

JHARKHAND ZOO AUTHORITY

BHAGAWAN BIRSA BIOLOGICAL PARK, ORMANJHI, RANCHI

Email Id- jharkhandzooauthority@gmail.com, Phone no. 9006216090

BID DOCUMENT

CONSTRUCTION OF ENTRANCE PLAZA

Bhagwan Birsa Biological Park, Ormanjhi, Ranchi

I N D E X

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Short Term Tender Notice No. 4/2020

(For Construction of Entrance Plaza)

1. Bids are invited for **Construction of Entrance Plaza** at Bhagwan Birsa Biological Park Ormanjhi, Ranchi, from eligible and experienced Civil Contractors / Contracting firms of Class II and Class I registered with Government of Jharkhand. The tender documents can either be purchased from the office of Director, Bhagawan Birsa Biological Park, Ormanjhi, Ranchi on payment of tender fee of Rs. 5000/- by cash or downloaded from the departmental website i.e. forest.jharkhand.gov.in, but a bank Draft for an amount of Rs.5000/- made in favour of Member Secretary, Jharkhand Zoo Authority, Ranchi shall be submitted along with the bid.
2. Approximate Estimate/ value of work: **Rs.2.12 Crores**
3. EMD Amount: **Rs.4.24/- lakhs.**
4. Period of completion of work: **12 Months.**
5. Form of contract – Lump sum contract.
6. Details of issue/ receipt/opening of bids:-
 - i. Issue of Bid Documents: From 5.3.20 to 20.3.20 up to 12.30 PM
 - ii. Last Date and Time of Receipt of Bids: 20.3.20 up to 2.30 PM
 - iii. Date and Time of opening of bids:
 - (a) Technical Bid: 20.3.20 at 3.30 PM
 - (b) Financial Bid: 24.3.20 at 3.30 PM
7. Submission of Bids: Before due date and time, in the office of Director, Bhagawan Birsa Biological Park, Ormanjhi, Ranchi

Sd/

Member secretary,
Jharkhand Zoo Authority

General Instructions and Terms and Conditions of the Bid

1. **Qualification Requirements:** To qualify for consideration of award of the contract, the bidder should fulfil the following criteria:
- Assessed available Bid capacity as per formula (2AN-B) should be greater than the Estimated Contract Value as specified in the bid document. The details and certificates are to be furnished as per the proforma available in the bid document.
 - The bidder should have satisfactorily completed building works or works of similar nature of value not less than **Rs.1.06 Crores** as a Prime Contractor in the same name and style in any one year during the last 5 financial years. Sub contractor's / GPA holder's experience shall not be taken into account.
 - The Bidder should have executed the minimum quantities of items of work as given below in any one year during the last 5 financial years. The bidder should enclose certificate issued by **an officer not below the rank of E.E., or equivalent** of the State/Central Government Departments/ State Government undertakings or Central Government undertakings.

S.No.	Item	Quantity
1	PCC/CC/RCC work	500 cum
2	Masonry work (Brick masonry, RR Stone masonry)	700 cum
3	Centering and Shuttering	1000 Sqm
4	Flooring (Marble/Granite/ Kota Stone/Ceramic Tile/Mosaic Tile)	1000 Sqm

- The bidder shall have Class-I Electrical Registration along with "A" grade Electrical Licence issued by the Licensing authority (or) Consent letter to executive the Electrical works from eligible registered contractors who have registered in Electrical works with 'A' grade Licence if self registration is not available. The bidder should submit the particulars invariably in the prescribed format specified in the bid document along with necessary certificates, failing which his bid shall be treated as incomplete and summarily rejected.
- The bidder should further demonstrate the availability (either owned or leased) of the following key and critical equipment along with proof of owning or leasing the machinery.
 - Scaffolding and Centering material (Steel): 1000 Sqm
(Steel Plates and Wooden Ballies)
 - Pin vibrators 25mm dia : 2 Nos.
 - Pan vibrators 450mm x 600mm : 2 Nos.
 - Concrete Weigh Batcher : 1 Nos.

- (5) Hydraulic Excavator : 1 Nos.
(6) Concrete Mixer : 2 Nos.
(7) Water Tanker : 2 Nos.

- vi. The bidder should demonstrate the availability of the following key technical personnel with adequate experience
1. Graduate Engineer (civil) – 2 Nos
 2. Diploma holder (civil)- 2 Nos
- vii. The bidder should have an annual average turnover of atleast Rs.1.0 crores in the last 3 years
- viii. EMD: The bidders shall submit the EMD for **Rs.4.24 lakh /- in the form of DD made in favour of Member Secretary, Jharkhand Zoo Authority, Ranchi, from any Nationalised/Scheduled Bank.**
- ix. GST Registration certificate and up to date GST Clearance certificate
- x. PAN
- xi. IT Returns of last 3 years

- 2. Scope of Work:-** Construction of Entrance Plaza at Ormanjhi, Ranchi as per the approved Design, Drawings and DPR maintaining quality standards for materials and workmanship. Drawings and DPR are can either be downloaded or be obtained from the office of member secretary, Jharkhand Zoo Authority.

3. Principal Components of the work:

- a) Civil Work : Rs.1,62,12,622/-
b) Plumbing and Sanitary works : Rs. 11,69,955/-
c) Electrification : Rs. 8,55,117/-
d) Horticulture : Rs. 1,26,519/-
e) Miscellaneous :Rs. 2,03,500/-
f) ECV put to bidding. :Rs. 2,12,11,756/-

(Inlusive of GST, Labour cess etc.)

4. The bidder shall furnish the following particulars in the formats enclosed, supported by documentary evidence as specified in the prescribed formats.

i. Check list of documents to be submitted

- a) Copy of contractors registration certificate under appropriate class with Government of Jharkhand
- b) Copy of Income Tax PAN card and Income Tax Returns for last 3 years.
- c) Copy of GST Registration, and upto date GST Return

- d) The particulars of value of all civil engineering works executed in the name of Bidder in the last five financial years in Statement- I, duly supported with work done certificates.
- e) The details of building or similar works executed as Prime Contractor (in the same name) during the last five financial years, showing year wise break up of value of work executed in Statement- II duly supported with work done certificates, work wise and year wise, in the name of Bidder.
- f) The physical quantities of specified works executed as Prime Contractor (in the same name) in the last five financial years with year wise and work wise break up, in Statement- III duly supported with work done certificates.
- g) The information on '*existing commitments*' with supporting certificates in Statement- IV.
- h) The availability of Key / critical construction / quality control equipment in Statement- V.
- i) The availability of Key personnel in Statement- VI.
- j) The information and litigation history in Statement- VII.
- k) The proposed methodology and program of construction, backed with equipment planning and deployment, duly supported with broad calculations, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.
- l) A self declaration by the bidder in proof of going through all bid conditions in the format given.
- m) Class-I Electrical Registration along with "A" grade Electrical License issued by the Licensing authority (or) Consent letter to executive the Electrical works from eligible registered contractors who have registered in Electrical works with 'A' grade License if self registration is not available.

5. **Bid capacity:** The bidder who meets the above qualification criteria and whose available bid capacity is more than the estimated contract value will be qualified for opening of Price bid. The available bid capacity will be calculated as under:

Available Bid Capacity: **2AN-B.**

Where,

A = Maximum value of civil engineering works executed in the name of Bidder in any one financial year during the last five financial years (updated to current Price level) taking into account the works completed as well as works in progress.

N = Number of years prescribed for completion of the work for which Bids are invited

B = Updated value (at current Price level), of all existing Commitments i.e., ongoing works, works likely to be awarded to be executed during the next 15 Months (Period of completion of work for which Bids are invited).

Annual turnover cost of completed works and balance works on hand etc., shall be updated by giving weightage of 10% per year to bring them to current price level.

6. Even though the bidders meet the qualifying criteria, they are liable to be disqualified / debarred / suspended / blacklisted if they have
 - i. Furnished false / fabricated particulars in the forms, statements and /annexures submitted in proof of the qualification requirements
 - ii. Not turned up for entering into agreement within the time specified.
 - iii. Record of poor progress such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.
 - iv. Participated in the previous bidding for the same work and had quoted unreasonably high bid percentage and
 - v. Even while execution of the work, if found that the work was awarded to the Contractor based on false / fake certificates of experience, the Contractor will be blacklisted and work will be taken over as per norms.
7. Bids quoted with above **5%** of the estimated contract value shall summarily be rejected. Bids quoted within the permissible ceiling limits, but under collusion or due to unethical practices adopted at the time of bidding process, shall be rejected.
8. A bidder submitting a Bid which the bid accepting authority considers excessive and or indicative of insufficient knowledge of current prices or definite attempt of profiteering will render himself liable to be debarred permanently from bidding or for such period as the bid accepting authority may decide. The bidder's overall percentage quote should be based on the controlled prices for the materials, if any, fixed by the Government or the reasonable prices permissible for the bidder to charge a private purchaser under the provisions of clause-6 of the hoarding and profiteering prevention ordinance of 1943 as amended from time to time and on similar principle in regard to labour supervision on the construction.
9. **One Bid per Bidder:** Each Bidder shall submit only one Bid for the work. A Bidder who submits more than one Bid will cause dis-qualification of all the Bids submitted by the Bidder.
10. **Cost of Bidding:** The Bidder shall bear all costs associated with the preparation and submission of his Bid and the bid inviting authority will in no case be responsible and liable for those costs.

11. Site Visit: The Bidder, at the Bidder's own responsibility and risk, is advised to visit and examine the Site of Work and its surroundings and obtain all information that may be necessary for preparing the Bid for entering into a contract, for construction of the work. The costs of visiting the site shall be at the Bidder's own expense. **Clarification on Bid Documents:** A prospective Bidder requiring any clarification on Bid documents may contact the Bid Inviting Officer at the address indicated in the NIT. The Bid Inviting Officer will also respond to any request for clarification, received through mail or post.

12. Amendment to Bid Documents

- i. Before the last date for submission of Bids, the Bid Inviting Officer may modify any of the Contents of the Bid Notice, Bid documents by issuing amendment / Addendum.
- ii. Any addendum/amendments issued by the Bid Inviting Officer shall be part of the Bid Document and it shall either be notified in the News Papers in which NIT was published or displayed in website.
- iii. To give prospective Bidders reasonable time to take an addendum into account in preparing their bids, the Bid Inviting Officer may extend if necessary, the last date for submission of bids.

13. Language of the Bid: All documents relating to the bid shall be in the English Language only.

14. Documents comprising of the Bid.

- i. The bidders shall submit their technical bids, price bids etc., in the standard formats prescribed in the bid documents. The bidders should attach all the relevant certificates, documents etc., in support of their technical bids. The bidders shall sign on all the statements, documents, certificates, owning responsibility for their correctness/authenticity. The technical bids will be opened by the Tender Committee of Jharkhand Zoo Authority at the time and date as specified in the bid documents. All the statements, documents, certificates, EMD/BG etc., submitted by the bidders in the technical bids will be evaluated against the specified parameters/ criteria, and the technically qualified bidders will be identified.
- ii. The bid offer shall be for the whole work and not for individual items / part of the work.
- iii. All duties, taxes, and other levies payable by the contractor as per State / Central Government rules, shall be included in the bid percentage quoted by the bidder.
- iv. The bid contract amount as computed based on overall bid percentage is subject to variation during the performance of the Contract in accordance with variation in quantities etc.

15. Validity of Bids:

- i. Bids shall remain valid for a period of 90 days from the last date for receipt of Bid.

- ii. During the above mentioned period no plea by the bidder, for any sort of modification of the bid based upon or arising out of any alleged misunderstanding of misconceptions or mistake or for any reason, will be entertained.

16. Earnest Money Deposit:-

- i. The bidder shall submit EMD along with the bid for an amount of Rs. **4.24 (Four lakhs Twenty Four Thousands)** in the form of DD made in favour of Member Secretary, Jharkhand Zoo Authority, Ormanjhi, Ranchi from any Nationalised or Scheduled bank.
- ii. The EMD of unsuccessful Bidders will be returned, once the bids are finalised.
- iii. The earnest money deposited by the successful bidder will not carry any interest and it will be dealt with as provided in the conditions stipulated in the bid.
- iv. The E.M.D. of successful bidder may be adjusted towards the security deposit or performance guarantee as per the terms of contract to be agreed after the finalisation of the tender.
- v. The E.M.D. shall be forfeited.
 - (a) if the Bidder withdraws the Bid during the validity period of Bid.
 - (b) in the case of a successful Bidder, if he fails to sign the Agreement for whatever the reason.

17. Signing of Bids.

- i. If the bid is made by an individual, it shall be signed with his full name and his address shall be given. If it is made by a firm, it shall be signed by an authorised partner (with proof) who shall also sign his own name, and the name and address of each member of the firm shall be given, if the bid is made by a corporation it shall be signed by a duly authorised officer who shall produce with his bid, satisfactory evidence of his authorisation. Such bidding corporation may be required before the contract is executed, to furnish evidence of its corporate existence. Bids signed on behalf of G.P.A. holder will be rejected.
- ii. The Bid shall contain no alterations or additions. In case of any corrections, they shall be signed by the person signing the Bid.
- iii. No alteration which is made by the bidder in the contract form, the conditions of the contract, the drawings, specifications or statements / formats or quantities accompanying the same will be recognised; and, if any such alterations are made the bid will be void.

18. Submission of Bids:

- i. The bids shall be submitted in separate envelopes or folders for technical and financial Bids with superscriptions- Technical bid for construction of Entrance Plaza and Financial Bid for construction of Entrance Plaza, respectively, as the case May be. Both Envelops to be placed in a bigger envelop with superscription “**Tender for Construction of Entrance Plaza**”

ii. The bidders shall submit their Tenders complete in all respects in the Office of Director, Bhagawan Birsa Biological Park before the closing time and date. The bidders shall sign on all the statements, documents, certificates, owning responsibility for their correctness/authenticity.

19. Last date / time for Submission of the Bids: Bids must be submitted not later than the date and time specified in NIT. In the event of the specified date / time for the submission of bids declared as holiday, the bids will be received on the next working day upto the time specified. The Tendering Authority may extend the dates for issue and receipt of Bids by issuing an amendment in which case all rights and obligations of the Tendering Authority and the Bidders will remain same as previously.

20. Late Bids : Any Bid received after the last date / time prescribed in NIT will be summarily rejected.

21. Modification to the Bid: No Bid shall be modified after the last date /time of submission of Bids.

22. Bid Opening and Evaluation

- i. The Technical bids will be opened by Tender Committee of Jharkhand Zoo Authority at the time and date as specified in the tender documents with due transparency. The technical bids will be evaluated against the specified parameters/criteria mentioned in the tender documents and the technically qualified bidders will be identified.
- ii. The tender opening authority may call upon any tenderer for clarification on the statements, documentary proof relating to the technical bid. The clarification called for from the tenderers shall be furnished within such stipulated time, as decided by the tendering authority.
- iii. The tenderer if so desirous, shall agree in writing to furnish the clarification called for within the stipulated time, and failure to do so will entail disqualification and rejection of his tender.
- iv. If the technical bid of a Bidder is not satisfying any of the eligibility criteria it will be rejected the Tender Committee.
- v. If any alteration is made by the bidder in the bid documents, the conditions of the contract, the drawings, specifications or statements / formats or quantities the bid will be rejected.

23. Price Bid Opening:

Price Bids of only the technically qualified Bids shall be opened and evaluated.

24. Evaluation and Comparison of Price Bids

- i. The Tender Committee of Jharkhand Zoo Authority will evaluate and compare the price bids of all the qualified Bidders and recommend based on the L1.
- ii. Negotiations with bidders are strictly prohibited. However, good gesture rebate, if offered by the lowest bidder prior to finalisation of bids may be accepted by the bid accepting authority.
- iii. **Selection of Bidder among the lowest & equally quoted bidders will be in the following orders:**
 - a) *The bidder whose bid capacity is higher will be selected.*
 - b) *In case the bid capacity is also same the bidder whose annual turnover is more will be preferred.*
 - c) *Even if the criteria of the turnover incidentally become the same, thereafter machinery available for the work and then the clean track record will be considered for selection.*

25. Discrepancy in Bid percentage quoted. In case of any discrepancy between the overall bid percentage quoted in words and figures, the percentage quoted in words shall prevail. In case the bidder has quoted overall bid percentage only in words and not in figures or vice versa, such bid shall be treated as incomplete and rejected.

26. Process to be Confidential. Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced by the bid accepting authority. Any effort by a Bidder to influence the processing of Bids or award decisions may result in the rejection of his Bid.

27. No Bidder shall contact the Member Secretary, Jharkhand Zoo Authority or any authority concerned with finalisation of bids on any matter relating to its Bid from the time of the Bid opening to the time the Contract is awarded. If the Bidder wishes to bring additional information to the notice of the Jharkhand Zoo Authority, he should do so in writing.

28. Before recommending / accepting the bid, bid accepting authority shall verify the correctness of certificates submitted to meet the eligibility criteria and specifically experience.

29. The Member Secretary, Jharkhand Zoo Authority who is also the Director, Bhagawan Birsa Biological Park is the Bid accepting Authority except in case of Single bid tenders. In the case of Single tender, the PCCF, Wild Life is the Bid Accepting Authority.

30. AWARD OF CONTRACT

- i. The Member Secretary, Jharkhand Zoo Authority will award the contract to the L1 Bidder.

- ii. The bid accepting authority reserves the right to accept or reject any Bid or all bids and to cancel the Biding process, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the reasons for such action.

31. Notification of Award and Signing of Agreement. :

- i. The Bidder whose Bid has been accepted will be notified of the award of the work by the Member Secretary, Jharkhand Zoo Authority, prior to expiration of the Bid validity period by Email/ Rregistered letter. This letter (hereinafter and in the Conditions of Contract called “Letter of Acceptance”) will indicate the sum that the Zoo Authority will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the “Contract Amount”).
- ii. When a bid is accepted the concerned bidder shall attend the office of the Member Secretary, Jharkhand Zoo Authority on the date fixed in the Letter of acceptance. Upon intimation being given by the Member Secretary, Jharkhand Zoo Authority of acceptance of his bid, the bidder shall make payment of the security deposit of 5% by way of Demand Draft or unconditional and irrevocable Bank Guarantee obtained from a Schedule Bank with a validity period of **Contract**, and sign an agreement in the form prescribed by the department for the due fulfilment of the contract. The EMD may be adjusted towards the security deposit. Failure to attend the Office of Member Secretary, Jharkhand Zoo Authority on the date fixed, in the written intimation, to enter into the required agreement shall entail forfeiture of the Earnest Money deposited. The written agreement to be entered into between the contractor and the Zoo Authority shall be the foundation of the rights and obligations of both the parties and the contract shall not be deemed to be completed until the agreement has first been signed by the contractor and then by the proper officer authorised to enter into contract on behalf of the Zoo Authority.
- iii. **The successful bidder has to sign an agreement within a period of 30 days from the date of receipt of communication of acceptance of his bid. On failure to do so his bid will be cancelled duly forfeiting the E.M.D. paid by him, without issuing any further notice and action will be initiated for debarring or black listing the bidder.**
- iv. The Successful Bidders who back out from entering into Agreement at the last minute, causing loss to the Zoo Authority will be debarred for One Year from participating in the tendering process of any department of the Government besides forfeiture of the EMD. In case a Successful Bidder of a Single Bid received backs out from entering into Agreement,

the EMD will be forfeited but the period debarring him from participating in the tendering process of any department of the Government will be restricted to Six Months Only.

- 32. Corrupt or Fraudulent Practices:** The Government require that the bidders / suppliers / contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Government
- (a) define for the purposes of the provision, the terms set forth below as follows:
 - (i) “corrupt practices” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a Government official in procurement process or in contract execution: and
 - (ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Government and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish in Bid prices at artificial non-competitive levels and to deprive the Government of the benefits of free and open competition.
 - (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.
 - (c) Will blacklist / or debar a firm, either indefinitely or for a stated period of time, if at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing a Government Contract.
 - (d) Further more, Bidders shall be aware of the provisions stated in the General Conditions of Contract.
33. Payment for the work done by the contractor will be made periodically for the finished work based on the measurements recorded in measurement books by any officer of the department not lower in rank than a Forester and check measured by any officer not lower in rank than a Range Officer. In the absence of a Forester, Forest Guard may record measurements under the supervision of Range Officer. The measurement shall be recorded at various stages of the work done and also after work is completed. **Further details on payments are given in conditions of the contract.**

FORMS OF BID

Annexure –I

CHECKLIST TO ACOMPANY THE BID

S.N	Description	Submitted	Page No.
1	2	3	4
1	Copy of Contractors valid Registration under appropriate Class and Category with Government of Jharkhand. (for Civil category)	Yes / No	
2	Copy of Income Tax PAN card and Income Tax Returns	Yes / No	
3	Copies of GST Registration and upto date Return	Yes / No	
4	Details of value of Civil Engineering works executed in the last 5 financial years in the Bidder's name in Statement-I with supporting certificates.	Yes / No	
5	Details of similar works completed as Prime Contractor during the last five financial Years in Statement-II with supporting certificates.	Yes / No	
6	Quantities of work executed as Prime Contractor in the last 5 financial years – in Statement – III with supporting certificates.	Yes / No	
7	A detail of existing commitments, if stated, i.e., works on hand in Statement-IV with Supporting Certificates.	Yes / No	
8	Availability of critical equipment in Statement –V.	Yes / No	
9	Availability of Key personnel in Statement. VI.	Yes / No	
10	Litigation history in Statement –VII.	Yes / No	
11	The proposed methodology and program of construction, backed with equipment planning and deployment, duly supported with broad calculations, justifying their capability of execution and completion of the work as per technical specifications within the stipulated period of completion as per milestones.	Yes / No	
12	Class-I Electrical Registration along with “A” grade Electrical Licence issued by the Licensing authority (or) Consent letter to executive the Electrical works from eligible registered contractors who have registered in Electrical works with ‘A’ grade Licence if self registration is not available.-	Yes / No	
13	A self declaration by the bidder in proof of going through all bid conditions (Annexure II)	Yes/No	
14	Copy of Partnership deed in case of partnership firms.-	Yes/No	

Notes:-

1) All the statements, copies of the certificates, documents etc., enclosed to the Technical bid shall be signed by the bidder and given page numbers on the right corner of each certificate, which will be indicated in column (4) against each item. The statements furnished shall be in the prescribed formats appended to the bid document.

2)The information shall be filled-in by the Bidder in the checklist and statements I to VII, and shall be enclosed to the Technical bid for the purposes of verification as well as evaluation of the bidder's Compliance to the qualification criteria as provided in the Bid document. All the Certificates, documents, statements as per check-list shall be submitted by the bidder .

Annexure II
DECLARATION

I / WE have gone through carefully all the Bid conditions and solemnly declare that I / we will abide by any penal action such as disqualification or black listing or determination of contract or any other action deemed fit, taken by, the Department/ Zoo Authority against me / us, if it is found that the statements, documents, certificates produced by me / us are false / fabricated.

I / WE hereby declare that, I / WE have not been blacklisted / debarred / Suspended / demoted in any department in Jharkhand or in any State due to any reasons.

Signature of the Bidder

STATEMENT – I

Details of value of Similar Civil works executed by the Bidder in each year during the last five financial years.

Sl. No.	Financial Year	Value in Rs.
1.	2014-2015	
2.	2015-2016	
3.	2016-2017	
4.	2017-2018	
5.	2018-2019	

Attach certificate(s) issued by the Executive Engineer concerned or Equivalent officer showing value of work done in respect of all the civil engineering works executed by the Bidder during last five years .

Signature of the Bidder

STATEMENT – II

Details of value of Similar civil works completed by the Bidder during the last five financial years.

Sl. No	Name of the work	Address of Agt. Concluding Authority	Agreement No. & date.	Value of Contract
1	2	3	4	5

Stipulated period of completion	Actual date of completion	Value of work done year wise during the last 'five' years.					Total value of work done.
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	
6	7	9	10	11	12	13	14

Attach certificate(s) issued by the Executive Engineer concerned or Equivalent officer showing work wise / year wise value of work done in respect of all the works executed by the Bidder during last five years

Signature of the Bidder

STATEMENT – III

Physical quantities executed by the Bidder in the last five financial years. [work wise / year wise].

Sl. No.	Financial Year	Name of work	Agt.No & Date	Quantities Executed Year wise			
				Masonry (RR, CRS & Brick)	Concrete (CC, VCC, RCC, VRCC)	Centering & Shuttering	Flooring (Polished Stone + Ceramic)
1	2	3	4	5	6	7	8
1	2014-2015						
2	2015-2016						
3	2016-2017						
4	2017-2018						
5	2018-2019						

Attach certificates in support of the above quantities issued by the Executive Engineer/Equivalent Officer concerned duly showing the quantities executed year wise.

Signature of the Bidder

STATEMENT – IV

Details of Existing Commitments.

Details of works on hand and, yet to be completed as on the date of submission of the Bid and works for which Bid's have been submitted are to be furnished.

A) Existing Commitments on ongoing works:

S.n	Name of work	Address of Agreement concluding Authority	Agrt. No. & Date	Value of work	Period of compln	Value of work done	Value of work yet to be done	Expected date of comln.
1	2	3	4	5	6	7	8	9

Attach certificates issued by the EE / equivalent officer concerned indicating the balance work to be done, and likely period of completion.

Signature of the Bidder

B) Details of works for which Bids are submitted [awarded / likely to be awarded]

S.n	Name of work	Address of Agreement concluding Authority	Estimated Value of work	Period of compln	Date of bid submission	Present stage of bid
1	2	3	4	5	6	7

Signature of the Bidder

STATEMENT - V

Availability of Critical Equipment : The bidder should furnish the information required below, regarding the availability of the equipment, required for construction / quality control.

S.n	Details of equipment	No. Required	No. owned	No. leased
1	2	3	4	5

Signature of the Bidder

A declaration regarding the equipment owned shall be produced by the Bidder on a non-judicial stamp paper of Rs. 100/- as below;

DECLARATION

“I do hereby solemnly affirm and declare that I /we own the following equipment for using on the subject work and also declare that I / We will abide by any action such as disqualification or determination of Contract or blacklisting or any action deemed fit, if the department detects at any stage that I/we do not possess the equipment listed below.

S.N	Name of machinery	Year of purchase	Regn No.	Capacity	Any other data	Is it working? Yes/No
1	2	3	4	5	6	7

Signature of the Bidder

STATEMENT – VI.

Availability of Key Personnel

Qualification and experience of Key Personnel proposed to be deployed for execution of the Contract.

S.n	Name	Dsignation	Qualification	Experience	Period of working with bidder
1	2	3	4	5	6

Signature of the Bidder

STATEMENT - VII

Information on litigation history in which Bidder is the Petitioner.

S.N	Case No. / Year	Court where pending	Subject/Prayer in case	Respondents	Present stage

Signature of the Bidder

Annexure III
BID Application Form

Date:

To
Member Secretary, Jharkhand Zoo Authority

Sir,

I / We do hereby bid and if this bid be accepted, I/WE under take to execute the following work:

“Construction Entrance Plaza at Ormanjhi Ranchi” as shown in the drawings and described in the specifications provided by Member Secretary, Jharkhand Zoo Authority with such variations by way of alterations or additions to, and omissions from the said works and method of payment as provided for in the “conditions of the contract” for such sum of Rupees, as quoted in the price bid or such other sum as may be arrived under the clause of the standard preliminary specifications relating to “Payment on lump-sum basis or by final measurement at unit rates”

I/ We submit that,

- i. I/WE agreed to keep the offer in this bid valid a period of **Three month(s)** mentioned in the bid notice and not to modify the whole or any part of it for any reason within above period. If the bid is withdrawn by me/us for any reasons whatsoever, the earnest money paid by me/us will be forfeited to Government
- ii. I/WE hereby distinctly and expressly, declare and acknowledge that, before the submission of my/our bid I/We have carefully followed the instructions in the bid notice and have read the preliminary specifications therein and that I/We have made such examination of the contract documents and the plans, specifications and quantities and of the location where the said work is to be done, and such investigation of the work required to be done, and in regard to the material required to be furnished as to enable me/us to thoroughly understand the intention of same and the requirements, covenants, agreements, stipulations and restrictions contained in the contract, and in the said plans and specifications and distinctly agree that I/We will not hereafter make any claim or demand upon the Zoo Authority/ Government based upon or arising out of any alleged misunderstanding or misconception /or mistake on my/or our part of the said requirement, covenants, agreements, stipulations, restrictions and conditions.
- iii. I/WE enclosed to my/our bid a DD for an amount of Rs. **4.0 lakh** , as earnest money not to bear interest.
- iv. I/WE shall not assign the contract or sublet any portion of the same.

- v. IF MY/OUR bid is not accepted, the EMD shall be returned to me/us on application when intimation is sent to me/us of rejection or at the expiration of three months from last date of receipt of this bid, whichever is earlier. If my/our bid is accepted the earnest money shall be retained by the Government as security for the due fulfilment of this contract. If upon written intimation to me/us by the Member Secretary, Jharkhand Zoo Authority I/We fail to attend the said office on the date herein fixed or if upon intimation being given to me/us by the Member Secretary, Jharkhand Zoo Authority or acceptance of my/our bid, and if I/We fail to make the additional security deposit or to enter into the required agreement then I/We agree for the forfeiture of the earnest money. Any notice required to be served on me/us here under shall be sufficiently served on me/us if delivered to me/us hereunder personally or forwarded to me/us by post to (registered or ordinary) or left at my/our address given herein. Such notice shall if sent by post be deemed to have been served on me/us at the time when in due course of post it would be delivered at the address to which it is sent.
- vi. I/WE fully understand that the written agreement to be entered into between me/us and Zoo Authority shall be the foundation of the rights of the both the parties and the contract shall not be deemed to be complete until the agreement has first been signed by me/us and then by the proper officer authorised to enter into contract on behalf of Zoo Authority.
- vii. I/WE will employ the following technical staff for supervising the work and will see that one of them is always at site during working hours, personally checking all items of works and pay extra attention to such works as required special attention (eg) Reinforced concrete work.

Name of technical staff proposed to be employed	Qualification.

- viii. I/ We hereby declare that I/We have perused in detail and examined closely the Jharkhand Standard Specifications/BIS/IRC MORTH, all clauses of the preliminary specifications with all amendments and have either examined all the standards specifications or will examine all the standard specifications for items for which I/We bid, before I/We submit such bid and agree to be bound and comply with all such specifications for this agreement which I/We execute in **Jharkhand Zoo Authority**.

- ix. I/WE certify that I/We have inspected the site of the work before quoting my Percentage excess or less on ECV, I /We have satisfied about the quality, availability and transport facilities for stones, sand and other materials.
- x. I/WE am/are prepared to furnish detailed data in support of all my quoted rates, if and when called upon to do so without any reservations.
- xi. I/WE hereby declare that I/We will pay security deposit of 5 % in terms of conditions of contract/ Instructions to bidders
- xii. I/WE hereby declare that I am/We are accepting for the defect liability period of 18 Months or as per the Govt norms whichever is higher.
- xiii. I/WE declare that I/WE will procure the required construction materials including earth and use for the work after approval of the Member Secretary. The responsibility for arranging and obtaining the land for borrowing or exploitation in any other way shall rest with me/us for the materials for construction, I/WE shall ensure smooth and uninterrupted supply of materials.
- xiv. I/WE declare that the responsibility for arranging and obtaining the land for disposal of spoil/soil not useful for construction purposes shall rest with me/us.
- xv. I/WE declare that I/WE shall not claim any compensation or any payment for the land so arranged for disposal of soil and the land for borrow area. My/our quoted percentage excess over or less than ECV., are inclusive of the land so arranged and I/We will hand over the land so arranged for disposal of soil to the department after completion of work.
- xvi. I/WE declare that I/WE will execute the work as per the mile stone programme, and if I/WE fail to complete the work as per the mile stone programme I abide by the condition to recover liquidated damages as per the bid conditions.
- xvii. I/WE declare that I/WE will abide for settlement of disputes as per the bid conditions.
- xviii. I/WE have not been black listed in any department in Jharkhand due to any reasons.
- xix. I/WE agree to disqualify me/us for any wrong declaration in respect of the above and to summarily reject my/our bid.

Address of the Bidder:

Phone No.:

Signature of Bidder

Seal:

CONDITIONS OF CONTRACT

A. GENERAL

1. Interpretation:

1.1 In interpreting these Conditions of Contract, singular also means plural, male also means female, and vice-versa. Headings have no significance. Works have their normal meaning under the language of the contract unless specifically defined. The Engineers-in-charge will provide instructions clarifying queries about the conditions of Contract.

1.2 The documents shall be construed to be part of the the Contract:

- 1) Agreement
- 2) Letter of Acceptance, notice to proceed with the works
- 3) Contractor's Bids (Technical and Price bid)
- 4) Conditions of contract
- 5) Specifications
- 6) Drawings
- 7) Bill of quantities
- 8) Any other document listed as forming part of the Contract.

2. Member Secretary's Decisions:

2.1 Except where otherwise specifically stated, the Member Secretary will decide the contractual matters between the Jharkhand Zoo Authority and the Contractor.

3. Delegation:

3.1 The Member Secretary may delegate any of his duties and responsibilities to other officers and may Cancel any delegation by an official order issued.

4. Communications and Legal Address – Notices:

4.1 Bidders should give in their bid, their place of residence and postal address. The delivering at the above named place or posting in a post box regularly maintained by the Post Office Department or sending by letter registered for acknowledgement of any notice, letter or other communication to the contractor shall be deemed sufficient service thereof upon the contractor in writing as may be changed at any time by an instrument executed by the contractor, and delivered to the Member Secretary.

Nothing contained in the agreement and its content conditions shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon the contractor personally. PS 10

5. Sub-contracting: No subcontracting is permitted.

6. Other Contractors etc. :

6.1 The Contractor shall cooperate and share the Site with other contractors if any, Public authorities, utilities, and the Department. The Contractor shall also provide facilities and services for them as directed by the Member Secretary.

7. Personnel:

7.1 The Contractor shall employ the required Key Personnel named in the Schedule of Key Personnel to carry out the functions stated in the Schedule or other personnel approved by the Member Secretary. The Member Secretary will approve any proposed replacement of Key Personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

7.2 The technical personnel should be on full time and available at site whenever required by the Member Secretary or the officer authorised by him, to take instructions.

7.3 The names of the technical personnel to be employed by the contractor should be furnished in the statement enclosed separately.

7.4 In case the contractor is already having more than one work on hand and has undertaken more than one work at the same time, he should employ separate technical personnel on each work.

7.5 If the contractor fails to employ technical personnel the work will be suspended or department will engage a technical personnel and recover the cost thereof from the contractor.

7.6 If the Member Secretary asks the Contractor to remove a person who is a member of Contractor's staff or his work force stating the reasons, the Contractor shall ensure that the person leaves the site forthwith and has no further connection with the work in the contract.

The contractor has to open an account in nearest bank in the name of the technical staff appointed by them and their salary should be paid through the account only.

The contractor has to certify that the same technical persons appointed shall not be utilized during agreement period on any other work in any other organization and if found at any stage, liable to recover the reimbursement amount in addition to the normal recovery.

8. Contractor's Risks:

8.1 All risks of loss of or damage to physical property and of personnel injury and death, which arise during and in consequence of the performance of the Contract are the responsibility of the Contractor.

9. Site Inspections:

9.1 The contractor should inspect the site and also proposed quarries of choice for materials, source of water and quote his percentage including quarrying, conveyance and all other charges etc.

9.2 The responsibility for arranging the land for borrow area rests with the Contractor and no separate payment will be made for procurement or otherwise. The contractor's quoted percentage will be inclusive of land cost.

10. Contractor to Construct the Works:

10.1 The Contractor shall construct and Commission the Work in accordance with the specifications and Drawings.

11. Diversion of streams / Nalas / Drains.

11.1 The contractor shall at all times carry out construction of cross drainage works in a manner creating least interference to the natural flow of water while consistent with the satisfactory execution of work. A temporary diversion shall be formed by the contractor at his cost where necessary. No extra payment shall be made for this work.

11.2 No separate payment for bailing out sub-soils, water drainage or locked up rain water for diversion and such other incidental will be made. The percentage to be quoted by the contractor are for the finished item of work in situ and including all the incidental charges. The borrow pits are also to be de-watered by the contractor himself at his expense, if that should be found necessary.

11.3 The work of diversion arrangements should be carefully planned and prepared by the contractor and forwarded to the Zoo Authority technically substantiating the proposals and approval of the Zoo Authority be obtained for execution.

11.4 The contractor has to arrange for bailing out water, protection to the work in progress and the portion of works already completed and safety measures for men and materials and all necessary arrangements to complete the work.

11.5 All the arrangements so required should be carried out and maintained at the cost of the contractor and no separate or additional payments is admissible..

11.6 Cofferdams.

Necessary coffer dams and ring bunds have to be constructed at the cost of contractor and same are to be removed after the completion of the work. The contractor has to quote his percentage keeping the above in view.

12. Power Supply.

12.1 The contractor shall make his own arrangements for obtaining power from the Electricity dept., at his own cost. The contractor will pay the bills of Electricity Department for the cost of power consumed by him.

12.2 The contractor shall satisfy all the conditions and rules required as per Indian Electricity Act 1910 and under Rule-45(I) of the Indian Electricity Rules, 1956 as amended from time to time and other pertinent rules.

12.3 The power shall be used for bonafide departmental work only.

13. Temporary Diversions (Works on Highways)

13.1 The contractor shall at all times carryout work on the highway in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all works involving improvements to the existing highway, the contractor shall in accordance with the directions of the Member Secretary provide and maintain during the execution of the work a passage for traffic, either along a part of the existing carriage way under improvement or along a temporary diversion constructed close to the highway.

- 13.2 If in the opinion of the Member Secretary, it is not possible to pass the traffic on part width of the carriage-way for any reason, a temporary diversion close to the highway shall be constructed as directed. It shall be paved with the materials such as hard morum, gravel and stone, metal to the specified thickness as directed by the Member Secretary. In all cases, the alignment, gradients and surface type of the diversion including its junctions, shall be approved by the Member Secretary before the highway is closed to traffic.
- 13.3 The contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and information and protection of traffic approaching or passing through the section of the highway under improvement. Before taking up any construction, an agreed phased programme for the diversion of traffic on the highway shall be drawn up in consultation with the Member Secretary.
- 13.4 The barricades erected on either side of the carriage way portion of the carriage way closed to traffic, shall be of strong, design to resist vibration and painted with alternative black and white stripe. Red lanterns or warnings lights of similar type shall be mounted on the barricades at night and kept lit throughout from sunset to sunrise.

14. Ramps:

Ramps required during execution may be formed wherever necessary and same are to be removed after completion of the work. No separate payment will be made for this purpose.

15. Monsoon Damages:

Damages due to rain or flood either in cutting or in banks shall have to be made good by the contractor till the work is handed over to the Department. The responsibility of de-silting and making good the damages due to rain or flood rests with the contractor. No extra payment is payable for such operations and the contractor shall therefore, have to take all necessary precautions to protect the work done during the construction period.

16. The works to be Completed by the Intended Completion Date:

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the Contractor, as updated with the approval of the Member Secretary, and complete the work by the Intended Completion Date.

17. Safety:

17.1 The Contractor shall be responsible for the safety of all activities on the Site.

18. Discoveries:

18.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Government. The Contractor is to notify the Member Secretary of such discoveries and carry out the Member Secretary's instructions for dealing with them.

19. Possession of the Site.

19.1 The Department shall give possession of the site to the Contractor. If possession of a part site is given, the Department will ensure that the part site so handed over is amenable to carryout the work at site by the Contractor.

20. Access to the Site:

20.1 The Contractor shall provide the Member Secretary and any person authorised by the Member Secretary, access to the site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

21. Instructions:

21.1 The Contractor shall carry out all instructions of the Member Secretary and comply with all the applicable local laws where the Site is located.

22. Settlement of disputes:

- 22.1 If any dispute of difference of any kind whatsoever arises between the Member Secretary, Jharkhand Zoo Authority and the Contractor in connection with, or arising out of the Contract, whether during the progress of the works or after their completion and whether before or after the termination, abandonment or breach of the Contract, it shall be referred to **PCCF, Wild Life** whose decision will be final and binding.
- 22.2 If the Contractor is dissatisfied with the decision of the Member Secretary, the Contractor may, within thirty days after receiving the decision, appeal to the PCCF, WL who shall offer an opportunity to the contractor to be heard and to offer evidence in support of his appeal, and decide which is final and binding upon the Contractor.
- 22.3 All disputes shall be subject to the jurisdiction of Courts at Ranchi only.

B. TIME FOR COMPLETION

23. Program:

23.1 The total period of completion is **12 Months** from the date of entering with agreement to proceed including rainy season. Keeping in view, the schedule for handing over of site work should be programmed such as to achieve the mile-stones as in “Rate of progress statement” enclosed. Mile stones will be drawn by the Member Secretary, Jharkhand Zoo Authority at the time of concluding agreement

23.2 The attention of the bidder is directed to the contract requirement at the time of beginning of the work, the rate of progress and the dates for the whole work and its several parts as per milestones. The rate of progress and proportionate value of work done from time to time will be assessed by the Range Officer/ Incharge Engineer and accordingly completion of milestones will be assessed. After signing the agreement, the contractor shall forthwith begin the work, shall regularly and continuously proceed with them.

23.3 Rate of progress:

i) Work programme of achieving the milestones.

Mile Stone-I (Months)	Up to basement level	(4) Months from start date.
Mile Stone-II (Months)	Roof slabs laid in all components	(8) Months from start date.
Mile Stone-III (Months)	Finishing's & completion of Work in all respects	(12) Months from start date.

23.4 The contractor shall bear all costs and charges for special or temporary way leases required by him in connection with access to the site. The contractor shall also provide at his own cost any additional accommodation outside the site required by him for the purposes of the work.

23.5 Subject to any requirement in the contract as to completion of any section of the works before completion of the whole of the works shall be completed in accordance with provisions of clauses in the Schedule within the time stated in the contract calculated from the last day of the

period named in the statement to the bid as that within which the works are to be commenced or such extended time as may be allowed.

23.6 Delays and extension of time:

No claim for compensation on account of delays or hindrances to the work from any cause whatever shall lie. Reasonable extension of time will be allowed by the Member Secretary, Jharkhand Zoo Authority or by the officer competent to sanction the extension, for unavoidable delays, such as may result from causes, which in the opinion of the Member Secretary, Jharkhand Zoo Authority, are undoubtedly beyond the control of the contractor.

Whenever authorised alterations or additions made during the progress of the work are of such a nature in the opinion of the Member Secretary, Jharkhand Zoo Authority as to justify an extension of time in consequence thereof, such extension will be granted in writing by the Member Secretary, Jharkhand Zoo Authority or other competent authority when ordering such alterations or additions.

24. Construction Programme:

24.1 The Contractor shall furnish within one month of the order of the work a programme showing the sequence in which he proposed to carry out the work, monthly progress expected to be achieved, also indicating date of procurement of materials, plant and machinery. The schedule should be such that it is practicable to achieve completion of the whole work within the time limit fixed and in keeping with the Mile stone programme specified and shall obtain the approval of the Member Secretary. Further rate of the progress as in the program shall be kept up to date. In case it is subsequently found necessary to alter this program, the contractor shall submit sufficiently in advance the revised program incorporating necessary modifications and get the same approved by the Member Secretary. No revised program shall be operative without approval of Member Secretary.

24.2 The Contractor shall give written notice to the Member Secretary whenever planning or progress of the works is likely to be delayed or disrupted unless any further drawings or order including a direction, instruction or approval is issued by the Member Secretary within a reasonable time. The notice shall include details of the drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

25. Speed of Work:

25.1 The Contractor shall at all times maintain the progress of work to conform to the latest operative progress schedule approved by the Member Secretary. The contractor should furnish progress

report indicating the programme and progress once in a month. The Member Secretary may at any time in writing direct the contractor to slow down any part or whole of the work for any reason (which shall not be questioned) whatsoever, and the contractor shall comply with such orders of the Member Secretary. The compliance of such orders shall not entitle the contractor to any claim of compensation. Such orders of the Member Secretary for slowing down the work will however be duly taken into account while granting extension of time if asked by the contractor for which no extra payment will be entertained.

25.2 Delays in Commencement or progress or neglect of work and forfeiture of earnest money, Security deposit and withheld amounts:

If, at any time, Member Secretary, Jharkhand Zoo Authority or Officer authorised by him shall be of the opinion that the Contractor is delaying Commencement of the work or violating any of the provisions of the contract or Contractor is neglecting or delaying the progress of the work as defined by the tabular statement. "Rate of progress" in the Articles of Agreement", he shall so advise the Contractor in writing and at the same time demand compliance in accordance with conditions of Bid notice/bid document/ Agreement. If the Contractor neglects to comply with such demand within seven days after receipt of such notice, it shall then or at any time there after, be lawful for the Member Secretary, Jharkhand Zoo Authority to take suitable action in accordance Terms of contract.

26. Suspension of works by the Contractor:

- 26.1 If the Contractor suspends the works, or sublets the work without sanction of the Member Secretary, Jharkhand Zoo Authority or in the opinion of the Member Secretary, Jharkhand Zoo Authority neglect or fail to proceed with due diligence in the performance of his part of the Contract as laid down in the Schedule rate of progress, or if he continue to default or repeat such default in the respects mentioned in the agreement, he shall take action in accordance with the terms of the agreement.
- 26.2 If the Contractor stops work for 28 days continuously and the Stoppage has not been approved by the Member Secretary, Jharkhand Zoo Authority, the Contract will be terminated.
- 26.3 If the Contractor has delayed the completion of works the Contract will be terminated in terms of the Contract or as per the prevalent govt norms.

27. Extension of the Intended Completion Date:

27.1 The Member Secretary, Jharkhand Zoo Authority may extend or recommend for extension, in accordance with the Government orders in force, the Intended Completion Date if a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.

27.2 The Member Secretary, Jharkhand Zoo Authority shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Zoo Authority for a decision upon the effect of a Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Delays Ordered by the Member Secretary:

28.1 The Member Secretary may instruct the Contractor to delay the start or progress of any activity within the Work.

29. Early Warning:

29.1 The contractor is to warn the Member Secretary at the earliest opportunity of the future specific events or likely circumstances that may adversely affect the Execution of Works.

29.2 The Contractor shall cooperate with the Member Secretary in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Member Secretary.

30. Management Meetings:

30.1 The Member Secretary may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the programme for remaining work and to deal with matters raised in accordance with the early warning procedure.

C. QUALITY CONTROL

31. Identifying Defects:

31.1 The Member Secretary or officer authorised by him shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Member Secretary may instruct the Contractor to verify the Defect and to uncover and test any work that the Engineer considers may be a Defect.

32. Tests:

32.1 If the Member Secretary instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the Contractor shall pay for the test and any samples.

33. Correction of Defects:

33.1 The Member Secretary shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins on Completion. The defect liability period shall be extended for as long as defects remain to be corrected by the Contractor.

33.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Member Secretary's notice.

34. Uncorrected Defects:

34.1 If the contractor has not corrected the defect within the time specified in the Member Secretary's notice, the Member Secretary will assess the cost of having the defect corrected and the contractor will pay this amount.

34.2 The Member Secretary shall introduce O.K. cards and prescribe the formats thereof. O.K. cards shall relate to all major components of the work. The contractor / his authorised representative shall be required to initiate and fill in and present the O.K. card to the construction staff who would check the respective items and send to the quality control staff for final check and clearance / O.K. Any defects pointed out by the construction supervision staff or by the Quality Control staff shall promptly be attended to by the contractors and the fact of doing so be duly recorded on the back of O.K. card.

34.3 The Member Secretary may also introduce checklists, which shall be kept in Bound registers by the construction supervision staff. The contractor may be required to fill up these lists in the first instance and shall be subsequently checked by the Construction / Quality Control engineers.

35. Quality Control:

35.1. In addition to the normal inspection by the regular staff incharge of the Construction of work, the work may also be inspected by Authorised officers of Quality control & Vig. or by the State or District level Vigilance Cell Unit and any other authorised external Agency. If any sub-standard work or excess payments are noticed with reference to measurement books etc., during inspection, action will be taken based on their observations by the Member Secretary or the officer authorised by him.

35.2. For all works costing more than Rs.2.00 Crores the Contractor shall submit quality plan and also show proof of owning quality lab or tie-up with an established quality lab.

D. Cost Control

36. Bill of Quantities:

- 36.1 The Bill Quantities shall contain items for the construction work to be done by the Contractor.
- 36.2 The Contractor is paid for the quantity of the work done at the estimate rate in the Bill of Quantities for each item plus or minus Bid percentage.

37. Changes in the Quantities:

- 37.1 The contractor is bound to execute all supplemental works that are found essential, incidental and inevitable during execution of main work.

- 37.2 The payment of rates for such supplemental items of work will be regulated as under;

Supplemental items directly deducible from similar items in the original agreement.

- 37.2.1 The rates shall be derived by adding to or subtracting from the agreement rate of such similar item the cost of the difference in the quantity of materials labour between the new items and similar items in the agreement worked out with reference to the Standard Schedule of Rates adopted in the sanctioned estimate with which the bids are accepted plus or minus over all bid percentage.

- 37.2.2 (a) Similar items but the rates of which cannot be directly deduced from the original agreement.

(b) Purely new items which do not correspond to any item in the agreement.

- 37.2.3 The rates of all such items shall be Estimated Rates plus or minus overall Bid premium.

38. Extra Items:

- 38.1 Extra items of work shall not vitiate the contract. The contractor shall be bound to execute extra items of work as directed by the Member Secretary. The rates for extra items shall be worked out by the Member Secretary as per the conditions of the Contract and the same are binding on the Contractor.

39. Cash flow forecasts:

39.1 When the program is updated, the contractor is to provide the Member Secretary with an updated cash flow forecast.

40. Payment Certificates:

40.1 The Contractor shall submit to the Member Secretary monthly statements of the estimated value of the work completed less the cumulative amount certified previously.

40.2 The Member Secretary or the Officer Authorised by him shall check the Contractor's monthly statement within 14 days.

40.3 The value of work executed shall be determined by the Member Secretary.

40.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

40.5 The Member Secretary may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

41. Payments:

41.1 **Payment for the work done by the contractor will be made periodically for the finished work based on the measurements recorded in measurement books by any officer of the department not lower in rank than a Forester and check measured by any officer not lower in rank than a Range Officer.** In the absence of a Forester, Forest Guard may record measurements under the supervision of Range Officer. The measurement shall be recorded at various stages of the work done and also after work is completed. The contractor shall be present at the time of recording of each set of measurement and their check measurement and accept them then and there so as to avoid disputes at a later stage. If the contractor is not available at the work spot at the time of recording measurements or check measurements the particulars of measurements shall be signed by the authorised agent of contractor based on which the contractor shall accept the set of measurements without any further dispute. If for any reason the contractor's authorised agent is also not available at site when the department decides to suspend the work recording of measurements in the absence of the contractor or his authorised representative the department shall not entertain any claim from the contractor for any loss incurred by him on this account. The Contractor shall however note that the Department cannot

indefinitely wait for recording the measurement due to the absence of the Contractor and his authorised agent and check measure them even in the absence of the contractor.

- 41.2 The actual volume of stone and aggregates shall be computed after deducing the following percentages from the volume computed by stack measurements.

S. No	Standard size of aggregate and stone	Percentage reduction in volume computed by stack measurements to arrive at the volume to be paid for
1.	Stone and 65mm Metal	20
2.	40 mm and 25 mm	10
3.	20 mm, 12 mm, 10 mm & 6 mm	5
4.	Fine aggregate	Nil
5.	Gravel	5

[Note: The above Table may be modified depending on the type of work.]

Unless otherwise directed, measurements shall not be taken until sufficient materials for use on work have been collected and stacked. Immediately after measurement, the stack shall be marked by white wash or other means as directed by the Member Secretary.

- 41.3 Payments and Certificates:

41.3.1 Payments shall be adjusted for recovery of liquidated damages in terms of bid conditions and security deposit for the due fulfilment of the contract. Payment will be made to the Contractor under the certificate to be issued at reasonably frequent intervals by the Member Secretary, and intermediate payment will be the sum equal to 90% of the value of work done as so certified and balance of 10% will be withheld and retained as security for the due fulfilment of the contract under the certificate to be issued by the Member Secretary. On completion of the entire works the contractor will receive the final payment of all the moneys due or payable to him under or by virtue of the contract except earnest money/Security deposit retained as security. The amount withheld from the final bill will be retained under deposits and paid to the contractor together with the earnest money deposit retained as security after a period of 18 Months as all defects shall have been made good according to the true intent and meaning there of.

41.3.2 In case of over payments or wrong payment if any made to the contractor due to wrong interpretation of the provisions of the contract, etc., such unauthorised payment will be deducted in the subsequent bills or final bill for the work or from the bills under any other contracts with the Zoo Authority Government or at any time there after from the deposits available with the Zoo Authority.

41.3.3 Any recovery or recoveries advised by the Government Department either state or central, due to non-fulfilment of any contract entered into with them by the contractor shall be recovered from any bill or deposits of the contractor.

41.3.4 No claim shall be entertained, if the same is not represented in writing to the Member Secretary within 15 days of its occurrence.

41.3.5 The contractor is not eligible for any compensation for inevitable delay in handing over the site or for any other reason. In such case, suitable extensions of time will be granted after considering the merits of the case.

41.4 Intermediate Payments:

41.4.1 For intermediate Stage of work, only part rates as fixed by the Member Secretary will be paid.

41.4.2 Part rates shall be worked out for the work done portion based on the actual operations involved keeping in view the value of the balance work to be done, to avoid unintended benefit to the Contractor in initial Stage.

41.4.3 Full rate shall be paid when the work is completed to the full profile as noted in the drawings.

41.4.4 For earthwork in cutting, 10% of the quantity will be with-held for intermediate payments and the same will be released after completing the work to the profiles as per drawings and disposal of the spoil material at the specified places and handing over the balance useful stone. For this purpose a length of 25 m will be taken as a Unit.

41.4.5 For earthwork, embankment formation work, 10% of the quantity will be withheld for intermediate payments and the same will be released after completing the bund to the profiles as per drawings including trimming of side slopes and all other works contingent to the bund profile. For this purpose, 25 m of length will be taken as a Unit.

41.4.6 For the structural works either with masonry or concrete where the height of structure is more than three meters, the quantities executed in the lower level will be withheld at the rate of one percent for every three meters height, if the balance height of the structure work is more than three meters in being over the executed level and the same will be released only after the entire work is completed as certified by the Member Secretary.

41.4.7 Where payment is intended for aggregates by Bill of Quantities item based on stack measurements, 10% of the quantity measured will be withheld. No payment or advance will be made for unfixed materials when the rates are for finished work in site.

42. Interest on Money due to the Contractor:

42.1 No omission by the Zoo Authority to pay the amount due upon certificates shall vitiate or make void the contract, nor shall the contractor be entitled to interest upon any guarantee fund or payments in arrear, nor upon any balance which may, on the final settlement of his accounts, found to be due to him.

43. Certificate of Completion of works:

43.1 Certificate of Completion of works:

43.1.1 When the whole of the work has been completed and has satisfactory passed any final test that may be prescribed by the Contract, the Contractor may give a notice to that effect to the Member Secretary accompanied by an undertaking to carryout any rectification work during the period of maintenance, such notice and undertaking shall be in writing and shall be deemed to be request by the Contractor for the Member Secretary to issue a Certificate of completion in respect of the Works. The Member Secretary shall, within twenty one days of the date of delivery of such notice either issue to the Contractor, a certificate of completion stating the date on which, in his opinion, the works were completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the Works which, in the Member Secretary'’ opinion, required to be done by the Contractor before the issue of such Certificate. The Member Secretary shall also notify the Contractor of any defects in the Works affecting completion that may appear after such instructions and before completion of the Works specified there in. The Contractor shall be entitled to receive such Certificate of the Completion within twenty one days of completion to the satisfaction of the Member Secretary of the Works so specified and making good of any defects so notified.

43.1.2 Similarly, the Contractor may request and the Member Secretary shall issue a Certificate of Completion in respect of:

- a) Any section of the Permanent works in respect of which a separate time for completion is provided in the Contract, and
- b) Any substantial part of the Permanent Works which has been both completed to the satisfaction of the Member Secretary and occupied or used by the Department.

43.1.3 If any part of the Permanent Works shall have been completed and shall have satisfactorily passed any final test that may be prescribed by the Contract, the Member Secretary may issue such certificate, and the Contractor shall be deemed to have undertaken to complete any outstanding work in that part of the Works during the period of Maintenance.

44. Taxes included in the bid:

44.1 The percentage quoted by the contractor shall be deemed to be inclusive of the sales Tax and other taxes on all materials that the contractor will have to purchase for performance of this contract.

44.2 Any Central or State sales and other taxes on completed items of works of this contract as may be levied and paid by the contractor shall be reimbursed by the department to the contractor on proof of payment to the extent indicated in Part.II of Schedule-A.

45. PRICE ADJUSTMENT

I) **Price Adjustment for steel and cement, labour, machinery is permitted as per Govt. of Jharkhand norms, if any.**

46. Retention

46.1 The department shall retain from each payment due to the contractor @ the rate of 10% of bill amount until completion of the whole of the Works.

46.2 On completion of the whole of the Works half the total amount retained is re-paid to the Contractor and half when the Defects Liability Period has passed and the Member Secretary has certified that all the Defects notified by the Member Secretary to the Contractor before the end of this period have been corrected.

46.3 On completion of the whole works, the Contractor may substitute retention money with an “**on demand**” Bank Guarantee.

47 Liquidated Damages:

47.1 If for any reason, which does not entitle the contractor to an extension of item, the rate of progress of works, or any section is at any time, in the opinion of the Member Secretary too slow to ensure completion by the prescribed time or extended time for completion, The Member Secretary shall so notify the contractor in writing and the contractor shall there upon take such steps as are necessary and the Member secretary may approve to expedite progress so as to complete the works or such section by the prescribed time or extended time. The contractor shall not be entitled to any additional payment for

taking such steps. If as a result of any notice given by the Member Secretary under this clause the contractor shall seek the permission from member Secretary to do any work at night or on Sundays, if locally recognised as days of rest, or their locally recognised equivalent, such permission shall not be unreasonably refused.

47.2 If the contractor fails to complete whole of the works or any part thereof or section of the works within the stipulated periods of individual mile stones (including any bonafide extensions allowed by the competent authority without levying liquidated damages), the Member Secretary may without prejudice to any other method of recovery will deduct 1/2000 of Balance work per each day for the period of delay which is short fall for that Mile Stone limiting the maximum liquidated damages to the extent of 10% of contract value not as a penalty from any monies in his hands due or which may become due to the contractor. The payment or deductions of such damages shall not relieve the contractor from his obligation to complete the works, or from any other of his obligations and liabilities under the contract. **The maximum amount of liquidated damages for the whole of the works is ten percent of final contract price.**

48 Securities: Security Deposit of 5% of value of work shall be made with the Member Secretary, JZA, not later than the date specified in the Letter of Acceptance, either by Bank Draft or by an irrevocable and unconditional bank guarantee acceptable to the Department. The EMD may be adjusted against the security deposit. Security deposit shall be valid until a date 28 days from the date of expiry of Defects Liability Period.

49 Cost of Repairs: Loss or damage to the Works or materials to the Works between the Start Date and the end of the Defects Correction Periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. FINISHING THE CONTRACT

50 Completion:

50.1 The Contractor shall request the Member Secretary to issue a Certificate of completion of the Works and the Member Secretary will do so upon deciding that the work is completed.

51 Taking Over:

51.1 The Department shall take over the Site and the Works within seven days of the Member Secretary issuing a certificate of functioning in good condition after defects liability period.

52 Final Account:

52.1 The Contractor shall supply to the Member Secretary a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Member Secretary shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Member Secretary shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the final Account is still unsatisfactory after it has been resubmitted, the Member Secretary shall decide on the amount payable to the Contractor and issue a payment certificate within 56 days of receiving the Contractor's revised account.

53 Termination:

53.1 The Department may terminate the Contract if the contractor causes a fundamental breach of the Contract.

53.2 Fundamental breaches of Contract include, but shall not be limited to the following.

- a) The Contractor stops work for 28 days when no stoppage of work is shown on the current program and the stoppage has not been authorised by the Member Secretary.
- b) The Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation.
- c) The Member Secretary gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Member Secretary; and
- d) The Contractor does not maintain a security which is required and

- e) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined.
- f) If the contractor, in the judgement of the Department has engaged in corrupt or fraudulent practices in competing for or in the executing the contract.

For the purpose of this paragraph: “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process of contract or execution. “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment to the Government and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Government of the benefits of free and open competition.

53.3 Notwithstanding the above the Department may terminate the contract for convenience.

53.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secured leave the Site as soon as reasonably possible.

54 Payment upon Termination:

54.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Member Secretary shall issue a certificate for the value of the work done less advance payments received upon the date of the issue of the certificate, less other recoveries due in terms of the Contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed. Additional Liquidated Damages shall not apply. If the total amount due to the Department exceeds any payment due to the Contractor the difference shall be a debt payable to the Department.

55 Property:

55.2 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Department if the Contract is terminated because of Contractor’s default.

56 Release from Performance:

56.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Department or the Contractor the Member Secretary shall certify that the contract has been frustrated. The Contractor shall make the site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any work carried out after wards to which commitment was made.

F. SPECIAL CONDITIONS

57 Water Supply:

The Contractor has to make his own arrangements at his own cost for water required for the work and to the colonies and work sites, which are to be established by the Contractor.

58 Electrical Power:

The Contractor has to make his own arrangements for drawing electric power from the nearest power line after obtaining permission from the Competent authority at his own cost. In case of failure of electricity, the Contractor has to make alternative arrangements for supply of electricity by Diesel Generator sets of suitable capacity at place of work. If the supply is arranged by the Department, necessary Tariff rates shall have to be paid based on the prevailing rates.

The contractor will pay the bills of Electricity Board for the cost of power consumed by him.

The contractor shall satisfy all the conditions and rules required as per Indian Electricity Act 1910 and under rule –45(I) of the Indian Electricity Rules, 1956 as amended from time to time and other pertinent rules.

The power shall be used for bonafide Departmental works only.

58.1 Electric Power for Domestic Supply:

- a) The contractor has to make his own arrangements at his own cost for the supply of electric power for domestic purposes and the charges for this purpose have to be paid by him at the rates as fixed by the Competent authority from time to time.
- b) The contractor will have to make his own arrangements to lay and maintain the necessary distribution lines and wiring for the camp at his own cost. The layout and the methods of laying the lines and wiring shall have the prior approval of the Member Secretary. All camp area shall be properly electrified. All lines, streets, approaches for the camp etc., shall be sufficiently lighted for the safety of staff and labour of the contractor, at the cost of the Contractor and it will be subject to the approval of the Member Secretary.

59 Land:

59.1 Land for Contractor's use:

The contractor will be permitted to use Government land for execution of work. The contractor shall have to make his own arrangements for acquiring and clearing the site, levelling, providing drainage and other facilities for labour staff colonies, site office, work-shop or stores and for related activities. The Contractor shall apply to the Department within a reasonable time after the award of the contract and at least 30 days in advance of its use, the details of land required by

him for the work at site and the land required for his camp and should any private land which has not been acquired, be required by the contractor for his use. The same may be acquired by the contractor at his own cost by private negotiations and no claim shall be admissible to him on this account.

The Member Secretary reserves the right to refuse permission for use of any government land for which no claim or compensation shall be admissible to the contractor. The contractor shall, however, not be required to pay cost or any rent for the Government land given to him.

59.2 Surrender of Occupied Land:

- a) The Government land as here in before mentioned shall be surrendered to the Member Secretary within seven days, after issue of completion certificate. Also no land shall be held by the contractor longer than the Member Secretary shall deem necessary and the contractor shall on the receipt of due notice from the Member Secretary, vacate and surrender the land which the Member Secretary may certify as no longer required by the Contractor for the purpose of the work.
- c) The contractor shall make good to the satisfaction of the Member Secretary any damage to areas, which he has to return or to other property or land handed over to him for purpose of this work. Temporary structures may be erected by the contractor for storage sheds, offices, residences etc., for non-commercial use, with the permission of the Member Secretary on the land handed over to him at his own cost. At the completion of the work these structures shall be dismantled site cleared and handed over to the Member Secretary. The land required for providing amenities will be given free of cost from Government lands if available otherwise the contractor shall have to make his own arrangements.

59.3 Contractor not to dispose off Spoil etc. :-

The contractor shall not dispose off or remove except for the purpose of fulfilment of this contract, sand, stone, clay ballast, earth, trees and shrubs or other materials obtained in the excavation made or lying on the site of the work, and all such materials and produce shall remain property of the Government. The Zoo Authority may upon request from the contractor, or if so stipulated in the conditions of the contract allow the contractor to use any of the above materials for the works either free of cost or after payment as may be specifically mentioned or considered necessary during the execution of the work.

60 Roads:

In addition to existing public roads and roads Constructed by Government, if any, in work area all additional approach roads inside work area and camp required by the Contractor shall be constructed and maintained by him at his own cost. The layout design, construction and maintenance etc. of the roads shall be subject to the approval of the Member Secretary. The contractor shall permit the use of these roads by the Government free of charge.

It is possible that work at, or in the vicinity of the work site will be performed by the Government or by other contractors engaged in work for the Government during the contract period. The contractor shall without charge permit the government and such other contractor and other workmen to use the access facilities including roads and other facilities, constructed and acquired by the contractor for use in the performance of the works.

The contractor's heavy construction traffic or tracked equipment shall not traverse any public roads or bridges unless the contractor has made arrangement with the authority concerned. In case contractor's heavy construction traffic or tracked equipment is not allowed to traverse any public roads or bridges and the contractor is required to make some alternative arrangements, no claim on this account shall be entertained.

The contractor is cautioned to take necessary precautions in transportation of construction materials to avoid accidents.

61 Payment for Camp Construction:

No payment will be made to the contractor for construction, operation and maintenance of camp and other camp facilities and the entire cost of such work shall be deemed to have been included in the bided rate for the various items of work in the schedule of quantities and bids.

62 Explosive And Fuel Storage Tanks:

No explosive shall be stored within ½ (half) KM of the limit of the camp sites. The storage of gasoline and other fuel oils or of Butane, Propane and other liquefied petroleum gases, shall confirm to the regulations of Andhra Pradesh State Government and Government of India. The tanks, above ground and having capacity in excess of 2000 litres, shall not be located within the camp area, nor within 200m, of any building.

63 Labour:

63.1 The contractor shall, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

Labour importation and amenities to labour and contractor's staff shall be to the contractor's account. His quoted percentage shall include the expenditure towards importation of labour amenities to labour and staff;

The contractor shall, if required by the Member Secretary, deliver to the Member Secretary a written in detail, in such form and at such intervals as the Member Secretary may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the contractor on the Site and such information in respect of Contractor's Equipment as the Member Secretary may require.

63.2 Transportation of Labour:

The contractor shall make his own arrangements at his own cost for the daily transportation of the labour and staff from labour camps/colonies to the work spot and back. No labour or staff of the contractor shall stay at the work spot. No extra payment will be made to the contractor for the above transportation of the labour and his quoted percentage to the work shall include the transportation charges of labour from colonies to work spot and back.

The contractor will at all times duly observe the provisions of employment of children Act XXVI of 1938 and any enactment or modification of the same and will not employ or permit any person to do any work for the purpose under the provisions of this agreement in contravention of said Act. The contractor here by agrees to indemnify the department from and against all claims, penalties which may be suffered by the department or any person employed by the department by any default on the part of the contractor in the observance and performance of the provisions of the employment of children Act. XXVI of 1938 or any enactment or modification of the same.

The contractor shall obtain the insurance at his own cost to cover the risk on the works to labour engaged by him during period of execution against fire and other usual risks and produce the same to the Member Secretary concerned before commencement of work.

64 Safety Measures:

1. The contractor shall take necessary precautions for safety of the workers and preserving their health while working in such jobs, which require special protection and precautions. The following are some of the measures listed but they are not exhaustive and contractor shall add to and augment these precautions on his own initiative where ever necessary and shall comply with directions issued by the Member Secretary or on his behalf from time to time and at all times.

2. Providing protective foot wear to workers in situations like mixing and placing of mortar or concrete sand in quarries and places where the work is done under much wet conditions.
3. Providing protective head wear to workers at places like underground excavations to protect them against earth /rock falls.
4. Providing masks to workers at granulates or at other locations where too much fine dust is floating about and sprinkling water at frequent intervals by water hoses on all stone crushing area and storage bins abate to dust.
5. Getting the workers in such jobs periodically examined for chest trouble due to too much breathing in to fine dust.
6. Taking such normal precautions like fencing and lightening in excavation of trenches, not allowing rolls and metal parts of useless timber spread around, making danger areas for blasting providing whistles etc.
7. Supply workmen with proper belts, ropes etc., when working in precarious slopes etc.
8. Avoiding sub standard not confirming to standards electrical wire etc., as they would electrocute the works.
9. Taking necessary steps towards training the workers concerned on the machinery before they are allowed to handle them independently and taking all necessary precautions in and around the areas where machines hoists and similar units are working.

65 Fair Wage Clause:

The contractor shall pay not less than fair wages to labourers engaged by him on the work.

“Fair” wages means wages whether for time or piecework notified by the Government from time to time in the area in which the work is situated.

The contractor shall notwithstanding the provisions of any contract to the contrary cause to be paid to the labour, in directly engaged on the work including any labour engaged in connection with the said work, as if the labourers had been directly employed by him.

In respect of labour directly or indirectly employed in the works for the purpose of the contractors part of the agreement the contractor shall comply with the rules and regulations on the maintenance of suitable records prescribed for this purpose from time to time by the Government. He shall maintain his accounts and vouchers on the payment of wages to the labourers to the satisfaction of the Member Secretary.

The Member Secretary shall have the right to call for such record as required to satisfy himself on the payment of fair wages to the labourers and shall have the right to deduct from the contract amount a suitable amount for making good the loss suffered by the worker or workers by reason of the "fair wages" clause to the workers.

The contractor shall be primarily liable for all payments to be made and for the observance of the regulations framed by the Govt. from time to time.

As per contract labour (Regulation and abolition) Act. 1970 the contractor has to produce the license obtained from the licensing officers of the labour department along with the bid or at the time of agreement.

Any violation of the conditions above shall be deemed to be a breach of his contract.

Equal wages are to be paid for both men and women if the nature of work is same and similar.

The contractor shall arrange for the recruitment of skilled and unskilled labour local and imported to the extent necessary to complete the work within the agreed period as directed by the Member Secretary in writing.

66 Indemnity Bond:

NAME OF WORK: - Construction of Entrance Plaza, Bhagawan Birsa Biological Park, Ormanjhi, Ranchi

I, _____ contractor S/o. _____ aged _____
_____ Resident of _____
_____ do hereby bind myself to pay all the claims
may come (a) under Workmen's Compensation Act. 1933 with any
statutory modification there on and rules there under or otherwise for or
in respect of any damage or compensation payable in connection with
any accident or injury sustained (b) under Minimum wages Act 1948 (c)
under payment of wages Act.1936 (d) under the Contractor labour
(Regulation and Abolition) Act. 1970 by workmen engaged for the
performance of the business relating to the above contract ie., Failing
such payment of claims of workmen engaged in the above work, I abide
in accepting for the recovery of such claims, effected from any of my
assets with the departments.

67 Compliance With Labour Regulations:

During continuance of the contract, the contractor shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notifications that may be issued under any labour law in future either by the State or the Central Government or the local authority and also applicable labour regulations, health and sanitary arrangements for workmen, insurance and other benefits. Salient features of some of the major labour laws that are applicable to construction industry are given below. The contractor shall keep the Department indemnified in case any action is taken against Department by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Department is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provision stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the contractor, the Member Secretary /Department shall have the right to deduct any money due to the contractor including his amount of performance security. The Department/Member Secretary shall also

have right to recover from the contractor any sum required or estimated to be required for making good the loss or damage suffered by the Department.

The employees of the Contractor in no case shall be treated as the Employees of the Department at any point of time.

68 Salient features of some major labour laws applicable to establishment engaged in buildings and other construction work:

- (a) Workmen compensation Act 1923: The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if any employee has completed 5 years service or more, or on death, at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments, employing 10 or more employees.
- (c) Employees P.F. and Miscellaneous provision Act 1952: The Act provides for monthly contributions by the Department plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.,
- (d) Maternity Benefit Act 1951: The Act provides for leave and some other benefits to women employees in case of confinements or miscarriage etc.
- (e) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided by the Principal Department by Law. The Principal Department is required to take certificate of Registration and the contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Department if they employ 20 or more contract labour.

- (f) **Minimum wages Act 1948:** The Department is supposed to pay not less than the Minimum wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.
- (g) **Payment of wages Act 1936:** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- (h) **Equal Remuneration Act 1979:** The Act provides for payment of equal wages for work of equal nature to Male or Female workers and for not making discrimination against Female employee in the matters of transfers, training and promotions etc.
- (i) **Payment of Bonus Act 1965:** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payment of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above and upto Rs.3500/- per month shall be worked out by taking wages as Rs.2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- (j) **Industrial Disputes Act 1947:** The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock- out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (k) **Industrial Employment (Standing Orders) Act 1946:** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the State and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Department on matters provided in the Act and get the same certified by the designated Authority.
- (l) **Trade Unions Act 1926:** The Act lays down the procedure for registration of trade unions of workmen and Departments. The Trade Unions registered under the act have been given certain immunities from civil and criminal liabilities.
- (m) **Child Labour (Prohibition & Regulation) Act 1986:** The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes, Employment Child Labour is prohibited in Building and Construction Industry.

- (n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of service) Act 1979:
The Act applicable to an establishment, which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another State). The inter State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.
- (o) The Building and Other Construction workers (regulation of Employment and conditions of service) Act 3047 and the Cess Act of 3047: All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Department of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Department to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) Factories Act 1948: The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 person or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

69 Liabilities of the Contractor:

69.1 Accident Relief and workmen compensation:

The contractor should make all necessary arrangements for the safety of workmen on the occurrence of the accident, which results in the injury or death of any of the workmen employed by the contractor, the contractor shall within 24 hours of the happenings of the accident or accidents should be intimate in writing to the Member Secretary of the Zoo Authority, the act of such accident. The contractor shall indemnify Government against all loss or damage sustained by the Government resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines if any payable by Govt. as a consequence of Govt. failure to give notice under workmen's compensation Act or otherwise conform to the provisions of the said Act in regard to such accident.

69.2 In the event of an accident in respect of which compensation may become payable under the workmen's compensation Act VIII 23 whether by the contractor, by the Government it shall be lawful for the Member Secretary to retain such sum of money which may in the opinion of the Member Secretary be sufficient to meet such liability. The opinion of the Member Secretary shall be final in regard to all matters arising under this clause.

69.3 The contractor shall at all times indemnify the Govt. / Zoo Authority against all claims which may be made under the workmen's compensation act or any statutory modification thereafter or rules there under or otherwise consequent of any damage or compensation payable in consequent of any accident or injuries sustained or death of any workmen engaged in the performance of the business relating to the contractor.

70 Contractor's Staff, Representatives and Labour:

- (a) The contractor shall, at all times, maintain on the works, staff of qualified Engineers, and Supervisors of sufficient experience of similar other jobs to assure that the quality of work turned out shall be as intended in the specifications. The contractor shall also maintain at the works, a Work Manager or sufficient status, experience and office and duly authorise him to deal with all aspects of the day-today work. All communications to any commitments by the Work Manager shall be considered as binding on the Contractor.
- (b) The Contractor shall at all times submit details of skilled and unskilled labour and equipment employed to the Member Secretary in prescribed proforma as he may require to assess and ensure the proper progress of work.
- (c) If the contractor does not employ the technical person agreed to on the work a fine of Rs.25,000/- will be imposed. If he does not employ for 30 days, thereafter it becomes a fundamental breach of contract.

71 Accommodation and food:

The contractor should arrange accommodation he needs, at his own cost. The contractor shall make his own arrangements for supply of food grains, fuel and other provision to his staff and labourers including controlled commodities.

72 Protection of adjoining premises:

The contractor shall protect adjoining sites against structural, decorative and other damages that could be caused by the execution of these works and make good at his cost any such damages.

73 Work during night or on Sundays and holidays:

The works can be allowed to be carried out during night, Sundays or authorised holidays in order to enable him to meet the schedule targets and the work shall require almost round the clock working keeping in view:

- (i) The provisions of relevant labour laws being adhered to:
- (ii) Adequate lighting, supervision and safety measures are established to the satisfaction of the Member Secretary and
- (iii) The construction programme given by the Contractor and agreed upon by the Member Secretary envisages such night working or working during Sundays or authorised holidays.

74 Layout of materials stacks:

The contractor shall deposit materials for the purpose of the work on such parts only of the ground as may be approved by the Member Secretary before starting work. A detailed survey, clearly indicating position and areas where materials shall be stacked and sheds built is to be conducted by the contractor at his own cost and only after obtaining necessary approval of the plan for use of sites by the Member Secretary, the Contractor can use the sites accordingly.

75 Use of blasting materials:

Procurement of blasting materials and its storage is the responsibility of the contractor. The contractor shall engage licensed blaster for blasting operation. The contractor is to act in accordance with Indian Explosive Act and other rules prevailing, during the execution of work. It is the responsibility of the contractor to see, that works by other agencies in the vicinity are not hampered, in such cases if any claim is made by other agencies that should be borne by the contractor. Carriage of blasting materials, from the magazine to the work site, is the responsibility of the contractor.

76 Plant and Equipment:

76.1 The contractor shall have sufficient plant, equipment and labour and shall work such hours and shifts as may be necessary to maintain the progress on the work as per the approved progress schedule. The working and shifts hours shall comply with the Govt. Regulations in force.

76.2 It is expressly and clearly understood that contractor shall make his own arrangements to equip himself with all machinery and special tools and plant for the speedy and proper execution of the work and the department does not undertake responsibility towards their supply.

76.3 The department shall supply such of the machinery that may be available on hire basis but their supply cannot be demanded as matter of right and no delay in progress can be attributed to such non-supply of the plant by the department and the department cannot be made liable for any damage to the contractor. The Contractor shall be responsible for safe custody of the departmental machinery supplied to him (which will be delivered to contractor at the machinery yard at site of work) and he has to make good all damages and losses if any other than fire, wear and tear to bring it to the conditions that existed at the time of issue to the contractor before handing over the same to the department. The hire charges for the machinery handed over to the contractor will be recovered at the rate prevalent at the time of supply. The contractor will have to execute supplemental agreement with Member Secretary at the time of supply of the machinery.

76.4 The acceptance of departmental machinery on hire is optional to the contractor.

77 Steel forms:

Steel forms should be used for all items involving and use of centering and shuttering shall be single plane without any dents and undulations.

78 Inconvenience to public:

The contractor shall not deposit materials at any site, which will cause inconvenience to public. The Member Secretary may direct the contractor to remove such materials or may undertake the job at the cost of the contractor.

79 Conflict of interest:

Any bribe, commission, gift or advantage given, promised or offered by on behalf of contractor or his partner, agent or servant or any one on his behalf to any officer, servant, representatives, agents of Member Secretary, or any persons on their behalf, in relation to the obtaining or to execution of this, or any other contract with Member Secretary shall in addition to any criminal liability, which it may occur, subject to the cancellation of this or all other contracts and also to payment of any loss or damage resulting from any such cancellation. Member Secretary shall then be entitled to deduct the amount, so payable from any money, otherwise due to the contractor under this or any other contract.

80 Contract documents and materials to be treated as confidential:

All documents, correspondences, decisions and orders, concerning the contract shall be considered as confidential and/or restricted in nature by the contractor and he shall not divulge or allow access to them by any un-authorised person.

81 General obligations of Contractor:

81.1 The contractor shall, subject to the provision of the contract and with due care and diligence, execute and maintain the works in accordance with specifications and drawings.

81.2 The contractor shall promptly inform the Department and the Member Secretary of any error, omission, fault and such defect in the design of or specifications for the works which are discovered when reviewing the contract documents or in the process of execution of the works.

81.3 If Contractor believes that a decision taken by the Member Secretary was either outside the authority given to the Member Secretary by the Contract or that the decision was wrongly taken, the decision shall be referred to the technical expert within 14 days of the notification of the Member Secretary's decisions.

81.4 Pending finalisation of disputes, the contractor shall proceed with execution of work with all due diligence.

82 Security measures:

- a) Security requirements for the work shall be in accordance with the Government's general requirements including provisions of this clause and the Contractor shall conform to such requirements and shall be held responsible for the actions of all his staff, employees.
- b) All contractors' employees, representatives shall wear identifications badges provided by the contractor. Badges shall identify the contractor, showing and employee's number and shall be worn at all times while at the site. Individual labour will not be required to wear identification badges.
- c) All vehicles used by the contractor shall be clearly marked with contractor's name.
- d) The contractor shall be responsible for the security of the works for the duration of the contract and shall provide and maintain continuously adequate security personnel to fulfil these obligations. The requirements of security measures shall include, but not limited to maintenance

of order on the site, provision of all lighting, fencing, guard flagmen and all other measures necessary for the protection of the works within the colonies, camps and elsewhere on the site, all materials delivered to the site, all persons employed in connection with the works continuously throughout working and non working period including nights, Sundays and holidays for duration of the contract.

- e) Other contractors working on the site concurrently with the contractor will provide security for their own plant and materials. However, their security provisions shall in no way relieve the contractor of his responsibilities in this respect
- f) Separate payment will not be made for provision of security services.

83 Fire fighting measures:

- a) The contractor shall provide and maintain adequate fire fighting equipment and take adequate fire precaution measures for the safety of all personnel in temporary and permanent works and shall take action to prevent damage / destruction by fire of trees, shrubs and grasses.
- b) Separate payment will not be made for the provision of fire prevention measures.

84 Sanitation:

The contractor shall implement the sanitary and watch and ward rules and regulations for all forces employed under this contract and if the Contractor fails to enforce these rules, the Member Secretary may enforce them at the expenses of the Contractor.

85 Training of personnel:

The contractor, shall, if and as directed by the Member Secretary provide free of any charge adequate facilities, for vocational training of Government Officers, students, Engineers, supervisors, foremen, skilled workmen etc. not exceeding six in number at any one time on the contractor's work. Their salaries, allowances etc. will be borne by the Government and the training schemes will be drawn up by the Member Secretary in consultation with the contractor.

86 Ecological balance:

- a) The contractor shall maintain ecological balance by preventing de-forestation, water pollution and defacing of natural landscape. The contractor shall so conduct his construction operation as to prevent any unnecessary destruction, scarring, or defacing of the natural surrounding in the

vicinity of the work. In respect of the ecological balance, Contractor shall observe the following instructions.

- i) Where unnecessary destruction, scarring, damage or defacing may occur, as result of the operation, the same shall be repaired, replanted or otherwise corrected at the contractor's expense. The contractor shall adopt precautions when using explosives, which will prevent scattering of rocks or other debris outside the work area. All work area including borrow areas shall be smoothed and graded in a manner to conform to the natural appearances of the landscape as directed by the Member Secretary.
- ii) All trees and shrubbery which are not specifically required to be cleared or removed for construction purposes shall be preserved and shall be protected from any damage that may be caused by the contractor's construction operation and equipment. The removal of trees and shrubs will be permitted only after prior approval by the Member Secretary. Special care shall be exercised where trees or shrubs are exposed to injuries by construction equipment, blasting, excavating, dumping, chemical damage or other operation and the contractor shall adequately protect such trees by use of protective barriers or other methods approved by the Member Secretary. Trees shall not be used for anchorages. The contractor shall be responsible for injuries to trees and shrubs caused by his operations. The term "injury" shall include, without limitation bruising, scarring, tearing and breaking of roots, trunks or branches. All injured trees and shrubs be restored as nearly as practicable without delay to their original condition at the contractor's expense.
- (iii) The contractor's construction activities shall be performed by methods that will present entrance or accidental spillage of solid matter contaminants, debris and other objectionable pollutants and wastage into river. Such pollutant and waste include earth and earth products, garbage, cement concrete, sewage effluent, industrial wastes, radioactive substances, mercury, oil and other petroleum products, aggregate processing, mineral salts and thermal pollution. Pollutants and wastes shall be disposed off in a manner and at sites approved by the Member Secretary.
- (iv) In conduct of construction activities and operation of equipments the contractor shall utilise such practicable methods and devices as are reasonably available to control, prevent and otherwise minimise the air pollution. The excessive omission of dust in to the atmosphere will not be permitted during the manufacture, handling and storage of concrete aggregates and the contractor shall use such methods and equipment as

necessary for collection and disposal or prevention of dust during these operation. The contractor's methods of storing and handling cement shall also include means of eliminating atmospheric discharges of dust, equipment and vehicles that give objectionable omission of exhaust gases shall not be operated. Burning of materials resulting from clearing of trees, bushes, combustible construction materials and rubbish may be permitted only when atmospheric conditions for burning are considered favourable.

- b) Separate payment will not be made for complying with the provisions of this clause and all cost shall be deemed to have been included in the unit rates and prices included in the contract if any provision is not complied with within a reasonable time even after issue of a notice in this respect, the necessary operations would be carried out by the Member Secretary at the cost of the Contractor, Orders of the Member Secretary in this respect would be final and binding on the contractor.

87 Preservation of existing vegetation:

- a) The contractor will preserve and protect all existing vegetation such as trees, on or adjacent to the site which do not unreasonably interfere with the construction as may be determined by the Member Secretary. The contractor will be held responsible for all unauthorised cutting or damage of trees, including damage due to careless operation of equipment, stockpiling of materials or trekking of grass areas by equipment. Care shall be taken by the Contractor in felling tress authorised for removal to avoid any unnecessary damages to vegetation and tress that are to remain in place and to structures under construction or in existence and to workmen.
- b) All the produce from such cutting of trees by the contractor shall remain the property of Government and shall be properly stacked at site, approved by the Member Secretary. No payment whatsoever, shall be made for such cutting and its stacking by the Contractor. If any produce from such cutting is not handed over to the Government by the contractor, he shall be charged for the same at the rates to be decided by the Member Secretary. The recovery of this amount shall be made in full from the intermediate bill that follows.
- c) The contractor shall also make arrangements of fuel deposits for supply of required fuel for the labourer to be employed for cooking purpose at his own cost in order to prevent destruction of vegetation growth in the surrounding area of the work site.

88 Possession prior to completion:

The Member Secretary shall have the right to take possession of or use any completed part of work or works or any part there of under construction either temporarily or permanently. Such

possession or use shall not be deemed as an acceptance of any work either completed or not completed in accordance with the contract with in the interest of Clause 28 of APSS except where expressly otherwise specified by the Member Secretary.

89 Payment upon termination:

If the contract is terminated because of a fundamental breach of contract by the contractor, the Member Secretary shall issue a certificate for the value of the work done less advance payment received upon the date of the issue of the certificate and less the percentage to apply to the work not completed as indicated in the contract data. Additional liquidated damages shall not apply. If the total amount due to the Department exceeds any payment due to the contractor the difference shall be a debt payable to the Department. In case of default for payment within 28 days from the date of issue of notice to the above effect, the contractor shall be liable to pay interest at 12% per annum for the period of delay.

90 Access to the contractor's books:

Whenever it is considered necessary by the Member Secretary to ascertain the actual cost of execution of any particular extra item of work or supply of the plant or material on which advance is to be made or of extra items or claims, he shall direct the contractor to produce the relevant documents such as payrolls, records of personnel, invoices of materials and any or all data relevant to the item or necessary to determine its cost etc. and the contractor shall when so required furnish all information pertaining to the aforesaid items in the mode and manner that may be specified by the Member Secretary.

91 Drawing to be kept at site:

One copy of the drawings furnished to the contractor shall be kept by the contractor on the site and the same shall at all reasonable time be available for inspection and use by the Member Secretary and the Member Secretary's representative and by any other persons authorised by the Member Secretary in writing.

92 B.I.S. [I.S.I.] books and Jharkhand Standard Specifications book to be kept at site:

A complete set of Indian Standard specification referred to in "Technical Specifications" and JSS book shall be kept at site for reference.

93 Site Order Book:

An order book shall be kept at the site of the work. As far as possible, all orders regarding the work are to be entered in this book. All entries shall be signed and dated by the Department

Officer in direct charge of the work and by the contractor or by his representative. In important cases, the Member Secretary or the officer authorised will countersign the entries, which have been made. The order book shall not be removed from the work, except with the written permission of the Member Secretary.

94 Variations by way of modification, omissions or additions:

For all modifications, omissions from or additions to the drawings and specifications, the Member Secretary will issue revised plans, or written instructions, or both and no modification, omission or addition shall be made unless so authorised and directed by the Member Secretary in writing.

The Member Secretary shall have the privilege of ordering modifications, omission or additions at any time before the completion of the work and such orders shall not operate to annul those portions of the specifications with which said changes do not conflict.

Member Secretary's Decision:

It shall be accepted as in separable part of the contract that in matters regarding materials, workmanship, removal of improper work, interpretation of the contract drawings and contract specification, mode of the procedure and the carrying out of the work, the decision of the Member Secretary, which shall be given in writing shall be binding on the contractor.

95 Care and diversion of river/stream:

The contractor shall submit details regarding the diversion and care of river or stream during construction of the work along with a separate print-out of the time table showing earliest and latest start and finish dates of various activities. He should submit a detailed layout plan with drawings for the diversion and care of river during construction of work. The above arrangements shall be at contractor's cost.

96 Income tax:

- a) During the currency of the contract deduction of income tax at applicable rates shall be made from the gross value of each bill of the contract.
- b) Income Tax clearance certificate should be furnished before the payment of final bill.
- c) The contractor's staff, personnel and labour will be liable to pay personnel income taxes in respect of their salaries and wages as are chargeable under the laws and regulations for the time being in force, and the contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.

97 (GST):

98 GST will be deducted at applicable rates on Net Value of Each Bill while making payment to the Contractor.

99 Supply of construction materials:

- i) The contractor has to make his own arrangements for procurements, supply and use of construction materials.
- ii) All materials so procured should confirm to the relevant specifications indicated in the bidding documents.
- iii) The contractor shall follow all regulations of the Department/Government of India in respect of import licences etc., if the procurement of the materials is through imports and he shall be responsible for the payment of applicable duties and taxes, port clearances, inland transportation etc.
- iv) The contractor shall make his own arrangements for adequate storage of the materials.

100. The contractor will not have any right for claiming any interest for the delays in payments if any that occurs during execution due to administrative reasons.

The delay or non payment of part bills cannot be a reason or alibi for the contractor to slow down/stop the work. In other words the essence of contract remains the completion of the work within the stipulated time notwithstanding anything regarding timing of the payments .

101 CONSTRUCTION MATERIALS

101.1 The contractor has to make his own arrangement for procurement, supply and use of all construction materials including cement, steel and blasting materials etc., and compliance of following should be ensured.

- a) All materials so procured should confirm to the relevant specifications indicated in the tender documents or to alternative standards or specifications which are equal or higher in quality than those specified subject to Member Secretary's prior review and written approval difference between the standards specified and the proposed alternatives must be fully described by the contractor and submitted to Member Secretary's at least 30 days prior to the date when the contractor desires Member Secretary's approval. In the event Member Secretary determines that the alternative do not ensure equal or higher quality the same will be rejected and the contractor shall comply with the standards set forth within the documents.
- b) All materials to be supplied should fully confirm to provisions of A.P.S.S. / I.S. Specifications as applicable.

101.2 Materials, workmanship, period and certificate of maintenance and defect liability, quality:-

All materials and workmanship shall be of the respective kinds described in the contract and in accordance with Member Secretary's instructions and shall be subjected from time to time to such tests as the Member Secretary may direct at the place of manufacture or fabrication or on the site or at such other place or places as may be specified in the contract, or at all or any of such places. The contractors shall provide such assistance, instruments, machines, labour and materials as are normally required for examining measuring and testing the work and the quality weight or quantity of any materials used and shall supply samples of materials before incorporation in the works for testing as may be selected and required by the Member Secretary.

101.3 Tests, inspection of defective materials:

The contractor shall without extra cost provide samples and co-operate in the testing of materials. The Member Secretary shall have access at all times to the places of storage and where materials are being manufactured and proceeded for use in the works under contract to determine whether their manufacture and process are proceeding in accordance with the drawings and specifications. The Member Secretary shall during the progress of the works have power to order in writing from time to time in respect of the following.

- a) The removal from the site, within such time or times as may be specified in the order of any materials which in opinion of the Member Secretary, are not in accordance with contract.
- b) The substitution of proper and suitable materials and
- c) The removal and proper re-execution, not with standing of any work which in respect of materials or workmanship is not, in the opinion of the Member Secretary, in accordance with contract.

The contractor shall carry out such order at no extra cost to the Member Secretary. In case of default on the part of the contractor in carrying out such order, the Member Secretary shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be recoverable from the contractor by Member Secretary or may be deducted by the Member Secretary from any monies due to or which may become due to the contractor.

In lieu of removing the work or materials not in accordance with the contract the Member Secretary may order such work or materials to remain and in that case such may be paid at the reduced rates as may be decided by Member Secretary. However any action by the Member Secretary under this para shall not any way absolve the contractor from his responsibility and liabilities as per conditions of contract.

101.4 CEMENT

The contractor has to make his own arrangements for the procurement of cement of required specification for works subject to the following:

- a) The contractor shall procure bulk cement required for the works, only from cement factories (Main producers) of approved make and brand only as approved by the Member Secretary. The contractor shall make own arrangements for adequate storage of cement.
- b) The contractor shall procure cement in standard packing (50 Kg per bag) from the authorised manufacturers. The contractor shall make necessary arrangement at his own cost to the satisfaction of Member Secretary for actual weighment of random sample from the available stock and shall confirm with the specification laid down by the Bureau of Indian standards or other standard institutions as the case may be. Cement shall be got tested for all the tests as

directed by the Member Secretary at least once in a month in advance before the use of cement bags brought and kept at site godown.

Cement bags required for testing shall be supplied by the contractor free of cost.

- c) The contractor should store the cement of 60 days requirement at least one month in advance to ensure the quality of cement so brought to site and shall not remove the same without the written permission of the Member Secretary.

The contractor shall forthwith remove from the works area any cement that the Member Secretary may disallow for use on account of failure to meet with required quality and standard.

- d) The contractor will have to construct sheds for storing cement having capacity not less than the cement required for 90 days use at appropriate locations at the work site. The Member Secretary or the representatives shall have free access to such stores at all times.
- e) The contractor shall further at all times satisfy the Member Secretary on demand by production of records and books or by submission of returns and other proofs as directed that the cement is being used as tested and approved by Member Secretary for the purpose and the contractor shall at all times keep his records up to date to enable the Member Secretary to apply such checks as he may desire.
- f) Cement which has been unduly long in storage with the contractor or alternatively has deteriorated due to inadequate storage and thus become unfit for use on the work shall be rejected by the department and no claims will be entertained. The contractor shall forthwith remove from the work area any cement the Member Secretary may disallow for use on work and replace it by cement complying with the relevant Indian Standards.

101.5 STEEL

The contractors shall procure mild steel (M S) reinforcement bars, High yield strength deformed bars (HYSD) bars, rods and structural steel etc., required for the works, only from the main or secondary producers, manufacturing steel to the prescribed specification of Bureau of Indian Standards or equivalent and licensed to affix ISI or other equivalent certifications marks and acceptable to the Member Secretary. Necessary test certificates for each consignment are to be produced to Member Secretary before use on works. The original bills of procurement should be submitted to the Member Secretary for making payment of the item.

The diameter and weight of steel should be as follows:

S.No.	Diameter of rod	Sectional weight in Kg/RM both for Plain and HYSD steel
1.	6 MM	0.22
2.	8 MM	0.39
3.	10 MM	0.62
4.	12MM	0.89
5	14 MM	1.21
6.	16 MM	1.58
7.	18 MM	2.00
8.	20 MM	2.47
9.	22 MM	2.98

10.	25 MM	3.85
11.	28 MM	4.83
12.	32 MM	6.31
13.	33 MM	6.71
14.	36 MM	7.99
15.	40 MM	9.86
16.	42 MM	10.88

Note: If any rods other than those diameters specified above are procured the weights shall be as per standard steel tables.

102 STORAGE OF CEMENT etc.,

102.1 It is often necessary to store Portland cement, some times for a period months. This is particularly true when transportation facilities must be need to their capacity and deliveries.

102.2 Portland cement readily absorbs moisture not only in the form of free water but also moisture from the atmosphere or from damp material in contact with it and becomes hydrated and loses strength. It is necessary therefore that it should be protected from absorption of moisture before it is used if it is to fulfill its function. An absorption of one or two percent of water has not appreciable effect but further amounts of absorption, results in hardening of the cement and reduced the strength. If the absorption exceeds 5% the cement is for all ordinary purposes ruined. Finally ground cement stored in stacks tend to deteriorate more than coarse cements. In this respects normal hardening Portland cement and high aluminium cements at least affected than rapid hardening Portland cement.

102.3 American, Spanish and German experiments have shown that on average the strength of cement stress in bags is reduced.

After 3 months by 15 to 20 percent.

After 6 months by 20 to 30 percent.

After 12 months by 30 to 50 percent.

After 2 years by 10 to 50 percent.

After 4 1/2 years by 50 to 60 percent.

102.4 These figures prove that special attention should be paid to the storage of cement, even when its strength is equal to or suspense's the specified normal strength.

102.5 With an extensive range of climate conditions it is difficult to lay down universal rules for the storage of cement by the general principle should always be kept in mind that it must be protected as far as possible from any form of moisture prior to mixing concrete mortar.

102.6 During the dry weather in main parts of the country where the relative humidity of the atmosphere even in nights is low (that is to say when there is very little moisture in the air) little or no protection may be necessary and the cement in its stock may require no more than a tarpaulin through for the stack. But there are parts of the country particularly near the coast where the atmosphere is always damp at any time of day or night and then greater precautions are necessary. In such place such as the west coast and the Niligiries and period when heavy rain falls are encountered such greater care has to be taken of the cement and proper strength provided it from the damp.

102.7 Whenever there is any possibility of the cement exposed to moisture either in the atmosphere or actual ratio it should be stored in a well constructed dry godown or shed. The cement store should be whether right construction preferable with terraced roofing with a sound wooden or ground to ensure that it is damp proof building with plant roofing are prohibited because of their tendency to leak. Corrugated sheets roofing has tendency to the condense moisture and should be protected by field to prevent wind and rain driving through cement should not be placed directly on cement plaster flooring and other types of flooring commonly meant with which are not damp proof. A wooden platform or false floor a sheet of water proof paper should be provided.

If none of these is possible than floor should be covered with straw, hay, cinder or ash or such other material densely and uniformly packed to a thickness of at least one inch and over a laid worth tarpaulin of old cement large windows and ventilators if any should be slightly shut to prevent from circulation of air inside the stores drainage should be provided if necessary to prevent accumulation of water in the vicinity of the store.

102.8 Cement should be stored in piles arranged parallel to the walls. It is advisable to pile bags against the walls and an allowance of at least 0.3M all round should be made between the exterior walls piles at least 0.6M wide should be left for each access and delivery. The outside stacks deterior a similar pile. Successive consignments covered with some water proof cover as a both measure of protection and prevent the free circulation of air as each lot of proper fresh air will bring in more moisture. Once the cement has been properly stored should not be disturbed until it is to be used. There is no advantage in moving and stacking the bags to reduce where house set as this practice only exposes fresh cement to the air resulting in loss due to the shifting of cement through the cloth mesh and in damage to the stacks.

102.9 Cement required for use immediately after delivery to the site may be stored in the open on a raised damp proof floor so long as it is fully protected by tarpaulin or either weather resisting covers. Storage under these conditions should be limited to 48 hours. The tarpaulin should be raised well above the top most Tie of bags and must be sloped for rapid drainage in case of showers.

102.10 The storage place required for a given quantity of cement can be calculated from the following date. If spread losses over the floor of a store to a depth of 1st floor a ton of cement required about 2.50 Sqm. If stored in paper bags laid on their side the area required is 5.00 Sqm to 6.00 Sqm. per ton if laid in a single tier and proportionately less if laid on more than one tier. If the bags are stacked in any other manner feet portion the minimum area provided should be increased to allow space for passenger etc., to avoid house set in any case not more than 15 bags. If stacked higher than this the pressure on the bottom bags is liable to burst at or form clad in damp water apart from handling difficulties because of their height.

102.11 Consignments should be used in the same sequences as they are delivered. To ensure this the date of arrival of each consignment should be clearly indicated. This is best done by tying a piece of country twines or cord to the end bags in the bottom most tier of the days pile, tacking the two places of card up the sides and along the top of pile an tying the main the centre. The date of receipt in the store being clearly written on a bin card high from the card. Dead storage where the cement remains in place for a long time which other consignments of cement come in and out should be avoided.

102.12 In issuing cement from a store the cement bags should be removed in vertical column of the pile and not horizontal so as to avoid dead stoppage space.

102.13 As a rule cement should not be stored longer than three months and if time is exceeded the material should be retested being needed. Especially in the rainy season prolonged storage should be avoided. If stuck is likely to be held over for more than three months anticipatory measures should be taken to use it on the works.

102.14 Cement that has become supply due to storage in damp positions due to exposure to the weather is generally useless for making concrete and should be removed from the site. Air set lumps that can be broken down to floor with the pieces. If such lumps are innumerable it is easier to screen

them out and discard them if the proportion of air cement is considerable. The fine material after screening should be tested to determine whether it has become defective.

102.15 The cement in bags is stored in high piles for long periods. There is often a slight tendency in the lower layers to harden, caused by the pressure above this is known as warehouse set. Cement in this condition, an every wet not for service and can be reconditioned by letting each drop on a solid surface for using the cement contained.

102.16 All cement concrete shall be machine mixed and machine vibrated.

102.17 The proportions of cement concrete specified in the above schedule are nominal and are indication of approximate proportion of cement, fine aggregate and coarse aggregate which may have to be altered suitably at site to obtain desired strength and workability. However, the quantity of cement all not be less than specified below:

Nominal Mix	Cement in bags of 50 Kgs per one Cubic metre (net) of cement concrete
a) 1 : 1.5 : 3	8.84 bags of 50 Kgs.
b) 1 : 2 : 4	6.62 bags of 50 Kgs.
c) 1 : 2.5 : 5	5.30 bags of 50 Kgs.
d) 1 : 3 : 6	4.42 bags of 50 Kgs.
e) 1 : 4 : 8	3.31 bags of 50 Kgs.
g) 1 : 5 : 10	2.65 bags of 50 Kgs.

Theoretical requirement of cement for

a) C.R.S. Masonry in C.M. (1: 6)	1.54 bags per Cum
b) C.R.S. Masonry in C.M. (1: 8)	1.15 bags per Cum
c) Brick Masonry in C.M. (1: 4)	1.44 bags per Cum
d) Brick Masonry in C.M. (1: 6)	0.96 bags per Cum
e) Brick Masonry in C.M. (1: 8)	0.72 bags per Cum
f) 12mm plastering in C.M. (1:5) & (1:3)	1.02 bags per 10 Sqm.
g) 12mm plastering in C.M. (1:6) & (1:4)	1.02 bags per 10 Sqm.
h) 20mm plastering in C.M. (1:6) & (1:4)	1.02 bags per 10 Sqm.
i) 12mm plastering in C.M. (1:4)	1.08 bags per 10 Sqm.
j) 12mm plastering in C.M. (1:6)	0.72 bags per 10 Sqm.

103 Conditions on Roof Slabs and Stripping time

103.1 The R.C.C. slab laid should be leak proof. After observing for two rainy seasons if the roof or floor is found to be perfectly leak proof and no moisture or dampness is seen underneath at ceiling of the slab, the contractor can ask for refund of E.M.D. or F.S.D. from the department. If there are any defects noticed after laying of roof they must be attended to by the contractor at his own cost. Further the contractor must arrange to get the structure treated as per clause 21 of ISI code No.456/2000 at his own cost on the instructions of the department.

When R.C.C. slab is laid the following tests may be carried out by the contractor at his own cost to prove that the slab is impervious.

After the centring is removed and curing period is over the slab shall be put to test by pouring water to 15 cms. depth and watched carefully for period not less than a week.

If leakage is observed immediate action should be taken to rectify it by the contractor at his own cost and again tested to see that there are no leakages.

The officer observing the leakage test shall issue a certificate to this effect before final bill is made.

The variation thickness of R.C.C. roof slab due to varying spans, or special covering materials should not effect the general roof bed which should be uniform unless otherwise shown in drawings or instructed.

For roof slab to be laid MS hooks to be provided as directed by the department for fixing fans and lighting G.I. pipes of 12mm or 20mm dia meter supplied by the department at site has to be provided in the masonry walls of a concrete at the specified places as directed by the department for making electrical wiring. No payment will be made to the contractor for these sundry items of work.

For roof slabs water has to be stagnated for 15 cms depth for one week to test the leakages if any. If there are any leakages the contractor has to rectify the same as directed by the department at the cost of the contractor. No payment will be made to the contractor on this account either for testing or for rectifications thus stagnated.

103.2 Stripping Time: Forms shall not be struck until the concrete has reached a strength at least twice the stress to which the concrete may be subjected at the time of removal of form work. The strength referred to shall be that of concrete using the same cement and aggregates, with the same proportions and cured under conditions of temperature and moisture similar to these existing on the work. Where possible, the form work shall be left longer as it would assist the curing.

Note 1:- In normal circumstances and where ordinary Portland cement is used form work may generally be removed after the expiry of the following period.

- a) Walls, Columns and Vertical faces - 24 to 48 hours as may be of all structural members decided by the Engineer-in-charge
- b) Slabs (props left under) 3 days
- c) Beam sop fits (props left under) 7 days
- d) Removal of props under slabs
 - i) Spanning upto 4.5 Mts. 7 days
 - ii) Spanning over 4.5 Mts. 14 days
- e) Removal of props under Beams & Arches
 - i) Spanning upto 6 Mts. 14 days
 - ii) Spanning over 6 Mts. 21 days

For other cements the stripping time recommended for ordinary Portland cement may be suitably modified.

Note2:- The number of props left under the concrete element, their sizes and description, shall be such that they shall be able to safely carry the full dead load of the slab, beam or arch as the case may be together with any live load likely to occur during curing or further construction.

SCHEDULE -C

LIST OF SPECIFICATIONS FOR THE VARIOUS ITEMS OF WORKS SUPPLEMENTING THOSE DESCRIBED IN SCHEDULE 'A' BY S.S. NUMBERS

Sl.No.Short Title	I. S. Number
I. CEMENT:	
1. 43 Grade ordinary port Portland cement	8112-1989
2. Methods of physical tests for hydraulic comments	4031 (Part 1 to 15) - 1988
II. AGGREGATES:	
1. Aggregates (Coarse and fine) from natural source for concrete	383 - 1970
2. Specification for sand for masonry :	2116-1980
3. Method of tests for aggregates for concrete :	2386 (Part-I to IV) - 1963
III. BUILDING STONES:	
1. Method of Tests for determination of strength properties of natural building stones Part - I : Compressive strength Part - II : Transverse strength Part - III : Tensile strength Part - IV : Shear strength	1121 (Part I to IV) - 1974
2. Quarrying stones for construction purposes, recommended practice	83831-1977
3. Measurement of buildings and Civil Engineering Works	1200 (Part-IV) - 1976
4. Stone Masonry: Specifications for dressing natural building stones	1129-1972 (Part – IV)
5. Drilling and permeability tests	5529 (Part III) - 1973
6. Code of practice for permeability tests (during and after construction)	11216 - 1985
IV. STEEL	
1. Code of practice for bending and fixing of bars for concrete reinforcement	2502-1963
2. Specifications for High Strength Deformed Steel bars and Wires for concrete reinforcement :	1781-1985
3. Recommendation for detailing of reinforcement in reinforced Cement concrete works	5525-1969
4. Mild steel and Medium Tensile steel bars for concrete reinforcement	432 (Part – VIII) – 1982
5. Measurement of Building and Civil Engineering works Part - VIII Steel works and iron work)	1200 (Part – VIII) - 1993

V. MASONRY

1. Code of practice for construction of stone masonry Rubble stone masonry 1597 (Part-1) - 1992
2. Measurement of building and Civil Engineering Works Plastering and pointing. 1200 (Part-XII) - 1976

VI. CONCRETE:

1. Measurement of building and Civil Engineering Works method of concrete works 1200 (Part-II) - 1974
2. Concrete works : Code of practice for plain and reinforced concrete 456 - 1978
3. Pre cast concrete coping blocks 5751 - 1984
4. Method of Testing for strength of concrete 516 - 1959
5. Specification for Admixtures for concrete 9103 - 1979
6. Method of sampling and analysis of concrete 1199 - 1976
7. Concrete mixer - batch type 1791 - 1968
8. Concrete Vibrators - Immersible type 2505 - 1980

VII. EARTH WORK :

1. Measurement of building and Civil Engineers Works method for earth work 1200 (Part – 1) - 1974
2. Safety Code for filling and other deep foundations 5121 - 1969
3. Safety Code for excavation works 3701 - 1966
4. Code of practice for earth work on canals 4701 - 1982
5. Method of testing for soils Determinations of Water content 2720 (Part – II) - 1973
6. Determination of water content dry density relation using light compaction 2720 (Part-VIII) - 1980
7. Determination of Dry density of soils in place by sand replacement method (first revision) 2720 (Part – XXVII) - 1974
8. Determination of dry density of soils in – situ 270 (Part – XXIX) - 1975

VIII. OTHER SUBJECTS:

1. Safety code for scaffolds 3698 (Part – I) - 1968
2. Safety Code for ladders 3696 (Part – II) - 1966
3. Recommendation of stacking and storage of construction materials at site 4082 – 1977

DRAWINGS

DRAWINGS:

- 1.1 The plans enclosed with the bid are liable to be altered during execution of work as per necessity of site conditions. The premium quoted by the contractor for various items shall hold good for execution of work even with altered plans.
- 1.2 One set of drawings, on the basis of which actual execution of the work is to proceed shall be furnished free of cost to the contractor by the Member Secretary progressively according to the work program submitted by the contractor and accepted by the Member Secretary. Drawings for any particular activity shall be issued to the contractor at least 30 days in advance of the scheduled date of the start of the activity. However, no extra claims by the contractor towards any delay in issue of drawing or issue of any revision / change to the drawings issued earlier shall be admissible. The Member Secretary shall intimate the contractor 7 days in advance regarding any delay to issue of drawings, for any particular stage of work. If work gets effected due to delay in issue of drawings, for any particular stage of work the contractor shall be granted extension of time in terms of existing procedure.
- 1.3 Signed drawings above shall not be deemed to be an order for work unless they entered in the agreement or schedule of drawings under proper alterations of the contractor and Member Secretary or unless they have been sent to the contractor by the Member Secretary with a covering letter confirming that the drawing in and authority for work in contract.

1.0 DISCREPANCIES:

- 2.1 In case of discrepancies between documents the following order of procedure shall apply:-
 - 2.1.1 Between the written description of written dimensions in the drawings and the corresponding one in the specifications, the latter shall apply.
 - 2.1.2 Figured dimensions shall supersede scaled dimensions. The drawings on a larger scale shall take precedence over those on a smaller scale.
 - 2.1.3 Drawings issued as construction drawings from time to time shall supersede bid drawings and also the correspondence drawings previously issued.

Note: The contractor should not execute any component of work without obtaining the working drawings. Any work done without drawings shall be at the contractor's responsibility only. Acceptance for such work will be at the discretion of the Member Secretary.

2.0 SECRECY CLAUSE:

The drawings and specifications made available to the bidder shall exclusively be used on the work and they are retained from passing on each plan to any unauthorised hand either in parts or in full under the provisions of Section-3 and 5 of the official secrets Act 1923. Any violation in this regard will entail suitable action under appropriate clause or official secret Act 1923.

BILL OF QUANTITIES

NAME OF WORK: - Construction of Entrance Plaza at Bhagawan birsa biological Park at Ormanjhi, Ranchi

BILL OF QUANTITIES

(SEPARATE SHEET ENCLOSED)

PREAMBLE

1. The Bill of Quantities shall be read in conjunction with the instructions to Bidders, General and Special conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional and are given to provide common basis for bidding. *The quantities here given are those upon which the lumpsum bid cost of the work is based but they are subject to alterations, omissions, deductions or additions as provided for in the conditions of this contract and do not necessarily show the actual quantities of work to be done.* The basis of payment will be actual quantities of work ordered and carried out as measured by the Contractor and verified by the member secretary and valued at the estimate rate plus or minus bid percentage quoted in the Bill of Quantities where applicable, and otherwise at such rates and prices as the Member Secretary may fix within the terms of Contract.
3. The estimate rates in the Bill of Quantities shall, except in so-far as it is otherwise provided under the Contract include cost of all constructional material, labour, machinery, transportation, erection, maintenance, profit, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract.
4. The plans enclosed with the bid are liable to be altered during execution of work as per necessity of site conditions. The Bid percentage quoted by the bidder shall hold good for execution of work even with altered plans.
5. The whole cost of complying with the provisions of the Contract shall be included in the estimated rates for items provided in the Bill of Quantities and where no items are provided in the Bill of Quantities, their cost shall be deemed to be distributed among the estimate rates entered for the related items of work.

6. General directions and descriptions of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering estimate rate against each item in the Bill of Quantities.
7. The method of measurements of completed work for payment shall be in accordance with the relevant B.I.S. Codes & Jharkhand S. Specifications.
8. All items of work are to be executed as per the drawings / specifications supplied with the contract documents.

If there is any contradiction between the drawings and the text of the specifications, the later shall prevail.

9. The Bidder should inspect and select the quarries of his choice before he quotes the bid percentage in the Schedule of Bill of Quantities and satisfy himself about the availability of required quantum of materials.
10. Diversion drains should be excavated before completion of the embankments and the useful soils should be used in the nearby embankments.
11. The actual mix proportion by weight to be adopted during execution will be got designed in the laboratories to suit the grade of concrete and mortar to be used. It will be the responsibility of the contractor to manufacture concrete and mortar of required strength.
12. The quantum of measurement for all items of earthwork involving conveyance manually or by machinery shall be as assessed by level measurement. The measurements for the embankment will be for the consolidated banks only.
13. Wherever bailing out of water is involved either for excavation or for foundations or for constructions, the percentage quoted shall take into account the dewatering charges necessary. No separate payment will be made for dewatering.

14. Wherever embankment work is involved, useful soils approved by the Member Secretary from the cutting reaches and diversion drains shall be taken and used for forming nearby embankments soils used for constructions will be at free of cost.
15. The quoted bid percentage shall also include the work of any kind necessary for the due and satisfactory construction, completion and maintenance of the works according to the drawings and these specifications and further drawings and orders that may be issued by the Member Secretary from time to time. The quoted bid percentage shall include compliance by the Contractor with all the general conditions of contract, whether specifically mentioned or not in the various clauses of these specifications, all materials, machinery, plant, equipment, tools, fuel, water, strutting, timbering, transport, offices, stores, workshop staff, labour and the provision of proper and sufficient protective works, diversions, temporary fencing and lighting. It shall also include safety of workers, first aid equipments suitable accommodation for the staff and workmen, with adequate sanitary arrangements, the effecting and maintenance of all insurances, the payment of all wages, salaries, fees, royalties / Taxes, duties or other charges arising out of the execution of works and the regular clearance of rubbish, reinstatement and clearing-up of the site as may be required on completion of works safety of the public and protection of the works and adjoining land. The work of Building in quality control / assurance shall be deemed to be covered in the quoted percentage.
16. The Contractor shall ensure that, the quoted bid percentage shall cover all stages of work such as setting out, selection of materials, selection of construction methods, selection of equipment and plant, deployment of personnel and supervisory staff, quality control testing etc. The work quality assurance shall be deemed to be covered in the bid percentage.
17.
 - a) The special attention of the bidder is drawn to the conditions in the bid document wherein reference has been made to the Jharkhand Standard Specifications and the Standard preliminary specifications containing therein. These preliminary specifications shall apply to the agreement to be entered into between the contractor and the Government of Jharkhand and shall form an in-separable condition of the contract along with the estimate. All these documents taken together shall be deemed to form one contract and shall be complimentary to another.
 - b) The bidder shall examine, closely the Jharkhand Standard Specifications and also the standard preliminary specifications contained therein before submitting his overall bid percentage which shall be for finished work in-situ. He shall also carefully study the

drawings and additional specifications and all the documents, which form part of the agreement to be entered into by the successful bidder.

18. The bidders attention is directed to requirements for materials under the clause 'materials and workmanship' in the specifications of JSS. Materials conforming to the Bureau of Indian Standards specifications, JSS etc., shall be used on the work and the bidders shall quote his overall bid percentage accordingly.
19. The bidder has to do his own testing of materials and satisfy himself that they conform to the specifications of respective I.S.I. Codes before bidding.
20. The contractor shall himself procure the required construction materials of approved quality including the earth for formation of embankment and water from quarries / sources of his choice. All such quarries / sources of materials required for the work shall be got approved by the Member Secretary in writing well before their use of the work.
21. The contractor shall himself procure at his own cost the steel, cement, Bitumen, Blasting materials, sand, metal, soils, etc., and such other materials required for the work well in advance. The contractor has to bear the cost of materials and their conveyance. The department will not take any responsibility for fluctuations in market in cost of the materials, transportation and for loss of materials etc.
22. Inspection of site and quarries by the bidder: Every bidder is expected before quoting his overall bid percentage, to inspect the site of proposed work. He should also inspect the quarries and satisfy himself about the quality, and availability of materials. The best class of materials to be obtained from quarries, or other sources shall be used on the work. In every case the materials must comply with the relevant standard specifications. Samples of materials as called for in the standard specifications or in this bid document or as required by the Member Secretary, in any case, shall be submitted for the Member Secretary's approval before the supply to site of work is begun.
23. The bidder's particular attention is drawn to the sections and clauses in the Jharkhand standard specification dealing with
 - a) Test, inspection and rejection of defective materials and work.
 - b) Carriage

- c) Construction plant
- d) Water and lighting
- e) Cleaning up during the progress and for delivery.
- f) Accidents
- g) Delays
- h) Particulars of payments.

The contractor should closely peruse all the specification clauses, which govern the overall bid percentage he is bidding.

- 24. The defect liability period of contract is 18 months.
- 25. The estimate rates for items shown in the Bill of quantities include all construction materials. No escalation in rates will be paid unless specified in the bid document. The bidder has to quote an overall bid percentage considering all the aspects of the bid to complete the finished item of work as per the JSS / B.I.S. specifications, the special specifications appended, Drawings etc.
- 26. If there is any contradiction between JSS and B.I.S. specifications, listed and detailed technical specifications, the latter shall prevail.
- 27. In case of a job for which specifications are not available with the Schedule or in JSS / B.I.S. code and are required to be prescribed, such work shall be carried out in accordance with the written instructions of the Member Secretary.
- 28. The contractor should use the excavated useful soils and stone for construction purpose. Soils used for construction either for homogeneous section in hearting or in casing zone based on the suitability will be at free of cost and the cost of stone used for construction purpose will be recovered from the contractors bill.

The contractor should quote his bid percentage keeping in view of the above aspects.

- 29. Additions and alternations by the Bidder in the Schedule of quantities will disqualify the bid.
- 30. In the case of discrepancies between the written description of the item in the Schedule "A" and the detailed description in the specification of the same item, the latter shall be adopted.

31. The Unit rates noted below are those governing payment of extras or deductions for omissions according to the conditions of the contract as set-forth in the preliminary specifications of the Jharkhand standard specifications and other conditions of specification of this contract.
32. It is to be expressly understood that the measured work is to be taken according to the actual quantities when in place and finished according to the drawings or as may be ordered from time to time by the Member Secretary and the cost calculated by measurement or weight at their respective rates without any additional charge for any necessary or contingent works connected works connected herewith. The Percentage Excess or less on ECV quoted are for works in situ and complete in every respect.
33. For all items of work in excess of the quantities indicated the rates payable for such excess quantities will be bided rates i.e., estimate rates plus or minus bid percentage.
34. For all items of work, intermediate payment will be made provisionally as per relevant clause. Full-accepted agreement rates will be paid only after all the items of works are completed.
35. The contractor is bound to execute all supplemental works that are found essential incidental and inevitable during execution of main work.
36. The payment of rates for supplement items of work will be regulated as under.

Supplemental items directly deductible from similar items in the original agreement.

The rates shall be derived by adding to or subtracting from the agreement rate of such similar item the cost of the difference in the quantity of materials labour between the new items and similar items in the agreement worked out with reference to the schedule of rates adopted in the sanctioned estimate with which the bids are compared.

- a) Similar items but the rates of which cannot be directly deducted from the original agreement.
- b) Purely new items which do not correspond to any item in the agreement.

The rate of all such items shall be estimated rates plus or minus overall bid percentage.

37. ENTRUSTMENT OF ADDITIONAL ITEMS.

- a) Where ever additional items not contingent on the main work and outside the scope of original agreement are to be entrusted to the original contractor dispensing with bids and if the value of such items exceeds the limits upto which the officer is empowered to entrust works initially to contractor without calling for bids approval of next higher authority shall be obtained. Entrustment of all such items on nomination shall be rates not exceeding the estimate rates.

- b) Entrustment of supplement items contingent on the main work will be authorised by the officers upto the monetary limits upto which they themselves are competent to accept items in the original agreement so long as the total amounts upto which they are competent to accept in an original agreement rates for such items shall be worked in accordance with the existing procedure prescribed by the Government.

Note: It may be noted that the term estimate rate used above means the rate in the sanctioned estimate with which the bid's compared or if no such rate is available in the estimate the rate derived will be with reference to the schedule of rates adopted in the sanctioned estimate with which bids are compared.

Form- A
PRICE BID

Tender Notice No.: 4/2020

Name of Work: Construction of Entrance Plaza at Bhagawan Birsa Biological Park.
Ormanjhi Ranchi.

Estimated Contract Value: Rs. 2,12,11,756/- (Rs. Two Crore Twelve Lakhs Eleven Thousand Seven Hundred Fifty Six only)

I, Sri / Smt./ M/s. do hereby express my willingness to execute the aforesaid work as per the conditions, standards, specifications, rules, regulations, etc., stipulated in the Bid Documents.

a) at an overall tender percentage of (in figures).....(in words) **excess / less** over estimate contract value.

OR

b) at estimated contract value.

Signature of the bidder

Name & Seal.

ENTRANCE PLAZA, ORMANJHI, RANCHI (JHARKHAND)			
Rates as per SOR-2018-19/ DSR 2018			
BILL OF QUANTITIES: SUMMARY OF PRICES			
S. No.	SECTIONS	Rs.	Amount
A	<i>CIVIL WORKS</i>	Rs.	16,212,622.33
B	<i>ELECTRICAL WORKS</i>	Rs.	855,117.00
C	<i>PLUMBING AND SANITARY WORKS</i>	Rs.	1,169,955.00
D	<i>HORTICULTURE</i>	Rs.	126,519.90
F	<i>Miscellaneous</i>	Rs.	203,500.00
	<i>TOTAL</i>	Rs.	18,567,714.23
	<i>GST</i>	12.00%	2,228,125.71
	<i>TOTAL (adding GST)</i>	Rs.	20,795,839.94
	<i>Labour Cess</i>	1.00%	207,958.40
	<i>Contingency</i>	1.00%	207,958.40
	TOTAL(Including GST, Labour Cess and Contingency)	Rs.	21,211,756.74
		Say	Rs. 2.12 Crores

PART-A : CIVIL WORKS										
SOR No.	S.No.	Particulars	No.	Length	Width	Height	Qty.	Unit	Rate	Amount
		SITE CLEARANCE								
5.10.1	1	Dismantling pucca brick or lime work including stacking serviceable materials in countable stacks within 15M. Lead and disposal of unserviceable materials with all leads all complete as per direction of E/I.	6	30.00	0.23	3.00	124.20	cum	390.16	48,457.87
5.10.3	2	Dismantling R.C.C. work including stacking serviceable materials in countable stacks within 15M. Lead and disposal of unserviceable materials with all leads all complete as per direction of E/I.	6	15.00	7.00	0.15	94.50	cum	1,435.57	135,661.37
5.10.4	3	Dismantling patent stone floor including stacking serviceable materials in countable stacks within 15M. Lead and disposal of unserviceable materials with all leads all complete as per direction of E/I.								
		Interior	6	15.00	7.00		630.00			
		Exterior	2	40.00	4.00		320.00			
							950.00	sqm	29.35	27,882.50
5.1		EARTHWORK								
5.1.1	4	Earthwork in excavation in foundation trenches in ordinary soil (vide classification of soil item -A) and disposal of excavated earth as obtained to a distance upto 50 M. including all lifts, levelling,ramming the foundation trenches, removing roots of trees, shurbs all complete as per approved design, building specification and direction of E/I.								
		For Foundation								
		Plaza	1	300	2.5	1.6	1200.00			
		Washrooms	1	50	2.5	1.6	200.00			
							1400.00	cum	109.36	153,104.00
5.1.2	5	Extra for earthwork in hard soil as per specification and direction of E/I (Vide classification of soil item-B).								
		For Foundation								
		Plaza	1	300	2.5	1.6	1200.00			
		Washrooms	1	50	2.5	1.6	200.00			
							1400.00	cum	11.17	15,638.00

5.3		CONCRETE WORKS								
		P.C.C.								
5.3.2	6	Providing P.C.C. M-150 in nominal mix of (1:2:4) in foundation with approved quality of stone chips 20 mm to 6 mm size graded and clean coarse sand of FM 2.5 to 3 including screening, shuttering mixing cement concrete in mixer and placing in position, vibrating, striking, curing, taxes and royalty all complete as per building specification and direction of Engineer-in-charge.								
		UNDER FOOTING								
		F1	8	2.4	1.8	0.1	3.46			
		F2	12	2.7	2.1	0.1	6.80			
		CF1	4	4.9	2.1	0.1	4.12			
		CF2	3	3.8	1.8	0.1	2.05			
							16.43	cum	5,358.83	88,034.86
		PCC UNDER WALL								
		Plaza Wall	1	250	2.5	0.1	62.5			
		Washrooms	1	42	2.5	0.1	10.5			
							73.00	cum	5,358.83	391,194.59
		<i>GROUND FLOOR</i>								
		UNDER FLOOR								
		Plaza Wall	1	32.55	19.5	0.1	63.47			
			1	10.23	10	0.1	10.23			
		Washrooms	1	13.71	3.6	0.1	4.94			
							78.64	cum	5,358.83	421,408.21
		R.C.C.								
5.3.5.1	7	Providing RCC M-200 with nominal mix of (1:1.5:3) in foundation and plinth with approved quality of stone including screening, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement, taxes and royalty all complete as per building specification and direction of E/l.								
		FOOTING								
		F1	8	2.1	1.5	0.35	8.82			
		F2	12	2.4	1.8	0.35	18.14			
		CF1	4	4.6	1.8	0.45	14.90			
		CF2	3	3.5	1.5	0.35	5.51			
							47.38	cum	5,358.83	253,904.04

		(M-25)									
		<i>NECK COLUMN</i>									
		column (230*450)	13	0.23	0.45	1.85	2.49				
		column (230*600)	15	0.23	0.6	1.85	3.83				
		column (230*375)	6	0.23	0.375	1.85	0.96				
							7.28	cum	5,358.83	38,991.12	
		<i>PLINTH BEAM</i>									
		Plaza	1	250	0.23	0.45	25.88				
		Washrooms	1	42	0.23	0.45	4.35				
							30.22	cum	5,358.83	161,954.56	
5.3.8	8	Providing RCC M-150 with nominal mix of (1:2:4) in lintel with approved quality of stone chips 20mm to 6mm size graded and clean coarse sand of F.M 2.5 to 3 including screening, centering, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement, taxes and royalty all complete as per building specification and direction of E/l.									
		<i>LINTEL</i>									
		Plaza	1	250	0.23	0.3	17.25				
		Washrooms	1	50	0.23	0.3	3.45				
							20.70	cum	6,869.88	142,206.52	
5.3.9.1	9	Providing RCC M - 200 with nominal mix of (1:1.5:3) In roof slab with approved quality of stone chips 20mm to 6mm size graded and clean coarse sand of F.M 2.5 to 3 including screening, centering, shuttering, mixing cement concrete in mixer and placing in position, vibrating, striking, curing (but excluding the cost of reinforcement, taxes and royalty all complete as per building specification and direction of E/l.									
		<i>ROOF SLAB</i>									
		Plaza	1	40	7.55	0.15	45.30				
			1	40	8.75	0.15	52.50				
		G+1	1	10	6.75	0.15	10.13				
			2	5	6.75	0.15	10.13				
		Washrooms	1	15	4	0.15	9.00				
							127.05	cum	7,523.28	955,832.72	

5.3.18	13	Providing R.C.C.M-200 with nominal mix of (1:1.5:3) in stair case with approved quality of stone chips graded and clear coarse sand of F M 2.5 to 3 including centering, shuttering, screening, mixing cement concrete in mixer, placing in position, vibrating, striking, curing taxes and royalty all complete, as per building specification and direction of E/I.								
		STAIRCASE								
		G+1	1	10	1.05	0.15	1.58	cum	11,817.67	18,612.83
5.2		MASONRY								
		FLY ASH BRICKS								
5.2.46	14	Providing designation 100 A brick work with fly ash lime brick (FLAG) confirming to IS 12894-1990 (9'x4.5"x3') in C M (1 : 3) in foundation and plinth with approved quality of clean coarse sand of F.M. 2- 2.5 including providing 10 mm thick mortar joints, cost of screening materials, raking out joints to 15mm depth, curing, taxes and royalty all complete as per building specification and direction of E/I.								
		FOUNDATION								
		Plaza	1	250	0.45	2.35	264.38			
		Washrooms	1	50	0.45	2.35	52.88			
							317.25	cum	4,334.79	1,375,212.13
5.2.52	15	Providing designation 100 A brick work with fly ash lime brick (FLAG) confirming to IS 12894-1990 (9'x4.5"x3') in C M (1 : 6) in super structure with approved quality of clean coarse sand of F.M. 2- 2.5 including providing 10 mm thick mortar joints, cost of screening materials, raking out joints to 15mm depth, curing, taxes and royalty all complete as per building specification and direction of E/I.								
		Plaza wall	1	250	0.23	3.4	195.50			
		Washrooms wall	1	50	0.23	2.6	29.90			
							225.40	cum	4,074.18	918,320.17
5.2.28	16	Providing Random rubble stone masonry in C.M. (1:4) in foundation and plinth with hammer dressed stone of less than 0.03 M3 in volume and clean coarse sand of 2 to 2.5 including cost of screening, raking out joints to 20mm depth, curing, taxes and royalty all complete as per building specification and direction of E/I.								
		UNDER FLOOR								
		Plaza	1	50	19.5	0.2	195.00			
		G+1	1	15	10	0.2	30.00			

		Washrooms	1	15	3.6	0.2	10.80				
							235.80	cum	2,502.14	590,004.61	
5.5		STEEL WORKS									
5.5.1	17	Providing reinforcement (wire rods Gr.A) 6&8mm.dia.rods as per approved design and drawing excluding carriage of M.S.rods (straightor incolls) to work site , cutting,bending and binding with annealed wire with cost of wire ,removal of rust placing the rods in position all complete as per building specification and direction of E/l.									
		8mm TMT Gr. A (only valid for SAIL & TATA STEEL									
		Column	20.24	(.50/100)	7.85		0.79				
		Plinth Beam	30.22	(.50/100)	7.85		1.19				
		Lintel	16	(.50/100)	7.85		0.63				
		Beam	30.22	(.50/100)	7.85		1.19				
		Slab	111.93	(.50/100)	7.85		4.39				
							8.19	MT	58,849.00	481,875.33	
5.5.5(a)	18	Providing Tor steel reinforcement of 10mm., dia bars as per approved design and drawing excluding carriage of M.S.rods (straightor incolls) to work site , cutting,bending and binding with annealed wire with cost of wire ,removal of rust placing the rods in position all complete as per building specification and direction of E/l.									
		Slab	111.93	(1.0/100)	7.85		8.79	MT	65,841.84	578,519.66	
5.5.5 (b)	19	Providing Tor steel reinforcement of 12mm., dia bars as per approved design and drawing excluding carriage of M.S.rods (straightor incolls) to work site , cutting,bending and binding with annealed wire with cost of wire ,removal of rust placing the rods in position all complete as per building specification and direction of E/l.									
		Footing	47.38	(1.5/100)	7.85		5.58				
		Lintel	16	(1.0/100)	7.85		1.26				
		Stairs	1	(1.5/100)	7.85		0.11				
							6.95	MT	63,763.52	443,081.22	

5.6		FLOORING WORKS								
5.6.19	22	Providing and laying 25mm. thick kotah stone slab flooring of approved size, texture and colour over 19mm thick base of lime mortar (1 : 1) (lime putty: surkhi: coarse sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of slab including rubbing and polishing to granolithic finish with approved quality of carborandum stone including cost of curing, taxes and royalty all complete as per building specification								
(iii)		450 x 450 mm								
		Plaza	1	32.55	19.5		634.73			
		G+1	1	10.23	10		102.30			
			1	6.5	6.75		43.88			
							780.90	sqm	1,455.17	1,136,342.25
5.6.20	23	Providing and laying 25mm. thick kotah stone tiles in risers of steps, skirting and pillars of approved size, texture and colour laid over 12mm. thick cement mortar (1:3) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing to granolithic finish with approved quality -do-								
		RISER								
		G+1	21	1.05	0.15	3.31	sqm	1,472.60	4,870.62	
		SKIRTING								
		Plaza	1	330	0.1	33.00	sqm	1,472.60	48,595.80	
5.6.27	24	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622 of approved make in all colours and shades laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) jointing with grey cement slurry @ 3.3 kg/sqm including grouting the joints with white cement and matching pigments etc complete size of tile 300x300x10mm sizes.								
		Washrooms								
		FLOOR	1	25	3.6	90.00	sqm	776.02	69,841.80	
		WALL	1	100	3	300.00	sqm	776.02	232,806.00	

DSR 8.11	25	Providing and fixing machine cut, mirror/ eggshell polished , Marble stone work for wall lining (vener work) including dado, skirting, risers of steps etc., in required design and pattern wherever required, stones of different finished surface texture, on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) laid and jointed with white cement slurry @ 3.3 kg/sqm including pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing, polishing etc. all complete as per Architectural drawings, and as directed by the Engineer-in-Charge.								
8.11.1		18 mm thick Italian Marble stone slab,Perlato, Rosso verona, Fire Red or Dark Emperadore etc.								
		For Washroom Door Frame	4	5.10	0.23		4.69	sqm	8,823.75	41,401.04
DSR 8.2	26	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.								
8.2.2		Granite of any colour and shade								
8.2.2.1		Area of slab upto 0.50 sqm								
		For Washrooms	2	2.50	0.75		1.88			
		For Kitchen/Pantry	1	30.00	0.75		22.50			
		For Ticket Counter	1	5.00	0.60		3.00			
							27.38	sqm	4,217.35	115,449.96
DSR 8.4	27	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.								
		For Washrooms	2	2.50	0.10		0.50			
		For Kitchen/Pantry	1	30.00	0.10		3.00			
		For Ticket Counter	1	5.00	0.10		0.50			
							4.00	sqm	434.25	1,737.00

DSR 8.5	28	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.								
		For Washroom	4.00			4.00				
		For Kitchen	1.00			1.00				
						5.00	Each	734.55		3,672.75
DSR 8.7	29	Providing and fixing cramps of required size & shape in RCC/ CC / Brick masonry backing with cement mortar 1:2 (1 cement :2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).								
8.7.1		Gunmetal cramps	10				kg	627.85		6,278.50
8.10	30	Marble work gang saw cut (polished and machine cut) of thickness 18 mm for wall lining (veneer work), backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand), including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the marble shade (To be secured to the backing by means of cramps, which shall be paid for separately)								
8.1.1		Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble.								
8.1.1.2		Area of slab over 0.50 sqm								
		For Arcade	3	40.00	1.00	120.00				
		For RFID	3	18.00	1.00	54.00				
						174.00	sqm	4,615.65		803,123.10
8.90	31	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.								
8.9.1		8mm thick								
8.9.1.2		Granite of any colour and shade								
		For Washrooms	4	9.00	2.40	86.40				
		For Kitchen	1	30.00	1.00	30.00				
						116.40	sqm	2,926.85		340,685.34

4.16 (RW)	32	Footpaths and Separators (Construction of footpath/separator by providing a 150 mm compacted granular sub base as per clause 401 and 25 mm thick cement concrete grade M15, over laid with precast concrete tiles in cement mortar 1:3 including provision of all drainage arrangements but excluding kerb channel.)	1	50.00	100.00		5000.00	sqm	639.00	3,195,000.00
8.1(RW)	33	Cast in Situ Cement Concrete M20 kerb (Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 408)								
		For Premises edges periphery	4	70.00			280.00			
		For drive way periphery	2	80.00			160.00			
		For Children's park	1	100.00			100.00			
		Miscellaneous	1	50.00			50.00			
							590.00	metre	211.00	124,490.00
5.7		PLASTER WORKS								
5.7.1	34	Providing 12mm. cement plaster (1:3)with clean coarse sand of F.M. 1.5 including screening, curing with all leads and lifts of water, scaffolding taxes and royalty all complete as per building specification and direction of E/I.								
		INTERIOR								
		Plaza ceiling	1	36	7.55		271.80			
			1	36	8.75		315.00			
			1	6.5	6.75		43.88			
			2	4.5	6.75		60.75			
		Plaza wall	1	224		3.85	862.40			
		Washroom ceiling	1	13.7	3.6		49.32			
		Washroom wall	1	51		3.05	155.55			
							1758.70	sqm	140.52	247,131.82

5.8.35	38	Providing one coat of wax polishing with mansion, waxpol or equivalent approved quality of wax polish over old or new wooden surface including cleaning the surface after removing dirt scales, smokes grease and sand papering, including cost of scaffolding ancl taxes all complete as per building specification and direction on of E/I.								
		For Doors	3	1.5	2.1		9.45			
			4	0.9	2.1		7.56			
			2	2.4	2.4		11.52			
							28.53	sqm	148.40	4,233.85
5.8.32	39	Providing two coats of synthetic enamel paint of approved shade and make over new wooden surface including cleaning the surface after removing dirt scales, smokes grease and sand papering, including cost of scaffolding ancl taxes all complete as per building specification and direction on of E/I.								
		For Toilet Doors	4	0.9	2.1		7.56	sqm	161.80	1,223.21
5.8.45	40	Providing two coats of synthetic enamel paint of approved shade and make over steel surface after removing dirt scales, smokes grease and sand papering, including cost of scaffolding ancl taxes all complete as per building specification and direction on of E/I.								
		For Steel work on existing structures	12	2.4	2.4		69.12	sqm	53.71	3,712.44
5.9		ROOF WORK								
5.9.1	41	Providing average 115mm. thick lime terracing (24 lime:36 surkhi:100 brick khoa) well beaten and compacted including maintaining proper level and slope, making ghundi with finishing treatment, cost of carriage, curing, royalty and taxes all complete as per building specification and direction of E/I.								
		Washrooms	1	13.7	4	0.15	8.22	sqm	794.96	6,534.57
5.9.6	42	Providing single layer Naria-tiles in roof including cost of all labour ancl materials, taxes, all complete as per building specification and direction of E/I.								
		Note: Traditional style Clay tile roof to be used of half cylindrical shape.								
		For Shops roof	1	35	8		280.00			
		For Arcade roof	1	35	6		210.00			
		For G+1	2	7	4.5		63.00			
							553.00	sqm	178.50	98,710.50

5.12		WATER PROOFING								
5.12.1	43	Water proofing for Old and New Roof Slab :- Providing and laying water proofing treatment on roof slab by applying two Component, factory designed ready to use, acrylic modified flexible, brush, roller or spray applied water proofing coating as per manufacturer specifications with following steps :-								
		(a) surface preparation :- Providing and cleaning of concrete surface to remove dust, oil, grease including removal of existing loose paint / coating, and cement laitance by cleaning with compressed air & water jet including all materials, labour, tools complete. Ponding test to be done after plugging all outlets and to be checked from soffit to identify seepage, leakage. On identification of seepage, cement grouting to be done with non shrink expanding admixture of Sika India Pvt.Ltd. / MYK Schomberg / Dr Fixit/Fosroc or equivalent. Providing and repairing of all corners and joints such as those between the parapet wall and the roof slab etc shall be chamfered with 150mm X 150 mm fillet of mortar (Cement: sand - 1:4) admixed with acrylic polymer of Sika/ Fosroc/MYK Schomberg/Dr Fixit or equivalent. Before chamfering a prime coat shall be given with the slurry of acrylic polymer. Repairing surface irregularities, damaged concrete in base slab, dead cracks if any, with an acrylic polymer modified repair mortar including a coat of bonding agent of the same with cement slurry including all material, labour, tools complete.								
		(b) 1st Coat :- Apply 1st coat of two component acrylic modified, ready to use, flexible cementitious material on surface saturated dry roof and inside wall of Parapet wall upto 600 mm by brush or roller. After 1st coat of application, 45 gsm of Fibre glass cloth to lay when the first layer is still green. 1st coat should be applied @ 1.50 kg/Sqmt/coat. For the purpose of measurement the entire treated surface will be measured."								

		(c)2nd coat :-To apply the 2nd coat of two component acrylic modified, ready to-use, flexible cementitious material right angle to the 1st coat over the glass fibre laid surface. 2nd coat should be applied @0.7 kg/Sqmt/coat. For the purpose of measurement the entire treated surface will be measured." After three days of drying the 2nd coat , the rain water outlets to be plugged and ponding test to be done for 48 hours to identify seepage, leakage from soffit and if found necessary rectification to be done as per satisfaction of E/I.								
		The water proofing coating to be protected from damage before screed over it. Waterproofing Brand: Sika Topseal 109hi / Fosroc Brushbond RFX/ Dr Fixit Pidiffin 2Kl MYK Aquafin TG Product Performance - Chemical Base Part A. Acrylic copolymer, Part 13 Specially graded cementitious powder - Density 1.6 l.rg/l (mixed density) at +27 deg. C Tensile Strength - 2 lllmm2 after 28 clays (with Fibre cloth) (According to ASTM D 2370) Pullout bond strength -2N/mm2 (concrete failure) (According to ISO 4624) Slant-Shear Bond Strength -4 N/mm2 (According to FIP 5.15) Elongation at Break -35% without Fibre Cloth and 20% with Fibre Cloth (According to ASTM D 2370)								
		(d) Protection of treated surface with PCC. The treated surface should be covered with 25mm/50mm PCC of M-20 grade(1:1.5:3) with proper slope (1:120) towards the rain outlets in alternate panels of 2 mt x 2mt keeping 6 mm gap between the panel joint. Integral water proofing admixture conforming to IS 2645 @ of 100 ml per bag of cement to be added in screed concrete(paid separately from these items)								
		All corners shall be chamfered with 150mm X 150 mm fillet. The rain water outlets shall be just leveled with the screed concrete to ensure smooth discharge of water - the peripheral gaps between pvc pipe outlet and concrete surface should be packed properly with rich concrete and the peripheral mouth to be sealed with moisture insensitive epoxy putty of Sika India Pvt.Ltd / MYK Schomberg / Dr FixitFosroc .For the purpose of measurement the entire treated surface will be measured."								
		(e)Groove of PCC surface should be filled with Polysulphide Sealant (Paid Separately) Brand - Sika India Pvt Ltd / MYK Schomberg / Dr Fixit/Fosroc.								
		WASHROOM								

PART B:ELECTRICAL WORKS

SOR No.	Item no.	Description of Item	Qty.	Unit	Rate	Amount
		INTERNAL WIRING				
1.3	1	Wiring for light point / fan point/ exhaust fan point/ cell bell point with 1.5sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, with modular type switch, modular plate,suitable size G.I box etc. as required.				
		a) Group A	200	Point	20.00	4,000.00
1.4	2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface /recessed PVC conduit, 2 way modular type switch, modular plate,suitable size G.I box etc.as required.	8	Point	10.80	86.40
1.5	3	Wiring for light /power plug with 2x4 sq.mm FR PVC insulated copper conductor single core cable in surface /recessed PVC conduit along with 1 No 4 sq.mm FR PVC insulated copper conductor single core cable for loop earthing as required.	1300	m	212.00	275,600.00
1.6	4	Wiring for light / power plug with 4x4 sq.mm FR PVC insulated copper conductor single core cable in surface /recessed PVC conduit along with 2 Nos 4 sq.mm FR PVC insulated copper conductor single core cable for loop earthing as required.	100	m	917.00	91,700.00
1.7	5	Wiring for circuit / submain wiring along with earth wire with the following sizes PVC insulated copper conductor, single core cable in surface/recessed PVC Conduit as required.				
1.7.1		2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire	200	m	146.00	29,200.00
1.7.2		2 x 2.5 sq.mm + 1 x 2.5 sq.mm earth wire	200	m	173.00	34,600.00
1.7.3		2 x 4.0 sq.mm + 1 x 4.0 sq.mm earth wire	200	m	211.00	42,200.00
1.7.4		2 x 6.0 sq.mm + 1 x 6.0 sq.mm earth wire	200	m	269.00	53,800.00
1.7.11		4 x 10 sq.mm + 2 x 10 sq.mm earth wire	30	m	667.00	20,010.00
1.7.12		4 x 16 sq.mm + 2 x 16 sq.mm earth wire	30	m	1,008.00	30,240.00

1.24	6	Supplying and fixing modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
1.24.1		5/6 amps switch	290	Each	59.00	17,110.00
1.24.4		3 pin 5/6 amps socket outlet	90	Each	75.00	6,750.00
1.27	7	Supplying and fixing of following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.				
1.27.2		4/5 Module	5	Each	157.00	785.00
1.31	8	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular type switch connection, painting etc as required. (for light plugs to be used in non residential buildings).	20	Each	241.00	4,820.00
1.32	9	Supplying and fixing suitable size GI box with modular plate cover in front on surface or in recess including providing and fixing 6 pin, 15/16 amps modular socket outlet and 15/16 amps modular switch connection, painting etc as required.	15	Each	307.00	4,605.00
1.38	10	Supplying and fixing call bell / buzzer suitable for D.C./A.C single phase, 230 volts, complete as required.	4	Each	263.00	1,052.00
1.21	11	Supplying and fixing of following sizes PVC conduit along with accessories in surface / recess including cutting the wall and making good the same in case of recessed conduit as required.				
1.21.2		25mm	200	m	93.00	18,600.00
1.21.3		32mm	200	m	115.00	23,000.00
1.21.4		40mm	50	m	140.00	7,000.00
1.26	12	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	4	Each	36.00	144.00

2.18	13	Supplying and fixing 20 amps 240 volts SPN industrial type socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps 'C' series, SP MCCB, in sheet steel enclosure, on surface or in recess with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc as required.	5	Each	985.00	
		DISTRIBUTION BOARDS AND PANELS				
2.8	14	Supplying and fixing following way, single pole and neutral, sheet, MCB distribution board, 240 volts, on surface /recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required. (But without MCB/RCCB / isolator)				
2.8.7		4 way double door	1	Each	843.00	843.00
2.9	15	Supplying and fixing following way, three pole and neutral, sheet, MCB distribution board, 415 volts, on surface /recess, complete with tinned copper busbar, neutral busbar, earth bar, din bar detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required. (But without MCB/RCCB / isolator)				
2.9.4		4 way (4 + 12), double door	1	Each	1,701.00	1,701.00
2.9.6		8 way (4 + 24), double door	1	Each	2,415.00	2,415.00
2.11	16	Supply and fixing 6 amps to 32 amps rating, 240 volts, 'B' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
2.11.1		a) Single pole	11	Each	146.00	1,606.00
2.15	17	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connection, testing and commissioning etc. as required.				

2.15.2		63 amp	1	Each	658.00	658.00
2.14	18	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connection, testing and commissioning etc. as required.				
2.14.1		40 amp	1	Each	290.00	290.00
2.16	19	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
2.16.1		a) 16/25 amps	2	Each	1,348.00	2,696.00
2.16.2		b) 40 amps	2	Each	1,458.00	2,916.00
2.13	20	Supplying and fixing single pole blanking plate in existing DB complete as required.	4	Each	20.00	80.00
		EARTHING				
3.5	25	Earthing with GI 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 etc as required. (but without charcoal or coke and salt).	1	Set	3,109.00	3,109.00
3.8	26	Extra for using salt and coke for GI or Copper plate earth electrode as required.	1	Set	3,263.00	3,263.00
3.11	27	Supplying and laying 25mm x 5mm GI Strip at 0.50 metre below ground as strip earth electrode, including soldering etc, as required.	2	m	83.00	166.00
3.18	28	Providing and fixing 25mm x 5mm GI Strip on surface or in recess for connections etc as required.	20	m	123.00	2,460.00
		LIGHTING CONDUCTOR				
4.1	29	Providing and fixing of lighting conductor finial, made of 25mm dia 300 mm long, copper tube, having single prong at top, with 85mm dia 3 mm thick copper base plate including holes etc. complete as required.	50	Each	1,110.00	55,500.00

4.4	30	Reverting, sweating and soldering of copper / G.I tape (with another copper / G.I tape, base of the finial or any other metallic object) as required.	50	Each	114.00	5,700.00
4.7	31	Providing and fixing G.I tape 20 mm X 3 mm on parapet or surface of wall for lighting conductor complete as required.(for horizontal run).	20	m	56.00	1,120.00
4.8	32	Providing and fixing G.I tape 20 mm X 3 mm on parapet or surface of wall for lighting conductor complete as required.(for vertical run).	20	m	80.00	1,600.00
4.12	33	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long. With 4 nos of tinned brass bolts, nuts, check nuts and spring washers etc. complete as required.	15	Each	63.00	945.00
4.15	34	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	20	m	28.00	560.00
		Lighting Fixtures and Fans				
	35	Supplying installation,testing & comisioning of ceiling fan, complete with blades with suitable length of down rods shackle insulator earthing point including connection etc. as required. (MR)				
		1200mm sweep	20	Each	1,203.33	24,066.60
	36	Supplying installation,testing & commisioning of following type recessed/surface mounted fluorescent light fixture complete with electronic choke earthing point and with TL-5 / CFL lamps complete as required. (Make - HAVELLS / WIPRO / BAJAJ)				
		1x 28W T5 (4' Fixture)	50	Each	900.00	45,000.00
		2 x 11 W CFL	10	Each	1,650.00	16,500.00
		Bulk Head	10	Each	350.00	3,500.00
		1x14W T5 (2' Fixture)	10	Each	700.00	7,000.00

	37	Supplying installation, testing & commissioning of 300 mm 1400 RPM exhaust fan complete with louver and bird guard screen with 3 core flexible wire as required. (MR)	4	Each	1,530.00	6,120.00
				TOTAL		855,117.00

PART E: MISCELLANEOUS WORKS

SOR No.	Item no.	Description of work	No.	Length	Width	Height	Qty.	Unit	Rate	Amount
DSR 10.2		Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.					2000	kg	101.75	203,500.00
								TOTAL		203,500.00

PART C: PLUMBING AND SANITARY WORKS

AS PER DSR-2018

DSR No.	Item no.	Description of Item	Qty.	Unit	Rate	Amount
		SANITARY INSTALLATIONS				
17.3	1	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
17.3.1		W.C. pan with ISI marked white solid plastic seat and lid	2	Each	6,685.00	13,370.00
17.7A	2	Providing and fixing wash basin with C.I. brackets, 15 mm dia CP Brass single hole basin mixer of approved quality and make, including painting of fittings and brackets, cutting and making good the walls wherever required:-				
a		White Vitreous China Wash basin size 550x400 mm with a 15 mm CP Brass single hole basin mixer	4	Each	4,403.80	17,615.20
17.9	3	Providing and fixing kitchen sink with C.I. brackets, C.P. brass chain with rubber plug, 40 mm C.P. brass waste complete, including painting the fittings and brackets, cutting and making good the walls wherever required:				
17.9.1		White glazed fire clay kitchen sink of size 600x450x 250 mm	1.00	Each	3,163.25	3,163.25
17.28	4	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
17.28.1		Semi rigid pipe				
17.28.1.2		40 mm dia	4	Each	98.40	393.60
17.70	5	Providing and fixing PTMT Bottle Trap for Wash basin and sink.				

17.70.2		Bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 gms	4	Each	348.60	1,394.40
17.29	6	Providing and fixing 100 mm sand cast Iron grating for gully trap.	2	Each	44.60	89.20
17.30	7	Providing and fixing in position 25 mm diameter mosquito proof coupling of approved municipal design.	4	Each	45.00	180.00
17.31	8	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	4	Each	1,283.05	5,132.20
17.34	9	Providing and fixing toilet paper holder :				
17.34.1		C.P. brass	2	Each	583.75	1,167.50
18.15	12	Providing and fixing brass bib cock of approved quality :				
18.15.1		15 mm nominal bore	6	Each	302.55	1,815.30
18.51	13	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
18.51.1		15 mm nominal bore	10	Each	552.35	5,523.50
18.53	14	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
18.53.1		15mm nominal bore	15	Each	532.00	7,980.00
17.35	15	Providing and fixing soil, waste and vent pipes :				
17.35.1		100 mm dia				
17.35.1.1		Sand cast iron S&S pipe as per IS: 1729	120	m	1,008.20	120,984.00
17.35.2	16	75 mm diameter :				
17.35.2.1		Sand cast iron S&S pipe as per IS: 1729	60	m	923.25	55,395.00

17.36	17	Providing and filling the joints with spun yarn, cement slurry and cement mortar 1:2 (1 cement : 2 fine sand) in S.C.I./ C.I. Pipes :				
17.36.1		75 mm dia pipe	20	Each	126.00	2,520.00
17.36.2		100 mm dia pipe	40	Each	148.45	5,938.00
		INTERNAL DRAINAGE INSTALLATION				
12.41	18	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
12.41.1		75 mm diameter	200	m	201.10	40,220.00
12.41.2		110 mm diameter	300	m	305.05	91,515.00
12.44	19	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	50	Each	47.25	2,362.50
12.46	20	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.	20	Each	100.45	2,009.00
12.43	21	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
12.43.1		75 mm	18	Each	290.15	5,222.70
12.43.2		110 mm	18	Each	288.80	5,198.40
13.55	22	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with black anticorrosive bitumastic paint of approved brand and manufacture, over and including a priming of ready mixed zinc chromate yellow primer on new work:				
13.55.1		100 mm diameter pipes	6	Each	58.15	348.90
13.55.2		150 mm diameter pipes	5	Each	86.70	433.50

17.37	23	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. :				
17.37.1		For 100 mm dia pipe	7	Each	287.45	2,012.15
17.37.2		For 75 mm dia pipe	5	Each	283.40	1,417.00
18.28	24	Providing lead caulked joints to spun iron or C.I. pipes and specials, including testing of joints but excluding the cost of pig lead :				
18.28.1		100 mm diameter pipe	7	Each	374.80	2,623.60
19.2	25	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :				
19.2.1		100 mm diameter S.W. pipe	50	m	817.00	40,850.00
18.7	26	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.				
18.7.5		40 mm nominal outer dia Pipes	50	m	648.60	32,430.00
18.7.6		50 mm nominal outer dia Pipes	50	m	903.50	45,175.00
17.35	27	Providing and fixing soil, waste and vent pipes :				
17.35.1		100 mm dia				
17.35.1.2		Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	100	m	1,092.20	109,220.00
18.40	28	Painting G.I. pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality :				
18.40.1		15 mm diameter pipe	50	m	9.30	465.00

18.40.2		20 mm diameter pipe	50	m	11.10	555.00
18.40.3		25 mm diameter pipe	50	m	14.15	707.50
18.40.4		32 mm diameter pipe	50	m	17.05	852.50
18.40.5		40 mm diameter pipe	50	m	19.40	970.00
18.40.6		50 mm diameter pipe	50	m	23.35	1,167.50
18.40.7		65 mm diameter pipe	50	m	28.95	1,447.50
18.40.8		80 mm diameter pipe	50	m	33.60	1,680.00
18.10	29	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.				
		Internal work - Exposed on wall				
18.10.1		15 mm dia nominal bore	50	m	284.90	14,245.00
18.10.2		20 mm dia nominal bore	50	m	344.10	17,205.00
18.10.3		25 mm dia nominal bore	50	m	438.00	21,900.00
18.10.4		32 mm dia nominal bore	50	m	529.70	26,485.00
18.10.5		40 mm dia nominal bore	50	m	639.60	31,980.00
18.10.6		50 mm dia nominal bore	50	m	786.75	39,337.50
18.11	30	Providing and fixing G.I. Pipes complete with G.I. fittings and clamps, i/c making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall :				
18.11.1		15 mm dia nominal bore	50	m	447.60	22,380.00
18.11.2		20 mm dia nominal bore	50	m	494.10	24,705.00
18.17	31	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
18.17.1		25 mm nominal bore	50	Each	497.15	24,857.50
18.17.2		32 mm nominal bore.	50	Each	581.25	29,062.50
18.17.3		40 mm nominal bore	50	Each	678.40	33,920.00
18.17.4		50 mm nominal bore	50	Each	869.20	43,460.00
18.12	32	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
		External work				
18.12.2		20 mm dia nominal bore	50	m	283.80	14,190.00
18.12.3		25 mm dia nominal bore	50	m	364.55	18,227.50
18.12.6		50 mm dia nominal bore	50	m	565.25	28,262.50
18.19	33	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
		50 mm nominal bore				

18.19.4.1		Horizontal	4	Each	1,144.05	4,576.20
18.19.4.2		Vertical	4	Each	1,251.10	5,004.40
18.14	34	Fixing water meter and stop cock in G.I. pipe line including cutting and threading the pipe and making long screws etc. complete (cost of water meter and stop cock to be paid separately).	4	Each	606.55	2,426.20
18.48	35	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	4000	per litre	8.80	35,200.00
	37	GI Pipes				
1545		G.I. pipes 15 mm dia	50	m	91.00	4,550.00
1546		G.I. pipes 20 mm dia	50	m	120.00	6,000.00
1547		G.I. pipes 25 mm dia	50	m	171.00	8,550.00
1548		G.I. pipes 32 mm dia	50	m	215.00	10,750.00
1549		G.I. pipes 40 mm dia	50	m	250.00	12,500.00
1550		G.I. pipes 50 mm dia	50	m	310.00	15,500.00
18.33	39	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c 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 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
18.33.1		With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	2	Each	9,288.40	18,576.80
		EXTERNAL SEWERAGE NETWORK				

2.1	40	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :				
2.10.1		All kinds of soil				
2.10.1.2		Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	50	m	364.20	18,210.00
2.11	41	Extra for excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth upto 1.5 metre).	50	m	127.00	6,350.00
					TOTAL	1,169,955.00

11.9	4	Planting of Trees and their Maintenance for one Year (Planting of trees by the road side (Avenue trees) in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, planting the saplings, backfilling the trench, watering, fixing the tree guard and maintaining the plants for one year)	20							each	917.00	18,340.00
										TOTAL		126,519.90