



Government of West Bengal

Directorate of Forests

Office of the Divisional Forest Officer

&

Ex- Officio Manager, West Bengal Wasteland Development Corporation

Parks and Gardens (North) Division

32, Girish Ghosh Sarani, Hakimpura, Siliguri-1

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Memo. No.206/2-26

Date: 02.11.2018

Notice Inviting e-Tender: - e-Tender NIT No: 78/DFO/PGN/WBWDCL/18-19
(1st Call)

The Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division, on behalf of the Governor, West Bengal invites e-tenders for the following work(s) from the eligible Contractors as detailed in the table below. [Collection (downloading) and Submission (uploading) of Tender can be made online through the website <https://wbtenders.gov.in> only].

NIT NO: 78/DFO/PGN/WBWDCL/18-19 (1st Call)

Name of the project work
Creation of External Infrastructures for Management of Eco-Resorts at Tonglu.

Amount : Rs. 4,96,72,484/-

TENDER FEE : Rs. 10,000/-

EMD : Rs. 9,93,450/-

Period of Completion : 180 Days.

Cost of tender document/tender fees and Earnest Money Deposit (EMD) should be deposited online at the website www.wbtenders.gov.in through RTGS/NEFT Challan or through online payment gateway.

Note: Cost of Tender document/ Tender fees and Earnest Money deposit (EMD) for 1st Call to be released & the Bidder has to deposit the Cost of Tender Document/ Tender fees and Earnest Money Deposit (EMD) afresh for 2nd Call and so on, if any.

NOTICE INVITING TENDER No. NIT No: 78/DFO/PGN/WBWDCL/18-19 (1st Call) DATED: 02.11.2018

General Guidance for e-Tendering

1.1 Instructions / Guidelines for tenderers for electronic submission of the tenders online have been shown in Web site <https://wbtenders.gov.in>

1.2 Registration of Contractors

Any contractor willing to take part in the process of e-tendering will have to be enrolled and registered with the Government e-Procurement System.

1.3 Digital Signature Certificate (DSC)

Each contractor is required to obtain a Class-II or Class-III Digital Signature Certificate (DSC) for submission of tenders

1.4 Collection of Tender Documents

The contractor can search and download NIT and tender documents electronically from computer once he logs on to the website mentioned in Clause 1.1 using the Digital Signature Certificate. This is the only mode of collection of tender documents

1.5 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. A prospective Tenderer (including his participation in partnership) shall be allowed to participate in a single work or more than one or as many project works as mentioned in the List of Work(s) of this NIT.

2. Submission of Tenders

2.1 General process of submission

Tenders are to be submitted online through the website stated in Clause 1.1 in two folders, at a time for each work, one is **Technical Proposal** and the other is **Financial Proposal**, before the prescribed date and time mentioned in the list attached. Using the Digital Signature Certificate (DSC), the documents are to be uploaded virus scanned and digitally signed. Tenderers should specially take note of all the addendum/corrigendum related to the tender and upload the latest documents as part of the tender.

2.2 Technical Proposal

The Technical Proposal should contain scanned copies and/or a declaration in standardized formats of the following in two covers (folders).

2.3 Contractors Responsibility

Successful tenderer will conduct soil investigation and design the foundation on the basis of soil investigation report for all structures and get the approval of the same design from the Competent Authority prior to the execution.

A. Technical File (Statutory Cover) containing

i. NOTICE INVITING TENDER (Including Instructions to Bidders, General Terms & Conditions Of Contract, Technical Specification.) **(To be submitted in “NIT” Folder)**

ii. Section B (Form I, Form III, Form IV and AFFIDAVIT – Y) **(to be submitted in “EMD AND TECHNICAL DOCUMENTS” Folder.)**

b) Addenda/Corrigenda: if published. Contractors are to keep track of all the Addendum/Corrigendum issued with a particular tender and upload all the above digitally signed along with the NIT. Tenders submitted without the Addendum/Corrigendum will be treated as informal and liable to be rejected.

2.3. Financial Proposal

i) The financial proposal should contain the Bill of Quantities (B.O.Q.) in one cover (folder). The contractor is to quote the percentage rate (Presenting Excess / Less / Excess or Less 0.00% or to indicate at par) online through computer in the space marked for quoting rate in the BOQ.

ii) Only downloaded copy of the B.O.Q. are to be uploaded quoting the rate, virus scanned & digitally signed by the contractor.

3. Eligibility Criteria for participation in tender:

(a) All categories of intending Tenderers shall have satisfactorily completed as a prime agency during the last 5 (five) years prior to the date of issue of this Tender Notice *and as per Notification no. 03-A/PW/O/10C-02/14dated 12.03.2015*

For 1st Call of NIT :

i) Intending tenderer should produce credentials of similar nature of completed work of the minimum value of **40% of the estimated amount** put to tender during 5(five) years prior to the date of issue of the tender notice;

or,

ii) Intending tenderers should produce credentials of 2(two) similar nature of completed work, each of minimum value of **30% of the estimated amount** put to tender during 5(five) years prior to the date of issue of the tender notice;

or

iii) Intending tenderers should produce credentials of 1(one) single running work of similar nature which has been completed to the extent of **80% or more** and value of which is not less than the desired value at (i) above; In case of running works , only those tenderers who will submit the certificate of satisfactory running work from the Competent authority, 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.

For 2nd Call of NIT :

i) Intending tenderer should produce credentials of similar nature of completed work of the minimum value of **30% of the estimated amount** put to tender during 5(five) years prior to the date of issue of the tender notice;

or,

ii) Intending tenderers should produce credentials of 2(two) similar nature of completed work, each of minimum value of **25% of the estimated amount** put to tender during 5(five) years prior to the date of issue of the tender notice;

or

iii) Intending tenderers should produce credentials of 1(one) single running work of similar nature which has been completed to the extent of **75% or more** and value of which is not less than the desired value at (i) above; In case of running works , only those tenderers who will submit the certificate of satisfactory running work from the Competent authority, 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.

For 3rd Call of NIT :

i) Intending tenderer should produce credentials of similar nature of completed work of the minimum value of **20% of the estimated amount** put to tender during 5(five) years prior to the date of issue of the tender notice;

or,

ii) Intending tenderers should produce credentials of 1(one) single running work of similar nature which has been completed to the extent of **70% or more** and value of which is not less than the desired value at (i) above; In case of running works , only those tenderers who will submit the certificate of satisfactory running work from the Competent authority, 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.

(a) All categories of intending Tenderers shall have satisfactorily completed as a prime agency during the last 3 (three) years prior to the date of issue of this Tender Notice at least one work of similar nature with an estimated cost equal to or more than the estimated cost put to this notice.

(b) Provided that such similar works should have been implemented in Government Department, Zilla Parishad, Government undertaking / Statutory Bodies constituted under the statute of the Government. Completion Certificate indicating Estimated Amount, Value of work-done, date of completion of the work and detail communicational address along with contact number of the Client should be submitted.

[Non-statutory Documents]

(c) All categories of prospective Tenderers shall have to submit valid and up to date documents regarding taxes and charges as applicable, Income Tax Return Acknowledgement Receipt, PAN Card issued by Income Tax Department, Voter ID Card , Trade License, GST Registration, ESI, PF in respect of the prospective Tenderer..

[Non-statutory Documents]

(d) Where an individual person holds a Certificate in his own name duly issued to him against the company or the firm of which he happens to be a director or partner, such individual person shall, while submitting any tender for and on behalf of such company or firm, invariably submit a copy of registered power of attorney showing clear authorization in his favour, by the rest of the directors of such company or the partners of such firm, to submit such tender. The Power of Attorney shall have to be registered in accordance with the provisions of the Registration Act, 1908.

[Non-statutory Documents]

(e). Neither prospective Tenderer nor any of the constituent partners had been debarred to participate in any Tender by the P.W.D., P.W.(R)D & P.W.(C.B.)D, Housing Department, W.B. or C.P.W.D. or M.E.S or Railways; during the last 5 (five) years prior to the date of this NIT. Such debarring will be considered as disqualification towards eligibility. (A declaration in this respect has to be furnished by the prospective bidders as per prescribed format).

[Non statutory Documents]

(f) The partnership firm shall furnish the registered Partnership Deed and the Company shall furnish the memorandum of Association (MOA) and Article of Association (AOA)

[Non- statutory documents]

(g) Registered Un employment Engineers Co- operative Societies/ Labour Co- Operatives are required to furnish the following documents:-

[Non statutory documents]

- (i) Current “**No objection Certificate**” from the assistant Registrar of Co- operative Societies.
- (ii) By- laws duly approved by the Assistant Registrar of Co- Operative Societies,
- (iii) Name with address and signature (in original) of the present board of Directors of the Co- operative Society.
- (iv) Copies of Minutes of last Annual General Meeting and Audit Report of the Co-operative Society with the evidence of submission of the same to the concerned Authorities, duly attested.
- (h).The prospective Tenderer or any of their constituent partner shall neither have abandoned any work nor any of their contract have been rescinded during the last 5 (five) years. Such abandonment or rescission will be considered as disqualification towards eligibility.
- (i).Joint Ventures will not be allowed.
- (j).A prospective Tenderer shall be allowed to participate in the job either in the capacity of individual or as a partner of a firm. If the prospective Tenderer is found to have applied severally in a single job, all his applications will be rejected for that job.
- (k) Conditional / Incomplete Tender will not be accepted under any circumstances.

B. My Document (Non-Statutory Cover)

Sl. No.	Category Name	Sub-Category Description		Document Name
1.	CERTIFICATES	CERTIFICATES	1	P.T. deposit receipt Challan
			2	All up-to-date documents regarding taxes & charges as applicable.
			3	I.T.R. Acknowledgement Receipt
			4	PAN Card
			5	Voter ID Card
			6	Enlistment Certificate
			7	ESI, PF & GST Registration Certificate
2.	COMPANY DETAILS	COMPANY DETAILS	1	Proprietorship Firm - Trade License.
			2	2 Partnership Firm - Registered Partnership Deed, Registered Power of Attorney, Trade licence.
			3	Pvt. Ltd. Company - Registration Certificate under Company's Act, MOA & AOA, Registered Power of Attorney, Trade licence.
			4	Registered Un-employed Engineers and Labour Co-operative Societies Limited
3.	CREDENTIAL	CREDENTIAL	1	Completion Certificate from the concerned Supervisor which is applicable for eligibility in this bid [According to Cl. 6(i) of NIT]
4.	Technical Person	Contract/agreement/engagement of technical Person	1	Graduate/ Diploma Civil Engineer
			2	Graduate/ Diploma Electrical Engineer

Sl. No.	Category Name	Sub-Category Description		Document Name			
5.	Financial information	P/L & Balance sheet 2015-16 P/L & Balance sheet 2016-17 P/L & Balance sheet 2017-18	1. 2. 3.	Audit Report 2015-16 Audit Report 2016-17 Audit Report 2017-18			

4. Opening of Technical Proposal

Technical proposals will be opened by the authorized representatives electronically from the website stated in Clause 2.1, using their Digital Signature Certificate.

Intending tenderers may remain present, if they so desire.

Cover (Folder) for Statutory Documents should be opened first, if found in order, Cover (Folder) for Non-statutory Documents will be opened. If there is any deficiency in the Statutory Documents, the tender will summarily be rejected.

Decrypted (transformed into readable formats) documents of the Non statutory Cover will be downloaded, and handed over to the Tender Evaluation Committee (constituted for evaluation of tenders).

5. Uploading of summary list of technically qualified Tenderer (1st round)

Pursuant to scrutiny and decision by Technical Analysis Committee (TAC) & will be Evaluated by Technical Evaluation Committee (TEC) formed by the order of competent authority the summary list of eligible tenderers with the serial number of work(s) for which their Financial Proposals will be considered will be uploaded in the web portals. While evaluation, the Committee may summon the tenderers and seek clarification / information or additional documents or original hard copy of any of the documents already submitted and if these cannot be produced within the stipulated time frame, their proposals will be liable for rejection.

6. Final publication of summary list of technically qualified Tenderer

Date of opening of financial bid will be done after completion of all procedural formalities.

7. Opening and Evaluation of Financial Proposal

Financial proposals of the Tenderer declared technically eligible by the Tender Analysis Committee (TAC) and the Technical Evaluation Committee (TEC) formed by the order of Competent Authority will be opened electronically from the web portal stated on the prescribed date.

8. Acceptance of Tender (Technically eligible/qualified)

Lowest valid rate should normally be accepted. However, the Tender Accepting Authority does not bind him/herself to do so and may reserves the right to reject any or all the tenders, for valid reasons and also reserves the right to distribute the work amongst more than one tenderer.

9. Penalty for suppression / distortion of facts

If any tender fails to produce the original hard copies of the documents or any other documents on demand of the Tender Evaluation Committee within a specified time frame or if any deviation is deleted 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 as deemed fit. In addition, his user ID will be deactivated and Earnest Money Deposit will stand forfeited. Besides, the WBFOR may take appropriate legal action against such defaulting tenderer.

10. Schedule of Dates:

SI No.	Particulars	Date	Time
1	Date of uploading N.I.T.Documents—Online (Publishing Date)	05.11.2018	05.00 pm.
2	Documents download start date (Online)	05.11.2018	05.15 pm.
3	Bid submission start date (Online)	05.11.2018	05.20 pm
4	Pre-Bid Meeting at Office of the Divisional Forest Officer, Parks & Gardens (N) Division, 32, Girish Ghosh Sarani, Hakimpara, Siliguri- 734001	26/11/2018	11:30 am.
5	Documents download end date (online)	07.12.2018	05.15 pm.
6	Bid submission closing date (Online)	07.12.2018	05.20 pm
7	Bid opening date for Technical Proposal (Online)	10.12.2018	11.00 am

Note: 1). In case of any unscheduled holiday or on days of Bandh or natural calamity on the aforesaid dates, the next working day will be treated as scheduled / prescribed date for the same purpose.

2). The Tender Inviting Authority may change the venue of opening the Technical or Financial Bids in case of exigent circumstances like breakdown of communications link or conditions of force majeure.

3). The Tender Inviting Authority reserves the right to defer the date of opening of either Technical or Financial Proposal or both, if required.

12. Brief details on the nature of work:

SI No.	Name of the project work	Amount
1	Creation of External Infrastructures for Management of Eco-Resorts at Tonglu (Estimate Attached)	Rs. 4,96,72,484/-

13. Tender Document costs (Tender Fees) & Earnest Money Deposit (EMD):

a) Cost of tender document/tender fees and Earnest Money Deposit (EMD) should be deposited online at the website www.wbtenders.gov.in through RTGS/NEFT Challan or through online payment gateway.

b) There is no exemption of any kind for any of the eligible contractors towards cost of tender document fee or EMD.

- c) **Refund of EMD:**The EMD of the unsuccessful Tenderer deposited shall be automatically refunded through online process. The refund of EMDs will be paid to the bidders to the account from which the EMD transaction got initiated by the bidder. Accordingly, for internet banking transactions, the EMD will be refunded back to the internet banking account from which the bidder initiated the transaction. If the bidder has made EMD payment through RTGS/NEFT mode, the refund will go back to the account from which the RTGS/NEFT transaction got initiated.

HELPDESK

For any queries or issues on EMD payments made through Internet banking or Payment gateway, RTGS/NEFT mode or any Refunds Contact Helpdesk: 03340267513/ 03340267512

- d) Intending Tenderers should download the Tender Documents from the website <http://wbtenders.gov.in> directly with the help of Digital Signature Certificate.

- e) Both Technical Bid and Financial Bid should be submitted duly digitally signed by the Tenderer through the website <http://wbtenders.gov.in> as per the 'Date & Time Schedule' stated in Sl. No.03 of this N.I.T. (Details of which has been narrated in 'Instruction to Bidders')

14. Opening of Tender:

1. (a) The Technical Bid shall be publicly opened by the authority receiving tender or by his authorized representative, as per the Date & time Schedule mentioned in NIT. **(Stage I)**

(b) Each applicant have to submit the relevant sample, as applicable before opening of the technical bid on the specific date mentioned in the NIT at the office of the Ex-Officio Manager, WBWDCL & Divisional Forest Officer, Parks & Gardens (North) Division, Girish Ghosh Sarani, Hakimpara, Siliguri-734001.

- (c) Prospective Tenderer or their authorized representatives may be present during the opening process.

- (d) Financial Bids of only those Tenderer who would qualify in the Technical Bid Evaluation will be opened. **(Stage II).**

- (e) The Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division or his authorized representative opening the Financial Proposal may call for Open Bid/Seal Bid after opening of the said tender to obtain the suitable rate further, if required. If any of the Tenderers or their representatives fails to attend during this process no subsequent objection would be entertained under any circumstances at any later date or time.

2. The intending Tenderer shall clearly understand that whatever may be the outcome of the present Invitation of Tender, no cost of Tendering shall be reimbursable by the Government. The Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division reserves the right to reject any tender or all Tenders without assigning any reason whatsoever and is not liable for any cost that might have incurred by any Tenderer at any stage of Tendering.

3. The acceptance of the tender rests with the Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division, West Bengal who does not bind herself to accept the lowest tender and reserves to herself the authority to reject any or all the tenders received without assigning any reason thereof.

4. Intending Tenderer at their own cost and risk are encouraged to inspect the site of work and get them thoroughly acquainted with the local condition and all factors which may affect their rates. Prior to the site visit the intending Tenderers must inform the Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division about the time and date of the visit.

5. The selected Contractor must arrange to procure all materials required for the proper maintenance work. The Employer will not on any account be responsible for procuring the same.
6. Emergency/Special direction works may be carried out through Ex-Officio Unit Manager & Range Officer as or when required.
7. Payment will be made as per actual work done in the field on monthly basis. The claim should be accompanied by completion certificate of concerned Ex-Officio Unit Manager and Range Officer .
8. The detailed estimate will be available at the office of The Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division, Girish Ghosh Sarani, Hakimpura, Siliguri-734001.
9. If required in emergency or in exigency or in case of special direction from competent authority the successful tenderer or concerned Ex-Officio Unit Manager and Range Officer may take up same type & nature of additional work at same less & same rate & payment will be done accordingly on availability of fund within the completion of the project period based on the actual measurement of additional work.
10. The selected contractor will remain solely responsible for any liability in respect of works and labourers engaged by him for the said purpose. He shall make his own arrangement for temporary acquisition of land for storing his material and for the housing of his staff at his own expenses.

15. VALIDITY OF BIDS:

Bid shall remain valid for a period for 365 Days . Bid validity for a shorter period (than as given date) shall be rejected by Tender Accepting Authority as non-responsive. If any Tenderer withdraws his offer before Tender Closing period without giving any satisfactory explanation for such withdrawals, he may be disqualified for submitted tender to this Office and Directorate of Forests, Government of West Bengal for a minimum period of 1 (one) year and legal action will be taken against him.

16. VERIFICATION OF CREDENTIALS/ONSITE PROJECTS:

Before issuance of the work order, the Tender Accepting Authority may verify the credential and other documents of the lowest Tenderer if found necessary. After verification, if it is found that such documents submitted by the lowest Tenderer is either manufactured or false in that case, work order will not be issued in favour of the Tenderer under any circumstances and legal action will be taken against him.

17. CANCELLATION OF TENDER:

The Divisional Forest Officer, Parks & Gardens (North) Division, West Bengal reserves the right to cancel this N.I.T. due to unavoidable circumstances and no claim in this respect will be Entertained.

18. SECURITY DEPOSIT:

The 2% EMD will be adjusted against Security Deposit & rest 8% of Security Deposit will be deducted from running bill.

19. EXECUTION OF WORK: The Tenderer shall be bound to execute work according to the direction given from time to time by the undersigned authorized officer of this Division and any complaint against the tenderer from the said officer for deviation for his direction will cause violation of the condition of the contract and forfeiture of security money as well as discontinuation /dismissal of agreement and work order.

20. DEDUCTION OF TAXES ETC:

Deduction of Income Tax & other taxes from the Contractor's Bill will be made as per existing Govt. rules.

21. REMOVAL OF DISCREPANCY:

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 :-

- a. Form of Agreement.
- b. Tender Form.
- c. Technical Specifications including Sample materials Submission.
- d. General Terms and Conditions.
- e. Instructions to Bidders.
- f. N.I.T.

22. MOBILISATION ADVANCE/ COST OVER RUN: No Mobilization Advance and Secured Advance will be allowed. . Time / cost overrun and consequent cost of escalation for any materials, labour, P.O.L. etc. will not be allowed.

23. Canvassing in connection with the tender is strictly prohibited in the Tender submitted by the Contractor.

24. The successful Tenderer will have to start the work as per the work order to commence the work.

25. The materials, tool and plants specifically lawn mower be required for the project will be of best quality and will have to be as per the full satisfaction of undersigned or his/ her authorized officer. The authority will have the power to reject at any stage the defective and/ or inferior materials and then the replacement shall at once be made at the Contractors own expense.

26. The Successful Tenderer shall have to comply with the provision of the Minimum Wages Act, 1948 (d) and the subsequent amendments thereof or other laws relating thereto and the rules made and orders issued there under from time to time, failure to do so will be treated as breach of contract and the Ex-Officio Manager, West Bengal Wasteland Development Corporation Limited and Divisional Forest Officer, Parks & Gardens (North) Division may in his discretion cancel the contract. The contractor shall also be liable for any liability arising on account of any violation by him of the provisions of the Act and rules made there under time to time.

27. The successful Tenderer shall not be entitled for any compensation for any loss suffered by him due to delay arising out for modification of the work, due to non-delivery of the possession of site and / or modification of drawing and design.

28. No tender shall be deemed to be fit for consideration unless the tender documents are completely filled in. All information that may be asked from the Tenderer must be unequivocally furnished. The eligibility of a Tenderer will be ascertained on the basis of the documents submitted by a Tenderer in support of eligibility criteria. If any document submitted by a Tenderer is found to be incomplete/incorrect/ manufactured / fabricated or false, his Tender will be out rightly rejected at any stage and legal action will be taken against him.

29. A Tenderer is to quote in figures as well as in words, his rates in the following forms as applicable in his cases against the estimated value put to tender of the tender form.

30. In the event of a tender being submitted by a firm, it must be signed by a member or members of the firm having legal authority to do so and if called for, legal documentations in support thereon must be produced for inspection and in the case of a firm carried out by one member or a joint family it must disclose that the firm is duly registered under the Indian Partnership Act.

31. Scope of work of the Successful bidder may be changed during execution as per approval of Competent Authority or instruction of Project- in-Charge deployed by the client.

32. Contingency expenditure as shown in the BOQ will be at the discretion of the Tendering Authority for necessary payment.

33. The scope of work as floated in the tender may also vary in physical and financial terms, based on site specificity.

34. The project cost floated in the tender shall include applicable GST within it and TDS under GST shall be deducted as and when applicable. Income Tax will be deducted from bill amount (excluding GST amount) as applicable.

35. Payment will be done after receiving of fund from Competent Authority.

36. In case of deposition of security deposit, notification issued by Audit Branch of Finance Department vide No. 4608-F(Y) Dated. 18.07.2018 should be strictly followed.

37. Applicable GST will be paid from the Project Cost. Only.

38. The primary scrutiny of technical bids will be done by Technical Analysis Committee formed vide this Office memo no. 1094(17)/2-14 dated. 06.09.2018 which will be further evaluated by Technical Evaluation Committee.

39. All intending bidders or their authorized representatives may attend Pre- Bid meeting as scheduled.

s/d

Ex-Officio Manager, WBWDCL &
Divisional Forest Officer,
Parks & Gardens (North) Division

Memo. No. 206(8)/2-26

Date: 02.11.2018

Copy for information and wide circulation through his office notice board to:

1. The Principal Chief Conservator of Forests,(HoFF) West Bengal, Aranya Bhaban, Salt Lake, Kolkata-700098.
2. The Managing Director, West Bengal Wasteland Development Corp. Ltd.
3. The Chief Conservator of Forests , MIS Cell, Aranya Bhaban with a soft copy for uploading in Department Website. PDF Format mailed to the mail id pccfwb@vsnl.net.
4. The General Manager, West Bengal Wasteland Development Corp. Ltd.
5. The General Manager (Operations), West Bengal Wasteland Development Corp. Ltd.
6. The Deputy Director Tourism, North Bengal.
7. Concerned Ex-Officio Unit in- charge and Range Officer for wide publicity at Local Level.
8. Office Notice Board.
9. The Guard File.

s/d

Ex-Officio Manager, WBWDCL &
Divisional Forest Officer,
Parks & Gardens (North) Division

**1. OPENING & EVALUATION OF
TENDER A) Opening of Technical Proposal**

i) Technical proposals will be opened by the Tender Opening Authority or his authorized representative as per the Date & Time schedule mentioned in the N.I.T. electronically from the website stated in Clause 2 of this NIT using their Digital Signature Certificate.

ii) Intending tenderers are encouraged to be present for observing the tendering opening procedure.

iii) Statutory Cover shall be opened first and if found in order, Non-Statutory cover 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 Statutory and Non Statutory Cover will be downloaded by the Tender Opening Authority.

V) Declaring summary list of technically qualified tenderers :-

a. Pursuant to scrutiny and decision of the Tender Opening Authority, the summary list of technically qualified tenderers and the serial no. of work for which their proposal will be considered will be uploaded in the web portal and also that of the Directorate of Forests, Government of West Bengal as per feasibility. The list would be displayed vide notice board of the Tender Inviting a authority, viz. Divisional Forest Officer, Parks & Gardens (North) Division, West Bengal.

b. While evaluation, the Tender Opening Authority may summon the tenderers and seek clarification /information or additional documents or original hard copy of any of the documents already submitted and if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

c. All prospective tenderers who fulfill the eligibility criteria conditions of this NIT become technically qualified for further process.

B) Opening of Financial Proposal

i. The financial proposal of the technically qualified tenderers will be opened by the Tender Opening Authority or his Authorized representative electronically as per the Date & Time Schedule mentioned in the N.I.T. from the website using their Digital Signature Certificates.

ii) Intending technically qualified tenderers are encouraged to be present during this process.

iii) Decrypted (transformed in to readable formats) B.O.Q. would be downloaded by the Tender Opening Authority.

PENALTY FOR SUPPRESSION / DISTORTION OF FACTS

If any Tenderer fails to produce the original hard copies of the documents (specifically the completion certificates and audited balance sheets), or any other documents on demand of the Tender Opening Authority within specified time frame or if any deviation is detected in the submitted documents or if there is any suppression of facts, the tender will be rejected outright and appropriate legal action may be taken by the Government against such Tenderer.

AWARD OF CONTRACT

a) The Tender Inviting Authority reserves the right to accept or reject any Tender and to cancel the tendering processes and reject all Tenders at any time and prior to the Award of Contract without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Bidder or Bidders of the ground for Employer's action.

- b) The Bidder who's Bid has been accepted will be notified by the Tender Inviting & Accepting Authority through acceptance letter.
- c) The notification of award will constitute the formation of the Contract.
- d). The Agreement will incorporate all agreements between the Tender Accepting Authority and the successful Bidder. All the tender documents including NIT & B.O.Q. will be the part of the Contract Document.

s/d
Ex-Officio Manager, WBWDCL &
Divisional Forest Officer,
Parks & Gardens (North) Division.

Section – B
FORM-I
APPLICATION

To

The Ex-Officio Manager, WBWDCL &
Divisional Forest Officer, Parks & Gardens (North) Division

Subject: (Name of the Work with Tender reference no.) _____

Reference :(N.I.T. No.) _____

Dear Sir/Madam,

Having examined the Statutory, Non-statutory and NIT documents; I/We hereby submit all the necessary information and relevant documents for evaluation.

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.

I/We are interested in bidding for the work mentioned above I/We understand that

- (a) Tender Inviting Authority and Accepting Authority can amend the scope and value of the Contract bid under this project
- (b) Tender Inviting Authority and Accepting Authority reserve the right to reject any tender without assigning any reason.

The application is made by me/us on behalf of _____ in the capacity of _____ duly authorized to submit the tender.

Enclosure:

(1) Technical Proposal (Envelop-

1/Folder) Date: _____

Signature of authorized officer of the firm

Title & Capacity of the officer

Name of the Firm with Seal

Section – B
AFFIDAVIT – Y

(To be furnished in Non-judicial stamp paper of appropriate value duly notarized)

(I) I, the undersigned 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 undersigned.

(II) The undersigned also hereby certifies that neither our firm M/S _____ nor any of constituent partners had been debarred to participate in tender by the Directorate of Forests /Government of West Bengal or any of the Statutory Bodies or Government Organizations in favour of whom credentials are preferred by the undersigned towards eligibility criteria claim; during the last 5 (five) years prior to the date of this N.I.T.

(III) The undersigned would authorize and request any Bank, person, Firm, or Corporation to furnish pertinent information as deemed necessary and/or as requested by the Divisional Forest Officer, Parks & Gardens (North) Division, W.B. herein referred to as the Tender Inviting & Accepting Authority, to verify this statement.

(IV) The undersigned understands that further qualifying information may be requested and agrees to furnish any such information at the request of the Tender Inviting & Accepting Authority.

(V) Certified that I have applied in the tender in the capacity of individual/as partner of a firm & I have not applied severally for the same job.

Date: _____

Signature of authorized officer of the firm

Title & Capacity of the officer

Name of the Firm with Seal

Section – B
FORM – III

STURCTURE AND ORGANISATION

A.1. Name of the applicant (Tenderer):

A.2. Office Address:

Telephone No.:

Fax No.:

A.3. Name and address of Bankers:

A.4. Attach an organization chart showing the structure of the company with names of key personnel and technical staff with Bio-data

Date: _____

Signature of authorized officer of the firm

Title & Capacity of the officer

Name of the Firm with Seal

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

Section-B

**FORM- IV
EXPERIENCE PROFOILE**

LIST OF PROJECTS COMPLETED THAT ARE SIMILAR IN NATURE TO THE WORKS [REFER PARA 3

(a) (i)

(ii) (iii) -ELIGIBILITY CRITERIA]

Name of the Employer	Name, Location and nature of work	Name of authorized supervisor with designation	Contract price in Indian Rupees	Percentage of participation of Company	Original date of starting work	Original date of completion of work	Actual date of starting of work	Actual date of completion of work	Reasons for delay in completion

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

b). Non-disclosure of any information in the schedule will result in disqualification of the firm.

Date.....

Signature of authorized officer of the firm

Title and capacity of the officer

Name of the firm with seal

INSTRUCTION TO BIDDERS (ITB)

Section – A

1. GENERAL GUIDANCE FOR e-TENDERING

Instructions / Guidelines for prospective tenderers for electronic submission of the tenders online may be obtained from the site, <http://wbtenders.gov.in> to participate in e-Tendering process.

2. 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 <http://wbtenders.gov.in> ; the contractor is to click on the link for e-Tendering site as given on the web portal.

3. DIGITAL SIGNATURE CERTIFICATE (DSC)

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

4. COLLECTION OF NIT & TENDER DOCUMENTS

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.

5. 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. A prospective Tenderer (including his participation in partnership) shall be allowed to participate in a one or more than one project in this NIT.

6. SUBMISSION OF TENDER

General process of submission: Tenders are to be submitted online through the website stated in Clause 2 in two folders at a time for each work, one in Technical Proposal & the other in Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents are to be uploaded virus 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 Tender Documents in two covers (folders) namely Statutory Cover and Non-Statutory Cover:-

A-1) Statutory Cover containing

- i) Application (ITB, Section B (Form I, , Form III, Form IV))
Demand Draft towards cost of tender documents (Tender Fees) & Earnest Money as prescribed in the N.I.T. against each serial of work in favour of The Divisional Forest Officer, Parks & Gardens (North) Division , Siliguri.
- ii) NIT (properly downloaded, digitally signed and uploaded)
ITB (properly downloaded, digitally signed and uploaded)
- iii) Tender Form (properly download, digitally signed on both the pages and upload the same except quoting rate, quoting rate will only be encrypted in BOQ in Financial Bid). In case any rate is quoted in Tender Form, the tender is liable to be summarily rejected.
- iv) Technical Specifications (properly downloaded, digitally signed and uploaded)
- v) Affidavit (Ref:- format shown in "Affidavit - Y" of ITB, Section -B).

A-2) Non-Statutory Cover containing:

I) (i) Certificates:

- a) Valid and up to date Professional Tax (P T) deposit receipt challan.
- b) VAT registration Certificate.
- c) Income Tax Return Acknowledgement Receipt.
- d) Income Tax PAN Card.
- e) Voter I Card
- f) Valid & upto date E.S.I. PF & GST Registration Certificate.
- g) Credential Certificates.

(ii) Proprietorship Firm - Trade Licence

(iii) Partnership Firm - Registered Deed of partnership Firm, Registered Power of Attorney, Trade Licence.

(iv) Private Limited Company - Registration Certificate under Company Act, Memorandum of Association (MOA) & Articles of Association (AOA), Registered Power of Attorney, Trade Licence.

(v) Registered Unemployed Engineers' Co-operative Societies / Labour Co.- Op. Societies are required to furnish the following valid and up to date documents : -

- a. Current "No Objection Certificate" from the Assistant Registrar of Co-operative Societies.
- b. Supporting documents showing area of operation.
- c. Bye-laws duly approved by the Assistant Registrar of Co-operative Societies.
- d. Name with address and signature of the present Board of Directors of the Co-operative Society.
- e. Minutes of last Annual General Meeting and Audit Report of the Co-operative Society with the evidence of submission of the same to the concerned Authorities.

vi) Credential for satisfactorily completion as a prime agency during the last 3 (three) years prior to the date of issue of this Tender Notice will be as stated below:

(a) Please see Point No. 3(a) of Tender Notice.

(b) Provided that such similar works should have been implemented in Government Department, Zilla Parishad, Government undertaking / Statutory Bodies constituted under the statute of the Government. Completion Certificate indicating Estimated Amount, Value of work-done, date of completion of the work and detail communicational address along with contact number of the Client should be submitted. In the case of works undertaken for P.W.D./ C.P.W.D./ M.E.S./ Railways, a Completion Certificate from the concerned Executive Engineer will be treated as valid credential.

[Non-statutory
Documents]

(c) Completion Certificate indicating Estimated Amount, Value of work-done, date of completion of the work and detail communicational address along with contact number of the Client should be submitted by the tenderer. Completion Certificate from the concerned Executive Engineer only will be treated as valid credential. & Experience Profile (ITB, Section – B , Form - V)

Note:- Failure of submission of any of the above mentioned documents will render the tender liable to be summarily rejected for both Statutory & Non Statutory Cover.

The above stated statutory/non-statutory/technical documents should be uploaded 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.

RESORT, TONGLU (WEST BENGAL)
SUMMARY OF COST

EXTERNAL PLUMBING WORKS, STP, WTP, PUMPS & UG TANK

S.NO	DESCRIPTION	AMOUNT		
		WBSOR 2017 (a)	CPWD-DSR 2016 (b)	MR (c)
I	EXTERNAL WATER SUPPLY			
a	DISTRIBUTION NETWORK FOR DOMESTIC WATER SUPPLY	165130.00	325011.70	17168.00
b	DISTRIBUTION NETWORK FOR IRRIGATION WATER SUPPLY (RECYCLED)	189055.00	590686.50	35116.00
c	DISTRIBUTION NETWORK FOR RISING MAIN WATER SUPPLY	33930.00	79402.00	17168.00
II	EXTERNAL SEWERAGE SYSTEM	390407.00	1537752.78	965574.74
III	EXTERNAL PIPE DRAINAGE SYSTEM	0.00	546961.75	66361.68
IV	Other Item			
1	SEPTIC TANK (10 Users) x 2 & SOAK PIT (10 Users) x 2	0.00	0.00	1090318.27
2	STP			
2.1	Electro- Mechanical Work	0.00	0.00	2,386,250.00
2.2	Civil Work	0.00	0.00	1912500.00
3	UG TANK, WTP & Hydropneumatic System			
3.1	Electro- Mechanical Work	0.00	0.00	2393440.00
3.2	Civil Work	0.00	0.00	6375000.00
	Total	778522.00	3079814.73	15258896.69
	DARJEELING FACTOR @10%	77852.20	NA	NIL
	COST INDEX FOR DSR @66.67%	NA	2053312.48	NIL
	GRAND TOTAL	856374.20	5133127.21	15258896.69
	Net Total (Total (b) of WBSOR-2017+ CPWD-DSR-2016 + MR)			₹ 21,248,398.10
	Add for difficult access and difficult working site @ 20%			₹ 4,249,679.62
	Sub Total			₹ 25,498,077.72
	GST @ 12%			₹ 3,059,769.33
	Sub Total			₹ 28,557,847.05
	Labour Welfare Cess @ 1%			₹ 285,578.47
	Add Contingency Charges @ 3%			₹ 856,735.41
	Sub Total			₹ 29,700,160.93
	Say			₹ 29,700,161.00
Rupees Two Crore Ninety Seven Lakhs One Hundred Sixty One Only				

RESORT, TONGLU (WEST BENGAL)

2 SEWAGE TREATMENT PLANT (STP) 25 KLD					
SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Design, supplying, installing, testing & commissioning of Sewage Treatment Plant for 25 KLD electro mechanical system based on MBBR Technology. (Including all Civil & construction work)				
	Sewage parameters before treatment:				
	PH 7.5 - 8.5				
	BOD 250-350 mg/lt				
	COD 600-800 mg/lt.				
	SS 200-450 mg/lt.				
	Oil & Grease upto 50 mg/lt				
	Desired Sewage discharge standard after treatment are as				
	PH 6.5 – 8.5				
	BOD Less than 30Mg/L				
	S. Solids Less than 30 Mg/L				
	COD Less than 150 Mg/L				
	Oil & Grease Less than 5 Mg / L				
2.1 STP - Electro-Mechanical Work					
a)	Supply, installation, testing & commissioning of SS screen perforated 6-8 mm 1 No. & perforated 3-2mm 1 No. size of both screen is 800x1000 mm	Nos.	2		
b)	Supply, installation, testing & commissioning of level indicators and controllers for automatic operation of the complete system with high/low level alarm complete with auxillary NO/NC contacts. (Required in equalization tank, chlorine contact tank, sludge holding tank).	Set	L/s		
c)	Supply, installation, testing & commissioning of Submersible, non clogging type pumps capable of handling solids upto 35- 50mm having CI casing & impeller complete with mechanical seal & all accessories, motor of required capacity. Delivery header with isolation valve, pressure gauge on delivery line with isolation cock. Pumps shall have following duty Make: KSB/Wilo/Grundfos/Ebara/Eqv				
	Submersible Effluent Transfer Pumps				

SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Flow Rate (each) = 2.5 m ³ / hr	1W+1S			
	Head = 9-10 Mtr	Nos.	2		
	Sludge Recirculation Pump				
	Flow Rate (each) = 5m ³ / hr	1W+1S			
	Head = 8-10 Mtr	Nos.	2		
	Make : Kirloskar/M&P				
d)	Air diffusion system shall include the following:				
	Supply, installation, testing & commissioning of Twin lobe, rotary Air blower capable of delivering 40 cum/hr of free air at required pressure (0.5kg) driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of suitable HP Suitable for 415 ± 10% volts, 3 phase, 50 cycles A/C supply. Make: Everest/Kay/Ingarsollrand				
	Air Blowers (1W + 1S)				
	Flow Rate (each) = 40 m ³ / hr	Nos.	2		
	Air piping shall comprise of MS piping in Aeration Tank & Plant room & PVC Piping in Submerged complete with all fittings such as tees, crosses, plugs, sockets, elbows, reducers, paint, supports & clamps, puddle flanges etc cutting chases & making good the wall wherever required. Contactor to submit detailed P & I indicating their proposal.	Lot	1		
	Non-clog type air dispersion system capable of handling required 3-5 cfm of air with oxygen transfer efficiency. Air dispersion grid shall be assembled in modular form so that they can be replaced / repaired easily from plat form at the top. (Coarse bubble membrane diffusers) Make : Rehau /OTT/SSI/Quasys	Lot	1		
	<u>Note :</u>				
	Air dispersion system shall be provided for MBBR Tank, Equalization Tank, and Sludge Holding Tank.				
e)	Providing and fixing all interconnecting piping (as described below) and isolation control valves for making the system complete. The piping material shall be MS 'C' class.				
	CPVC : Submerged air piping .				
	MS Epoxy : Air piping & pumped effluent riser (non- submerged)				
	PVC piping : Pumped effluent (submerged) & tank				

SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	MS Piping : Interconnecting pipe line after delivery header of pump / filter	Lot	1		
f)	Supply, installation, testing & commissioning of Chlorine dosing system with dosing solution and a 100 ltrs HDPE tank with 0-60 lph dosing pump. Make: Seko/ Asia LMI	Set	1		
g)	Supply, installation, testing & commissioning of MBBR Media MOC: PP in MBBR Tank Make : Quasys/MM Aqua/Cooldeck	Lot	1		
h)	Supply, installation, testing & commissioning of Tube Deck Media MOC: PVC in Tube Settler Tank Make : Quasys/MM Aqua/Cooldeck	Lot	1		
i)	Supplying, installing, testing & commissioning of centrifugal Filter Pump, CI body, CI impeller. with mechanical seal alongwith motor. , pressure gauge with isolation cock, Isolation valve, mechanical seal,NRV on delivery line. Isolation valve. The pump shall be suitable for 415±10% volts 3 phase AC supply Make: Kirloskar/Johanson/Mather & Platt				
	Filter feed pumps:				
	Capacity : 5 Cum/hr.		1W+1S		
	Head : 30 Mtrs	Nos.	2		
j)	MULTI GRADE FILTER				
	Supply, installation & testing and commissioning of vertical floor mounted FRP pressure type Multi Grade filter of suitable size, provided with an inlet distributor complete charge with media like pebbles, gravels, sand etcThe vessel with frontal piping & valves, back wash system & filter media etc. complete with standard fittings, pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping.				
	Flow rate = 5000 Lit/hr at 4hrs operation				
	Vessel Dia = 700 mm				
	Filtration rate = 14 M ³ /M ² /Hr				
	Working pressure = 3.5 Kg/Sq.cm.	Set	1		
k)	ACTIVATED CARBON FILTER				
	Supply, installation & testing and commissioning of vertical floor mounted FRP pressure type Activated Carbon filter of suitable size, provided with an inlet distributor complete charge with media like pebbles, gravels,Activated Carbon etcThe vessel with frontal piping & valves, back wash system & filter media etc. complete with standard fittings, pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping.				
	Flow rate = 5000 Lit/hr at 4hrs operation				

SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Vessel Dia = 700 mm				
	Filtration rate = 14 M ³ /M ² /Hr				
	Working pressure = 3.5 Kg/Sq.cm.	Set	1		
l)	Supply Installation & Commissioning of SS 304 Basket type centrifuge System for Sludge Drying purpose Basket Size 12" Make : Airtech/Microtrans /Eqv	Set	1		
m)	Supply, installation, testing & commissioning of Sludge Feed Pump gland packing seal, solid handling capacity upto 7 to 10% of the effective percentage of sludge and direct drive with motor. Make: Kirloskra/M&P/Crompton Greaves				
	Sludeg Feed Pump				
	Capacity : 2m ³ /hr				
	Head : 10 mtrs. (1W+ 1S)	Nos	2		
n)	Providing, fixing, testing and commissioning of 3 phase, 50 HZ, AC, PLC based, vertical /Horizontal inline multi stage fixed speed hydropneumatic pumping sets, in SS MOC (Impeller - SS 304, Shaft - 316), housing in cast iron, enclosure class IP 55, Insulation F class, electrical control panel with contactors, relays, circuit breakers, starters, branch ammeters, incoming voltmeter, selector switches, equal load sharing, low level guard and other protection as per manufacturers specifications complete with common base frame, pressure gauge on the delivery side including non-return valve, isolating valves on suction and delivering sides, suction and delivery headers, pressure tanks bladder/diaphragm type with pre-pressurized air, complete in all respects. The booster pumps shall consistes of 2 nos. hydropneumatic pumps fixed types in configuration of 1 pumps working and 1 pump stand by).				
	(Make : Grundfos / WILO / ITT /Ebara)				
	Discharge : 50 lpm (each) at 35 meter head(1W+1S), 2900 rpm, 415 volts, 50 HZ, 1 x 100 liters pressure tanks.	1	Set		
o)	Instrumentation				
	Supply, installation, testing & commissioning of Following Instrumentation				
	Electromagnetic Flow meter Size : 1.5"				
	Make: Adept/Scientific Device	Nos	1		
	Online pH Meter				
	Make:Digital/Aster	Nos	1		
p)	STP ELECTRICAL PANEL				

SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control centre fabricated out of 14 gauge CRCA sheet steel. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved shade of powder coated paint. 1 No. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels.				
	Motor Control Centre				
i)	Incoming				
a)	0-500 volts 96 x 96 mm square electronic voltmeter with selector switch shall be protected by 2 amps TP MCB. 1 Set				
b)	0-200 amps 96 x 96 mm square electronic ammeter with selector switch and 125./5 amps 10 VA CL:1 CTs. 1 Set				
c)	Phase indicating lamps shall be protected by 2 amp SP MCB 3 Sets				
ii)	Bus Bar				
	200 amps TPN (15 KA) copper bus bar with heat shrinkable insulation sleeves.				
a)	Required Nos of required capacity TPN MCB for direct on line starter/star delta starters and out going feeders to all the pumps/blowers etc. (including standbys). Each compartment shall contain auto / manual selector switch and indicating lamp with MCB's for 'ON/OFF/TRIP' status of motor				
b)	Spare MCB's of following capacities: i. 16 amps TPN MCB's 2 Nos.				
c)	Necessary cable alleys, internal / cabling, wiring, cabling from MCC to various pumps / equipment and interlocking, earthing for all equipment shall also included				
	Notes :				
a)	a. All MCCBs / MCBs shall be of 15 KA breaking capacity and suitable for motor duty application.				
b)	b. All motor starters shall be provided with Automatic level controller				
c)	c. DOL starters shall be used for mototrs below 10HP and Star- Delta Starters for other motors .				
d)	d. Provision shall be made for providing potential free contacts to all pumps starters				
e)	MCC for all STP equipments/pumps as described in sub head II e. All MPCB, Contactor, Overload Relay Shall be L&T & ABB	Set	1		
q)	Supplying, installing, testing & commissioning of Cables , Conector, Cable Trays, to make Electrical Installation Complete.				
i)	Cable				
	Type - Armoured 3 core , 4core				
	Capacity - As per the control panel and machines to connected.				
	Size of cable - as required.				
ii)	Cable Tray				
	Qty - As required				

SNo	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Type - Slotted GI				
	Size - 2" x 4" x6" or as required.				
iii)	Cable Tray Support				
	Quantity - As per site requirment of approved quality.	Lot	1		
	TOTAL OF STP C/F To External Plumbing & Sanitation Work			2386250	2386250

RESORT, TONGLU (WEST BENGAL)

2.2 STP -Civil Work

S.No.	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)	Ref.
1	Construction of RCC STP structure having provision for holding tank (25,000 litres), STP (25000 LITRES), recycled water tank (25000 litres) ,Pump Room, Stair case ect. As per Architectural, Structural, Plumbing Drawings. The work shall include Excavation and Back filling, Lean concrete 1:4:8 below foundation /Tank raft, RCC Work in Raft, Wall, Slab, staircase, Kota Stone Flooring in Pump Room, Kota Stone flooring in staircase, Painting, Providing and fixing Sleeves, Inserts, Vents, Manhole covers, Ladders, Terrace Flooring with Paver Block, GI Roofing with Color coated sheets	Litre	75000.00	15.00	1,125,000.00	PAR-2012 5.5
	SUB - TOTAL				1,125,000.00	
	ADD COST INDEX @ 70%				787,500.00	
	TOTAL C/F To External Plumbing & Sanitation Work				1,912,500.00	
2	Sewage Treatment plant shall include the following Civil Units in RCC 25 :					
a)	Screen Chamber & O&G Tank		1			
b)	Sewage Equalization Tank		1			
c)	Treated Water Tank		1			
d)	Sewage Treatment plant shall include the following MSEP Tank (Prefabricated) :					
e)	MBBR Tanks		2			
f)	Tube Settler		1			
g)	Chlorine Contact Tank		1			
h)	Sludge Holding Tank		1			
i)	Plant Room & Foundation		1			
Note	Vendor to provide detailed GA drawings (Plan & Section), P & I diagram, schematic diagram for the above mentioned component and additional component if so required for the complete working of the STP and get it approved by the Owner's Architect / Project Manager / Consultants. Contractor shall also ensure approval of his design process from all concerned local authority					

RESORT, TONGLU (WEST BENGAL)						
3.2 WTP & Hydropnumetic System -Civil Work						
S.No.	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)	Ref.
1	Construction of RCC Under Ground Water Tank having provision for Fire Fighting Reserve of 1,00,000 litres of water in two compartments, Domestic Water Storage of 50,000 litres in two compartments, Pump Room (100000 litre vol.), Stair case ect. As per Architectural, Structural, Plumbing Drawings. The work shall include Excavation and Back filling, Lean concrete 1:4:8 below foundation/Tank raft, RCC Work in Raft, Wall, Slab, staircase, Water proofing, Glazed tiling in Domestic Water Compartments, Plain Cement flooring in Pump Room, Kota Stone Flooring in Pump Room, Kota Stone flooring in staircase, Painting, Providing and fixing Sleeves, Inserts, Vents, Manhole covers, Ladders, Terrace Flooring with Paver Block, GI Roofing with Color coated sheets	Litre	250,000.00	15.00	3,750,000.00	PAR-2012 5.5
	SUB - TOTAL				3,750,000.00	
	ADD COST INDEX @ 70%				2,625,000.00	
	TOTAL C/F To External Plumbing & Sanitation Work				6,375,000.00	

RESORT, TONGLU (WEST BENGAL)						
3. WTP & Hydropnumetic System Pump (House Equipments, Piping, Water Treatment Plant for UndergroundTank (20 KLD WTP + 100 KLD FIRE))						
3.1 Electro-Mechanical Work						
S.No	DESCRIPTION	QTY	UNIT	RATE (Rs.)	AMOUNT (Rs.)	
1	Pumps, Panels and related Pipes & Accessories					
a)	Providing, fixing, jointing and testing in position ISI marked (IS : 1239) G.I pipes (Heavy class-C) manufactured from seamless pipes, complete with all necessary G.I fittings i.e. sockets, elbows, tees, bends, reducers, unions, plugs, supports, clamps, Hangers. The Galvanization shall conform to IS : 4736. The work shall include the painting with two coats enamel paint of approved quality and shade over a coat of primer on exposed pipe works, complete as required by the Engg-in-charge for proper completion of the work.					
	(Make : Jindal (Hissar) / Prakash Surya)					
	40mm nominal bore (wall thickness - 4.8 mm)	30	R.M.			-
	50mm nominal bore (wall thickness - 4.8 mm)	30	R.M.			-
	65mm nominal bore (wall thickness - 4.8 mm)	30	R.M.			-
	80mm nominal bore (wall thickness - 4.8 mm)		R.M.			-
b)	Providing and fixing in position M.S. / G.I. pipe one side flanged sleeves of suitable long (heavy class) with M.S. puddle flange fabricated out of 6 mm thick MS plate in RCC walls of water tanks / retaining walls during the time of casting the same including hot dipped galvanization after fabrication and painting with two coats of anti corrosive paint over primer.					
	40 NB (IS 1239 - C Class)	4	Nos.			-
	50 NB (IS 1239 - C Class)	2	Nos.			-
	65 NB (IS 1239 - C Class)	9	Nos.			-
	80 NB (IS 1239 - C Class)	4	Nos.			-
	100 NB (IS 1239 - C Class)	1	Nos.			-

	150 NB (IS 1239 - C Class)		1	Nos.		-
	200 NB (IS 1239 - C Class)		1	Nos.		-
c)	Providing and fixing in position M.S. / G.I. pipe both side flanged sleeves of suitable long (heavy class) with M.S. puddle flange fabricated out of 6 mm thick MS plate in RCC walls of water tanks / retaining walls during the time of casting the same including hot dipped galvanization after fabrication and painting with two coats of anti corrosive paint over primer.					
	65 NB (IS 1239 - C Class)		3	Nos.		-
	80 NB (IS 1239 - C Class)		3	Nos.		-
	100 NB (IS 1239 - C Class)		1	Nos.		-
	150 NB (IS 1239 - C Class)		1	Nos.		-
d)	Providing and fixing in position M.S. / G.I. pipe one side screwed sleeves of suitable long (heavy class) with M.S. puddle flange fabricated out of 6 mm thick MS plate in RCC walls of water tanks / retaining walls during the time of casting the same including hot dipped galvanization after fabrication and painting with two coats of anti corrosive paint over primer.					
	65 NB (IS 1239 - C Class)		12	Nos.		-
	80 NB (IS 1239 - C Class)		2	Nos.		-
e)	Supply & fixing in position ISI marked cast iron double flanged butterfly valves (PN 16) as per IS:13095, with SS disc, shaft, seating rings, internal fastening, nuts, bolts including transporting to worksite, 3 mm thick rubber gaskets etc. including testing, Complete as per drawings & directions of the Engineer-in-charge.					
	(MAKE : Venus / IVC / SKS / Zoloto / Audco / Advance)					
	40 mm nominal dia		4	Nos.		-
	50 mm nominal dia		2	Nos.		-
	65 mm nominal dia		2	Nos.		-
	80 mm nominal dia			Nos.		-
f)	Providing & fixing cast iron body strainer made up of SS screen tested to a min. pressure of 15 kg/sqcm complete with flanged ends as required. (make : CIM / Zoloto / Audco / Advance)					
	40 mm nominal bore		1	Nos.		-
	50 mm nominal bore		1	Nos.		-
	200 mm nominal bore		1	Nos.		-
g)	Supply, installing, testing and commissioning of non clog submersible type drainage / dewatering pump suitable for automatic operation, float valve operated, automatic / manual operation, including NRV & all accessories, inlet & outlet arrangements, required cable etc. complete in all respects. (Make : Grundfos / ITT / WILO / DP / Nocchi / KSB)					

h)	<p>2.5 lps at 12 meter, 10 mm max particle size, 50 Hz, 240 volts, IP 68, F insulation, Float level switches, impeller in CI / Polypropylene, casing in CI / polyurethan and shaft in stainless steel (1 set comprises of two number dewatering pumps - for pump house drainage)</p> <p>Providing, fixing, testing and commissioning of three phase, 50 HZ, AC, PLC based, vertical inline multi stage variable cum fixed speed hydropneumatic pumping sets, in SS MOC (Impeller - SS 304, Shaft - 316), housing in cast iron, enclosure class IP 55, Insulation F class, electrical control panel with contactors, relays, circuit breakers, starters, branch ammeters, incoming voltmeter, selector switches, equal load sharing, low level guard and other protection as per manufacturers specifications complete with common base frame, pressure gauge on the delivery side including non-return valve, isolating valves on suction and delivering sides, suction and delivery headers, pressure tanks bladder/diaphragm type with pre-pressurized air, complete in all respects. The booster pumps shall consist of 2 nos. hydropneumatic pumps (1 variable speed and 1 fixed types in configuration of 1 pumps working and 1 pump stand by). The Complete pumping system and panel shall be assembled and tested at the pump manufacturer factory.</p> <p><u>Systems assembled by the dealers locally will not be</u> (Make : Grundfos / WILO / ITT / DP / Nocchi)</p>	1	Set		-
	Discharge : 35 lpm (each) at 30 meter head, 2900 rpm, 415 volts, 50 HZ, 2 x 100 liters pressure tanks.(1W+1S) for Domestic water supply	1	Set		-
	Discharge : 50 lpm (each) at 30 meter head, 2900 rpm, 415 volts, 50 HZ, 2 x 100 liters pressure tanks.(1W+1S) for Recycle water supply at STP	1	Set		-
i)	<p>Providing, fixing, testing and commissioning of electrical control panel for water supply pumps / equipments with magnetic type level controllers and digital type level indicators. The panel will be suitable for automatic start-stop arrangement of water supply pumps and other equipments as required. The panel will have necessary indication & protection, Star delta starters for above 5 HP pumps & DOL Starters for upto 5 HP pumps, digital ammeter & voltmeter with selector switches on incomer and ammeter with selector switch on all outgoing feeders, phase indicating lights, pump ON / OFF lights, power ON / OFF lights, switches for auto-manual operation of pumps, cyclic convertor for alternate running of working and stand by pumps, overload relays, single phasing preventor, dry suction cut off, necessary contactors inclusive of SS level sensing probes to be installed in water reservoirs for the proper completion of the</p>				
	<p>The system will include Digital type multi level indicator display system of water levels for 3 nos water tanks / compartments.</p> <p>The control panel will be floor / wall mounted type fabricated out of 14 SWG CRCA MS sheet, IP 54 enclosure, duly powder coated of min. 60 micron thickness of standard seimens grey shade over primer coats with 7 tank treatment for degreasing, derusting, phosphatising & passivation complete. The panel will be compartmentalized with front operation having Separate bus bar and cable alley chamber, ventilation louvers, 415 V electrolytic Aluminium Bus Bar, removable gland plates, cable glands, including connection with outgoing feeders complete in all respect.</p>				

	The MCCB shall be Ics = 100% Icu, with rotary handle & pad locking arrangement, with trip setting as per load requirement. TP MCCB shall be with solid isolable neutral link. The breaking capacity specified is Ics value. The MCCB shall be of thermo magnetic type. All outgoing MCB's shall be C type with 10 KA breaking capacity.					
	The system is inclusive of suitable PVC insulated armoured multi core copper control cable FRLS grade of required length with supporting arrangements for the proper completion of the system.					
	The suitable size PVC / XLPE insulated armoured aluminium conductor power cable from control panel to pumps will be included in above item along with terminations, cable glands & cable trays etc as required. (Cable Make : Universal / CCI / NICCO / Finolex / Polycab / Skytone)					
	The following pumps shall be controlled by the panel :					
i)	One set of Hydropneumatic water transfer pump set control panel. (The control panel of hydropneumatic pumps will be supplied by the pump manufacturer) (To cut off pump when water level is low in suction tank)					
ii)	Two sets of tubewell submersible pumps (To cut off pump when water level is high in delivery tank and start when delivery water tank level is low)					
iii)	One set of filter feed pump of water treatment unit. (To cut off pump when water level is high in delivery tank and start when delivery water tank level is low)					
iv)	1 nos. Dewatering Pump Control unit for two nos. single phase pumps, to operate Pumps alternatively and in case of Excess inflow into the Sump, Both Pumps Will Start Automatically With Audio, Visual & Alarm Including All Standard Accessories Like Ammeter, Auto Manual switch, DOL Starter, Indicating Lights, And Pumps On/ Off Lights, Protection MCB, Etc.					
	(Panel Make : Elegant / Aqua / Advance / Adlec / Ambit / Tricolite / Milestone / Vidyut control / ASES (Agni Suraksha), Swithgear & accessories make : ABB / Schnieder / L&T /Seimens)					
	INCOMER : 100 AMP FP MCCB (25 KA) BUS BAR : 200 AMP, 500 Volts, 3 phase 50 HZ TPN high conductivity electrolytic Aluminium bus bar of suitable length, insulated by heat shrinkable sleeves. The current density of bus bar shall be minimum 1.00 sq mm / amp.					
	OUT GOINGS :					
	2 no 25 AMP TP MCB (10 KA) - for treated water transfer pumps					
	2 no 16 AMP TP MCB (10KA) - for filter feed pumps					
	2 no 25 AMP TP MCB (10KA) - for tubewell pump					
	1 no 20 AMP DP MCB (10KA) - for dewatering pumps control unit					
	2 no 20 AMP TP MCB (10KA) - for spare					
	5 no 6 / 10 / 16 Amp DP MCB (10KA) - for Light / fan / spares		1	Set		-

j)	Providing, fixing, testing and commissioning of electrical control panel for water supply pumps / equipments with magnetic type level controllers and digital type level indicators. The panel will be suitable for automatic start-stop arrangement of water supply pumps and other equipments as required. The panel will have necessary indication & protection, Star delta starters for above 5 HP pumps & DOL Starters for upto 5 HP pumps, digital ammeter & voltmeter with selector switches on incomer and ammeter with selector switch on all outgoing feeders, phase indicating lights, pump ON / OFF lights, power ON / OFF lights, switches for auto-manual operation of pumps, cyclic convertor for alternate running of working and stand by pumps, overload relays, single phasing preventor, dry suction cut off, necessary contactors inclusive of SS level sensing probes to be installed in water reservoirs for the proper completion of the					
	The system will include Digital type multi level indicator display system of water levels for 3 nos water tanks / compartments.					
	The control panel will be floor / wall mounted type fabricated out of 14 SWG CRCA MS sheet, IP 54 enclosure, duly powder coated of min. 60 micron thickness of standard seimens grey shade over primer coats with 7 tank treatment for degreasing, derusting, phosphatising & passivation complete. The panel will be compartmentalized with front operation having Separate bus bar and cable alley chamber, ventilation louvers, 415 V electrolytic Aluminium Bus Bar, removable gland plates, cable glands, including connection with outgoing feeders complete in all respect.					
	The MCCB shall be Ics = 100% Icu, with rotary handle & pad locking arrangement, with trip setting as per load requirement. TP MCCB shall be with solid isolable neutral link. The breaking capacity specified is Ics value. The MCCB shall be of thermo magnetic type. All outgoing MCB's shall be C type with 10 KA breaking capacity. The system is inclusive of suitable PVC insulated armoured multi core copper control cable FRLS grade of required length with supporting arrangements for the proper completion of the system.					
	The suitable size PVC / XLPE insulated armoured aluminium conductor power cable from control panel to pumps will be included in above item along with terminations, cable glands & cable trays etc as required. (Cable Make : Universal / CCI / NICCO / Finolex / Polycab / Skytone)					
	The following pumps shall be controlled by the panel :					
i)	One set of Hydropneumatic water transfer pump set control panel. (The control panel of hydropneumatic pumps will be supplied by the pump manufacturer) (To cut off pump when water level is low in suction tank)					
ii)	1 nos. Dewatering Pump Control unit for two nos. single phase pumps, to operate Pumps alternatively and in case of Excess inflow into the Sump, Both Pumps Will Start Automatically With Audio, Visual & Alarm Including All Standard Accessories Like Ammeter, Auto Manual switch, DOL Starter, Indicating Lights, And Pumps On/ Off Lights, Protection MCB, Etc.					
	(Panel Make : Elegant / Aqua / Advance / Adlec / Ambit / Tricolite / Milestone / Vidyut control / ASES (Agni Suraksha), Swithgear & accessories make : ABB / Schnieder / L&T / Seimens)					

	INCOMER : 100 AMP FP MCCB (25 KA)					
	BUS BAR : 200 AMP, 500 Volts, 3 phase 50 HZ TPN high conductivity electrolytic Aluminium bus bar of suitable length, insulated by heat shrinkable sleeves. The current density of bus bar shall be minimum 1.00 sq mm / amp.					
	OUT GOINGS :					
	2 no 25 AMP TP MCB (10 KA) - for recycle water transfer pumps					
	1 no 20 AMP DP MCB (10KA) - for dewatering pumps control unit					
	2 no 20 AMP TP MCB (10KA) - for spare					
	5 no 6 / 10 / 16 Amp DP MCB (10KA) - for Light / fan / spares	1	Set			-
2	WATER FILTRATION PLANT					
	Supplying, installing, testing & commissioning of water filtration plant (for 20 KL per Day) comprising of the following including all necessary inter connecting piping, control valves, electrical cables, control cables, other accessories etc. as directed and required at site to complete the work.					
a)	FILTER FEED PUMPS					
	Providing, fixing, testing and commissioning of single stage, horizontal, centrifugal, 2 pole, 50 HZ, AC, monoblock pumps (as per IS : 9079) incorporating C.I. casing and frame, stainless steel shaft, bronze impeller, TEFC induction motor directly coupled to the pump, IP44 protection, class B insulated, C.I. body, hydraulically and dynamically balanced to give vibration free operation, with mechanical seal arrangement, fixed on a base plate with suitable vibration eliminator pads complete with PCC foundation, bolts grouted in CC blocks of 1:2:4, suitably rated DOL / star-delta starter fixed inside main electrical panel complete with level controller, necessary wiring, pressure gauge on the delivery side and strainer on suction side, including non-return valve and isolating valves on suction and delivering sides as required, including suction and delivery headers complete in all respects.					
	(Pump make : Kirloskar / Mather+Platt / KSB)					
	(i) Filter Feed Pumps - 2 nos (1W+1S), having discharge : 3500 lit/hr (each) at 30 meter head					
b)	MULTI GRADE FILTER - 1 nos.					
	Supply, installation & testing and commissioning of vertical floor mounted mild steel pressure type Multi Grade filter of suitable size, provided with an inlet distributor. The vessel is painted externally with epoxy paint with primer and internally with 2 mm thick FRP lining with frontal piping & valves, back wash system & filter media etc. complete with standard fittings like manhole cover, pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets.					
	Flow rate = 2500 Lit/hr at 8 hrs operation					
	Vessel Dia = 600 mm					
	Filteration rate = 16 M ³ /M ² /Hr					
	Shell/ Dish thickness = 6 / 8 mm					
	Working pressure = 3.5 Kg/Sq.cm.					

c)	ACTIVATED CARBON FILTER - 1 nos.					
	Supply, installation & testing and commissioning of vertical floor mounted mild steel pressure type Activated Carbon filter of suitable size, provided with an inlet distributor. The vessel is painted externally with epoxy paint with primer and internally with 2 mm thick FRP lining with frontal piping & valves, back wash system & activated carbon media etc. complete with standard fittings like manhole cover, pressure gauge at inlet & outlet, sampling cock, rinse drain valve, air vent valve with piping, bolts, nuts & rubber gaskets.					
	Flow rate = 2500 Lit/hr at 8 hrs operation					
	Vessel Dia = 500 mm					
	Filtration rate = 15 M ³ /M ² /Hr					
	Shell/ Dish thickness = 6 / 8 mm					
	Working pressure = 3.5 Kg/Sq.cm.					
d)	IRON Removal Filter					
	Supply, Installation, testing and commissioning of Vertical IRON Removal Filter fabricated out of 6mm thick M.S. plate as per IS Code with 8mm dished ends, manholes and side holes with cover, under drains, supporting legs flanged piping, valves, strainer plate of 12 mm thickness etc. complete initially charge with media like pebbles, gravels, Birm Media etc. It shall be internally coated with red iron oxide primer and two coats of epoxy paint and externally with red iron oxide primer and two coats of approved synthetic enamel paint. Filter media shall be included in cost and shall include standard fittings like pressure gauges on inlet and outlet, sampling cocks, air vent, bolts, nuts and rubber					
	i) Flow rate = 2500 Lit/hr at 8 hrs operation					
	ii) Vessel Dia = 500 mm					
	iii) Filtration rate = 15 M ³ /M ² /Hr					
	iv) Shell/ Dish thickness = 6 / 8 mm					
	v) Working pressure = 3.5 Kg/Sq.cm.					
e)	Providing and fixing all piping (GI Piping -Class C) and isolation control Ball / butterfly valves of required sizes and numbers with all accessories, fittings, supports, clamps, double flanged flexicon rubber expansion joint with rubber gasket as per system pressure, nuts, bolts, washers, puddle flanges for all tanks, other flanges, NRV's, flow control valves, flow measurement device, SS 304 screen strainers at suction of clear water pumps, level sensors for automatic operation of all kind of pumps with necessary control wiring upto the control panel, for making the system complete in all respects with anti corrosive protection. Battery Limit for WTP Piping is from Filter Feed Pump Suction including Butterfly Valve & Strainer at main suction line till outlet pipe into under ground tank from Filter header.					

f)	Contractor shall include all electrical and mechanical items as required to operate the system automatically/ manually and also include in his rates all water level controller for automatic operation of pumps, electrical wiring, armoured aluminium power cables and copper control cables between panel to various pumps & equipments, cable terminations, double compression glands, GI perforated cable trays to carry cables from panel to various equipments including supports, with all accessories complete as required. Only main power supply upto the WTP panel shall be provided by the owner.					
g)	The Contractor shall have to submit detailed GA drawings, P & I diagram, schematic diagram and shop drawings of the water treatment plant indicating all component, piping, valves etc for the complete working of the WTP.					
h)	The entire installation shall be complete in all respects including all interconnecting pipe line, control valves, pressure gauge, meters, etc at suitable places including electrical control panel for pumps and plant. The system should be complete in all respects.					
TOTAL C/F To External Plumbing & Sanitation Work(1+2)			1	Job		2,393,440.00

RESORT, TONGLU (WEST BENGAL)						
3.2 WTP & Hydropnumetic System -Civil Work						
S.No.	DESCRIPTION	UNIT	QTY	RATE (Rs.)	AMOUNT (Rs.)	Ref.
1	Construction of RCC Under Ground Water Tank having provision for Fire Fighting Reserve of 1,00,000 litres of water in two compartments, Domestic Water Storage of 50,000 litres in two compartments, Pump Room (100000 litre vol.), Stair case ect. As per Architectural, Structural, Plumbing Drawings. The work shall include Excavation and Back filling, Lean concrete 1:4:8 below foundation/Tank raft, RCC Work in Raft, Wall, Slab, staircase, Water proofing, Glazed tiling in Domestic Water Compartments, Plain Cement flooring in Pump Room, Kota Stone Flooring in Pump Room, Kota Stone flooring in staircase, Painting, Providing and fixing Sleeves, Inserts, Vents, Manhole covers, Ladders, Terrace Flooring with Paver Block, GI Roofing with Color coated sheets	Litre	250,000.00	15.00	3,750,000.00	PAR-2012 5.5
	SUB - TOTAL				3,750,000.00	
	ADD COST INDEX @ 70%				2,625,000.00	
	TOTAL C/F To External Plumbing & Sanitation Work				6,375,000.00	

BILL OF QUANTITIES FOR TONGLU (WEST BENGAL)

EXTERNAL PLUMBING WORKS

S. No	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
I	SUB HEAD (I) :- EXTERNAL WATER SUPPLY PIPES AND FITTINGS									
	SECTION I DISTRIBUTION NETWORK FOR DOMESTIC WATER SUPPLY									
1	2.1 (DSR-2016)	Excavating trenches upto 1.5 meter depth in all kind of soil of required width for pipes. including excavation for sockets and dressing of sides ramming of bottoms including getting out the excavated soil & then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc & disposing of surplus excavated soil as directed within a lead of 50m or as directed at site by engg-in-charge.								
		All kinds of soil								
		Pipes etc from 80 mm and above but not exceeding 300 mm dia.	metre	500.00	0.00	590.15	0.00	0.00	295075.00	0.00
2	SECTION (A) (II) ITEM-2	Supplying, fitting and fixing in position G.I.pipes of TATA make for underground works with all necessary accessories,specials viz.socket, bend, tee, union, cross, elbow, nipple, short piece etc.including cost of all materials,joining materials ,cutting pipes,making threads,cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed with two coats of painting on G.I. pipes and specials with bituminous paint complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.Payment for painting will be made separately)								
		External work								
	(ii)	20 mm dia nominal bore	metre	90.00	240.00	0.00	0.00	21600.00	0.00	0.00
	(iii)	25 mm dia nominal bore	metre	400.00	319.00	0.00	0.00	127600.00	0.00	0.00
	(iv)	32 mm dia nominal bore	metre	45.00	354.00	0.00	0.00	15930.00	0.00	0.00
3	18.17 (DSR-2016)	Providing & fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)								
	18.17.1	25 mm dia	NOS	3.00	0.00	3219.00	0.00	0.00	9657.00	0.00
	18.17.2	32 mm dia	NOS	1.00	0.00	4828.50	0.00	0.00	4828.50	0.00
4	MR	Supply, fixing in position, testing ISI marked cast iron double flanged sluice valves as per IS:14846-2000, (PN 10) with SS stem, bolts, nuts, 3 mm thick rubber gaskets including transporting to worksite, Complete as per drawings & directions of the Engineer-in-charge.								
		32 mm nominal dia	Each	0.00	0.00	0.00	8105.00	0.00	0.00	0.00
5	18.32 (DSR-2016)	Constructing brick masonry chamber 300 x 300 x 500 mm, inside with F.P.S. brick work in cement mortar 1: 4 (1 cement : 4 coarse sand) for Isolating Valve / garden hydrant /gate valve ,including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size); necessary excavation, foundation concrete 1:4:8 (1 cement :4 coarse sand: 8 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design. (The cost of cover and frame shall be separate)	Each	3.00	0.00	1931.40	0.00	0.00	5794.20	0.00
6	18.33 (DSR-2016)	Constructing brick masonry chamber 600 x 600 x 1050 mm inside with F.P.S. brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Sluice Valve , necessary excavation, foundation concrete 1:4:8 (1 cement : 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) including centering, shuttering, excavation, refilling and disposal of surplus earth as directed complete in all respects. (The cost of cover and frame shall be separate)	Each	0.00	0.00	5700.00	0.00	0.00	0.00	0.00

S. No	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
7	18.32 (DSR-2016)	Constructing brick masonry chamber 300 x 300 x 500 mm, inside with F.P.S. brick work in cement mortar 1: 4 (1 cement : 4 coarse sand) for Isolating Valve / garden hydrant /gate valve ,including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size); necessary excavation, foundation concrete 1:4:8 (1 cement :4 coarse sand: 8 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design. (The cost of cover and frame shall be sepearate)	Each	28.00	0.00	4292.00	0.00	0.00	120176.00	0.00
8	18.33 (DSR-2016)	Constructing brick masonry chamber 600 x 600 x 1050 mm inside with F.P.S. brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Sluice Valve , necessary excavation, foundation concrete 1:4:8 (1 cement : 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) including centering, shuttering, excavation, refilling and disposal of surplus earth as directed complete in all respects. (The cost of cover and frame shall be sepearate)	Each	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	19.19 (DSR-2016)	Providing Precast Cement Concrete / SFRC Valve Chamber cover and frame conforming to IS : 12592-2002., The concrete mix should be not less than M 30.								
	19.19.1	L D- 2.5								
	19.19.1.1	Rectangular shape 600*450 mm internal dimensions	Each	28.00	0.00	3219.00	0.00	0.00	90132.00	0.00
10	MR	Providing and laying cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone agg. 20 mm nominal size) for thrust blocks at bends and junctions of water lines including necessary excavation, centering, shuttering etc as directed and required at site to complete the work..	Cum.	2.00	0.00	0.00	5000.00	0.00	0.00	10000.00
TOTAL OF SECTION (II)								189055.00	590686.50	35116.00
SECTION-III		DISTRIBUTION NETWORK FOR RISING MAIN WATER SUPPLY								
1	2.10	Excavating trenches upto 1.5 meter depth in all kind of soil of required width for pipes. including excavation for sockets and dressing of sides ramming of bottoms including getting out the excavated soil & then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc & disposing of surplus excavated soil as directed within a lead of 50m or as directed at site by engg-in-charge.								
		All kinds of soil								
		Pipes etc from 80 mm and above but not exceeding 300 mm dia.	metre	90.00	0.00	590.15	0.00	0.00	53113.50	0.00
2	SECTION (A) (II) ITEM-2	Supplying, fitting and fixing in position G.I.pipes of TATA make for underground works with all necessary accessories,specials viz.socket, bend, tee, union, cross, elbow, nipple, short piece etc.including cost of all materials,jointing materials ,cutting pipes,making threads,cutting trenches upto 1.5 metre below surface in all sorts of soil and refilling the same as directed with two coats of painting on G.I. pipes and specials with bituminous paint complete in all respect. (Payment will be made on the centre line measurement of the total pipe line including all specials No separate payment will be made for accessories, specials.Payment for painting will be made sepearately)								
		External work								
	(iv)	32 mm dia nominal bore	metre	45.00	354.00	0.00	0.00	15930.00	0.00	0.00
	(v)	40 mm dia nominal bore	metre	45.00	400.00	0.00	0.00	18000.00	0.00	0.00
3	18.17 (DSR-2016)	Providing & fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)								
	18.17.2	32 mm dia	NOS	1.00	0.00	4828.50	0.00	0.00	4828.50	0.00
	18.17.3	40 mm dia	NOS	1.00	0.00	6438.00	0.00	0.00	6438.00	0.00

S. No	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
4		Supply, fixing in position, testing ISI marked cast iron double flanged sluice valves as per IS:14846-2000, (PN 10) with SS stem, bolts, nuts, 3 mm thick rubber gaskets including transporting to worksite, Complete as per drawings & directions of the Engineer-in-charge.								
	MR	32 mm nominal dia	Each	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	18.32 (DSR-2016)	Constructing brick masonry chamber 300 x 300 x 500 mm, inside with F.P.S. brick work in cement mortar 1: 4 (1 cement : 4 coarse sand) for Isolating Valve / garden hydrant /gate valve , including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size); necessary excavation, foundation concrete 1:4:8 (1 cement :4 coarse sand: 8 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design. (The cost of cover and frame shall be seperate)	Each	2.00	0.00	4292.00	0.00	0.00	8584.00	0.00
6	18.33 (DSR-2016)	Constructing brick masonry chamber 600 x 600 x 1050 mm inside with F.P.S. brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for Sluice Valve , necessary excavation, foundation concrete 1:4:8 (1 cement : 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design including fixing of CI/SFRC cover and frame in 150 mm thick cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) including centering, shuttering, excavation, refilling and disposal of surplus earth as directed complete in all respects. (The cost of cover and frame shall be seperate)	Each	0.00	0.00	5700.00	0.00	0.00	0.00	0.00
7	19.19 (DSR-2016)	Providing Precast Cement Concrete / SFRC Valve Chamber cover and frame conforming to IS : 12592-2002., The concrete mix should be not less than M 30.								
	19.19.1	L D- 2.5								
	19.19.1.1	Rectangular shape 600*450 mm internal dimensions	Each	2.00	0.00	3219.00	0.00	0.00	6438.00	0.00
8	MR	Providing and laying cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone agg. 20 mm nominal size) for thrust blocks at bends and junctions of water lines including necessary excavation, centering, shuttering etc as directed and required at site to complete the work..	Cum.	2.00	0.00	0.00	8584.00	0.00	0.00	17168.00
TOTAL OF SECTION (III)								33930.00	79402.00	17168.00
II SUB HEAD (II) :- EXTERNAL SEWERAGE SYSTEM										
1	2.10 (DSR-16)	Excavating trenches of required width for pipes, cable, etc including excavation for sockets and dressing of sides, ramming of bottoms, depth upto 1.50m including getting out the excavated soil & then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc & disposing of surplus excavated soil as directed within a lead of 50m.								
		All kinds of soil								
		Pipes cables etc. exceeding 80 mm dia. But not exceeding 300mm dia.	metre	215.00	0.00	590.15	0.00	0.00	126882.25	0.00
2		Providing, Laying & Jointing of UPVC pipe SN-8 (IS : 16098-1) including lowering in trenches, laid to correct levels up to required depth and connecting with the resoective manhole for Underground Sewerage with fittings complete in all respect								
	MR	160 mm OD. (140 ID) (Wall thickness : 10.0 - 11.2 mm)	metre	80.00	0.00	0.00	1448.00	0.00	0.00	115840.00
	MR	200 mm OD. (195 ID) (Wall thickness : 14.1 - 15.7 mm)	metre	220.00	0.00	0.00	2146.00	0.00	0.00	472120.00
3		Providing and laying cement concrete 1 : 5 : 10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) around UPVC Pipes including bed concrete as per standard design.								
	MR	160 mm diameter	metre	10.24	0.00	0.00	1019.35	0.00	0.00	10438.14
	MR	225 mm diameter	metre	48.62	0.00	0.00	1287.60	0.00	0.00	62603.11

S. No.	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
		Weight: 245 kg (approx)	each	28.00	4034.00	0.00	0.00	112952.00	0.00	0.00
9	19.11 (DSR-16)	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :								
	19.11.1	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :								
	19.11.1.2	With Sewer bricks conforming to IS : 4885	each	2.00	0.00	15022.00	0.00	0.00	30044.00	0.00
10	19.12	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m								
	19.12.2	With Sewer bricks conforming IS : 4885	metre	1.00	0.00	10730.00	0.00	0.00	10730.00	0.00
11	13.1 (DSR-16)	12 mm cement plaster of mix:								
	13.1.1	1:4 (1 cement: 4 fine sand)	sqm	7.16	0.00	643.80	0.00	0.00	4609.61	0.00
12	19.11	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement :4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :								
	19.11.1	1.68 m deep with SFRC Cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :								
	19.11.1.2	With Sewer bricks conforming IS : 4885	each	2.00	0.00	35409.00	0.00	0.00	70818.00	0.00
13	19.12	Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m :								
	19.12.2	With Sewer bricks conforming IS : 4885	metre	1.00	0.00	16309.60	0.00	0.00	16309.60	0.00
14	13.1 (DSR-16)	12 mm cement plaster of mix:								
	13.1.1	1:4 (1 cement: 4 fine sand)	sqm	18.98	0.00	643.80	0.00	0.00	12219.32	0.00

S. No	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
15		Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :								
		2.30 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) :								
	MR	With Sewer bricks conforming IS : 4885	each	2.00	0.00	0.00	41310.50	0.00	0.00	82621.00
16		Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m :								
	MR	With Sewer bricks conforming IS : 4885	metre	2.00	0.00	0.00	24142.50	0.00	0.00	48285.00
17		12 mm cement plaster of mix								
	MR	1:4 (1 cement : 4 coarse sand).	Sq.m	60.00	0.00	0.00	643.00	0.00	0.00	38580.00
18		Earth work in excavation by mechanical means(Hydraulic excavator)/manual means in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	MR	All kinds of soil	Cum	100.00	0.00	0.00	643.80	0.00	0.00	64380.00
19	19.15 (DSR-16)	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :								
	19.15.1	With 20x20 mm square bar	each	300.00	0.00	536.50	0.00	0.00	160950.00	0.00
TOTAL OF SUB HEAD (II)								390407.00	1537752.78	965574.74
III SUB HEAD (III) :- EXTERNAL DRAINAGE SYSTEM										
PIPE DRAIN										
1	2.1	Excavating trenches of required width for pipes, cable, etc including excavation for sockets and dressing of sides, ramming of bottoms, depth upto 1.50m including getting out the excavated soil & then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc & disposing of surplus excavated soil as directed within a lead of 50m.								
		All kinds of soil								
		Pipes cables etc. exceeding 80 mm dia. But not exceeding 300mm dia.	metre	90.00	0.00	590.15	0.00	0.00	53113.50	0.00
2	19.6(DSR-16)	Providing and laying Non pressure NP 2 class (light duty) RCC pipe with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1cement : 2 fine sand) including testing of joints etc. complete.								
	19.6.3	250 mm. dia. RCC Pipes	metre	90.00	0.00	1019.35	0.00	0.00	91741.50	0.00
3	4.1.8(DSR-16)	Providing and laying in position cement concrete excluding the cost of centering and shuttering. (in all type of work upto plinth level) by 1:4:8 (1 cement : 4 coarse sand : 8 graded stone agg. 40 mm nominal size)								
			CUM.	30.00	0.00	1,368.08	0.00	0.00	41042.25	0.00
4	4.1.3(DSR-16)	Providing and laying in position cement concrete excluding the cost of centering and shuttering (in all type of work upto plinth level) by 1:2:4 (1 cement : 2 coarse sand : 4 graded stone agg. 20 mm nominal size) for RCC bedding								
			CUM.	30.00	0.00	8,584.00	0.00	0.00	257520.00	0.00

S. No	Item No./Page No./MR	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
5	19.27(DSR-16)	Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design :								
	19.27.1(DSR-16)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	1.00	0.00	10730.00	0.00	0.00	10730.00	0.00
6	19.29(DSR-16)	Constructing brick masonry road gully chamber 110x50x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame and vertical grating complete as per standard design :								
	19.29.1(DSR-16)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	1.00	0.00	16095.00	0.00	0.00	16095.00	0.00
7	19.9(DSR-16)	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :								
	19.9.1	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :								
	19.9.1.2	With Sewer bricks conforming to IS : 4885	each	1.00	0.00	15022.00	0.00	0.00	15022.00	0.00
8	19.10	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m								
	19.10.2	With Sewer bricks conforming IS : 4885	metre	0.50	0.00	10730.00	0.00	0.00	5365.00	0.00
9		12 mm cement plaster of mix:								
	MR	1:4 (1 cement: 4 fine sand)	sqm	3.60	0.00	0.00	643.80	0.00	0.00	2317.68
10	2.6	Earth work in excavation by mechanical means(Hydraulic excavator)/manual means in foundation trenches or drains(not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m								
	2.6.1	All kinds of soil	Cum	50.00	0.00	590.15	0.00	0.00	29507.50	0.00
11	19.15(DSR-16)	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design :								
	19.15.1	With 20x20 mm square bar	each	50.00	0.00	536.50	0.00	0.00	26825.00	0.00
12		Extra for depth for manholes:								
	MR	For 455x610 mm size	metre	2.00	0.00	0.00	6438.00	0.00	0.00	12876.00
	MR	For 1100 x 500 mm inner size	metre	2.00	0.00	0.00	8584.00	0.00	0.00	17168.00
13		Supply, installing, testing and commissioning of non clog submersible type drainage / dewatering pump suitable for automatic operation, float valve operated, automatic / manual operation, including NRV & all accessories, nlet & outlet arrangements, required cable etc. complete in all respects. (Make : Grundfos / ITT / WILO / DP / Nocchi / KSB)								
		2 lps at 10 meter, 10 mm max particle size, 50 Hz, 240 volts, IP 68, F insulation, Float level switches, impeller in CI / Polypropylene, casing in CI / polyurethan and shaft in stainless steel (1 set comprises of two number dewatering pumps - for pump house drainage)								
	MR	Pump	set	1.00			30000.00	0.00	0.00	30000.00

RESORT , TONGLU (WEST BENGAL)				
SUMMARY OF COST				
EXTERNAL ELECTRICAL & LIGHTING SYSTEM				
S. No	DESCRIPTION	AMOUNT		
		WBSOR-2017 (a)	CPWD-DSR-2016 (b)	MR (c)
I	LT PANEL AND FEEDER PILLARS	0.00	0.00	2432330.00
II	CABLE & ACCESSARY	266585.00	18098.00	547120.00
III	MISCELLANEOUS	0.00	10749.00	24460.00
IV	EARTHING	41864.00	142483.00	93650.00
V	TRANSFORMER	0.00	0.00	1150911.00
VI	D.G. SETS	0.00	0.00	2319220.00
VII	LIGHTING PROTECTION SYSTEM	0.00	0.00	266885.00
VIII	EXTERNAL LIGHTING SYSTEM	0.00	0.00	878560.00
	Total C/F To Summary (a)	308449.00	171330.00	7713136.00
	DARJEELING FACTOR @15%	46267.35	NA	NIL
	COST INDEX FOR DSR @66.67%	NA	114225.71	NIL
	Total (b)	354716.35	285555.71	7713136.00
	Net Total (Total (b) of WBSOR-2017+ CPWD-DSR-2016 + MR)			₹ 8,353,408.06
	Add for difficult access and difficult working site @ 20%			₹ 1,670,681.61
	Sub Total			₹ 10,024,089.67
	GST @ 12%			₹ 1,202,890.76
	Sub Total			₹ 11,226,980.43
	Labour Welfare Cess @ 1%			₹ 112,269.80
	Add Contingency Charges @ 3%			₹ 336,809.41
	Sub Total			₹ 11,676,059.65
	Say			₹ 11,676,060.00
Rupees One Crore Sixteen Lakhs Seventy Six Thousand Sixty Only				

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
	(a)	Laying of one No. cable upto 35 sqmm in underground trench 460 mm wide x 760 mm average depth, with brick protection on the top of the cable with 8 (eight) Nos. bricks per metre, including filling the space between the brick & cable and also the trench with shifted soil, leveling up and restoring surface duly rammed.	RM	1130	162.00			183060.00	0.00	0.00
	(b)	Laying of one No. cable above 35 sqmm and upto 185 sqmm in underground trench 460mm wide x 760mm average depth, with brick protection on the top of the cable with 8 (eight) Nos. bricks per Mtr. including filling the space between the bricks and cable and also the trench with shifted soil, leveling up and restoring surface duly rammed.	Metre	270	172.00			46440.00	0.00	0.00
	(c)	Laying of one No. cable above 185 sqmm in underground trench 460mm wide x 760mm average depth, with brick protection on the top of the cable with 8 (eight) Nos. bricks per Mtr. including filling the space between the bricks and cable and also the trench with shifted soil, leveling up and restoring surface duly rammed	Metre	60	187.00			11220.00	0.00	0.00
3	2/F-2	Laying through Underground Trech								
	(a)	Laying of two cables upto 35 sqmm in an underground trench in single tier formation (horizontal), the trench size : 680 mm x 760 mm average depth, with brick protection on the top of each cable 8 (eight) Nos. bricks per Mtr. and 4 (four) Nos. bricks per Mtr. as separator between the bricks and cables and also trench to be filled up with shifted soil, levelling up and restoring surface duly rammed.	RM	25	301.00			7525.00	0.00	0.00
	(b)	Laying of two cables above 35 sqmm and upto 185 sqmm in an underground trench in single tier formation (horizontal), the trench size : 680 mm x 760 mm average depth, with brick protection on the top of each cable 8 (eight) Nos. bricks per Mtr. and 4 (four) Nos. bricks per Mtr. as separator between the bricks and cables and also trench to be filled up with shifted soil, levelling up and restoring surface duly rammed.	Metre	10	315.00			3150.00	0.00	0.00
	(c)	Laying of two cables above 185 sqmm in an underground trench in single tier formation (horizontal), the trench size : 680 mm x 760 mm average depth, with brick protection on the top of each cable 8 (eight) Nos. bricks per Mtr. and 4 (four) Nos. bricks per Mtr. as separator between the bricks and cables and also trench to be filled up with shifted soil, levelling up and restoring surface duly rammed.	Metre	10	337.00			3370.00	0.00	0.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
						TOTAL		266585.00	18098.00	547120.00
III		SUB HEAD (III) :MISCELLANEOUS								
1	MR	S/F of shock treatment chart (prescribed under I.E.rules) duly framed with glass and supported from back with hard board with supply of all material labour T & P etc for proper completion of work. (Approx front area = 1.20 sq M)	NOS	2			1150.00	0.00	0.00	2300.00
2	MR	Supply and fixing of First aid box as approved by Indian red cross conforming to IS : 2217.	NOS	2			850.00	0.00	0.00	1700.00
3	MR	Supply of rubber gloves of 11 KV grade as per IS : 4770.	Set	2			450.00	0.00	0.00	900.00
4	MR	Supply and fixing of cable route marker	NOS	6			340.00	0.00	0.00	2040.00
5	MR	Supplying and laying of 1000 mm wide x 12 mm thick chequered rubber matting of tested quality to withstand 15KV dielectric strength as per IS 5424 complete in all respects.	M	6			1730.00	0.00	0.00	10380.00
6	MR	Supplying, Fixing, Testing, Commissioning of 1800 mm x 900 mm x 20 mm thick chequered rubber matting of tested quality to withstand 11 KV dielectric strength complete in all respects.	NOS	2			3570.00	0.00	0.00	7140.00
7	2.21(DSR)	Providing and fixing M.V. danger notice plate of 200 mm x 150 mm made of mild steel, at least 2 mm thick and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required .	NOS	2			149.00	0.00	298.00	0.00
8	2.22(DSR)	Providing and fixing H.T. danger notice plate of 250 mm x 200 mm made of mild steel, at least 2 mm thick and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required .	NOS	2			163.00	0.00	326.00	0.00
9	14.14(DSR)	Providing, laying and fixing following dia RCC pipe NP 2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.						0.00	0.00	0.00
	14.14.2	150 mm. dia.	M	25.00			405.00	0.00	10125.00	0.00
							TOTAL	0.00	10749.00	24460.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
IV SUB HEAD (IV) :- EARTHING SYSTEM										
1		Earthing with Copper plate (610x610x3mm size) having weight of 9.84 Kg and 1 No. 25x5mm Copper strip (3.20 mt long) & 1 no. 6 sqmm PVC insulated stranded Copper wire (4 Mt long) incl. S & F 15 mm dia GI pipe (ISI-Medium) protection (4 mt. long) to be filled with bitumen, partly under the ground level & partly above ground level to an average depth of 3.65 Mts. below the ground level and restoring the surface duly rammed incl. providing 3.0 mt long, 25 mm dia GI pipe (ISI-Medium) for periodic treatment, incl. providing masonry enclosure on the top of the earth electrode of overall size 86.36x86.36x46cm deep (below Ground level) complete with cemented brick work (1:6) of 25 cm width, duly plastered with cement mortar (inside) CI hinged inspection cover of size 36.56x35.56cm with locking arrangement, GI reducer and treatment of soil by using salt & charcoal or coke for plate electrode.	Set	4	10466.00			41864.00	0.00	0.00
2	5.4(DSR)	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	14		4327.00		0.00	60578.00	0.00
3	5.15(DSR)	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Meter	175		129.00		0.00	22575.00	0.00
4	5.14(DSR)	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Meter	85		698.00		0.00	59330.00	0.00
5	MR	Providing and fixing 32 mm X 6 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	85			150.00	0.00	0.00	12750.00
6	MR	Providing and fixing 50 mm X 6 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	45			200.00	0.00	0.00	9000.00
7	MR	Providing and fixing 50 mm X 10 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	25			320.00	0.00	0.00	8000.00
8	MR	Providing and fixing earth bus of 32 mm X 6 mm copper strip on surface for connections etc. as required.	Metre	55			680.00	0.00	0.00	37400.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
		a) Cable Termination box with disconnecting facility for 11 KV 3C-185 sq mm XLPE cable at 11 KV side								
		b) Cable Termination box with disconnecting facility for required nos. LT cable at LT side.								
		c) Off Load Tap Changer on HV side + 7.5 % to - 7.5 % @ 2.5 % in manual mode with position indicator and locking arrangements.								
		d) Unidirectional rollers.								
		e) Oil Conservator with filter cap, drain plug & oil level gauge								
		f) Earthing terminals 2 nos for body earthing.								
		g) 0.415 KV neutral seperately bought out on a bushing for neutral earthing.								
		h) Pressure release device. Double diaphragm explosion vent.								
		i) Radiators Detachable type with top & bottom shut off valve.								
		j) First filling of filtered dehydrated oil as per IS : 335 including make up fill during installation.								
		k) Silica gel breather with connecting pipe & oil seal.								
		l) Rating, Diagram & Terminal marking plate of SS.								
		m) Sampling Valves for filtration, drainage and filling with plugs.								
		n) Air release plugs.								
		o) Thermometer pocket with plug.								
		p) Lifting Lugs.								
		q) Buchholz relay with gas release cock, alarm & shut off valve with separate set of contacts for trip and alarm.								
		r) 150 mm Winding temperature indicator (WTI) with alarm.								
		s) 150 mm Oil temperature indicator (OTI) with alarm								
		t) Marshalling Box.								
		u) Clamping device.								
		v) Jacking Pads.								
		The work shall be complete in all respects up to the satisfaction of BSF.								
	MR	250 KVA	SET	1			544009.00	0.00	0.00	544009.00
							TOTAL	0.00	0.00	1150911.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
		Low Lube oil trip indication								
		Engine hours indication								
		Alternator -								
		Synchronous Alternator of above capacity at 0.8 PF, 3 phase, 415 volts, 50 cycles, 4 wire, 1500 RPM, suitable for operation at 40 deg C, 50% RH & at 1000 meter above MSL, capable of taking 10% overloading for one hour after 12 hrs of continuous loading, brushless, self excited, self regulated through AVR, continuous duty conforming to IS 4722, BS 2613 suitable for tropical conditions, class H insulation, including terminal box suitable for cable termination as required.								
		Base Frame - Both the engine and alternator shall be mounted on suitable base frame made of MS channel which shall be installed on cement concrete foundation and vibration isolating arrangement as per recommendations of manufacturer.								
		Inbuilt Fuel tank of standard capacity complete with inlet and outlet connections, oil indication gauge, drain plug, air breather, fuel transfer system for automatic fuel refilling system with pump, piping, valves, level indicators etc. complete.								
		Exhaust System - Exhaust manifold with silencer complete with mineral wool / rock wool insulation of minimum 50 mm thick of 150 Kg per cu M density on all sides, with chicken mesh wrapping and 26 SWG aluminium sheet cladding complete as required.								
		The D G set should be supplied with required hardware for external PLC based auto load management system.								
		Starting system - 24 Volt DC starting system comprising of starter motors : voltage regulator and arrangement for initial excitation complete with 12/24 Volts suitable nos. lead acid type batteries of suitable AH.								
		Ventillation System - Arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air into the atmosphere as per standard specifications.								
	MR	200 KVA	SET	1			1714210.00	0.00	0.00	1714210.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
		Synchronous Alternator of above capacity at 0.8 PF, 3 phase, 415 volts, 50 cycles, 4 wire, 1500 RPM, suitable for operation at 40 deg C, 50% RH & at 1000 meter above MSL, capable of taking 10% overloading for one hour after 12 hrs of continuous loading, brushless, self excited, self regulated through AVR, continuous duty confirming to IS 4722, BS 2613 suitable for tropical conditions, class H insulation, including terminal box suitable for cable termination as required.								
		Base Frame - Both the engine and alternator shall be mounted on suitable base frame made of MS channel which shall be installed on cement concrete foundation and vibration isolating arrangement as per recommendations of manufacturer.								
		Inbuilt Fuel tank of standard capacity complete with inlet and outlet connections, oil indication gauge, drain plug, air breather, fuel transfer system for automatic fuel refilling system with pump, piping, valves, level indicators etc. complete.								
		Exhaust System - Exhaust manifold with silencer complete with mineral wool / rock wool insulation of minimum 50 mm thick of 150 Kg per cu M density on all sides, with chicken mesh wrapping and 26 SWG aluminium sheet cladding complete as required.								
		The D G set should be supplied with required hardware for external PLC based auto load management system.								
		Starting system - 24 Volt DC starting system comprising of starter motors : voltage regulator and arrangement for initial excitation complete with 12/24 Volts suitable nos. lead acid type batteries of suitable AH.								
		Ventillation System - Arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air into the atmosphere as per standard specifications.								
	MR	62.5 KVA	SET	1			549010.00	0.00	0.00	549010.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
3		Supply & installation of advance maintenance free Chemical Gel Earthing of Dual Pipe Technology (GI) of 3mtr long 80mm dia. of outer shell (MS) with the 50mm dia. of inner shell (MS) with 80-100 microns galvanized filled with highly conducting metallic compounds with the permanent sealings at both the ends with the lead terminal of 50x10mm size at the top along with 50 Kgs of RESLOW (mixture of Sulphate, Silica, Alumina, Iron Oxide, Titanium Oxide, Calcium Oxide, Potassium Oxide, Chloride, Nickel Oxide, Magnesium Oxide, Sodium Oxide, Zinc Oxide, etc) Resistance Lowering Grounding Minerals. The loss on ignition by mass of the chemical compound RESLOW shall be less than 20%. The chemical compound should be tested and certified by any International accredited and BIS (Bureau of Indian Standards) accredited laboratory. The testing laboratory should be ISO 9001 & ISO 14001 certified. The material shall be duly tested & certified by CPRI (Central Power Research Institute), Govt. of India for a minimum short circuit current of 30 KA rms. complete in all respect	No's	2			27445.00	0.00	0.00	54890.00
		The chemical earth electrode manufacturer shall be an ISO 9001:2008 & ISO 14001:2004 certified organization.								
4	MR	Supply & installation of heavy duty weather proof environment friendly polyplastic earth pit chamber with cover of autolocking facility with the following dimensions - 254mm dia. (top), 330mm dia. (bottom) and 260mm height. 4 knock-out openings are provided for the easy interconnection of earth strips between the earth pits to form a grid. complete in all respect	No's	2			6000.00	0.00	0.00	12000.00

Sl. no.	Item No./Page No./MR	Description of items	Unit	Qty	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
1	MR	Supply of LED Bollard with 96 low power LEDs,Light Color Warm white (3000K), Lumens:WW: 300 lm NW: 400lm CRI >75 ,Closed, diffuser Optic cover Poly carbonate diffuser board Resistance to heat and fire GWT= 850°C for plastics parts Mains cabling Via 1 x M16 cable gland accepting cable 3 core x >1.0mm² Connection Push in connector in 3 poles accepting wires 3core x >1.0mm²,Extrusion Aluminum material housing. Poly carbonate diffuser,Color Dark grey (RAL 7043),Operating temperature - 20°C < Ta < 40°C with Life of 25,000 hours @70% lumen maintenance with System power of 8W Electronic Driver 220-240V / 50-60Hz, integrated (non-dimmable) and THD< 30% Class I and IP65 / IK10,Weight: 1.85 Kg (0.8m),CCC, CE and RoHS compliance ,such as Philips BCP151 LED150/WW PSU 220-240V 7043.	No's	68.00			12420.00	0.00	0.00	844560.00
		ERECTION OF EXTERNAL LIGHTING FIXTURES								
1	MR	Installation, testing and commissioning of CFL / HPSV / MH / CDMT type LED Bollard/ Step Light/Spot Light/Flood Light with required lamps complete with, control gears, ballast, capacitor etc. including connection with 3x1.5 sqmm flexible fire retardant copper connecting wire of required length complete as required.	No's	68.00			500.00	0.00	0.00	34000.00
							TOTAL	0.00	0.00	878560.00

RESORT , TONGLU (WEST BENGAL)
SUMMARY OF COST
PA & CCTV SYSTEM

S. No	DESCRIPTION	AMOUNT		
		WBSOR-2017 (a)	CPWD-DSR-2016 (b)	MR (c)
i	PUBLIC ADDRESS SYSTEM	0.00	0.00	1068843.77
ii	CCTV CAMERA	0.00	0.00	338470.00
	TOTAL (a)	0.00	0.00	1407313.77
	DARJEELING FACTOR@15%	0.00	NA	NIL
	COST INDEX FOR DSR @66.67%	NA	0.00	NIL
	TOTAL (b)	0.00	0.00	1407313.77
	Net Total (Total (b) of WBSOR-2017+ CPWD-DSR-2016 +			₹ 1,407,313.77
	Add for difficult access and difficult working site @ 20%			₹ 281,462.75
	Sub Total			₹ 1,688,776.52
	GST @ 12%			₹ 202,653.18
	Sub Total			₹ 1,891,429.71
	Labour Welfare Cess @ 1%			₹ 18,914.30
	Add Contingency Charges @ 3%			₹ 56,742.89
	Sub Total			₹ 1,967,086.90
	Say			₹ 1,967,087.00
Rupees Nineteen Lakhs Sixty Seven Thousand Eighty Seven Only				

**BILL OF QUANTITIES FOR RESORT, TONGLU
CCTV & PA SYSTEM**

S.No	Item No./Page No./MR	DESCRIPTION	UNIT	QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
I		SUB HEAD (I) - PA SYSTEM								
1.0		Control Equipment & Paging Console								
1.1		Supply, Installation, Testing & Commissioning of Public Address and Emergency Sound System Controller complying to International standards) with following features:								
1.1.1	MR	The Voice Alarm Controller Having audio and control data transmission, & announcement to 12 zones expendable to 60 zones with & including built in 240 W booster amplifier, 16 priority levels & emergency, music to selected zones can be played. The system is configured using DIP switches for basic mode and, PC programmable for advance functions, External alarm inputs/alarm tones/messages, with 12 contact trigger inputs for busineses & emergency calls, volume control for each zone level of priorities, system can be integrated with fire alarm panel, one no, hot stand by for amplifiers in case of working amplifier failure.	Sets	1.00			551660.00			551660.00
2.0		Announcement Console.								
a)	MR	Supply, Installation, Testing & Commissioning of Voice Alarm Call Stations at control room with High Quality goose neck Condensor Microphone along with 8 button keypad for six (6) zone selection, key and an all call key, PTT Switch fault acknowledge and reset any number of zone selection, by adding keypad with selectable gain speach filter & limiter for improved intelligibility with LED indication for Zone selection fault & emergency state complete as required.	Nos	1.00			64912.00			64912.00
b)	MR	SITC of Voice alarm Remote Call Stations with High Quality Gooseneek Condensor Microphone alongwith 8 buttons keypad for six (6) zone selections, key & an all call key PTT (Push to talk) switch fault acknowledge and reset any number of zone selection, by adding keypad with selectable gain speach filter & limiter for improved interlligibility with LED indication for Zone selection fault & emergency state complate with required Interface Unit complete in all respect as required.	Nos	1.00			123750.00			123750.00
3.0		Amplifier & Speakers								
a)		SITC of 240 W Booster Amplifier for RMS power out put 70V and 8 OHM out put 100 V input for slave opertion on 100 volts speaker lines also having temperature control in built fan for high reliability with sensitivity/level control complate as required with following features.								
b)	MR	For 240W Amplifier	Nos	1.00			139575.50			139575.50
4(a)	MR	SITC and Commissioning of 6 W ceiling loudspeakers with built in LMT suitable for both music and speech complete as required.	Nos	25.00			1089.05			27226.25
b)	MR	SITC and Commissioning of 15W economy Horn loudspeaker complate as required.	Nos	1.00			9524.59			9524.59
5.0		Music Source								
a	MR	SITC and Commissioning of Back Ground Music source (BGM) with CD/MP3 player & with wireless remote control provision having integrated CD player complete as required.	Nos	1.00			65595.43			65595.43

S.No	Item No./Page No./MR	DESCRIPTION	UNIT	QTY	WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
6.0		Cables & Other Items								
a		SITC and Commissioning of 19" Presidential equipment rack of 24U size made out of CRCA Sheet steel duly powder coated & provided with PVC Channel to house all the control equipments, amplifiers with wiring & switches complete in all respect (custom)	Sets	1.00			R/O			
b)	MR	SITC and laying of Call Station Cable for inter connection of remote call station (CAT5) as required.	RM	50.00			70.00			3500.00
c)	MR	SITC and laying of 2 core 1.5 mm PVC insulated twin-twisted copper conductor wires in existing conduit/trunking as required.	RM	300.00			160.00			48000.00
d)		SITC and laying in position the following sizes of Rigid PVC conduits including providing all accessories concealed/exposed complete as required.								
e)	MR	25mm dia PVC conduit	RM	300.00			110.00			33000.00
f)	MR	25mm dia PVC flexible pipe	RM	30.00			70.00			2100.00
		TOTAL SUB HEAD (I) - PA SYSTEM						0.00	0.00	1068843.77
II		SUB HEAD (II) - CCTV								
1	MR	Supply, installation, testing and commissioning of 21" LED TV complete with all required features. (Make: Sony/Samsung/LG).	Each	2.00			34070.00			68140.00
2	MR	Supply, installation, testing and commissioning of Transient/WD Hard Disc 2 TB for 32 Port DVR	Each	2.00			6790.00			13580.00
3	MR	Supply, fixing, testing of outdoor Bullet camera 1.3 MP , HD Infrared Waterproof, Latest DSP Digital Signal Processing technology, Exclusive Korean latest program, Image stabilization technology, automatically adapt to the digital noise reduction.	Each	25.00			2980.00			74500.00
4	MR	Supply, installation, testing and commissioning of Rohs DVR 32 Port (H.264), DDNS setting is needless, Customized UI is available, Friendly GUI, easy to operate, Support IMAC, IOS, Windows, Android ect. system, Support trouble shooting and upgrades by remote, Support chrome, safari, firefox, IE6,7,8,9 browser, Support Iphone, Android, Blackberry, Symbian ect. mobile systems, Software logo and model No. can be changed easily by user.	Each	2.00			63950.00			127900.00
5	MR	Supply, installation, testing and commissioning of Power Supply 32 Channel (16x2) 16 Amp	Each	4.00			2490.00			9960.00
5	MR	Supply of CCTV coaxial 3+1 wire for CCTV cameras.	Mtr	900.00			19.00			17100.00
6	MR	Supply of CAT-6 for DVR.	Mtr	10.00			24.00			240.00
7	MR	Supply and laying of BNC Pin Connector .	Nos.	50.00			30.00			1500.00
8	MR	Supply and fixing of DC Power Pigtails Plug Lead Cord for CCTV Cameras .	Nos.	25.00			22.00			550.00
9	MR	Commissioning & Servicing	Set	1.00			25000.00			25000.00
		TOTAL SUB HEAD (II) - CCTV						0.00	0.00	338470.00

**RESORT , TONGLU (WEST BENGAL)
SUMMARY OF COST**

FIRE DETECTION & ALARM SYSTEM

S. No	DESCRIPTION	AMOUNT		
		WBSOR-2017 (a)	CPWD-DSR-2016 (b)	MR (c)
1	PANEL AND DETECTORS	0.00	0.00	129000.00
2	CABLES AND ACCESSORIES	0.00	0.00	783000.00
	TOTAL (a)	0.00	0.00	912000.00
	DARJEELING FACTOR@15%	0.00	NA	NIL
	COST INDEX FOR DSR @66.67%	NA	0.00	NIL
	TOTAL (b)	0.00	0.00	912000.00
	Net Total (Total (b) of WBSOR-2017+ CPWD-DSR-2016 + MR)			₹ 912,000.00
	Add for difficult access and difficult working site @ 20%			₹ 182,400.00
	Sub Total			₹ 1,094,400.00
	GST @ 12%			₹ 131,328.00
	Sub Total			₹ 1,225,728.00
	Labour Welfare Cess @ 1%			₹ 12,257.28
	Add Contingency Charges @ 3%			₹ 36,771.84
	Sub Total			₹ 1,274,757.12
	Say			₹ 1,274,757.00
Rupees Twelve Lakhs Seventy Four Thousand Seven Hundred Fifty Seven Only				

**BILL OF QUANTITIES FOR RESORT, TONGLU
FIRE DETECTION & ALARM SYSTEM**

S.No	Item No./Page No./MR	DESCRIPTION	UNIT	QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
		CONVENTIONAL FIRE DETECTION AND ALARM SYSTEM								
I		SUB HEAD I - PANEL & DETECTOR								
1	MR	Providing, fixing, testing and commissioning of UL / FM / EN / VDS listed / approved conventional automatic fire Alarm detectors								
	MR	(a) Optical /Photoelectric type smoke detectors of photo-optic sensing chamber, 12/24 volt D.C., twin visual alarm indicator "Blink" in stand by and "Steady" in alarm (LED's) complete in all respects with base as required.	NOS	35			1550.00			54,250.00
2	MR	(b) Fixed cum rate of rise temprature type heat detectors , 57 to 60oC (135oF.) (fixed) and 15oF per minute rate of rise twin visual alarm indicators (LED's) "Blink" in stand by and "Steady" in alarm complete in all respects with base as required.	NOS	4			1255.00			5,020.00
3	MR	Providing, fixing, testing and commissioning of manual call points break glass type housed in sheet steel / Polymer housing in surface/recess including making connections with wires complete in all respects and as per specifications. The manual call point should have an indicator, which should "blink" in stand by condition.	NOS	18			1070.00			19,260.00
4	MR	Providing, fixing, testing and commissioning of electronic hooters (hooters shall also be able to work as public address system sounders) housed in sheet steel / Polymer housing suitable for wall / ceiling and surface / recess mounting including making connections with wires complete in all respects and as per specifications.	NOS	18			1290.00			23,220.00
5	MR	Providing,fixing,testing and commissioning of response indicators with dual LED suitable for operation on 12/24 volts D.C., sheet steel / Polymer housing suitable for surface/recess mounting including making connections with wires complete in all respects.	NOS	35			350.00			12,250.00
6	MR	Providing, fixing, testing and commissioning of microprocessor based Zonal / local fire alarm control and indicating panel with indicating lights etc complete in all respects for proper working of the system and as per specifications. The control wires between the local control panel and the main control panel should be monitored and give a fire and fault indication at the Main Panel in the event of a fire / fault. The power to LCP will be supplied by main panel. (Make : Agni Suraksha (ASES), Safeway, Honeywell)								
		8-Zone main control panel	SET	1			15000.00			15,000.00
		TOTAL SUB HEAD I - PANEL & DETECTOR						-	-	129,000.00

S.No	Item No./Page No./MR	DESCRIPTION	UNIT	QTY	WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
II		SUB HEAD II - CABLES AND ACCESSORIES								
7	MR	Supply and fixing of ISI marked (IS:3419 & 2509) 2 mm thick PVC conduit in concealed / exposed system in wall, ceiling or on floor including cutting of brick work, laying of conduit and fixing it with M.S. hooks and then plastering with cement, sand motar finished to the level, on floor the conduit shall be covered in PCC 1:2:4 for protection, including cost of threading of conduit and providing necessary sockets, bends, tees etc as directed at site by the engineer-in-charge with supply of all material labour and T & P required for proper completion of work. conduit being laid either in concealed system in ceiling slab or wall or on surface or under the frame of false ceiling including flexible conduits or through wooden partition including clamping arrangements as required								
		25 mm dia. conduit	M	5500			92.00			506,000.00
8	MR	Supplying, receiving, storing, handling, fixing, wiring for fire alarm system wiring using ISI marked (IS 694) 1100 Volts grade, PVC insulated, flexible, flame retardant low smoke (FRLS) copper conductor wire , drawn in existing solid / flexible conduits / casing capping including connections to the detectors, manual call points , hooters, response indicators, accessories, fire alarm control panel etc. including termination with bottle type copper lugs as required to complete the system.								
		2 x 1.5 sq mm	M	5500			46.00			253,000.00
9	MR	Providing and fixing of self illuminated / auto glow " EXIT " signs printed on photoluminescent sheet containing self illuminated base chemical, of appropriate size not less than 400 x 150 mm, suspended from ceiling or fixed to the walls with accessories as required and as directed at site.								
			NOS	20			1,200.00			24,000.00
		TOTAL SUB HEAD II - CABLES AND ACCESSORIES						-	-	783,000.00

RESORT ,TONGLU (WEST BENGAL)**SUMMARY OF COST
FIRE FIGHTING SYSTEM**

S.NO	NAME OF SUB-HEAD	AMOUNT		
		WBSOR 2017 (a)	CPWD-DSR 2016 (b)	MR (c)
1	COST OF CIVIL WORKS			2207062.33
2	COST OF ELECTRICAL & MECHANICAL WORKS			1409023.00
	Total C/F To Summary (a)	0.00	0.00	3616085.33
	DARJEELING FACTOR	NA		NIL
	COST INDEX FOR DSR		NA	
	TOTAL(b)	0.00	0.00	3616085.33
	Net Total (Total (b) of WBSOR-2017+ CPWD-DSR-2016 + MR)			₹ 3,616,085.33
	Add for difficult access and difficult working site @ 20%			₹ 723,217.07
	Sub Total			₹ 4,339,302.40
	GST @ 12%			₹ 520,716.29
	Sub Total			₹ 4,860,018.68
	Labour Welfare Cess @ 1%			₹ 48,600.19
	Add Contingency Charges @ 3%			₹ 145,800.56
	Sub Total			₹ 5,054,419.43
	Say			₹ 5,054,419.00

Rupees Fifty Lakhs Fifty Four Thousand Four Hundred Nineteen Only

**BILL OF QUANTITIES FOR RESORT AT TONGLU
FIRE FIGHTING SYSTEM**

S.No	Item No./Page No./M	DESCRIPTION	UNIT	TOTAL QTY	RATE (In Rs.)			AMOUNT (In Rs.)		
					WBSOR 17	DSR 16	MR	WBSOR 17	DSR 16	MR
I SUB HEAD (I) :- CIVIL PART										
1		Supply & erection of ISI marked portable fire extinguishers , wall mounted type, wall brackets complete in all respect as per standard item with all accessories, delivery hose & nozzle wherever required, including fixing on walls as per the directions of Engineer-in-charge.								
	MR.	Water CO2 type. 9 Lt.capacity (IS:940)	Each	3			3220.50			9661.50
	MR.	CO2 gas type. 4.5 kg. Capacity (IS:2878)	Each	3			8158.60			24475.80
2	MR.	Supply & fixing of 4 nos. G.I. round bottom fire buckets of 9.5 liters capacity filled with sand including proper supporting / mounting arrangements in MS angle iron frame, painted by fire red colour over two coats of red oxide paint and written with white paint "FIRE" complete in all respects as per the directions of Engineer-in-charge.	Set	3			4294.00			12882.00
3		Supply, erection and testing of ISI marked M.S. pipes (Class B - heavy duty) and specials etc. (as per IS:1239) for above ground laying for hydrants system including transportation of materials upto the worksite, cutting the pipes to required length, edge preparation, welding, fixing / erection of pipes including specials i.e. bends, tees, reducers, flanges, expansion joints wherever required, washers, nuts, bolts etc. in proper position including all supports at maximum 3 meter spacing by 3 mm thick G.I. hangers / clamps / Tie rod supports with G.I. nuts, bolts, anchor fastner and washer for hydrant / sprinkler piping, jointing by welding, aligning the pipe line, painting with two primer coat by zinc chromate primer and two coats of synthetic enamel fire red colour, providing tapping for pressure gauges and for other instruments etc. Hydrostatic testing of system as specified, flushing & cleaning by water etc. complete as per drawings & direction of the Engineer-in-charge.								
		The pipes and accessories will be provided with all type of supports (Maximum Support spacing = up to 25 mm dia @ 2 m, 32 mm to 100 mm dia @ 2.5 m, 150 mm & above dia @ 3 m) by minimum 3 mm thick G.I. clevis / sprinkler hangers / clamps / Tie rod supports with G.I. nuts, bolts, anchor / dash fastner and washer for hydrant / sprinkler piping, for 100 & 150 mm dia pipe the support will be through 50x50x6 mm painted / pre galvanized MS angle iron along with G.I. U clamp, nuts, washers, anchor fasteners etc as the case may be.								
		The quoted rates shall also include for making holes in masonry / RCC slab, wall, chases in wall, providing sleeves in RCC wall & slabs with puddle flanges wherever required & making good the same by sealing the opening to original conditions.								
		upto 40mm dia. pipe threaded forged fittings and threaded joints shall be provided and for 50mm dia & above pipes welded joints with MS / malleable iron fittings shall be used.								
	MR.	63 NB	Meter	90			1073.50			96615.00
	MR.	100 NB	Meter	90			1352.61			121734.90
	MR.	150 NB	Meter	10			1776.64			17766.40
	MR.	200 NB	Meter				3220.50			

4		Supply, laying & jointing of ISI marked Mild Steel pipes (class C - heavy duty) (as per IS : 1239) including all fittings i.e. reducer, elbows, tees, flanges, washers, nuts, boltsetc. below ground including transportation of all materials to work site, earth work in excavation in all kinds of soil upto 1.50 meter depth, edge preparation, jointing by welding, laying the pipes in trenches in proper alignment, providing 150 mm thick fine sand layer above pipe, back filling the trenches in layers of 20 cms, consolidation of Each deposited layer, watering, ramming, disposal of surplus earth within a lead of 200 m and as directed, hydrostatic testing of the complete pipe work, providing 1:2:4 concrete thrust blocks of suitable size at all bends, tees and junctions with form works, completing the work in all respect as per drawings & direction of the Engineer-in-charge							
		The rates will include providing and laying 4 mm thick "Pypkote" tar based polymeric corrosion protection tape over two coat of zinc chromate primer as per manufacturers specs, as directed and as per IS:10221.							
	MR.	100 MM NB	Each	10			1717.60		17176.00
	MR.	150 MM NB	Each	450			2147.00		966150.00
5		Same as in item above but of G. I. Class B - medium duty for drainage pipe.							
	MR.	80 NB	Meter	10			1207.69		12076.90
6		Providing & fixing neoprene rubber single arch expansion joint (anti vibration bellow) as per manufacturers specifications. Tested to a pressure of 16 Kg/Cm ² including all necessary fittings complete as required.							
	MR.	80 mm dia.	Each	1			1878.63		1878.63
	MR.	150 mm dia.	Each	2			4294.00		8588.00
	MR.	200 mm dia.	Each	2			6441.00		12882.00
7		Supply & fixing in position ISI marked cast iron double flanged butterfly valves (PN 20 MPa) as per IS:13095, with SS disc, shaft, seating rings, internal fastening, nuts, bolts including transporting to worksite, 3 mm thick rubber gaskets etc. including testing, Complete as per drawings & directions of the Engineer-in-charge.							
	MR.	80 MM NB	Each	2			4830.75		9661.50
	MR.	100 MM NB	Each	1			5904.25		5904.25
	MR.	150 MM NB	Each	3			8588.00		25764.00
	MR.	200 MM NB	Each	3			18249.50		54748.50
8		Supply & fixing in position ISI marked cast iron double flanged dual plate type Non Return Valves (PN 1.6 Mpa)							
	MR.	80 MM NB	Each	1			5904.25		5904.25
	MR.	150 MM NB	Each	2			14492.25		28984.50
	MR.	200 MM NB	Each	2			24153.75		48307.50
9		Supply, fixing, testing and commissioning of yard hydrant comprising of the following (as per IS:908). (MAKE : Newage / Safeguard / Padmini / Getech)							
		1 no single headed C.I. stand post type hydrant.							
		1 no C.I.flange riser and duck foot bend							
	MR.	1 nos taper connection from main line.	Each	11			12882.00		141702.00
10	MR.	Supply, fixing, testing & commissioning of 20 mm bore and 30 meter long hose (high pressure rubber braided hose pipe as per IS:444) and hose reel suitable for 10 kg/sqcm operating pressure for first aid fire fighting conforming to IS : 884, with 180° full swing drum, fixing brackets, shut off gun metal nozzle, 40 mm dia. hand lever operated isolating ball valve, connecting directly from the riser through 40 mm dia. G.I.pipe with sockets, elbows, nipples etc. including providing operating instructions on a metal plate and fixing it near hose reel. The system shall be complete in all respects as per drawings and directions of Engineer-in-charge.	Each	11			12882.00		141702.00

11	MR.	Providing Stainless steel ISI marked 63 mm. dia. male Instantaneous pattern short branch pipes with 20 mm dia. Nozzle as per IS : 903, suitable for 10 kg/sqcm operating pressure and suitable for interconnections to hose pipe coupling as required.	Each	11			2683.75		29521.25
12	MR.	Providing ISI marked RRL (IS : 636, type-A) fire hose pipe 15 meter long and 63 mm dia with ISI marked (IS : 903) Stainless steel male and female coupling bound and rivetted to hose pipes with copper rivets and copper wire complete as required.	Each	22			6441.00		141702.00
13	MR.	Providing & fixing standard carbon steel fireman axe with rubber insulated handle tested to 20000 Volts.	Each	11			858.80		9446.80
14		Providing & fixing 25 mm dia air release valve with forged brass body full way ball valve type isolating valve, flanges / union, suitable for sprinkler / wet riser / down comer system with all necessary connections complete in all respects.							
	MR.	25 mm dia air release valve	Each	1			1610.25		1610.25
15		Providing and fixing C I body flanged S S strainer fabricated out of 1.6 mm thick Stainless Steel 304 sheet with 3 mm dia hole complete.							
	MR.	150 mm dia	NOS	1			15565.75		15565.75
	MR.	200 mm dia	NOS	1			28447.75		28447.75
16	MR.	Supply, fixing, testing & commissioning of 25 mm dia inspecting and testing assembly with gun metal valve, sight glass, by pass valve and connection to the drain line as required to complete the system.	Set	1			3220.50		3220.50
17		Providing & fixing dial pressure gauge complete in all respects. (Make : H Guru / FIBIG)							
	MR.	for 80 mm diameter pipe	NOS	2			1073.50		2147.00
	MR.	for 150 mm diameter pipe	NOS	2			1288.20		2576.40
	MR.	for 200 mm diameter pipe	NOS	2			1610.25		3220.50
18	MR.	Supply, installation and testing of cylindrical type flanged pressure vessel tank , 450 mm dia, 2 m long and of 10 mm thick M.S., common for a set of fire pumps including flanged connection, suitable supporting legs etc. The air vessel tank shall be provided with air release valve, stop cock, safety valve, pressure gauge, 50 mm dia drain valve, suitable pressure switches to operate main pumps and jockey pumps, tested to min 25 KG/cm2 complete including painting with synthetic enamel paint of approved shade with all accessories as per direction of the Engineer-in-charge.	Nos	1			42940.00		42940.00
19	MR.	Providing and fixing of cast iron body 150 mm dia Draw out connection in Under ground water storage tank with heavy class MS suction pipe of required length, foot valve, suction coupling in conformity with local regulations complete in all respects. (MAKE : Newage / Safeguard / Padmini)	NOS	1			9124.75		9124.75
20	MR.	Supply & installation of cast iron body 4 way 63 mm dia male instantaneous inlet coupling complete with inbuilt NRV, cap and chain for fire brigade connection conforming to IS : 904 and making connection with fire fighting pipe or under ground water tank, completing the work in all respect as per the directions of the Engineer-in-charge.	NOS	1			22543.50		22543.50
21	MR.	Providing and fixing weather proof standard fire hose cabinet (900 mm x 600 mm x 450 mm) outdoor type made of not less than 14 SWG MS sheet having glassed hinged door (5 mm thick glass) including necessary locking arrangement with handle for housing hydrant valve, two nos.15 meter long fire hose pipes, branch pipe as required as per drawings, including brackets for mounting accessories, painting (one coat primer and two coat of fire red colour). The cabinet shall be mounted on self standing mounted type painted MS Angle iron frame as required. The words "FIRE HOSE" to be painted on the box.	NOS	11			5904.25		64946.75

22	MR.	Supply, fixing in position, testing ISI marked cast iron double flanged sluice valves as per IS:14846-2000, (PN 20) with SS stem, bolts, nuts, 3 mm thick rubber gaskets including transporting to worksite, Complete as per drawings & directions of the Engineer-in-charge.							
		(MAKE : Kirlosker / IVC / Zoloto / Venus / Audco / Advance)							
	MR.	150 MM NB	NOS	2.00			16639.25		33278.50
23	MR.	Constructing brick masonry chamber 90 x 90 x 120 cm inside with FPS brick work in cement mortar 1 : 5 (1 cement : 5 fine sand) for sluice valve with S.F.R.C. cover and frame (heavy duty HD-20 grade designation), 560 mm internal diameter conforming to IS:12592, total weight of cover and frame to be not less than 182 Kg in cement concrete 1:2:4 and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:4 (1 cement : 4 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design .	NOS	2			16102.50		32205.00
		TOTAL SUB HEAD (I)							2207062.33
II SUB HEAD (II) :- ELECTRICAL & MECHANICAL WORKS									
1		Providing and laying of ISI marked Aluminium conductor, XLPE insulated, armoured, served, sheathed Cable 1100 V grade with terminal joints by palm or pin type cable sockets (lugs), insulating with tapes, double compression type brass and nickle plated compression glands. On surface, the cable run shall be on MS cable tray or fixed on M.S. clamps etc.of suitable size or as directed by engineer-in- charge, complete in all respects. In ground the cable shall be laid at a depth of 750 mm from ground Level including a cushion of 75 mm thick. Fine river sand around, duly protected by bricks on sides and top including excavation and back filling of soil or laid in RCC hume pipe as called for. The armouring shall be properly connected with the earth conductor by clamps etc.							
	MR.	4 core 10 sq.mm.	meter	60			429.40		25764.00
2		Supply, Fixing, Testing & Commissioning of fire authority approved electrical motor driven fire pump , suitable for automatic operation consisting of following : (Main Pump for hydrant, sprinkler, water curtain system) (MAKE : Kirloskar / Mather + Platt)							
		(a) Horizontally mounted, multi stage, split casing Centrifugal fire pump with operating speed not exceeding 1500 rpm, as per IS:1520 complete for delivery of under mentioned discharge against desired mentioned head so as to ensure a minimum pressure of 35 meter at the highest and farthest outlet at the specified flow complete with necessary strainers, 100 mm dia dial pressure gauge of calibration 0-15 kg/sq cm including bypass arrangement for periodic testing of the working of the pumpset as well as testing of automation with required length and size of MS pipe and control valves for proper completion of work. The pump shall be capable of giving 150% of rated discharge at head not less than 65% of rated head. The pump shall be provided with Mechanical seals. The impeller shall be enclosed type and accurately balanced dynamically. The pump casing shall be of cast iron, impeller shall be of bronze and shaft shall be of stainless steel.							
		(b) Squirrel cage, TEFC induction motor as per IS : 325, suitable for 415 V +/- 10%, 3 Phase, synchronous speed 1500 rpm, IP 55 protection and class 'F' insulation, vacume impregnated windings with heat and moisture resisting varnish for the above pump and flexible coupling with the pump. The motor shall be rated for continuous duty and shall have HP rating necessary to drive the pump at 150% of it's rated discharge at 65% of rated head.							

	(c) Common bed plate of fabricated mild steel channel or cast iron type, coupling, coupling guard etc as required.								
	(d) Suitable cement concrete pump foundation and vibration clamping arrangement as required. with foundation bolts, anti vibration pads, washers etc.								
	(e) Pressure switch for automatic operation of motor including necessary wiring upto control panel.								
	(f) Necessary Priming arrangement (if required) for the pump including priming tank of suitable capacity, piping of medium class GI pipe, valves, connection etc. complete.								
	Discharge : 2280 liter per minute	SET	1.00			430000.00			430000.00
	Head : 65 meter								
	(Make : Kirlosker)								
	(Make : Mather & Platt)								
3	Supply, Fixing, Testing & Commissioning of fire authority approved Diesel Engine driven Fire Pump , suitable for automatic operation consisting of following : (Stand by pump). (Make : Kirloskar / Mather+Platt with Kirlosker / Cummins engine)								
	(a) Horizontally mounted, multi stage, split casing Centrifugal fire pump with operating speed not exceeding 1500 rpm, as per IS:1520 complete for delivery of under mentioned discharge against desired mentioned head so as to ensure a minimum pressure of 35 meter at the highest and farthest outlet at the specified flow complete with necessary strainers, 100 mm dia dial pressure gauge of calibration 0-15 kg/sq cm including bypass arrangement for periodic testing of the working of the pumpset as well as testing of automation with required length and size of MS pipe and control valves for proper completion of work. The pump shall be capable of giving 150% of rated discharge at head not less than 65% of rated head. The pump shall be provided with Mechanical seals. The impeller shall be enclosed type and accurately balanced dynamically. The pump casing shall be of cast iron, impeller shall be of bronze and shaft shall be of stainless steel.								
	(b) Water cooled Diesel engine developing suitable BHP for the above pump set, 1500 RPM including engine control panel with manual and automatic starting mechanism, auto/manual selector switch, 3 attempt starting device, timers, relays, push buttons, start/stop in manual mode, 2 nos. SMF lead acid batteries of 12 / 24 V & of 180 AH capacity, battery charger unit with boost & trickle charger, selector switch, 3 mm thick welded steel fabricated Diesel tank for two hours capacity complete with inlet and outlet connections, fuel tubings to the engine of MS C clas, fuel filter, fuel lift pump, oil level indication gauge, residential exhaust silencer, fly wheel, air intake manifold, air cleaner, radiator, radiator fan, lub. oil pressure gauge, filter, cooling water temperature gauge and all other accessories required to complete the system. The diesel engine shall be rated for continuous duty and shall have BHP rating necessary to drive the pump at 150% of it's rated discharge at 65% of rated head.								
	(c) Diesel engine Exhaust system of required length of Class `B' MS pipe of suitable diameter with bends, expansion joints including providing suitable supporting arrangements at suitable intervals, with glass wool insulation 50 mm thick on all sides of exhaust pipe and silencer, with chicken mesh wrapping and 1 mm thick aluminium sheet cladding complete as required.								
	(d) Supply, installation, testing and commissioning of AMF autostart complete with necessary relays like no volt relay, over voltage and low voltage relays, contactors, timer, pressure switch etc. as required for the auto start of the diesel engine in case of power failure complete with all accessories, wiring & cabling including connection to diesel engine complete as required all in conformity with the local Fire regulations. The diesel engine driven fire pump will start automatically in the event of pressure drop beyond preset limit or on mains failure or failure of electric driven pumps to start.								
	(e) Common bed plate of fabricated mild steel channel or cast iron type, coupling, coupling guard etc as required.								
	(f) Suitable cement concrete pump foundation and vibration clamping arrangement as required. with foundation bolts, anti vibration pads, washers etc.								

	(g) Pressure switch for automatic operation of motor including necessary wiring upto control panel.								
	(h) Necessary Priming arrangement (if required) for the pump including priming tank of suitable capacity, piping of medium class GI pipe, valves, connection etc. complete.								
	Discharge : 2280 liter per minute	SET	1.00			678000.00			678000.00
	Head : 65 meter								
	(Make : Kirlosker)								
	(Make : Mather & Platt)								
4	Supply, Fixing, Testing & Commissioning of fire authority approved electrical motor driven fire pump, suitable for automatic operation consisting of following : (JOCKEY PUMP) . (MAKE : Kirloskar/Mather + Platt)								
	(a) Horizontally mounted, end suction type, Centrifugal fire pump with operating speed of 2900 rpm, as per IS:1520 complete for delivery of under mentioned discharge against desired mentioned head so as to ensure a minimum pressure of 35 meter at the highest and farthest outlet at the specified flow complete with necessary strainers , 100 mm dia dial pressure gauge of calibration 0-15 kg/sq cm including bypass arrangement for periodic testing of the working of the pumpset as well as testing of automation with required length and size of MS pipe and control valves for proper completion of work. The pump shall be capable of giving 150% of rated discharge at head not less than 65% of rated head. The pump shall be provided with Mechanical seals. The impeller shall be enclosed type and accurately balanced dynamically. The pump casing shall be of cast iron, impeller shall be of bronze and shaft shall be of stainless steel.								
	(b) Squirrel cage, TEFC induction motor as per IS : 325, suitable for 415 V +/- 10%, 3 Phase, synchronous speed 2900 rpm, IP 55 protection and class 'F' insulation, vacume impregnated windings with heat and moisture resisting varnish for the above pump and flexible coupling with the pump. The motor shall be rated for continuous duty and shall have HP rating necessary to drive the pump at 150% of it's rated discharge at 65% of rated head.								
	(c) Common bed plate of fabricated mild steel channel or cast iron type, coupling, coupling guard ets as required.								
	(d) Suitable cement concrete pump foundation and vibration clamping arrangement as required. with foundation bolts, anti vibration pads, washers etc.								
	(e) Pressure switches (for both upper and lower levels) for automatic operation of motor including necessary wiring upto control panel.								
	(f) Necessary Priming arrangement (if required) for the pump including priming tank of suitable capacity, piping of medium class GI pipe, valves, connection etc. complete.								
	Discharge : 180 liter per minute	SET	1.00			130759.00			130759.00
	Head : 65 meter								
	(Make : Kirlosker)								
	(Make : Mather & Platt :								
5	Design, manufacture, supply, storing, inspection, handling, assembling, installation in correct alignment, position, affecting proper connections, testing and commissioning of 14 SWG CRCA sheet steel fabricated cubical type Electrical Control Panel for fire fighting pumps , floor mounting, dust & vermin proof, front operated construction, enclosure class - IP 52, powder coated after proper treatment with 9 tank process with top/bottom removable gland plates, as required, double compression type cable glands, earth bus, hinged and lockable doors to achieve dust and vermin proof complete with all inter connections small wiring by min. 2.5 sq. mm. FRLS copper wires, ckt labels etc. The panel feeders shall be suitable for terminating suitable nos. 3.5 / 4 core armoured aluminium cable required.								

RESORT, TONGLU (WEST BENGAL), Infrastructure Part		
ABSTRACT		
SL.NO	DESCRIPTION OF WORK	AMOUNT
1	EXTERNAL PLUMBING WORKS, STP, WTP, PUMPS & UG TANK	₹ 29,700,161.00
2	EXTERNAL ELECTRICAL & LIGHTING SYSTEM	₹ 11,676,060.00
3	PA & CCTV SYSTEM	₹ 1,967,087.00
4	FIRE DETECTION & ALARM SYSTEM	₹ 1,274,757.00
5	FIRE FIGHTING SYSTEM	₹ 5,054,419.00
	TOTAL	₹ 49,672,484.00
Rupees Four Crore Ninety Six Lakhs Seventy Two Thousand Four Hundred Eighty Four Only		