THE STATE FISHERIES DEVELOPMENT CORP. LTD.
(An ISO 9001:2015 Certified Govt. Undertaking)
Bikash Bhawan, Bidhannagar, Kolkata - 700091
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e-Tender Notice No. SFDC/MD/NIT- 02 (e)/2025-26

Memo No: 473/Const-201/2024 **Date: 22/05/2025**

The Managing Director, **The State Fisheries Development Corporation Limited** invites e-tender on Turnkey Basis for the work detailed in the table below.(Submission of Bid through ***online***)

Sl. No.	Name of work	Estimated Amount (In Rs.)	Earnest Money (In Rs.)	Period of completion	Eligibility of Bidder
1	Construction of 5 TPH FLOATING FISH FEED AND 5 TPH SINKING OR SHRIMP FEED PLANT PROJECT and OTHER INFRASTRUCTURE ON TURNKEY BASIS AT KALYANI. DISTRICT-NADIA, WEST BENGAL.	Rs.71,43,78,540/- (Including GST, Cess)	1,42,87,571/-	24th Month.	Bonafide, resourceful & reliable agencies (reference Serial No. 5 of this e-NIT).

N.B.:- The successful L1 Bidder shall have to pay the fees of requisite set of tender documents for execution of formal agreement.

1. Both Technical document and Financial Bid are to be submitted in technical (Statutory & Non-Statutory) and financial folder concurrently duly digitally signed in the website http://wbtenders.gov.in.

2. Necessary Earnest Money will be deposited by the bidder electronically: online – through his net banking enabled bank account, maintained at any bank or: offline – through any bank by generating NEFT/ RTGS challan from the e–tendering portal. Intending Bidder will get the Beneficiary details from e–tender portal with the help of Digital Signature Certificate and may transfer the EMD from their respective Bank as per the Beneficiary Name & Account No., Amount, Beneficiary Bank name(ICICI Bank) & IFSC Code and e–Proc Ref No. Intending bidder who wants to transfer EMD through NEFT/RTGS must read the instruction of the Challan generated from E–Procurement site (i.e Unique transaction receipt) & must be uploaded in the EMD folder of Statuary Bid Document. Bidders are also advised to submit EMD of their bid, at least 3 working days before the bid submission closing date as it requires time
for processing of Payment of EMD. *Bidders eligible for exemption of EMD as per Govt. rule may avail the same and necessary documents regarding the exemption of EMD must be uploaded in the EMD folder of Statuary bid documents.*

3. The Technical document and Financial Bid submitted online only.

4. The FINANCIAL OFFER of the prospective tenderer will be considered only if the TECHNICAL Document of the tenderer found qualified by the Managing Director, The State Fisheries Development Corporation Limited. The decision of the Managing Director, The State Fisheries Development Corporation Limited will be final and absolute in this respect. The both list of Qualified Bidders will be

displayed in the website and also in the Notice Board of the office of the Managing Director, The State Fisheries Development Corporation Limited, on the scheduled date and time.

5. **Eligibility criteria for participation in the tender**.

i. The intending tenderers should produce credentials of a similar nature of completed a Single work as a prime agency of the minimum value of 40% (forty percent) of the estimated amount put to during last 5 (five) years prior to the date of issue of the tender notice; or,

ii. The intending tenderers should produce credentials of 2 (two) similar nature of completed work as a prime agency, each of the minimum value of 30% (thirty percent) of the estimated amount put to tender during last 5 (five) years prior to the date of issue of the tender notice; or,

iii. The intending tenderers should produce credentials of one single running work of similar nature work as a prime agency which has been completed to the extent of 80% (eighty percent) or more & value of which is not less than desired value at (i) above;

iv. Consortium is allowed only when Civil contractor & Machine Manufacturing Company having their requisite credential for participating in the tender. Maximum two members can be allowed in this understanding. A consortium bid will be considered in the name of the lead partner through by valid agreement by both the parties and duly signed by both authorized signatories which shall be furnish along with the bid. However, this consortium shall jointly / combinedly qualify the credential criteria, i.e refer to clause no 5 (i) & (ii). Machine manufacturing company cannot enter in to the tender process with more than one participant. In case of Consortium, both the party must have a valid agreement between them and the lead member shall have a valid Power Of Attorney to handle / sign tender related documents and detail of company profile relating to manufacturing unit for Machine Manufacturing Company.

v. Machineries equipment manufacturer must have global presence in terms of technology and production line. as Machineries manufacturing company must have supplied similar capacity (5 TPH FLOATING FISH FEED PLANT AND 5TPH SINKING OR SHRIMP FEED PLANT) machineries , to the Govt. Agencies or any statutory bodies or any private bodies in any country during last 5 years. (Supporting certificate to be provided).

The Agency shall have Valid license from statutory authority for civil works.

In case of running works, only those tenderers who will submit the certificate of satisfactory running work from the concerned Executive Engineer, or equivalent competent authority will be eligible for the tender. In the required certificate it should be clearly stated that the work is in progress satisfactorily and also that no penal action has been initiated against the executed agency, i.e., the tenderer.

Credential of Public Works department of State / Central, Fisheries department or its statutory bodies, Zilla Parisad, Municipal Corporations, HIDCO., or similar nature other Govt. bodies are preferred as per discretion of the executing Agency for similar works in case of civil and electrical works. (satisfactory completion certificate to be provided).

The agency/company should have experience under any department of State / Central Government or any local bodies or Govt owned corporation or any reputed private Bodies in any country for similar works In case of machineries company having an experience of supply similar capacity of plant and machineries . (Supporting certificate to be provided).

“The Bid” means the offer or proposal of the Bidder to be submitted for the Contractor service in Accordance with the stipulations set forth in this Bidding Documents.

“The Technical Bid” means the Technical part of the Bid.“The Financial Bid” means the financial part of the Bid..

"The Authorized Tender representative" means the bidder who has enclosed the authorization in their letter head.

"The Civil Contractor" ,or "The Contractor" means the Bidder, whose Bid for the Construction has been accepted by the Authority and includes his personal Tender representatives, successors and authorized assignees.

"The Bidder" or "The Agency" means either the Contractors/Company/Firm or his authorized Representative, Who submits the Bid for the Construction.

The Bidders are required to produce the original documents for verification by the Tender Committee as and when required. Qualified firms will be intimated to attend the opening of cover II (financial bid). The venue will be intimated separately.
The prospective tenderers must have sufficient credential to participate in the Tender. [Non Statutory Documents].

N.B.:-Completion certificate should contain a) Name of work, (b) Name of Client, (c) Amount put to tender, (d) Schedule month and year of commencement and completion as per work order (e) actual month and year of completion.

Completion Certificate, Work Order and Payment certificate along with Summary sheet for details of works must be uploaded. Otherwise tender will be treated as non qualified.

I. Payment certificate will not be treated as credential.

II. Credential certificate issued by the Executive Engineer or equivalent or competent authority of a state / Central Govt., State / Central Govt. undertaking, Statutory / Autonomous Bodies Constituted under the Central / State Statute, on the executed value of completed / running work will be taken as credential.

III. Average Annual financial turnover during the last 3 financial years, ending 31st March, 2024, should be at least 10 (Ten) Crore. (Supported by Audited Balance Sheet).

IV. Bidder must have Authorization / Approval from Manufacturer of Equipment/ machineries.

V. The prospective bidders shall have in their full time engagement experienced technical personnel, the minimum being One Degree/ Diploma holder Civil, One Degree/Diploma holder of Electrical/Mechanical , (Authenticated documents in respect of qualification and engagement shall be furnished for Technical Evaluation). In this respect the bidder shall upload Form No. IIIB in Section-'B' duly notarized, failing which the bid may be treated as non responsive [Non statutory Documents].

VI. The prospective bidders shall have available liquid assets (aggregate of working capital, cash-in-hand, uncommitted Bank Guarantees) and /or credit facilities not less than 10% estimated cost put to tender. In this respect proper & authentic documents to be submitted through e-filling (along with supported up-to-date audited balance sheet). Evidence of access to or availability of credit facilities should be certified by the any commercial Bank [Non statutory Documents].

VII. Declaration regarding Structure and Organization duly digitally signed by the applicant to be submitted along with application.

VIII. In case of Registered Unemployed Engineers' Co-operative Societies and Registered Labour Co-operative Societies, documents of credentials as per Serial No. 5, Page No. 2 of this e-NIT. 'Certificate of Registration' and 'Certificate for Validity of Registration' from the respective Assistant Registrar of Co-operative Societies, Bye Law, PAN Card, Current P.Tax Challan, Valid 15-digit Goods and Services Taxpayer Identification Number (GSTIN) under GST Act '2017, Employees Provident Fund and Employees State Insurance registration number and current challan eligible list of Registered Unemployed Engineers' Co-operative Societies / Registered Labour Co-operative Societies issued by the concerned Assistant Registrar of Co-operative Societies showing the name of their Society must be documented through e-filling. Also in case of Registered Unemployed Engineers' Co-operative Societies, documents in satisfying the following criteria are required to be documented through e-filling:-

IX. The Society consists of at least 10 (ten) members of which at least 60% should hold Degree or Diploma in any branch in Engineering as per Memo No. 44-A/4M-11/2002 dt. 09.01.2004 of Deputy Secretary-III, P.W.D.. Privilege will be allowed as per G.O. No. 378(9)-A/PW/O/10C-17/05 dt. 31-05-2005 P.W.D. Accounts Branch by Deputy Secretary-III including necessary documents in support of the statement and along with other supporting papers. (Non-Statutory documents)

X. Above society shall be allowed to participate the work mentioned in this e-NIT as per G.O.

XI. In case of proprietorship & partnership Firm & Company, System Generated Tax Audit Report in 3 CD& 3CB Form shall have to be furnished along with Balance Sheet & Profit & Loss Account & all schedules forming the part of Balance Sheet & Profit & Loss Account. Tax Audit Report, Balance Sheet & Profit & Loss Account including all schedules forming the part of Balance Sheet & Profit & Loss Account should be in favour of applicant. No other name along with applicant name in such enclosure will be entertained. (Non-Statutory Document).

XII. Where there is a discrepancy between the unit rate & the line item total resulting from multiplying the unit rate by the quantity, the unit rate quoted shall govern.

XIII. Prevailing safety norms has to be followed so that LTI (Loss of time due to injury) is zero.

XIV. The Tender evaluation committee will have sole discretion to decide eligibility of the contractor on the basis of e-filing documents and reserves the right to refuse any explanation to contractors found ineligible after scrutiny.

XV. A prospective tenderer shall be allowed to participate in the particular work either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single work, all his applications will be rejected for that work without assigning any reason thereof.

XVI. The partnership firm shall furnish (a) Registration certificate from Register of Firms, (b)The registered partnership deed & the company shall furnish (a) Incorporation Certificate & (b) Article of Association & Memorandum. (Non-Statutory Document).

XVII. Intending Bidder(s) must have to attend Pre-Bid meeting held on **03/06/2025 at 2.00 PM** at the office of the undersigned.

XVIII. Site Visit : from **05/06/2025 To …… (**from 11.00 AM to 3PM):

XIX. If any bidder fails to attend the pre-bid meeting as well as Site Visit , his/her technical bid will be cancelled without assigning any reason behind it. Intending bidder(s) must upload (FORM-IX) which has to be countersigned by the respective In-charge or his representative

6. No mobilization /secured advance shall be allowed.

7. (a)All materials such as cement, steel etc. are to be procured at his own cost including all Taxes. Quality of material should be maintained as per specification with reliable B.I.S. Code & as mentioned in the structural detail drawing & test certificate should be submitted as per direction of E.I.C. Authenticated evidence for purchase of cement & steel etc. are to be submitted along with the challan & test certificate. In the event of further testing opted by the E.I.C., then such testing from any Govt. approved testing laboratory shall have to be conducted by the agency at their own cost. The quality of materials & specifications of items as per provision of P.W.D. S.O.R. & relevant I.S. Code.

   (b) The Prospective bidders(L1) shall submit the work program as per schedule time in Bar Chart format after receiving the work order. The work program shall be prepared as per working schedule with duly signed by Engineer & shall be considered the actual time.

8. Recovery of 1% (one percent) cess on construction cost in accordance with the buildings and other construction worker's (Regulation of Employment & conditions of service) Act. 1996will be implemented in this Tender.

9. Arbitration will not be allowed. The Clause No. 25 of 2911 (ii) is to be considered as deleted clause vide gazette notification no. 558/SPW-13th December, 2011.

10. Bids shall remain valid for a period not less than 180 (One hundred eighty) days from the date of opening of the Financial Bid. Bid valid for a shorter period shall be rejected by the Managing Director, as non-responsive.

11. The prospective bidders shall have own the required plant & machinery or arrange through lease hold registered agreement in working condition. The contractor must furnish the documents in support of ownership or lease hold registered agreement & shall have to be submitted through e-filling [Non – Statutory Documents]. The minimum numbers of machineries are given in the form.

12. The prospective bidders shall be capable to establish field testing laboratory equipped with requisite instruments and technical staff so that if the work is finally awarded, he may establish such laboratory in the work site. Test of materials from outside recognized laboratory may be done, if required, at the discretion of the Engineer-in-charge. The cost for such testing will be borne by the agencies.

13. The intending bidders should clearly understand that whatever may be the outcome of the present invitation of bids, no cost of bidding is reimbursable from the department.

14. In case of inadvertent typographical mistake in the bill of quantity, the same will be treated to be corrected as to confirm with the prevailing relevant schedule of rates of PWD / PWD (Electrical) / PWD (Roads)/ I& WD for the concerned distractor as per Technically sanctioned estimate.

15. No fixed Security Deposit will be allowed.

16. No Price Adjustment in respect of certain construction material (i.e. cement components, steel components etc.) will be considered.

17. If required ready Mix Concrete as per specification required for the construction work will be supplied by the agency through his own plant / from any reputed/recognized supplier if required.

18. Running payment for the work may be made on availability of the fund. The executing agency may not get a running payment unless the gross amount of running bill is 50(fifty) lakh or 30% of the tendered amount whichever is less.

19. Successful bidder (L1) will have to purchase at least 2(two) copies of tender at usual cost which mentioned in e-NIT from the office of the respective MD, SFDCL.

20. A **:- Important information**

Date & Time schedule

Sl. No.	Particulars	Date & Time
1.	Date of upload in gov e-N.I.T. Documents online) (Publishing Date)	**24/05/2025 at 4.00 p.m.**
2.	Documents download/sell start date (Online)	**24/05/2025 at 4.00 p.m.**
3.	Documents download/sell end date (Online)	**16/06/2025 up to 3.00 p.m.**
4.	Date of Pre Bid Meeting with the intending bidders In the office of The Managing Director, The State Fisheries Development Corporation Limited, Bikash Bhawan, North Block, 1st Block, Salt Lake City, Kolkata- 700 091.	**03/06/2025 at 2.00 p.m.**
5.	Bid submission start date(Online)	**24/05/2025 at 4.00 p.m.**
6.	Bid Submission closing (Online)	**16/06/2025 up to 3.00 p.m.**
7.	Bid opening date for Technical Proposals (Online)	**18/06/2025 at 3.00 p.m.**

22.LOCATIONOFCRITICALEVENT

Pre Bid Meeting

And Bid Opening → Office of the **Managing Director**
The State Fisheries Development Corporation Limited
Bikash Bhawan, North Block, 1st Block, Salt Lake City, Kolkata- 700 091.

23. The Agency will be liable to maintain the work at working portion at the appropriate service level to the satisfaction of the Engineer-in-Charge at his own cost for a period as per prevailing Govt. rule from the date of completion of the work. If any defect/damage is found during the period as mentioned above contractor shall make the same good at his own cost expense to the specification at par with instant
Project work. Failure to do so, penal action against the Agency will be imposed by the Department as deem fit. The Agency will have to quote his rate considering the above as respect.

24. All Bidders are requested to present in the' The State Fisheries Development Corporation Limited.', during opening the financial bid The Managing Director, **The State Fisheries Development Corporation Limited** may call **Open Bid/Sealed Bid** after opening of the said bid to obtain the suitable rate further ,if it is required. No objections in this respect will be entertained raised by any Bidder who will present during opening of bid, or from any Bidder who will absent at the time of opening of Financial Bid. No informal tenderer will be enter tainted in the Bid further.

25. Site of work and necessary drawings may be handed over to the agency phase wise. No claim in this Regards will be entertained.

26. **Earnest Money :** Necessary Earnest Money will be deposited by the bidder electronically: online – through his net banking enabled bank account, maintained at any bank or: offline – through any bank by generating NEFT/ RTGS challan from the e–tendering portal. Intending Bidder will get the Beneficiary details from e–tender portal with the help of Digital Signature Certificate and may

transfer the EMD from their respective Bank as per the Beneficiary Name & Account No., Amount, Beneficiary Bank name (ICICI Bank) & IFSC Code and e–Proc Ref No. Intending bidder who wants to transfer EMD through NEFT/RTGS must read the instruction of the Challan generated from E–Procurement site & must be uploaded in the EMD folder of Statuary Bid Document. Bidders are also advised to submit EMD of their bid, at least 3 working days before the bid submission closing date as it requires time for processing of Payment of EMD. Bidders eligible for exemption of EMD as per Govt. rule may avail the same and necessary documents regarding the exemption of EMD must be uploaded in the EMD folder of Statuary bid documents.

Balance amount of earnest money if any required (calculated on the basis of @ 2% of total Estimated amount) has to be deposited by the successful bidder(s) at the time of formal agreement.

27. The Bidder, At His Own responsibility and risk is encouraged to visit and examine the site of works and its surroundings and obtain all information's that may be necessary for preparing the bid and entering into a Contract for the work as mentioned in the notice inviting tender, Before submitting offer with full satisfaction, The cost of visiting the site shall be at his own expense.

28. The intending Bidders shall clearly understand that whatever may be the outcome of the present invitation of Bids, no cost of Bidding shall be reimbursable by the Department. The Managing Director, The State Fisheries Development Corporation Limited reserves the right to reject any application for purchasing Bid Documents and to accept or reject any offer without assigning any reason whatsoever and is not liable for any cost that might have incurred by any Tenderer at the stage of Bidding.

29. **Prospective applicants are advised to note carefully the minimum qualification criteria as mentioned in 'Instructions to Bidders' before tendering the bids.**

30. **Conditional / Incomplete tender will not be accepted.**

31. The intending tenderers are required to quote the rate ***online.***

32. Contractor shall have to comply with the provisions of (a) the contract labor (Regulation Abolition) Act. 1970 (b) Apprentice Act. 1961 and (c) minimum wages Act. 1948 of the notification thereof or any other laws relating thereto and the rules made and order issued there under from time to time

33. **Guiding schedule of rates – For building works**: Current Schedule of rates for concerned District P.W.D. with effect from 01.11.2017 for Building, Sanitary & Plumbing works P.W (R) SOR, P.W.D. (Electrical) SOR along with up-to-date Corrigenda & Addenda, Unified Schedule of Rates is brought into effect from 19.01.2018 under the Irrigation & Waterways Department

34. No price preference & other concession as per Order No. 1110-F dated 10.02.2006 will be allowed.

35. During the scrutiny, if it come to the notice to tender inviting authority that the credential or any other paper found incorrect/ manufactured/ fabricated, that bidder would not be allowed to participate in the tender and that application will be out rightly rejected without any prejudice. The Managing Director, The State Fisheries Development Corporation Limited reserves the right to cancel the N.I.T. due to unavoidable circumstances and no claim in this respect will be entertained.

36. IncaseiftherebeanyobjectionregardingprequalifyingtheAgencythatshouldbelodgedtotheManaging Director, The State Fisheries Development Corporation Limitedwithin2(two) days from the date of publication of list of qualified agencies and beyond that time schedule no objection will be entertained by the authority.

37. Before issuance of the WORK ORDER, the tender inviting authority / bid evaluation committee may verify the hard copy of earnest money, the credential and other documents of the lowest tenderer if necessary. After verification if it is found that the documents submitted by the lowest tenderer is either manufactured or false in that case work order will not be issued in favor of the said Tenderer under any circumstances.

38. If any discrepancy arises between two similar clauses on different notification, the clause as stated in later
Notification will supersede former one in following sequence.

I. FormNo.2911 (ii).
II. e-NIT
III. Special terms &conditions.
IV. Technical Bid.
V. Financial Bid

39. The prospective tenderers or any of their constituent partner shall neither have abandoned any work nor any of their contract have been rescinded during the last 3 (three) years. Such abandonment or rescission will be considered as disqualification towards eligibility.

40. Qualification criteria.

The tender inviting & Accepting Authority will determine the eligibility of each bidder, the bidders shall have to meet all the minimum regarding.

a) ***Financial Capacity.***
b) ***Technical Capability comprising of personnel & equipment capability.***
c) ***Experience/Credential***

The eligibility of a bidder will be ascertained on the basis of the digitally signed documents in support of the minimum criteria as mentioned in a, b, c above. If any document submitted by a bidder is either manufacture or false, in such cases the eligibility of the bidder/tenderer will be out rightly rejected at any stage without any prejudice.

41. Where an individual person holds a digital certificate in his own name duly issued to him by the company or the firm of which he happens to be a director or partner, such individual person, either belonging to an appropriate cadre officer of the company or an authorized partner of a firm, having a registered power of attorney empowered by the board or by the firm, shall invariably upload a copy of registered power of attorney showing clear authorization in his favour, to upload such tender.
The power of attorney shall have to be registered to accordance with the provisions of the Registration Act, 1908.

42. The bidder should submit necessary labour license from the competent authority under contract labour (Regulation & Abolition) Act '1970.

43. No child labour will be allowed at the working site.

44. The prospective bidder to arrange sufficient construction materials & mechanical equipment's to ensure compliance with his obligations under the contract.

45. All the EMD/Tender Fees in respect of e-Tender will mandatorily be received and refund/settlement made as per Finance Department, Govt. of West Bengal vide No. 3975-F(Y) dated 28th July '2016.

46. Rate should be quoted including all duties, taxes & other levies Educational Cess etc. as imposed byGovt. of India & Govt. of West Bengal valid on date of bidding, payable by the Contractor under the Contract, or for any other cause. **The Managing Director**, **The State Fisheries Development**

Corporation Limited will not make any payments towards taxes, duties, levies etc. for the entire contract period.

47. Bidder shall submit copy of :-

i) Valid PAN issued by the IT Dept., Govt. of India& I.T Return for last 05 (five) years.

ii) Valid 15-digit Goods and Services Taxpayer Identification Number (GSTIN) under GST Act '2017.

iii) Tax invoice(s) needs by the supplier for raising claim under the contract showing separately the tax

charged in accordance with the provisions of GST Act '2017.

iv) Employees Provident Fund and Employees State Insurance registration number and current challan.

48. Prospective Bidder shall have to comply the **Defect Liability Period of** 3 (three) years for the project and 1 (One) year of operation to the plant from the actual date of completion. If any defect/ damage is detected during this period as mentioned above the contractor shall make the same good at his own expense to the satisfaction of the of the Engineer in Charge or in default, the Engineer in Charge may cause the same to be made good by other agency and deduct the cost (of which the certificate of the Engineer in Charge shall be final) from his security deposit or any sums that may be then, or at any time thereafter become due to the contractor. Security Deposit shall become payable only after expiry of the Defect Liability Period after making necessary deduction if applicable.

49. Supplementary work/ deviation quantity if any should be followed as per Notification No. 6754-PW/L & A/2M-312/2017 dt. 18/12/2017.

50. Failure in keeping to stages of work Programmed: If the Contractor does not keep to the approved program and continues at any stage to fail behind his schedule by as much as twenty percent (20%) of the said approved work programmed, within thirty (30) days from receipt by him of a written notice from the Engineer, or if in the opinion of the Engineer the delay will substantially affect operation activities or execution of a major work item and it is ascertained by the Engineer that the Contractor cannot remedy the occasion within the stipulated time, the MD of SFDCL on give recommendation of Engineer shall have full authority to undertake measures to recover from such adverse condition.

Settlement of Disputes: If any dispute or difference of any kind whatsoever shall arise between the Employer and the Contractor or the Engineer and the Contractor in connection with, or arising out of the Contract, of the execution of the Works, whether during the progress of the Works or after their completion and whether before or after the termination, abandonment or breach of the Contract, it shall be settled in the court of law having jurisdiction provided that such a recourse shall not be resorted to without exhausting all other reasonable avenues of redresser.

51. EXTENSION OF TIME FOR COMPLETION

Should the amount of extra or additional work of any kind or any cause of delay referred to in these Conditions, or other special circumstances of any kind whatsoever which may occur, other than through a default of the Contractor, be such as fairly to entitle the Contractor to an extension of time for the completion of the works, the M.D on recommendation of Engineer shall determine the period of such extension and shall notify the Employer and the Contractor accordingly. Provided that the Engineer is not bound to take into account any extra or additional work or other special circumstances unless the Contractor has within twenty-eight days after such work has been commenced, or such circumstances have arisen or as soon as is practicable, submitted to the Engineer full and detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

52. In case the contractor fails to make desirable progress of works or lags behind in activities in items of work required for timely completion of the work due to lapse on their part, the MD of SFDCL give written notice to the contractor for achieving specified progress /or to deploy adequate resources to the satisfaction of Engineer in Charge for timely completion of the work.

If the contractor fails to achieve the specified quality and fails to take action for timely completion of work due to their fault even after expire of the notice period then the MD of SFDCL shall have option to

terminate the contract and to withdraw the remaining part of the work in part or in full from the contractor and get the same executed at the risk and cost of the terminated contractor through alternative agency/agencies (As per Clause 3 of 2911 ii).

The contractor will be eligible for payments for works executed but not paid till the date of termination. Such amount shall be determined after joint inspection of sites on mutually agreed days after termination.

53. The agency should have engaged Job Card holder where unskilled workers are required & shall furnish certificate after completion the work with signature.

Sd/-
MANAGING DIRECTOR
THE STATE FISHERIES DEVELOPMENT CORPORATION LIMITED

Memo No. 473/1(4)/Const-201/2025 **Dated : 22/05/2025**

Copy forwarded for favour of kind information to the:-

1) The Secretary to the Govt. of West Bengal, Fisheries Department,
2) The Managing Director, BENFISH,
3) The PS to Minister in Charge, Fisheries Department,
4) Guard file

Sd/-
MANAGING DIRECTOR
THE STATE FISHERIES DEVELOPMENT CORPORATION LIMITED

SECTION A
INSTRUCTION TO BIDDERS

1. *General guidance for e-Tendering*

Instructions/ Guidelines for tenderers for electronic submission of the tenders online have been annexed for assisting the contractors to participate in e-Tendering.

1. Registration of Contractor

   Any contractor willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement system; through logging on to https://etender.wb.nic.in (the web portal of public works department) the contractor is to click on the link for e-Tendering site as given on the web portal.

2. Digital Signature certificate (DSC)
   Each contractor is required to obtain Digital Signature Certificate (DSC) for submission of tenders, from the approved service provider of the National Information's Centre(NIC) on payment of requisite amount details are available at the Web Site stated in Clause-2 of Guideline to Bidder DSC is given as a USB e- Token.

3. The contractor can search & download NIT & Tender Documents electronically from computer once he logs on to the website mentioned in Clause 2 using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.

4. Participation in more than one work
   A prospective bidder shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If found to have applied severally in a single job all his applications will be rejected for that job.A prospective bidder(including his participation in partnership) shall be allowed to participate in single road /building work as mentioned in the list of schemes.

5. Submission of Tenders.
   General process of submission, Tenders are to be submitted through online to the website stated in Cl. 2 in two folders at a time for each work, one in Technical Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC) the documents are to be uploaded virus protected scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

A. Technical proposal

The Technical proposal should contain scanned copies of the following further two covers (folders).

A-1. Statutory Cover Containing

(i) Prequalification Application (Sec–B, Form– I).

(ii) Earnest Money (EMD) as prescribed in the N.I.T. against each of the serial of work in favour of the Managing Director, The State Fisheries Development Corporation Limited.

(iii) Tender Form No. 2911 (ii) & N.I.T. with all addenda & corrigendum *(download properly and upload the same Digitally Signed).* **The rate will be quoted in the B.O.Q.** Quoted rate will be encrypted in the B.O.Q. under Financial Bid. **In case quoting any rate in Tender Form No. 2911 (ii), the tender is liable to be summarily rejected**.

(iv) NIT with Special terms & conditions and specification of works.

A-2. Non statutory Cover Containing

i) PAN Card, Current P.Tax Challan, Current IT Return for last 5 (five) years, Trade License, Valid 15-digit Goods and Services Taxpayer Identification Number (GSTIN) under GST Act '2017, Tax invoice(s) needs by the supplier for raising claim under the contract showing separately the tax charged in accordance with the provisions of GST Act '2017, Employees Provident Fund and Employees State Insurance registration number and current challan.

ii. Registration Certificate under Company Act. (if any).

iii. Registered Deed of partnership Firm/ Article of Association and Memorandum.

iv. Registered Power of Attorney (For Partnership Firm/ Private Limited Company, if any).

v. System generated Tax Audit Report in 3 CD/ 3CB Form shall have to be furnished along with Balance Sheet and Profit and Loss A/c for the last five years (year just preceding the current Financial Year will be considered as year – I).

vi. Employees Provident Fund and Employees State Insurance registration number and current challan.

vii. Clearance Certificate for the Current Year issued by the Assistant Register of Co-Op(S)(ARCS) bye laws are to be submitted by the Registered Labour Co-Op(S) Engineers' Co.-Opt.(S).

viii. List of machineries possessed by own / arrange through lease hold agreement along with authenticated copy of invoice & challan. (Section –B, Form IV).

ix. List of technical staff along with structure and organization (Form-III B, &Section – B, Form – III).

x. Credentials per Serial No. 5, Page No. 2 of this e-NIT. To be furnished (Section – B, Form – V).

xi. Information regarding litigation etc. to be furnished (Section – B, Form – VI).

xii. Bank solvency certificate to be furnished (Section – B, Form – VII).

xiii. Declaration by the Tenderer (Section-B, Form-VIII)

Note:-The eligibility of a bidder will be ascertained on the basis of scanned copy of all original documents duly digitally signed as stated in A-1 & A-2. Failure of submission of any of the above-mentioned documents (as stated in A1 and A2) will render the tender liable to summarily rejected for both statutory & non statutory cover.

C. Financial proposal

(i)The financial proposal should contain the following documents in one cover (folder) i.e. Bill of quantities (BOQ) the contractor is to quote the rate (percentage Above/ Below/ At par) online through computer in the space marked for quoting rate in the BOQ.

(ii)Only downloaded copies of the above documents are to be uploaded virus scanned and Digitally Signed by the contractor.

iv) As per G.O. No. 4608-F(Y) dated 18.07.2018 of Finance Department, Govt. of West Bengal, Additional

Performance Security @ 10% (Ten Percent) of the tendered amount shall be obtained from the successful bidder if the accepted bid value is 80% (Eighty percent) or less of the Estimated amount put to tender.

The Additional Performance Security shall be submitted in the form of Bank Guarantee from any Scheduled Bank before issuance of the Work Order.

The Bank Guarantee shall have to be valid upto end of the Contract Period & shall be renewed accordingly, if required.

Necessary provisions regarding deduction of security deposit from the progressive bills of the contractor as per relevant clauses of the contract shall in no way be altered/affected by provision of this Additional Performance Security.

6. Penalty for suppression / distortion of facts

Submission of false document by tenderer is strictly prohibited and in case of such act by the tenderer the same may be referred to the appropriate authority for prosecution as per relevant IT Act with forfeiture of earnest money forthwith.

7. REJECTION OF BID:-

The Employer (tender accepting authority / bid evaluation committee) reserves the right to accept or reject any Bid and to cancel the Bidding processes and reject all Bids at any time prior to the award of Contract without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the ground for Employer's (tender accepting authority) action.

The Tenderer whose Bid has been accepted will be notified by the Tender Inviting and Accepting Authority through acceptance letter/ Letter of Acceptance

The Letter of Acceptance will constitute the formation of the Contract.

The Agreement in Printed Tender Form in WBF No. 2911 (ii) will incorporate all necessary documents e.g. N.I.T., all addenda corrigendum, special terms and condition (Section –C), different filled-up forms (Section –B), B.O.Q. and the same will be executed between the Tender Accepting Authority and the successful Tenderer.

Sd/-
MANAGING DIRECTOR
THE STATE FISHERIES DEVELOPMENT CORPORATION LIMITED

THE ABOVE STATED NON-STATUTORY/TECHNICAL DOCUMENTS SHOULD BE ARRANGE IN THE FOLLOWING MANNER

Click the check boxes beside the necessary documents in the My Document list and then click the tab " Submit Non Statutory Documents' to send the selected documents to Non-Statutory folder. Next Click the tab " Click to Encrypt and upload" and then click the "Technical" Folder to upload the Technical Documents.

Sl. No.	Category Name	Sub Category Description	Details
A.	CERTIFICATES	CERTIFICATES	1. Valid 15-digit Goods and Services Taxpayer Identification Number (GSTIN) under GST Act '2017. 2. Tax invoice(s) needs by the supplier for raising claim under the contract showing separately the tax charged in accordance with the provisions of GST Act '2017. 3. PAN Card, Current P.Tax Challan. 4. Current IT return 5. Current Trade License 6. Employees Provident Fund and Employees State Insurance registration number and current challan.
B.	Company Details	Company Details – I	1. Society (Society Registration copy, Trade License). 2. Power of attorney. 3. Partnership Firm (Partnership Deed, Trade License). 4. Bye Law. 5. Eligible list of Registered Unemployed Engineers Co-operative Society /Registered Labour Co-operative Society. 6. Current Audit Report. 7. Current N.O.C. from A.R.C.S. 8. Minutes of last A.G.M. *In case of Consortium, the lead member should have all above documents and valid agreement copy with Authorization Letter.
C.	Credential	Credential 1	1. Similar nature of work done & completion certificate which is applicable for eligibility in this tender.(ref. Serial no-5 of this e-NIT)
D.	Civil Man Power, Machineries	Technical Personnel Machineries	List of Technical Staffs along with Structures & Organization (As per e-NIT), Section-B (Form-IV).
E	Financial Information	Work in Hand	1. Financial Statement (Form – II B) duly filled up. Bid Capacity (Form-II A) 2. Affidavits – X & Affidavits – Y (Section – B) 3. Certificate of revolving line of credit by the Bank (Section-B, Form-VII)
		Profit & Loss A/c. & Balance Sheet for last 5 (five) years	Profit & Loss A/c. & Balance Sheet (with Annexure & System generated 3CD & 3 CB form in case of Tax Audit).

Note:-<u>Scan copy of all original documents stated above shall be uploaded duly signed by the bidder.</u>

A. Tender evaluation by the Managing Director, The State Fisheries Development Corporation Limited

i. Opening of Technical proposal :- Technical proposals will be opened by Bid evaluation Committee constituted by the Managing Director, The State Fisheries Development Corporation Limited, and his authorized representative electronically from the web site stated using their Digital Signature Certificate.

ii. Intending tenderers may remain present if they so desire.

iii. Cover(folder) statutory documents(vide Cl. No. 5.A-1 of Section "A") should be open first & if found in order, cover(Folder) for non-statutory documents (vide Cl. No. – 5.A-2 of Section "A") will be opened. If there is any deficiency in the statutory documents the tender will summarily be rejected.

iv. Decrypted (transformed in to readable formats) documents of the non statutory cover will be downloaded & handed over to the Managing Director, The State Fisheries Development Corporation Limited.

v. Uploading of summary list of technically qualified tenderers.

vi. Pursuant to scrutiny & decision of the Bid evaluation committee constituted by The Managing Director, The State Fisheries Development Corporation Limited the summary list of eligible tenders & the serial number of work for which their proposal will be considered will be uploaded in the web portals.

vii. While evaluation by Bid evaluation committee constituted by the Managing Director, The State Fisheries Development Corporation Limited may summon of the tenders & seek clarification / information or additional documents or original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

viii. Opening & evaluation of Tender :-

If any contractor is exempted from payment of EMD, copy of relevant Government Order needs to be furnished.

B. Financial proposal

i) The financial proposal should contain the following documents in one cover (folder) i.e. Bill of quantities (BOQ) the contractor is to quote the rate (Presenting Above/ Below/ At per) online through computer in the space marked for quoting rate in the BOQ.

ii) Only downloaded copies of the above documents are to be uploaded virus scanned & Digitally Signed by the contractor.

6. Penalty for suppression / distortion of facts.

If any tenderer fails to produce the original hard copies of the documents (especially Completion Certificates and audited balance sheets), or any other documents on demand of **The Managing Director**, **The State Fisheries Development Corporation Limited** within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies or if there is any suppression, the tenderer will be suspended from participating in the tenders on e-Tender platform for a 3 (Three) years. In addition, his user ID will be deactivated and Earnest Money Deposit will stand forfeited. Besides, the SFDCL may take appropriate legal action against such defaulting tenderer.

The Employer reserves the right to accept or reject any Bid and to cancel the Bidding processes and reject all Bids at any time the prior to the award of Contract without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for Employer's action.

7. **AWARD OF CONTRACT**

The Bidder whose Bid has been accepted will be notified by the Tender Inviting & Accepting Authority through acceptance letter.

The notification of award will constitute the formation of the Contract.

The Agreement in W.B.F.No.-2911 (ii) will incorporate all agreements between the Tender Accepting Authority and the successful Bidder.

8.PAYMENT BREAK UP SCHEDULE

Sl no.	Derscription		Percentage
1)	**PART-A (CIVIL,SANITARY PLUMBING,FIRE)**		25.16%
A	PLANT AREA INCLUDING STRUCTURAL WORK, ROOF SHEDDING		
	i) Piling and foundation work	7%	
	ii) Super structure including Structural work, roof shedding. Flooring, Brickwork, RCC painting etc	9%	
	iii) Plumbing, Electrical, finishing / work etc	2.82%	
	Sub Total	18.82 %	
B	ADMINISTRITIVE BUILDING		
	i)Foundation work.	0.5%	
	ii)Super Structure, Brick work, R.C.C , PCC, columns, slabs, beams Up to 1st floor, Plastering. Flooring, Painting etc.	1%	
	iii)Plumbing, Electrical, finishing/ work etc	0.23%	
	Sub Total	1.73 %	
C	CIVIL WORK FOR FOUNDATION OF BOILER, LIQUID TANK, OHT AND SECURITY ROOM, WEIGH BRIDGE FOUNDATION & OPEN TOILET BLOCK		
	i)Foundation work.	1.5%	
	ii)Super Structure, R.C.C columns, Beam, Slab, Plastering	0.33%	
	iii) painting, finishing/ work etc	0.15%	
	Sub Total	1.98%	
D	MAIN GATE (MECHANICAL TYPE) WITH BOUNDARY WALL,		
	Boundary Wall and Main gate complete work.	0.38%	
	Sub Total	0.38%	
E	INTERNAL ROAD, PARKING, LANDSCAPE		
	i)Internal road complete work.	1.5%	
	ii)Parking Complete Work.	0.5%	
	iii) Landscaping Complete work.	0.16%	
	Sub Total	2.16%	
F	FIRE FIGHTING		
	Fire Fighting complete work.	0.09%	
	Sub Total	0.09%	
2	**PART-B (MACHINERY)**		74.84%
A	Main Plant Machine with all necessary components, Auxiliary Equipment and Automation		
	i)After receiving the equipment's at site.	50%	
	ii) After successful installation & commissioning	14.94%	
	iii) after one month of successful running of the equipment's.	6.00%	
	Sub Total	70.94%	
B	Boiler		
	i)After receiving the equipment's at site.	3.00%	
	ii) After successful installation & commissioning	0.40%	
	iii) after one month of successful running of the equipment's.	0.24%	
	Sub Total	3.64%	
C	Weigh Bridge		
	i)After receiving the equipment's at site.	0.20%	
	ii) After successful installation & commissioning	0.06%	
	Sub Total	0.26%	

PAYMENT

Any request for Advance Payment will not be entertained. However, in exceptional cases, advance may be allowed against 110% Bank Guaranty. (applicable for machineries items only) .

1. Bills to be produced in DUPLICATE.
2. The payment shall be made as per projected Performance Chart both Physical and Financial submitted by the Agency within 14 days of Issuing of Award of Contract based on Job completion period on approved Design/Lay-Out.
3. However, as per instruction of the authority from time to time, the successful bidder shall have to produce the BAR CHART in terms of % of completion of work and Physical progress of the work accordingly
4. Payment shall be made after executing the order satisfactory in all respect.
5. For Plant and Machineries : All payment will be made as per performance Chart (Physical & Financial) submitted by the agency prior to start the Job as above. However on prior approval from Competent Authority ,

However, no interest shall be paid to the firm, if the payment is delayed due to whatsoever reasons. The payment of bills shall be withheld in case of violation of any tender terms & conditions.

Sd/-
MANAGING DIRECTOR
THE STATE FISHERIES DEVELOPMENT CORPORATION LIMITED

Form – II A

Information of audited financial statements for the last year to demonstrate the current soundness of the Bidder's financial position :

1. The Bidder's Net worth for the last year calculated on the basis of capital, profit & free reserve available to the firm should be positive.
2. Bidders, who meet the minimum qualification criteria, will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:
   Assessed Available Bid Capacity = (A x N x 2 - B) where
   A = Maximum value of engineering works in respect of projects executed in any one year during the last 5 (five) years (updated to the price level of the year indicated in table below under note) taking into account the completed as well as works in progress. The projects include turnkey project / item rate contract / construction works.
   N = Number of years (i.e._____ year) prescribed for completion of the works for which Bids are invited.

   B= Financial Liability of the bidder to be incurred for existing commitments & on-going works during the period of the subject contract.

To calculate the value of 'A'

i) A table containing value of Engineering Works in respect to Projects (Turnkey projects/item rate contract/construction works) undertaken by the bidder during the last 5 (five) years is as follows:

Sl. No.	Year	Value of Engineering Works undertaken w.r.t. Projects (Rs. In Crores)
1	Year – 5	
2	Year – 4	
3	Year – 3	
4	Year – 2	
5	Year – 1	

ii) Maximum value of projects that have been undertaken during the F.Y. _____out of the last 5 years & value thereof is Rs._____Crores. (Rupees_____). Further,value updated to the price level of the year indicated in Table is as follows:

Rs. _____ Crores x _____(Updation Factor as per Table annexed)
Rs._____ Crores (Rupees_____).

Table indicating the factory for the year for updation to the price level is indicated as under

Sl. No.	F.Y. / Calendar year	Updation factor
1	Year – 1	1.0
2	Year – 2	1.05
3	Year – 3	1.10
4	Year – 4	1.15
5	Year – 5	1.20

iii) Net worth for the last year of _____ (name of the company)

…… …… Signature: Name: Designation of Authorized Signatory For & on behalf of …….. (Name of the Applicant)	…… …… Name of the Statutory Auditor's Firm/Chartered Accountant Signature:- Seal of the Audit/Chartered Accountant Firm: Name of signatory (in capital) : Membership No.:- Firm Regn. No:- Date of Birth :- Mob:- UDIN :-

Note :

1. All the documents to be submitted in support of Annexure – P must be duly signed & sealed by the applicant / bidder & authenticated by Statutory Auditor's firm.

2. In case of a Consortium, Lead Partner shall be required to meet minimum 35% of required Bid Capacity & another consortium partner shall be required to meet minimum 65% of BID Capacity. Bid capacity of all members in total should be at least 100% of required Bid capacity of the estimated amount.

SECTION – B

FORM –I

PRE-QUALIFICATION APPLICATION

To

The Managing Director

The State Fisheries Development Corporation Limited

Ref: - Tender for_____
_____ (Name of work) _____
_____
_____

e-N.I.T.NO- _____ of 2025-26 of The Managing Director, The State Fisheries Development Corporation Limited

Dear Sir,

Having examined the Statutory, Non statutory and e-NIT documents, I /we hereby submit all the necessary information
and relevant documents for evaluation. The application is made by me / us on behalf of……In the capacity_____duly authorized to submit the order.

The necessary evidence admissible by law in respect of authority assigned to us on behalf of the group of firms for
Application and for completion of the contract documents is attached herewith.

We are interested in bidding for the work(s) given in Enclosure to this letter.
We understand that:

(a) Tender Inviting and Accepting Authority/Engineer-in-Charge can amend the scope and value of the contract bid under this project.

(b) Tender Inviting and Accepting Authority/Engineer-in-Charge reserves the right to reject any application
without assigning any reason.

Enclo:- e-Filling:-

1. Statutory Documents
2. Non Statutory Documents

Signed by an authorized officer of the firm

_____
_____

Title of the officer

_____
_____

Name of the Firm with Seal

Date

N.B. THIS APPLICATION MUST BE MADE IN THE LETTER HEADED PAD OF THE FIRM IN WHICH APPLICATION IS MADE, CLEARLY MENTIONING THE ADDRESS AND CONTACT NUMBER & email ID OF THE FIRM.

Form – II B

This is to certify that we have verified the consolidated financial statement of _____(Name of the Firm in which application is made) having its Registered Office at _____(address of the Firm). Based on our examination of Books and Records and other documentary evidences we certify that the financial data of the company given in the balance

Sl No	Description	Financial Data for the last 5 audited Financial Years				
		2019-20 Rs.(in Cr.)	2020-21 Rs.(in Cr.)	2021-22 Rs.(in Cr.)	2022-23 Rs.(in Cr.)	2023-24 Rs.(in Cr.)
1	Net Worth (Calculated on the basis of capital, profit and free reserve available to the firm should be positive)					
2	Working Capital					
3	Annual Turnover (Civil Construction work)					

sheets are detailed hereunder for the Financial year(s)as mentioned below are true and correct.

Available Liquid Assets (FY2023-2024)

1) Working Capital = Rs.
2) Uncommitted Bank Guarantees =Rs.
3) Credit Facilities as shown in Bank Certificate = Rs.
   (Certificate to be submitted in Form VII)
   Total Liquid Assets =

Name of the Statutory Auditor's Firm/Chartered Accountant
Signature:-
Seal of the Audit/Chartered Accountant Firm: Name of signatory (in capital) :-
Membership No.:-
Firm Regn. No:-
Date of Birth :-
Mob
UDIN :-

Signature, name and designation of Authorized Signatory

For and on behalf of
……....(Name of the applicant)

N.B :-THIS FORM (i.e FORM-II B) MUST BE PROPERLY MADE IN THE LETTER HEAD OF THE AUDITOR'S/CHARTERED ACCOUNTANT FIRM, CLEARLY MENTIONING THE ADDRESS, e-mail ID, and CONTACT NUMBER OF THE FIRM &should preferably be made in a single page else to be authenticated in each page similarly. All data as mentioned in form II B shall be available through UDIN verification.

SECTION – 'B'

AFFIDAVIT – "X"

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized on after the date of publication of this e-NIT)

Work in progress				**Work order issued but work not started**		
Sl. No.	Name of the work with Tender No.	Estimated Amount	% of work executed	Sl. No	Name of the work with Tender No.	Tendered Amount

Signed by an authorized officer of the firm

_____

Title of the officer

_____

Name of the Firm with Seal

Date_____

SECTION – 'B'

AFFIDAVIT – "Y"

(To be furnished in Non – Judicial Stamp paper of appropriate value duly notarized)

1. I, the under-signed do certify that all the statements made in the attached documents are true and correct. In case of any information submitted proved to be false or concealed, the application may be rejected and no objection/claim will be raised by the under-signed.

2. The under-signed also hereby certifies that neither our firm M/S _____norany of constituent partner had been debarred to participate in tender for Govt. works during the last 5(five)years prior to the date of this e-NIT.

3. The under-signed would authorize and request any Bank, person, Firm or Corporation to furnish pertinent information as deemed necessary and/or as requested by the Department to verify this statement.

4. The undersigned understands that further qualifying information may be requested and agrees to furnish any such information at the request of The Department.

5. Certified that I have applied in the tender in the capacity of individual/as a partner of a firm and I have not applied severally for the same work.

6. Certify that the rates have been offered by carrying out & completing the work to the satisfaction by the Department by taking due consideration of all factors after inspection of the work site & going through the detailed Notice Inviting e-Tender & Schedule of probable items of work with approximate quantities & other documents.

_____

Signed by an authorized officer of the firm

_____

Title of the officer

Name of the Firm with Seal

Date_____

SECTION - B
FORM- III
STRUCTURE AND ORGANISATION

A.1 Name of applicant :

A.2 Office Address :

Telephone No. and Cell Phone No. :

Fax No. :

E mail ID :

A.3 Attach an organization chart showing the structure of the company with names of Key personnel and technical staff with Bio-data. :

A.4 PAN No. :

A.5 G.S.T. No. :

A.6 Details of Bank Accounts :-

i) Name of Bank :

ii) Name of Branch & Addressed with Phone No. :

iii) Account No. :

iv) MICR No. :

v) IFSC Code No. :

Note: Application covers Proprietary Firm, Partnership, Limited Company or Corporation.

_____
Signed by an authorized officer of the firm

_____
Title of the officer

_____
Name of the Firm with Seal

Date_____

FORM- III B

[Ref. NIT Clause No. 5.0 (vi)]

(To be furnished in Non- Judicial Stamp paper of appropriate value duly notarized on or after the date of publication of this NIT)

List of Technical Personnel to be full time engaged/ appointed for the work

(Name of work) _____

Sl. No.	Name of Technical Personnel	Qualification	Designation	Date of Joining	Mob No	Remarks

I on behalf of **(bidders name)** do hereby declare that the above information furnished by me are true to the best of knowledge and belief and shall be responsible if any information is found incorrect in due course and the Department has got all right to take any action as deems fit.

Witness :_____

_____

Signed by an authorized officer of the firm

Title of the officer

Name of the Firm with seal

Date _____

_____

Signature of Notary

SECTION - B

FORM – IV

C. DEPLOYMENT OF MACHINERIES (in favour of owner / lessee):-

(Original document of own possession arranged through lease deed to be annexed)

(If engaged before Certificate from E.I.C. to be annexed in respect of anticipated dated of release of Machineries.)

Name of Machine / Instrument	Make	Type	Capacity	Motor / Engine No.	Machine No.	Possession Status		Date of release If Engaged
						Idle	Engaged	
1	2	3	4	5	6	7	8	9

Signed by an authorized officer of the firm

_____

Title of the officer

_____

Name of the Firm with Seal

Date_____

SECTION – B FORM – IV (contd…)

G. **CONTRACTOR'S EQUIPMENT:**

MINIMUM PLANT AND EQUIPMENT TO BE DEPLOYED BY THE CONTRACTOR FOR THE WORK. Whereas it is entirely the responsibility of the Contractor to deploy sufficient plant and mechanical equipment to ensure compliance with his obligations under the Contract, the following list is an indicative list of the minimum essential basic holding of plant and mechanical equipment which should be owned or arranged through lease hold agreement by the bidders. Initially maximum age of the plants, machineries will be 10 years as on the date of publication of NIT. It may be extended up to 15 years after getting fit certificate from the manufacturer and this certificate should be produced at the time of submission of Bid.

All other machineries and equipments should be in running condition.

All plants, machineries and equipments will be verified by the Department before execution of the work.

SL.NO.	TYPE OF EQUIPMENT	MINIMUM NUMBER REQUIRED
01	Dewatering Pump (5 HP. Capacity)	2 (Two)
02	Tilting Drum Mixer 230-280 litre capacity with Hopper.	2 (Two) nos
03	Concrete vibrator	2 (two) nos.
04	Reinforcement Cutting Machine	1 (one) no.
05	Shuttering Materials	100 Sq.M.
06	Insulation Tester (500V or 1KV, 2KV Megger)	1 (one) no.
07	Water Tanker	2 (Two) nos.
08	Drilling Machine & Welding Machine etc. required for Electro-Mechanical work.	1 (one) no

Signature of applicant including title
and capacity in which application is mad

SECTION-B

FORM-V

EXPERIENCE PROFILE

LIST OF WORKS COMPLETED WHICH ARE SIMILAR IN NATURE AND EXECUTED & RUNNING WORKS DURING THE LAST FIVE YEARS AS PER CLAUSE 5 OF THIS e-NIT.

Name of Employer	Name, Location &nature of work	Contract price in Indian Rs.	Value completed & certified in Indian Rs.	Original date of start of work	Original date of completion of work	Actual date of starting the work	Actual date of completion the work	Reasons for delay in completion (if any)

Note : a) Certificate from the Employers to be attached.

Signed by an authorized officer of the firm

_____

Title of the officer

_____

Name of the Firm with Seal

Date_____

SECTION-B

FORM-VI

INFORMATION REGARDING CURRENT LITIGATION, DEBARRING/EXPELLING OF TENDERER OR ABANDONMENT OF WORK BY TENDERER

1.	a) Is the Applicant currently involved in any litigation relating to the contract works.	:	YES / NO
	b) If yes, give details with reasons	:	
2.	a) Has the Applicant or any of its constituent partners been debarred / expelled by any Agency in India, during the last 5 (five) years.	:	YES / NO
	b) If yes, give details with reasons	:	
3.	a) Has the Applicant or any of its constituent abandoned / suspended any contract during the, last 5 (five) years.	:	YES / NO
	b) If yes, give details with reasons	:	

Note: If any information in this Schedule is found to be incorrect or concealed, pre-qualification application will be summarily rejected.

Signature of applicant including title & capacity in which application is made

SECTION-B

FORM-VII

Bank Solvency Certificate

This is to certify that ……(name of firm) is a reputed company with a good financial standing.

If the contract for the work, namely "…….. "(As per NIeT against Notice Inviting e-Tender No. …….. of **The Managing Director**, **The State Fisheries Development Corporation Limited** is awarded to the above firm, we shall be able to provide overdraft / credit facilities to the extent of Rs…….. (Rupees……) **only to meet their working capital for executing the above contract during the contract period.**

Signed by an authorized officer of the Bank with seal
Name of the Bank
Address of the Bank
Phone No.
e-Mail ID
Date

SECTION-B

FORM-VIII

DECLARATION BY THE TENDERER

Ref: - Tender for_____
_____ (Name of work) _____
_____

e-N.I.T.No.: ……..of 2025-26 of The Managing Director, The State Fisheries Development Corporation Limited

I/We have inspected the site of work and have made myself/ourselves fully acquainted with local conditions in and around the site of work. I /We have carefully gone through the Notice Inviting Tender and other tender documents mentioned therein. I/We have also carefully gone through the 'Priced schedule of Probable Items and Quantities'.

My/Our tender is offered taking due consideration of all factors regarding the local site conditions stated in this Detailed Notice Inviting Tender to complete the proposed construction in all respects.

I/We promise to abide by all the stipulations of the contract documents and carry out and complete the work to the satisfaction of the department.

I/We also agree to procure tools and plants, at my/our cost required for the work.

I/We have applied in the tender in the capacity of individual / as a partner of a firm.

_____

Signature of Tenderer

_____

Postal address of the Tenderer

SECTION-B

(FORM –IX)

SITE VISIT FORM

DECLARATION BY THE TENDERER

(To be uploaded under Company letter head with full address, phone no., mail id etc., duly signed & sealed)

I/We have inspected the site of work and have made myself/ourselves fully acquainted with local conditions in and around the site of work. I /We have carefully gone through the Notice Inviting e-Tender and other tender documents mentioned there in along with the scope of work. I/We have also carefully gone through the 'Priced schedule of Probable Items and Quantities'.

My/Our tender is offered taking due consideration of all factors regarding the local site conditions stated in this Detailed Notice Inviting e-Tender to complete the proposed construction as per drawings referred to above in all respects.

I/We promise to abide by all the stipulations of the contract documents and to carry out and complete the work in due time as mentioned in Award of Contract to the full satisfaction of the Engineer-In-Charge, Otherwise necessary Clauses as per rules will be imposed on me/us .

I/We also agree to procure tools at my/our own cost required for the work.

Signature & Seal of the Bidder

SECTION-C
Special terms and conditions

Special terms and conditions and specification of works:

C.1 General :

Unless otherwise stipulated all the works are to be done as per general conditions and general specifications as mentioned either in—

(i) 'Departmental Schedule', which means the Public Works (Roads) Department Schedule of Rates for Road works, Bridge & Culvert Works and Carriage etc. in different district of West Bengal for the working area including up-to-date addenda and corrigenda, if any, issued by the Superintending Engineer, Bridge Planning Circle up to the date of Technical Sanction of the estimate of the respective work or in

(ii) Latest edition of the book of name 'Specification for Road and Bridge Works' of the M.O.R.T. & H., Surface Transport (Roads Wing), Government of India, published by Indian Roads Congress, New Delhi, for the specification of various works.

For general conditions and general specifications of items of works including supply and carriage works, not appearing in the aforesaid S.O.R./ specification book, relevant Public Works Department (W.B.)Schedule of Rates for Building Works and Materials and Labour in force including up-to-date addenda and corrigenda and Schedule of Rates of N.H. works ,P.W. (Roads) Dte. issued from competent authority as applicable (up to the date of Technical Sanction of the estimate of the respective work) for the working area of concerned State Highway Circle at the time of submission of tender for the working area will be considered.

C.2 Definition of Engineer-in-Charge and commencement of work :

The word "Engineer-in-Charge" means the Project Engineer, The State Fisheries Development Corporation Ltd. The word "Department" appearing anywhere in the tender documents means Fisheries Department, Government of West Bengal, who have jurisdiction, administrative or executive, over part of whole of the works forming the subject matter of the tender or contract. The word " approved" appearing anywhere in the documents means approved by the Engineer-in-Charge. In case, the work is transferred to any other Division, the Executive Engineer under whom the work will be executed should be treated as the Engineer-in-Charge. The work shall have to be taken up within seven days of the receipt of the work order or otherwise mentioned therein. Failure to do so will constitute a violation of the contract stipulation as regards of proportionate progress and timely completion of work and the contractor will thereby make himself liable to pay compensation or other penal action as per stipulation of the printed tender form.

C.3 Terms & Conditions in extended period :

As Clause 5 of W.B.F. No. 2911 (ii) as the case may be when an extension of time for completion of work is granted by the Engineer-in-Charge for cogent **reasons** for which the contractor have no control, it will be taken for granted by the working contractor that the validity of the contract is extended automatically upto the extended period with all terms and conditions rates etc. remaining unaltered, i.e. the tender is revalidated upto the extended period.

C.4 Co-operation with other agencies and damages and safety of road users :

All works are to be carried out in close co -operation with the Department and other contract or contracts that may be working in the area of work. The work should also be carried out with due regard to the convenience of the road users and occupants of the adjacent locality, if any. All arrangements and programme of work must be adjusted accordingly. All precautions must be taken to guard against chances of injury or accidents to workers, road users, occupants of the adjacent locality etc. The contractor must see that all damages to any property which, in the opinion of the Engineer-in -Charge are due to the negligence of the contractor are promptly rectified by the contractor at his own cost and expenses and according to the direction and satisfaction of the Engineer-in-Charge.

C.5 Transportation arrangement:
The contractor shall arrange for all means of transport including railways wagons required for carriage and supply of materials and also the materials required for the construction work. The Department may however, at their own discretion grant necessary certificates, if required, for booking of railways wagons etc. But, in case of failure of the department to help the contractor in this respect, the contractor will have arrange at his own initiative so that progress of work will not hamper and no claim whatever on this ground will be entertained under any circumstances. If railways facilities are not available, the contractor will have to depend on transport of materials by road as necessary to complete the work without claiming any extra payment from department in this regard. The contractor must consider this aspect while quoting rate.

C.6 Contractor's Site Office:
The contractor shall have an office adjacent to the work as may be approved by the Engineer-in-Charge where all directions and notice of any kind whatsoever, which the Engineer-in-Charge or his representative may desire to give to the contractor in connection with the contract, may be left or sent by post to such office or delivered to the contractor's authorized agent or representative. For such intimation to the contractor's site office, it shall be deemed to the sufficient enough to be served upon the contractor.

C.7 Incidental and other charges:
The cost of all materials, hire charges to Tools and plants, labour, Corporation/Municipal Fees for water supply, Royalty or road materials (if any), electricity and other charges of Municipalities or statutory local bodies, ferry charges, Toll charges, loading and unloading charges, handling chargers, overhead charges etc. will be deemed to have been covered by the rates quoted by the contractor inclusive of also Sales Tax (Central and/or State), Income Tax, Octroi Duty/Terminal Tax, Turnover Tax, VAT etc. All other charges for the execution of the specified work, including supply of materials and related carriage, complete or finished in all respect upto the entire satisfaction of the Engineer-in-charge of the work. No claim extra claim in this regard beyond **the** specified rate as per work schedule whatsoever in this respect will be entertained.

C.8 Authorized Representative of Contractor :
The contractor shall not assign the agreement or sublet any portion of the work. The contractor, may however, appoint and authorized representative in respect of one or more of the following purpose only.

a) General day to day management of work.

b) To give requisition for Departmental materials, Tools & Plants etc. to receive the same and sign hand receipts thereof.

c) To attend measurements when taken by the Departmental Officers and sign the records of such measurements which will be taken of acceptance by the contractor.

The selection of the authorized representatives shall be subject to the prior approval of the Engineer-in-Charge concerned and the contractor shall in writing seek such approval of the Engineer- in-Charge giving therein the name of work, Tender No., the Name, Address and the specimen signature of the representative he wants to appoint and the specific purposes as specified here-in-above, which the representative will be authorized for. Even after first approval, the Engineer-in-Charge may issue at any subsequent date, revised directions about such authorized representative and the contractor shall be bound to abide by such directions. The Engineer-in-Charge shall not be bound to assign any reason for his revised directions. Any notice correspondence etc. issued to the authorized representative or left at his address, will be deemed to have been issued to the contractor.

C.9 Power of Attorney :
The Provision of the power of attorney, if any, must be subject to the approval of the Department. Otherwise the Department shall not be bound to take cognizance of such of attorney.

C.10 Extension of time :
No extension of time will be granted due to preliminary works and non-availability of materials etc. For cogent reasons over which the contractor will have no control and which will retard the progress, extension of time for the period lost will be granted on receipt of application from the contractor before the expiry date of contract. No claim whatsoever for idle labour, additional establishment, enhanced cost of materials and labour and hire charges of tools & plants etc. would be entertained under any circumstances. The contractor should consider the above factor while

quoting this rate. Applications for such extension of time should be submitted by the contractor in the manner indicated in Clause-5 of the printed form of W.B.F. No.2911 (ii).

C.11 Contractor's Godown :

The contractor must provide suitable godowns for cement and other materials at the site of work. The cement godown is to be sufficient in capacity and it must be water tight with either an elevated floor with proper ventilation arrangement underneath the floor or if solid raised flooring is made, cement is to be stored on bamboo or timber dunnage to the satisfaction of the Engineer-in- Charge. No separate payment will be made for these godowns or for the store yard. Any cement, which is found at the time of use to have been damaged, shall be rejected and must immediately to remove from the site by the contractor as per directed of the Engineer-in-Charge.

C.12 Arrangement of Land :

The contractor will arrange land for installation of his Plants and Machinery, his godown, store yard, labour camp etc. at his own cost for the execution of the work. Departmental land, if available and if applied for, may be spared for the purpose on usual charges as fixed by the Competent Authority.

C.13 Use of Government Land :

Before using any space in Government land for any purpose whatsoever, approval of the Engineer-in-charge will be required. Departmental land, if available and if applied for, may be spared for the purpose on usual charges as fixed by the Competent Authority. The contractor shall make his own arrangements for storage of tools, plant, equipments; materials etc. of adequate capacity and shall clear and remove on completion of work and shed, huts etc. which he might have erected in Government land. If after such use, the contractor failed to clear the land, Department will arrange to remove those installation and adequate recovery will be made from the dues of the contractor.

C.14 Work Order Book :

The contractor shall within seven days of receipt of the order to take up work, supply at his own cost one Work Order Book to Sub-Divisional Officer/Assistant Engineer Concerned, who is authorized to receive and keep in custody the Work Order Book on behalf of the Engineer-in-Charge. The Work Order Book shall be kept at the site of work under the custody of Sub-Divisional Officer/Assistant Engineer or his authorized representative. The Work Order Book shall have machine numbered pages in triplicates. Directions or instruction from Departmental officers to be issued to the Contractor will be entered (in triplicate) in the Work Order Book (except when such directions or instructions are given by separate letters). The contractor or his authorized representative shall regularly note the entries made in the Work Order Book and also record thereon the action taken or being taken by him complying with the said directions or instruction on any relevant point relating to the work. The contractor or his authorized representative may take away the triplicate page of the Work Order Book for his own record and guidance.

Cases of supplementary items or of claims may not be entertained unless supported by entries in the Work Order Book or any written order from the Tender Accepting Authority.

The first page of the Work Order Book shall contain the following particulars:

a) Name of the Work

b) Reference to contract number

c) Contractual rate in percentage

d) Date of opening of the Work Order Book

e) Name and address of the Contractor

f) Signature of the Contractor

g) Name & address of the Authorized representative (if any of the contractor authorized by him)

h) Specific purpose for which the contractor's representatives is authorized to act on behalf if the Contractor.

i) Signature of the authorized representative duly attested by the Contractor.

j) Signature of the Sub-Divisional Officer/Assistant Engineer concerned.

K) DATE OF ACTUAL COMPLETION OF WORK.

L) DATE OF RECORDING FINAL MEASUREMENT.

Entries in (k) & (l) above shall be filled in on completion of the work and before the Work Order Book is recorded in the office of the Sub-Divisional Officer/Assistant Engineer.

C.15. Site Condition:

The contractor before tendering must visit the site and satisfy himself as to the extent of the proposed construction difficulties and problems, if any, to start, to continue and complete the work within the time as stipulated in this tender without dislocation of normal traffics during day as well as to night considering all these aspects the rate shall be quoted and the department will not be entertained any appeal/claim of the bidder in future in this regard. No interruption in works due to any site condition will be allowed towards complete the work in time. The execution of the work should however be planned and phased so that there are no undue hazards to the movement of normal traffic over the Road. No additional payment will be entertained on this account.

Difficulties and inconveniences in transporting materials over the bad Roads, Kutcha Roads, incomplete Roads and over the weak and damaged culverts should be taken into consideration by the Contractor. The materials for the work may be required to carry over kutcha Roads. These approach Roads should be maintained by the Contractor at his own cost. Difficulties in collection of different materials in lot, over the Road flank due to insufficient space if there be, should be noted by the bidder for which no rate or time will be allowed on these accounts as stated. The bidder should quote his rate taking into consideration regarding security of the materials. Nothing would be entertained under any circumstances beyond the respective tendered provisions.

C.16 Preliminaries:

During execution of the work contractor will remain responsible for providing reasonable facilities to traffic on the Road and also lighting and guarding of the Road during night for its safety while the work is in progress and no extra payment will be made on this account before/or after taking up the work.

Approximately half of the Road width including one flank shall be kept clear to the traffic from all obstruction and the surface shall be properly cleaned and leveled as far as possible.

Sign Boards / Direction Boards are to be erected at required points of specified size indicating in red letters on a white back ground as per direction of the Engineer-in-charge. Cost of which should be borne by the agency.

Road barriers shall be placed wherever the existing Road surface disturbed with proper' Road signs. During night, these should be provided with the light, Night Guard e.g. 'Chowkidar' for watching the barrier etc. shall also be maintained by the Contractor to give due warning to Road users specially at night.

C.17 Clearing of Materials:

Before starting any work, work site, where necessary, must be properly dressed after cutting clearing all varieties of jungles shrubs, bamboo clusters or any undesirable vegetation from the alignment or site of works on completion of works all temporary structure or obstruction including some pipes in underground work, if any, must also be removed. All scars of construction shall be obliterated and the whole site shall be left in a clear and neat manner to the satisfaction of the Engineer-In-Charge. Total length (in case of road project) shall be demarcated by proper chain aging along with fixing 200m post as per direction of Engineer-in-Charge on both side of the alignment and Bench Marking at desired locations as per direction of Engineer-in-Charge. No separate payment shall be made for all these works, the cost thereof being deemed to have been included in the rates of various items of works quoted by the contractor in the schedule of probable items of works.

C.18 Sundry Materials:

The contractor must erect temporary pillars, master pillars etc. as may be required in suitable places as directed by the Engineer-In-Charge at his own cost before starting and during the work by which the departmental staff will check levels layout different works and fix up alignment and the contractor shall have to maintain and protect the same till completion of the work. All machinery and equipments like Level Machine, Staff, Theodolite etc. and other sundry material like, pegs, strings, nails flakes instruments etc. and also skill labour require for setting out the levels for laying out different structures and alignment shall also be supplied by the contractor (as per direction of Engineer-in-Charge) at his own cost without any extra claim towards the department.

C.19 Supplementary / Additional items of Works :

Supplementary work/ deviation quantity if any should be followed as per Notification No. 6754-PW/L & A/2M-312/2017 dt. 18/12/2017.

C.20 Covered up works :

When one item of work is to be covered up by another item of work the latter item shall not be done before the formal Item has been measure up and has been inspected by the Engineer-in-Charge or the Sub-Divisional Officer/Assistant Engineer, as the authorized representatives of the Engineer-in- Charge and order given by him for

proceeding with the latter item of work. When however, this is not possible for practical reasons, the Sub-Assistant Engineer, if so authorized by the Sub-Divisional Officer/Assistant Engineer may do this inspection in respect of minor works and issue order regarding the latter item.

C.21 Approval of Sample:
Samples of all materials to be supplied by the contractor and to be used in the work shall have to be approved by the Engineer-in-Charge and checking the quality and brand of such materials shall have to be done by the concerned Department or as directed by Engineer-in-Charge prior to utilization in the work.

C.22 Water and energy:
The contractor shall have to arrange on his own cost, required energy for operation of equipments and machinery, for operating of pumping set, illuminating work site, office etc. that may be necessary in different stages of execution of work. No facility of any sort will be provided for utilization of the departmental sources of energy existing at site of work. Arrangement for obtaining water for the work should also be made by the contractor at his own cost. All cost for getting energy and / or for any purpose whatsoever will have to be borne by the contractor for which no claim will be entertained.

All materials, tools and plants and all labour (skilled and unskilled) including their housing, water supply, sanitation, light, procurement of food for contractors staff & crews, medical aids etc. are to be arranged for by the contractor at his own cost. The cost for transportation of labour, materials and all other incidental items as required for work shall also have to be borne by the Contractor without any extra claim from department.

C.23 Road opened to traffic:
It should be clearly understood that the contractor will be responsible to keep the road open to all kinds of traffic during execution of the work. The work should be so arranged and the programme of work must be as adjusted as would not disturb the smooth flow of road traffic in any way. If necessary diversion road should be provided and maintained by the contractor at his own cost for the entire period of work, if not separately provided in the tender. The Contractor should take all necessary precautions including guarding, lighting and barricading as necessary, to guard against the chances of injury or accident to the road user and traffic and ferry users during execution of the work for which nothing extra will be paid except otherwise mentioned in specific price schedule. The contractor will also indemnify the Department and the contractor is liable to compensate against consequences of any such injury or accident, if so happens, as per opinion of the Engineer-in-Charge, due to contractor's fault in compliance with any of such obligations.

Suitable road sign as and where necessary should be provided by the contractor at his own cost as per direction of the Engineer-in-charge and shall also be maintained till the completion of the work. Road barriers with redlight at nightmare to be placed where the existing surface is disturbed with proper road signs. All these shall be done at the cost of the contractor without any extra claim towards department.

C.24 Drawings:
All works shall be carried out in conformity with the drawings supplied by this Department. The Contractor shall have to carry out all the works according to the departmental General Arrangement Drawing and Detail Working Drawings to be supplied by the Department from time to time.

C.25 Serviceable Materials:
The responsibility for stacking the serviceable materials (as per decision of the Engineer-in-Charge) obtained during dismantling of existing structures/roads and handing over the same to the Engineer-in-charge of work of this Department lies with the contractor and nothing will be paid on this account. In case of any loss or damage of serviceable materials prior to handing over the same to this Department, full value will be recovered from the Contractor's bill at rates as will be assessed by the Engineer-in-charge.

C.26 Unserviceable Materials:
The Contractor shall remove all unserviceable materials, obtained during execution at place as directed. The contractor shall dress up and clear the work site after completion of work as per direction of the Engineer-in-Charge. No extra payment will be made on this account.

C.27 Contractor's risk for loss or damage:
All risk on account of railway or road carriage or carriage by boat including loss or damage of vehicles, boats, barges, materials or labour, if any, will have to be borne by the contractor without any extra claim towards department.

C.28 Idle labour& additional cost:

Whatever may be the reason no claim on idle labour, enhancement of labour rate additional establishment cost, cost of Toll and hire and labour charges of tools and plants, railway freight etc. would be entertained under any circumstances.

C.29 Charges and fees payable by contractor:

a) The contractor shall pay all fees required to be given or paid by any statute or any regulation or by -law of any local or other statutory authority which may be applicable to the works and shall keep the department against all penalties and liabilities of every kind for breach of such statute regulation or law.

b) The Contractor shall save, harmless and indemnify the department from and against all claims, demands, suit and proceedings for or an account of infringement of any patent rights, design, trade mark of name of other protected right in respect of any constructional plant, machine, work, materials, thing or process used for or in connection with works or temporary works or any of them.

C.30 Issue of Departmental Tools and Plants:

All Tools and Plants required for the work will have to be supplied by the Contractor at his own cost; all cost of fuel and stores for proper running of the Tools and Plants must be borne by the Contractor.

C.31 Realization of Departmental claims:

Any sum of money due and payable to the contractor (including security deposit returnable to him) under this contract may be appropriated by the Government and set off against any claim of Government for the payment of sum of money arising out of this contract or under any other contract made by the contractor with the Government.

C.32 Compliance of different Acts:

The contractor shall comply with the provisions of the Apprentices Act, 1961, Minimum Wages Act, 1848. Contact Labour (Regulation and Abolition) Act 1970 and the rules and orders issued hereunder from time to time. If he fails to do so, Engineer-in-Charge or Director of Fisheries Government of West Bengal may at his discretions, take necessary measure over the contract.

The Contractor shall also make himself for any pecuniary liabilities arising out on account of any violation of the provision of the said Act(s). The Contractor must obtain necessary certificate and license from the concerned Registering Office under the Contract Labour (Regulation & Abolition) Act, 1970.

The contractor shall be bound to furnish the Engineer-In-Charge all the returns, particulars or date as are called for from time to time in connection with implementation of the provisions of the above Acts and Rules and timely submission of the same, failing which the contractor will be liable for breach of contract and the Engineer-in-Charge may at his discretion take necessary measures over the contract.

C.33 Safety, Security and Protection of the Environment:

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

(a) have full regard for the safety of all persons and the Works (so far as the same are not completed or occupied by the department),

(b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer-in-Charge for the protection of the Works
or for the safety and convenience of the public or others,

(c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation,

(d) Ensure that all lights provided by the Contractor shall be screened so as not to interfere with any signal light of the railways or with any traffic or signal lights of any local or other authority.

C.34 Commencement of work:

The work must be taken up within the date as stipulated in the work order and completed in all respects (including preparatory works or for any causes thereof) within the period specified in Notice Inviting Tender.

C.35 Program of work:

Before actual commencement of work the contractor shall submit a program of construction of work with methodology clearly showing the required materials, men and equipment. The contractor will submit a program of

construction in the pattern of Bar Chart or Critical Path Method and a time table divided into four equal periods of progress of work to complete the work within the specific period for approval of the Engineer-In-Charge who reserves the right to make addition, alterations and substitutions to such program in consultation with the contractor and such approved program shall be adhered to by the contractor unless the same is subsequently found impracticable in part or full in the opinion of the Engineer-In- Charge and is modified by him. The contractor may pray in writing, showing sufficient reasons therein for modification of program. The conditions laid down in clause 2 of the printed W.B.F.No.-2911 (ii) regarding the division of total period and progress to work and the time table there for as provided in the said clause shall be deemed to have been sufficiently complied with the actual progress of work and does not fall short of the progress laid down in the approved time table for one fourth, half and three fourth of time allowed for the work.

C.36 Setting out of the work:

The contractor shall be responsible for the true and perfect setting out of the work and for the correctness of the position, levels, dimensions and alignments of all parts of work, if any rectification or adjustment becomes necessary the contractor shall have to do the same at his own cost according to the direction of the Engineer-in-Charge. During progress of works, if any, error appears or arises in respect of position, level, dimensions or alignment of any part of the work contractor shall at his own cost rectify such defects to the satisfaction of the Engineer-in-Charge. Any setting out that may be done or checked by either of them shall not in any way relieve the contractor from their responsibility for correctness and rectification thereof.

C.37 Precautions during works:

The contractor shall carefully execute the work without disturbing or damaging underground or overhead service utilities viz. Electricity, Telephones, Gas, Water pipes, Sewers etc. In case disturbances of service utilities is found unavoidable the matter should immediately be brought to the notice of the Engineer-in-Charge and necessary precautionary measures as would be directed by the Engineer-in-Charge shall be carried out at the cost and expenses of the contractor. If the service utilities are damaged or disturbed in any way by the contractor during execution of the work, the cost of rectification or restoration of damages as would be fixed by the Engineer-in-Charge concerned will be recovered from the contractor.

C.38 Testing of qualities of materials & workmanship:

All materials and workmanship shall be in accordance with the specifications laid down in the contract and also as per M.O.R.T. & H's specification for Road and Bridge Works (Latest Revision) and relevant IS codes and the Engineer-In-Charge reserves the right to test, examine and measure the materials/workmanship direct at the place of manufacture, fabrication or at the site of works or any suitable place. The contractor shall provide such assistance, instrument, machine, labour and materials as the Engineer-in-Charge may require for examining, measuring and testing the works and quality, weight or quantity of materials used and shall supply samples for testing as may be selected and required by the Engineer-in-Charge without any extra cost. Besides this, he will carry out tests from outside Laboratory as per instruction of Engineer-in-Charge. The cost of all such tests shall be borne by the agency and that must be considered during quoting rate.

C.39 Timely completion of work:

All the supply and the work must have to be completed in all respects within the time specified in Notice Inviting Tender from the date of commencement as mentioned in work order. Time for completion as specified in the tender shall be deemed to be the essence of the contract.

C.40 Procurement of materials:

All materials required to complete execution of the work shall be supplied by the contractor after procurement from authorized and approved source.

C.41 Rejection of materials:

All materials brought to the site must be approved by the Engineer-In-Charge. Rejected materials must be removed by the Contractor from the site within 24 hours of the issue of order to that effect. In case of non-compliance of such order, the Engineer-In-Charge shall have the authority to cause such removal at the cost and expense of the contractor and the contractor shall not be entitled to claim for any loss or damage of that account.

C.42 Implied elements of work in items:

Except of such items as are included in the Specific Priced Schedule of probable items and approximate quantities no separate charges shall be paid for traffic control measures, shoring, shuttering, dewatering, curing etc. and the rates of respective items or works are to be deemed as inclusive of the same.

C.43 Damaged cement:
Any cement lying at contractor's custody which is found at the time of use to have been damaged shall be rejected and must immediately be removed from the site by the contractor or disposed of as directed by Engineer-in-Charge at the costs and expenses of the contractor.

C.44 Issue of Departmental Materials:
Departmental materials will not be issued under any circumstances.

C.45 Force Closure:
In case of force closure or abandonment of the works by the Department the contractor will be eligible to be paid for the finished work and reimbursement of expenses actually incurred but not for any losses.

C.46 Tender Rate:
The contractor should note that the tender is strictly based on the rates quoted by the Contractor on the priced schedule of probable item of work. The quantities for various other items of works as shown in the priced schedule of probable items of works are based on the drawing and design prepared by the Department. If variations become necessary due to design consideration and as per actual site conditions, those have to be done by the contractor at the time of execution at the rate prescribed in the tender condition. No conditional rate will be allowed in any case.

The Intending Bidders are requested to read carefully & go through all the Terms & Conditions, Specifications etc. etc. as stipulated in the tender documents (duly uploaded in the web portal by the N.I.A.) and considering all aspects rate in the B.O.Q. shall be Quoted.

C.47 Delay due to modification of drawing and design:
The contractor shall not be entitled for any compensation for any loss due to delays arising out of modification of the drawing, addition & alterations of specifications.

Section – 'D"

Specification of works

1. Drawings

The tender must be based on the Departmental G.A.D. and execution of work shall be done as per detailed working drawings lo be supplied by the Department from time to time.

2. Site Conditions

i) The tenderer must inspect and examine the site and its surroundings and satisfy himself before submission of his tender about the nature of the ground, sub-soil characteristics, the quantities and nature of the work, material necessary for completion of the work, the means to access to the working site, the H.F.L. & O.F.L., the accommodation he may require for his men and materials and in general he shall obtain all necessary information as to risks, contingencies overhead and other circumstances that may influence or affect his tender rates, and no claim whatsoever will be entertained after acceptance of his tender.

ii) The contractor must accept the entire site, as it is, including changes, if any, during the period of construction, and any work that may be necessary to carry out the entrusted job, except those otherwise specifically mentioned or included in the priced schedule of work / B.O.Q. shall be deemed to have been included for in the rates quoted by the tenderer.

3. Access Road

The contractor shall, construct and maintain throughout the contractual period of work as access road, without intervening the water flow of the cross-channel suitable for the loaded trucks for carriage of his construction materials from the nearby State Highway to the actual place of work-site at his own cost and for which no separate, payment will be made.

4. Excavation and Earth Work

i) General

The excavation will generally refer to open excavation of foundation wet or dry.

ii) Excavation and Preparations of Foundation for Pilling and Concreting

It shall include removal of all materials of whatsoever nature for all depths, whether wet or dry. necessary for the construction of foundation (including mass excavation) in accordance with lines, levels, shown on the Departmental drawings and the plan, dimension of the excavation shall be the theoretical dimensions Plus 0.16 meter on all sides or as directed by the Engineer-in-Charge. The Bottom of excavation shall be leveled both longitudinally and transversely or stepped as directed by the Engineer in- Charge. If the contractor excavates greater depth or width than shown on the Departmental drawings or as directed by the Engineer-in-Charge, he shall at his own expenses fill the extra depth or width with cement concrete in proportion as directed by the Engineer-in-Charge but in no case with concrete of mix leaner than I:4:8 cement concrete.

The contractor shall report to the Engineer-in-Charge when the excavations are ready for piling or laying of lean concrete or soling or to receive structural concrete. No concrete shall be placed in foundations until the contractor has obtained the approval of the Engineer-in-Charge. In case, the excavation is done through different strata of soil and if the same is payable as per provision in the schedule of items with quoted rates, the contractor shall get the dimensions of the strata decided and approved from the Engineer-in-Charge. If no specific provision is made in the Schedule of Items with rates appearing in the priced schedule of items of work it will be presumed that excavation shall be in all types of soil and the contractor's rate cover for the same. After the excavation is approved by the Engineer-in-Charge (and before commencement of piling work or laying of the concrete) the contractor shall get the depth and dimensions of the excavation and levels (and nature of strata if applicable as per Schedule of Items like
hard rock, soft rock etc) and measurements recorded from the Engineer-in-Charge.

iii) Shoring

The sides of the excavations should be timbered and shored in such a way as is necessary to secure them from falling and the shoring 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 from slips and present damages

to work and property and injury to persons. The shoring shall he removed as directed after the items for which is it required are completed.

iv) Protection

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

v) Stacking of Excavated Materials

All materials excavated will remain the property of the department and rate for excavation includes shorting out of useful materials and stacking unserviceable materials as directed. Materials suitable and useful for backfilling or leveling of the site or other use shall be stacked in convenient place but not in such a way as to obstruct free movement of men and vehicles or encroach on the area required for construction purpose.

vi) Backfilling

All shoring and frame work shall be removed after their necessity cease and trash of any sort shall be cleaned out from the excavation. All space between foundation concrete and the sides of excavation shall be refilled to the original surface with approved excavated materials in layers of 15 cm. to 20 cm. thick, watered and rammed. The filling shall be done after concrete is fully set and done in such a way as not to cause undue thrust on any part of the structures. Where suitable excavated materials are to be used for refilling, it shall be brought from the place where it was temporarily stacked for use in refilling. Measurement of excavations, lean concrete or soling, piling work, concrete and other works below ground level are to be jointly recorded. Black Cotton soil shall not be used for backfilling.

vii) Dewatering

Rate for excavation shall include bailing or pumping out water which may accumulated in the excavation during the progress of work either from seepage, springs, rain or any other cause, and diverting surface flow, if any by 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 or trenches or masonry or any adjacent structure. When water is met in foundation trenches, pumping out water shall be from an auxiliary pit of adequate size dug, slightly outside the foundation excavations. The depth 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 measurements.

b) During placement of reinforcements.

c) When concrete work is in progress and till it completion comes above the natural water level.

d) Till the Engineer-in-Charge considers that the concrete is sufficiently set.

viii) Rate to Include for Excavation

Apart from other factors mentioned elsewhere in the contract, rates for the item of excavation shall also include for the following:

a) Clearing site.

b) Setting out works as required.

c) Providing shoring and shuttering to avoid sliding of soil and to protect adjacent Structure and subsequently removing the same.

d) Bailing out and pumping out water as required and directed.

e) Excavation at all depth (unless otherwise specified in the Schedule of Items) and removal of all materials of whatever nature wet or dry and necessary for the construction of foundation etc. and preparing bed for laying concrete.

f) Sorting out useful excavated materials and conveying beyond the structure and stacking them neatly in the size for backfilling or reuse as directed.

g) Necessary protection including labour, materials and equipment to ensure safety and protection
against risk or accident.

h) Drilling of holes / pits for local inspection as directed to explore the nature of substratum if necessary.

i) Dismantling, cutting and removing under-ground drainage, concrete or masonry structure if any encountered during excavation.

j) The excess excavation required for fixing for work or working space and refilling the same on completion of all works.

k) Removing surplus excavated materials from site upto 450 metre including loading and unloading.

l) MEASUREMENT FOR EXCAVATION

Excavation for foundation shall be measured and paid as per drawing dimensions (or the actual work done at site whichever is less) of concrete (bed concrete where so specified) at the lowest level plus 0.46 metre in all sides. In regard to length and breadth, and depth shall be completed from the concerned excavation levels and ground levels taken before excavation. Any additional excavation required for working space for from work planking dewatering installation and shuttering etc. shall not be measured and paid for separately but rate quoted by the tenderer shall include for all these factors. No increase in bulk after excavation shall be made.

5. Concrete Work

A) General

i) Supervision

A competent person approved by the Engineer-in-Charge shall be employed by contractor whose first duty will be to supervise all stages in all preparation and placing of the concrete. All tests required shall be carried out as directed by the Engineer-in-Charge.

ii) Approval of Concreting Arrangement etc.

Well before construction commences the contractor shall supply to the Engineer-in-Charge his approved drawing showing the general detailed arrangement for his concreting plant, system of form work, conveyance of the concrete to the point of pouring and all other devices which he proposes to use for the construction of the structure.

iii) Samples and Tests

Every facility shall be provided to enable the Engineer-in-Charge to obtain samples and carry out tests on the materials and construction. If those test show that any of the materials for construction do not comply with the requirements of the relevant IS specification, the contractor shall be responsible for replacement of the defective materials, and or construction. The necessary cost of all such tests has to be borne by the contractor.

iv) Rejected Materials

All materials which have been damaged, contaminated or have deteriorated or do not comply in any way with the requirements of the relelvant IS specification shall be rejected immediately from the site at the contractors own expenses.

v) Equipment

Contractor shall keep of work site testing equipment for aggregate, concrete like test sieves, balance, slump cones, cube testing machine, cube moulds, weightbatch, mixer machine with hoppers, vibrators, hoist, pile driving machineries etc. as required conforming to relevant IS specification.

B) Materials

All materials shall be of approved quality.]

i)Cement

Brand of Cement: Ultratech / Ambuja / Lafarge / ACC / Ramco / or equivalent (Cement from Mini Plant will not be allowed)

a) Ordinary Portland Cement shall conform to the IS specification IS:269-1967, Portland Pozzolana Cement shall conform to IS:1489-1967. PSC confirming to IS-455.

b) Cement shall be stored in dry Weather proof godowns (or shed) built at the cost of the contractor in the stocks which are not higher than 100 bags. Sufficient space shall be provided for circulation and rotation of bag in order to minimize the length of storage time of any of the bags. The floor of the godown shall consist of wooden planks resting on base prepared of dry bricks laid on edge and joints grouted with cement mortar.

c) Cement which is deteriorated, damaged or wet shall not be allowed to be used. All such cement shall he immediately removed from work site by the contractor. The cost of all such removal of cement shall be borne by the contactor.

ii) Steel

HYSD Bars conforming to IS 1786 of appropriate grade shall be used.

iii) Aggregates

All aggregates shall confirm to IS:383-1970

iv) Fine Aggregate

a) The fine aggregate sand shall be hard, dense durable and clean with uncoated grains. The maximum size of particles shall be graded down. The sand shall be 4.75 mm. (3/ 16 in) and shall he graded down. The sand shall not contain any harmful materials such as iron, pyrites, coal, mica, silt, clay, alkali, sea shells, organic impurities, loam etc. or in case of reinforced cement work any material which might attack the reinforcement or detrimental to concrete. Aggregate which are chemically reactive with the alkalizes of the cement shall not be used. The maximum quantity of the deleterious materials shall not exceed the limits specified in the relevant IS specification. The fineness modulus for such sand should normally not less than 2.

b) Grading the natural sand used for work shall have a grading conforming to one of the three grading zones of I, II & III of IS:383-1970.

v) Coarse Aggregates

a) Coarse aggregate unless otherwise stated shall consist of hard, dense, durable, uncoiled crushed rock of Pakur or Pakur variety.

b) The aggregate shall be free from soft, friable than or long laminated pieces. Aggregate shall be free from injurious amounts of alkali organic matter and other deleterious materials. Flaky or weathered stones shall not be used. The maximum percentage of deleterious materials shall not exceed those specified in the relevant IS specifications. The Engineer-in-Charge at his direction may allow the use of Graded Aggregate of nominal size to conform to the grading in the IS:383- 1970.

c) Contractor shall arrange to supply coarse aggregate, in single sizes. The single sizes shall be combined in suitable proportion to get desired over all grading of aggregates.

d) Size of Aggregates: Nominal maximum size of aggregate in R.C.C. piles, piers, shutters, slabs etc. should be restricted to 6 mm. less than the minimum clear distance between the main bars or 6 mm. less than the minimum cover to the reinforcement whichever is less. In no case the maximum size of the aggregate should be more than 40 mm.

e) In selecting the aggregate, the contractor shall satisfy himself that the source is suitable for regular supply and a watch shall be maintained that the particular shape and grading remain available uniformly throughout the progress of work. Unless authorized specified, this shall be obtained from Pakur.
f) Where directed by the Engineer-in-Charge, aggregate shall he washed by approved methods at contractor's expenses.

g) The sample of coarse aggregate for concrete work should be produced for the approval of Engineer-in-Charge and the whole work should be done with course aggregate conforming to the approved sample.

h) Stack - piling of aggregate
Unless otherwise directed with a view to maintain uniform water cement ratio, the aggregate shall be stocked in stack - piles. Where stock-pile are unused, the floor should be clear, the stock - piles should as far as possible be large, flat - topped and drained. It is recommended that the aggregate should not be drawn bottom 0.5 metre of the stock piles, since this is normally such than that above.

vi) Water
Water used for easing of aggregate, mixing and curing shall be potable, free from injurious amounts of deleterious materials which are likely to affect the strength and durability of concrete pH value of Water shall be between 6 to 8.
In addition, water shall not contain an excess of acid, alkali, sugar or salt. The permissible limits of those materials shall be as stipulated in IS. 456-2000.

C) Mixing of Concrete
C.1) Machine Mixing
Concrete shall be mixed in a Batching Plant or as the case may be mechanical mixer. Mixing shall be continued until there is uniform distribution of materials and the mass is uniform in colour and consistency. Mixing shall be continued till individual particle of the coarse aggregates shown complete coating of mortar containing its proportionate amount of cement. The mixing time from the time of adding water shall be in accordance with IS:1951-61. but in no case mixing shall be done for less than two minutes. Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Unless otherwise agreed to by the Engineer-in-Charge the first batch of concrete from the mixer shall contain only two thirds of the normal quantity. Mixing Plant shall be thoroughly cleaned before changing from one type of cement to other.

C.2) Transporting, Placing, Compacting and Curing of Concrete
a) Transporting Concrete shall be handled from the place of mixing at site to the place of final deposit as rapidly as practicable by method which will prevent contamination, segregation or loss of any of the ingredients. If segregation occurs during transport the concrete shall be remixed before use. The concrete shall be placed in position and compacted before the initial set of cement has commenced and shall not be subsequently disturbed. During hot or cold weather concrete shall be transported in deep containers to reduce loss of water by evaporation during hot weather and loss of heat during cold weather. Deep containers are specified on account of their lower surface area.

b) Placing of Concrete
Unless otherwise agreed to by the Engineer-in-Charge, Concrete shall not be dropped into position from height greater than 1.2 metre.

c) Removal of Debris etc .

All debris dust etc. shall be removed from the shuttering at the cost of the contractor before any concrete is placed. Care should be taken to see that shuttering is watertight and has been properly treated with approved composition to prevent absorption of water. No concrete shall be placed in any part of the structure until the approval of the Engineer-in-Charge has been obtained.

d) Temperature of Concrete

Concrete when deposited shall be a temperature of not less than 4.5°C and not more than 38°C. When concreting under water, the concrete shall not be placed in water having a temperature below 4.5°C The temperature of the concrete, when deposited under water, shall not be less than 16°C nor more than 18°C.

e) Protection and Placing in Layers

Concrete shall be placed into the form in layer not exceeding 450 mm. in thickness. Concrete after placing shall be protected by use of covering subject to approval of the Engineer-in-Charge during first stages of hardening against high winds hot sun and/or rain or surface water. No shock or vibrations shall be allowed to be imported to forms supporting fresh concrete. No such vibration shall be given in reinforcing bars portion of which are embedded in fresh compacted concrete.

f) Compaction

All concrete shall be compacted to produce it dense homogeneous mass. Concrete shall be thoroughly compacted during operation of placing by the use of Mechanical Vibrators. It shall be compacted in its final position within 30 minutes of its discharge from the mixer unless carried in properly designed agitators operating continuously when this time shall be within 2 hours of the addition of cement to the mix and within 30 minutes of its discharge from the agitator. Sufficient number of vibrators (including standby) of adequate capacities shall be used for compaction of concrete. Vibration shall be carried out by trained men and in presence of a qualified supervisor trained in the use of vibrators and vibrated concrete. In certain portions where vibration is not effective, careful rolling and tamping shall be earned out and sufficient men employed to ensure that thorough consolidation taken place. Where manual compaction becomes necessary the workability of the mix should be controlled to suit such mode of compaction, subject of course to strength requirement if specified also being complied with. When concreting has to resume on a surface which has hardened, it shall be roughened swept clean, thoroughly wetted, and covered with a 13mm. layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. This 13 mm. layer of mortar shall be freshly mixed and placed immediately before placing new 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 any particulars of coarse aggregate. The surface shall then be thoroughly wetted, oil free, water removed and then coated with neat cement grout. The first layer of concrete to be placed on this surface shall not exceed 150 mm. in thickness, and shall be well ram mad against old work.

g) Packing Round Reinforcement;

In the case of reinforced concrete work, the concrete shall be carefully consolidated and packed round the reinforcement and care shall be taken to ensure that the reinforcement is not displaced during the placing and compaction of concrete. If reinforcement moves out of the place, it must be brought back to position immediately.

h) Lapse of approval for Concreting & Method of Continuous Concreting

If concreting is not started within 2 hours of the approval being given, it shall have to be obtained again from the Engineer-in-Charge. Concreting shall be carried out continuously unto predetermined positions of construction joints.The position and arrangement for construction joints shall be approved by the Engineer-in-Charge. Fresh concrete shall not be placed against concrete which have been in position for more than 30 minutes unless a proper construction joint is formed. Rest, Panes for meals etc. shall be suitable to the approval of the Engineer- in- Charge.

i) Protecting & Curing

The contractor shall adequately protect freshly laid concrete from rapid drying due to strong sunshine, drying winds etc, and also from running of surface water and shocks. All concrete work shall be water-cured for a minimum period of 14 days after concreting as advised by the Engineer-in-Charge. Horizontal surface shall be kept covered with water pounded by means of builds and vertical surfaces like those of walls etc. by burlaps kept constantly wet with water sprays. More sprinkling of water of vertical surface without sacks or burlaps will not be allowed. In respect of concrete made out of Pozzolana cement, curing shall be continued for another 8 days.

j) Trained Supervisor

It is essential that the contractor's supervisor who is in charge of the construction of all concrete work whether reinforced or not, shall be skilled in this class of work and shall superintend personally the whole construction and pay special attention to:

a) The quality, testing, proportioning and mixing of the materials particularly control of water cement ratio.
b) Laying of materials in place and through consolidation of the concrete to ensure solidity and freedom for voids.
c) Sizes and positions of reinforcements.

D) Construction Joints:

i) General

The position of all the construction joints shall be determined by contractor in consultation with the Engineer-in-Charge before the work commences. The joints shall be vertical (in rafts, beams etc.)
and horizontal (in walls, columns. etc.) as required, except in the case of inclined or curved member the joints shall be at right angles to the exist of the member. No Vertical Joint shall be formed without a proper stop-board at the joint. Where directed, the joints shall be of approved shape. All costs of the construction joint shall be included in the rates for the respective concrete items and no claim for extra amount on this accounts would be entertained.

E) Test for Concrete

i) General

Tests shall be conducted in accordance with IS:516/1956 with uptodate amendments. It shall be the responsibility of the contractor to ensure that test moulds are prepared in work-man like manner. If in the opinion of the Engineer-in-Charge there is doubt regarding the quality of cement, the sample of cement shall be tested before being used in the work. The Engineer-in-Charge reserves the right to reject the structure (columns, copping, beams, girders, slabs etc.) if the results obtained from concrete cube tests falls short according to criteria as laid down in IS:456/2000 with latest amendment, and in such case, the dismantling and reconstruction of the structure or and component thereof shall be done by the contractor at his own cost.

ii) Test Cubes

a) Works test cubes shall be taken in sets of 6 cubes. The concrete for preparation of one set of 6 cubes shall he taken from the batch of mixed concrete discharged from mixture. The cubes shall be moulded in accordance with Indian Standard Code of Practice.

b) A minimum of one set of 6 cubes shall be taken for every 28 cum. or part thereof of concrete poured and they shall be considered as representative for the said quantity. This is an average figure, and may be decreased to cater to special conditions like different mixes, special structures etc. at the discretion of the Engineer-in-Charge.

c) The cubes shall be cured as per I.S. Code of Practice. The entire operation of casting, arranging and dispatch of cubes to Laboratory will be carried out by the contractor under the supervision of the Engineering-in-Charge. Out of '6 cubes, 2 cubes shall be tested at the age of 7 days and the other 4 at the age of 28 days in an approved Laboratory. Usually testing of the cube would be carried out at site by the cube testing machine of the contractor in presence of the Engineer-in- Charge or his authorized representatives. Out of the 4(four) sets to be tested at 28 days, the Engineer-in-Charge may arrange to have any two tested at any Government Engineering Collage whose report shall be binding on all parties concerned. The contractor shall have to install at site the machine for testing concrete test cubes. In such case the same shall have to be got approved by the Department before undertaking any test and the accuracy and performance of such machine(s) shall be subject to checking and inspection by the Engineer-in Charge or any person authorized by him to do so.
d) The cubes will be initialed, and dated jointly by contractor's representatives and the Engineer-in-
Charge or his authorized representative with a piece of wire or nail so that an indicating of the initials is left on the cube.
e) The contractor shall arrange transport the cubes to the approved laboratory and arrange to have
the testing results for warded (in duplicate) directly from laboratory to the Engineer-in-Charge. The contractor shall bear all expenses in connection with the preparation of test cubes like cost of mould, cost of concrete, labour and transport charges to the approved laboratory etc, including necessary laboratory testing charges.

f) A Register shall be maintained at site by the contractor with the following details entered initialed by the contractors and the Engineer-in-Charge.

1) Reference to specific structural member receiving the batch of concrete from which thecubes were cast.
2) Mark on cubes.
3) Grade and/or mix of concrete.
4) Date and time of casting.
5) Water cement ratio by weight and slump.
6) Crushing strengths as obtained at the age of 7 days for 2 cubes out of a set of 6 and at the age of 28 days for the 2 cubes. In case of doubt the remaining 2 cubes shall be tested at any recommended Engineering College.
7) Laboratory in which tested and reference to test certificate.
8) Any other information directed by the Engineer-in-Charge.

g) A record of the quality of concrete incorporated in the work that is represented by the quality of concrete of the set of cubes along with the description of the structural members where such concrete has been deposited shall be maintained. This record shall be initialed by the contractor and maintained by the Engineer-in-Charge.

F) Vibration of Concrete:

a) Water Cement Ratio

The water-cement ratio (by weight) for all vibrated concrete (except controlled concrete) shall generally be 0.45 and it shall not be varied unless otherwise directed. In respect of Controlled concrete the water-cement ratio shall be as determined in the laboratory mix design suitable for vibrated concrete.

b) Placing

Concrete shall be placed in layers not over 15 cm. deep and each layer shall be vibrated into place by methods which will not permit the ingredients to separate.

c) Number and size of Vibrators

Vibrators shall be of sturdy-construction, adequately powered and capable of transmitting to the concrete not less than 3,500 impulses per minute when operating under load. The vibration shall be sufficiently tense to cause to the concrete to flow of settle reading into place and visible affect the concrete over a radius of at least 450 mm. (18") when used in concrete having slump of 25 mm. Sufficient number of vibration at least one vibrator for a rate of concreting of 1.5 cum (50 cft.) per hour shall be employed so that at the required rate of placement, vibration through the entire valued of each layer of concrete and complete compaction are incurred.

d) Manipulation of Vibrators

Internal vibrators shall be kept constant moving in the concrete and shall be applied at points uniformly placed not further apart than the radius over which the vibrator is visibly effective. The vibrator shall not be held in one location long enough to draw a pool of grout from the surrounding concrete. The vibration shall be such that the concrete becomes uniform plastic and there shall be at least 200 second of vibration per Sq.metre (20 second of vibration per sq.ft) of surface of each layer of concrete computed on the basis of visibly affected radius and taking overlap into consideration.

G) Grades of Concrete

i) General

Before taking up the concrete work the contractor shall have to get mix design desired and approved by the Engineer-in-Charge and necessary tests conducted to satisfy the requirement specified for the respective grade of concrete. Contractor when there is any change in the quality or aggregates (both coarse and fine) and alteration made in the mix which should be got approved by the Engineer-in-Charge before being carried out for the work. The preliminary test and work test results should conform to the requirement of I.S.Code of Practice 456-2000 with latest amendment. Cube tests shall have to be done in accordance with IS:516-1959.

ii) Criterion Regarding Strength

Although the works test cubes are specified to be conducted at the age of 7 and 28 days. compressive strength specified at 28 days shall alone be the criterion for acceptance or rejection of concrete.

iii) Sample size and Acceptance Criteria

All tests shall be carried out in accordance with IS:516-1959. The criteria for acceptance of a concrete of a specific grade shall be in accordance with recommendation of IS:456-2000.

H) Execution of Concrete Work

No concrete work shall be done in absence of Engineer-in-Charge or his representative.

I) Form Work

i) General

Form work shall include all temporary or permanent forms required for forming the concrete together with all temporary construction required for their support.

ii) Material and Design

The form work shall be of approved dressed timber/plywood true to line and level not less than 3 cm. thick. Surface in contact with concrete are to be planed smooth except where otherwise stated. Where timber is used for form work it shall be well reasoned. Free from loose knots, projecting nails, splits or other defects that may not affect the surface of concrete. As an alternative, sufficiently rigid steel shuttering may be used. In every case, joints of the shuttering are to be such as to prevent the loss of liquid from concrete. In timber shuttering the joints shall therefore be either tongued and grooved or the joints must he perfectly close and lined with kraft paper or other types of approved materials. In case of steel shuttering also the joints are to be similarly lined to ensure water tightness. The inside surface of the form work shall be properly greased to prevent adhesion of concrete. The form work shall be so constructed as to remain sufficiently rigid during placing of the concrete.

All shuttering and framing must be adequately stayed and braced to the satisfaction of the Engineer-in-Charge for properly supporting the concrete during the period of hardening. The forms shall have sufficient strength and rigidity to hold concrete and withstand the pressure of ramming and vibration without excessive deflection from the prescribed lines when the concrete is vibrated. Suitable device shall be used to hold corners of adjacent ends and edges of panels of forms together for accurate alignment.

iii) lf directed by the Engineer-in-Charge suitable camber shall be provided in horizontal members e.g. R.C.C. beams, girders of the structure to counter act the effects of any defection. The formwork shall be so fixed as to provide for such camber.

iv) Forms shall be so constructed as to be removable in sections in the desired sequence without damaging the surfaces of concrete or disturbing other sections.

v) Unless otherwise specified or directed, chambers or fillets of size 25 mm. X 25 mm. shall be provided at all angles of the formwork to avoid sharp corners.
vi) The form work shall conform to the shape, lines and dimensions to suit the R.C.C. member as shown in drawings. Formwork shall be adequately designed to support the full weight of workers, freshly placed concrete, without yielding settlement or deflection and to ensure good and truly aligned concrete finished in accordance with drawings.

vii) Staging with sal-bullah posts of adequate diameter to support the mould for concrete shall be sufficiently rigid with provision of stays and bracing. For the staging of sub-structure, the Sal-bullah posts shall be capable of sustaining dead load due to formwork, concrete etc. and working load on it without yielding. Before actual erection of the staging of the sub-structure the contractor shall have to get the drawing showing their arrangement of staging and form work along with supporting calculations approved by the Engineer-in-Charge.

viii) The arrangements for side shattering including supporting arrangement to be done by the contractor shall have to be get approved by the Engineer-in-Charge.

ix) The load carrying capacity of the Iron / Salbullah timber posts which will be considered in the design of staging for super structure shall be ensured at site prior to the erection staging by suitable arrangement of load testing to the satisfaction of the Engineer-in-Charge.

x) Cleaning and Treating of Forms
All rubbish particularly chipping, sawings and saw-cast shall be removed from the Interior of the forms before the concrete is placed and the form work in contact with the concrete shall be cleaned and thoroughly treated with an approved composition. Care shall be taken that such approved composition is kept out of contract with the reinforcements. Interior of all moulds and boxes must be thoroughly washed out with a hose pipe or otherwise so as to be perfectly cleaned and free from all extraneous matter prior to the deposition of the concrete. Prior approval of the formwork shall be taken from the Engineer-in-Charge before placing of reinforcements in the formwork.

xi) Stripping
Forms shall be left in place until their removal is authorized by the Engineer-in-charge and shall then be removed which reaches adequate strength so as to avoid injury to concrete. In no circumstances shall forms be struck until concrete reaches strength of at least twice the stress to which the concrete maybe subjected to at the time of striking. The strength referred to shall be that of concrete using the same cement and aggregates with the same proportion and cured under conditions of temperature and moistures similar to those existing on the work. Where possible, the formwork should be left longer as it wound assist the curing.

xii) Stripping Time
In normal circumstances (generally where temperatures are above 20ºC) and where Ordinary Portland Cement is used, the shuttering for the vertical sides shall be retained for a minimum period of 2 days unless otherwise directed at site by the Engineer-in-Charge.

xiii) Tolerances
The following shall be maximum permissible tolerance :
a) On general setting out for dimensions upto 4 metre in length a tolerance upto 3 mm. will be allowed.
b) On lengths of more than 4 metre, tolerance of not more than 5 mm. will be allowed.
c) On the cross sectional dimension of R.C. members, tolerance of more than 3 mm. will not be allowed.

If the work is not carried out within the tolerances set out above in (a) to (c), the cost of all rectification measure, dismantling and reconstruction as decided by the Engineer-in-Charge shall be borne by the contractor. In case of work dismantle, the same shall not be measured and paid for.

J) Defective / Poor Concrete – Procedure for Dealing with :

a) General

If in the opinion of the Engineer-in-Charge there is doubt as to the strength of the structure due to the works test cubes failing to attain specified strength or due to poor workmanship like honey combing etc. or displacing of concrete or similar circumstances or any reason attributing the negligence on the part of the contractor, then the decision of the Engineer-in-Charge regarding dismantling of such concrete or rectification of concrete allowed to be retained in its place shall be final and binding on the contractor.

b) Where Concrete in Structure is Allowed to Retain :

When the works test strength as revealed by cube tests lies below the specified strengths, then if in the opinion of the Engineer-in-Charge the lower strength attained is acceptable to be retained in the structure then such concrete shall be allowed retained in the structure and payment for such concrete to the contractor shall be made at such reduced rate as may be decided by the Engineer-in- Charge whose decision shall be final and binding on the contractor. For deficiency in strength upto 5 percent from the specified strength rates will be reduces by 5 percent and for deficiency above 5 percent and upto 10 percent rates will be reduced by 10 percent. Concrete deficient in strength beyond 10 percent of the specified strength if allowed to be retained the limit of' reduction in rate will be limited to 15 percent of the rate.

c) Concrete ordered to be Dismantled

Where the Engineer-in-Charge does not accept the poor or defective concrete and order the same to be dismantled, then the contractor shall dismantle such concrete at his expense and reconstruct the same to the satisfaction of the Engineer-in-Charge. Concrete thus dismantled will not be measured and paid for.

d) Concrete Retained with Rectification

Where the Engineer-in-Charge in order to save time and where he considers adequate steps that defective concrete be strengthened as directed by him, the contractor shall carry out all rectification measures to the approval of the Engineer-in-Charge at contractor's expenses. The concrete of lower strength thus accepted shall however be paid for after necessary reduction of rate as would be decided by the Engineer-in Charge.

e) Quantity of Defective Concrete Represented by Cubes

In all cases of defective concrete as revealed by works test cubes strength failing below the specified strength the quantity of concrete thus affected and represented by the cubes shall be decided by the Engineer-in-Charge, whose decision shall be final and binding on the contractor.

f) Honeycombing:

a) Where honeycombed surfaces are noticed in the concrete the contractor shall not patch up the same until examined by the Engineer-in-Charge and decision given regarding the acceptance with rectification or rejection of the same. If the contractor patches up such defects without the knowledge of the Engineer-in-Charge, the Engineer-in-Charge will be at liberty to order demolition of the concerned concrete member to the extent he considers necessary. In such case, the contractor at his expense shall re-construct the same. Demolished work shall not be measured and paid for and the cost of cement thus wasted shall he recovered at penal rate from the contractor.

b) If in the opinion of the Engineer-in-Charge the honeycombing is harmful to the structure and where so directed by the Engineer-in-Charge the full structural members affected by honey combing as decided by the Engineer-in-Charge, shall be dismantled and reconstructed to the approval of the Engineer-in-Charge at contractor's expenses. The demolished concrete will not be measured and paid for and the cost of cement thus wasted shall he recovered at penal rate from the contractor.

c) Where in the opinion of the Engineer-in-Charge the structural member containing honeycombing can be allowed to be remained with rectification, the rectification shall be carried out as directed by the Engineer-in-Charge by guniting (with cement sand mortar I : 3 proportion) the areas concerned at contractor's expenses.

d) Where such honeycombed area are not severe in the opinion of the Engineer-in-Charge and where so directed shall be patched up with cement-sand mortar consisting of I part of cement to 3 parts of sand after removing defective concrete down to sound concrete to the satisfaction of the Engineer-in-Charge all at the expense of the contractor.

g) Other Defects

Any other defects in concrete shall be made good as directed by the Engineer-in-Charge at contractor's expenses.

K) Contractor's Rate to Include

The rate of contractor for providing and laying cement concrete in various grades or proportions shallapart from any other factors specified else, where in the tender documents include for the following :-

a) For all factors and methods of work described in these specifications.
b) For all materials, labour, tools and plants etc. mixing, conveying and placing concrete in position, ramming, vibrating troweling, curing, providing necessary shoring and removing the same after the works is complete. Shuttering and staging are described as separate items in the Priced Schedule of Items / B.O.Q. being attached with the tender unless otherwise stated. As such the rates for shuttering and staging shall not be included in the rate of concrete. The rates for shuttering and staging are inclusive of all the work mentioned in specification for form work. The reinforcement in case of reinforced concrete work will be paid for separately unless otherwise stated in the particular items but the rate shall include for pouring concrete and packing around reinforcement.
c) The measurement of concrete will be as per detailed drawings, shape and sizes based on net structural sizes as per drawings.
d) Rates for concrete items shall cover for any shape on structural members like columns, girders, slabs, rafts etc.
e) Testing of work test cubes shall be done as required by Specification in a laboratory approved by the Engineer-in Charge and for tests of materials and work required in the opinion of the Engineer-in- Charge as described in these specification.
f) Fixing all inserts like pipes, plugs, forming holes etc. as described.
g) Weigh batching using a Mechanical weigh batcher or a batching plant except where so specified for volumetric batching.
h) For taking out dowel bars etc. through shuttering.
i) For work at all levels.

iii) Cleaning of Reinforcement

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

iv) Cutting of Reinforcement

Before the reinforcement bars are cut, the contractor shall study the length of bars required as per drawings and shall care out cutting only to suit the sizes required as per drawings. Reinforcements shall be securely placed in position and firmly supported or edged 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 work. It is most important to maintain reinforcement in its correct position without displacement and to maintain the correct specified cover. Contractor shall be responsible to all costs for rectification required in case the bars are displaced out of their correct position.

L) Welding

Welding of bars may be carried out as per I.S. Specification and code of Practice in place of placing. However no extra payment shall be allowed for the same.

M) Bending of Reinforcement

Bends etc. on steel reinforcement shall be carefully formed. Care being taken to keep bends out of binding. Otherwise all rods shall be truly straight. If any bend shows signs of brittleness or cracking, therod shall be removed immediately from the site. Minimum radius of 2 times diameter of the bars shall be used unless otherwise specified in the drawing. In respect of standard hooks the radius of bend shall be 2 times the diameter of bar. Heating of reinforcement of bars to facilitate bending will not be permitted. The bars shall always be bend cold. In case of mild steel reinforcement bars of larger sizes if used, where cold bending is not possible, they may be bent by heating with written permission of the Engineer-in- Charge. Bars bent hot 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.

N) Inspection of Reinforcements

No concreting shall be commenced until the Engineer-in-Charge or his authorized representative has inspected the reinforcement in position and until his approval has been obtained. A notice atleast 24 hours before concreting shall be given to the Engineer-in-Charge or his authorized representative by the contractor for inspection of reinforcement. If in the opinion of the Engineer-in-Charge any material is not to 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 ones and rectify any other defects in accordance with the instruction of the Engineer-in-Charge or his authorized representative and to his entire satisfaction.

O) Net Measurements
Reinforcement shall be placed as shown in the structural drawings and payment will be made on the net measurements from drawings. Only such laps, dowels, chairs and pins in reinforcement as approved by the Engineer-in-Charge or his authorized representative or shown in drawings shall be paid for. The contractor shall consider in his Tender for all wastage in reinforcement work which will not be paid for separately. All lap lengths shall be as per I.S. specification or drawings.

P) Cover for Reinforcements
Cover for reinforcement shall be as per IS: 21-1972 / Drawings.

Q) Rate of the Contractor for Reinforcement shall in Addition to any Factors
a) Recoiling, straightening (coiled bars, bent bars to facilitate transporting).
b) All cutting to lengths, labour in bending and cranking, forming hooked ends, handling, hoisting and every thing necessary to fix reinforcement in work as per drawing.
c) Cost of binding wire required as described.
d) Cost of pre-cast concrete cover blocks to maintain cover and holding reinforcement in position.
e) For fabrication and fixing reinforcement in any structural member irrespective of its location, dimensions and level.
f) Removal of rust and other undesirable substances. using wire brush etc. as described.
g) Work at all levels.

Notes :
a) Stone metal and chips of any size as required will have to be arranged by the contractor and cost will be deemed to have been included in the rate of respective items.

Bored Piling Work

Piling work has to be done as per latest IS specification IS 2911 (ii).

6. Specifications

A) Timber
All timber shall be of best quality well-seasoned and/or well treated for preservation and protection against decay etc. It shall be uniform in substance, straight in fibre, free from large or dead knots, sap,flaws, sun-cracks, shakes or blemishes of any kind. Any damage or splits across the grain shall not be permissible. The colour of the timber shall be uniform throughout, firm and shining with a silky luster when planed and shall not omit dull sound when struck.

B) Timber doors, windows etc. and their fittings

i) Door and Window works shall be carried out as per detailed drawings or as directed by the Engineer-in-Charge. Specified timber shall be used and it shall be sawn in the direction of the grains and shall be straight and square.

ii) Fitting shall be of Iron, brass and aluminium or as specified. These shall be well made reasonable smooth and free from sharp edges, corners flaws and other defects. Screw holes shall be counter sunk to suit the head of specified wood screws. Iron fittings shall be finished bright or black enameled or copper oxidized. Brass fittings shall be finished bright (brass), oxidized, or chromium plated (Electro-plates) and aluminium fittings shall be finished bright or anodized or as specified. Fittings shall be got approved by the Engineer-in-Charge before fixing. In case of renewal works, the new fittings, shall as far as possible match with the existing ones. Screws shall be driven with screw driver and not hammered in.

C) 1st Class Brick works
Cement mortar shall be prepared by mixing sand and cement in specified proportion. Sand shall be measured on the basis of its dry volume. In case of damp sand, its quantity shall be increased suitable to allow for bulkage.

D) Damp Proof Course

Damp Proof Course shall be laid to specified thickness over walls for the full thickness of the superstructure walls. The surface shall be levelled and prepared before laying the cement concrete. Edges of damp proof course shall be straight even vertical side shuttering shall consist of wooden frame and shall be strong and properly fixed so that it does not got disturbed during compaction and the mortar does not lead through. The concrete mix shall be of workable consistency and shall be tamped thoroughly to make a dense mass. When the sides are removed, the surface should come out smooth without any honey-combing. The damp proof course shall be laid continuous and surface shall be double chequered. Damp proof course shall be cured for at last seven days, after which it shall be allowed to dry. Waterproofing materials of approved quality shall he added to the concrete mixture in accordance with the manufacturer's specifications.

E) Cement Plaster

The proportion for mortar for exterior or interior plaster shall be specified in the items of work. The plaster shall be of thickness as specified and the surface shall be similarly cured as for cement concrete. The moulding shall be carried out as shown in the drawing and shall be separately measured in overall length unless otherwise specified in the items. Interior corners and edges of openings if so directed by the Engineer-in-Charge shall be rounded off or chamfered with the same mortar for which no extra payment will be allowed. All cement concrete surface should be chipped off properly before taking up the plastering work.

I/We have inspected the site of work and have made myself / ourselves fully acquainted with local conditions in and around the site of works. I/We have carefully gone through the Notice Inviting Tender including the Corrigendum Notices and other Tender documents mentioned therein. I/We have also carefully gone through the PWD(WB) Schedule and special terms and conditions and agreed to execute all the terms of the priced schedule as per General Conditions Specification as laid down in the said schedule. My / Our tender is offered taking due consideration of all factors and if the same are accepted I/We promise to abide by all the stipulations of the Tender Documents and carry out and complete the work to the satisfaction of the Department.

Sd/-
The Managing Director
The State Fisheries Development Corporation Limited

Scope of Work:

To accomplish the objectives, as aforesaid. The Scope of work includes the construction of the proposed fish feed plant. The Contractor, who will work for this project, will undertake the work as specified in this tender document. The work involves Construction of-5 TPH FLOATING FISH FEED AND 5TPH SINKING OR SHRIMP FEED PLANT and other facilities at Kalyani, Dist-Nadia, West Bengal. The works includes-

Civil Work:

- Construction of Plant Area Including (FISH FEED PLANT AREA= 5812.65 SQM)
- Construction of Administrative Building,(ADMINISTRATIVE BLOCK GROUND FLOOR AREA= 314.4 SQ.M)
- Civil Work For Foundation Of Boiler (BOILER AREA =720 SQM), Liquid Tank(LIQUID TANK P.L. AREA=320.00 SQM), OHT(OHR AREA= 9 SQM). And Security Room, Weigh Bridge Foundation & Open Toilet Block,
- Sanitary And Plumbing (External & Internal),
- Main Gate (Mechanical Type) With Boundary Wall (BOUNDARY WALL RUNNING LENGTH =596M)
- Construction of Internal Road with100 mm thick interlocking designer concrete paver block M-50 grade (ROAD AREA = 4314.92 SQM),
- Construction of Parking with with 80 mm thick interlocking designer concrete paver block M-40 grade(AREA =570 SQM) , Landscaping.
- Fire Fighting,
- Electrical (External & Internal Lighting).

Procurement & establishment of all plant machineries:

- Setting of the Main Plant(5 TPH FLOATING FISH FEED AND 5TPH SINKING OR SHRIMP FEED PLANT)Machine with all necessary components, Auxiliary Equipment and Automation,
- Weigh Bridge,
- Boiler.
- The bidders need to follow the departmental drawing, specification and instruction of the Engineer- in Charge.
- The contractor has to supply all materials and machineries required to complete the work. The quality, source, brand, make etc. to supply at site.
- The contractor has to complete all the structural work, Superstructure, Foundation in all respect including R.C.C, P.C.C. flooring, plastering, coloring, testing, disinfecting etc. as per approved drawing, specification.

- Execution of work with construction of Plant building . This shall include supply of all required materials, construction, installation, testing and commissioning for operationalization of the plant . This shall also include clearance of jungle, cutting of all existing trees as required, services and utilities including removal of debris.

- Services after completion and handing over in phases and up to the expiry of the defect liability period.
- Any other services and utilities as per requirements and direction of Engineer-In-Charge for completion of the project.

- All safety norms as per requirement to be ensured by the Bidder at site.

SUMMARY OF 5 TPH FLOATING FISH FEED AND 5TPH SINKING OR SHRIMP FEED PLANT PROJECT AT KALYANI	
Sr. No.	Description
	PART-A (CIVIL,SANITARY PLUMBING,FIRE)
A	CIVIL WORK
1	PLANT AREA INCLUDING STRUCTURAL WORK, ROOF SHEDDING
2	ADMINISTRITIVE BUILDING
3	CIVIL WORK FOR FOUNDATION OF BOILER, LIQUID TANK, OHT AND SECURITY ROOM, WEIGH BRIDGE FOUNDATION & OPEN TOILET BLOCK
4	LANDSCAPE
5	MAIN GATE (MECHANICAL TYPE) WITH BOUNDARY WALL
6	INTERNAL ROAD
7	PARKING
8	FIRE FIGHTING
	PART-B (MACHINERY)
9	Boiler
10	Weigh Bridge
11	Main Plant Machine with all necessary components, Auxiliary Equipment and Automation

Construction of Plant Area At Kalyani Fisheries Project

Sl. No.	Description of Items	Qty.	Unit
1	Providing Bored Cast-in-situ M30 grade R.C.C. pile in position as per specifications in all kinds of soil including cost of boring using drilling mud to stabilize the bore and flushing the bore of excess mud with freshly prepared drilling fluid by using pumps prior to placing concrete by tremie pipe in one continuous operation and including the cost of all materials and labor for placing of concrete and also including the cost of mobilization and hire charges of all equipment necessary for boring, welding of reinforcement cage as necessary and lowering of reinforcement cage, preparation and placing of concrete, including the cost of concrete but excluding the cost of reinforcement and labor for bending binding etc. complete as per Drawing and Technical Specifications and removal of excavated earth with all lifts and lead upto 1000 m. Work to be executed as per IS: 2911 (Part II Sec 2).		
	ii) Pile diameter - 500 mm. Boring Work	1674.00	mtr
	ii) Pile diameter - 500 mm. Concrete Work M30(Controlled Cement Concrete)	328.82	cum
2	Removal of mud/sludge/slurry/liquid earth obtained during piling work from the working site and disposal of the same beyond the KMC/Municipal or any suitable area with conformity of Municipal Corporation Rules using tanker including loading and unloading the same with pump, clearing the site complete in all respect as per direction of the Engineer-in-charge.		
	ii) Pile diameter - 500 mm.	1674.00	mtr
3	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction.		
	a) For works in foundation, basement and upto roof of ground floor/upto 4 m		
	(i) Tor steel/Mild Steel		
	I. SAIL/TATA/RINL	15.63	mt
4	Performing Vertical load test on single Pile in accordance with IS:2911 (Part-IV) by hydraulic jacks on pile/piles with 1.5 times the design load including preparation of the head of piles with concrete of required strength for receiving the jacks with all ancillary arrangements for setting up gauges, construction of suitable platforms, keeping the loads and dismantling and removing all arrangement etc. complete as per IS specification and direction of Engineer-in-charge		
	II) Testing load between 100 T and 150 T for "Routine load test" of pile..	1.00	each

5	Integrity testing of Pile using Low Strain/ Sonic Integrity Test/ Sonic Echo Test method in accordance with IS 14893 including surface preparation of pile top by removing soil, mud, dust & chipping lean concrete lumps etc.and use of computerised equipment and high skill trained personal for conducting the test & submission of results, all complete as per direction of Engineer-in-charge a) Within 50 km. radius from Raj-Bhavan	8.00	each
6	Dismantling R.C. floor, roof, beams etc. including cutting rods and removing rubbish as directed within a lead of 75 m. including stacking of steelbars. (a) In ground floor including roof.	168.27	CUM
7	Earth work in excavation of foundation trenches or drains in all sorts of soil(including mixed soil but excluding laterite or sandstone)including removing spreading or stacking the spoil s within a lead of 75m as directed.the item including necessary trimming the spoils of trenches, levelling ,dressing and removing the bottom ,bailing out water as required complete.(a) depth of excavation not exceeding 1.5 m. (b) Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	2236.26 857.01	%Cu.M %Cu.M
8	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work)(a) With earth obtained from excavation of foundation	2875.00	%Cu.M
9	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity)(B) Do - by fine sand	3450.00	%Cu.M
10	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	5750.00	*sqm*
11	Cement concrete with graded stone ballast (40 mm size excluding shuttering. In ground floor a) Pakur Variety 1:3:6 Proportion	431.25	Cu.M.
12	Brick work with 1st class bricks in cement mortar (1:4) (a) In foundation and plinth	321	Cu.M.
13	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS : 456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer-in charge. Consumption of cement will not be less than 320 Kg of cement with super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix foumula. In ground floor and foundation. [using concrete mixture] M30Grade (i) Pakur Variety (in foundation)	1547	*cum*

14	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete M25Grade In Ground Floor Level.	15	*cum*
15	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams and columns, lintels curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor) (When the height of a particular floor is more than 4 m the equivalent floor height shall be taken as 4 m and extra for works beyond the initial 4 m ht. shall be allowed under 12 (e) for every 4 m or part thereof) (C)Steel shuttering or 9 to 12 mm thick approved quality ply board shuttering in any concrete work In Ground Floor Level.	8151.34	Sq.M.
16	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction.(a) For works in foundation and upto roof of ground floor/upto 4 m(i) Tor steel/Mild Steel I. SAIL/TATA/RINL In Ground Floor Level.	201.08	*MT*
17	M.S. structural works in columns, beams etc. with simple rolled structural members (e.g. joists, angle, channel sections conforming to IS: 226, IS: 808 & SP (6)- 1964 connected to one another with bracket, gussets, cleats as per design, direction of Engineer-incharge complete including cutting to requisite shape and length, fabrication with necessary bolting, metal arc welding conforming to IS: 816- 1956 & IS: 1995 using electrodes of approved make and brand conforming to IS:814- 1957, haulage, hoisting and erection all complete. The rate includes the cost of rolled steel section, consumables such as electrodes, gas and hire charge of all tools and plants and labour required for the work including all incidental changes such as electricity charges, labour insurance charges etc. Payment to be made on the basis of calculated weight of structural members only in finished work as per IS specified weight. Payment for gusset, bracket, cleat, rivets, bolts and nuts may be make by adding the actual weight of such items with the weight of finished structural members or 7% of weight for finished structural members weighing not less than 22.5 Kg. / m. or 15 % of weight for finished structural members weighing less than 22.5 Kg. / m. may be increased allow for bracket, cleat, rivet, bolts and nuts etc. and no separate payment being made for these items, as per direction of Engineer In Charge. The rates are considered for a height of erection 8m. / 2nd floor level from the ground. Add 1.5% extra over the rate for each additional floor or 4m. beyond initial 8m. or part thereof. III) For built up sections / structural members of specified sections weighing not less than 22.5 Kg./m	534.00	*MT*

18	Supplying, fitting & fixing Industrial Troughed Aluminum sheet (excluding the supporting frame work) of approved make & brand in alloy 3105 conforming to IS: 1254-1991 fitted and fixed with 75 mm & 25 mm Self tapping screw , EPDM Washer 16 mm dia & 3 mm th washer etc complete with 150 mm. end lap and one corrugation minimum side lap. (Payment to be made on area of finished work) (Aluminum sheet to be supplied by contractor). (i) In Roof:- a) With 0.65 mm thick sheet	12488.00	sqm
19	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.	8503.22	Sqm
20	Artificial stone in floor, dado, staircase etc with cement concrete (1:2:4) with stone chips, laid in panels as directed with topping made with ordinary or white cement (asnecessary) and marble dust in proportion (1:2) including smooth finishing and rounding off corners including raking out joints or roughening of concrete surface and application of cement slurry before flooring works using cement @ 1.75kg/sq.m all complete including all materials and labour. In ground floor. 3 mm. thick topping (High polishing grinding on this item is not permitted with ordinary cement). Using grey cement		
	(ii) 25 mm. thick	5750.00	Sqm
21	Holding down bolt with nut including 100 x 100 x 6 mm plate washer at bottom fitted complete and packing the hole with cement concrete or cement grout as directed, (c) 600 mm long	1224.00	Each
22	Dismantling all types of masonry excepting cement concrete plain or reinforced, stacking serviceable materials at site and removing rubbish as directed within a lead of 75 m. a) In ground floor including roof.	155.00	*cum*
23	Dismantling all types of plain cement concrete works, stacking serviceable materials at site and removing rubbish as directed within a lead of 75 m. In ground floor including roof. (a) upto 150 mm. thick	100.00	*cum*
24	(a) Supplying, fitting and fixing steel rolling shutter profile type with 18 B.G . of approved type steel latche section 75mm wide, fitted with coil wire spring to necessitate the fitting of required Nos. of C.I. Pulleys on heavy type solid drawn seamless steel tube complete with locking arrangements both inside and outside specially built-up side guide channels including providing a hood for the steel rolling shutter in the room, painting two coats of approved aluminum paint over a coat of red lead primer complete.	96.00	*SQM*

Estimate For Construction of Administrative Building At Kalyani Fisheries Project

Sl. No.	Description of Items	Qty.	Unit
1	Earth work in excavation of foundation trenches or drains in all sorts of soil(including mixed soilbut excluding laterite or sandstone)including removing spreading or stacking the spoil s within a lead of 75m as directed.the item includingds necessary trimming the spoils of trenches,levelling ,dressing and removing the bottom ,bailing out water as required complete.(a) depth of excavation not exceeding 1.5 m.	417.23	%Cu.M
	(b) Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	180.80	%Cu.M
2	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work) (a) With earth obtained from excavation of foundation	475.45	%Cu.M
3	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity)(B) Do - by fine sand	52.79	%Cu.M
4	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	189.96	*sqm*
5	Cement concrete with graded stone ballast (40 mm size excluding shuttering. In ground floor a) Pakur Variety 1:3:6 Proportion Item no.22(i)(3rd corri), page no.34 of PWD(B)	14.25	Cu.M.
6	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS : 456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer-in charge. Consumption of cement will not be less than 320 Kg of cement with super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix foumula. In ground floor and foundation. [using concrete mixture] M30Grade (i) Pakur Variety (in foundation)	132	*cum*
	ist floor	78	*cum*

7	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete M25Grade		
	In Ground Floor Level.	5	*cum*
	In First Floor Level.	5	*cum*
8	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams and columns, lintels curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor) (When the height of a particular floor is more than 4 m the equivalent floor height shall be taken as 4 m and extra for works beyond the initial 4 m ht. shall be allowed under 12 (e) for every 4 m or part thereof) (a) 25 mm to 30 mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.		
	In Ground Floor Level.	1006.96	Sq.M.
	In First Floor Level.	722.83	Sq.M.
9	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. (a) For works in foundation and upto roof of ground floor/upto 4 m (i) Tor steel/Mild Steel I. SAIL/TATA/RINL		
	In Ground Floor Level.	47.43	*MT*
	In First Floor Level.	9.37	*MT*
10	Brick work with 1st class bricks in cement mortar (1:4)		
	(a) In foundation and plinth	61.86	*cum*
	(b) In superstructure, ground floor	108.19	*cum*
11	125 mm. thick brick work with 1st class bricks in cement mortar (1:4) in ground floor.		
	Ground Floor	42.60	Sqm

12	Plaster (to wall, floor, ceiling etc.) with cement and sand mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding / staging where necessary (Ground floor) [Excluding cost of chipping over concrete surface]. Considering Extra for each additional floor over the rate for ground floor items 1 to 3 of subhead A : (ii) Internal plaster		
	20 mm. thick plastering with cement mortar (1:6) **at outer Wall** In Ground Floor	663.15	Sqm
	10 mm. thick plastering with cement mortar (1:4) **at Ceiling**		
	In Ground Floor	345.40	Sqm
	15 mm. thick plastering with cement mortar (1:6) at **Inner Wall** In Ground Floor	740.37	Sqm
14	Labour for Chipping of concrete surface before taking up Plastering work.	974.71	Sqm
15	b) Rendering the Surface of walls and ceiling with White Cement base WATER PROOF wall putty of approved make & brand.(1.5 mm thick)	1085.77	Sqm
16	Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative textured(matt finish) or smooth finish acrylic exterior emulsion paint including scraping and preparing the surface throughly, complete as pe manufacturer's specification and as per direction of the EIC Two Coat In Ground Floor	663.15	%Sqm
17	Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of Engineer-in-Charge to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer. In Ground Floor (two coat)	663.15	Sqm
18	Applying Interior grade Acrylic Primer of approved quality and brand on plastered or cencrete surface One Coat ii) Solvent based interior grade Acrylic Primer	1085.77	%Sqm
19	Applying Acrylic Emulsion Paint of approved make and brand on walls and ceiling including sand papering in intermediate coats including putty (to be done under specific instruction of Superintending Engineer) Two Coat , ii) Luxury Quality	1085.77	Sqm

20	Wood work in frame fitted and fixed in position complete including a protective coat of painting at the contact surface of the frame exluding cost of concrete, Iron Butt Hinges and M.S clamps (Malayasian wood) (e) Sal : Malayasian wood In Ground Floor	0.61	*cum*
21	Supplying Solid flush type doors of deluxe decorative (both side) quality, conforming to I:S 2202 timber frame consisting of top and bottom rail and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 27.5mm wide battens places both ways in order to made the door of solid core and internal lipping with teak, mahogony or rose wood approved decorative veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing the shutters in position but excluding the cost of hinges and other fittings		
	(a) 35mm thick shutters (single leaf)		
	In Ground Floor	19.74	*SQM*
22	Supplying solid flush type doors of commercial quality, the timber frame consisting of top and bottom rails and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 37.5mm wide battens places both ways in order to make the door of solid core and internal lipping with Garjan or similar wood veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing shutters in position but excluding the cost of hinges and other fittings in ground floor. (b) 32 mm thick shutters (single leaf) In Ground Floor	11.03	*SQM*
23	Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. by cement concrete(1:2:4) as per direction. (Cost of concrete will be paid separately) 40 mm. x 6 mm., 250 mm. length.	90.00	*NOS*
24	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :	45	*NOS*
25	(a) Supplying 'Godrej' mortice lock chromium plated with latch and keys 4 levers, including fitting and fixing complete.	4.00	*NOS*
	(b) Supplying 'Godrej' mortice lock chromium plated with keys 6 levers including fitting & fixing complete.	13.00	*NOS*

26	Anodised floor door stopper (Brass)	13.00	*NOS*
27	Supplying, fitting & fixing Surface mounted overhead Door Closer for 2 hour fire rated doors, of size EN-4 for leaf width upto 950/ 1100mm weighing maximum 60/ 80 kgs, CE certified, marked & conforming to EN 1154-2003 of approved quality of reputed brand, complete as per direction & satisfaction of Engineer-in-Charge. for leaf width upto 1100mm	8.00	*NOS*
28	Supplying profiles of required section made of Aluminium Alloy Extrusions conforming to IS: 732-1983 and IS: 1285- 1975; Annodized (with required film thickness and specified colour / natural) matt finished conforming to IS: 1868-1983 for fabrication of composit door, sliding & casement windows, partitions, formed of basic sections of any ISI embossed / certified make and brand as per direction of Engineer - In- Charge. (Payment will be made on finished length of the work). *15 Micron colour annodizing.* **a) 2- track sliding window**		
	i) Bottom frame	21.00	Mtr
	ii) Top and side frame.	59.40	Mtr
	iii) Shutter.bottom member	22.20	Mtr
	iii) Shutter.style side member	76.80	Mtr
	iii) interlock member member	19.20	Mtr
	iv) Glazing clip.	176.00	Mtr
	v) Cleat angle. (Non-annodized)	176.00	Mtr
	h)Louvered window.		
	i) Top, bottom and side member.	12.00	Mtr
	ii) Louvered Section.	12.00	Mtr
	iii) Cleat angle (Non-annodized).	16.00	Mtr
	k) Movable door shutter.		
	i) Door frame. (Top & sides).	18.60	Mtr
	ii) Shutter		
	Top rail.	37.20	Mtr
	Bottom rail.	6.00	Mtr
	Lock rail	6.00	Mtr
	Door vertical.	12.60	Mtr
	Glazing clip.	24.00	Mtr
29	Supplying PVC rollers for sliding windows as per direction of Engineer	43.00	*EACH*
30	Supplying maruti lock (100mm)	24.00	*PAIR*

31	(C) Supplying Heavy Duty Aluminium Handle (EBCO Type) (Natural White)	30.00	*PAIR*
32	(E) Supplying 250mm long Heavy Type Aluminium window Peg Stay (Natural White)	81.00	*EACH*
33	Labour charge for fabrication and installation of composite door, window, partitions made from annodized extruded alloy aluminium sections for the following units:-		
	(A) Glazed aluminium sliding windows made of extruded and annodized alloy aluminium sectios, fabrications, including cutting to proper shape and size, drilling and aligning of window shutter frame fitted with in built locking arrangements, sliding rollers and other necessary fittings, fixture, adhesives and joineries along with extruded neoprine or EPDM gasketing in between window frame and masonry work (walls, column, beam.lintels etc.) as well as between glass and shutter frame for fixing glass and Polysulphide sealant and in between shutter and window frame where necessary including cutting to requisite size and fixing glass as per drawing, specification and direction of EIC. The rate includes the hire charge of all tools and plants, including all incidental charges, adhesive, joineries such as screw, cleat angle etc. but excluding the cost of extruded aluminium sections, glass, neoprene / EPDM gasket, locking arrangement and rollers.		
	ii) 3 /4 track sliding window.	41.58	SQM
	v) Louvered window.	1.62	SQM
34	**Supplying bubble free float glass** of approved make and brand conforming to IS: 2835-1987; (A) clear, toughened glass conforming to IS: 2553-1992 (part-II) 6mm thick	37.80	SQM
35	Collapsible gate with 40mm x 40mm x 6mm Tee as top and bottom guide rail, 20mm x 10mm x 2mm vertical channels 100mm apart in fully stretched position 20mm x 5mm M.S. flats as collapsible bracings properly rivetted and washered including 38mm steel rollers including locking arrangements, fitted and fixed in position with lugs set in cement concrete and including cutting necessary holes, chasing etc. in walls, floors etc. and making good damages complete. (Add extra @ 1% for each addl. floor upto 4th floor and @ 1.25% for each addl. floor above 4th floor)	5.76	SQM

36	Supplying and laying true to line and level vitrified tiles of approved brand (size not less than 600 mm X 600 mm X 10 mm thick) in floor, skirting etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry back side of tiles using cement @ 2.91Kg./sqM or using polymerised adhesive (6 mm thick layer applied directly over finished artificial stone floor/Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per sqM below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles / epoxy grout materials of approved make as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contrr]e) (I) With application slurry @1.75 kg/ Sq.m, 20 mm sand cement mortar (1:4) & 2 mm thick cement slurry at back side of tiles, 0.2 kg/ Sq.m white cement for joint filling with pigment (A) Deep Colour & White		
	In All Floor	356.40	SQM
37	Supplying and laying true to line and level **Anti-Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles** conforming to IS:15622-2006 & IS 4457-2007 and testing shall be made in accordance with IS:13630 [Non- modular sizes for tiles with Skid resistance > 0.5, Mohr's hardness > 5.0, Staining resistance: Class-1, Water Absorption: E < 0.5%], MOR > 35 N/sq.mm **in Internal area of building** e.g. Toilet Block, Passage, Corridor, Accessible Open Terrace etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg./Sqm or using Polymerised Adhesive (6 mm thick layer applied directly over finished artificial stone floor/ Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per Sqm below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles/ epoxy grout materials of approved make as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, labour and all other incidental charges complete		
	true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contractor). a) In Ground Floor: Sizes-300 mm x300mm x10 mm with breaking strength > 1200 N **In FLOOR**		
	In Ground Floor	28.61	SQM

38	Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials. With Sand Cement Mortar (1:3) 15 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20kg/Sq.m. (b) Area of each tile above 0.09 Sq.m, (i) Coloured decorative at **WALL** In Ground Floor	125.16	SQM
39	18 mm. to 22 mm. thick, kota stone slab set in 20 mm thick (avg) cement mortar (1:4) in floor, stair & lobby including pointing in cement slurry with admixture of pigment matching the stone shade, including grinding & polishing as per direction of Engineer - in - charge to match with the existing work. [Slurry for bedding @ 4.4 kg/Sq.m and pointing @2.0 kg/Sq.m]	20.17	SQM
40	Providing and fixing of false ceiling with powder coated **exposed G.I. grid suspension** system (E-Grid T 2430 or equivalent load carrying capacity with mid span deflection not exceeding 1/360 span with hanger spacing of 1200mm c/c)consisting of Main Runner 3600 mm long, Cross Tee 1200 mm / 600 mm long and Wall Angle. The Wall Angle shall be fixed on PVC Dash Fasteners on the perimeter of the wall by steel screws with distance 300mm c/c. The Main Runners to be placed @ 1200 mm. The Cross Tee 1200mm will be inserted in the pre-cut slots of Main Runner at a regular interval of 600 mm to form a modular grid of 1200mm X 600mm.. Additional Cross Tees of 600 mm shall be placed perpendicular to the Cross Tee 1200 mm long to finally form a grid of 600 mm X 600 mm. Grid of module size 600 mm X 600 mm shall be supported by 6 mm dia G.I. wire from purlins / soffit. 6 mm thick High Pressure Steam Cured Non Asbestos Fibre Cement Standard Ceiling Board (Density > 1300 Kg/m3) of size 595 mm X 595 mm, conforming IS 14862 & Type B Category III of ISO 8336, tested as per AS-1530 part 3 & BS-476 Part 4,5,6,7 & 8, should be placed in the Grid module to form a False Ceiling. All complete as per the drawing & directions of Engineer-in-charge. A) **False Ceiling (with 6mm thick Fibre Cement Designer Board** and E-Grid T- 2430). In Ground Floor	100.00	SQM

41	Cleaning the concrete surface by removing dirt and debris,marking defective locations and removing loose concrete by careful stripping untill hard surface is exposed, cutting the concrete to regular shape, wire brushing the exposed surface and removing debris from site complete as per direction of the Engineer - in - Charge	64.37	SQM
42	Polymer concrete made with water resistant bonding agent of synthetic rubber emulsion as per manufacturer's specification excluding the cost of cement concrete (2.75 Kg / bag of cement) Note : Payment on volume of (1 : 1½ : 3) Concrete.	9.66	CUM
43	b) Applying 2 coats of Non-Toxic Acrylic Polymer modified Paint having adhesive & waterproofing properties by mixing in proportion (1 liquid: 4 cementitious material) or as per manufacturer's specification for water proofing layer in water tank etc. (No Departmental Cement is required) In Floor	61.97	SQM
44	Extra rate for adding Polyester Fibre anti shrinkage material @ 0.25% by weight of cement [or as per Manufacturer's Specification] as secondary reinforcement to arrest hair crack in concrete including cost of Fibre .	10.23	KG
45	(a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and fixed with necessary screws and lugs in ground floor. (i) Grill weighing above 10 Kg./sq.mtr and up to 16 Kg./sq. mtr.	277.20	Qntl
46	(a) Priming one coat on steel or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.	27.72	SQM
	(b) Priming one coat on timber or plastered surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.	19.41	SQM
47	(A) Painting with best quality synthetic enamel paint of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary : (a) On timber or plastered surface : With super gloss (hi-gloss) - (iv) Two coats (with any shade except white)	19.41	SQM

	(b) On steel or other metal surface : With super gloss (hi-gloss) - (iv) Two coats (with any shade except white)	27.72	SQM
48	Anodised aliminium D-type handle of approved quality manufactured from extruded section conforming to I.S. specification (I.S. 230/72) fitted and fixed complete: (a) With continuous plate base (Hexagonal/ Round rod) (iv) 125 mm grip x 10 mm dia rod.	18.00	EACH
49	Supplying concealed type heavy duty PVC headed aluminium tower bolt for double leaf doors as per approved make and brand as per direction of Engineer-in-Charge. (b) 250 mm long	18.00	EACH

Estimate For Construction of Others Area Liquid tank, Boiler, Security Room, OHT Etc At Kalyani Fisheries Project

Sl. no.	Description of Items	Qty.	Unit
1	Earth work in excavation of foundation trenches or drains in all sorts of soil(including mixed soilbut excluding laterite or sandstone)including removing spreading or stacking the spoil s within a lead of 75m as directed.the item includingds necessary trimming the spoils of trenches,levelling ,dressing and removing the bottom ,bailing out water as required complete.(a) depth of excavation not exceeding 1.5 m.	777.60	%Cu.M
	(b) Depth of excavation for additional depth beyond 1,500 mm. and upto 3,000 mm. but not requiring shoring.	344.33	%Cu.M
2	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work) (a) With earth obtained from excavation of foundation	773.52	%Cu.M
3	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity)(B) Do - by fine sand	164.17	%Cu.M
4	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	518.40	*sqm*
5	Cement concrete with graded stone ballast (40 mm size excluding shuttering. In ground floor a) Pakur Variety 1:3:6 Proportion Item no.22(i)(3rd corri), page no.34 of PWD(B)	38.88	Cu.M.
6	Brick work with 1st class bricks in cement mortar (1:4) (a) In foundation and plinth	57	Cu.M.

7	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS : 456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer-in charge. Consumption of cement will not be less than 320 Kg of cement with super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix foumula. In ground floor and foundation. [using concrete mixture] M30Grade (i) Pakur Variety (in foundation)	557	*cum*
	ist floor	0	*cum*
8	Controlled Cement concrete with well graded stone chips (20 mm nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS :456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer- in-charge. Consumption of cement will not be less than 450 kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test & job mix formula. In Ground floor & foundation. [Using concrete M25Grade		
	In Ground Floor Level.	5	*cum*
9	Hire and labour charges for shuttering with centering and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams and columns, lintels curved or straight including fitting, fixing and striking out after completion of works (upto roof of ground floor) (When the height of a particular floor is more than 4 m the equivalent floor height shall be taken as 4 m and extra for works beyond the initial 4 m ht. shall be allowed under 12 (e) for every 4 m or part thereof) (a) 25 mm to 30 mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.		
	In Ground Floor Level.	840.60	Sq.M.
10	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. (a) For works in foundation and upto roof of ground floor/upto 4 m (i) Tor steel/Mild Steel I. SAIL/TATA/RINL		
	In Ground Floor Level.	68.05	*MT*

11	Brick work with 1st class bricks in cement mortar (1:4)		
	(a) In foundation and plinth	48.50	*cum*
	(b) In superstructure, ground floor	50.89	*cum*
12	(b) 100 mm. thick brick work with 1st class Modular bricks set in cement sand mortar (1:4) including raking out joints, curing, scaffolding etc. complete in all respect with H.B. netting in every third layer in ground floor.		
	Ground Floor	42.60	Sqm
13	Plaster (to wall, floor, ceiling etc.) with cement and sand mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding / staging where necessary (Ground floor) [Excluding cost of chipping over concrete surface].		
	Considering Extra for each additional floor over the rate for ground floor items 1 to 3 of subhead A : (ii) Internal plaster		
	20 mm. thick plastering with cement mortar (1:6) **at outer Wall**		
	In Ground Floor	348.52	Sqm
	10 mm. thick plastering with cement mortar (1:4) **at Ceiling**		
	In Ground Floor	329.70	Sqm
	15 mm. thick plastering with cement mortar (1:6) at **Inner Wall**		
	In Ground Floor	140.40	Sqm
14	Labour for Chipping of concrete surface before taking up Plastering work.	449.04	Sqm
15	b) Rendering the Surface of walls and ceiling with White Cement base WATER PROOF wall putty of approved make & brand.(1.5 mm thick)	470.10	Sqm
16	Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative textured(matt finish) or smooth finish acrylic exterior emulsion paint including scraping and preparing the surface throughly, complete as pe manufacturer's specification and as per direction of the EIC		
	Two Coat		
	In Ground Floor	348.52	%Sqm
17	Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of Engineer-in-Charge to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer.		
	In Ground Floor (two coat)	348.52	Sqm

18	Applying Interior grade Acrylic Primer of approved quality and brand on plastered or cencrete surface One Coat ii) Solvent based interior grade Acrylic Primer	470.10	%Sqm
19	Applying Acrylic Emulsion Paint of approved make and brand on walls and ceiling including sand papering in intermediate coats including putty (to be done under specific instruction of Superintending Engineer) Two Coat , ii) Luxury Quality	470.10	Sqm
20	Wood work in frame fitted and fixed in position complete including a protective coat of painting at the contact surface of the frame exluding cost of concrete, Iron Butt Hinges and M.S clamps (Malayasian wood) (e) Sal : Malayasian wood In Ground Floor	0.17	*cum*
21	Supplying Solid flush type doors of deluxe decorative (both side) quality, conforming to I:S 2202 timber frame consisting of top and bottom rail and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 27.5mm wide battens places both ways in order to made the door of solid core and internal lipping with teak, mahogony or rose wood approved decorative veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing the shutters in position but excluding the cost of hinges and other fittings **(a) 35mm thick shutters (single leaf)**		
	In Ground Floor	8.40	*SQM*
22	Supplying solid flush type doors of commercial quality, the timber frame consisting of top and bottom rails and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 37.5mm wide battens places both ways in order to make the door of solid core and internal lipping with Garjan or similar wood veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing shutters in position but excluding the cost of hinges and other fittings in ground floor. (b) 32 mm thick shutters (single leaf) In Ground Floor	6.30	*SQM*
23	Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. by cement concrete(1:2:4) as per direction. (Cost of concrete will be paid separately) 40 mm. x 6 mm., 250 mm. length.	24.00	*NOS*

24	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :	12	*NOS*
25	(a) Supplying 'Godrej' mortice lock chromium plated with latch and keys 4 levers, including fitting and fixing complete.	2.00	*NOS*
26	Anodised floor door stopper (Brass)	3.00	*NOS*
27	Supplying, fitting & fixing Surface mounted overhead Door Closer for 2 hour fire rated doors, of size EN-4 for leaf width upto 950/ 1100mm weighing maximum 60/ 80 kgs, CE certified, marked & conforming to EN 1154-2003 of approved quality of reputed brand, complete as per direction & satisfaction of Engineer-in-Charge. for leaf width upto 1100mm	3.00	*NOS*
28	Supplying profiles of required section made of Aluminium Alloy Extrusions conforming to IS: 732-1983 and IS: 1285- 1975; Annodized (with required film thickness and specified colour / natural) matt finished conforming to IS: 1868-1983 for fabrication of composit door, sliding & casement windows, partitions, formed of basic sections of any ISI embossed / certified make and brand as per direction of Engineer - In- Charge. (Payment will be made on finished length of the work).		
	15 Micron colour annodizing.		
	a) 2- track sliding window		
	i) Bottom frame	8.00	Mtr
	ii) Top and side frame.	8.00	Mtr
	iii) Shutter.bottom member	8.00	Mtr
	iii) Shutter.style side member	2.00	Mtr
	iii) interlock member member	2.00	Mtr
	iv) Glazing clip.	2.00	Mtr
	v) Cleat angle. (Non-annodized)	2.00	Mtr
	h)Louvered window.		
	i) Top, bottom and side member.	12.00	Mtr
	ii) Louvered Section.	12.00	Mtr
	iii) Cleat angle (Non-annodized).	16.00	Mtr
	k) Movable door shutter.		
	i) Door frame. (Top & sides).	2.00	Mtr
	ii) Shutter		
	Top rail.	2.00	Mtr
	Bottom rail.	5.00	Mtr
	Lock rail	5.00	Mtr
	Door vertical.	5.00	Mtr

	Glazing clip.	5.00	Mtr

Estimate For Construction of Landscape Area At Kalyani Fisheries Project

Sl. No.	Description of Items	Qty.	Unit
1	Clearing compound premises of shurbs, plants, jungles etc. by cutting and removing as directed (Specific permission of Engineer-in-Charge prior to execution will be necessary). (Payment to be made on area cleared)		
	As per site condition	375.90	Sq.m
2	Supplying and Planting of different plant / trees (Supplying well grown plants bushy and healthy, minimum height as specified i.e. exposed height including all leads & lift, carriage, handling, manuring, applying presticide and fertilizer etc.		
	i) Furcaria veriegated 10-12 leaves in height 20-30cm in earthen pots of size 25cm.	12.00	Each
	ii) Rangon chineese of size not less than 20cm	502.00	Each
	iv) Rangon hi-breed healthy plant.	300.00	Each
	vi) Duranta healthy plant of big size	300.00	Each
	viii) China palm of leaves 4-5 in earthen pots size 25cm	10.00	Each
	xiii) Ficus regnold well branched (bushy) of height 120cm- 135cm in cement pots of size 35cm.	5.00	Each
	xiv) Acalypha species (Red/Green) of height 30cm-90cm in earthen pots of size 25cm.	6.00	Each
	xvii) Bougainvillea (mix variety) of height 30cm-90cm in polybag of size 10cm-15cm.	200.00	Each
	xxvii) Areca Palm 4 - 5 suckers of height 120 cm to 135 cm in earthen pots of size 25 cm.	3.00	Each
	xxx) Dracaena Fragrance of height 90 cm to 60 cm in earthen pots of size 35 cm.	10.00	Each
	xxxviii) Hibiscus Rosa sinensis of height 90 cm to 60 cm in earthen pots of size 20 cm.	10.00	Each

	Azadirachta indica (Neem) of height 120-130cm in big polybag of size 25 cm	5.00	Each
	: Supply and stacking of Polyalthia longifolia (Ashok) plant of height 150-165 cm. in earthen pots of size 25 cm as per direction of the officer-in-charge.	5.00	Each
3	Supplying and fixing grasses tiles of grass Maxican Carpet/ Selection No. 1 Healthy & fresh grasses (size 1'x1' or bigger) including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from wees and fit for mowing including supplying good earth as required by Engineer-in-charge. (Rate includes supply of labour, tools & plants including materials) Green area	200.00	% Sq.M.
4	Supplying and stacking sludge (adequate for Horticulture work) at site in dry cake form from approved disposal work site including royalty, all lead and lift etc. (Sludge measured in stack will be reduced by 8%).	110.00	Cu.M
5	Spreading of sludge, dump manure,/farm yard manure/animel dung manure and good earth in required thickness. This includes supply of labour, tools & plants excluding materials.	200.00	%Sq.M
6	Preparation of beds for hedging and shrubbery by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20%, one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary watering and finally fine dressing, levelling etc., including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50m lift upto 1.5m complete. This includes supply of labour, tools & plants including materials. Planting hedge plants in two rows at 30cm apart Hedge area	150.00	%Sq.M
7	Planting of trees (Avenue plants) in 0.60m dia holea, 1m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure. This includes supply of labour, tools & plants including materials but excluding cost of tree.	35.00	Each

Estimate For Construction of Boundary Wall At Kalyani Fisheries Project			
Sl. No.	**Description of Items**	**Qty.**	**Unit**
	FOR BOUNDARY WALL		
B	**Earth Work**		
1	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete.		
	(a) Depth of excavation not exceeding 1,500 mm.	43.568	Cum
2	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work)		
	a) With earth obtained from excavation of foundation.	38.336	Cum
1	Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.		
	i) In Ground Floor and Foundation.	30.490	Sqm

2	(I) Cement concrete with graded stone ballast (40 mm size excluding shuttering) (A)[PakurVariety] (a) 1:3:6 proportion i) In Ground Floor and Foundation.	2.689	Cum
3	Hire and labour charges for shuttering with centreing and necessary staging upto 4 m. using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels curved or straight including fitting, fixing and striking out after completion of works. (upto roof of ground floor) (c)Steel shuttering or 9 to 12mm thick approved quality ply board shuttering in any concrete work as per decision & direction of Engineer-in-charge. i) In Ground Floor and Foundation.	97.6	Sqm.
4	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. (i) Tor steel/Mild Steel I. SAIL / TATA / RINL	0.833	M.T.

5	Controlled Cement concrete with well graded stone chips (20 mm graded nominal size) excluding shuttering and reinforcement with complete design of concrete as per IS : 456 and relevant special publications, submission of job mix formula after preliminary mix design after testing of concrete cubes as per direction of Engineer-in charge. Consumption of cement will not be less than 300 Kg of cement with Super plasticiser per cubic meter of controlled concrete but actual consumption will be determined on the basis of preliminary test and job mix foumula. In ground floor and foundation.[using concrete mixture] (a) M 20 Grade (For Lintels & Counters) (i) Pakur Variety		
	i) In Ground Floor	10.415	cum
E	***BRICK WORKS***		
1	Labour for Chipping of concrete surface before taking up Plastering work.	91.530	Sqm
2	Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary(Ground floor).[Excluding cost of chipping over concrete surface]		
	With 1:6 cement mortar :- a) 20 mm thick plaster inside		
	i) In Ground Floor	158.220	Sqm

3	Neat cement punning about 1.5mm thick in wall,dado, window sill,floor etc.	29.925	Sqm
K	***Internal & External Painting Work***		
1	Applying **Exterior grade Acrylic primer** of approved quality and brand on plastered or concrete surface old or new surface to recive acrylic exterior emulsion paint including scraping and prepairing the surface throughly, complete as per manufacture's specification and as per derection of E.I.C.		
	b) Two Coats		
	i) In Ground Floor	158.220	sqm.
2	Protective & Decorative Applying **exterior emulsion paint** of approved quality as per manufacture's specification and as per derection of E.I.C. to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer		
	b) Premium 100% Acrylic Emulsion - Two Coat		
	i) In Ground Floor	158.220	sqm.
3	**Priming one coat on steel** or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc.		
	i) In Ground Floor	16.200	sqm.

4	Painting with best quality **synthetic enamel paint** of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary : b) **On steel** or other metal surface : With super gloss (hi-gloss) - iv) Two coats (with any shade except white) i) In Ground Floor	16.200	sqm.
5	M.S. structural works with hollow sections (square or rectangular shape) conforming to IS: 806-1968 & IS:1161-1998) connected to one another with bracket, gusset, cleat as per design, drawing & direction of Engineer-in-Charge complete including cutting to requisite shape & size, fabrication including metal arc welding conforming to IS: 816-1969 & IS: 9595 using electrodes of approved make and brand conforming to IS:814- 2004, haulage, hoisting and erection all complete. The rate includes the cost of all M.S. Hollow section, all consumables such as electrodes, gas and hire charges of all tools and plants and labour reqired for execution and all incidental chages (such as electricity, labour insurance) etc. complete. Payment to be made on the basis of calculated weight of structural memebrs of MS Holow Section as specified in relevent IS code in finished work. Payment for gusset, bracket, cleat may be made by adding the actual weight of such items with weight of finished structural members. For Roof trusses spanning upto 12.00 m		
	Increase 7% of weight for finished structural member for bracket, tee etc.	1.018	mt

7	(a) Supplying, fitting galvanised 3 ply 12 gauge / 4 points line of barbed wire in fencing (holes already made in the body of the post) or fixed by staples tightening and fixing the wires in taut condition with straining bolts including the cost of cutting and of lapping joints in the wire as necessary but excluding the cost of galvanised staples,straining bolt and binding wire where necessary. (Payment to be made on the length of individual lines of wire.)	512.040	%Mtr.
8	Supplying galvanised straining bolts (with eye at one end with double nuts and washers) fitted and fixed complete. (i) 10 mm. dia. (a) 150 mm.	1,369.000	each
9	Supplying galvanised staples fitted and fixed complete (a) 19 mm. to 25 mm. size	1,369.000	% Nos
10	Supplying 7 ply galvanised strand wire 19 gauge fitted and fixed complete with necessary eyes, hooks and straining bolts (excluding the cost of straining bolts.)	512.040	mtr

Construction of Gate Gumty At Kalyani Fisheries Project			
Sl. No.	**Description of Items**	**Qty.**	**Unit**
1	Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75m. as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. (a) Depth of excavation not exceeding 1,500 mm.	23.484	Cum
2	Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm. including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work) a) With earth obtained from excavation of foundation.	15.911	Cum
3	Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.	40.168	Sqm
4	(I) Cement concrete with graded stone ballast (40 mm size excluding shuttering) (A)[PakurVariety] (a) 1:3:6 proportion i) In Ground Floor and Foundation.	3.747	Cum
5	Batch Mixed concrete of M 30 Grade with well Graded stone chips of 20 mm nominal size containing designed quantity of cement per Cu. M of Wet concrete produced in computerised batching plant under controlled condition using approved super plasticizer designing concrete mix following I.S 10262 and I.S. 456 transporting the mix with agitation in transit mixer to work site depositing the mix on a platform erected for the purpose at required level of concreting and then placing the mix in its final location of form work compacting and curing the same complete as per specification and direction of the Engineer-in charge including hire charges of computerised batching plant, transit mixer with all accessories vibrators etc. inclusive of all other incidental charges in this connection complete but excluding cost of hire charge of platform and its supporting staging which would be paid through separate item. Consumption of cement will be (As per approved Design Mix). [Cement to be supplied by agency then item rate to be deduced as per Format A of Annexure I] [with Batching Plant & transit mixer](Pakur Variety) With Approved Concrete Pump i) Foundation & Ground floor	9.826	cum

6	Hire and labour charges for shuttering with centreing and necessary staging upto 4 m. using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels curved or straight including fitting, fixing and striking out after completion of works. (upto roof of ground floor) (c)Steel shuttering or 9 to 12mm thick approved quality ply board shuttering in any concrete work as per decision & direction of Engineer-in-charge. i) In Ground Floor and Foundation.	95.723	cum
7	Brick work with 1st class bricks in cement mortar (1:6) i) In Foundation and Plinth (Using for Plinth)	3.480	cum
8	Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. (i) Tor steel/Mild Steel I. SAIL / TATA / RINL 120Kg/Cum of concrete	1.179	M.T.
9	Supplying & laying 3mm thick pre-fabricated plastomeric water proofing membrane conforming to EN 12311-1 & ASTMD 5147, manufactured with **atactic poly propylene (APP)** modified premium grade asphalt , specially reinforced with non-woven polyester core with polyester reinforcement @160 gms per sqm & both faces covered with thermo-fusible polyethylene film /MineraL on top face over a coat of primer @ 0.40 lit/sqm of manufacturer's specification on smooth,clean dry surface prepared wherever required.Lap joint shall be provided of 75 mm in longitudinal & 100 mm in transverse direction and fused using LPG/ Propane torch employing extra care ensuring full bondage, complete removal of entrapped air and sealing edges into grooves in appropriate manner as per direction of Engineer -in-charge all complete including materials,labour and applicable taxes. (Payment shall be made on the basis of finished surface area.) Membrane Property: Softening Point > 150 deg C, Cold Flexibility < -6 deg C, Tensile Strength, N/cm : 600 (longitudinal), 450 (transverse), Tearing Strength, N: 300 (longitudinal), 200 (transverse)	30.000	Sqm.
10	Applying 2 coats of Non-Toxic Acrylic Polymer modified Paint having adhesive & waterproofing properties by mixing in proportion (1 liquid: 4 cementitious material) or as per manufacturer's specification for water proofing layer in water tank etc. For All Floor	30.000	Sqm.
11	Brick work with 1st class bricks in cement mortar (1:6) i) In Ground Floor	18.268	cum
12	125 mm. thick brick work with 1st class bricks in cement mortar (1:4) in ground floor. i) In Ground Floor	17.933	Sqm

13	Extra for using approved H.B netting in every third layer in any floor	17.933	Sqm
14	Cutting chase upto 125 x 150 mm. and subsequent mending of damages. In brick wall [Cement-3.6 Kg/Mtr]	20.000	Mtr.
	In concrete wall [Cement-3.6 Kg/Mtr]	10.000	Mtr.
15	Labour for Chipping of concrete surface before taking up Plastering work.	35.750	Sqm
16	Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary(Ground floor).[Excluding cost of chipping over concrete surface] With 1:6 cement mortar :- a) 20 mm thick plasteri) In Ground Floor	102.000	Sqm
	With 1:6 cement mortar :- b) 15 mm thick plaster i) In Ground Floor	80.970	Sqm
	With 1:4 cement mortar : - c) 10 mm thick plaster i) In Ground Floor	24.750	Sqm
17	25 mm. thick damp proof with cement concrete (1:1.5:3)(with graded stone aggregate 10 mm. normal size) and painting the top surface with a coat of bitumen [VG.40] using 1.7 kg. per sq.m. including heating the bitumen and cost and carriage of all materials complete. [Bitument to be supplied by the Agency]	6.00	Sqm
18	Supplying and laying true to line and level **Anti-Skid, Full Body, Homogeneous & Granular finish Vitrified Tiles** conforming to IS:15622-2006 & IS 4457-2007 and testing shall be made in accordance with IS:13630 [Non- modular sizes for tiles with Skid resistance > 0.5, Mohr's hardness > 5.0, Staining resistance: Class-1, Water Absorption: E < 0.5%], MOR > 35 N/sq.mm in Internal area of building e.g. Toilet Block, Passage, Corridor, Accessible Open Terrace etc. set in 20 mm sand cement mortar (1:4) and 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg./Sqm or using Polymerised Adhesive (6 mm thick layer applied directly over finished artificial stone floor/ Mosaic etc without any backing course) laid after application slurry using 1.75 Kg of cement per Sqm below mortar only, joints grouted with admixture of white cement and colouring pigment to match with colour of tiles/ epoxy grout materials of approved make as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, labour and all other incidental charges complete true to the manufacturer's specification and direction of Engineer-in-Charge. (White cement, synthetic adhesive and grout material to be supplied by the contractor). In Ground Floor: Sizes-600 mm x600mm x10 mm with breaking strength >1500 N i) In Ground Floor	3.960	Sqm

19	Supplying and laying true to line and level **Double Charge Vitrified Tiles** of approved brand conforming to IS 15622: 2006 (Group B I a) and tested as per IS 13630:2006 (relevant parts) [Non-modular sizes for tiles with Water Absorption (av.) ≤ 0.08 %] in floor, skirting etc. using polymerised adhesive of 6mm thick layer applied directly over finished artificial stone floor/Mosaic etc without any backing course and joints grouted with admixture of white epoxy grout materials of approved brand including spacer -2mm as directed and removal of wax coating of top surface of tiles with warm water and polishing the tiles using soft and dry cloth upto mirror finish complete including the cost of materials, Iabour and all other incidental charges complete as per direction of Engineer in- Charge. (Note: This work should not be executed without specific permission of Superintending ln Ground FIoor:(size not Iess than 600mmX 600 mm X 9.5 mm thick)	20.770	Sqm
20	Supplying, fitting and fixing Black Stone slab used in Kitchen slab, alcove, wardrobe etc. laid and jointed with necessary adhesive Cement mortar (1:2) including grinding or polishing as per direction of Engineer-in -Charge in Ground Floor.	4.125	Sqm
21	Supplying, fitting & fixing **granite slabs 15mm to 18 mm. thick** with uniform texture & without decorative veins in columns, **wall, facia, rise etc.** with 15 mm thick [avg] cement mortar (1:2) including making suitable arrangements to hold the stones properly by brass / copper hooks including pointing in cement mortar (1:2) (1 white cement : 2 marble dust) with admixture of pigment matching the stone shades all complete as per direction of the Engineer-incharge including cost of all materials, labours, scaffolding, staging, curing and roughening of concrete surface complete. [Using cement slurry at back side of granite @ 4.4 kg/sq.m & white cementslurry for joint filling @ 1.8 kg/sq.m]In ground floor (b) Area of each Granite slab 0.6 to 1.0 Square meter.	6.570	Sqm
22	Supplying, fittings and fixing both side side prelaminated 35mm thick solid flush type door shutter , the timber frame consisting of top and bottom rails and side styles of well seasoned timber 65mm wide each and the entire frame fitted with 37.5mm wide battens places both ways in order to make the door of solid core and internal lipping with Garjan or similar wood veneers using phenol formaldehyde as glue etc. complete, including fitting, fixing shutters in position but excluding the cost of hinges and other fittings in ground floor. (a) 35 mm thick shutters (single leaf)	3.780	Sqm
23	Supplying, fitting and fixing **M.S. clamps for door** and window frame made of flat bent bar, end bifurcated with necessary screws etc. In cement concrete(1:2:4) including cutting of brick work/concrete work as per direction.	14.000	Each
24	**Iron butt hinges** of approved quality fitted and fixed with steel screws, with ISI mark.**(Oxidised) Any Floor** viii) 100mm. X 75mm. X 3.50mm.	8.000	Each

25	ii) **Brass hasp bolt** of approved quality fitted and fixed complete (oxidised) with 16mm dia rod with centre bolt and round fitting. **300 mm. long**	2	Each
26	**Anodised aluminium barrel / tower / socket bolt** (full covered) of approved manufactured from extruded section conforming to I.S. 204/74 fitted and fixed with cadmium plated screws: **Any Floor** b) 300mm long x 12mm dia. bolt.	3	Each
27	**Anodised aliminium D-type handle** of approved quality manufactured from extruded section conforming to I.S. specification (I.S. 230/72) fitted and fixed complete: (a) With continuous plate base (Hexagonal / Round rod) (vii) 150 mm grip x 12 mm dia rod.	5	Each
28	Door Stopper (Brass)	2	Each
29	Providing and fixing pressed steel door frames conforming to IS: 4351,manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge: **Profile C - Fixing with adjustable lugs with split end tail to each jamb** Ground Floor	10.200	mtr.
30	(a) M.S.or W.I. Ornamental grill of approved design joints continuously welded with M.S, W.I. Flats and bars of windows, railing etc. fitted and fixed with necessary screws and lugs in ground floor. (i) Grill weighing above 10 Kg./sq.mtr and up to 16 Kg./sq. mtr. i) In Ground Floor	0.450	Qntl.
31	Collapsible gate with 40mm x 40mm x 6mm Tee as top and bottom guide rail, 20mm x 10mm x 2mm vertical channels 100mm apart in fully stretched position 20mm x 5mm M.S. flats as collapsible bracings properly rivetted and washered including 38mm steel rollers including locking arrangements, fitted and fixed in position with lugs set in cement concrete and including cutting necessary holes, chasing etc. in walls, floors etc. and making good damages complete. i) In Ground Floor	3.300	Sqm
32	Applying **Exterior grade Acrylic primer** of approved quality and brand on plastered or concrete surface old or new surface to recive acrylic exterior emulsion paint including scraping and prepairing the surface throughly, complete as per manufacture's specification and as per derection of E.I.C. b) Two Coats	102.000	%sq m.

33	Protective & Decorative Applying **exterior emulsion paint** of approved quality as per manufacture's specification and as per derection of E.I.C. to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer b) Premium 100% Acrylic Emulsion - Two Coat i) In Ground Floor	102.000	sqm.
34	(b) Rendering the surface of walls and ceiling with white cement based wall putty of approved make and brand(1.5mm thick) i) In Ground Floor	105.720	sqm.
35	Applying 2 coats of **interior grade Acrylic Primer** of approved quality and brand on plastered or cencrete surface old or new surface to receive distemper/Acrylic emulsion paint including scraping and preparing the surface throughly, complete as per manufacturer's specification and as per direction of the Engineer-in-charge. Two Coat -Solvent based interior grade Acrylic Primer i) In Ground Floor	105.720	sqm.
36	Applying **Acrylic Emulsion Paint** of approved make and brand on walls and celling sand papering in intermediate coats including putty. (i) Luxary Quality (Two coats) i) In Ground Floor	105.720	sqm.
37	**Priming one coat on steel** or other metal surface with synthetic oil bound primer of approved quality including smoothening surfaces by sand papering etc. i) In Ground Floor	22.338	sqm.
38	Painting with best quality **synthetic enamel paint** of approved make and brand including smoothening surface by sand papering etc. including using of approved putty etc. on the surface, if necessary : b) **On steel** or other metal surface : With super gloss (hi-gloss) - iv) Two coats (with any shade except white) i) In Ground Floor	22.338	sqm.

39	Supplying profiles of required section made of Aluminium Alloy Extrusions conforming to IS: 732-1983 and IS: 1285- 1975; Annodized (with required film thickness and specified colour / natural) matt finished conforming to IS: 1868-1983 for fabrication of composit door, sliding & casement windows, partitions, formed of basic sections of any ISI embossed / certified make and brand as per direction of Engineer - In- Charge. (Payment will be made on finished length of the work).		
	TOTAL 2 TRACK SLIDING WINDOW		
	i) bottom frame.	3.600	Mtr
	ii) top & side frame	6.000	Mtr
	iii) Shutter.bottom member	3.900	Mtr
	iii) Shutter.style side member	12.000	Mtr
	iii) interlock member member	6.000	Mtr
	iv) Glazing clip.	19.600	Mtr
	v) Cleat angle. (Non-annodized)	2.400	Mtr
	TOTAL FIXED GLAZING IN SLIDING WINDOW		
	i) Top, bottom and side member.	10.200	Mtr
	ii) Mullion.	8.600	Mtr
	iii) Glazing clip.	6.800	Mtr
	TOTAL LOUVERED WINDOW		
	i) Top, bottom and side member.	3.000	Mtr
	ii) Louvered Section.	7.700	Mtr
	iii) Cleat angle (Non-annodized).	0.800	Mtr
40	Labour charge for fabrication and installation of composite door, window, partitions made from annodized extruded alloy aluminium sections for the following units:- (A) Glazed aluminium sliding windows made of extruded and annodized alloy aluminium sectios, fabrications, including cutting to proper shape and size, drilling and aligning of window shutter frame fitted with in built locking arrangements, sliding rollers and other necessary fittings, fixture, adhesives and joineries along with extruded neoprine or EPDM gasketing in between window frame and masonry work (walls, column, beam.lintels etc.) as well as between glass and shutter frame for fixing glass and Polysulphide sealant and in between shutter and window frame where necessary including cutting to requisite size and fixing glass as per drawing, specification and direction of EIC. The rate includes the hire charge of all tools and plants, including all incidental charges, adhesive, joineries such as screw, cleat angle etc. but excluding the cost of extruded aluminium sections, glass, neoprene / EPDM gasket, locking arrangement and rollers. i) 2 track sliding window. Ground Floor	3.600	Sqm

	c) Fixed Window frame of size 67 x 62 mm & Mullion (if required) of size 67 x 78 mm both having wall thickness of 2.3 ± 0.2 mm Ground Floor	1.800	Sqm
	v) Louvered window. Ground Floor	0.540	Sqm
41	Supplying EPDM gusket of approved make and brand as per direction of Engineer in charge. **For openable / Casement windows.** EPDM / weather gasket for outer frame and mullion. Ground Floor	18.000	
42	**Supplying bubble free float glass** of approved make and brand conforming to IS: 2835-1987; (A) clear, toughened glass conforming to IS: 2553-1992 (part-II) 6mm thick Ground Floor	6.210	Sqm
43	Supplying, fitting & fixing factory made foam PVC (density shall not be less than 600 kg/cum) door frame (finished weight of 2.73 kg/mtr.) of size 100mm X 45mm made off with 5mm thick extruded foam PVC sheet, mitre cut at junction of horizontal and vertical member and joined them by heat welding. Entire door frame profiles to be reinforced with steel primer coated 19 SWG 40mm X 20mm M.S. tube. An additional 5mm thick PVC sheet with desired colour/shade to be provided at the exposed surface and three nos 5mm thick PVC sheet to be provided as gap insert. The door frame to be fixed with wall by using 8mm dia. and 100mm long strainless steel screws and PVC fasteners. A minimum of 4 nos. screws to be provided for each vertical member & 2 nos. for horizontal member all complete as per direction of Engineer-in-Charge.	4.950	Mtr
44	Providing & fixing factory made 30 mm thick factory made solid pvc door shutter made out of single piece extruded solid pvc profile . The style & rails shall be of size of 75 x 30 mm having wall thickness of 5 mm. The style and top bottom rail shall have one side a thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power. 15 mm thickness shall be of single piece extruded solid pvc profile whereas it shall be not be made of sheet pasted profile) . The styles and rails shall be reinforced with MS tube of size 18 mm(±) 1mm x 18 mm (±) 1mm x 1mm painted with primer all four corners of reinforcement to be welded or sealed . solid pvc extruded bidding (push fit type) will be set inside the styles and rails with a cavity to receive single piece extruded 5 mm pvc sheet as panel. The styles and rails will be metered cut and join with the help of pvc solvent cement, self tapping screw and braket of size 200 x 75 mm / welded at each corner. Single piece extruded solid pvc lockrail of size 100 x 30 mm with a wall thickness 5 mm & 15 mm integrally extruded in the middle of lockrail & fixed with styles with the help of PVC solvent cement & self driven self tapping screws of size 100mm x 8mm complete as per manufacturers specifications and direction of Engineer-in-Charge.	1.575	Sqm
	TOTAL 2 NOS GATE GUMTY		

Estimate For Construction of Internal Road At Kalyani Fisheries Project			
Sr. #	**Description of Items**	**Qty.**	**Unit**
1	**Cast in Situ Cement Concrete M20 Kerb** Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409 of Specifications for Road & Bridge Works of MoRT&H (5th Revision). (The rate is inclusive of cost of all materials, labour, hire and usage charges of machinery and all incidental charges in this connection.) B) Using Concrete Mixer	1150.00	METER
2	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity) (B) Do - by fine sand	2330.06	%Cum.
3	100 mm thick interlocking designer concrete paver block M-50 grade for hightraffic zone, bus terminus, industrial complex, mandi houses etc. as per IS: 15658- 2006 (over 20-40 mm medium sand bed on 250mm thk WBM/ WMM base course & 250 mm thk bound gnaular/ granular sub-base course & filling the interstices of blocks with fine sand by brooming & subsequent watering including cost of sand for sand bed but excluding cost of base, sub-base course & subgrade preparation.) complete as per direction of Engineer-in-Charge. [Note: Subgrade CBR shouldnot be less than 5] Colour Decorative	5177.90	SQM
4	Box cutting or filling in Road embankment in all sorts of soil including spreading the spoils properly over the flank as necessary or on berm to approximate grade & camber and rolling the sub-grade with power roller to proper camber and grade as per direction and satisfaction of Engineer-in-charge including uprooting and removing plants and jungles when and where necessary. (a) Depth up to 150 mm. (b) For each additional Depth of 150mm and part thereof.	4530.67 4530.67	SQM SQM
5	Hire and labour charges for Shuttering with or without staging upto 4.0 m height using approved stout props with wooden planks/ply wood/steel sheet plate with required bracing for any kind of plain or reinforced concrete works in all sorts of minor structure including culvert, box culvert, crossdrain etc. The rate is inclusive of fitting, fixing and striking out after completion of work as per specification and direction. (b) Where staging is not required.	42.53	SQM

6	Extra for manual compaction of earth by rammers / hand roller in 250 mm layers including watering etc. if required. (Borrow pit measurement).	1078.73	CUM
7	Water Bound Macadam Base Course Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening / binding materials to fill up the interstices of coarse aggregate, watering including lighting, guarding, barricading and making necessary earthen bundh of one metre width on each side and preparing the bed by necessary cutting or filling, including cost of all materials and hire and labour charges of all men and machinery and compacting to the required density, as per Clause 404 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).		
	(ii) Grading-I Aggregate (63 mm to 45 mm) Using Stone Screening Type B (11.2 mm) A. Mechanical Means	483.27	CUM
	(iii) Grading-II Aggregate (53 mm to 22.4 mm) Using Stone Screening Type B (11.2 mm) A. Mechanical Means	483.27	CUM
	Analysis Rate		
8	Granular Sub-base with Graded Material(Table:- 400-1) B. By Mix in Place Method : Construction of granular sub-base by providinggraded material, mixing by mix in place method with Rotavator at OMC, spreading in uniform layers with Motor grader on prepared surface in proper grade and camber, compacting with vibratory roller to achieve thedesired density, including lighting, guarding, barricading, including cost of all materials, machinery, tools and plants including cost of quality control complete as per Clause 401 of Specifications for Road & Bridge Works of MoRT&H (5th Revision).		
	(i) Grading – I	1078.73	cum
	Analysis Rate		

Estimate For Construction of Parking At Kalyani Fisheries Project

Sr.#	Description of Items	Qty.	Unit
1	80 mm thick interlocking designer concrete paver block M-40 grade for medium-traffic zone & utility cuts on arterial roads etc. as per IS: 15658-2006 (over 20-40 mm medium sand bed on 250mm thk WBM/ WMM base course & 250 mm thk bound gnaular/ granular sub-base course & filling the interstices of blocks with fine sand by brooming & subsequent watering including cost of sand for sand bed but excluding cost of base, sub-base course & subgrade preparation.) complete as per direction of Engineer-in-Charge. [Note: Subgrade CBR shouldnot be less than 5] Colour Decorative	570.53	SQM
2	(A) Filling in foundation or plinth by silver sand in layers not exceeding 150 mm as directed and consolidating the same by thorough saturation with water, ramming complete including the cost of supply of sand. (payment to be made on measurement of finished quantity) (B) Do - by fine sand	82.50	%Cum.
3	Single brick flat soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with powdered earth or local sand.	660.00	sqm
4	Cement concrete with graded stone ballast (40 mm size excluding shuttering. In ground floor a) Pakur Variety 1:3:6 Proportion	99.00	cum
5	Box cutting or filling in Road embankment in all sorts of soil including spreading the spoils properly over the flank as necessary or on berm to approximate grade & camber and rolling the sub-grade with power roller to proper camber and grade as per direction and satisfaction of Engineer-in-charge including uprooting and removing plants and jungles when and where necessary. (a) Depth up to 150 mm. (b) For each additional Depth of 150mm and part thereof.	380.94 380.94	sqm sqm
6	Hire and labour charges for Shuttering with or without staging upto 4.0 m height using approved stout props with wooden planks/ply wood/steel sheet plate with required bracing for any kind of plain or reinforced concrete works in all sorts of minor structure including culvert, box culvert, crossdrain etc. The rate is inclusive of fitting, fixing and striking out after completion of work as per specification and direction. (b) Where staging is not required.	12.00	sqm

Estimate For Construction of Fire At Kalyani Fisheries Project			
Sl. No.	**Description of Item**	**Unit**	**Qty.**
1.0	**Portable Chemical Fire Extinguishers**		
1.1	Supply, Installation, Testing & Commissioning (S.I.T.C.) of ISI marked 4.5 Kg. capacity carbon-dioxide type portable fire extinguisher (IS:15683), flat base including vlave, discharge hose, initial fill with CO2 gas & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc.	Each	3
1.2	S.I.T.C. of ISI marked 4 Kg. capacity ABC powder type portable fire extinguisher (IS:15683), with gun-metal cap and nozzle including initial fill & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc.	Each	3
1.3	S.I.T.C. of ISI marked 9 Ltr. capacity Water type portable fire extinguisher (IS:15683), with gun-metal cap and nozzle including initial fill & wall suspension bracket and complete in all respect with all labour, tools & plants, transportation, taxes, levies etc. **NS**	Each	3
5.0	**Addressable type Fire Alarm System**		
5.1	Supplying, installation, testing & commissioning of response indicator on surface / recessed MS Box having two LED, metallic cover complete with all connections etc as required.	Each	2
5.2	Supplying and Drawing 1.1 KV single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) of the following sizes in the prelaid polythene pipe and by the prelaid GI fish wire and makingnecy. connection as required. **(Control Cabling for connection between Push Button Station and pump panel) .**		
	(a)2 x 22/0.3 (1.5 sqmm)	mtr	900
5.3	Supplying and fixing polythene pipe complete with fittings as necy. under ceiling/beam, bound with 22 SWG GI binding wire incl. supplying and drawing 1x18 SWG GI Wire as fish wire inside the pipes and fittings and providing 50 mm dia disc of MS sheet (20 SWG) having colour paint at one face fastened at the load point end of the polythene pipe with fish wire (synchronizing with roof/beam casting work of building construction)		
5.3.1	19mm dia 3mm thick Polythene Pipe	RM	400
5.3.2	25mm dia 3mm thick Polythene Pipe	RM	20
5.4	Supplying, installation, testing & commissioning of fault isolator complete with base as required.	Each	2

5.5	Supplying, installation, testing & commisssioning of intelligent addressable programmable sounder complete as required	Each	2
5.6	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 ± 5% V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications. Two Loop Panel.	Each	1
5.7	Supplying, installation, testing & commissioning of smoke detector with builtin LED and mounting base complete with all connections etc. as required.	Each	21
5.8	Supplying, installation, testing & commissioning of intelligent analog addressable photothermal detector complete with mounting base complete as required.	Each	3
5.9	Supplying, installation, testing & commisssioning of intelligent addressable programmable sounder complete as required	Each	4
5.10	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	Each	12
5.11	Supplying, installation, testing & commissioning of addressable fire control module complete as required.	Each	3
5.12	Supplying, installation, testing & commissioning of digital audio amplifier 75 Watt, 25V rms operating at 240 Volt AC Supply complete as required.	Each	1
5.13	Supplying and Drawing 1.1 KV single core stranded 'FR' PVC insulated & unsheathed single core stranded copper wire (Brand approved by EIC) of the following sizes in the prelaid polythene pipe and by the prelaid GI fish wire and makingnecy. connection as required. (Control Cabling for connection between Push Button Station and pump panel) .	Each	1
	2 x 1C x 1.5 sq. mm	mtr	48.03855
	3 x 1C x 1.5 sq. mm	mtr	20
	2 x 1C x 2.5 sq. mm	mtr	40
	3 x 1C x 2.5 sq. mm	mtr	40
6.0	Safety Signage		

6.1	Supply & Fixing EI danger board on wall, 20 cm x 30 cm (8"x12")		
6.1.1	" EXIT "	Each	7
6.1.2	" ARROW "	Each	7
7.0	Supply & Fixing 2 run 240 sqm x 3.5 core alumunium armoured xlp cable (1.1 kv grade) at electrical panel room to fire panel room. termination/splicing	mtr	10
8	Supplying and fixing compression type gland complete with brass gland, brass ring & rubber ring for dust & moisture-proof entry of XLPE/PVC armoured cables as below : (b) For 3 core upto 240 sqmm	Each	2
9	Finishing of the XLPE/PVC insulated armoured cable ends by soldering with cable sockets and insulated tapes etc., including supplying sockets, soldering materials, tapes etc. and making connection to switch, BDB and BBC etc. iv)3½ core 240 sqmm cable	SET	2

List of Equipment and Machinery along with specification for installation of 5 TPH floating fish feed & 5TPH Shrimp feed or Sinking fish feed plant.

I PLANT COMPONENTS

A RAW MATERIAL RECEIVING AND CLEANING SYSTEM

A-1 RAW MATERIAL RECEIVING AND CLEANING LINE 1

1 1 INTAKE PIT

2 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.

Filtering bag device
Cage filtering bag skeleton. Knitting polyester fibre filtering bag.

Dust cleaning system Through type solenoid valve.
Nozzles fixed on the jetting rod

Round Type Bag with high efficiency. Filtering Area: 16 m^2
Air volume: 80 m^3/min

With 24 filter sleeves.

3 1 FAN

Mild steel execution.

Squirrel cage motor 5.50 kW.

4 1 CHAIN CONVEYOR

Product Mill feed
Capacity 20 t/h
Length 8 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe. Tail station

self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
Double type conveying gravity troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
dosing hood(s).
Set of required conveyor supports.

LLCA does not have discharge hoppers.
Helical geared motor 3 kW, energy efficiency class IE3.

5 1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 20 t/h
Overall height 11.5 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories
Aspiration duct
Speed monitor Belt track monitor

Helical geared motor 2.2 kW, energy efficiency class IE3.

6 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.

Filtering bag device
Cage filtering bag skeleton. Knitting polyester fibre filtering bag.

Dust cleaning system Through type solenoid valve.
Nozzles fixed on the jetting rod

Round Type Bag with high efficiency.
Filtering Area: 1.6 m²

Air volume: 8 m³/min

With 4 filter sleeves.

7 1 SMALL ALUMINUM FAN

Capacity: 8 m³/min. Pressure:1800pa.

Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

8 1 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.

with 2 limit switches. Cylinder and Solenoid.
1 set flange(s), mild steel.

9 1 DRUM SIEVE

Dust-tight, entirely of mild steel construction on support legs, with product feed inlet, product feed chute, aspiration connection, lateral

inspection port and removable front-end door. Brush for sieve cleaning. The sieve discharge section is subdivided for the product and tailings.

The horizontal overhung-type sieve drum is easily replaceable. The sieve cylinder is cylindrical, consisting of a punched plate rolled into a cylindrical shape and a flange. The size of the sieve holes is determined

according to the type of product to be handled and the specified throughput.
1 Helical geared motor 0.37 kW, energy efficiency class IE3.

10 1 SPOUT MAGNET

Metal construction.

Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core
fastened onto the hinged door for cleaning purposes.

The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint

11 1 AUTOMATIC HOPPER SCALE

Product: soybean meal Capacity: 20 t/h

The automatic dump scale MSDM is suitable for internal production control. The weigh hopper is directly suspended on a bar-force transducer, allowing accurate determination of weight. Enclosure free
construction prevents dust accumulation and ensures excellent sanitation.

Fully electronic high accuracy scale. Tubular construction without jacket.
Weigh hopper suspended on three rod-type load cells. Steel frame with legs for supporting or suspending installation.
Inlet connection part, weigh hopper with double outlet gate and outlet section assembled.
Product feeding through 1-step clam gate.

Lower surge hopper, outlet equipped with manually adjustable feed gate.
Adapter to lower surge hopper.

12 1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 20 t/h
Overall height 34 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories
Aspiration duct Speed monitor

Belt track monitor
Helical geared motor 4 kW, energy efficiency class IE3.

13 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling.

Large surface fitted with stiffener. Filtering bag device
Cage filtering bag skeleton.

Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve.

Nozzles fixed on the jetting rod
Round Type Bag with high efficiency.

Filtering Area: 1.6 m² Air volume: 8 m³/min

With 4 filter sleeves.

14 1 SMALL ALUMINUM FAN

Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.

With motor 0.75kW. Energy efficiency class IE3.

15 1 CHAIN CONVEYOR

Product Mill feed
Capacity 20 t/h
Length 8 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.

Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
discharge gate(s) pneumatically operated, with pneumatic piston, valve and positioning switches.
Set of required conveyor supports.
Helical geared motor 2.2 kW, energy efficiency class IE3.

1 ASPIRATION FILTER
Complete with:
Machine body for mounting on a chain conveyor. Made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device
Cage filtering bag skeleton. Knitting polyester fibre filtering bag. Dust cleaning system

Through type solenoid valve. Nozzles fixed on the jetting rod Round Type Bag with high efficiency. Filtering Area: 1.2 m²

With 4 filter sleeves.

1 SMALL ALUMINUM FAN
Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

2 ROTARY DISTRIBUTOR
Spout diameter: 250 mm Number of outlet spouts: 10
With rotating inner spout for branching one inlet onto various outlets. With position indication at each outlet for remote control. A door is built into the steel housing for access to the rotating spout.
Without connection to aspiration system. Construction in mild steel.
1 Helical geared motor 0.37 kW, energy efficiency class IE3.

A-2 RAW MATERIAL RECEIVING AND CLEANING LINE 2

1 INTAKE PIT

1 ASPIRATION FILTER
Complete with:
Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device
Cage filtering bag skeleton. Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve. Nozzles fixed on the jetting rod Round Type Bag with high efficiency. Filtering Area: 16 m²
Air volume: 80 m³/min

With 24 filter sleeves.

1 FAN

Mild steel execution.

Squirrel cage motor 5.50 kW.

1 CHAIN CONVEYOR
Product Mill feed
Capacity 20 t/h
Length 5.5 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.
Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
Double type conveying gravity troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
1 dosing hood(s).
Set of required conveyor supports.

Helical geared motor 2.2 kW, energy efficiency class IE3.

1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 20 t/h
Overall height 11.5 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Aspiration duct

Speed monitor Belt track monitor
Helical geared motor 2.2 kW, energy efficiency class IE3.

24 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling.

Large surface fitted with stiffener. Filtering bag device
Cage filtering bag skeleton.

Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve.

Nozzles fixed on the jetting rod
Round Type Bag with high efficiency. Filtering Area: 1.6 m^2

Air volume: 8 m^3/min

With 4 filter sleeves.

25 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.

With motor 0.75kW. Energy efficiency class IE3.

26 1 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.

with 2 limit switches. Cylinder and Solenoid.
1 set flange(s), mild steel.

27 1 CENTRIFUGAL SIFTER

Construction in mild steel.

With 3 beater rails and 3 brush rails.
Steel housing with two service doors. With built-on safety devices for changing sieves. Rotor bearings on both sides of the front-end plates.

Split sieve of perforated sheet metal Ø 16 mm, for fast and easy changing of the sieves. With outlet box for the overs. With integrated torque arm.

Connection-spout to central aspiration system.
Parallel shaft helical geared motor 15 kW, energy efficiency class IE3.

28 1 SPOUT MAGNET

Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss

1 AUTOMATIC HOPPER SCALE
Product: Meal Feed

Capacity: 15 t/h

The automatic dump scale MSDM is suitable for internal production control. The weigh hopper is directly suspended on a bar-force transducer, allowing accurate determination of weight. Enclosure free construction prevents dust accumulation and ensures excellent sanitation.

Fully electronic high accuracy scale. Tubular construction without jacket.
Weigh hopper suspended on three rod-type load cells. Steel frame with legs for supporting or suspending installation.
Inlet connection part, weigh hopper with double outlet gate and outlet section assembled.
Product feeding through 1-step clam gate.
Lower surge hopper, outlet equipped with manually adjustable feed gate.
Adapter to lower surge hopper.

1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 20 t/h
Overall height 34 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Aspiration duct
Speed monitor Belt track monitor

Helical geared motor 4 kW, energy efficiency class IE3.

31 1 ASPIRATION FILTER

Complete with:

Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton. Knitting polyester fibre filtering bag.
Dust cleaning system

Through type solenoid valve. Nozzles fixed on the jetting rod
Round Type Bag with high efficiency.

Filtering Area: 1.6 m^2 Air volume: 8 m^3/min

With 4 filter sleeves.

32 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped

with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

33 1 CHAIN CONVEYOR

Product Mill feed
Capacity 20 t/h
Length 8 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.
Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single-type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
2 discharge gate(s) pneumatically operated, with pneumatic piston, valve and positioning switches.
Set of required conveyor supports.

Helical geared motor 2.2 kW, energy efficiency class IE3.

34 1 ASPIRATION FILTER

Complete with:
Machine body for mounting on a chain conveyor.

Made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton. Knitting polyester fibre filtering bag.
Dust cleaning system

Through type solenoid valve.
Nozzles fixed on the jetting rod Round Type Bag with high efficiency.

Filtering Area: 1.2 m^2

With 4 filter sleeves.

35 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.

Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

B DOSING AND MIXING SYSTEM

B-1 DOSING LINE 1

36 10 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

37 10 DOSING BIN

38 10 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

39 10 PN. HAMMER

40 10 TUBULAR SCREW CONVEYOR

Technical data

Product: Mill feed

Capacity: 30 t/h
Bulk density 0.55 t/m³
Length: 3 m
Inclination: 0 Degree

Executed in mild steel.
Tubular housing. Shaft with continuous flights. Necessary intermediate bearings.
1 end outlet.

1 high-capacity inlet(s).
With chain transmission and guard Set of required conveyor supports.

With helical geared motor, manufactured by NORD. Motor size 3 kW

41 1 HOPPER FOR SCALE 1000KG

Material: MS Volume:2000l

42 3 LOAD CELL

Toledo brand.

43 1 PN. HAMMER

44 1 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication. 1 set flange(s), mild steel.

45 1 SINGLE WING VALVE

For pneumatic remote operation. Diameter: 500 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft.

With solenoid valve and limit switch.

46 1 SINGLE WING VALVE

For pneumatic remote operation. Diameter: 300 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft.

With solenoid valve and limit switch.

47 1 ASPIRATION FILTER

Made of mild steel plate by welding and assembling.

Through type solenoid valve.
Round Type Bag with high efficiency.

With compressure air filter and pressure regulator.

DOSING LINE 2

6 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
6 DOSING BIN

6 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
8 PN. HAMMER

6 TUBULAR SCREW CONVEYOR
Technical data
Product: Mill feed
Capacity: 20 t/h
Bulk density 0.55 t/m³
Length: 3 m
Inclination: 0 Degree

Executed in mild steel.
Tubular housing. Shaft with continuous flights. Necessary intermediate bearings.

1 end outlet.
1 high-capacity inlet(s).
With chain transmission and guard

Set of required conveyor supports.
With helical geared motor, manufactured by NORD. Motor size 2.2 kW

53 1 HOPPER FOR SCALE 500KG

Material: MS Volume:1000l

54 3 LOAD CELL

Toledo brand.

55 1 PN. HAMMER

56 1 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air

cylinder. 2 limit switches for position indication. 1 set flange(s), mild steel.
1 SINGLE WING VALVE
For pneumatic remote operation. Diameter: 400 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.
1 SINGLE WING VALVE
For pneumatic remote operation. Diameter: 250 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.
1 ASPIRATION FILTER
Made of mild steel plate by welding and assembling. Through type solenoid valve.
Round Type Bag with high efficiency.
With compressure air filter and pressure regulator.

HAND INTAKE LINE

1 BAG INTAKE
Stationary execution in mild steel, powder coated.
With cylindrical housing and built-on bag intake dump hopper and lockable lid.
Incl. proximity switch and pneumatic piston for lid interlocking. Rectangular opening for small filter AHMB / MVRW.
Screen diameter 75 cm.
With three pendulous supports, vibratory drive 0.12 kW. 2 Sleeves and clamps.
1 ASPIRATION FILTER
Complete with:
Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device
Cage filtering bag skeleton. Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve. Nozzles fixed on the jetting rod Round Type Bag with high efficiency. Filtering Area: 1.44 m^2

Air volume: 7.2 m³/min

With 4 filter sleeves.

1 SMALL ALUMINUM FAN
Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

1 SURGE HOPPER

1 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
1 SINGLE WING VALVE
For pneumatic remote operation. Diameter: 300 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.
MIXING LINE

1 TWIN-SHAFT MIXER
TWIN-SHAFT MIXER in mild steel
Effective volume: 2400
L
Maximal weight loading: 1680
Product mixture, bulk density: 0.5t/m³ Dry mixing time: approx. 60sec High mixing speed and homogeneity.

Complete with:
Enlarged mixing chamber, applicable for mixing of various light and heavy products.
Specially designed discharger with large door opening angle and quick discharging with less residues.
Specially designed discharger door seal system with good tightness, ensuring no product leakage.

With built-in compressed-air blow-off device for dry cleaning.

With chain drive.

All bearings are made by SKF.

With 4 limit switches.
1 Helical geared motor 18.5 kW, energy efficiency class IE3.

67 1 OUTLET HOPPER FOR

68 1 LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

69 1 PN. HAMMER

70 1 CHAIN CONVEYOR

Product Mill feed
Capacity 13 t/h
Length 6 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.

Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
Double type conveying gravity troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
1 dosing hood(s).
Set of required conveyor supports.

Helical geared motor 2.2 kW, energy efficiency class IE3.

71 1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 13 t/h
Overall height 34 m

Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories
Aspiration duct Speed monitor
Belt track monitor

Helical geared motor 3 kW, energy efficiency class IE3.

72 1 ASPIRATION FILTER

Complete with:

Machine body made of mild steel plate by welding and assembling. Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton.
Knitting polyester fibre filtering bag. Dust cleaning system

Through type solenoid valve.
Nozzles fixed on the jetting rod Round Type Bag with high efficiency.

Filtering Area: 1.6 m^2 Air volume: 8 m^3/min

With 4 filter sleeves.

73 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped

with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

74 1 SPOUT MAGNET

Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core

fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint

75 3 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.

Cylinder and Solenoid.
1 set flange(s), mild steel.

C GRINDING SYSTEM

C-1 COARSE GRINDING LINE 1

76 2 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

77 2 GRINDING BIN

78 2 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

79 2 SLIDE GATE WITH PNEUMATIC ACTUATOR

Double slide gate in V-shape as silo outlet to 2 ways.
Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.

1 set flange(s), mild steel.

80 1 INLET HOPPER FOR HAMMER MILL

81 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

82 1 FEEDER

Mounted on the top of the hammer mill AHZC-66100 to obtain a uniform feed rate.

Sturdy steel construction for load-controlled operation of the hammer mill.
Integrated magnetic separator.

Aspiration air controlled by an air flap.
The product flow is controlled by a frequency-controlled metering bucket wheel to operate the mill under constant load.

The metering bucket wheel is adapted for fine grinding.

Parallel shaft helical geared motor 1.1 kW, energy efficiency class IE3, ATEX Category 3D.
1 HAMMER MILL
Hammer mill

Buhler hammer mill for a flexible application in feed- and flourmills or other applications to achieve a specific granulation for further production steps.

Characteristics:
sturdy steel construction
motor drive connection by semi elastic coupling
rotor with 104 hardened hammers
quick and easy change of hammers and screens
applicable screen thickness: from 0.5mm up to 3.0mm
door is locked until the motor stops
start-up interlocking by open doors
hammer rotor is supported by externally mounted pillow block bearings
changeable rotation direction results in less downtime and longer lifetime for the hammers

Filtering bag device
optimized product inlet flow Cage filtering bag skeleton. Knitting polyester fibre filtering bag. with
switchable control flap
easy detachable doors for service and maintenance Dust cleaning system Through type solenoid valve.
equipped with vibration Nozzles fixed on the jetting rod
absorbers
–Door with interlock switch. Round Type Bag with high efficiency. Filtering Area: 60 m²
zero-motion monitor Air volume: 300 m³/min
With temperature monitoring for
the bearings: 2 Temperature
sensor PT-100.
With temperature monitoring With 64 filter sleeves. for
the grinding chamber: 1
Temperature sensor PT-100. FAN
Including the temperature
indicator Mild steel execution.
vibration sensor
–Type of screen: mild steel Ø 1.5 Squirrel cage motor 22.00 kW. mm
1 set of spare screen
–Type of screen: mild steel Ø 1.5 **OUTLET HOPPER FOR HAMMER MILL** mm

Motor size:
1 Three-phase motor 132 kW, energy efficiency class IE4.

LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

Product: Mill feed
Capacity: 10 t/h
Bulk density 0.5 t/m³
Length: 5 m
Inclination: 0 Degree

TUBULAR SCREW CONVEYOR

Technical data

Executed in mild steel.
Tubular housing. Shaft with continuous flights. Necessary intermediate bearings.
1 end outlet.
1 rectangular inlet.
Set of required conveyor supports.
With helical geared motor, manufactured by NORD. Motor size 3 kW
1 SPOUT MAGNET
Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core

fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint
4 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

COARSE GRINDING LINE 2

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
2 GRINDING BIN

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
2 SLIDE GATE WITH PNEUMATIC ACTUATOR
Double slide gate in V-shape as silo outlet to 2 ways.
Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.

1 set flange(s), mild steel.

1 INLET HOPPER FOR HAMMER MILL

1 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
1 FEEDER

Mounted on the top of the hammer mill to obtain a uniform feed rate.

Sturdy steel construction for load-controlled operation of the hammer mill.
Integrated magnetic separator. Aspiration air controlled by an air flap.
The product flow is controlled by a frequency-controlled metering bucket wheel to operate the mill under constant load.

The metering bucket wheel is adapted for fine grinding.
Parallel shaft helical geared motor 1.1 kW, energy efficiency class IE3, ATEX Category 3D.
1 HAMMER MILL

Large surface fitted with stiffener. Filtering bag device
Cage filtering bag skeleton;

Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve;

Nozzles fixed on the jetting rod Round Type Bag with high efficiency.
Filtering Area: 50 m²

Air volume: 250 m³/min

With 64 filter sleeves.

100 1 FAN

Mild steel execution.

Squirrel cage motor 22.00 kW.

101 1 OUTLET HOPPER FOR HAMMER MILL

102 1 LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

103 1 TUBULAR SCREW CONVEYOR

Technical data

Hammer mill

Buhler hammer mill for a flexible application in feed- and flourmills or other applications to achieve a specific granulation for further production steps.

Characteristics:
sturdy steel construction
motor drive connection by semi elastic coupling
rotor with 104 hardened hammers

quick and easy change of hammers and screens
applicable screen thickness: from 0.5mm up to 3.0mm
door is locked until the motor stops
start-up interlocking by open doors
hammer rotor is supported by externally mounted pillow block bearings
changeable rotation direction results in less downtime and longer lifetime for the hammers
optimized product inlet flow with switchable control flap
easy detachable doors for service and maintenance
equipped with vibration absorbers
–Door with interlock switch.
zero-motion monitor
With temperature monitoring for the bearings: 2 Temperature sensor PT-100.
With temperature monitoring for the grinding chamber: 1 Temperature sensor PT-100.
Including the temperature indicator
vibration sensor
–Type of screen: mild steel Ø 1.0 mm 1 set of spare screen
–Type of screen: mild steel Ø 1.0 mm

Motor size:
1 Three-phase motor 132 kW, energy efficiency class IE4.

1 ASPIRATION FILTER
Complete with:
Machine body made of mild steel plate by welding and assembling.
Product: Mill feed
Capacity: 10 t/h
Bulk density 0.5 t/m³
Length: 5 m
Inclination: 0 Degree

Executed in mild steel.
Tubular housing. Shaft with continuous flights. Necessary intermediate bearings.
1 end outlet.
1 rectangular inlet.
Set of required conveyor supports.
With helical geared motor, manufactured by NORD. Motor size 3 kW
104 1 SPOUT MAGNET
Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For

direct installation in the corresponding down spout. A magnet core fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint

105 2 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.
with 2 limit switches. Cylinder and Solenoid.
1 set flange(s), mild steel.

106 1 BELT ELEVATOR

Technical data

Product Mill feed
Bulk density 0.5 t/m³
Capacity 10 t/h
Overall height 24 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Aspiration duct Speed monitor Belt track monitor
Helical geared motor 2.2 kW, energy efficiency class IE3.

1 ASPIRATION FILTER
Complete with:
Machine body made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Filtering bag device
Cage filtering bag skeleton; Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve; Nozzles fixed on the jetting rod Round Type Bag with high efficiency. Filtering Area: 1.6 m²
Air volume: 8 m³/min

With 4 filter sleeves.

1 SMALL ALUMINUM FAN
Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

FINE GRINDING LINE 1

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.

2 GRINDING BIN

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
2 PN. HAMMER

2 SLIDE GATE WITH PNEUMATIC ACTUATOR
Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

1 PULVERIZER
Pulverizer designed for fine grinding of aqua feed, pet food, grain and other applications

Throughput: 3 t/h for
95% <= 80 Mesh / 0.175 mm
with pre-ground product < 2 mm at the inlet

Crushing system:
Vertical rotor equipped with wear plate; hammer heads welded with hard alloy
Grinding ring of toothed shape
Integrated classifying, adjustable to reach the desired fineness
The finished product will be discharged by a continuous airflow through the pulverizer, necessary aspiration air volume 110 m³/min.

Feeder with anti-bridging device driven by
1 Helical geared motor 1.5 kW, energy efficiency class IE3.

Drive for classifying rotor with
1 Three-phase motor 7.5 kW, energy efficiency class IE3.

Main drive with V-belt and
1 Three-phase motor 90 kW, energy efficiency class IE4.

115 1 CYCLONE SEPARATOR

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

116 1 AIRLOCK

Airlock shape: Normal airlock.

mild steel housing with multiple pocket rotor. Size 10 L,with 0.75 kw Hard gear motor.
Inlet type: Round to square.

SKF bearing.

With sight glass.

117 1 ASPIRATION FILTER

Aspiration filter without outlet cone.

Made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Through type solenoid valve;

Round Type Bag with high efficiency.
With compressure air filter and pressure regulator. With support.

With discharger motor.

118 1 FAN

Mild steel execution.

Squirrel cage motor 22.00 kW.

119 1 AIRLOCK

Airlock shape: Normal airlock.
mild steel housing with multiple pocket rotor.

Size 10 L, with 0.75 kw Hard gear motor.
Inlet type: Round to square.

SKF bearing.

With sight glass.

1 TROUGH SCREW CONVEYOR
Technical data
Product: Dosing feed
Capacity: 5 t/h
Bulk density 0.5 t/m³
Length: 4 m

Mild steel construction consisting of:
U-shaped conveyor trough with vertical side walls. Trough ends equipped with flange-bearings and shaft gland sealing ring.
With screw shaft. 1 end outlet.
With choke flap and limit switch.
With helical geared motor, manufactured by NORD. Motor size 1.5 kW
1 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

1 DRAWER TYPE POWDER TESTING SIFTER
The machine is with high output, low energy consumption, simple structure, suitable for two kinds of material classification and cleaning. With motor 1.5kW.
3 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

FINE GRINDING LINE 2

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
2 GRINDING BIN

126 2 LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

127 2 PN. HAMMER

128 2 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

129 1 INLET HOPPER FOR HAMMER MILL

130 1 LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

131 1 FEEDER

Mounted on the top of the hammer mill AHZC-66100 to obtain a uniform

feed rate.

Sturdy steel construction for load-controlled operation of the hammer

mill.
Integrated magnetic separator.
Aspiration air controlled by a air flap.
The product flow is controlled by a frequency-controlled metering bucket wheel to operate the mill under constant load.
The metering bucket wheel is adapted for fine grinding.
Parallel shaft helical geared motor 1.1 kW, energy efficiency class IE3, ATEX Category 3D.

132 1 HAMMER MILL

Hammer mill

Buhler hammer mill for a flexible application in feed- and flourmills or

other applications to achieve a specific granulation for further production steps.

Characteristics:
 sturdy steel construction

motor drive connection by semi elastic coupling
rotor with 104 hardened hammers

quick and easy change of hammers and screens
applicable screen thickness: from 0.5mm up to 3.0mm
door is locked until the motor stops
start-up interlocking by open doors
hammer rotor is supported by externally mounted pillow block bearings
changeable rotation direction results in less downtime and longer lifetime for the hammers
optimized product inlet flow with switchable control flap
easy detachable doors for service and maintenance
equipped with vibration absorbers
Door with interlock switch.
zero-motion monitor
With temperature monitoring for the bearings: 2 Temperature sensor PT-100.
With temperature monitoring for the grinding chamber: 1 Temperature sensor PT-100.
Including the temperature indicator
vibration sensor
Type of screen: mild steel Ø 1.0 mm 1 set of spare screen
Type of screen: mild steel Ø 1.0 mm

Motor size:

1 Three-phase motor 132 kW, energy efficiency class IE4.

11 ASPIRATION FILTER
3
3

Complete with:

Machine body made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton; Knitting polyester fibre filtering bag.
Dust cleaning system

Through type solenoid valve; Nozzles fixed on the jetting rod
Round Type Bag with high efficiency.

Filtering Area: 60 m² Air volume: 300 m³/min

With 64 filter sleeves.

11 3 4 **FAN**

Mild steel execution.

Squirrel cage motor 22.00 kW.

135 1 OUTLET HOPPER FOR HAMMER MILL

136 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

137 1 TUBULAR SCREW CONVEYOR

Technical data

Product: Mill feed
Capacity: 10 t/h
Bulk density 0.5 t/m³
Length: 5 m
Inclination: 0 Degree

Executed in mild steel.
Tubular housing. Shaft with continuous flights. Necessary intermediate bearings.
1 end outlet.
1 rectangular inlet.
Set of required conveyor supports.
With helical geared motor,Motor size 3 kW
1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 10 t/h
Overall height 28 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Aspiration duct Speed monitor Belt track monitor
Helical geared motor 3 kW, energy efficiency class IE3.

1 ASPIRATION FILTER
Complete with:
Machine body made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Filtering bag device
Cage filtering bag skeleton; Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve; Nozzles fixed on the jetting rod Round Type Bag with high efficiency. Filtering Area: 1.6 m²
Air volume: 8 m³/min

With 4 filter sleeves.

1 SMALL ALUMINUM FAN
Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

FINE GRINDING LINE 3

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.

2 GRINDING BIN

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
2 PN. HAMMER

2 SLIDE GATE WITH PNEUMATIC ACTUATOR
Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

1 SLIDE GATE WITH PNEUMATIC ACTUATOR
Welded steel housing (mild steel). The slide plate is actuated by air

cylinder. 2 limit switches for position indication. 1 set flange(s), mild steel.

147 1 PULVERIZER

Pulverizer designed for fine grinding of aqua feed, pet food, grain and other applications

Throughput: 4.0-5.0 t/h for
95% <= 80 Mesh / 0.175 mm

with pre-ground product < 1.5 mm at the inlet

Crushing system:

Vertical rotor equipped with wear plate; hammer heads welded with hard alloy
Grinding ring of toothed shape

Integrated classifying, adjustable to reach the desired fineness
The finished product will be discharged by a continuous airflow through the pulverizer, necessary aspiration air volume 233 m³/min.

Feeder with anti-bridging device driven by
1 Helical geared motor 1.5 kW, energy efficiency class IE3.

Drive for classifying rotor with
1 Three-phase motor 15 kW, energy efficiency class IE3.

Main drive with V-belt and
1 Three-phase motor 132 kW, energy efficiency class IE4.

148 1 CYCLONE SEPARATOR

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

149 1 AIRLOCK

Airlock shape: Normal airlock.
mild steel housing with multiple pocket rotor. Size 24 L,with 1.5 kw Hard gear motor.

Inlet type: Round to square.

SKF bearing.

With sight glass.

150 1 ASPIRATION FILTER AHMY-130

Aspiration filter without outlet cone.
Made of mild steel plate by welding and assembling; Large surface fitted with stiffener.

Through type solenoid valve;
Round Type Bag with high efficiency.
With compressure air filter and pressure regulator.

With support.
With discharger motor.

151 1 FAN

Stainless steel.
Squirrel cage motor 55.00 kW.

152 1 AIRLOCK

Airlock shape: Normal airlock.
mild steel housing with multiple pocket rotor.

Size 24 L, with 1.5 kw Hard gear motor. Inlet type: Round to square.

SKF bearing.

With sight glass.

153 1 TROUGH SCREW CONVEYOR

Technical data

Product: Dosing feed
Capacity: 5 t/h
Bulk density 0.5 t/m³
Length: 4 m

Mild steel construction consisting of:
U-shaped conveyor trough with vertical side walls. Trough ends equipped with flange-bearings and shaft gland sealing ring.
With screw shaft. 1 end outlet.
With choke flap and limit switch.
With helical geared motor, manufactured by NORD. Motor size 1.5 kW
154 1 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

	155	**1**	**DRAWER TYPE POWDER TESTING SIFTER** The machine is with high output, low energy consumption, simple structure, suitable for two kinds of material classification and cleaning. With motor 1.5kW.
	156	**2**	**GRAVITY FLOW DIVERTER** Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches. Cylinder and Solenoid. 1 set flange(s), mild steel.
D			**SECOND DOSING AND MIXING SYSTEM**
D-1			**SECOND DOSING AND MIXING LINE 1**
	157	**2**	**LEVEL PROBE** Nominal voltage 24 VDC. Paddle limit switch.
	158	**2**	**SURGE BIN**
	159	**8**	**LOAD CELL** Toledo brand.
	160	**2**	**LEVEL PROBE** Nominal voltage 24 VDC. Paddle limit switch.
	161	**2**	**PN. HAMMER**
	162	**2**	**SLIDE GATE WITH PNEUMATIC ACTUATOR** Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication. 1 set flange(s), mild steel.
	163	**1**	**BAG INTAKE** Stationary execution in mild steel, powder coated. With cylindrical housing and built-on bag intake dump hopper and lockable lid. Incl. proximity switch and pneumatic piston for lid interlocking. Rectangular opening for small filter AHMB / MVRW. Screen diameter 75 cm. With three pendulous supports, vibratory drive 0.12 kW. 2 Sleeves and clamps.

164 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling;

Large surface fitted with stiffener. Filtering bag device
Cage filtering bag skeleton;

Knitting polyester fibre filtering bag. Dust cleaning system
Through type solenoid valve;

Nozzles fixed on the jetting rod Round Type Bag with high efficiency.
Filtering Area: 1.44 m^2

Air volume: 7.2 m^3/min

With 4 filter sleeves.

165 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.

With motor 0.75kW. Energy efficiency class IE3.

166 1 SURGE HOPPER

167 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

168 1 SINGLE WING VALVE

For pneumatic remote operation. Diameter: 300 mm.

Aluminium alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.

169 1 TWIN-SHAFT MIXER

TWIN-SHAFT MIXER

Effective volume: 2400
L
Maximal weight loading: 1680
Product mixture, bulk density: 0.5t/m^3 Dry mixing time: approx. 60sec High mixing speed and homogeneity.

Complete with:
Enlarged mixing chamber, applicable for mixing of various light and heavy products.
Specially designed discharger with large door opening angle and quick discharging with less residues.

Specially designed discharger door seal system with good tightness, ensuring no product leakage.

With built-in compressed-air blow-off device for dry cleaning.

With chain drive.

All bearings are made by SKF. With 4 limit switches.

With 2 additional spray bar(s) for liquid addition is installed in a optimal position to guarantee a good mixing effect and prevent agglomeration.

1 Helical geared motor 18.5 kW, energy efficiency class IE3.

170 1 OUTLET HOPPER FOR

171 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

172 1 PN. HAMMER

173 1 CHAIN CONVEYOR

Product Mill feed
Capacity 6 t/h
Length 8 m

Executed in mild steel.
Drive station
as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.
Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.

Double type conveying troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
Double type conveying gravity troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
1 dosing hood(s).
Set of required conveyor supports.

Helical geared motor 1.5 kW, energy efficiency class IE3.

174 1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 6 t/h
Overall height 34 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories
Aspiration duct
Speed monitor Belt track monitor

Helical geared motor 1.5 kW, energy efficiency class IE3.

175 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling; Large surface fitted with stiffener.

Filtering bag device
Cage filtering bag skeleton; Knitting polyester fibre filtering bag.

Dust cleaning system Through type solenoid valve;
Nozzles fixed on the jetting rod

Round Type Bag with high efficiency. Filtering Area: 1.6 m²
Air volume: 8 m³/min

With 4 filter sleeves.

1 SMALL ALUMINUM FAN
Capacity: 8 m³/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.
With motor 0.75kW. Energy efficiency class IE3.

1 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

1 CENTRIFUGAL SIFTER
Construction in mild steel.
With 3 beater rails and 3 brush rails.
Steel housing with two service doors. With built-on safety devices for changing sieves. Rotor bearings on both sides of the front-end plates. Split sieve of perforated sheet metal Ø 7 x 35 mm, for fast and easy changing of the sieves. With outlet box for the overs. With integrated torque arm.
Connection-spout to central aspiration system.
Parallel shaft helical geared motor 11 kW, energy efficiency class IE3.

1 SPOUT MAGNET
Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint
D-2 SECOND DOSING AND MIXING LINE 2

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.

2 SURGE BIN

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.

183 2 PN. HAMMER

184 2 TUBULAR SCREW CONVEYOR
Technical data

Product: Mill feed
Capacity: 6 t/h
Bulk density 0.5 t/m³
Length: 3 m
Inclination: 0 Degree

Executed in mild steel.
Tubular housing. Shaft with continuous flights.
Necessary intermediate bearings. 1 end outlet.
1 high-capacity inlet(s).

With chain transmission and guard Set of required conveyor supports.
With helical geared motor, manufactured by NORD.

Motor size 1.5 kW

185 1 SCALE HOPPER

Material: MS
Volume:2000l

186 3 LOAD CELL

Toledo brand.

187 1 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication. 1 set flange(s), mild steel.

188 1 SINGLE WING VALVE

For pneumatic remote operation. Diameter: 600 mm.

Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.

189 1 SINGLE WING VALVE

For pneumatic remote operation. Diameter: 250 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft.

With solenoid valve and limit switch.

190 1 BAG INTAKE

Stationary execution in mild steel, powder coated.
With cylindrical housing and built-on bag intake dump hopper and

lockable lid.
Incl. proximity switch and pneumatic piston for lid interlocking. Rectangular opening for small filter AHMB / MVRW.

Screen diameter 75 cm.
With three pendulous supports, vibratory drive 0.12 kW. 2 Sleeves and clamps.

191 1 ASPIRATION FILTER

Complete with:

Machine body made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton;
Knitting polyester fibre filtering bag. Dust cleaning system

Through type solenoid valve;
Nozzles fixed on the jetting rod Round Type Bag with high efficiency.

Filtering Area: 1.44 m^2 Air volume: 7.2 m^3/min

With 4 filter sleeves.

192 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.

With motor 0.75kW. Energy efficiency class IE3.

193 1 SURGE HOPPER

194 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

195 1 SINGLE WING VALVE

For pneumatic remote operation.

Diameter: 300 mm.
Aluminum alloy housing, Aluminum alloy flap discs and 42CR shaft. With solenoid valve and limit switch.

196 1 TWIN-SHAFT MIXER
TWIN-SHAFT MIXER
Effective volume: 2400
L
Maximal weight loading: 1680
Product mixture, bulk density: 0.5t/m³ Dry mixing time: approx. 60sec

High mixing speed and homogeneity.

Complete with:
Enlarged mixing chamber, applicable for mixing of various light and

heavy products.
Specially designed discharger with large door opening angle and quick discharging with less residues.

Specially designed discharger door seal system with good tightness, ensuring no product leakage.

With built-in compressed-air blow-off device for dry cleaning.

With chain drive.

All bearings are made by SKF. With 4 limit switches.

With 2 additional spray bar(s) for liquid addition is installed in a optimal position to guarantee a good mixing effect and prevent agglomeration.

1 Helical geared motor 18.5 kW, energy efficiency class IE3.

197 1 OUTLET HOPPER FOR

198 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

199 1 PN. HAMMER

200 1 CHAIN CONVEYOR

Product Mill feed
Capacity 6 t/h
Length 8 m

Executed in mild steel. Drive station

as totally closed steel construction with inspection window. Wear resistant drive sprocket wheel, flange bearings and with intermediate plate.
With incorporated product back up probe.
Tail station
self-cleaning steel construction, high grade steel shaft, flanged bearings and idler sprocket. With product backup-, motion detector.
Single type conveying troughs
with guide rail, complete enclosed construction with bottoms and covers, locking joints and return elements.
Double type conveying troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
Double type conveying gravity troughs, complete enclosed construction with bottoms and covers, locking joints and intermediate bottom.
1 dosing hood(s).
Set of required conveyor supports.

Helical geared motor 1.5 kW, energy efficiency class IE3.

201 1 BELT ELEVATOR
Technical data
Product Mill feed
Bulk density 0.5 t/m³
Capacity 6 t/h
Overall height 34 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories Aspiration duct
Speed monitor

Belt track monitor
Helical geared motor 1.5 kW, energy efficiency class IE3.

202 1 ASPIRATION FILTER

Complete with:
Machine body made of mild steel plate by welding and assembling;

Large surface fitted with stiffener.
Filtering bag device

Cage filtering bag skeleton; Knitting polyester fibre filtering bag.
Dust cleaning system

Through type solenoid valve; Nozzles fixed on the jetting rod
Round Type Bag with high efficiency.

Filtering Area: 1.6 m^2 Air volume: 8 m^3/min

With 4 filter sleeves.

203 1 SMALL ALUMINUM FAN

Capacity: 8 m^3/min. Pressure:1800pa.
Cast housing and impeller are made of aluminum. Outlet is equipped with flange and protection grid.

With motor 0.75kW. Energy efficiency class IE3.

204 1 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.

1 set flange(s), mild steel.

205 1 CENTRIFUGAL SIFTER

Construction in mild steel.

With 3 beater rails and 3 brush rails.
Steel housing with two service doors. With built-on safety devices for changing sieves. Rotor bearings on both sides of the front-end plates.

Split sieve of perforated sheet metal Ø 7 x 35 mm, for fast and easy changing of the sieves. With outlet box for the overs. With integrated torque arm.

Connection-spout to central aspiration system.
Parallel shaft helical geared motor 11 kW, energy efficiency class IE3.

206 1 SPOUT MAGNET

Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For

direct installation in the corresponding down spout. A magnet core fastened onto the hinged door for cleaning purposes.
The magnet core is made of permanent magnetic rings 3000 Gauss

Surface treatment: paint

E EXTRIDING, DRYING, COATING AND COOLING SYSTEM

1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

1 EXTRUSION BIN

1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

1 PN. HAMMER

1 TROUGH SCREW CONVEYOR

Technical data

Product: Dosing feed
Capacity: 10 t/h
Bulk density 0.5 t/m³
Length: 4 m

Mild steel construction consisting of:
U-shaped conveyor trough with vertical side walls. Trough ends equipped with flange-bearings and shaft gland sealing ring. With 2 screw shafts.
1 end outlet.

With choke flap and limit switch. With chain transmission and guard
Set of required conveyor supports.

With 2 helical geared motors,. Motor size 1.5 kW

212 1 GRAVITY FLOW DIVERTER A

Gravity flow diverter, ø300mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.

1 set flange(s), mild steel.

213 1 DRAWER TYPE POWDER TESTING SIFTER

The machine is with high output, low energy consumption, simple structure, suitable for two kinds of material classification and cleaning. With motor 1.5kW.

214 1 ROTARY DISCHARGER

Material: stainless steel. SKF bearing.
1 Paddle wing level switch, with synchronous motor, wings and switch output.
Including bin made of stainless steel.
Helical geared motor 5.5 kW, energy efficiency class IE3.

215 1 FEEDER

Stainless steel bead-blasted volumetric feeder.

Center distance: 1800 mm
1 Helical geared motor 1.5 kW, energy efficiency class IE3.

216 1 CONDITIONER

All parts in contact with the product are made of stainless steel. The

paddles can be removed from the shaft and their angle adjusted. With connections for steam and 2 liquids.
The access door on the mixer is equipped with a safety switch to

prevent accidental opening or starting of the motor.
A length-adjustable temperature sensor is installed in the mixer outlet to measure product temperature.

1 Helical geared motor 11 kW, energy efficiency class IE3.

217 1 RETENTIONER HYTHERM

All parts in contact with the product are made of stainless steel. The paddles can be removed from the shaft and their angle adjusted.

One big maintenance flap either on the left- or right-hand side runs the entire length of the machine. It is locked and equipped with safety switches. These prevent the door from being opened during operation

and stop the machine if the door is open.

The drive must be controlled by a frequency converter.

1 Helical geared motor 7.5 kW, energy efficiency class IE3.

218 1 TWIN-SCREW EXTRUDER TYPE

The twin-screw extruder *CompacTwin*™ is designed for uncomplicated and reliable production of food and feed products.
The lean design is especially suitable for long, dedicated production

runs.
A modular concept allows additional elements to be integrated.

The machine is self-cleaning thanks to the intermeshing screw shafts.

The screw shafts may be easily removed with the aid of a simple device.
The laterally movable cutting device guarantees perfect shapes and product qualities. The entire knife head may be adjusted or exchanged while in operation.

Scope of delivery:

- BCCF CompacTwin twin-screw extruder: screw diameter 93 mm, L/D-Ratio 20D
- Base frame in mild steel
- Heavy duty branched transmission gearbox
- AC Main motor 160kW without RF (included in BCCB control)
- 1 Pair of spline shafts for screw length 20D
- 1 Set screw conveyor elements BCCF 20D of through hardened special steel, wear resistant.
- 1 Extruder- inlet barrel, heatable with inside placed wear resistant liner made of special hardened steel fitted to the *CompacTherm* pre-Conditioner
- 4 Extruder- intermediate barrel(s), heatable with inner liner made of special hardened steel and each with 2 bore holes for liquid addition, pressure or temperature measurement
- Pneumatically movable cutting device including knife head with drive, extruder head, end plate and nozzle plate
- Manually operated screw pull out device

219 1 STEAM FITTINGS/LIQUIDS METERING SYSTEMS

220 1 EXTRUDER CONTROL SYSTEM

Scope of delivery:

Touch panel 15 Inch
VisiWin software interface
MCC cabinet for extruder (CE) , Busbar system

Including Breakers, Contactors,Relays,CPU and IO modules.

Control scope: Max13 dosing, conditioner system, cutter, main motor. Conditioner control in cabinet.

With frequency converter power 160kW.

221 1 CYCLONE SEPARATOR

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

222 1 FAN

Mild steel execution.

Impeller is stainless steel.

Squirrel cage motor 5.50 kW.

223 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor.
Size 10 L, with 0.75 kw Hard gear motor.
Inlet type: Round to square.

SKF bearing.

With sight glass.

224 1 CYCLONE SEPARATOR 600

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

225 1 FAN

Mild steel execution.

Impeller is stainless steel.

Squirrel cage motor 5.50 kW.

226 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor.
Size 10 L, with 0.75 kw Hard gear motor.
Inlet type: Round to square.

SKF bearing.

With sight glass.

227 1 DRYER

SmartDry Dryer

Aquatic feed dryer

Capacity at the outlet 5000 kg/h
Sized for moisture reduction from 25 % (out of the extruder) and dry down to a maximum of 10 % moisture content at discharge.

Pellet size 5 mm
Sanitary design and seal arrangements to provide optimum performance.
Oscillating Spout Feeder directs the flow from the feed device into the dryer bed.
(Note: Product flow to the Oscillating Feeder must be at a uniform rate to accomplish uniform product distribution.)
Maximum drying and operational efficiency.

Steam heated 8 bar steam pressure supplied at dryer
Required steam quantity 800 kg/h nominal, 800 kg/h max.
Re-circulated air within the drier is heated by steam coils. The coils are vertically positioned and located within the heat source area of the drier. Coils will have bolted mounting for easy removal. Installation by the Buyer.

Multi Pass Design

Drier contains two, independently controlled conveyor passes to allow for different bed depths and product repositioning during the drying process. Zones are divided by partitions and curtains providing independently controlled process zones. The side of the unit opposite the plenum is unobstructed for direct access to the product bed area.
Frame, doors, panels, floor and dryer material in carbon steel.

Single Alternating Plenum Airflow
Each heat zone has a single plenum on one side of the unit. This plenum's location is alternated from side to side for each heat zone. Therefore, as the product moves from zone to zone, process air is introduced to both sides of the bed providing optimum air distribution for enhanced drying uniformity.
The heat source is located internally across the top of the drier, separated from the product area.
The recirculation fans pull air across the heat source and through mixing baffles providing uniform temperature air for maximum process control.
Air is circulated through the drier by plug fans strategically located to obtain uniform air distribution.
The bed drive chains have hardened components for extended life.

Bedplates
In Stainless steel are overlay construction designed to minimize product entrapment and enhance durability.

Instrumentation

Temperature sensors and pressure switches.

Lump breaker

The lump breaker consists of a rotating shaft with welded tines that rotate through the spaces between stationary tines mounted on the drop board, thereby breaking up product clusters.

No cooling zone.

To minimize installation time in the field, the unit is shop assembled, inspected, and shipped in modules as large as practical.

The steam fittings are not part of the scope of delivery.
With screw conveyor.

227.1 1 STEAM FITTINGS FOR DRYER

228 1 LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

229 1 BELT CONVEYOR

230 1 CYCLONE SEPARATOR

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

231 1 FAN

Stainless steel.

Squirrel cage motor 18.50 kW.

232 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor. Size 10 L, with 0.75 kw Hard gear motor.

Inlet type: Round to square.

SKF bearing.

With sight glass.

233 1 BELT ELEVATOR

Technical data
Product Feed pellets

Bulk density 0.4 t/m³
Capacity 5 t/h
Overall height 24 m
Surface Conatct with material is stainless steel

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Speed monitor Belt track monitor
Helical geared motor 1.5 kW, energy efficiency class IE3.

234 1 ROTARY SCREENER
High-capacity screener with 2 screen(s) with 2.19 m² each, to separate the inlet product into 3 different fractions.

Characteristics:
Base frame, sturdy welded steel construction.
Hanging support device for drive and screen chamber.
Easy to change sieve decks with quick pressing mechanism to exchange the screen frames.
Eccentric rotary mechanism with V-belt drive and motor.
1 Three-phase motor 2.2 kW, energy efficiency class IE3.

Note
Major components are shipped loose. Installation and assembly of loose items is responsibility of the buyer.

235 1 CYCLONE SEPARATOR

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

236 1 FAN

Mild steel execution.

Impeller is stainless steel. Squirrel cage motor 5.50 kW.

237 1 AIRLOCK

Airlock shape: Normal airlock.

stainless housing with multiple pocket rotor. Size 10 L, with 0.75 kw Hard gear motor.
Inlet type: Round to square. SKF bearing.
With sight glass.

COATING AND COOLING LINE

1 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
1 COATING BIN

2 LEVEL PROBE
Nominal voltage 24 VDC. Paddle limit switch.
1 PN. HAMMER

1 SLIDE GATE WITH PNEUMATIC ACTUATOR
Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

1 SLIDE GATE MANUALLY
Welded steel housing (mild steel). The slide plate is actuated manually via screw and hand wheel.
1 set flange(s), mild steel.

1 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.
1 SPRAY DRUM FOR PELLETS
The drum coater can be applied to extruded Pet Food and Aqua Feed by coating the feed with fats and oils, enzymes, vitamins etc. thermal sensitive additives & medicines.

Dimensions: Ø 850 x 3300 mm
Capacity: 2 - 5 t/h

Spray drum in mild steel execution.
Rotating mixing drum with an inclined, basic frame. The drum is driven with a fully protected chain drive.
The mixing drum has built-in flights for an efficient mixing. Drive with gear motor.
In- and outlet in closed execution. With a aspirated collecting hopper.

Spraying device in stainless steel with 8 pressure nozzles for a homogeneous distribution of the liquid.
Separated in 7 nozzles for oil and 1 nozzle for micro additives. Retractable nozzle bar with quick-coupler, electrically heated, completely build up.
Lateral placed rack to be connected with the liquid supply including pressure transmitter, solenoid valves, purging air connection and junction box for all signals and heating cables.
With hose between rack and spraying device.

Lateral placed rack to be connected with the liquid supply including pressure transmitter, solenoid valves, purging air connection and junction box for all signals and heating cables.
With hose between rack and spraying device.
Helical geared motor 2.2 kW, energy efficiency class IE2.

1 COUNTER FLOW COOLER
Cooler 20x20

Volume of Cooling Chamber: 3.78 m^3
Cooling principle is adopted to cool the pellets with high temperature and moisture. Hot air touches hot pellets with high moisture and cool air touches cooled pellets with low moisture so as to avoid the pellet surface crack caused by sudden cooling produced by direct touching between cool air and hot pellets.

Complete with:
Airlock feeding pellet into the cooler in stainless steel. Hood in stainless steel and all other parts in normal steel.
Octangular design ensures cooling air evenly through the pellet layer. With ajustable product distributor for a even product layer.

Upper and lower-level indicators.
Cooling case with toughened glass inspection window.

Rotating airlock discharging mechanism.
Adjustable discharging speed to make discharging even and smooth.

Helical geared motor 0.55 kW, energy efficiency class IE3. Helical geared motor 0.55 kW, energy efficiency class IE3.

247 1 CYCLONE SEPARATOR 1300

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

248 1 FAN

Mild steel execution.

Impeller is stainless steel. Squirrel cage motor 15.00 kW.

249 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor.

Size 10 L, with 0.75 kw Hard gear motor. Inlet type: Round to square.

SKF bearing.

With sight glass.

250 1 BELT ELEVATOR

Technical data

Product Feed pellets
Bulk density 0.4 t/m³
Capacity 5 t/h
Overall height 24 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted

Elevator buckets PE (polyethylene)

Accessories Speed monitor
Belt track monitor

Helical geared motor 1.5 kW, energy efficiency class IE3.

251 3 GRAVITY FLOW DIVERTER AHBL-ø250/60°

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.
with 2 limit switches. Cylinder and Solenoid.
1 set flange(s), mild steel.

F PELLETING SYSTEM

F-1 PELLETING LINE

252 1 LEVEL PROBE

Nominal voltage 24 VDC.
Paddle limit switch.

253 1 PELLETING BIN

254 1 LEVEL PROBE

Nominal voltage 24 VDC.
Paddle limit switch.

255 1 PN. HAMMER

256 1 ROTARY DISCHARGER

Material: stainless steel. SKF bearing.
– 1 Paddle wing level switch, with synchronous motor, wings and switch output.
Helical geared motor 5.5 kW, energy efficiency class IE3.

257 1 FEEDER

Housing, shaft and screw flights are made in stainless steel.
Housing with access door.
Shaft with continuous helical screw.

The drive must be controlled by a frequency converter

Helical geared motor 2.2 kW.

258 1 DOUBLE-SHAFT DIFFERENTIAL SPEED CONDITIONER

Housing, double shaft, paddles are made of stainless steel.
Mixer section with big diameter and small diameter paddle shaft, two paddle shaft with counter rotating.

With connection unions for steam in bottom and liquid on top.

Access door on the mixer with safety switch secured against accidental opening or starting of the motor.

Temperature sensor PT 100:

Installed in the mixer outlet to measure the product temperature. Parts in contact with the product are of stainless steel.

With double gear motor driven.
Helical geared motor 4 kW, energy efficiency class IE3. Helical geared motor 4 kW, energy efficiency class IE3.
1 RETENTIONER
Nord gearmotor, SKF bearing and housings, Material: Contact with product is 304 stainless steel.
2 SINGLE-SHAFT HIGH SPEED CONDITIONER
Housing, shaft, helicoid screw and paddles are made of stainless steel. Mixer section with helicoid screw over the inlet section and paddles for the rest of the mixing section.

With connection unions for steam.
Access door on the mixer with safety switch secured against accidental opening or starting of the motor.

Temperature sensor PT 100:
Installed in the mixer outlet to measure the product temperature. Parts in contact with the product are of stainless steel.

With motor and pulley drive.

Drive mounted on inlet or outlet side

1 PELLET MILL
Pellet mill utilizing a vertical, rotating pelleting die.

Inside diameter of pelleting die: 530 mm Active useful width: 192 mm
Active die surface: 32 dm²

2 Press rolls, outside diameter 250 mm, double labyrinth seals, eccentric shaft is clamped on both ends.

Machine-base/hoist/housing-cover:
Rigid, welded steel construction with attached hoist for die- and press roll exchange. With wide swivelled housing cover of stainless-steel sheets and with 3 scrapers adjustable from the outside of the housing.

Die- and press roll support/central lubrication:
The die-holding-body with stainless die-support is running on roller bearing on the roll shaft. Bores in the roll-supporting-shaft are connected to the centralized lubrication system of the main bearings

and the press-roll bearings, (lubrication without operation interruptions). Roll-supporting shaft with 2 press-rolls, sweeper and scraper.

V-belt drive with 1200 mm diameter sheave, mounted on the die- holding body, sheave for motor, necessary V-belts and drive guard.

Machine- and personnel- safety devices:
Press-elements are protected by a shear-pin with limit switches and covers for possible overloads. Interlocked magnetic switches prevent

the opening of housing cover or access door as long as the die rotates. Safety switches avoid an early start of the pellet mill if the doors are open. All safety elements of the pellet mill are pre-wired to a

centralized, common junction box.

Pellet mill inlet made of stainless steel with access lid, pneumatically

operated overload flap including air piston, solenoid valve and safety covering. Cross bars over the inspection opening prevent accidental contact with

moving parts.
Fixed permanent magnet with stainless enclosure.

1 pelleting die(s) in corrosion resistant design.
Hole diameter: 1.6 mm. Die thickness/active hole length: 38 mm.

Press-off device.

Central lubrication system.

1 Three-phase motor 160 kW, energy efficiency class IE3.

262 1 STEAM FITTINGS 180-400kg/h

263 1 POSTCONDITIONER

Postconditioner 22x22

Postconditioner principle is adopted to hold the pellets with high temperature and moisture during a determined retention time. A life steam injection helps to keep the moisturen and temperature on a

desired level. The heated and insulated side walls avoid condensation and keep the temperature inside of the postconditioner.

Complete with:
Airlock feeding pellet into the Postconditioner, made of stainless steel. Hood, distributor and side walls in stainless steel, all parts in contact

with product are in stainless steel.
With ajustable product distributor for a even product layer.

Upper and lower-level indicators.
Postconditioner case with toughened glass inspection window.

Swing type discharging mechanism:
Gentle hydraulic piston controls the swing discharging mechanism. Adjustable discharging speed to make discharging even and smooth.

Separate, compact hydraulic unit with oil tank, 1.5 kW motor, hydraulic pump, safety valve and solenoid valves.
– 1 Paddle wing level switch, with synchronous motor, wings and
switch output.

264 1 VERTICAL DRYER

Vertical pendulum dryer is a new type of vertical drying equipment, but also an important corollary equipment of special aquatic feed production

line. The machine can be used in the production of high-quality aquatic feed, shrimp feed, puffing and high-grade material of livestock and poultry.

Flexible pendulum hydraulic drive system control unloading

Pendulum replica unloading mechanism

Have the double function of cooling and drying
Counter-current principle of design, efficiency improved significantly Flap type discharge mechanism, do not damage particles, having

smoothly and is suitable for the bell shape material.

265 1 CYCLONE SEPARATOR 1200

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

266 1 FAN

Mild steel execution.

Impeller is stainless steel. Squirrel cage motor 7.50 kW.

267 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor.

Size 10 L, with 0.75 kw Hard gear motor. Inlet type: Round to square.

SKF bearing.

With sight glass.

268 1 COUNTER FLOW COOLER

Cooler 20x20

Volume of Cooling Chamber: 3.78 m³

Cooling principle is adopted to cool the pellets with high temperature and moisture. Hot air touches hot pellets with high moisture and cool air touches cooled pellets with low moisture so as to avoid the pellet

surface crack caused by sudden cooling produced by direct touching between cool air and hot pellets.

Complete with:
Airlock feeding pellet into the cooler in stainless steel. Hood in stainless steel and all other parts in normal steel.

Octangular design ensures cooling air evenly through the pellet layer. With adjustable product distributor for a even product layer.

Upper and lower-level indicators.
Cooling case with toughened glass inspection window.

Rotating airlock discharging mechanism.
Adjustable discharging speed to make discharging even and smooth. Helical geared motor 0.55 kW, energy efficiency class IE3.

Helical geared motor 0.55 kW, energy efficiency class IE3.

269 1 CYCLONE SEPARATOR 1300

Cone in ARWE.Wert construction. Tangential air intake spout and central air exhaust pipe. Matching counter flanges, gaskets and bolts.

270 1 FAN

Mild steel execution.

Impeller is stainless steel. Squirrel cage motor 15.00 kW.

271 1 SILENCER

Silencer 550mm

Material Stainless steel.

272 1 AIRLOCK

Airlock shape: Normal airlock.
stainless housing with multiple pocket rotor. Size 16 L, with 1.1 kw Hard gear motor.
Inlet type: Round to square. SKF bearing.
With sight glass.

1 BELT ELEVATOR
Technical data
Product Feed pellets

Bulk density 0.65 t/m³
Capacity 5 t/h
Overall height 30 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Speed monitor Belt track monitor
Helical geared motor 2.2 kW, energy efficiency class IE3.

1 ROTARY SCREENER
High capacity screener with 2 screen(s) with 2.19 m² each, to separate the inlet product into 3 different fractions.

Characteristics:
Base frame, sturdy welded steel construction.
Hanging support device for drive and screen chamber.
Easy to change sieve decks with quick pressing mechanism to exchange the screen frames.
Eccentric rotary mechanism with V-belt drive and motor.
1 Three-phase motor 2.2 kW, energy efficiency class IE3.

Note
Major components are shipped loose. Installation and assembly of loose items is responsibility of the buyer.

3 GRAVITY FLOW DIVERTER
Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.

with 2 limit switches. Cylinder and Solenoid.
1 set flange(s), mild steel.

G BAGGING SYSTEM

G-1 BAGGING LINE 1

276 4 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

277 4 BAGGING BIN

278 4 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

279 4 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.

280 1 ROTARY SCREENER

High capacity screener with 2 screen(s) with 2.19 m² each, to separate the inlet product into 3 different fractions.

Characteristics:

Base frame, sturdy welded steel construction.
Hanging support device for drive and screen chamber.

Easy to change sieve decks with quick pressing mechanism to exchange the screen frames.
Eccentric rotary mechanism with V-belt drive and motor.
1 Three-phase motor 2.2 kW, energy efficiency class IE3.

Note
Major components are shipped loose. Installation and assembly of loose items is responsibility of the buyer.

281 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

282 1 HOPPER ABOVE BAGGING STATION

283 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

284 1 BAGGING STATION

Single belt feeder type. Material: Mild steel.

285 1 SEWING MACHINE

With auto cutting function.

2 BAGGING LINE 2

286 4 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

287 4 BAGGING BIN

288 4 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

289 4 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

290 1 ROTARY SCREENER

High capacity screener with 2 screen(s) with 2.19 m² each, to separate the inlet product into 3 different fractions.

Characteristics:

Base frame, sturdy welded steel construction.
Hanging support device for drive and screen chamber.
Easy to change sieve decks with quick pressing mechanism to exchange the screen frames.
Eccentric rotary mechanism with V-belt drive and motor.
1 Three-phase motor 2.2 kW, energy efficiency class IE3.

Note

Major components are shipped loose. Installation and assembly of loose items is responsibility of the buyer.

291 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

292 1 HOPPER ABOVE BAGGING STATION

293 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

294 1 BAGGING STATION

Single belt feeder type. Material: Mild steel.

295 1 SEWING MACHINE

With auto cutting function.

3 BAGGING LINE 3

296 1 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel. with 2 limit switches.

Cylinder and Solenoid.
1 set flange(s), mild steel.

297 1 BELT ELEVATOR

Technical data

Product Feed pellets
Bulk density 0.65 t/m³
Capacity 5 t/h
Overall height 24 m
Surface powder-coated for indoor installation

Elevator boot angular

Elevator casing angular, bolted
Elevator buckets PE (polyethylene) Accessories
Speed monitor
Belt track monitor
Helical geared motor 2.2 kW, energy efficiency class IE3.

298 1 SPOUT MAGNET
Metal construction.
Cylindrical casing made of stainless steel with counter flanges. For direct installation in the corresponding down spout. A magnet core fastened onto the hinged door for cleaning purposes.

The magnet core is made of permanent magnetic rings 3000 Gauss Surface treatment: paint

299 1LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

300 1SURGE HOPPER

301 1LEVEL PROBE

Nominal voltage 24 VDC.

Paddle limit switch.

302 1PELLET CRUMBLER

Crumbler is the ideal compact machine for breaking down pellets and making crumbles. With its fluted rollers and adjustable roller gap, it provides the desired throughput and the ideal granulation for pellet

processing. We are proud to have manufactured and delivered over 1,000 reference machines, demonstrating the trust our clients have in this machine.

Roll feeder:
The modular roll feeder is equipped with a grooved feed roll with

outboard pedestal bearings. With electrically operated bypass flap with limit switches for position indication. With flange gear motor for driving the feed roller, 0.37 kW.

Feed flap regulation with linear drive.

Roller module:
Single version, consisting of: Horizontally arranged pairs of rolls.

Drive with 1 motor 22 kW, 1000/1200 rpm.

Roll diameter: 250 mm Roll length: 1500 mm

Machine housing: welded steel plate construction with top-mounted roller feeder. Completely enclosed housing with 4 sample taking openings. Roll transmission from roll to roll by timing belt. Main drive with V-belts, sheaves and guard.

Roll manufactured in high-quality two-component centrifugal casting, with a corrugation (fluting), with pressed in forged steel roll journals.

Mechanical roll pressing mechanism by means of spiral springs. Optimal product intake by guiding plates.
Optimum product intake due to guide plate

Terminal box:
For connecting the built-in safety devices and options
–pre-hopper, high level, pre-hopper, low level, lower surge hopper, high level

Drive motors:
1 Three-phase motor 22 kW, energy efficiency class IE3.

The following items will be delivered once per plant

Electronic measuring device for belt tension checking.
feeler gauge 0,05-1,00 mm, 20 leaves
Tools for assembly and disassembly of the main bearings
Device for roll-pack removing.

303 1 HOPPER UNDER CRUMBLER

304 1 PELLET GRADING SIFTER

The machine is designed to grade and sift according to size and density of material by means of plane-rotary movements.
With motor 1.5kW.

305 4 LEVEL PROBE

Nominal voltage 24 VDC.
Paddle limit switch.

306 4 BAGGING BIN

307 4 LEVEL PROBE

Nominal voltage 24 VDC.
Paddle limit switch.

308 4 SLIDE GATE WITH PNEUMATIC ACTUATOR

Welded steel housing (mild steel). The slide plate is actuated by air cylinder. 2 limit switches for position indication.
1 set flange(s), mild steel.

309 1 GRAVITY FLOW DIVERTER

Gravity flow diverter, ø250mm, symmetrical 60°, mild steel.
with 2 limit switches.
Cylinder and Solenoid.
1 set flange(s), mild steel.

310 1 VIBRATION SIFTER

It is an ideal machine in cleaning and grading for its characteristics, simple structure, stable operation, better cleaning effect, high output, low energy consumption, low noise and easier maintenance.
With 2*1.10kW motor.

311 1 DUST CLEANING DEVICE

312 1 LEVEL PROBE

Nominal voltage 24 VDC. Paddle limit switch.

313 1 HOPPER ABOVE BAGGING STATION

314 1 LEVEL PROBE

Nominal voltage 24 VDC.
Paddle limit switch.

315 1 BAGGING STATION

Single belt feeder type. Material: Mild steel.

316 1 SEWING MACHINE

With auto cutting function. Jialong brand.

317 1 ASPIRATION FILTER

Aspiration filter with outlet cone.

Made of mild steel plate by welding and assembling; Large surface fitted with stiffener.
Through type solenoid valve;

Round Type Bag with high efficiency.
With compressure air filter and pressure regulator. With support.

318 1 FAN

Mild steel execution.

Squirrel cage motor 5.50 kW.

319 1 SILENCER

Silencer 300mm Material MS.

320 1 AIRLOCK

Airlock shape: Normal airlock.
mild steel housing with multiple pocket rotor.

Size 16 L, with 1.1 kw Hard gear motor. Inlet type: Round to square.

SKF bearing.

With sight glass.

H LIQUID ADDING SYSTEM

H-1 LIQUID ADDING LINE 1

321 2 FITTINGS TO DAILY TANK

322 1 HYDROLYSATE DAILY TANK

323 1 WATER DAILY TANK

324 1 LIQUIDS ADDING MACHINE

Equipment can be added liquid automatically.
Inlet and outlet are equipment with pneumatic valves, realizing accurate control.

Material: stainless steel. With 3 load cells.

2 Inlet pipe with shut off valve.

325 1 FITTINGS FOR LIQUID ADDING LINE 1

Volumetric flow, 60 L/min

326 1 PIPING

H-2 LIQUID ADDING LINE 2

327	**2**	**FITTINGS TO DAILY TANK**
328	**1**	**SOYA LECITHINE DAILY TANK**
329	**1**	**FISH OIL DAILY TANK**
330	**1**	**LIQUIDS ADDING MACHINE SYTC100-F**

Equipment can be added liquid automatically.
Inlet and outlet are equipment with pneumatic valves, realizing accurate control.
Material: stainless steel.

2 Inlet pipe with shut off valve.

With 3 load cells.

With vertical agitator.

331 1 FITTINGS FOR LIQUID ADDING LINE 1

Volumetric flow, 60 L/min

332 1 PIPING

H-3 LIQUID ADDING LINE 3

333 1 FITTINGS TO DAILY TANK

334 1 FISH OIL DAILY TANK

335 1 FITTINGS FOR LIQUID ADDING LINE 3

Volumetric flow, 13 L/min

1 Set of fittings for fat or lecithin addition, comprising:

Check valve

Safety valve
Manual ball valve
Manometer
Pneumatic ball valve
Pneumatic V regulating valve Material, mild steel.

With flowmeter

336 1 PIPING

I AUXILIARIES

I-1 AUXILIARIES

337 1 INSTALLATION MATERIAL

338 1 COMPREOSSOR, FILTER, DRYER AND TANK

1 COMPRESSOR AIR PIPING AND ACCESSORIES

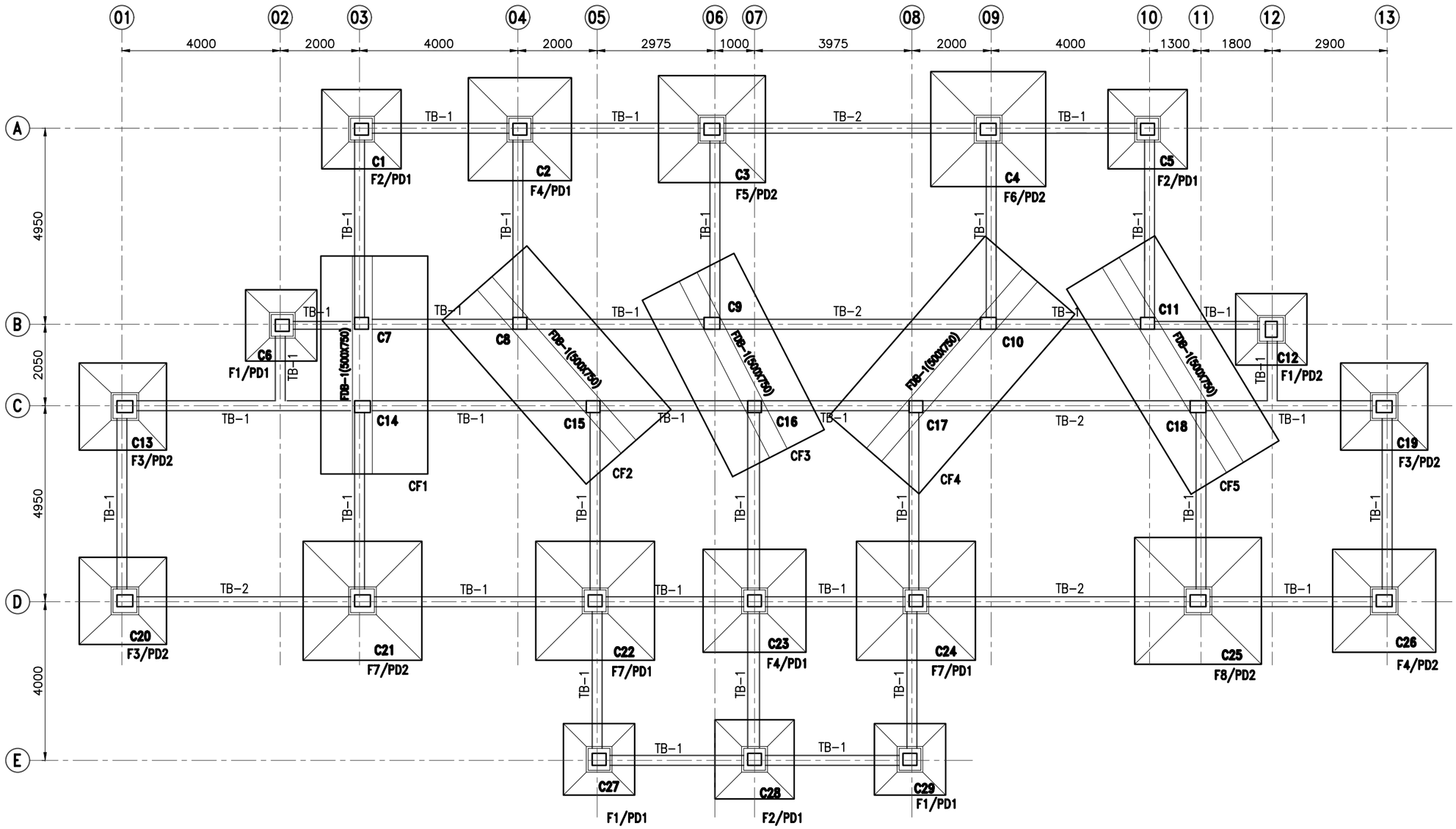
STEAM PIPING AND STEAM HEADER

II			PLANT AUTOMATION
	341	1	CONTROL SYSTEM
	342	1	PLC+MCC
	343	1	INSTALLATION MATERIALS
	344	1	HARDWARE DESIGN
	345	1	ELECTRICAL SUPERVISION
	346	1	ELECTRICAL INSTALLATION
III			SERVICE
J			ENGINEERING
	347	1	ENGINEERING Consisting of:

Flow sheet of the plant, with indication of the necessary equipment.

Installation drawings
1 sets with plan view, cross- and longitudinal sections, details regarding spouting, aspiration and compressed air system.

Sd/-
MANAGING DIRECTOR
THE STATE FISHERIES DEVELOPMENT CORPORATION LIMITED



FOUNDATION LAYOUT

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT FOUNDATION LAYOUT OF BLOCK-1

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. STRUC-01

1

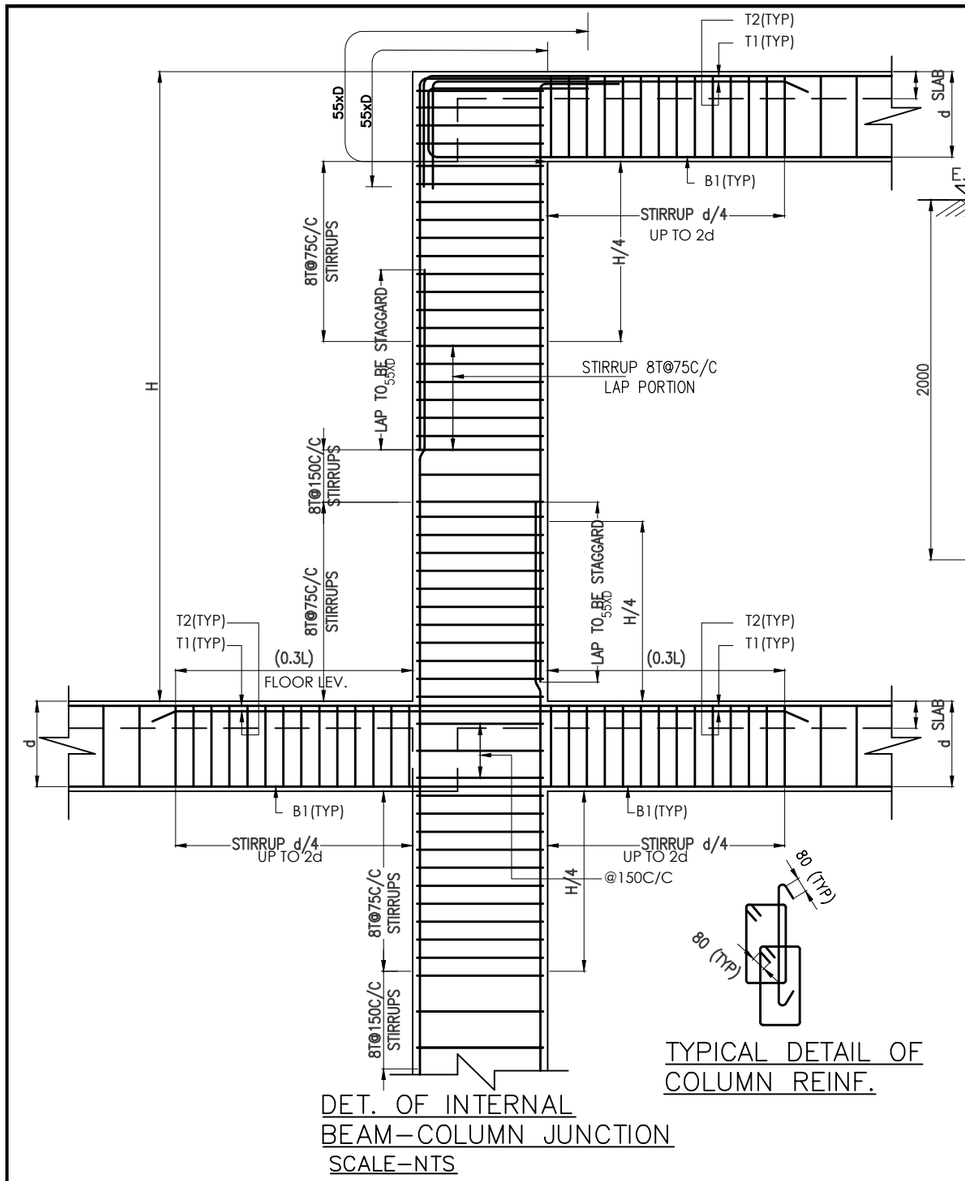
KFF / TENDER / STRUC

NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE – M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   I) COLUMN – 40MM
   II) LIFT WALL – 30MM
   IV) TIE BEAM – 25MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

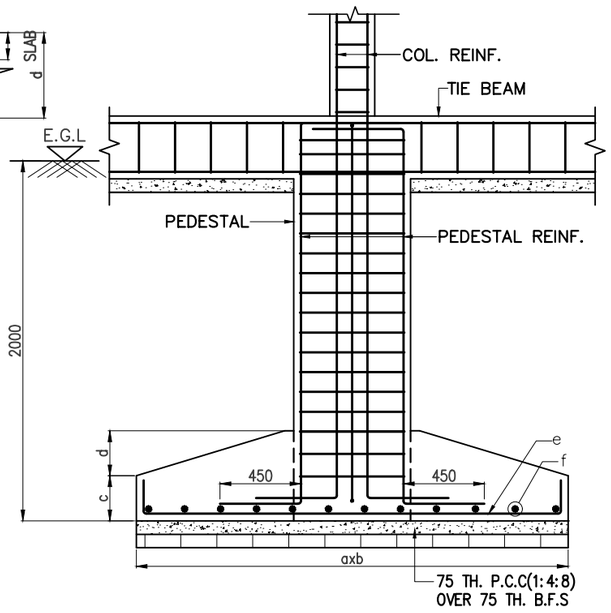
DEVELOPED BY:

SFDCL

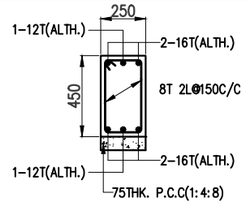


DET. OF INTERNAL
BEAM–COLUMN JUNCTION
SCALE–NTS

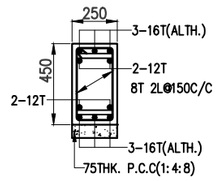
TYPICAL DETAIL OF
COLUMN REINF.



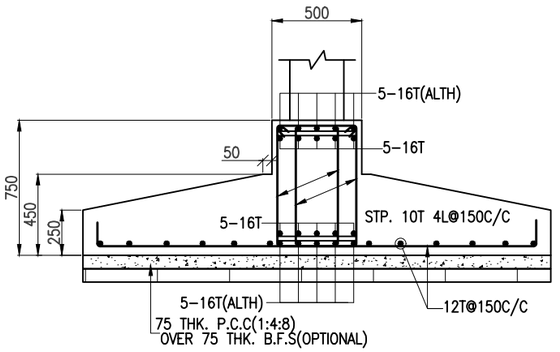
TYPICAL SECTION THROUGH ISOLATED FOOTING



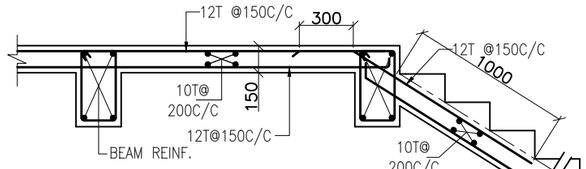
R.C DETAIL OF
TIE BEAM TB-1(250X450)
SCALE - 1:30

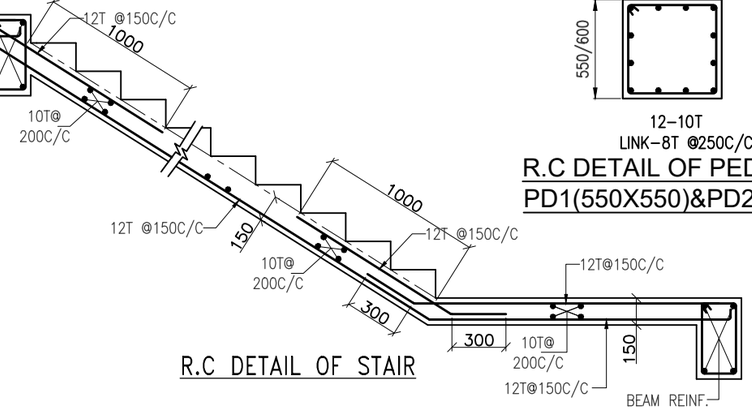


R.C DETAIL OF
TIE BEAM TB-2(250X450)
SCALE - 1:30

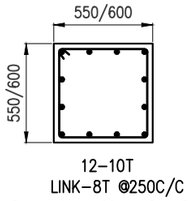


R.C DETAIL OF FDB-1(500X750)



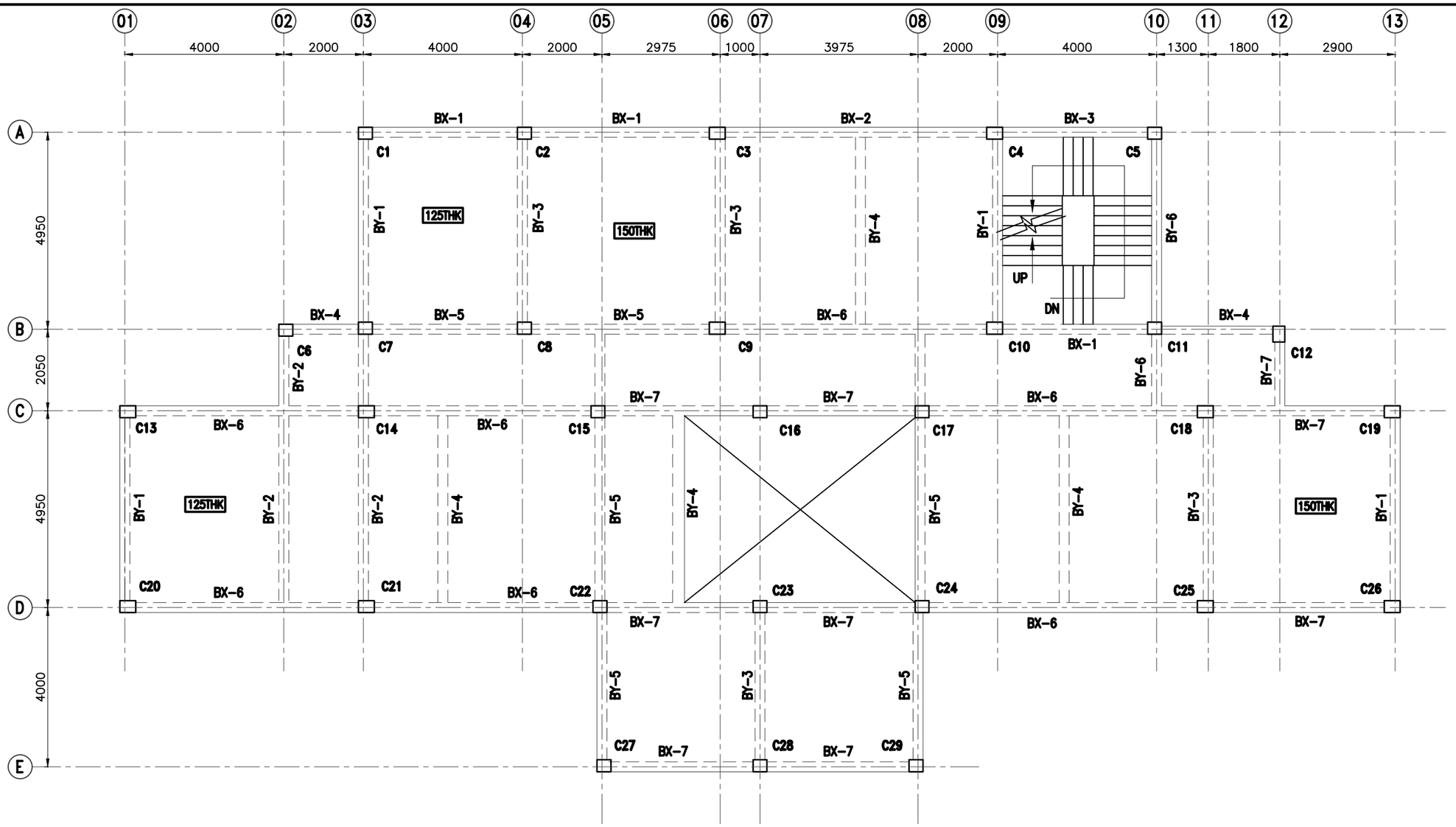


R.C DETAIL OF STAIR



R.C DETAIL OF PEDESTAL MKD.
PD1(550X550)&PD2(600X600)

PROJECT						NOTES	DEVELOPED BY:
FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI	NO.	ISSUE STATUS	BY	DATE	SCALE 1:300	1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED 2. GRADE OF CONCRETE – M25 3. GRADE OF STEEL Fe500D 4. CLEAR COVER TO MAIN REINFORCEMENT I) COLUMN – 40MM II) LIFT WALL – 30MM IV) TIE BEAM – 25MM 5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED 6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C 7. ALL DISTRIBUTION BAR 8T@250C/C 8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.	SFDCL
TITLE					DATE 16–12–24		
TENDER DRAWING- FISH PLANT R.C DETAIL OF FOUNDATION BLOCK-1					DRG.NO. STRUC–04		
					1		
	NO.		BY	DATE	KFF / TENDER / STRUC		



G.A OF TYPICAL FLOOR LEVEL

UNLESS OTHERWISE MENTION ALL SLAB THICKNESS 115MM

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT
G.A OF BLOCK-1

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. STRUC-02

1

KFF / TENDER / STRUC

NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE – M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   - I) COLUMN – 40MM
   - II) LIFT WALL – 30MM
   - IV) TIE BEAM – 25MM
   - V) FLOOR BEAM – 25MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

DEVELOPED BY:

SFDCL

FOUNDATION SCHEDULE

FOUNDATION MKD.	SIZE(IN mm)		DEPTH(IN mm)		REINFORCEMENT	
	a	b	c	d	ALONG SHORTER(e)	ALONG LONGER(f)
F1	1800	1800	200	150	10T @ 150c/c	10T @ 150c/c
F2	2000	2000	200	200	12T @ 150c/c	12T @ 150c/c
F3	2200	2200	200	225	12T @ 150c/c	12T @ 150c/c
F4	2600	2600	200	250	12T @ 150c/c	12T @ 150c/c
F5	2700	2700	200	250	12T @ 125c/c	12T @ 125c/c
F6	2900	2900	200	300	12T @ 115c/c	12T @ 115c/c
F7	3000	3000	200	300	12T @ 100c/c	12T @ 100c/c
F8	3200	3200	300	300	12T @ 100c/c	12T @ 100c/c
CF1	2700	5500	250	250	12T @ 150c/c	10T @ 200c/c
CF2	2800	5500	250	250	12T @ 125c/c	10T @ 200c/c
CF3	2600	5000	250	300	12T @ 125c/c	10T @ 200c/c
CF4	3000	6000	250	300	12T @ 125c/c	10T @ 200c/c
CF5	2600	6050	250	250	12T @ 125c/c	10T @ 125c/c

FLOOR SLAB SCHEDULE

SLAB THK.	SHORTER SPAN		LONGER SPAN	
	SUPPORT TOP	MID SPAN BOTTOM	SUPPORT TOP	MID SPAN BOTTOM
125	8T @150C/C	8T @150C/C	8T @150C/C	8T @150C/C
150	10T @125C/C	10T @150C/C	10T @125C/C	10T @150C/C

BEAM SCHEDULE (ALONG–"X" & "Y"AXIS)

BEAM MKD.	BEAM SIZE	SUPPORT REINFORCEMENT			SPAN REINFORCEMENT		
		TOP	BOTTOM	STIRRUPS	TOP	BOTTOM	STIRRUPS
BX–1	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C
BX–2	250X500	3–20T+ 3–16T	3–20T	8T 2L @125C/C	2–20T	3–20T+ 3–16T	8T 2L@200C/C
BX–3	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C
BX–4	250X500	3–16T	3–16T	8T 2L @125C/C	2–16T	3–16T	8T 2L@200C/C
BX–5	250X500	3–16T+ 3–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 3–16T	8T 2L@200C/C
BX–6	250X500	3–20T+ 3–16T	3–20T	8T 2L @125C/C	2–20T	3–20T+ 3–16T	8T 2L@200C/C
BX–7	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C

BEAM MKD.	BEAM SIZE	SUPPORT REINFORCEMENT			SPAN REINFORCEMENT		
		TOP	BOTTOM	STIRRUPS	TOP	BOTTOM	STIRRUPS
BY–1	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C
BY–2	250X500	3–20T+ 3–16T	3–20T	8T 2L @125C/C	2–20T	3–20T+ 3–16T	8T 2L@200C/C
BY–3	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C
BY–4	250X500	3–16T	3–16T	8T 2L @125C/C	2–16T	3–16T	8T 2L@200C/C
BY–5	250X500	3–16T+ 3–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 3–16T	8T 2L@200C/C
BY–6	250X500	3–20T+ 3–16T	3–20T	8T 2L @125C/C	2–20T	3–20T+ 3–16T	8T 2L@200C/C
BY–7	250X500	3–16T+ 2–16T	3–16T	8T 2L @125C/C	2–16T	3–16T+ 2–16T	8T 2L@200C/C

COLUMN SCHEDULE

COLUMN MKD.	COL. SIZE	FOUNDATION TO 2ND. FLOOR	2ND. FLOOR TO ROOF
C1,C2,C5,C6,C7,C8,C11,C15, C16,C17,C22,C23,C24,C27, C28,C29	300X350	8–16T	8–16T
C3,C4,C9,C10,C12,C13,C14, C18,C19,C20,C21,C25,C26,	300X400	10–16T	10–16T
GRADE OF CONCRETE		M25	M25
ALL STIRRUP		AS PER COLUMN SECTION	

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT COLUMN, BEAM & SLAB SCHEDULE BLOCK-1

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16–12–24

DRG.NO. STRUC–03

1

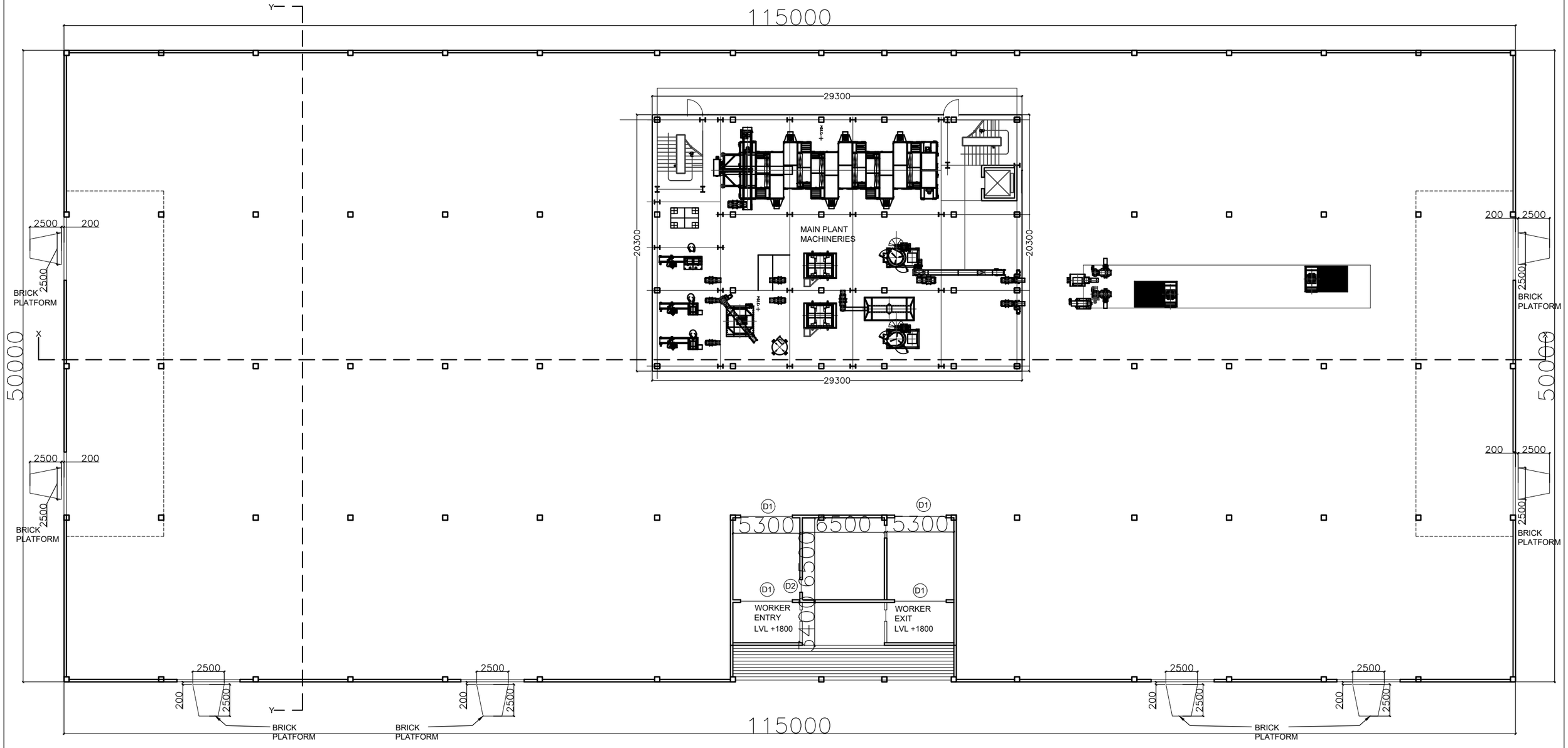
KFF / TENDER / STRUC

NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE – M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   I) COLUMN – 40MM
   II) LIFT WALL – 30MM
   IV) TIE BEAM – 25MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

DEVELOPED BY:

SFDCL



PROJECT					1. ALL DIMENSIONS ARE IN MM.
FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI	NO.	ISSUE STATUS	BY	DATE	SCALE 1:300
					DATE 16–12–24
TITLE					DRG.NO. ARCH–03
FISH FEED PLANT BLOCK PLAN AREA - 5812.65 SQM (62567.36 SQFT)					1
					KFF / TENDER / ARCH
	NO.		BY	DATE	

2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.

3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.

4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS RELEASED BY THE ARCHITECTS.

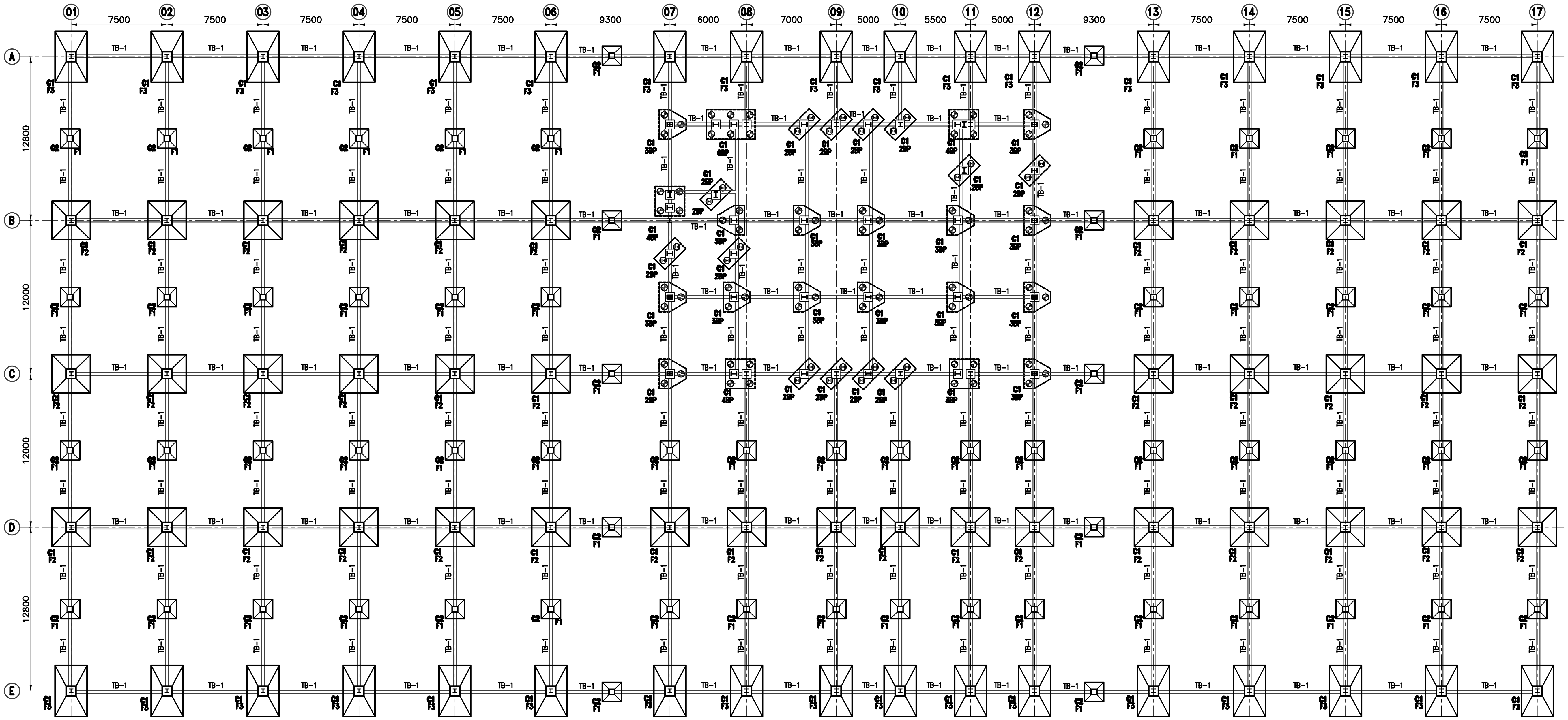
5. ALL EXTERNAL WALLS ARE 250 MM THICK AND INTERNAL 125 MM THICK UNLESS IT IS MENTIONED OTHERWISE

6. ALL PLASTERING INSIDE OR OUTSIDE ARE IN THE RATIO OF 1:6 RESPECTIVELY AND OUTSIDE PLASTERING CONTAINS WATER PROOFING AND CEILING & SHIFTS SHALL BE PLASTERED WITH CEM. PLASTERING 1:4

7. ALL R.C.C. WORKS ARE SUPPOSED TO BE AS PER STRUCTURAL DRAWING

DEVELOPED BY:

SFDCL



FOUNDATION LAYOUT

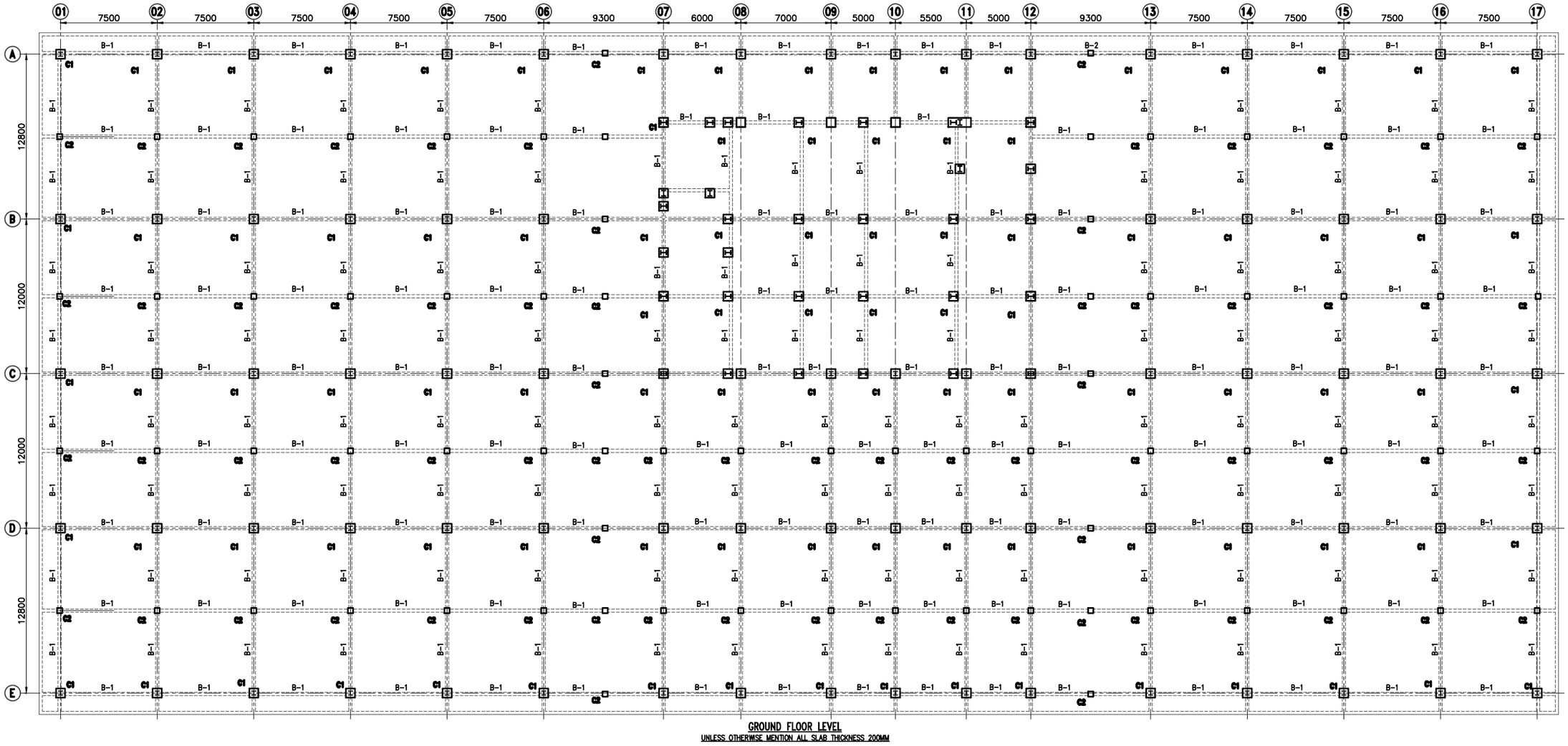
PROJECT					SCALE 1:300	
FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI	NO.	ISSUE STATUS	BY	DATE	DATE 16-12-24	
TITLE						DRG.NO. STRUC-01
TENDER DRAWING- FISH PLANT BLOCK FOUNDATION LAYOUT					1	
					KFF / TENDER / STRUC	
	NO.		BY	DATE		

NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE – M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   - I) COLUMN – 40MM
   - II) LIFT WALL – 30MM
   - III) TIE BEAM – 25MM
   - IV) PILE CAP :–
     - (i)BOTTOM–75MM
     - (ii)TOP–50MM
     - (iii) SIDE–50MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

DEVELOPED BY:

SFDCL



GROUND FLOOR LEVEL

UNLESS OTHERWISE MENTION ALL SLAB THICKNESS 200MM

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK G.A OF GROUND FLOOR LEVEL

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. STRUC-02

1

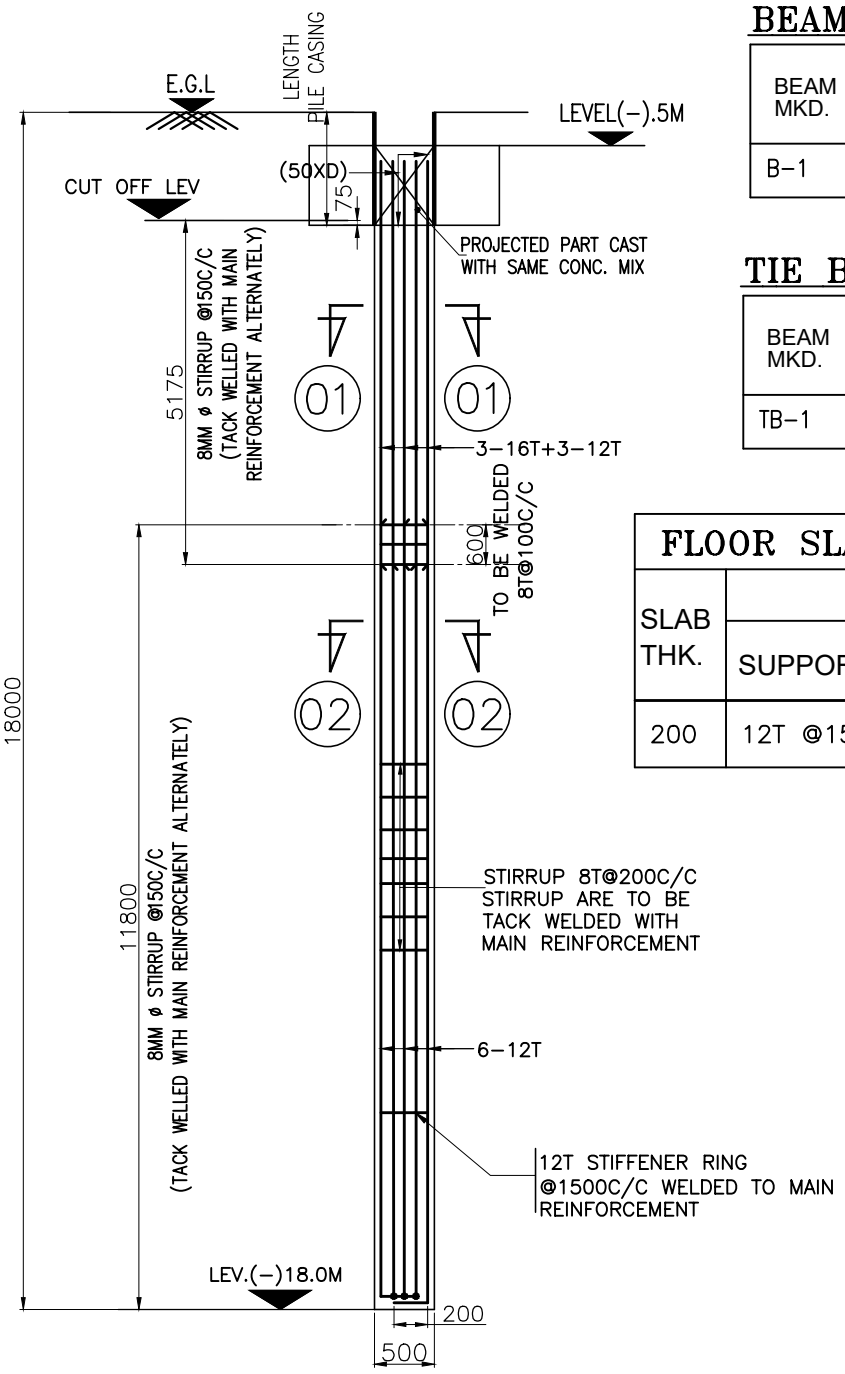
KFF / TENDER / STRUC

NOTES

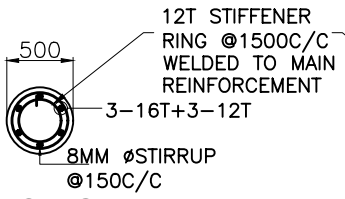
1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE – M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   I) COLUMN – 40MM
   II) LIFT WALL – 30MM
   IV) TIE BEAM – 25MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

DEVELOPED BY:

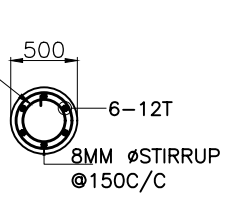
SFDCL



DETAILS OF 500Ø VERTICAL CAST IN SITU BORED PILE (BP) (D.M.C.) CAPACITY-55T SLUMP 150-180MM CONC.GRADE M25 ,WITH MIN. CEMENT CONTENT 400 Kg/m³



SEC. THROUGH 01-01



SEC. THROUGH -02-02

BEAM SCHEDULE

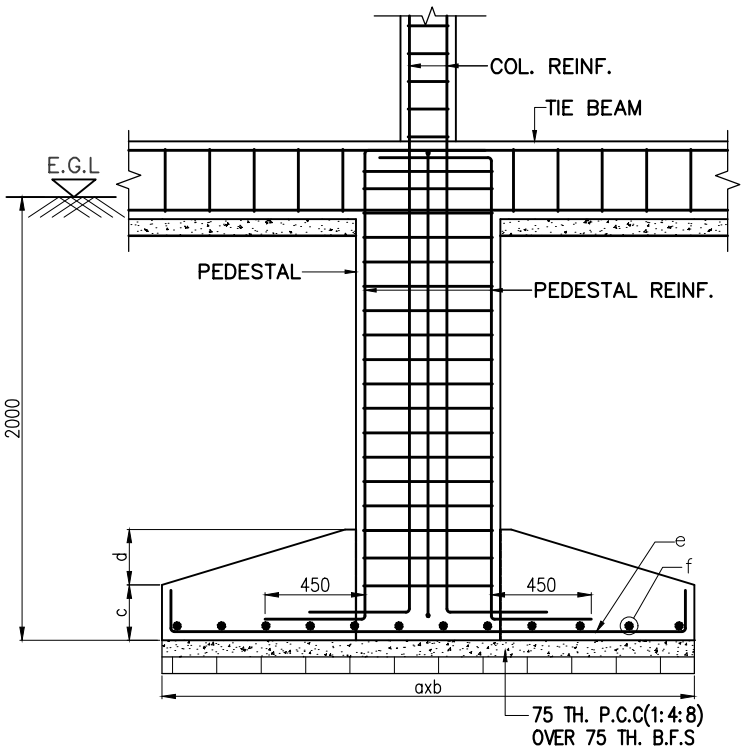
BEAM MKD.	BEAM SIZE	SUPPORT REINFORCEMENT			SPAN REINFORCEMENT		
		TOP	BOTTOM	STIRRUPS	TOP	BOTTOM	STIRRUPS
B−1	250X600	3−20T+ 3−20T	3−20T	8T 2L @125C/C	3−20T	3−20T+ 3−20T	8T 2L@200C/C

TIE BEAM SCHEDULE

BEAM MKD.	BEAM SIZE	SUPPORT REINFORCEMENT			SPAN REINFORCEMENT		
		TOP	BOTTOM	STIRRUPS	TOP	BOTTOM	STIRRUPS
TB−1	250X500	3−16T+ 3−12T	3−16T	8T 2L @125C/C	3−16T	3−16T+ 3−12T	8T 2L@200C/C

FLOOR SLAB SCHEDULE

SLAB THK.	SHORTER SPAN		LONGER SPAN	
	SUPPORT TOP	MID SPAN BOTTOM	SUPPORT TOP	MID SPAN BOTTOM
200	12T @150C/C	12T @150C/C	12T @150C/C	12T @150C/C



TYPICAL SECTION THROUGH ISOLATED FOOTING

FOUNDATION SCHEDULE

FOUNDATION MKD.	SIZE(IN mm)		DEPTH(IN mm)		REINFORCEMENT	
	a	b	c	d	ALONG SHORTER(e)	ALONG LONGER(f)
F1	1500	1500	200	150	10T @ 150c/c	10T @ 150c/c
F2	3000	3000	200	200	12T @ 150c/c	12T @ 150c/c
F3	4000	2500	400	200	16T @ 150c/c	12T @ 150c/c

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK R.C DETAIL OF PILE

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16−12−24

DRG.NO. STRUC−04

1

KFF / TENDER / STRUC

NOTES

1. ALL DIMENSIONS ARE IN MM EXCEPT NOTED
2. GRADE OF CONCRETE − M25
3. GRADE OF STEEL Fe500D
4. CLEAR COVER TO MAIN REINFORCEMENT
   - I) COLUMN − 40MM
   - II) LIFT WALL − 30MM
   - IV) TIE BEAM − 25MM
5. ALL LAPS ARE TO BE 50XDIA & ARE STAGGARED
6. ALL SPACER BAR ARE TO BE PROVIDED@600C/C
7. ALL DISTRIBUTION BAR 8T@250C/C
8. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL DRG.

DEVELOPED BY:

SFDCL

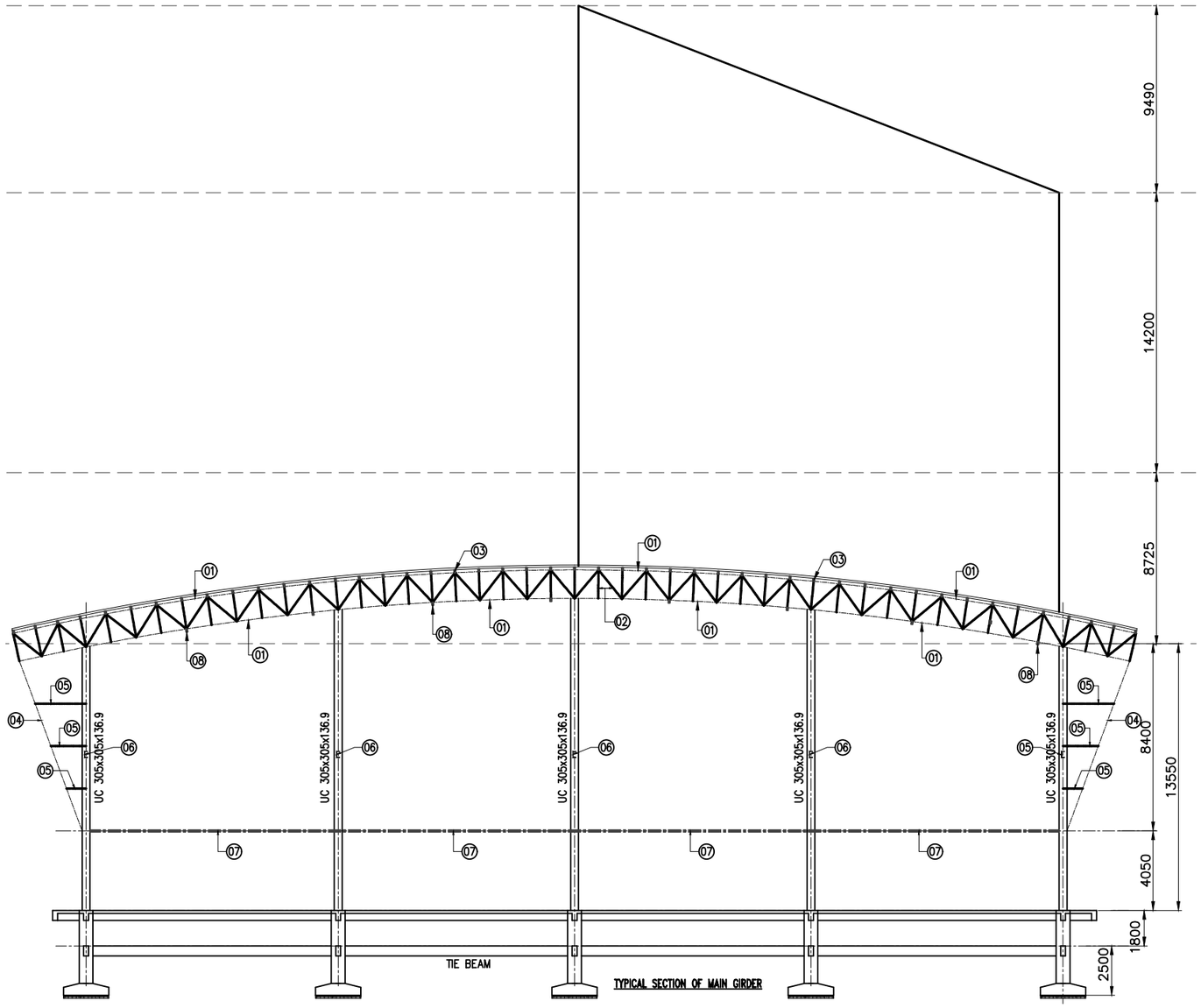


TABLE OF MEMBER GIRDER MKD.-1 TO 12	
MKD.	SECTION
01	NB-150X4.8
COLUMN	UC 305x305x136.9
02	NB-80X4
03	RHS-145X82x5.4
04	NB-125X4.8
05	NB-80X4
06	ISMC-300
07	ISMC-300
08	RHS-145X82x5.4

NOTE: –
THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK SECTION OF TRUSS

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. STRUC-05

1

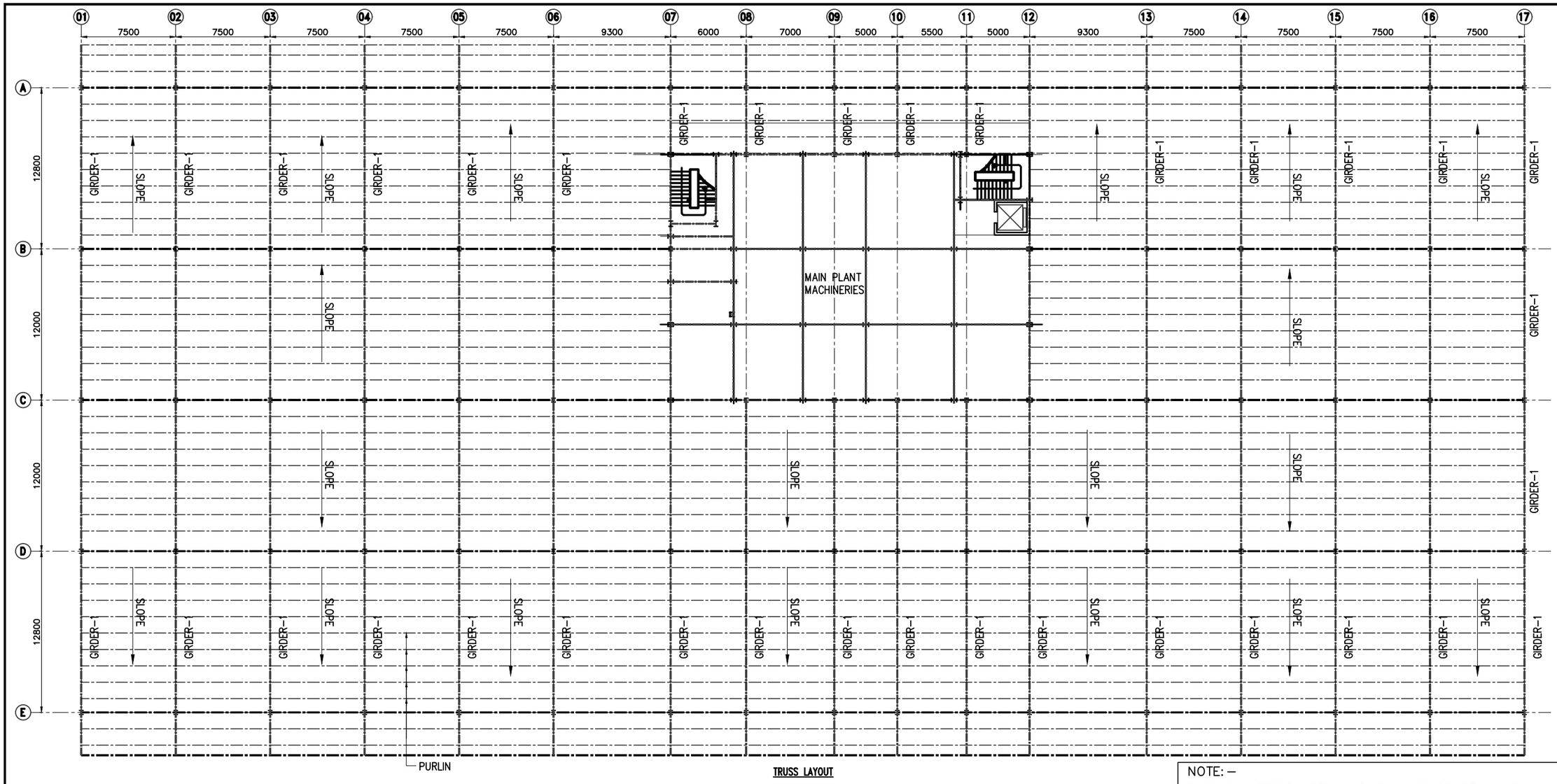
KFF / TENDER / STRUC

STEEL STRUCTURAL NOTES :-

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN M.
2. ALL GUSSET PLS. 8 THK. UNLESS NOTED OTHERWISE.
3. ALL FILLET WELDS 4mm THK. UNLESS NOTED OTHERWISE.
4. ALL ERECTION HOLES ARE 17.5ø FOR 16ø BOLTS U.N.O.
5. ERECTION BOLTS SHOWN THUS------◇
6. PERMANENT BOLT SHOWN THUS---------●
7. ALL INCLINED MEMBERS AND DIMENSION OF GST. PLATES ARE TO BE VERIFIED FROM ACTUAL SHOP LAY OUT.
8. ALL WELDS ARE 4 MM. FILLET UNLESS NOTED OTHERWISE.
9. ALL STRUCTURAL STEEL SHOULD BE IS: 2062 GR-A EXCEPT HOLLOW SECTIONS. FOR HOLLOW SECTIONS YST= 310 MPA
10. ERECTION TO BE DONE BASED ON FABRICATION DRAWING.
11. TOTAL FABRICATION & ERECTION WORK SHALL BE BASED ON IS : 800-2007.
12. TOLERANCES FOR FRICATION OF STEEL WORK AS PER IS : 7215

DEVELOPED BY:

SFDCL



TRUSS LAYOUT

NOTE: –
THIS IS A DESIGN DRAWING ONLY, SHOP DRAWING WILL BE PROVIDED BY VENDORS BEFORE EXECUTION AND MUST BE VERIFIED BY STRUCTURAL ENGINEER

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK TRUSS LAYOUT

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16–12–24

DRG.NO. STRUC–03

1

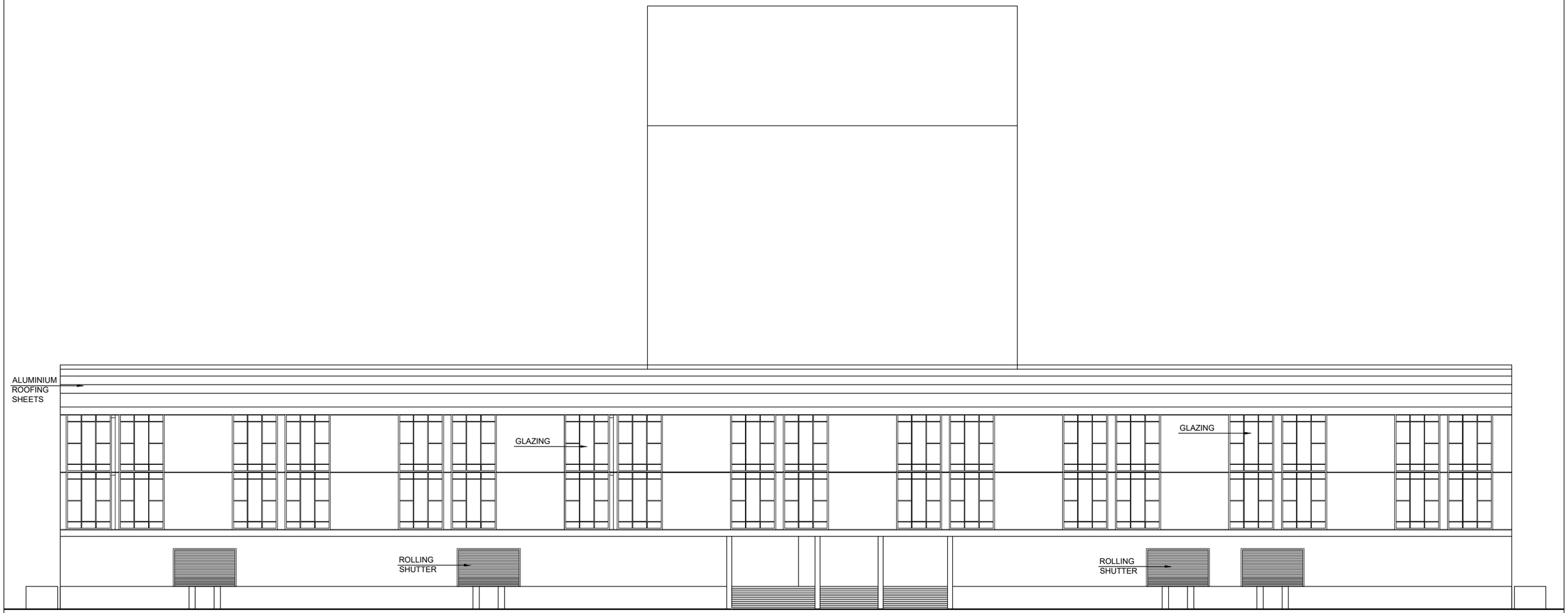
KFF / TENDER / STRUC

STEEL STRUCTURAL NOTES :–

1. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN M.
2. ALL GUSSET PLS. 8 THK. UNLESS NOTED OTHERWISE.
3. ALL FILLET WELDS 4mm THK. UNLESS NOTED OTHERWISE.
4. ALL ERECTION HOLES ARE 17.5ø FOR 16ø BOLTS U.N.O.
5. ERECTION BOLTS SHOWN THUS------◇
6. PERMANENT BOLT SHOWN THUS---------●
7. ALL INCLINED MEMBERS AND DIMENSION OF GST. PLATES ARE TO BE VERIFIED FROM ACTUAL SHOP LAY OUT.
8. ALL WELDS ARE 4 MM. FILLET UNLESS NOTED OTHERWISE.
9. ALL STRUCTURAL STEEL SHOULD BE IS: 2062 GR–A EXCEPT HOLLOW SECTIONS. FOR HOLLOW SECTIONS YST= 310 MPA
10. ERECTION TO BE DONE BASED ON FABRICATION DRAWING.
11. TOTAL FABRICATION & ERECTION WORK SHALL BE BASED ON IS : 800–2007.
12. TOLERANCES FOR FRICATION OF STEEL WORK AS PER IS : 7215

DEVELOPED BY:

SFDCL



FRONT ELEVATION

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK

AREA - 5812.65 SQM (62567.36 SQFT)

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. ARCH-05

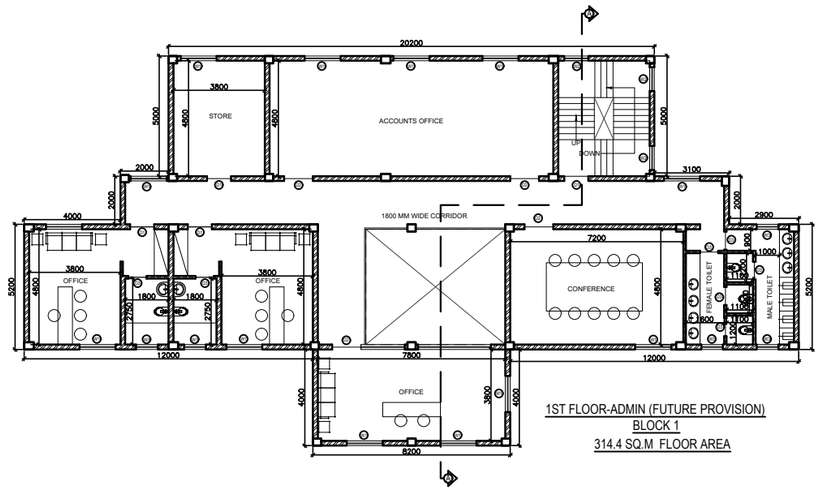
1

KFF / TENDER / ARCH

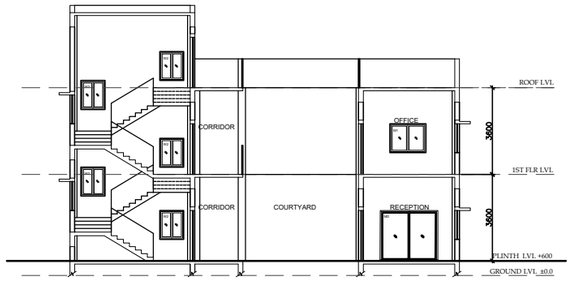
1. ALL DIMENSIONS ARE IN MM.
2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.
3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS RELEASED BY THE ARCHITECTS.
5. ALL EXTERNAL WALLS ARE 250 MM THICK AND INTERNAL 125 MM THICK UNLESS IT IS MENTIONED OTHERWISE
6. ALL PLASTERING INSIDE OR OUTSIDE ARE IN THE RATIO OF 1:6 RESPECTIVELY AND OUTSIDE PLASTERING CONTAINS WATER PROOFING AND CEILING & SHIFTS SHALL BE PLASTERED WITH CEM. PLASTERING 1:4
7. ALL R.C.C. WORKS ARE SUPPOSED TO BE AS PER STRUCTURAL DRAWING

DEVELOPED BY:

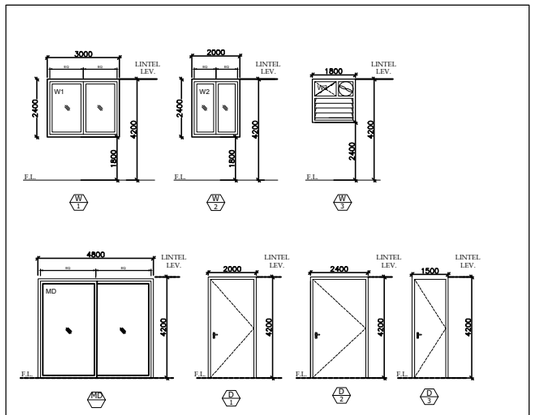
SFDCL



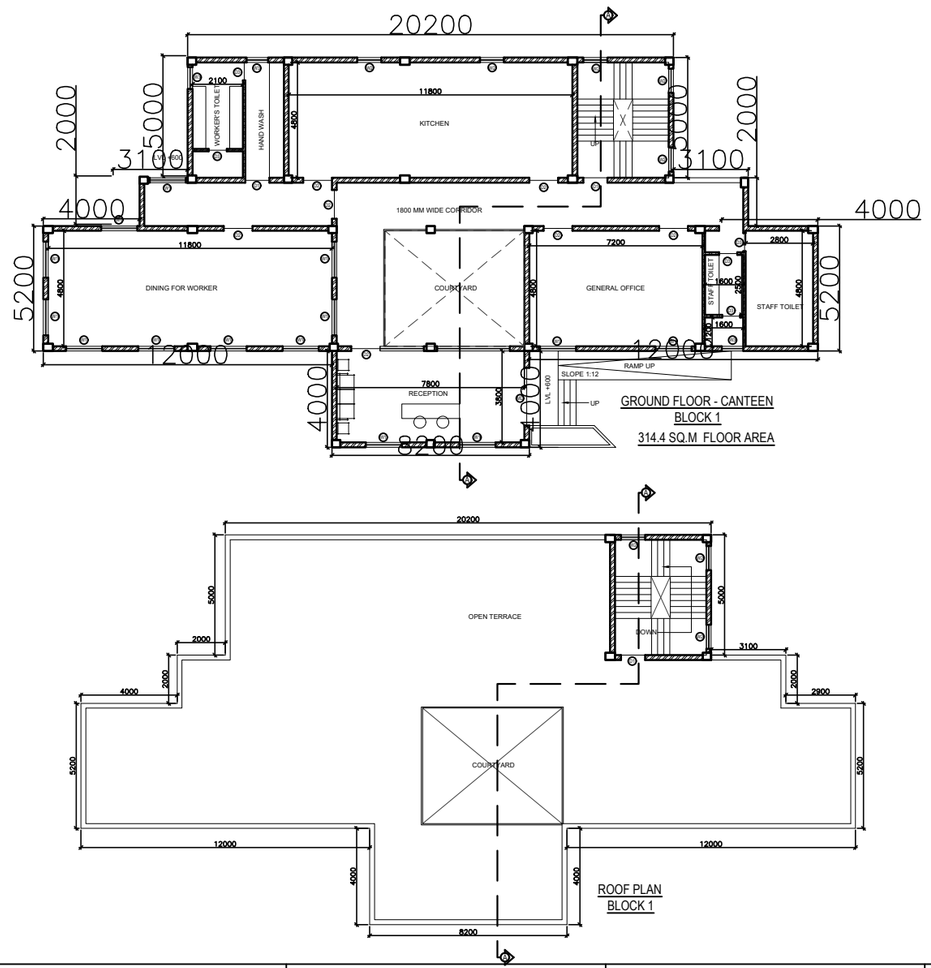
1ST FLOOR-ADMIN (FUTURE PROVISION)
BLOCK 1
314.4 SQ.M FLOOR AREA



SECTION AA (FIRST FLOOR- FUTURE PROVISION)

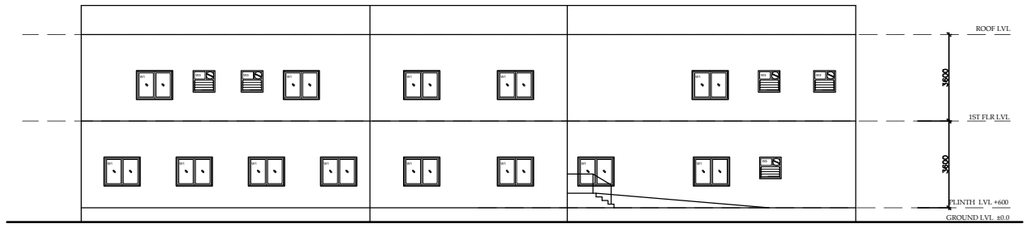


DOOR WINDOW SCHEDULE
BLOCK 1
SCALE - 1:125

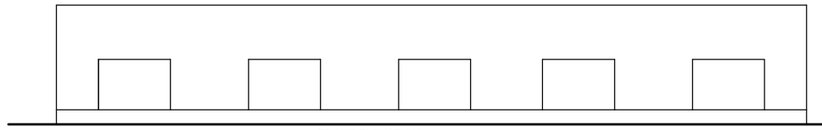


GROUND FLOOR - CANTEEN
BLOCK 1
314.4 SQ.M FLOOR AREA

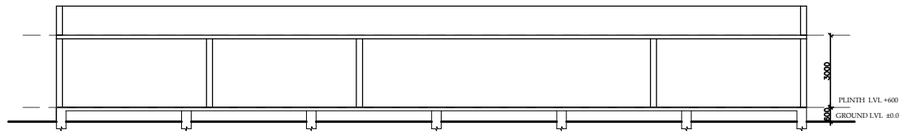
ROOF PLAN
BLOCK 1



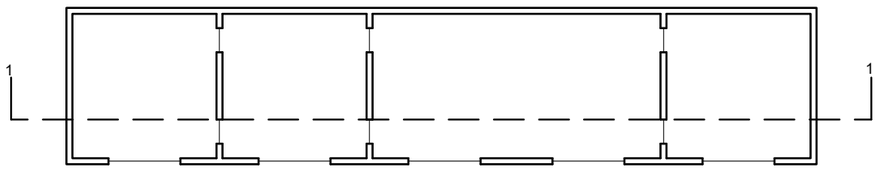
FRONT ELEVATION (FIRST FLOOR-FUTURE PROVISION)
BLOCK 1



FRONT ELEVATION



SECTION 1-1



PLAN- SUBSTATION BLOCK

PROJECT	SCHEDULE OF WINDOWS				SCHEDULE OF DOOR			
FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI	MKD	SIZE	LINTEL	SILL	MKD	SIZE	LINTEL	SILL
	W1	1500X1200	2100	900	MD	2400X2100	2100	
	W2	1200X1200	2100	900	D1	1000X2100	2100	
TITLE	W3	900X1200	2100	900	D2	1200X2100	2100	
CANTEEN & ADMINISTRATION BLOCK SUBSTATION BLOCK					D3	750X2100	2100	
					D4	1800X2100	2100	

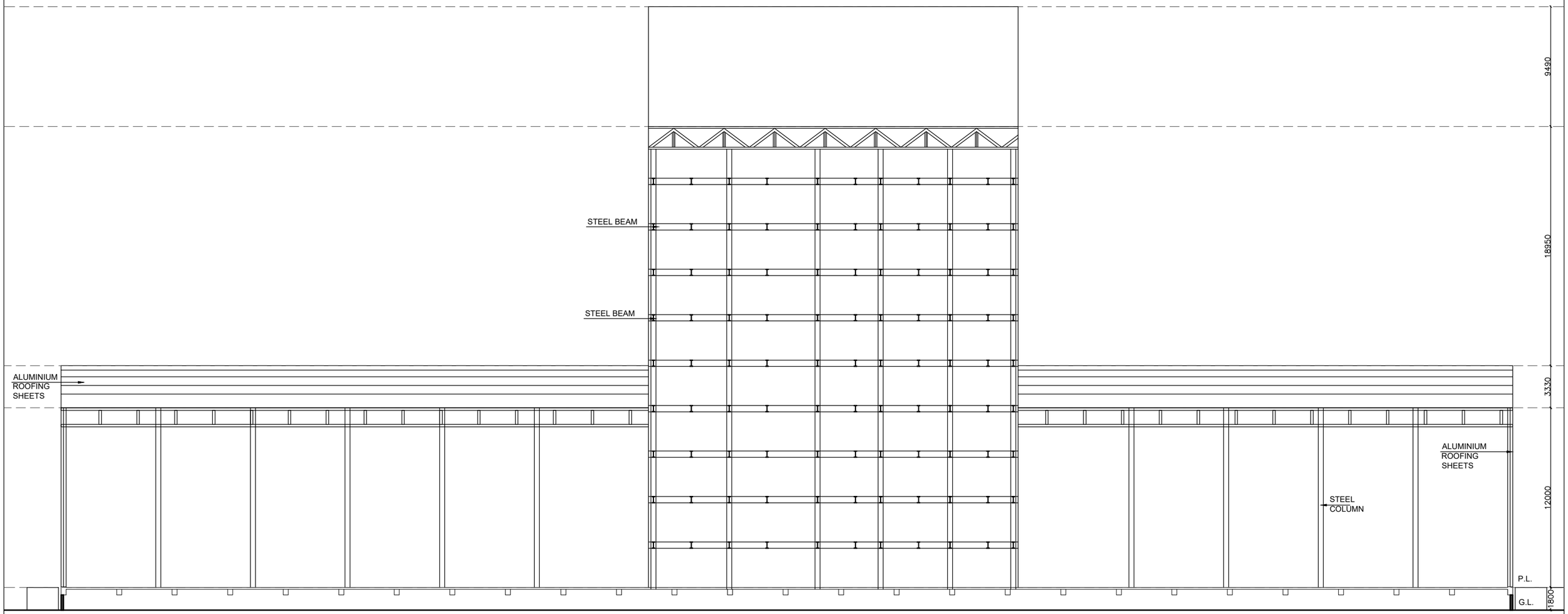
NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:250
DATE 16-12-24
DRG.NO. ARCH-07
1
N
KFF / TENDER / ARCH

1. ALL DIMENSIONS ARE IN MM.
2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.
3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS RELEASED BY THE ARCHITECTS.
5. ALL EXTERNAL WALLS ARE 250 MM THICK AND INTERNAL 125 MM THICK UNLESS IT IS MENTIONED OTHERWISE
6. ALL PLASTERING INSIDE OR OUTSIDE ARE IN THE RATIO OF 1:6 RESPECTIVELY AND OUTSIDE PLASTERING CONTAINS WATER PROOFING AND CEILING & SHIFTS SHALL BE PLASTERED WITH CEM. PLASTERING 1:4
7. ALL R.C.C. WORKS ARE SUPPOSED TO BE AS PER STRUCTURAL DRAWING

DEEVLOPED BY:

SFDCL



SECTION X-X

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

TENDER DRAWING- FISH PLANT BLOCK SECTION

AREA - 5812.65 SQM (62567.36 SQFT)

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16–12–24

DRG.NO. ARCH–06

1

KFF / TENDER / ARCH

1. ALL DIMENSIONS ARE IN MM.

2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.

3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.

4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS RELEASED BY THE ARCHITECTS.

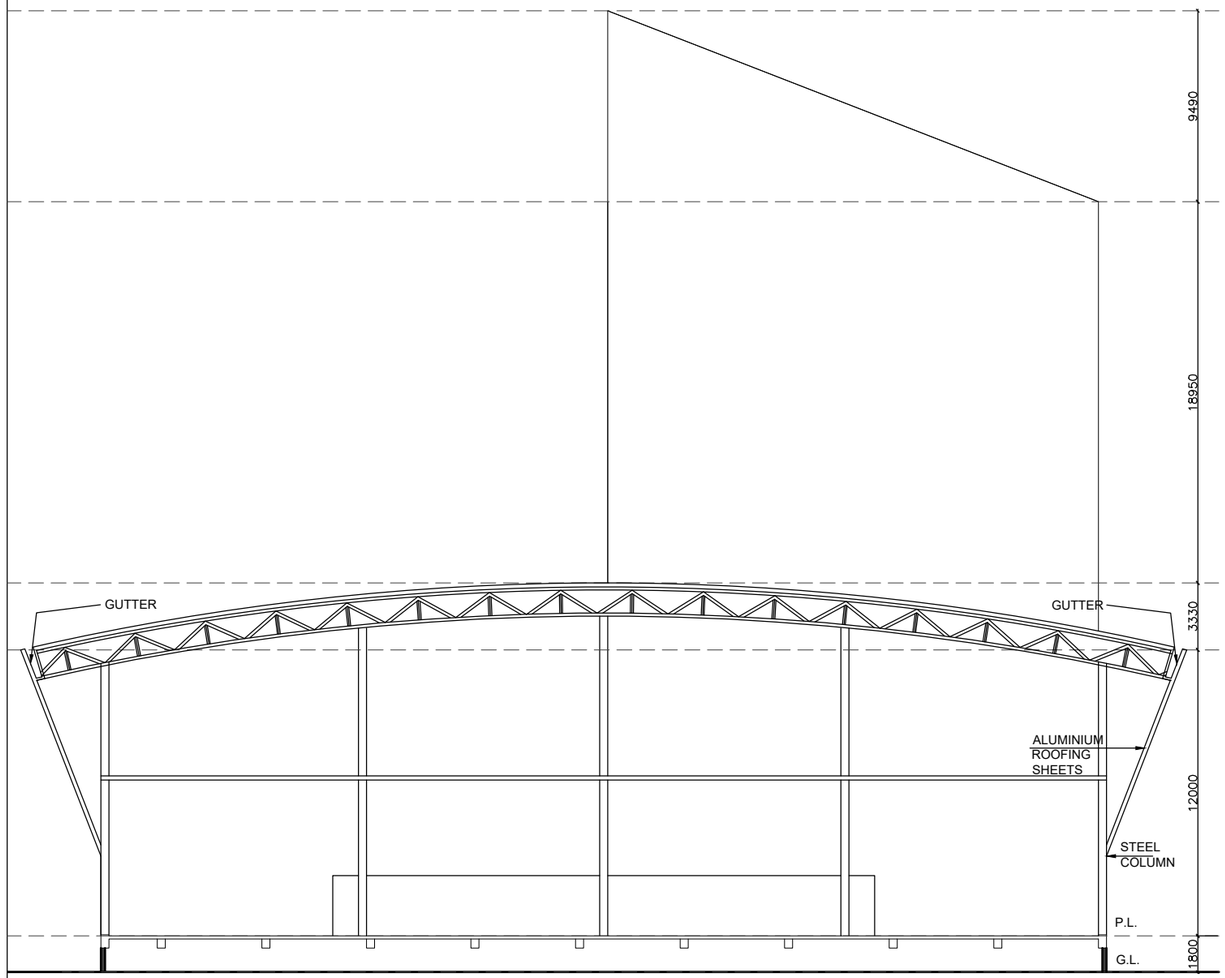
5. ALL EXTERNAL WALLS ARE 250 MM THICK AND INTERNAL 125 MM THICK UNLESS IT IS MENTIONED OTHERWISE

6. ALL PLASTERING INSIDE OR OUTSIDE ARE IN THE RATIO OF 1:6 RESPECTIVELY AND OUTSIDE PLASTERING CONTAINS WATER PROOFING AND CEILING & SHIFTS SHALL BE PLASTERED WITH CEM. PLASTERING 1:4

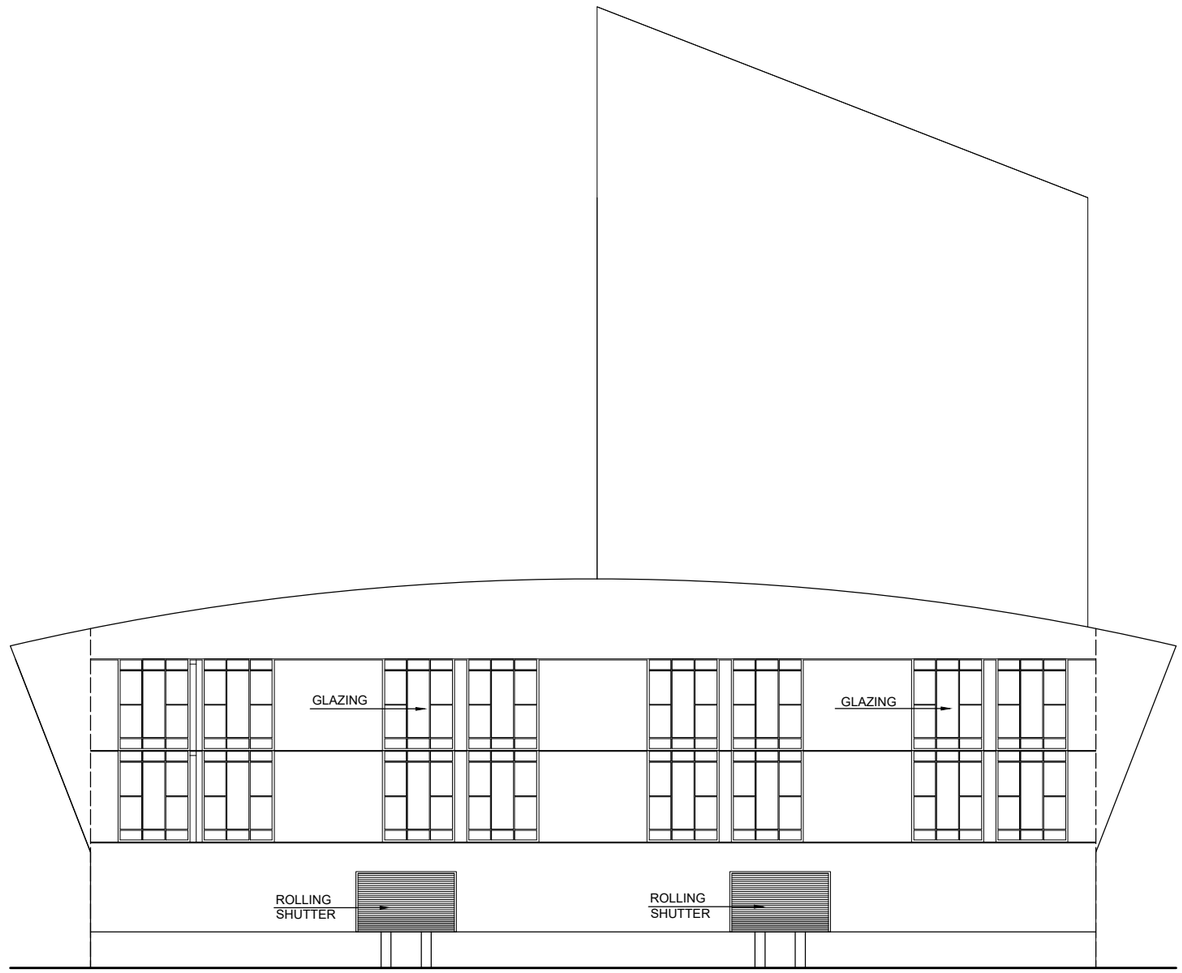
7. ALL R.C.C. WORKS ARE SUPPOSED TO BE AS PER STRUCTURAL DRAWING

DEVELOPED BY:

SFDCL



SIDE ELEVATION



SECTION YY

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

FISH FEED PLANT BLOCK- FRONT ELEVATION AND SECTION
AREA - 5812.65 SQM (62567.36 SQFT)

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:300

DATE 16-12-24

DRG.NO. ARCH-04

1

KFF / TENDER / ARCH

1. ALL DIMENSIONS ARE IN MM.
2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.
3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.
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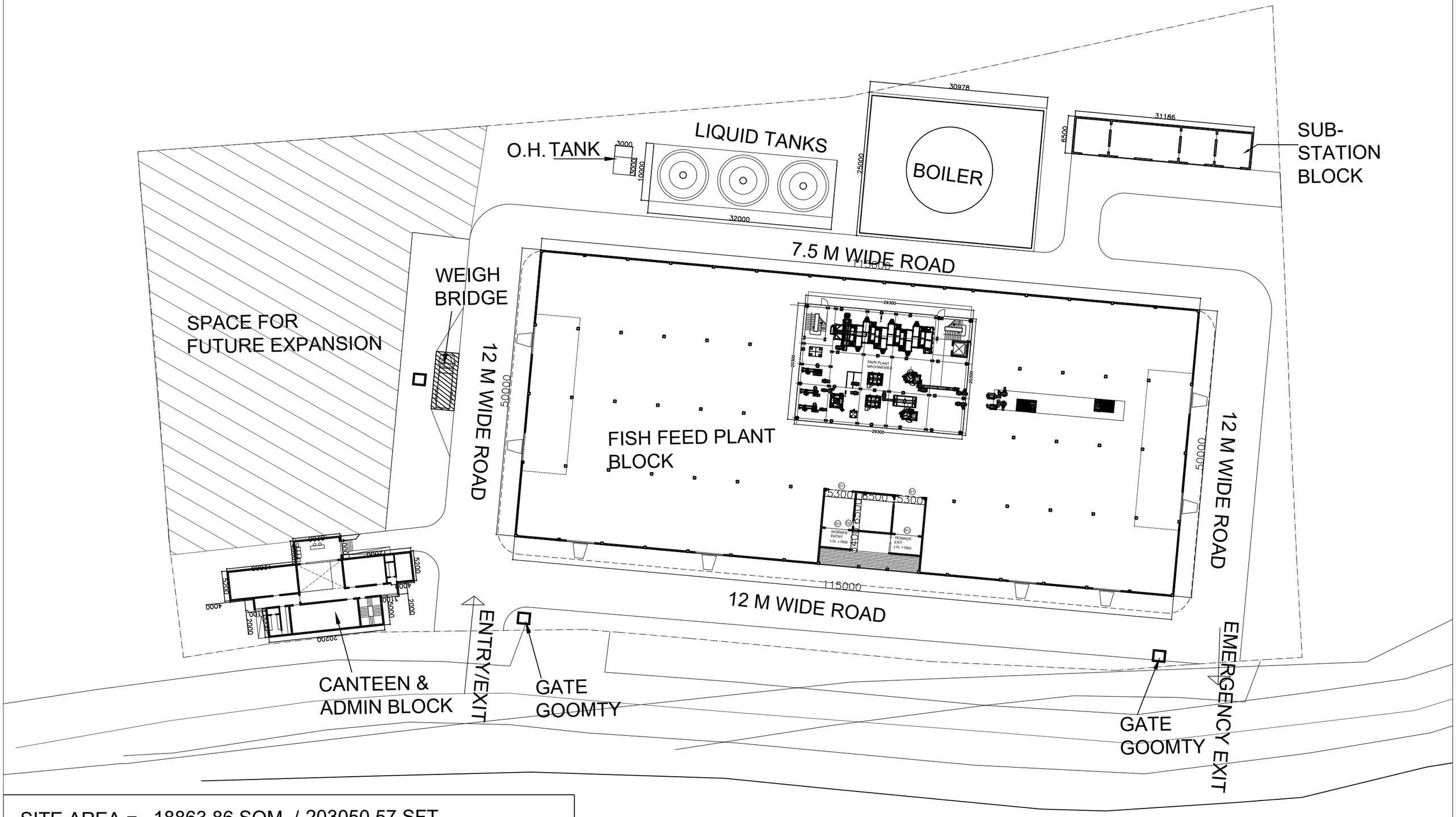
7. ALL R.C.C. WORKS ARE SUPPOSED TO BE AS PER STRUCTURAL DRAWING

DEVELOPED BY:

SFDCL



SITE AREA = 18863.86 SQM. / 203050.57 SFT.

ROAD AREA = 4314.92 SQM. / 46445.79 SFT.

TRANSFORMER BLDG AREA = 203.13 SQM./ 2186.44 SFT.

BOILER AREA = 720.00 SQM./ 7750.08 SFT.

LIQUID TANKS P.L. AREA = 320.00 SQM./ 3444.48 SFT.

BOUNDARY RUNNING METER = 596M

PROJECT

FISH FEED AND SHRIMP FEED PLANT PROJECT IN KALYANI

TITLE

SITE PLAN

NO.	ISSUE STATUS	BY	DATE
NO.		BY	DATE

SCALE 1:600

DATE 16–12–24

DRG.NO. ARCH–02

1

KFF / TENDER / ARCH

1. ALL DIMENSIONS ARE IN MM.
2. FOR CHANGES IN DIMENSION DUE TO SITE CONDITIONS THE ARCHITECTS DECISION SHALL BE FINAL.
3. FOR ANY DISCREPANCIES THE ARCHITECTS DECISION SHALL HAVE TO BE OBTAINED PRIOR TO IMPLEMENTATION AT SITE.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS RELEASED BY THE ARCHITECTS.

DEVELOPED BY:

SFDCL