

BID IDENTIFICATION NO.: 195/BSCL/204/16



TECHNICAL BID DOCUMENTS / DETAILED TENDER CALL NOTICE FOR THE WORK

Name of work: “Construction of Social Equity Center under Rental Housing Scheme for Construction Workers and Urban Homeless in Kharavel Nagar,” Bhubaneswar, Odisha. (Composite Tender)

COVER – I

Estimated Cost Put To Tender: Rs. 5,77,67,857/-

Bhubaneswar Smart City Limited

Block 1, II Floor, BMC-Bhawani Mall,

Bhubaneswar-751007

e-mail id. bbsr.bscl@gmail.com

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Bhubaneswar Smart City Limited

Block – 1, 2nd Floor, BMC Bhawani Mall, SaheedNagar Bhubaneswar.-751007
E-mail Id: bbsr.bscl@gmail.com, CIN: U74990OR2016PLC020016

INVITATION FOR BIDS (IFB)

'e' Procurement Notice No. 195 Dated. 19.01.17 **Bid Identification No. 195/BSCL/204/16**

The Tender Bid Documents consisting of cost of tender papers, EMD, time of completion, set of terms and conditions of contract and other necessary documents can be seen in the 'e' procurement portal <http://tendersodisha.gov.in>.

1. Name of the Work : "Construction of Social Equity Center under Rental Housing Scheme for Construction Workers and Urban Homeless in Kharvel Nagar," Bhubaneswar, Odisha. (Composite Tender)
2. Total No of Works : 1 (One)
3. Period of Completion : 12 (Twelve Calendar months)
4. Date of availability of Bid documents in web Portal : 30.01.2017
5. Last date/Time for receipt of Bid in web portal : 25.02.2017 up to 17:00 hours
6. Date of submission of original Documents, EMD, paper cost : 01.03.2017 up to 17:00 hours
7. Date of opening of Technical Bid: 02.03.2017 at 11:00 hours
8. Name and address of the officer inviting Bid : Chief Executive Officer, BSCL

Further details can be seen from the 'e' Procurement <http://tendersodisha.gov.in>. Any addendum / Corrigendum / cancellation of tender can be seen in the web site mentioned above.

Sd -

Chief Executive Officer

Memo No. 196 / Dt. 19.01.2017

Copy submitted to the Deputy Director (Advertisement) & Deputy Secretary to Government, I & P.R. Department, Odisha, Bhubaneswar with a request to get it published in two nos. of leading Oriya Dailies and one no. of National English Daily News Paper at an early date for wide circulation of the tender call notice, as the Estimated Cost of the work is Rs. 5.77 Crores (approx.). The soft copy containing the above DTCN is enclosed herewith for this purpose. The complimentary copy of the newspapers notice may be sent to this office for reference and record & the bill may be sent for necessary payment.

Encl.: CD - 1No.

- Sd-

Chief Executive Officer



Bhubaneswar Smart City Limited

Block – 1, 2nd Floor, BMC Bhawani Mall, SaheedNagar Bhubaneswar-751007
E-mail Id: bbsr.bscl@gmail.com, CIN: U74990OR2016PLC020016

NOTICE INVITING TENDER

Bid Identification No. 195 /BSCL/204/16 dated 19.01.17

- 1) Chief Executive Officer, Bhubaneswar Smart City Limited invites Percentage Rate bids for the works as detailed in table below from eligible contractor registered with the State Government and Contractor of equivalent Grade / Class registered with Central Government / MES / Railway or other licensing Authority for execution of civil works on production of definite proof from the appropriate authority.

S. No.	Name of Project	Bid Security (Rs.)	Cost of Bid Document + VAT (Rs.)	Period of Completion	Class of Contractor eligible for Bid
1	Project Name: “Construction of Social Equity Center under Rental Housing Scheme for Construction Workers and Urban Homeless in Kharavel Nagar,” Bhubaneswar, Odisha. (Composite Tender)	5,77,700/-	Rs. 10,000/- + (VAT) Rs. 500/-	12 (Twelve Calendar months)	Special Class / Super Class

- 2) The bidders have to participate in ONLINE bidding only. The web-site for “ONLINE BIDDING” is <http://tendersodisha.gov.in>.
- 3) Bid documents consisting of plans, specifications, the schedule of quantities and the set of terms and conditions of contract and other necessary documents can be seen in the website: <http://www.tendersodisha.gov.in>.
- 4) Bids must be accompanied by Earnest Money Deposit / Bid Security of the amount specified for the work in the table above, pledged in favour of Chief Executive Officer, Bhubaneswar Smart City Limited and will have to be in any one of the forms specified in the bidding documents.
- 5) The bidder must possess compatible **Digital Signature Certificate (DSC)** of Class–II or Class–III.
- 6) Bid documents will be available for bidding in above website from **dt.30.01.2017 to 1700 hours of dt.25.02.2017** for “ONLINE BIDDING”.
- 7) Bids shall be received "online" only on or before **1700 hours of 25.02.2017**.
- 8) Bids received online will be opened at **11:00 hours on dt.02.03.2017** in the office of Bhubaneswar Smart City Limited, Block – 1, 2nd Floor, BMC Bhawani Office Complex, Saheed Nagar, Bhubaneswar – 751 007 in the presence of bidders who wish to attend. Bidders who participated in the bid can witness the opening of bids after logging on to the site through their DSC. If the office happens to be closed on the last date of opening of the bids as specified; the bids will be opened on the next working day at the same time and venue.
- 9) After the date & time of receipt of bid is over, the original Bid security and Demand Draft towards cost of bid documents shall be submitted in the office of the undersigned on or before **17:00 hours of 01/03/2017**, during office hours on working days failing which the bid will be rejected.
- 10) Other details regarding the bid can be seen in the bidding documents.
- 11) Any addendum / corrigendum / cancellation of tender can be seen in the said website.

Sd/-
Chief Executive Officer

Memo No. 196 Dt. 19.01.2017

Copy forwarded to the Deputy Director (Advertisement) & Deputy Secretary to Govt., I.&P.R.Dept., Odisha, Bhubaneswar with a request to get the Invitation for Bids (IFB) published in two nos. leading Odia Daily and one no. of National English Daily Newspapers at an early date for wide circulation.

Complimentary copy of Newspapers publishing Invitation for Bids (IFB) may be sent to this office for reference and record & the bill may be submitted for necessary payment.

Encl. : CD-1 No.

Chief Executive Officer

Memo No. 197 Dt. 19.01.2017

Copy to the P.S. to Development Commissioner –cum A.C.A. to Govt. of Odisha for kind information of Development Commissioner-cum Chairman, Bhubaneswar Smart City Limited.

Sd/-
Chief Executive Officer

Memo No. 198 Dt. 19.01.2017

Copy submitted to Commissioner cum Secretary to Govt., Housing & Urban Development Deptt, Odisha, Bhubaneswar for favour of kind information.

Sd/-
Chief Executive Officer

Memo No. 199 Dt. 19.01.2017

Copy submitted to Commissioner, Bhubaneswar Municipal Corporation & Vice Chairman, BDA-cum Managing Director, BSCL for favour of kind information.

Sd/-
Chief Executive Officer

Memo No. 200 Dt. 19.01.2017

Copy submitted to Chief Engineer, (Buildings), R&B / Chief Engineer-cum-Engineer Member, Bhubaneswar Development Authority Bhubaneswar for favour of kind information and wide circulation.

Sd/-
Chief Executive Officer

Memo No. 201 Dt. 19.01.2017

Copy submitted to CE, e- procurement, Bhubaneswar for information and necessary action. It is requested to display this Tender Notice & Documents in e -procurement portal.

Sd/-
Chief Executive Officer

Memo No. 202 Dt. 19.01.2017

Copy to Secretary, BDA and Additional Commissioner, BMC with a request to upload this advertisement in your web sites.

Sd/-
Chief Executive Officer

CHECKLIST TO BE ENSURED BY THE BIDDER

Sl. No	Particulars	Reference to DTCN Clause No.	Whether furnished		Reference to Page no.
			Yes	No	
01.	Cost of tender paper Rs10,000.00 and VAT(Odisha VAT) Rs500.00 Separately(<i>Separate Scanned copy of financial instruments shall be furnished</i>)	No.4 & 5(i)			
02.	E.M.D for Rs 5,77,700/- (<i>Scanned copy of financial instrument shall be furnished</i>)	No.5(i) & 20			
	Or				
	E.M.D @2%in case of deploying machineries outside the State	No.5(i) & 20			
03	Additional Performance Security in case the bid price/rate is less than the estimated cost put to tender	No.62.2			
04.	Copy of valid Registration Certificate	No.5(i) & 21			
05.	Copy of valid VAT (Odisha VAT) clearance certificate	No.5(i) & 21			
06.	Copy of PAN Card	No.5(i) & 21			
07.	No Relationship Certificate in Schedule – A	No.35			
08.	Works Experience : List of projects under execution / executed that are similar in nature to the work	Schedule-B & Schedule –D			
09. (A)	Information regarding current litigation, debaring / expelling of the tender or abandonment of the work by the tenderer (Schedule-E)	No.49			
(B)	Affidavit (Schedule-F)	No.49			
10.	M.O.U. (Memorandum of Understanding duly notarized) with eligible registered electrical contractor having valid H.T. / L.T. license;	No. 8 & Schedule - J			
11.	Assessed Available Bid Capacity.	No. 112 (h)			
12.	Similar nature of work.	No. 112 (g)			
13.	Qualification of Key personnel engaged. (Schedule (G)	No. 63			
14.	Work Programme.				
15.	Tools & Plants and machineries as per the requirement in Schedule-C (Minimum 80% marks to be obtained). (Proof of ownership of Tools & Plants and machineries is to be furnished in shape of copy of invoices / required sale deed in case of 2 nd purchase / required lease deed with ownership documents of the leaser duly attested. In case of centering & shuttering materials certificate of the Executive Engineer Or equivalent and higher rank officer of Govt. / Govt. under taking / PSU within 90 days of last date of receipt of tender is allowed.	No.7 & 112(e) & Schedule-C			
	List of plants and equipments	Requirement			
(i)	Water Tanker mounted with Truck / Tractor	2 Nos.			
(ii)	Truck & Tipper	2 Nos.			
(iii)	Welding Machine	1 No.			
(iv)	Generator of minimum 40 KVA capacity	1 No.			
(v)	Ready mix Plant with pumping accessories of Capacity 15 cum/hr	1 No.			
(vi)	Concrete Mixer	1 No.			
(vii)	a. Concrete Vibrator : Needle type	2Nos			
	b. Concrete Vibrator : Plate Type	1 No.			
	c. Concrete Vibrator : Screed Type	1 No.			
(viii)	Complete staging, shuttering, centering arrangement	1500Sqm.			
(ix)	5 Ton Capacity Winch Machine	1 No.			
(x)	Water Pump of 1 HP Capacity	2 Nos			
16.	e-mail ID &		bbsr.bscl@gmail.com		
	Contact no		0674- 2548428		

CONTRACT DATA

A. GENERAL INFORMATIONS

SI No	Item	Details
1	Name of the Work	“Construction of Social Equity Center under Rental Housing Scheme for Construction Workers and Urban Homeless in Kharvel Nagar,” Bhubaneswar, Odisha. (Composite Work)
2.	Employer	Chief Executive Officer, Bhubaneswar Smart City Ltd., Bhubaneswar.
3.	Employer’s Representative	General Manager (E&T), BSCL, Bhubaneswar
4	Engineer	M/s EGIS India Consulting Engineers Pvt. Ltd.
6	<u>Estimated Cost (In Rs.)</u>	
	Civil Works	Rs.5,18,89,749.18
	EI Works	Rs.30,89,479.20
	PH Works	<u>Rs.27,88,628.92</u>
	Total	Rs.5,77,67,857.30
		Say Rs.5,77,67,857.00

B. BID INFORMATION

7	Intended completion period/Time period assigned for Completion	(12) Twelve Calendar Months
8	Last Date & time of submission of Bid	Date: 25.02.2017 Time 17.00hours
9	Cost of Bid Document	
	i Bank draft amount	Rs10,000/-+Rs500/-
	ii In favour of	Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar.
	iii Payable at	Bhubaneswar
10	Bid Security	
	i Amount	Rs. 5,77,700/-
	ii In favour of	Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar.
	iii Type of instrument	As specified in the bid document.
11	Additional Performance Security	
	i Amount	Differential cost i.e Estimated cost put to tender minus the quoted amount.
	ii In favour of	Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar.
	iii Type of instrument	As specified in the bid document clause no.62.2
11	The Financial years of last five years	2011-12 to 2015-16.
12	Bid validity period	90 days
13	Currency of Contract	Indian Rupee
14	Language of Contract	English

Instruction to Bidders (ITB)

e-procurement

1. NOTICE INVITING BID AND OBTAINING BID DOCUMENTS:

- 1.1. The authority belonging to the major discipline (Chief Executive Officer, BSCL) is competent to invite tender of composite bids.
- 1.2. For composite tender, estimated cost of each component should be clearly indicated in addition to combined estimated cost put to tender. The eligibility of bidders will correspond to the combined estimated cost of different components put to tender.
- 1.3. The contractor shall comply with the provisions of the Apprentices Act 1961, and the rules /amendments issued there under from time to time. If he fails to do so, it will be considered a breach of the contract and the Chief Executive Officer, Bhubaneswar Smart City Limited may at his discretion without prejudice to any other right or remedy available under law, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the said Act by him.
- 1.4. The contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Tender and of the rates and prices quoted in the Bill of Quantities, all of which shall, except in so far as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, plant & services or of contingencies for which there is a Provisional Sum) and all matters and things necessary for the proper execution and completion of the work and the remedying of any defects therein.
- 1.5. The successful bidder shall complete the works by the intended completion date specified in the Contract data.
- 1.6. Throughout these bidding documents, the terms " bid and tender" EMD and Bid Security and their derivatives (bidder / tenderer, bidding / tendering, etc.) are synonymous.
- 1.7. In case the tender for composite work includes in addition to main work / building work all other ancillary works such as sanitary and water supply installations, drainage installation, electrical work, horticulture work, roads and paths and gate works in dams and canals etc. , the bidder apart from being a registered Civil Contractor of appropriate class must associate himself with agencies of appropriate class those who is eligible to tender for sanitary and water supply drainage, electrical and horticulture works in the composite tender. Intending purchasers are not required to produce any documents viz. copy of Registration, Valid VAT(Odisha VAT) clearance certificate etc, at the time of purchase of tender documents but will be required for verification purpose at later stage. If a VAT (Odisha Vat) clearance Certificate is not available with the tenderer, an undertaking to that effect can be furnished at time of submitting tender thus making it clear to be submitted before signing of the Agreement. Furnishing copy of such documents is mandatory along with the tender documents otherwise his/her bid shall be declared as non-responsive and thus liable for rejection. The Bidder is required to attend the officer inviting the bid for verification of original documents within three days of opening the bid.
- 1.8. PARTICIPATING IN THE BID IN THE E-PROCUREMENT PORTAL: The Contractor/ Bidder intending to participate in the bid is required to register in the Portal with some information about the firm/Contractor. This is a onetime activity for registering in Portal. During registration, the contractor has to attach a Digital Signature Certificate (DSC) to his / her unique user ID. The DSC used must be of appropriate class (Class II or Class III) issued from a registered Certifying Authority such as n-Code, Sify, TCS, MTNL e-Mudra etc.
 - 1.8.1. To log on to the portal the Contractor/Bidder is required to type his/her *username* and password. *The system will again ask to* select the DSC and confirm it with the password of DSC. For each login, a user's DSC will be validated against its date of validity and also against the Certificate Revocation List (CRL) of respective CAs stored in system database. The system checks the unique ID, password and DSC combination and authenticates the login process for use of portal.

- 1.8.2. The tender documents uploaded by the Tender Inviting Officer in the website **www.tendersodisha.gov.in** will appear in the section of “Upcoming Tender” before the due date of tender sale. Once the due date has arrived, the tender will move to “Active Tender” Section of Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption.
- 1.8.3. If the software application has the provision of payment of cost of tender document through payment gateways of *authorized* bankers by directly debiting the account of the bidders, bidders will be required to avail on-line payment.
- 1.9. The bidder intending to participate in the bid on-line shall prepare the demand draft towards cost of bid as per IFB (except for exempted contractors) and up load the scanned copy of the draft to the portal against the bid where he is participating and the original shall be deposited to the tender inviting officer within the **period** specified in the “Invitation For Bid”. If the Bidder fails to deposit the original demand draft towards cost of bid within the stipulated time his bid shall be rejected and action as per prevailing rule shall be taken.
- 1.10. **DELETED.**
- 1.11. In the case of any failure, malfunction, or breakdown of the electronic system used during the e-procurement process, the tender inviting officer shall not accept any responsibility for failures or breakdowns other than in those systems strictly within their own control.
- 1.12. Any third party/company/person under a service contract for operation of e-procurement system in the State or his/their subsidiaries or their parent companies shall be ineligible to participate in the procurement processes that are undertaken through the e-procurement system irrespective of who operates the system.

2. ELIGIBLE BIDDERS:

- 2.1. This Bid is open to **all** Contractors of the class mentioned in the *Invitation for Bids* registered with the State Governments and Contractors of Equivalent Grade/ Class Registered with Central Government/ MES/ Railways for execution of civil works. The Bidders are required to enclose the proof of registration from the registering authority along with the Bid subject only to the registration in the portal using his/her DSC for on-line bids.

Contractors not registered with Govt. of Odisha can participate in the e-procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the state Govt. before award of the work as per prevalent registration norms of the state.
- 2.2. All bidders *shall* provide a statement that the bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Engineer-in-Charge to provide consulting services for the preparation or supervision of the works, and any of its affiliates shall not be eligible to bid.
- 2.3. If the bidder has a relative employed as an Officer in the rank of an Assistant Engineer/Under Secretary and above in the H&UD Department Government of Odisha, he shall inform the same in **Schedule-I** of the bid document mentioning the exact details in a covering letter along with the tender, failing which his bid will not be considered. Also if the fact of relationship subsequently comes to light, his contract will be rescinded. The bid security or the performance security will be forfeited and he shall be liable to make good any loss or damage resulting from such cancellation. In case the bidder has no relationship with any of the officers mentioned above he shall have to furnish with his bid an undertaking to that effect.
- 2.4. He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the concerned Department. Any breach of this condition by the contractor would render him liable for penal action for suppression of facts.
- 2.5. No Engineer of gazetted rank or other gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the Government of Odisha is allowed to work for contractor for a period of two years after his retirement from Government service,

without prior permission of the Government of Odisha in writing. Such a contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of Odisha as aforesaid before submission of the tender for engagement in the contractor's service.

3. **QUALIFICATION CRITERIA:**

3.1. For submission of Bids through the E-Procurement Portal, the bidder shall up-load the scanned copy/copies of documents listed under clause 3.2 in prescribed format wherever warranted in support of eligibility criteria and qualification information. The L-1 bidder shall have to produce the original documents in support of the scanned copies and statements uploaded in the portal within 5 days of opening of price bid. The Bid from Joint ventures is not acceptable.

3.2. The bid shall include following information and documents.

- (a) Copy of valid contractor's registration certificate, PAN card, VAT (Odisha VAT) clearance certificate should accompany the technical bid. If a VAT (Odisha Vat) clearance Certificate is not available with the tenderer, an undertaking to that effect can be furnished at time of submitting tender thus making it clear to be submitted before signing of the Agreement.
- (b) Copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory.
- (c) Major construction equipment to be deployed to carry out the Contract. The contractors are required to furnish evidence of ownership of principal machineries / equipments for only those machineries / equipments asked for in the tender documents.
- (d) In case if contractor executing several works, he is required to furnish a time schedule for movement of equipment/machinery from different site to this work site when work is to be executed.
- (e) The contractor shall furnish ownership documents for those machineries which he is planning to deploy for the tendered work.
- (f) In case the contractor proposes to engage machineries and equipments as asked for in the tender document, owned or hired but deployed outside the state, he/she is required to furnish additional 1% EMD/Bid security.
- (g) The contractor intending to use/lease equipments/machineries are required to furnish proof of ownership from the company/persons providing equipment/ lease deed and duration of such contract.
- (h) Copy of sub-contract agreement with eligible Registered Electrical Contractors having valid L.T. / H.T. license (Associated with the sub-contractor).
- (i) Details of work under progress as per tender documents.
- (j) Details of works executed during the last five years and works in hand (list of on-going works as per bid documents).

3.3. **DELETED**

3.4. *The Bidders are subject to be disqualified if they have:*

- a. Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- b. Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.; and/or
- c. Participated in the previous bidding for the same work and had quoted unreasonable prices and could not furnish rational justification to the Engineer-in-Charge.
- d. Indulged in unlawful & corrupt means in obtaining bids.
- e. Been black listed/their registrations by the competent authority.

4. **ONE BID PER BIDDER:**

- 4.1. Each bidder shall submit only one bid for one package. A bid is said to be responsive if accompanied by cost of bid document and appropriate bid security. The system shall consider only the last bid submitted through the E-Procurement portal.

5. COST OF BIDDING:

- 5.1. The bidder shall bear all costs associated with the preparation and submission of his bid, and the Engineer-in-Charge will in no case be responsible and liable for those costs.
- 5.2. All the rates and prices in the bid shall cover all taxes, viz. Central or State Sales Tax, Octroi, Value Added Tax or any other local taxes, ferry, tollage charges and royalties and any other charges.
- 5.3. The rate of royalties and taxes prevailing on the date of measurement shall be considered while making deductions in the bills.
- 5.4. The successful bidder shall make his own arrangement for all materials unless otherwise specified in the conditions of contract.

6. SITE VISIT:

- 6.1. Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (so far as practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A Bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The Bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which tools and plant, etc. will be issued to him by the BSCL and local conditions and other factors having a bearing on the execution of work.
- 6.2. The bidder, in preparing the bid, shall rely on site Investigation Reports referred to in the Contract Data, supplemented by any information available to the bidder. The Contractor shall do one plate load test along with one confirmatory boring as per the specification of latest IS Code before execution of the foundation work.
- 6.3. The Officer inviting the bid / Engineer-in-Charge will clarify queries on the Contract Data on requisition by the intending Bidder. The bidder may ask question in the e-procurement portal using his DSC; provided the questions are raised before the date mentioned in the home page under critical dates.

B. BIDDING DOCUMENTS

7. GENERAL INSTRUCTIONS:

- 7.1. The description of the work is as mentioned under Invitation for Bid.
- 7.2. The bids uploaded by the Tender Inviting Officer may consist of general arrangements drawings or typical sections of the project. Bidder may download these drawings and take out the print for detail study. Any other drawings and documents pertaining to the works available with the officer inviting the Bid as well as in the office of the Chief Executive Officer, BSCL as mentioned in the contract data will be open for inspection during working hours on all working days by the bidders. The bidder is required to download all the documents including the drawings for preparation of his bid. It is not necessary on the part of the Bidder to upload the drawings other Bid documents (after signing) while uploading his bid. He is required to upload documents related to his qualification information and Bill of Quantities duly filled in. It is assumed that while participating in the bid, the bidder has referred to all the drawings and documents uploaded by the Officer Inviting the Bids. Seeking any revision of rates or backing out of the bid claiming for not having referred to any or all documents provided in the Bid document by the Officer Inviting the Bids will be construed as plea to disrupt the bidding process and in such cases the bid security shall be forfeited.

7.3. The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, and technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk.

8. CLARIFICATION OF BIDDING DOCUMENTS:

8.1. Bid documents consisting of drawings, plans, specifications, the schedule of quantities of the various items of work to be done and the set of terms & conditions of contract to be complied with by the contractor who intends to bid and other necessary Documents can be seen in the office of the officer inviting the Bid during office hours every day except on Sundays & Public Holidays till last date of sale of tender paper.

8.2. **No paper copy of the bid shall be sold.**

8.3. The Contract Data to bid shall be filled and completed in the office of Officer inviting bid before issue of bid documents. If the documents are issued to the intending bidder without having been so filled in & completed, he shall request the officer inviting the bid to have this done before he completes and delivers his bid.

8.4. **The bidder can seek clarification on the bids** which he received earlier than 15 days prior to the deadline for submission of bids. The Employer's response will be forwarded through the e-mail ID of the enquirer.

8.5. **PRE-BID MEETING: Deleted.**

9. AMENDMENT OF BIDDING DOCUMENTS:

9.1. Before **the** deadline for submission of bids, the officer inviting the Bid may modify the bidding documents by issuing addenda.

9.2. Any **addendum** thus issued shall be part of the bidding documents and shall be notified in the website **www.tendersodisha.gov.in** / notice board and through paper publication.

9.3. To give **prospective** bidders reasonable time in which to take an addendum into account in preparing their bids, the Officer inviting the Bid if also happens to be the C.E.O., BSCL with the permission of the higher authority may, at his discretion, extend as necessary the dead line for submission of bids.

C. PREPARATION OF BIDS

10. LANGUAGE OF THE BID:

10.1. All documents relating to the Bid shall be in the English / Hindi / Oriya language. Bids submitted in any other language shall be summarily rejected.

11. DOCUMENTS COMPRISING THE BID:

11.1. Following documents will be deemed to be part of the bid even if not submitted with the bid.

- (i) Invitation for Bids (IFB)
- (ii) Instructions to bidders (ITB)
- (iii) Conditions of Contract
- (iv) Contract Data
- (v) Specifications
- (vi) Drawings

11.2. All the volumes/documents shall be provided in the portal by the Officer inviting the bid. The bidder shall carefully go through the document and prepare the required documents and up load the scanned documents in Portable Document Format to the portal in the designated locations of Technical Bid. He will fill up the percentage rate in the BOQ down loaded for the work in designated Cell and up-load the same in designated locations of Financial Bid. Submission of document shall be effected by using DSC of appropriate class.

A. **Cost of "Bid document" & "Bid Security"** shall comprise

- (i) Cost of Bid Document

- (ii) Bid Security in prescribed shape.
- B. **“Technical Bid”** shall comprise.
 - (i) Declaration under the Official Secret Act, 1923
 - (ii) Qualification Information and supporting documents,
 - (iii) Certificates, undertakings, affidavits,
- C. **“Financial Bid”** shall comprise.
 - (i) Priced Bill of Quantities

12. PROPOSAL BY THE BIDDER:

- 12.1. **In the E-Procurement Portal**, an intelligent Bill of Quantity in Microsoft Excel format shall be made available to the bidder.
- 12.2. For **Item rate** tenders, the bidder shall fill in rates in figures and should not leave any cell blank. The line item total in words and the total amount shall be calculated by the system and shall be visible to the bidder.
- 12.3. In case of **percentage rate** tender, the bidder will only fill in the designated cell and activate “less” or “excess” to indicate how much his price offer is excess or less (**Up to two decimal Place**) than the estimated amount.
- 12.4. The **bidder** shall bid for the whole works as described in the Bill of Quantities.
- 12.5. Bidders **shall** submit offers that fully comply with the requirements of the bidding documents, including the Conditions of Contract basic technical design as indicated in the drawing and specification. **Conditional offer or alternative offers will not be considered** in the process of bid evaluation.
- 12.6. All duties, taxes, including VAT(Odisha VAT) and other levies including Building and other Construction Workers Welfare Cess @ 1% payable by the contractor under the contract, or for any other cause shall be included in the rates, prices submitted by the bidder. Sales-tax, purchase tax, turnover tax or any other tax on material in respect of this contract shall be payable by the Contractor and BSCL will not entertain any claim whatsoever in respect of the same.
- 12.7. In the case of any bid where unit rate of any item/items appear unrealistic, such bid will be considered as unbalanced and in case the bidder is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected.
- 12.8. Bidders while quoting their offers shall consider the following as regards price adjustment towards **Cement, Steel & Bitumen** and escalation of **all components** of work as per Sub-Clause 31 of Condition of P-1 Contract.
- 12.9. Deleted.
- 12.10. Deleted.
- 12.11. Deleted.
- 12.12. Deleted.
- 12.13. The contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Tender and of the rates and prices stated in the Bill of Quantities, all of which shall, except in so far as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, plant & services or of contingencies for which there is a **Provisional** Sum) and all matters and things necessary for the proper execution and completion of the work and the remedying of any defects therein.
- 12.14. The **contractor shall** conform in all respects, by giving all notices and paying all fees, with the provisions of:
 - i) Any national or State Statute, Ordinance, or other Law, or any regulation, or bye-law of any local or other duly constituted authority in relation to the execution and completion of the works and remedying of any defects therein, and
 - ii) The rules and regulations of all public bodies and companies whose property rights are affected or may be affected in any way by the works.

12.15. **FOR COMPOSITE BIDS: Deleted.**

13. CURRENCIES OF BID AND PAYMENT:

13.1. The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

14. VALIDITY:

14.1. Bids shall remain valid for a period not less than **90 days** or the period mentioned in the Contract Data, after the deadline date for submission of bid as specified in the notice inviting the Bids. A Bid valid for a shorter period shall be rejected by the Engineer-in-charge as non-responsive.

14.2. In exceptional circumstances, prior to expiry of the original time limit, the Officer inviting the Bid may request the bidders to extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable or by e-mail.

14.3. **Deleted.**

15. BID SECURITY:

15.1. The Bidder shall furnish, as part of his Bid, a Bid security for the amount mentioned under Contract Data. The bidder shall scan all the written pages of the bid security and upload the same to the system in designated place.

The successful **lowest bidder** will produce the original of all scanned documents for verification within 5 days of opening of the tender (Price Bid). In the eventuality of failure on the part of the lowest successful bidder to produce the original documents, he will be debarred in future from participating in tender for three years and will be blacklisted by the competent authority. In such a situation, successful L-2 bidder will be required to produce his original documents for consideration of his/her tender at the negotiated rate equal to L-1 bidder.

15.1.1. **Deleted.**

15.1.2. Fixed deposit receipt of any scheduled bank approved by the Reserve bank of India / Indian Post Office Time deposit/ National Savings Certificate / KisanVikasPatra duly pledged in favour of Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar as per notice inviting bid by the BSCL.

15.1.3. **Deleted.**

15.1.4. **Deleted.**

15.2. The Bid shall be declared non-responsive and shall be rejected if submitted without an acceptable Bid Security and not secured as indicated in Sub-Clauses 15.1.

15.3. Combined bid security for more than one work is not acceptable.

15.4. In the case of Government Undertakings, Co-operatives Societies, Diploma or Degree holders in Engineering who are registered with the Government of Odisha, the rules framed by government from time to time about Cost of Bid documents, Bid security, performance security will apply.

15.5. The bid Security of unsuccessful bidders will be returned within 28 days of the end of the validity period specified in Sub-Clause 14.1.

15.6. The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security and Additional Performance security if any

15.7. The Bid Security may be forfeited

15.7.1. If the bidder withdraws the bid after opening of the bid but within the period of validity.

15.7.2. If the Bidder seeks any revision of rates or backs out of the bid claiming for not having referred to any or all documents provided in the Bid by the Officer Inviting the Bids.

15.7.3. **DELETED.**

- 15.7.4. In the case of a successful bidder, if the bidder fails within the specified time limit to
- 15.7.4.1. Sign the Agreement; or
 - 15.7.4.2. Furnish the required Performance Security including additional performance security if any.

16. FORMAT AND SIGNING OF BID:

- 16.1. The bidder can download the tender of his choice and save it in his system and undertake the necessary preparatory work off-line and upload the completed tender at his convenience within the final date and time of submission. The bidder shall only submit single copy of the required documents and Price Bid in the portal. In the Financial bid, the bidder cannot leave any figure blank. He has to only write the figures, the words will be self-generated. The Bidders are advised to up-load the completed Bid document well ahead of the last date & time of receipt to avoid any last moment problem of power failures etc.
- 16.2. The Bidder shall go through the Bid carefully and list the documents those are asked for submission. He shall prepare all documents including cost of Bid Document, Bid Security, Declaration form, price bid etc and store in the system.
- 16.3. The bidder shall log on to the portal with his DSC and move to the desired tender for up-loading the documents in appropriate place one by one simultaneously checking the documents. Once the Bidder makes sure that all the documents have been up-loaded in appropriate place, he clicks the submit button to submit the bid to the portal.
- 16.3.1. Tender cannot be pre-opened and cannot be submitted after due date and time. Therefore, only after satisfying that all the documents have been uploaded, the Bidder should activate submit button.
 - 16.3.2. In the e-procurement process, each process is time stamped. The system can identify each individual who has entered into the portal for any bid and the time of entering into the portal.
 - 16.3.3. The Bidder should ensure clarity of the document up-loaded by him to the portal, especially the scanned documents by taking out sample printing. Non-submission of legible documents may render the bid non-responsive. However, the Officer inviting the Bids if so desires , can ask for legible copies for clarification within a stipulated period of 7 days, provided such document in no way alters the Bidder's price bid. If the Bidder fails to submit such documents with in the stipulated date, his bid shall be evaluated on its own merit.

D. SUBMISSION OF BIDS

17. SECURITY OF BID SUBMISSION:

- 17.1. All bid data uploaded by the Bidder to the portal will be encrypted by the DSC of the opener(s). The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender.
- 17.2. The Bid shall be received in encrypted format by the system which can only be decrypted / opened by the authorized openers only on or after the due date and time.

18. DEADLINE FOR SUBMISSION OF THE BIDS :

- 18.1. The online bidding will remain active till the last date and time of the bid submission. Once the date and time (Server date and time) is over, the bidder will not be able to submit the bid. The date & time of bid submission shall remain unaltered even if the specified date for the submission of bids declared a holiday for the Officer inviting the Bid.
- 18.2. The officer inviting the bid may extend the deadline for submission of bids by issuing an amendment in accordance with Sub-Clause 9.3, in which case all rights and obligations of the officer inviting the bid & Engineer-in-Charge and the bidders previously subject to the original deadline will then be subject to the new deadline.

19. LATE BIDS :

- 19.1. The system shall reject submission of any bid through portal after closure of the receipt time. For all purpose the server time displayed in the e-procurement portal shall be the time to be followed by the bidder and concerned officers.

20. MODIFICATION AND WITHDRAWAL OF BIDS :

- 20.1. In the E-Procurement Portal, it is allowed to modify the bid any number of times before the final date and time of submission. The bidder shall have to log on to the system and resubmit the documents as asked for by the system including the price bid. In doing so, the bids already submitted by the bidder will be removed automatically from the system and the latest bid only will be admitted. But the bidder should avoid modification of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure. If the bidder fails to submit his modified bids within the designated time of receipt, the bid already in the system shall be taken for evaluation.
- 20.2. In the E-Procurement Portal, with-drawl of bid is allowed. But in such case he has to write a letter with appropriate reasons for his withdrawal addressed to the Officer inviting the bid and up load the scanned document to portal in the respective bid before the closure of receipt of the bid. The system shall not allow any withdrawal after expiry of the closure time of the bid.

E. OPENING AND EVALUATION

21. OPENING OF THE BID:

- 21.1. Bid opening dates are specified during tender creation or can be extended vide corrigendum. These dates are available in IFB, tender document as well as the home page of portal. Bid opening can be done by the authorized users which are defined during the tender publication / approval stage. The bids are encrypted using there public keys and can be decrypted only on or after the Bid Opening due date. The bid openers private key will be required to open the bids and all the openers have to log on to the portal during that time.
 - 21.1.1. The bidders who participated in the on line bidding can witness opening of the bid from any system logging on to the portal with the DSC away from opening place. Contractors are not required to be present during the bid opening at the opening location if they so desire.
 - 21.1.2. Each activity is date and time stamped with **user** details. For time stamping, server time is taken as the reference.
- 21.2. In the event of the specified date of bid opening being declared a holiday for the Officer inviting the Bid/Engineer-in-Charge, the bids will be opened at the appointed time on the next working day.
- 21.3. In case bids are invited for more than one package, the order for opening of the "Bid" shall be that in which they appear in the "Invitation for Bid".
- 21.4. During bid opening, the covers containing original demand draft towards Cost of bid in the form specified in the Invitation for Bid, received within the periods specified in Invitation For Bid (IFB) shall be opened and declared. The original copy of the Bid Security in the form, amount and period of validity in conformity with clause 15 shall be checked and announced. The list of bidders who have submitted the original copy of the cost of Bid and Bid Security shall be prepared and announced.
 - 21.4.1. Combined bid security for more than one work is not acceptable. If the bid security furnished does not conform to the amount and validity period as specified in clause 15 and has not been furnished in the form specified in Clause 15, the bid will be declared non-responsive and rejected.
- 21.5. The Bid openers; who have been pre-defined shall log on to the portal with their respective DSC. Unless all the Officers who have been declared as Opening officers, log on the portal with their DSC the Tender cannot be opened.

- 21.5.1. The Opening Officers will systematically check the scanned demand draft towards cost of the bid document and the scanned document of Bid security with that of the original submitted. If found in order, they will continue opening of all other documents in the system provided under Technical Bid.
- 21.5.2. Subject to confirmation of the bid security by the issuing institutions, the bids accompanied with appropriate bid cost and valid bid security will be taken up for evaluation with respect to the qualification Information and other information furnished in Part - I pursuant to Clause 3.
- 21.5.3. After receipt of confirmation of the bid security, the bidder will be asked in writing to clarify his technical bid, if necessary.
- 21.5.4. The bidders will respond in not more than 7 days of issue of the clarification letter, which will also indicate the date, time and venue of opening of the Financial Bid.
- 21.5.5. Immediately on receipt of these clarifications, the Evaluating Officers; predefined in the system for the bid, will finalize the list of responsive bidders. They will log on to the site with their DSC and record their comments on the Technical evaluation page in the system. The Officer Inviting the Bid if also the accepting authority, shall log on to the system with his digital signature and check the technical evaluation. He can either accept or pass on to the evaluating officers for re-evaluation. Upon acceptance of technical evaluation by the Accepting authority in the system, the system shall automatically generate letter to all the responsive bidders and the system shall forward the letter to all the responsive bidder that their technical bid has been evaluated responsive with respect to the data/information furnished by him and the letter shall also intimate him the date & time of opening of financial bid. The system shall also inform the non-responsive bidders in their email ID that their bid has been found non-responsive.
- 21.6. The Technical evaluation of all the bids will be taken up as per the information furnished by the Bidders. If any of the information/ statements/documents/certificates furnished by the bidder is found to be false/fabricated/bogus, his EMD/Bid Security shall stand forfeited and his registration in the portal shall be blocked and the bidder is liable to be blacklisted.
- 21.7. After **technical** evaluation of the bidders and selection of the qualified bidders, the financial bids of the technically qualified bidders shall be opened on the due date of opening. Members of the bid opening committee log on to the system in sequence and open the financial bids for the technically qualified bidders. The opening of financial bid by the opening officer using their DSC shall decrypt the financial bids.
 - 21.7.1. Opening of price bid and evaluation of lowest bidder is subject to satisfaction of other qualification information asked for in the bid pursuant to Clause-3.
 - 21.7.2. The Officer inviting Bid shall ensure that all the Bidders are individually intimated about the date, time & venue of opening of the financial bid along with the responsiveness of the Technical Bid.
 - 21.7.3. The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorized representative who wish to be present.
 - 21.7.4. At the time of opening of "Financial Bid", the names of the bidders whose bids were found responsive in accordance with Sub-Clause 24.1 will be announced. The bids of only those bidders will be opened. The remaining bids will be rejected.
 - 21.7.5. The responsive bidders' names, the bid prices, the item wise rates the total amount of each item, any discounts and withdrawals, and such other details as the officer inviting the tender may consider appropriate, will be announced by him or his authorized representatives at the opening.
 - 21.7.6. Special conditions and/or rebate/discount offer if any uploaded to the system shall be declared and recorded first.
 - 21.7.7. The Financial bid of the bidders shall be opened one by one by the designated officers. The system shall auto-generate the Comparative statement.

21.7.8. The Bidder can witness the principal activities and view the documents/summary reports for that particular work by logging on to the portal with his DSC from anywhere.

22. PROCESS TO BE CONFIDENTIAL:

22.1. 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. Any effort by a bidder to influence the officer inviting the bid, processing of bids or award decisions may result in the rejection of his bid.

23. CLARIFICATION OF BIDS:

23.1. To assist in the examination, evaluation, and comparison of bids, the officer inviting the bid may, at his discretion, ask any bidder for clarification of his rates including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable or by e-mail, but no change in the bid price or substance of the bid shall be sought, offered.

23.2. Subject to sub-clause 23.1, no bidder shall contact the officer inviting the bid on any matter relating to his bid from the time of the opening to the time the contract is awarded. If the bidder wishes to bring additional information to the notice of the officer inviting the bid, it should do so in writing.

24. EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS:

24.1. During the detailed evaluation of "Technical Bids", the officer inviting the bid will determine whether each bid:-

24.1.1. Whether the Bid security is confirmed by issuing institution/bank.

24.1.2. Has submitted legible documents for evaluation

24.1.3. Meets the eligibility criteria defined in *Clause 3* and;

24.1.4. Is substantially responsive to the requirements of the bidding documents.

24.2. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications and drawings.

24.3. A substantially responsive "Financial Bids" is one, which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one

24.3.1. Which affects in any substantial way the scope, quality, or performance of the works?

24.3.2. Which limits in any substantial way, inconsistent with the bidding documents, the right of the officer inviting the bid or the bidder's obligations under the contract or

24.3.3. Whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids?

24.4. If a "Financial Bid" is not substantially responsive, it will be rejected by the officer inviting the bid, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

24.5. On opening of the price bid the system shall arrange the financial bids in order of their value (L1 first, followed by L2, L3) for subsequent evaluation. The evaluation status (Sheet) will be visible to all the participating bidders after opening on their respective logins. Each activity is recorded in the system with date and time stamping.

25. EVALUATION OF BIDS: DELETED

25.1. If the officer **inviting** the Bid in his opinion judges that the price quoted by the lowest qualified bidder is high or a special condition imposed by the bidder is to be withdrawn, the bidder shall be invited for negotiation by the officer inviting the Bid or by an officer authorised by him in writing. Negotiations of financial bid with only the lowest bidder shall be carried out, if necessary. Negotiation of bid will be carried out by manual way.

25.2. **DELETED.**

- 25.3. **DELETED**
- 25.4. **DELETED.**
- 25.5. **DELETED.**

F. AWARD OF CONTRACT

26. AWARD CRITERIA:

- 26.1. The officer inviting the bid will award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated price.
- 26.2. On acceptance of the tender, the Contractor shall name in writing his accredited representative(s) who would be responsible for taking instructions from the Engineer-in-Charge.
- 26.3. Competent Authority on behalf of Governor of Odisha reserves to himself the right of accepting the whole or any part of the bid and the bidder shall be bound to perform the same at the rate quoted.
- 26.4. The successful bidder registered under other State Government / MES / Railways / CPWD in equivalent rank has to register under state PWD before signing of the agreement.

27. OPTIONS IF THE BIDDER BACKS OUT FROM BIDDING PROCESS :

- 27.1. In case the 1st lowest Bidder or even the next lowest Bidder withdraw in series one by one, thereby facilitating a particular Bidder for award, then they shall be penalized with adequate disincentives with forfeiture of EMD/Bid Security unless adequate justification for such back out is furnished. Appropriate action for blacklisting the bidder shall also be taken apart from dis-incentivising the bidder.
- 27.2. The bidding process shall be deemed to be complete till the date of issue of letter of acceptance. If the bidder fails to sign the agreement within the stipulated period mentioned under clause 29.2, his bid security shall stand forfeited.

28. RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS :

- 28.1. The competent authority on behalf of the Governor of Odisha does not bind him to accept the lowest or any other tender and reserves to him the authority to reject any or all the tenders received without assigning any reason.
- 28.2. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.

29. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:

- 29.1. In the E-Procurement Portal, the system shall generate the template of award letter and the Officer Inviting the Bid shall mention the amount of Performance Security and additional security required to be furnished in the letter and intimate the bidders in his e-mail ID. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.
- 29.2. The bidder shall within 15 days of issue of letter of acceptance, furnish the Performance security & additional Performance security (if any) in the prescribed form & the work programme & shall sign the agreement in prescribed format, failing which the Engineer-in-Charge shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the Bid Security absolutely. The agreement will incorporate all agreements between the officer inviting the bid and the successful bidder.

If L1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the contractor. In that case, the L2 bidder, if fulfils, other required criteria would be called for

drawing agreement for execution of work subject to the condition that L2 bidder negotiates at par with the rate quoted by the L1 bidder otherwise the tender will be cancelled. In case a contractor is black listed, it will be widely published and intimated to all departments of Government and also to Govt. of India agencies working in the state.

(Amendment to Para-3.5.14 Note-I of OPWD Code Vol.-I by inclusion).

29.2.1. Following documents shall form part of the agreement.

29.2.1.1. The notice inviting bid, all the documents including additional conditions, specifications and drawings, if any, forming the bid as issued at the time of invitation of bid and acceptance thereof together with any correspondence & documents leading thereto & required amount of performance security including additional performance security as per sub clause 29.2 hereof.

29.2.1.2. Standard Bid Document P.W.D. Form **P-1**

29.3. The letter to proceed with the work shall be issued by Engineer-in-charge only after signing of the agreement. The notification of award will constitute the formation of the contract subject only to the furnishing of performance security and additional performance security in accordance with the provisions of the agreement.

29.4. On acceptance of the composite bids by the competent authority the letter of award will be issued by the Engineer-in-Charge of the major component of the work on behalf of the Governor of Odisha.

29.5. Upon signing of the agreement by the successful bidder, the Engineer-in-Charge will promptly notify the other bidders that their bids have been unsuccessful.

30. CORRUPT OR FRAUDULENT PRACTICES:

30.1. The Engineer-in-Charge will reject a proposal for award if he determines that the bidder recommended for award has been engaged in corrupt or fraudulent practices in competing for the contract in question. He will report to the Officer Inviting Bid / next higher authority.

30.2. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable for rejection.

DETAILED TENDER CALL NOTICE

1. Sealed **percentage rate** bids are invited in **double cover system** from the Class of eligible contractors registered with the State Government and contractors of equivalent Grade / class registered with Central Government / MES / Railways having registration for Civil, Electrical and P.H.works for execution of Civil / E.I. / P.H. works on production of definite proof from the appropriate authority in prescribed form to be eventually drawn in P.W.D. FORM P-1 for the work "Construction of Social Equity Center under Rental Housing Scheme for Construction Workers and Urban Homeless in Kharvel Nagar," Bhubaneswar, Odisha (Composite Work) at an estimated cost of **Rs 5,77,67,857/-**(Rupees five crore seventy seven lakh sixty seven thousand eight hundred and fifty seven) only. Contractors not registered with Govt. of Odisha can participate in the e-procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the state Govt. before award of the work as per prevalent registration norms of the state.
 - a) This tender is of composite nature and consisting of civil works, Electrical and PH works.
 - b) This detailed Tender Call Notice along with the clauses mentioned herein shall form a part of the contract and agreement.
2. The Bid documents are available on official website of Government: <https://www.tendersorissa.gov.in> from **dt.30.01.2017 to 17.00 Hrs of dt.25.02.2017**.The last date and time of submission of Bid is as per contract data.
3. The Technical Bid documents (**Cover-I**) will be opened by the assigned officer in the office of the Chief Engineer, (Buildings),Odisha at **11.00 Hours on dt.02.03.2017** in the presence of the bidders or their authorized representatives who wish to attend. After evaluation of the documents contained in Cover-I, the Cover-II containing price bid/s of the technically responsive bidder/s will be opened. The date, time and place of opening the price bid will be intimated to the eligible qualified bidders through system generated E-mails.
4. The cost of Bid documents in shape of demand draft issued from any Nationalized / Scheduled bank may be prepared in the name of the Chief Executive Officer, Bhubaneswar Smart City Limited,Bhubaneswar,and payable atBhubaneswarseparately for Rs10,000/-&Rs500/- towards tender paper cost and VAT(Odisha VAT) of each bid respectively. The online bid must be accompanied with scanned copies of demand draft towards cost of tender paper. The original copy of the Demand Draft shall be submitted near the officer inviting the bid within the period as specified in 'Invitation For Bid' (IFB).
5. The bid is to be submitted in two covers.
 - i) **Cover-I** is to contain scanned copy of **EMD** and **Cost** of bid document, Registration Certificate, PAN/TIN, valid VAT (Odisha VAT) clearance certificate, Profit Loss statement, Joint venture agreement, List of similar nature of works, work in hand, list of machineries, affidavit, and all other documents required as per the relevant clauses of this DTCN. The contractor belonging to outside state of Odisha and not started business should submit an undertaking in the form of an Affidavit indicating therein that they are not registered under Odisha VAT Act. as they have not started any business in the state and they have no liability under the Act. But before award of final contract, such bidders will have to produce the VAT clearance certificate in form VAT 612.
 - ii) **Cover-II** is to contain the **PRICE BID** duly filled in and signed by the bidder and scanned copy o Additional Performance Security as per the relevant clauses of this DTCN.
6. Furnishing scanned legible copy of Original Registration certificate, valid VAT(Odisha VAT) clearance Certificate, PAN card along with the Technical Bid is mandatory otherwise his/ her bid shall be declared as non responsive and thus liable for rejection. If a VAT (Odisha Vat) clearance Certificate is not available with the tenderer, a undertaking to that effect can be furnished at time of submitting tender thus making it clear to be submitted before signing of the Agreement.

7. (i) The Contractors are required to furnish scanned copy of evidence of ownership showing the possession of principal machineries/equipments as per Annexure-I in Schedule-C for which contractor shall have to secure minimum 80% of marks failing which the tender shall be liable for rejection.
- (ii) In case the contractor proposes to engage machineries and equipments as asked for in the tender document, owned or hired but deployed outside the State, he/she is required to furnish additional 1% EMD / Bid Security. The entire bid security including the additional bid security shall stand forfeited in case the contractor fails to mobilize the machineries within a period as to be able to execute an item of work as per original programme which will be part of the agreement.
- (iii) The contractor intending to hire/lease equipments/machineries are required to furnish proof of ownership from the company/ person providing equipments/ machineries on hire/lease along with contracts/ agreements/lease deed and duration of such contract. The contracts/agreements/lease deed should be on long term basis for a minimum period of 18 (eighteen) months as mentioned in contract data from the last date of receipt of Bid documents.
8. The civil contractor in order to take part in the composite tender should enter into an M.O.U. (Memorandum of Understanding duly notarized) with eligible registered electrical contractor having valid H.T. / L.T.license; for execution of electrical installation and other electrical works and a copy of such M.O.U. should be attached with the tender as per the proforma at Schedule- J which shall form a part of tender. A copy of electrical license should also be enclosed with the tender papers, the original of which need to be furnished during verification. The above M.O.U. is not required in case of the civil contractor having valid registration in H.T. / L.T. electrical license with the same name & style.
9. (i) The contract will be drawn in P.W.D. P-1 contract form and will constitute 3 parts as follows.
- | | | |
|---------------|---|-------------------------------|
| a. Part – I | : | For Civil items of works |
| b. Part – II | : | For Electrical items of works |
| c. Part – III | : | For PH items of works |

The contract shall be drawn & signed by Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar on behalf of the Governor of Odisha.

(ii) The Civil items of works as per Part-I of Schedule of quantities, Electrical items of works (both internal & external) as per part-II of Schedules of quantities and P.H. items of works (both internal & external) as per Part-III of the Scheduled of quantities of the Agreement shall be supervised measured and check measured by the Engineer-in-Charge, BSCL. In the interest of expeditious execution of work, payment of interim bills (Running A/c bills) shall be made by the Chief Executive Officer, Bhubaneswar Smart City Limited, in respect of all Civil ,EI & PH Works and nil final bill shall be sent to the Engineer-in-charge for final adjustment and compilation of accounts.

The contractor shall be bound to receive and act as well according to the direction of the Engineer-in-Charge for Electrical / Public Health works.

10. If an individual makes the application, the individual should sign (with DSC) above his full type written name and current address.
11. If the application is made by proprietary firm, it shall be signed (with DSC) by the proprietor & furnish full type written name and the full name of his firm with its current address in a forwarding letter.
12. If the application is made by a firm in partnership, it shall be signed (with DSC) by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed and current address of all partners of the firm shall also accompany the application.
13. If the application is made by a limited company or a corporation, it shall be signed (with DSC) by a duly authorized person holding power of attorney for signing the application in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation will be required to furnish satisfactory evidence of its existence along with the technical bid.

14. The tender should be strictly in accordance with the provisions as mentioned in the tender schedule. Any change in the wordings will not be accepted.
15. The work is to be completed in all respects within **Twelve (12)** calendar months from the date of issue of work order. Before acceptance of tender, the successful bidder will be required to submit a work programme and milestone basing on the financial achievement so as to complete the work within the stipulated time and in case of failure on the part of the agency to achieve the milestone liquidated damage will be imposed

(Amendment to Para-3.5.18 Note-VIII of OPWD Code Vol.-I).
16. All tenders received will remain valid for a period of **90 days** from the last date prescribed for receipt of tenders and validity of tenders can also be extended if agreed by the tenderers and the Department.
17. The tenderer shall carefully study the tentative drawings and specifications applicable to the contract and all the documents, which will form a part of the agreement to be entered in to, by the accepted tenderer and detailed specifications for Odisha, and other relevant specifications and drawings, which are available. Complaint at a future date that the tenderers have not seen plans and specifications cannot be entertained.
18. The drawings furnished with the tender are tentative and subject to revision or modification as tendered during the execution as per actual necessity and detail test conducted. But the tendered rates quoted by the tenderer will hold good in case of such modification of drawings during the time of execution and shall in no way invalidate the contract and no extra monetary compensation will be entertained. The work shall however be executed as per final approved drawing to be issued by the Engineer-in-Charge as and when required.
19. By admission of a tender for the work, a tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the work, about the quality and availability of the required quantity of material including the wheat/ rice referred to above, medical aid, labour and food stuff etc., and that rates quoted by him in the tender will be adequate to complete the work according to the specifications attached there to and that he had taken in to account all conditions and difficulties that may be encountered during its progress and to have quoted rates including labour and materials with taxes, octroi, other duties, lead, lifts, loading and unloading, freight for all materials and all other charges necessary for the completion of the work, to the entire satisfaction of the Engineer-in-Charge of the work and his authorized subordinates. After acceptance of the contract rate Government will not pay any extra charges for any reason in case the contractor claims later on to have misjudged as regard availability of materials, labour and other factors.

For the purpose of estimate, the approved quarry lead is to be provided judiciously. Engineers – in-charge would be responsible for ensuring the quality of the materials supplied. The contractors would, however, be responsible for procurement of material from authorized sources and voluntarily disclose the source of procurement for the purpose of billing. Besides, the bidder would be required to submit the details of quarry for procurement while submitting the bids.

(Amendment to Para-3.4.16 (a) (vii) of OPWD Code Vol.-I by substitution).

20. The bid must be accompanied by security of the amount @ 1% (One percent) of the estimated cost put to tender of 5,77,700/-rounded to thousand rupees i.e.**Rs.5,77,67,857.00/-(Rupees five crore seventy seven lakh sixty seven thousand eight hundred fifty seven)** only along with tender in the form of **Fixed Deposit Receipt of Nationalized /Scheduled Bank / Kissan Vikash Patra / Post Office Savings Bank Account / National Savings Certificate / Postal Office Time Deposit Account** duly pledged in favour of the Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar as per the terms and conditions laid down in OGFR and in no other form. Tenders not accompanied with E.M.D. as specified above will not be considered. No adjustment of E.M.D. from one work, to another will be entertained. Bidders desirous to hire machineries or equipments from outside the state or owned but deployed outside the state are required to furnish additional one percent (1%) EMD / Bid Security. Tenders not accompanied with scanned copy of E.M.D. as specified above shall be declared as non-responsive and thus liable for rejection. No adjustment of E.M.D. from one work to another will be entertained. **The bid security should remain valid minimum of 45(Forty-five) days beyond the bid validity period.**

(N.B.:- Bank Draft / Pay orders or Bankers cheque from any Nationalized banks in favour of Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar shall not be considered as E.M.D)

21. The tender should be accompanied with the *Scanned copies of the valid Registration certificate, valid VAT (Odisha VAT) clearance certificate and PAN card* which are mandatory, otherwise his/her bid shall be declared as non-responsive and thus liable for rejection. The contractor belonging to outside state of Odisha and not started business should submit an undertaking in the form of an Affidavit indicating therein that they are not registered under Odisha VAT Act. as they have not started any business in the state and they have no liability under the Act. But before award of final contract, such bidders will have to produce the VAT clearance certificate in form VAT 612.
22. The tender containing extraneous conditions not covered by the tender notice are liable for rejection and quotations should be strictly in accordance with the items mentioned in the Tender Call Notices. Any change in the wording will not be accepted.
23. The department reserves the right of authority to reject any or all tenders received without assigning any reason whatsoever.
24. The earnest money of the L-1 bidder will be retained and will be dealt with as per terms and condition of O.P.W.D. Code. The retention of E.M.D. with the Department will carry no interest.
25. The Engineer-in-charge will notify the bidder / tenderer whose bid has been accepted of the award prior to expiration of the validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the conditions of Contract called the "Letter of Acceptance") will state the sum that the Engineer-in-charge 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 Price").

The Notification of award will constitute the formation of the contract, subject only to the furnishing of a performance security (Initial Security Deposit) in form of Deposit receipt of Schedule Bank / KissanVikashPatra / Post Office Savings Bank Account/National Savings Certificate / Post Office Time Deposit Account duly pledged in favour of the Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar & payable at Bhubaneswar and in no other form, which including the amount already deposited as bid security (earnest money) shall be 2% of the value of the tendered amount (excluding 1% deposited towards hiring of equipments / machineries from outside the state if any) and sign the agreement in the P.W.D. form No. P-1 (Schedule XLV No. 61) for the fulfillment of the contract in the office of the Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar and payable at Bhubaneswar or as directed. The security deposit together with the earnest money and the amount withheld according to the provision of P-1 agreement shall be retained as security for the due fulfillment of this contract and additional performance security in accordance with the provisions of the agreement.

The agreement will incorporate all agreements between the officer inviting the bid/ Engineer-in Charge and the successful bidder within 15 days following the notification of award along with the Letter of Acceptance. The successful bidder will sign the agreement and deliver it to the Engineer-in Charge. Following documents shall form part of the agreement.

- a) The notice-inviting bid, all the documents including additional conditions, specifications and drawings, if any, forming the bid as issued at the time of invitation of bid and acceptance thereof together with any correspondence leading thereto & required amount of performance security including additional performance security.
- b) Standard **P.W.D. Form P-1 with latest amendments**. Failure to enter in to the required agreement and to make the security deposit as above shall entail forfeiture of the Bid Security (earnest money) .No contract (tender) shall be finally accepted until the required amount of initial security money is deposited. The security will be refunded after **12 (Twelve) months** of completion of the work and payment of the final bill and will not carry any interest. As concurred by Law Department & Finance Department In their U.O.R. No 848, dt.21.05.97 J.O.R.No.202 W.F.D. dtd.06.03.98 respectively the E.M.D. will be forfeited in case, where tenderers back out from the offer before acceptance of tender by the competent authority.

- 26.** The contractor should be liable to fully indemnify the Department for payment of compensation under workmen compensation act. VIII of 1923 on account of the workmen employed by the contractor and full amount of compensation paid will be recovered from the contractor.
- 27.** Tenderers are required to liable by fair wages clause as introduced by Govt. of Odisha, Works Department letter No.VII (R&B) 5225, dt.26.2.55 and No.II, M-56/61-28842 (5), dt.27.9.61.
- 28.** The contractor shall bear cost of various incidentals, sundries and contingencies necessitated by work in full within the following or similar category.
- a) Rent, royalties, cess and other charges of materials, Octroi and all other taxes including prevailing sale tax / VAT(Odisha VAT) from time to time. Ferry tolls, conveyance charges and other cost on account of land buildings including temporary building required by the tenderer for collection of materials, storage, housing of staff or other purpose of the work are to be borne by the contractor at his own cost. No rent will be payable to Govt. for temporary occupation of land owned by govt. at the site of the work for bonafide use of the land for work and all such construction of temporary nature by the contractor shall be done after obtaining written permission from the Engineer-in-Charge of Civil portion of the work and all such construction shall have to be demolished and debris removed and ground made good and cleared after completion of the work at no extra cost.
 - b) Royalty will be recovered from each bill as notified by Govt. from time to time unless K Forms are enclosed. Refund of royalty at later date after passing of the bills cannot be entertained as the recovery of royalty is being credited to revenue.
 - c) Labour camps or huts necessary to a suitable scale including conservancy and sanitary arrangements therein to the satisfaction of the local labour laws and health authorities shall have to be provided by the Contractor.
 - d) Arrangement of suitable water supply including pipe water supply where available for the staff and labour as well as for the execution of the work is sole responsibility of the Contractor and no extra cost for carriage of water will be entertained. e) All fees and dues levied by Municipal, Canal or Water Supply Authorities are to be borne by the Contractor.
 - f) Suitable safety equipments and dresses, gloves, life belts etc. for the labour engaged in risky operations are to be supplied by the contractor at his own cost.
 - g) Suitable fencing barriers, signals including paraffin and electric signals where necessary at work and approaches in order in project the public and employees from accident has to be provided by the Contractor at his own cost.
 - h) Compensation including cost of any legal suit for injury to persons or property arising out of execution of the work and also any sum, which may become payable due to operation of the workmen compensation act, shall have to be borne by the contractor.
 - i) The contractor has to arrange adequate lighting arrangements for the work wherever necessary at his own cost.
- 29.** No payment will be made for layout, benchmark, level pillars, profiles and benching and leveling the ground required, which has to be carried out by the contractor at his own cost. The rates to be quoted should be for finished items of work inclusive of carriage of all materials and all incidental items of work.
- 30.** After the work is finished all surplus materials should be removed from the site of work, preliminary work such as vats, mixing platforms, etc. should be dismantled and all materials removed from the site and premises left neat and his should be inclusive in the rates. No extra payment will be made to the Contractor in this account.
- 31.** It should be understood clearly that no claim what-so-ever will be entertained to extra items of works quantity of any item besides estimate amount unless written order is obtained from the competent authority and rate settled before the extra items of work or extra quantity of any items of work is taken up.
- 32.** The tenderers shall have to abide by the C.P.W.D. safety code rules introduced by the Govt.of India, Ministry of Works and Housing & Supply in their standing order No.44150, dt.25.11.57.

33. No part of the contract shall be sublet without written permission to the concerned Executive Engineer or transfer to be made by the power of attorney authorizing others to receive payment on contractor's behalf.

34. Bid documents consisting of plans, specifications, the schedule of quantities and the set of terms and conditions of contract and other necessary documents can be seen in all the offices issuing the documents and office of the under signed during office hours every day except on Sundays and Public Holidays till last date of sale and receipt of tender papers. Interested bidders may obtain further information at the same address. But it must be clearly understood that tenders must be received in order and according to instructions in complete shape. Incomplete tender is liable for rejection.

35. **No Relation certificate.**

The contractor shall furnish a certificate along with the tender to the effect that he is not related to any officer in the rank of an Assistant Engineer & above in the state P.W.D. or Assistant/Under Secretary & above in the Works Department. If the fact subsequently proved to be false, the contract is liable to be rescinded. The earnest money & the total security will be forfeited & he shall be liable of make good to damages the loss or damages resulting for such cancellations. The proforma for no relationship certificate is contained in a separate sheet vide **Schedule-A**.

36. **Payment for variation in price -**

Contract price shall be adjusted for increase or decrease in rates and price of Labour, Cement, Steel, Bitumen, Pipes, POL & other material component in accordance with the following principles and procedures as per formula Vide Works Department Memorandum No-12606 /W dt.24.12.2012 as given below :

31. (a)(i) REIMBURSEMENT / RECOVERY DUE TO VARIATION IN PRICE OF MATERIALS OTHER THAN (STEEL, CEMENT, BITUMEN, PIPES & P.O.L.).

If during the progress of the work the price of any materials (Excluding the cost of steel, cement, bitumen & P.O.L.) incorporated in the work (not being materials supplied from the Engineer-in-Charge's store) in accordance with clause there of increases or decreases as a result of increase or decrease in the Average wholesale price Index (all commodities), and the contractor there upon necessarily and properly pays in respect of that materials incorporated in the work such increased or decreased price, then he shall be entitled to reimbursement or liable to refund, quarterly as the case may be, such an amount, as shall be equivalent to the plus or minus difference of 85% in between the Average Wholesale price Index (all commodities) which is operating for the quarter under consideration and that operated for the quarter in which the bid was received (last date of receipt) as per the formula indicated below provided that the work has been carried out within the stipulated time or extension thereof as are not attributable to him. If penalty is levied for delayed completion of the work, the contractor shall not be eligible to get price escalation on the above materials on the value of works executed during the extended period.

This clause will be applicable to the contracts where original stipulated period of completion is more than 18 months.

In the situation where the period of completion is initially stipulated in the agreement as less than 18 (eighteen) months but subsequently the completion period has been validly extended on the ground that the delay in completion is not attributable to the contractor and in the result the total period including the extended period stands more than 18 (eighteen) months or more, price escalation for other materials is admissible only for the remaining period excluding 18 (eighteen) months there from.

Formula to calculation the increase or decrease in the price of materials:

Price adjustment for increase or decrease in cost of materials other than cement, steel, bitumen, pipes and POL procured by the contractor shall be paid in accordance with the following formula:

$$V_m = 0.85 \times P_m / 100 \times R \times (M_i - M_o) / M_o$$

V_m = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates of materials other than cement, steel, bitumen, pipes and POL.

R = Value of work done during the quarter under consideration excluding the work executed under extra items if any at prevailing schedule of rate / derived rates.

M_o = The all India wholesale price index (all commodities) prevailed during the quarter of last date of receipt of bids (as published by the Economic Adviser to Govt. of India, Ministry of Industry and Commerce, New Delhi).

M_i = The all India wholesale price index (all commodities) for the quarter under consideration as published by Economic Adviser, Govt. of India Ministry of Industry and Commerce, New Delhi. In respect of the justified period extended for completion of the work, the index prevailing at the time of stipulated date of completion or the prevailing index of the period under consideration, whichever is less, shall be considered.

P_m = Percentage of material component (other than cement, steel, bitumen, pipes and POL) of the work, as indicated in clause-31 (d) below.

31.(a)(ii) REIMBURSEMENT / RECOVERY OF DIFFERENTIAL COST DUE TO VARIATION IN PRICES OF PRINCIPAL MATERIALS (STEEL, CEMENT, BITUMEN, PIPES) NOT ISSUED BY DEPARTMENT, AFTER SUBMISSION OF TENDER :

If after submission of the tender, the prices of Steel, Cement, Bitumen and Pipes (not being supplied by the Department) increases / decreases beyond the price(s) prevailing at the time of the last date of submission of tenders including extension for the work, the contractor shall be eligible to get differential cost due to such hike on the value of works executed during the stipulated period and during the extended period when the reason of delay in completion of the work is not attributable to the Contractor. If penalty is levied for delayed completion of the work, the contractor shall not be eligible to get price variation on the above materials on the value of works executed during the extended period.

Reimbursement in case of differential cost due to increase in prices of cement, steel, bitumen and pipes are to be made by the Executive Engineer with prior approval of tender accepting authority subject to following conditions:

- 1) Contractors have to submit the vouchers showing procurement of different materials from authorized dealers for the said work.
- 2) Differential cost will be allowed only for the works which are progressed as per the approved work programme / revised work programme duly approved by the Engineer in charge.

Recovery in case of decrease in prices of cement, steel, bitumen and pipes shall be made by concerned Executive Engineer from the Contractor immediately.

The increase / decrease in prices of cement, steel, Bitumen and Pipes for reimbursement / recovery shall be determined as follows:

a) Adjustment towards differential cost of cement

$V_c = (C_i - C_o) / C_o \times$ Actual quantity of cement utilized in the work during the quarter under consideration \times base price of cement as prevailing on the last stipulated date of receipt of tender including extension, if any.

$V_c =$ Differential cost of cement i.e. amount of increase or decrease in rupees to be paid or recovered.

$C_i =$ All India wholesale price index for cement for the quarter under consideration as published by Economic Adviser, Govt. of India, Ministry of Industry and Commerce, New Delhi.

$C_o =$ All India wholesale price index (as published by Economic Adviser, Govt. of India, Ministry of Industry and Commerce, New Delhi) for cement as prevailing on the last stipulated date of receipt of tender.

b) Adjustment towards differential cost of Steel

$V_s = (S_i - S_o) \times$ Actual quantity of steel utilized in the work during the quarter under consideration.

$V_s =$ Differential cost of steel i.e. amount of increase or decrease in rupees to be paid or recovered.

$S_i =$ Cost of the steel as prevailed during the period under consideration as fixed by Steel Authority of India.

$S_o =$ Base price of Steel prevailing as on the last date of submission of tender including extension, if any.

c) Adjustment towards differential cost of Bitumen

$V_b = (B_i - B_o) \times$ Actual quantity of bitumen utilized in the work during the quarter under consideration.

$V_b =$ Different cost of Bitumen i.e. amount of increase or decrease in rupees to be paid or recovered.

$B_i =$ Average cost of Bitumen prevailed during the period under consideration as fixed by IOCL / BPCL / HPCL.

$B_o =$ Base price of bitumen as prevailing on the last stipulated date of receipt of tender including extension, if any.

d) Adjustment towards differential cost of Pipes.

$V = 0.85 \times P_p / 100 \times R \times (P_i - P_o) / P_o$

$V_p =$ Differential cost of pipe i.e. amount of increase or decrease in rupees to be paid or recovered during the quarter under consideration.

$P_p =$ Percentage of pipe component of the work as indicated in the clause-31(d).

$R =$ Value of work done during the quarter under consideration excluding the value of work executed under extra items, if any, at prevailing schedule of rates or derived rate.

$P_i =$ All India Wholesale price index for the period under consideration as published by Economic Advisor, Govt. of India, Ministry of Industry and Commerce, New Delhi, for the type of pipe under consideration.

$P_o =$ All India Wholesale price index (as published by Economic Advisor, Govt. of India, Ministry of Industry and Commerce, New Delhi) as on the last stipulated date of receipt of tender including extension, if any for the type of pipe under consideration.

31. (b) REIMBURSEMENT / REFUND DUE TO STATUTORY RISE IN COST OF MINIMUM WAGES BY GOVERNMENT:

If after submission of the tender, the wages of labour increases or decreases as a direct result of the coming into force of any fresh law, or statutory rule or order beyond the wages prevailing at the time of the last date of submission of tenders including extensions, the contractor shall be eligible to get escalation due to such hike on the value of works executed during the stipulated period and during the validity extended period when the delay in completion is not attributable to the Contractor. If penalty is levied for delayed completion of the work, the contractor shall not be eligible to get escalation on labour on the value of works executed during the extended period.

The contractor shall, within a reasonable time of his becoming aware of any alteration in the price of any such wages of labour, give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with all information relating thereto which he may be in a position to supply. Engineer-in-Charge may call books of account and other relevant documents from the contractor to satisfy himself about reasonability of increase in prices of wages and actual payment thereof. For this purpose, the labour component of the work executed during period under consideration shall be the percentage (as specified in table below) of the value of work done during that period and the increase / decrease in labour shall be considered on the cost of minimum daily wages of any unskilled labourer, fixed by the Government of Odisha under Minimum wages act.

The compensation for escalation for labour shall be worked out as per the formula given below:

$$V_1 = 0.85 \times P_1 / 100 \times R \times (L_i - L_o) / L_o$$

V_1 = increase or decrease in the cost of work during the quarter under consideration due to changes in rates of minimum wages.

R = Value of work done during the quarter under consideration excluding the work executed under extra items if any at prevailing schedule of rate / derived rates.

L_o = The minimum wages for labour as notified by State Government, as prevailing on the last stipulated date of receipt of tender including extension, if any.

L_i = The minimum wages for labour as notified by the State Government & as prevailed on the last date of the quarter previous to the one under consideration. In respect of the justified period extended, the minimum wage prevailing on the last date of quarter previous to the quarter pertaining to stipulated date of Completion or the minimum wage prevailing on the last date of the quarter previous to the one under consideration, whichever is less shall be considered.)

P_1 = Percentage of labour component of the work, as indicated in the clause 31 (d)

31.(c) REIMBURSEMENT / REFUND DUE TO VARIATION IN PRICES OF P.O.L. :

Similarly, if during the progress of work, the prices of Diesel, Petrol, Oil and Lubricants increases or decreases as a result of the price fixed thereof by the Government of India and the Contractor thereupon necessarily and properly pays such increased or decreased price towards Diesel, Petrol, Oil and Lubricants used in the execution of the work, then he shall be entitled to reimbursement or liable to refund, quarterly, as the case may be such an amount as shall be equivalent to the plus or minus difference of 85% in between the price of P.O.L.,, which is operating for the quarter under consideration and that operated for the quarter of last date of receipt of bids as per the formula indicated below provided that the work has been carried out within the stipulated time or extension thereof as are not attributable to him. If penalty is levied for delayed completion of the work, the contractor shall not be eligible to get price escalation on POL on the value of works executed during the extended per.

Formula to calculate the increase or decrease in the price of P.O.L.:

$$V_f = 0.85 \times P_f / 100 \times R \times (F_i - F_o) / F_o$$

V_f = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for P.O.L.

P_f = Percentage of P.O.L. component of the work, as indicated in the clause 31 (d) below.

R = Value of work done during the quarter under consideration excluding the work executed under extra items if any at prevailing schedule of rate / derived rates.

F_i = All India Wholesale price index for Fuel, Oil and Lubricant (High Speed Diesel) for the quarter under consideration as published by Economic Adviser, Govt. of India, Ministry of Industry And Commerce, New Delhi. In respect of the justified period extended, the rates prevailing at the time of stipulated date of completion or the prevailing rates of the period under consideration, whichever is less, shall be considered.

F_o = All India Whole sale price index for Fuel, Oil and Lubricant (High Speed Diesel) as prevailing on the last stipulated date of receipt of tender including extension, if any.

31.(d) The following percentages will govern the price adjustment for the entire contract for different types of works as applicable given in the following table:

Percentage Table

Sl. No.	Category of works		% Component (cost wise)		
			Labour (P _i)	POL (P _f)	Steel + Cement + Bitumen + Other Materials *
1.	R&B works (% of component)	Road works	5	5	90
		Bridge works	25	5	70
		Building works	25	-	75
2.	Irrigation works (% of component)	Structural work	20	5	75
		Earth, Canal & Embankment work	25	10	65
3.	P.H. Work	Structural work	25	5	70
		Pipeline works	5	-	<u>Pipe – 70%</u> *Other material – 25%
		Sewer Line	10	-	<u>Pipe – 70%</u> *Other material – 20%

*** Note: - Further break up may be worked out considering the consumption of Cement, Steel, Bitumen and Pipe in the concerned works for the period under consideration.**

31. (e) APPLICATION OF ESCALATION CLAUSE :

i) The contractor shall for the purpose of availing reimbursement / refund of differential cost of steel, bitumen, cement, pipe, POL and wages, keep such books of account and other documents as are necessary to show that the amount of increase claimed or reduction available and shall allow inspection of the same by a duly authorized representative of Government and further, shall at the request of the Engineer-in-charge, furnish documents to be verified in such a manner as the Engineer-in-charge may require any document and information kept. The contractor shall within a reasonable time of 15 days of his becoming aware of any alteration in the price of such material, wages of labour and / or price of P.O.L. give notice thereof to the Engineer-in-charge stating that the same is given

pursuant to this condition along with information relating thereto which he may be in a position to supply.

- ii) *The compensation for escalation shall be worked out at quarterly intervals and shall be with respect to the cost of work done as per bills during the three calendar months on the said quarter. The first payment shall be made at the end of three months after the month (excluding the month in which tender was accepted) and thereafter at three months interval. At the time of completion of the work, the last period for payment might become less than 3 months, depending on the actual date of completion.*

37. If any advance / Secured advance is granted by the Department the same will bear interest at the rate of 18% P.A.
38. All items of work as per schedule of quantities of this tender should confirm to Odisha Detailed Standard Specification. I.R.C. & I.S.I. Codes & Bridge code section I,II,III,IV&VII & latest design criteria for pre-stressed concrete bridge specially for Roads & Bridges issued by MoRT&H., Government of India, Compacting shall have to be carried out with help of mechanical vibrators from the range of I.S.:2505, I.S.:2006, I.S.:2514. I.S.:4656.
39. Centering & Shuttering shall be with suitable steel shutters in side of which shall be lined with suitable sheeting and made leak proof and watertight. All joints in formwork shall be properly sealed preferably with P.V.C. joints sealing tapes & compounds.
40. Form work including complete false work shall be designed by the Contractor without any extra cost to employer and the Department will have the right to inspect the scaffolding, centering and shuttering made for the work and can reject partly or fully such structures, if found defective in their opinion. Any eventually such as loss of lives or property due to failure of centering and shuttering shall be the responsibility of the Contractor regarding compensation of all claims thereof.
41. Cement shall be used by bags and weight of one bag of Cement should be 50 (fifty) Kg. net & the Engineer-in-Charge or his representative shall have the right to test the weight & quality from time to time.
42. The tenderers shall make all arrangements for proper storage of materials but no cost for raising shed for store and pay of security guard etc. will be borne by the Department. The department is not responsible for any theft or loss of materials at site. It is contractor's risk. Under any such plea, if the tenderer stops the work he shall have to pay the full penalty as per clauses of the contract.
43. Approach road to site of work for transport of materials to site of work is sole responsibility of the Contractor. Statutory traffic restriction in the town area for Transport of construction material to site of work is to be taken in to consideration before tendering and no consideration for extra time or compensation thereof shall be considered.
44. The contractor should at his own cost arrange necessary tools and plants required for efficient execution of work and the rates quoted should be inclusive of transportation, hire and running charges of such plant and cost of consumables.
45. The contractor shall properly co-ordinate with the execution of P.H. and Electrical works and takes care of the safety of workers.
46. The machineries if available, with the department may be supplied on hire as per charges noted in the enclosed statement and may be changed from time to time subject to the condition that the contractor will execute in advance an agreement with the Engineer-in-Charge.
47. No claim whatsoever will be entertained for supply of machineries. No extension of time will be granted to the contractor under this ground under any circumstances
48. The tenderer should furnish along with their tender a list of works executed during the last five years duly certified by the concerned Engineer-in-charge indicating the satisfactory completion for Civil, P.H. & Electrical works as per the proforma enclosed in a separate sheet of **Schedule-D**.
49. The tenderer or any of its constituent partners of whose contract for any work has been rescinded or who has abandoned any work in the last five years prior to the date of Bid shall be debarred from qualification. The tenderer is to furnish an affidavit at the time of submission of tender paper about

the authentication of tender documents. An affidavit to this effect is to be furnished in **Schedule-F** and information in **Schedule-E**

50. It should be clearly understood that :
- a) The joints of the bars are to be provided with lapping, welds or bolts nuts as well are directed by the Engineer-in-charge.
 - b) Concrete test specimens 150mm × 150mm × 150mm in size (whether plain or reinforced concrete) for the testing shall be taken for each structural member by a representative of the contractor in the presence of responsible officer of the rank not lower than that of an Assistant Engineer/ Deputy Manager (Engg). The contractor shall bear the cost so involved in testing. The test specimen in cube should be carried out in the Departmental Control and Research Laboratory of Cuttack or Bhubaneswar. Test should be carried out in accordance with the stipulation in Bridges code section-III.
 - c) Test specimens shall be formed carefully in accordance with the standard method of taking test specimen and no plea shall be entertained later on the grounds that the casting of the test specimen was faulty and that the result of the specimen did not give a correct indication of the actual quality of concrete.
 - d) Plain concrete and reinforced concrete specimens will be tested in **Quality Control and Research Laboratory as per direction of Engineer-in-charge**. Cost of testing of all specimens and samples will be borne by the Contractor.
51. The rates quoted should be inclusive of carriage of water required in connection with execution of the work. No claim for carriage of water whatsoever will be entertained.
52. The contractor shall employ one or more Engineering Graduate or Diploma holders as apprentice at his cost if the work as shown in the tender exceeds 2,50,000.00. The apprentices will be selected by the Chief Engineer. The period of employment will commence within one month after the date of work order and would last till the date, when 90% of the work is completed. The fair wage to be paid to the apprentices should not be less than the emolument of personnel of equivalent qualification employed under Government. The number of apprentices to be employed should be fixed by the Chief Engineer, Works Department in the manner so that the total expenditure does not exceed one percent of the tendered cost of the work.
53. List of tool & plants in running condition in possession of contractor is to be furnished in a separate sheet of **Schedule-C**.
54. It is the responsibility of the contractor to procure and store explosive required for blasting operation. Department may render necessary possible help for procuring license.
55. For submission of a tender for the work, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the work about the quality and availability of the required quantity of materials, Medical aid, labour and Flood stuff etc. and that the rates quoted by him in the tender will be adequate to complete the work according to the specifications attached thereto and that he had taken in to account all conditions and difficulties that may be encountered during its progress and to have quoted labour rates and materials with taxes, Octoroi and other duties lead, lifts, loading and unloading freight for materials and all other charges necessary for the completion of the work to the entire satisfaction of the Engineer-in-charge of the work and his authorized subordinates. After acceptance of the contract rates Government will not pay any extra charges for any reason in case the contractor finds later on to have misjudged the conditions as regards the availability of materials, labour and other factors. The contractor will be responsible for any misuse, loss or damages due to any reasons whatsoever of any departmental material during the execution of work. In case of loss, damage or misuse, recovery at the rate at 5 times the cost of the materials will be deducted from the bills or his other dues.
56. The prevailing percentage of I.T. Department of the gross amount of the bill towards income tax will be deducted from the contractor's bill.
57. Prevailing rate of VAT(Odisha VAT) on the gross amount of the bill will be deducted from the contractor's bill, where Agreement Value is **One Lakh and above**.
58. **Prevailing rate of cess i.e. @ 1% on estimated cost put to tender as per the Building and Other Constructed Workers (RE&CS) Act. 1996 and Buildings and Other Construction**

Workers Welfare Cess Act. 1996 (vide resolution No.-12653, dt.15.12.2008 of Labour and Employment Department, Govt. of Odisha) will be deducted from each running bill of the contractor.

59. It must be clearly understood that under no circumstances any interest is chargeable for the dues or additional dues if any payable for the work executed and final bill pending disposal due to any reason whatsoever.
60. No extra payment will be made for removing spreading and consolidating salvaged metals and materials.
61. Under section 12 of contractors labour (Regulation and Abolition) Act. 1970 the contractor who undertakes execution of work through labour should produce valid license from licensing authorities of labour Department.
62. **Performance Security / Additional Performance Security :**

62.1 If the rate quoted by the bidder is less than 15% of the tendered amount, then such a bid shall be rejected and the tender shall be finalized basing on merits of rest bids. But if more than bid is quoted at 14.99% (Decimals up to two numbers will be taken for all practical purpose) less than the estimated cost, the tender accepting authority will finalize the tender thorough a transparent lottery system where all bidders / their authorized representatives, the Chief Executive Officer and CFO will remain present.

(Amendment to Appendix-IX, Clause-36 of OPWD Code Vol.-II)
(by inclusion vide O.M.No.12366 dt.08.11.2013).

62.2 When the bid amount is less than the estimated cost put to tender, in such an event, the bidders who have quoted less bid price / rates than the estimated cost put to tender shall have to furnish the exact amount of differential cost i.e. estimated cost put to tender minus the quoted amount as **Additional Performance Security** in shape of **Term Deposit Receipt** pledged in favour of Chief Executive Officer, Bhubaneswar Smart City Limited payable at Bhubaneswar along with price bid. The bidder shall deposit the original "Additional Performance Security" separately in a sealed envelope at the time of submission of the Earnest Money Deposit / Bid Security and Cost of bid documents within the period as specified in 'Invitation For Bid' (IFB).

The bids of the technically qualified bidders will be opened for evaluation of the price bid. In case of bidders quoting less bid price/rate than the estimated cost put to tender and **have not furnished the exact amount of differential cost** (i.e. estimated cost put to tender minus the quoted amount) as Additional Performance Security in shape of Term Deposit Receipt pledged in favour of Chief Executive Officer, Bhubaneswar Smart City Limited, **their price bid will not be taken in to consideration for evaluation even if they have qualified in the technical bid evaluation.** If the Contractor fails to complete the work, the amount so furnished as additional performance security will be forfeited in addition to the other penal clauses, if any to be imposed.

(Amendment to Para-3.5.5(V) Note-II of OPWD Code Vol.-I by substitution vide O.M. No.5288 dt.04.05.2016).

63. **Sample of all material** - The contractor shall supply sample of all materials fully before procurement for the work for testing and acceptance as may be requiring by the General Manager (E&T), BSCL.
64. Super class contractor shall employ under himself two Graduate Engineer and two Diploma holders belonging to the State of Odisha. Special class contractor shall employ under him one graduate Engineer and two Diploma Holders belonging to the state of Odisha. Likewise 'A' class contractor shall employ under him one Graduate Engineer or two Diploma Holders belonging to state of Odisha. The contractor shall pay to the Engineering personnel monthly emoluments, which shall not be less than the emoluments of the personnel of equivalent qualification employed under the State Govt. of Odisha. The Engineer-in Chief (Civil), Odisha may however assist the contractor with names of such unemployed Graduate engineers and Diploma Holders if such help is sought for by the contractor. The names of such Engineering personnel appointed by the Contractors should be intimated to the tender receiving authority along with the tender as to who would be supervising the work. Each bill of the Super Class, Special Class or 'A' Class Contractor shall be accompanied by an employment Roll of the Engineering personnel together with a Certificate of the Graduate Engineer or Diploma Holder so employed by the contractor to the effect that the work executed as per the bill has been supervised by him. (Vide Works Department No. Codes M-22/91-15384 dated 9.7.91). The required certificate is to be furnished in the tender documents vide **Schedule-G**.

65. Engineering personnel of the executing agency should be present at work site at the time of visit of High level Inspecting officers in the rank of General Manager (E&T) and above.
66. All reinforced cement work should conform to Odisha Detailed specification and should be of proportion as per Contract Agreement having desired compressive strength (in work test) in 15 Cm cubes at 28days, after mixing and test conducted in accordance with IS 456 and IS 516.
67. Bailing out of water from the foundation, pipeline trenches S. Tanks/ Soak pits/ Sumps/ M.H. etc. either rainwater or sub-soil water if necessary should be borne by the contractor. No payment will be made for benchmarks. Level pillars, profiles and benching and leveling the ground wherever required. The rates quoted should be for finished items of works inclusive of these incidental items of work. It should be understood clearly that no claims whatsoever would be entertained.
68. The tenderer shall have to abide by the C.P.W.D. safety code rules introduced by the Government of India, Ministry of work Housing and Supply in their standing order No-44150 dtd.25.11.57.
69. The Contractor will have to submit to the Chief Executive Officer, Bhubaneswar Smart City Limited, Bhubaneswar payable at Bhubaneswar monthly return of labour both skilled and unskilled employed by him on the work.
70. All fittings for doors and windows P.H. & Electrical works as supplied by the Contractor should be of best quality and conform to relevant I.S. specification and should be got approved by the Engineer-in-charge of the respective wing before they are used on the work.
71. After completion of the work the contractor shall arrange at his own cost all requisite equipments for testing buildings, if found necessary and bear the entire cost of such test, including the inspection of Electrical Inspectorate.
72. The Tenderer should furnish along with their tender **1.** A list of works, which are at present in their hand (**Schedule-B**) **2.** List of T&P (**Schedule-C**) and **3.** List of work executed (**Schedule-D**) in the prescribed proforma(s) enclosed herewith in appropriate place of bid document.
73. All reinforced cement concrete works should be finished smooth Extra charges for plastering if required to any R.C.C. structures like roof slab, Columns, Chajjas, fins, parapets, shelves etc. shall not be paid.
74. The tenderer may at his option quote reasonable rate for each item of work carefully so that the rate for one item should not be unworkable low and for others too high.
75. The contractor has to arrange the samples of materials required for execution to be got tested and approved by the BSCL before taking up the work and during course of execution required from time to time. All such samples will be tested at any of the **Departmental Control and Research Laboratories, or other testing laboratories approved by Works Department** at the cost of the Contractor with no extra cost to the BSCL.
76. If there is any damage to the work due to natural calamities like flood or cyclone or any other cause during the course of execution of work or up to 6 months after completion of work or if any, imperfection becomes apparent to the work within 6 months from the date of final certificate of completion of work the contractor shall make good of all such damages at his own cost with no extra cost to the Department. No claims, whatsoever, in this regard will be entertained.
77. The K. B. Bricks should be well burnt and of good qualities. The bricks should be approved by the Engineer-in-Charge before use in the work and should conform to the minimum strength and other criteria as per National Building Code.
78. Under Section 1 of contract labour Regulation and Abolition Act 1970 the contractor who undertakes execution of work through labour should produce valid license from the licensing authority of labour Department.
79. Standard co-efficient for linear measurement will be adopted while calculating consumption of steel and no claim whatsoever regarding difference in co-efficient of steel will be entertained. The rates quoted shall be inclusive of any eventuality of difference for co-efficient for linear measurements.
80. Engineer Contractor desirous to avail the facility of exemption of E.M.D is required to submit an affidavit to the effect that he has not yet availed the facility / participated in the tender for more than two works (Excluding this work) during the current financial year. The name of work for which

participated and the authority to whom the tender was submitted must be mentioned in the affidavit, failing which the tender will be rejected.

81. That for the purpose of jurisdiction in the event of disputes if any of the contract would be deemed to have been entered in to within the State of Odisha and it is agreed that neither party to the contract will be competent to bring a suit in regard to the matter by this contract at any place outside the State of Odisha.
82. **SPECIAL CONDITIONS (PART OF THE CONTRACT)**
- (I) All materials before they are being used in the items of works as per this Schedule of quantities and also the finished items of work where tests are applicable shall have to be tested through the Engineer-in-charge of the respective wing at appropriate Laboratories according to the relevant I.S. specifications of the materials and the said items of works and the cost of all such tests shall have to be borne by the Contractor and the rates of the items of works should be inclusive of cost of such tests.
- (II) The tests have to be planned & carried out such that the progress of work is not hampered
- (III) The tests are mandatory as per the prescribed frequencies and I.S. specifications. However, these are not exhaustive and the Engineer-in-charge has the right to prescribe other required test if any as will be considered from time to time.
83. In case of ambiguity between clauses of this D.T.C.N. and the **P-1** contract form, the relevant Clauses of the **P-1** contract form shall prevail over the D.T.C.N. The clauses not covered under **P-1** contract form shall be governed by the clauses of the D.T.C.N.
84. It must be definitely understood that the Government does not accept any responsibility for the correctness and completeness of the trial borings shown in the Cross Section.
85. Schedule of quantities is accompanied in **Cover-II (Price Bid)**. It shall be definitely understood that the Government does not accept any responsibility for the correctness or completeness of this schedule and that this schedule is liable for alternation or omissions, deductions or alternations set forth in the conditions of the contract and such omissions, deductions, additions or alternations shall no way invalidate the contract and no extra monetary compensation, will be entertained.
86. In case of any complaint by the labour working about the nonpayment or less payment of his wages as per latest minimum Wages Act, the General Manager (E&T), BSCL will have the right to investigate and if the contractor is found to be in default, he may recover such amount due from the contractor and pay such amount to the labour directly under intimation to the local labour office of the Govt. The contractor shall not employ child labour. The decision of the General Manager (E&T), BSCL is final and binding on the contractor.
87. The contractor should arrange the materials like Steel, Cement, paint and bitumen etc. of approved quality and specification at his own cost for completion of the work with the time schedule. No extension of time will be granted on the application of the contractor due to delay in procurement of materials.
88. The bidder will be responsible for the loss or damage of any departmental materials during transit and in the execution of the work due to reasons what-so-ever and the cost of such materials will be recovered from the bills at stock issue rates or market rates whichever is higher.
89. If the contractor removes BSCL materials supplied to him from the site of work with a view to dispose of the same dishonestly, he shall be in addition to any other liability civil or criminal arising out of his contract be liable to pay a penalty equivalent to five times of the price of the materials according to the stock issue rate or market rate whichever is higher. The penalty so imposed shall be recovered at any time from any sum that may then or at any time thereafter become due to the contractor or from his security deposit or from the proceeds of sale thereof.
90. **Deleted.**
91. **Deleted.**
92. **Deleted.**
93. The contractor must have to arrange by themselves cement, steel, bitumen and every sort of materials from approved manufacturer, get it tested in the Works Department approved Laboratory

and should be approved by the BSCL before use. No extension of time or escalation of price on such account shall be entertained in future.

94. **Deleted.**
95. **Odisha Bridge & Construction Corporation Ltd.** will be allowed price preference up to 3% over the lowest quotation or tender as laid down in Works and Transport Department Resolution No-285 date-17.04.1974. The **Odisha Construction Corporation** will be allowed a price preference to the extent of up to 3% over the lowest tender amount (Where their tender is not the lowest) provided they express willingness to execute the work after reduction of rates by negotiation.
96. The contractor is required to pay royalty to Govt. as fixed from time of time and produce such documents in support of their payment to the General Manager (E&T), BSCL with their bills, falling which the amount towards royalties of different materials as utilized by them in the work will be recovered from their bills and deposited in the revenue of concerned department.
97. **Trial Boring** - The foundation level as indicated in the body of the BSCL drawing is purely tentative and for the general guidance only. The BSCL has no responsibility for the suitability of actual strata at the foundation level. The contractor has to conduct his own boring before starting the work and get the samples tested at his own cost to ascertain the S.B.C. and credibility of the strata at founding level while quoting his rates for tender the contractor shall take in to account of the above aspects.
98. Any defects, shrinkage or other faults which may be noticed within 12 (Twelve) months from the completion of the work arising out of defective or improper materials or workmanship timing are upon the direction of the Engineer-in-Charge to be amended and made good by the contractor at his own cost unless the Engineer for reasons to be recorded in writing shall be decided that they ought to be paid for and in case of default BSCL may recover from the contractor the cost of making good the works. The contractor is also required to maintain the road/ building for **12 (Twelve) months** from the date of successful completion of the work.
99. From the commencement of the works to the completion of the same, they are to be under the contractors charge. The contractor is to be held responsible to make good all injuries, damages and repairs occasioned or rendered necessary to the same by fire or other causes and they hold the Govt. of Odisha harmless for any claims for injuries to person or structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor or any one in his employment during the execution of the work. Also no claim shall be entertained for loss due to earthquake, flood, cyclone, epidemic, riot or any other calamity whether natural or incidental damages so caused will have to be made good by the contractor at his own cost.
100. **Gradation of ingredients:** The coarse and fine aggregate shall meet the grade requirement as per the latest provision of relevant. I.S. Code / I.R.C. code / MoRT&H specifications.
101. Where it will be found necessary by the BSCL, the Officer-in-Charge of the work shall issue an order book to the contractor to be kept at the site of the work with pages serially numbered. Orders regarding the work whenever necessary are to be entered in this book by the BSCL Officer-in-Charge with their dated signatures and duly noted by the contractor or his authorized agents with their dated signature. Orders entered in this book and noted by the contractor's agent shall be considered to have been duly given to the contractor for following the instructions of the BSCL. The order Book shall be the property of the Bhubaneswar Smart City Limited and shall not be removed from the site of work without written permission of the General Manager (E&T) and to be submitted to the Engineer-in charge every month.
102. The contractor should attach the certificate in token of payment deposit with the registration authority as per recent circular of the Government relating to his registration.
103. In case of any discrepancy in printing or omissions of statutory specifications or any other part or portion of the approved document during download of the bid document, the decision of the officer inviting the bid will be binding on the bidder.
104. The rates quoted by the contractor shall cover the latest approved rates of Labours, Materials, P.O.L. and Royalties. Arrangement of borrow areas i.e. Land, Approach Road to the building site etc. are the responsibility of the contractor.

- 105.** The rate for each work of concrete items wherever dewatering is imperatively necessary the term dewatering shall mean the execution or operation of the items due to standing water as well as due to percolation of water. The quoted rates will be inclusive of this.
- 106.** The contractor shall make requisition of claim book from the date of commencement of the work from the BSCL and shall maintain in proper P.W.D. form with pages serially numbered in order to record items of works are not covered by his contract and claimable as extra. Claims shall be entered regularly in this book under the dated signature of the contractor or his duly authorized agents at the end of each month. A certificate should be furnished along with the claim to the effect that he has no other claim beyond this claim up-to-date. If in any month there are no claims to record, a certificate to that effect should be furnished by the contractor in the claim book. Each claim must be defined and should be given as far as possible regarding the quantities as well as the total amount claimed. The claim book must be submitted by the contractor regularly by 10th and 16th days of each month for orders of the Engineer-in-Charge or competent authority. Claims not made in this manner or the claim book not maintained from the commencement of the work is liable to be summarily rejected. The claim book is the property of the BSCL and shall be surrendered by the contractor to the Engineer-in-charge after completion of the work or before recession of the contract by the BSCL whichever is earlier for record.
- 107.** Number of tests as specified in I.R.C. / MoRT&H / I.S.I specification required for the construction of roads / bridges / buildings or any other structural works will be conducted in any Govt. Test House /Departmental laboratories/reputed material testing laboratory as to be decided by the Engineer-in-charge. Testing charges including expenditure for collection / transportation of samples /specimens etc. will be borne by the contractor. The collection of samples and testing are to be conducted for both prior to execution and during execution as may be directed by the Engineer-in-charge and on both the accounts the cost shall be borne by the contractor.
- 108.** Even qualified criteria are met, the bidders can be disqualified for the following reasons, if enquired by the Department
- (a) Making a false statement or declaration.
 - (b) Past record of poor performance.
 - (c) Past record of abandoning the work half way/ recession of contract.
 - (d) Past record of in-ordinate delay in completion of the work.
 - (e) Past history of litigation.
- 109.** In case the 1st lowest tenderer or even the next lowest tenderers withdraw in series one by one, thereby facilitating a particular tender for award, then they shall be penalized with adequate disincentives with forfeiture of EMD unless adequate justification for such back out is furnished. Appropriate action for black listing the tenderers shall also be taken apart from disincentives against the tenderer.
- 110.** The following documents which are not submitted with the Bid, will be deemed to be part of the Bid:

SI. No	Particulars
1	Notice Inviting tender
2	Instruction to the Bidders
3	Conditions of Contract.
4	Contract data
5	Specifications
6	Drawings

- 111. Deleted.**

112. ELIGIBILITY CRITERIA:

To be eligible for qualification, applicants shall furnish the followings. Non-furnishing of the following particulars shall be treated as ineligible.

- a. Scanned copy of required E.M.D as per the Clause No. 5 (i) and Clause No.20 of DTCN and Scanned copy of required Additional Performance Security as per the Clause No.62.2 of DTCN
- b. Scanned copy of demand draft towards cost of tender paper as per Clause No.4 and 5(i) of DTCN.
- c. Scanned copy of valid Registration Certificate, Valid VAT (Odisha VAT) clearance certificate, PAN card along with the tender documents and the L-I bidder has to furnish the Original Registration certificate, VAT(Odisha VAT) clearance certificate and Pan card, for verification within (5) Five days of opening of Cover-II of the tender before Chief Executive Officer, BSCL, Bhubaneswar as per Clause No-1,5(i) and 21 of DTCN. If a VAT (Odisha Vat) clearance Certificate is not available with the tenderer, an undertaking to that effect can be furnished at time of submitting tender thus making it clear to be submitted before signing of the Agreement. The contractor belonging to outside state of Odisha and not started business should submit an undertaking in the form of an Affidavit indicating therein that they are not registered under Odisha VAT Act., as they have not started any business in the state and they have no liability under the Act. But before award of final contract, such bidders will have to produce the VAT clearance certificate in form VAT 612.
- d. License criteria as per Clause No.8 of DTCN and Schedule-J need to be furnished.
- e. Evidence of ownerships of machineries/ equipments as per Clause No.7 of DTCN and need to be furnished by the bidder in Schedule-C.
- f. Joint Ventures are not accepted.
- g. The bidder Should have satisfactorily executed two / three similar works each costing 100 Lakh or more aggregating to 300 Lakh or more or executed one similar work costing 300 Lakh or more in any one Financial year during Current / last five years. Experience detailing completed similar nature of works during Current / last five years, with Certificates from the concerned Officer not below the rank of Executive Engineer or Equivalent need to be furnished by the bidder as per Schedule D. (*Similar nature of works means construction of buildings inclusive of Electrical installations and P.H. works.*)

h. BID CAPACITY - (Vide Works Department Office Memorandum No.6300 dtd.16.6.2011)

Applicants who meet the minimum qualification criteria will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under.

Assessed Available Bid Capacity = $(A*N^2-B)$, where

A = Maximum value of works executed in any one year during the last five years (updated to the current price level) rate of inflation may be taken as 10% per year (escalation factor) which will taken into account the completed as well as works in progress.

B = Value of **current price level** of the existing commitments and ongoing works to be completed during the next years (period of completion of works for which Bids are invited).

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

Note: In case of a Joint Venture the available Bid capacity will be applied for each partner to the extent of his proposed participation in the execution of the works.

The Statement showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer-in-Charge not below the rank of an Executive Engineer.

Escalation Factor: Following enhancement factors will be used for the cost of works executed and the financial figures to a common base value for works completed in India.

<u>Year before</u>	<u>Multiplying factor</u>
One	1.10
Two	1.21
Three	1.33
Four	1.46
Five	1.61

(Applicant should indicate actual figures of costs and amounts for the works executed by them without accounting for the above mentioned factors)

In case the financial figures and value of completed works are in foreign currency the above enhanced multiplying factors will be applied. Instead, current market exchange rate (State Bank of India BC selling rate as on the last date of submission of the bid) will be applied for the purpose of conversion of amount in foreign currency into Indian rupees.

The information on Bid Capacity as on the date of this bid is to be furnished as per the format in **Schedule-B**.

Total value of Civil Engineering construction work performed in the **last five years** is to be furnished for which **certificate from Chartered Accountant is to be furnished**.

2011-2012 -----	2013-2014 -----	2015-2016-----
2012-2013 -----	2014-2015 -----	

I. Non submission of required information in schedule B, D, E and F shall be treated as non-responsive and the bid shall be summarily rejected.

113. Time Control:- (Vide Works Department Office Memorandum No.24716 dtd.24.12.2005 and No.8310 dtd.17.05.2006)

a) Progress of work and Re-scheduling programme.

- i) The Chief Executive Officer, BSCL shall issue the letter of acceptance to the successful contractor. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.
- ii) Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Chief Executive Officer, BSCL for approval a Programme showing the general methods, arrangements, and timing for all the activities in the Works along with monthly cash flow forecast.
- iii) To ensure good progress during the execution of the work the contractors shall be bound in all cases in which the time allowed for any work exceeds one month to complete, 1/4th of the whole time allowed under the contract has elapsed, 1/2 of the whole of the work before 1/2 of the whole time allowed under the contract has elapsed, 3/4th of the whole of the work before 3/4th of the whole time allowed under the contract has elapsed.
- iv) If at any time it should appear to the Engineer-in-Charge that the actual process of the work does not conform to the programme to which consent has been given the Contractor shall produce, at the request of the Engineer-in-Charge, a revised programme showing the modifications to such programme necessary to ensure completion of the works within the time for completion. If the contractor does not submit an updated Programme within this period, the Engineer-in-Charge may withhold the amount of 1% of the contract value from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.
- v) An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- vi) The Engineer-in-Charge's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer-in-Charge again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

b) Extension of the Completion Date.

- i) The time allowed for execution of the works as specified in the Contract data shall be the essence of the Contract. The execution of the works shall commence from the 15th day or such time period as mentioned in letter of Award after the date on which the Engineer-in-Charge issues written orders to commence the work or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee / Security deposit absolutely.
- ii) The Contractor shall submit the Time & Progress Chart for each milestone Quarter wise indicating each month and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per milestone given in contract data.

- iii) In case of delay occurred due to any of the reasons mentioned below, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.
 - (1) Force majeure, or
 - (2) Abnormally bad weather, or
 - (3) Serious loss or damage by fire, or
 - (4) Civil commotion, local commotion of workmen, strike or lockout affecting any of the trades employed on the work, or.
 - (5) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract.
 - (6) In case a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost, or
 - (7) Any other cause, which, in the absolute discretion of the authority mentioned, in Contract data is beyond the Contractors control.
- iv) Request for reschedule and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen (14) days of the happening of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.
- v) In any such case a fair and reasonable extension of time for completion of work may be given. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. Non-application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

c) Compensation for Delay.

If the contractor fails to maintain the required progress in terms of clause-2 of P-1 Contract or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the General Manager (E&T), BSCL (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / month (as applicable) that the progress remains below that specified in Clause-2 of P-1 Contract or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified. Compensation @ 1.5% per month of for delay of work, delay to be completed on per Day basis. Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work or to the Tendered Value of the item or group of items of work for which a separate period of completion is originally given. The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in contract data, or the rescheduled milestone(s) in terms of Clause-2.5, the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of extension of time. Withholding of this amount on failure to achieve a milestone shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However no interest whatsoever shall be payable on such withheld amount.

d) Bonus for early completion

For availing incentive clause in any project which is completed before the stipulated date of completion, subject to other stipulations it is mandatory on the part of the General Manager (E&T) to report the actual date of completion of the project as soon as possible to the C.E.O, BSCL. The incentive for timely, completion should be on a graduated scale of one percent to 05 percent of the contract value. Assessment of incentives may be worked out for earlier completion of work in all respect in the following scale.

Before 30 % of contract period = 5 % of Contract Value

Before 20 to 30 % of contract period = 4 % of Contract Value

Before 10 to 20 % of contract period = 3 % of Contract Value

Before 5 to 10 % of contract period = 2 % of Contract Value

Before 5% of contract period = 1 % of Contract Value

(Amendment to Para-3.5.5 (V) of Note-III of OPWD Code Vol.-I by inclusion vide O.M. No.5288 dt.04.05.2016)

e) Management Meetings

- i) Either the Engineer or the Contractor may require the other to attend a management meeting. The business of management meetings shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- ii) The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

Rescission of Contract (Amendment as per letter No.10639 dt.27.05.2005 of Works Department, Odisha):- To rescind the contract (of which rescission notice in writing to the contractor under the hand of the Chief Executive Officer, BSCL shall be conclusive evidence), 20% of the value of left over work will be realized from the contractor as penalty.

114. Building and other Construction Workers Welfare Cess @ 1% of the estimated cost as per tender notification read with latest corrigendum if any will be proportionately deducted from the contractor's bill at the time of making payment of each bill.
115. The tenderers are required to go through each clause of P.W.D. Form **P-1** carefully in addition to the clauses mentioned here in before tendering.
116. A Contractor may be black listed as per amendment made to Appendix XXXIV to OPWD Code Vol.- II on rules for black listing of Contractors vide letter no.3365 dt.01.03.2007 of Works Department, Odisha.

As per said amendment a Contractor may be blacklisted

- a) Misbehavior/threatening of Departmental & supervisory officers during execution of work/tendering process.
 - b) Involvement in any sort of tender fixing.
 - c) Constant non-achievement of milestones on insufficient and imaginary grounds and non-adherence to quality specifications despite being pointed out.
 - d) Persistent and intentional violation of important conditions of contract.
 - e) Security consideration of the State i.e. any action that jeopardizes the security of the State.
 - f) Submission of false/ fabricated / forged documents for consideration of a tender.
117. The safety certificate of the E.I. work will be furnished by the agencies after getting necessary verification from the electrical inspector / equally competent authority responsible for the work prior to Energisation of the building.
 118. Percentage rate contract (vide Works Department letter no.8310 dt.17.05.2006) In case of percentage rate tender:-
 - i) The Contractor has to mention percentage excess or less over the estimated cost (In figures as well as words) in the prescribed format appended to the tender document.
 - ii) Contractors participated in the tender for more than one work may offer conditional rebate. Rebate offer submitted in separate sealed envelope shall be opened, declared and recorded first. The rebate so offered shall be considered after opening of all packages called in the same Tender Notice. The Contractors who wish to tender for two or more works shall submit separate tender for each. Each tender shall have the Bid Identification No., Name & Sl. No. of the work (as per IFB) to which they refer, written on the envelope.
 - iii) Only percentage quoted shall be considered. Percentage quoted by the Contractor should be accurately filled-in figures and words, so that there is no discrepancy.
 - (1) If any discrepancy is found in the percentage quoted in words and figures, then the percentage quoted by the Contractor in words shall be taken as correct
 - (2) If any discrepancy is found in the percentage quoted in percentage excess/ less and the total amount quoted by the Contractor, then percentage will be taken as correct.
 - (3) The percentage quoted in the tender without mentioning excess or less and not supported with the corresponding amount will be treated as excess.
 - (4) The percentage quoted in the tender without mentioning excess / less supported with corresponding amount does not tally with either to percentage excess or less then it will be treated as percentage excess.

- (5) The percentage quoted in the tender without mentioning excess / less supported with corresponding amount if tallied with the percentage then it will be treated as to which side the amount tallies.
 - (6) The Contractor will write percentage excess/ less up to two decimal point only.
 - (7) The tender shall be written legibly and free from erasures, over writings or corrections of figures. Corrections, over writings & interpolations where unavoidable should be made by making out, initialing, dating and rewriting.
- iv) In the contract P1 time is the essence. The contractor is required to maintain a certain rate of progress specify in the contract.
 - v) The quantity mentioned can be increased or reduced to the extent of 10% (ten percent) for individual items subject to a maximum of 5% (five percent) over the estimated cost. If it exceeds the limit stated above prior approval of competent authority is mandatory before making any payment.
 - vi) The period of completion is fixed and cannot be altered except in case of exceptional circumstances with due approval of next higher authority.
 - vii) Bills for percentage rate tenders shall be prepared at the estimated rates for individual items only and the percentage excess or less shall be added or subtracted from the gross amount of the bill.

(Total 118 Clauses)

APPROVED

Chief Executive Officer,
Bhubaneswar Smart City Limited.
Odisha, Bhubaneswar

TECHNICAL SPECIFICATION OF CIVIL PORTION OF WORK

Materials of following specification are to be used in work. The tenderers are expected to possessed and be well conversant with the following IS standard and code of practice.

1.	Cement	Will be as per I.S. 269/255 (However the grade of cement to be selected by the Engineer-in-Charge of work and compressive cube test before commencement of work in each batch).
2.	Steel	I.S. 2008 (HYSD – Fe500D) (SAIL/ TATA Steel/Jindal/ Shyam/RINL)
3.	Vibrator	I.S. 7246
4.	Aggregate	I.S. 383, I.S. 515
5.	Water for mixing and curing	Shall be clean, free from injurious amount of oil, salt, acid, vegetable materials and other substances and harmful to concrete in conformity to I.S. 456 and I.S. 2025.
6.	Sand/ Fine Aggregate	I.S. 2116, 383
7.	Binding wire	I.S. 280 (galvanized minimum 1 mm)
8.	Rain water pipe	I.S. 2527
9.	Construction joints	I.S. 3414
10.	Steel Window Frame	I.S. 1038/83
11.	Steel Door Frame	I.S. 4351/75
12.	Fitting & Fixtures for joinery works	Conforming to I.S. 7452/82 strictly conform to I.S. specification and as per direction of Engineer-in-Charge.

Note : For road work (Approach Road) specification as per road and bridges (latest edition) published by I.R.C & M.O.S.T. shall be followed. In case of any doubt and absence of provision, regarding specification I.S. / Latest National Building Code shall be referred.

ITEM OF WORK

1. Concrete shall be with conformity to I.S.456.
2. Foundation shall be with conformity to I.S.1080.
3. C.R. Masonry shall be with conformity to I.S.1597.
4. Brick masonry shall be with conformity to I.S.2212.
5. Cement plastering shall be with conformity to I.S.9103 & 6925.
6. Mortar shall be with conformity to I.S.2250
7. White and colour washing shall be with conformity to I.S.6278.
8. CC in foundation shall be with conformity to I.S.2571.
9. Anti-Termite Treatment shall be with conformity to I.S.6813. (Part – I & Part – II)
10. Painting to all surfaces shall be with conformity to I.S.2395 (Part – I & Part – II)
11. DPC shall be with conformity to I.S.3067
12. Tar felt treatment shall be with conformity to I.S.1346
13. Mosaic flooring with conformity to I.S.2114
14. Steel painting shall be with conformity to I.S.1477 (Part – I & Part – II) I.S.1661

TECHNICAL SPECIFICATIONS OF P.H. PORTION OF WORK

A) WATER SUPPLY & SANITARY INSTALLATIONS:

Materials of following standard manufacturers are to be used in the work. The contractor shall indicate, in the offer, the brand or make of the materials, for which the rates are quoted.

(a) Sanitary fixtures:

To be of best quality vitreous ware of porcelain.

- (i) Indian water closet
- (ii) Foot Rests
- (iii) Wash Hand Basin
- (iv) Kitchen Sink Hindware/Parry Ware / Neycer/ ISI marked
- (v) Urinals
- (vi) Drain Board
- (vii) Odisha Closet
- (viii) European Water Closet &
Low Level Flushing Cistern.

(b) C.I. High Level Flushing Cisterns:

Sushila Industries Prabhat Iron Foundry/
East India Steel / I.S.I. marked. “

(c) H.C.I. Soil Waste Pipes:

Confirming to I.S.I. 1729-1954, having
I.S.I.Mark.

(d) C.P. Bath Room Fittings:

Plaza/Jaquar I.S.I. marked &
confirming to-latest ISS

(e) Brass Fittings:

Shakti/Anupama /Luster/ I.S.I.Marked.

(f) Gunmetal Valves:

Anupama / Leader / B.S.I.S.I. marked.

(g) G.I. Pipes (Medium Class):

Manufactured by TATA / JINDAL / B.ST.
having I.S.I. Mark.

(h) Galvanized Iron fittings:

I.S.I. marked C/R brand.

(i) Paints:

Asian / Berger / Jonson/Confirming to I.S.S

(j) Cast Iron Manhole cover frame:

Sushila Industries / Prabhat Iron Foundry /
East India Steel make confirming toISS 7.26

(k) Stone Ware Pipes &Fittings:

Manufactured by Odisha Ceramic Industries
/ Odisha industries / Keshab Ceramic
confirming to I.S.S. Specification No.651 /
1980 {Grade A}

(l) P.V.C. (S.W.R.) &P.V.C (Rigid.) Pipe/Fittings:

Manufactured by the Supreme Industries
Ltd., Bombay / Oriplast, Balasore , Duroplast
confirming to I.S. Specification No. 4985/81
(Class IV)

(B) BUILDING MATERIALS:

(a) Bricks:

Bricks shall be of locally available best quality kiln burnt. Bricks shall be well burnt, uniform deep red, cherry or copper colored, free from cracks and flaws, well shaped, uniform in size, homogeneous in textures and shall omit a clear metallic sound when struck; bricks shall have a minimum crushing strength 75 Kg/Cm² and shall not absorb water more than 20% by weight.

(b) Cement Mortar:

Mortar shall be well mixed to a uniform colour and consisting in the proportion as specified in the items of work. Sand shall be measured on the basis of its dry volume and the quantity shall be adjusted for bulking of damp sand. Cement shall be mixed, taking 50 kg. or 0.035 Cum. in volume only required quantity that can

be consumed within 30 minutes of adding water shall be mixed at one time.

(c) Cement:

Cement should confirm to IS-269/IS-455.

(d) Sand:

Locally available best river sand medium size.

(e) Coarse Aggregates:

The coarse aggregate shall be of hard granite stone and shall generally confirm to I.S. 389. Porous Course aggregate shall not be used. The aggregate shall be free from clay films and other adherent coatings. Aggregate containing clay films over the stone materials shall be thoroughly washed. The aggregate shall be from approved quarry and crusher broken. Course aggregates shall be composed of particles ranging between the sizes 2.36 to the maximum size as may be specified in the relevant item of work, within the range, the aggregates shall be well graded so as to produce a dense concrete.

(f) Reinforcements:

HYS D Steel bars of steel of medium tensile strength will be used as reinforcement as per drawing and design and directions. Mild steel bars shall confirm to I.S.;226/1962 standard quality or IS:432/1966 - Grade-I. Black annealed wire (Not thinner than 24 gauge for tying the reinforcements shall be used).

TECHNICAL SPECIFICATION FOR SANITARY & PLUMBING WORKS

(A) Sanitary ware & allied fittings:

1. General:

All Sanitary fixtures and their allied fittings, should be of first quality, manufactured by Hindustan Sanitary Ware / Parry ware / Nycer, These should be approved by the Engineer-in-charge of the G.P.H. Wing before use.

2. Squatting Pattern W.C. (pan) (Odisha Pattern Closets):

The water closet shall be of vitreous China of specified size and pattern, with an integral flushing rim. It shall have the flushing inlet at the back. The Odisha closet should be of approved quality confirming to I.S.S.-2656 (Part-III).

The squatting type Indian Water Closet (Odisha Closet) shall be sunk in floor sloped towards the pan in a workmanship like manner. The closet shall be fixed on a proper cement concrete base of 1.3.6 proportion, taking care that the cushion is uniform and even, without closet, to receive the specified thickness of the floor finishing. The joint between the Closet and the P.V.C. (S.W.R) trap shall be made with W.C. ring and rubber lubricant and shall be leak proof.

3. Flushing Cistern :

The flushing of the Indian water closet (Odisha Closet) shall be done by C.I. or Polyateryne High Level low-level porcelain valve-less siphonic flushing cistern of approved brand and quality I.S.I. Marked and capacity as specified. The connection between the cistern and water closet shall be made by 32 dia. flush pipe, made from G.I. Pipe (Light Quality) or 32 dia P.V.C. Pipe as specified in the tender schedule. The flush pipe with an offset should be fixed to wall by using C.I. Holder Bat Clamps. The capacity of the cistern should be 10 Liters. as per I.S.S. 15 Liters. The Cistern shall be fixed on cast Iron or Rolled Steel Cantilever Brackets (Bulletin type), which shall be firmly embedded in the wall, with C.C. 1.2.4. The Cistern shall be provided with 20mm dia P.V.C. Overflow Pipe with fittings, which shall terminate into mosquito proof coupling secured in a manner that will permit it to be readily cleaned or renewed.

The 32mm dia Flush Pipe shall be connected to the Water Closet by means of approved type joint. The Flush Pipe shall be fixed to wall by using C.I. Holder Bat Clamps. The bend and the Offset as required in the Flush pipe shall be made cold. The inside of the Cistern shall be painted with two coats of approved black bitumen paint. The Outer face of the Cistern, Brackets Overflow pipe and Flush Pipe etc., shall be painted with two coats of any synthetic enamel paint of approved shade and make, over a coat of priming. The cost of the rate quoted for the flushing cistern. The inlet connection to the Cistern shall be made with 450 mm 1 cage 15 mm dia P.V.C. Heavy type connection Pipe.

4. Wash Hand Basin:

The Wash Hand Basin shall be of the White Vitreous China of approved quality, make and brand I.S.I, marked. It shall be one-piece construction with an integral combined overflow. The size of the basin shall be as specified. Each basin shall be provided with one 15 mm dia C.R Brass Pillar Tap, 32mm dia C.R Waste, C.R. Chain and Rubber Plug, Unions, Joints, C.P Bottle trap cast complete in all respects of approved quality.

The Basin shall be supported on a pair of R.S. or C.I. Cantilever brackets (built in type) embedded and fixed in wall with cement concrete, 1:2:4. These brackets shall be painted to the required shade with two coats of approved synthetic enamel paint over a coat of priming.

The waste of the Basin shall discharge into a floor trap or Channel through bottle traps as specified. One 32mm dia C.P. Bottle Trap is to be fixed to the Waste of the Basin & the outlet of the bottle trap is to be connected to the waste pipe to discharge the waste to the Pipe, to discharge the waste to the aforesaid floor trap. The inlet connection to the Basin shall be made with 450mm long 15mm dia Heavy type P.V.C. connection pipe.

5. Kitchen Sink:

Unless otherwise mentioned the Kitchen Sink and drain board (if used) shall be of white Vitreous China or fire clay as specified and approved quality, make a brand, confirming to T.S.S, It shall be of one piece construction with integral combined overflow. The size of the sink and Drain Board shall be as specified.

Each Sink shall be provided with one 15mm dia C.P. brass, Bib Cock, long body, 40mm C.P. Waste with overflow C.P. Chain & Rubber Plug, unions etc., complete in all respects as specified and of approved quality.

The sink shall be supported on a pair of M.S. or C.I. Cantilever Brackets (Built in type) embedded or fixed in position in the wall by Cement Concrete 1:2:4. The brackets shall be painted to required shade with two coats of approved synthetic enamel paint over a coat of priming. The waste should discharge into a floor Trap or Channel. The waste pipe should be 40mm dia P.V.C. Pipe jointed to the waste of the Sink with a Brass union nut.

6. Standing Urinals:

The Urinals shall be flat pattern lipped front basin of required dimension of White Vitreous China and one piece construction with internal flushing box rim of an approved make and brand as specified. It shall be fixed in the position by*using wooden plug embedded in the wall with screws of proper size. Each Urinal shall be connected to a 40mm dia RV.C. Waste Pipe, which shall discharge into a channel of floor trap. The lip of Urinals shall be kept at 525mm from floor level, while fixing the Urinal on wall.

Where no. of Urinals are fixed in a line, the distance between the centers to centre of each Urinal shall be kept 750mm. and each Urinal should be separated from one to other by a partition plate. The centre to centre of partition plates shall be kept 750mm apart. The partition plate shall be of one-piece 25mm thick marble plates, cut to size and front corners rounded. The partition plates shall be embedded in wall with cement concrete and finished smooth. The bottom of the partition plate should be kept 350mm above floor level and top should be kept at 1250mm above floor level. The plates should project 600mm from wall surface. The width of the plates to be embedded inside the wall should not be less than 100mm. The thickness of the plates shall be minimum 25mm.

For flushing the Urinals each Urinals shall be connected with one 20mm dia G.I. Pipe (Medium Class), One of this pipe shall be inserted into the inlet of the Urinal and jointed with Jute and putty where as the other end is connected either with a Tee or Bend with the 25mm dia size Water Pipe Line fixed on the wall horizontal above the Urinals. In each 20mm dia flush pipe one 20mm dia cum-metal Gate valve, the water will flow to thermal of Urinal through the inlet pipe and flush the Urinal. After flush, the valve can be closed to avoid wastage of water. One 40mm dia P.V.C. Waste Pipe shall be connected to the waste of each Urinal, to discharge the Waste into the Channel of Trap. One end of this Waste pipe shall be made a cup size to fit into the projected waste and tightened with screws.

7. Squatting Urinal Plates:

The Urinal Plates shall be of White Glazed Vitreous China with integral flushing rim of size 450 X 350mm of approved make and brand as specified. There shall be white vitreous channel with stop and outlet pieces in front. These plates shall be fixed on C.C. at 75mm to 100mm above floor level.

For flushing arrangement, one 25mm dia G.I. Common Water Pipeline (minimum size) shall be fixed on the wall parallel to floor. For each urinal one 20mm dia G.I. Branch Pipe shall be taken down up to 200mm from floor level just at the center of each plate, in which one 20mm dia Gate Valves is fixed at 350mm above floor level. At 1200mm height, the 20mm dia flush pipe shall be divided into two branches shall be taken downward and connected to the inlets of the urinals plate at floor level. By operating the valve as above, the water will rush into the rims of the urinal plate and flush it.

Where there are number of urinals fixed in a line, each urinal should be separated by a partition plate fixed in the center of two urinal plates. The center-to-center distance of the partition plates shall be kept 750mm.

The partition plates shall be of one-piece marble plate, 25mm thick, cut to sizes and front corners rounded. The plates are to be embedded in wall with cement concrete and finished smooth. The bottom of the partition plates shall be kept flushed to urinal top level and the top level of partition plate shall be kept at 1200mm from the urinal plate top and the projection from the wall shall be 600mm. The width of the plate to be embedded inside the wall should not be less than 100mm.

(B) Soil and waste pipes and fittings

1. H.C.I. Pipe Fittings

The Cast iron Soil, Waste and design pipes (spigot & socket joints) shall be of make and brand as specified (under specification of materials), confirming to I.S.S. 3989-1970 and ISI marked with approved clamps are to be used. The pipes and fittings shall be free from cracks, laps, pinholes, and other imperfection and carefully cited. The access door fittings shall be designed and made so as to avoid dead space in which filth may accumulate and door shall be provided with 3mm thick rubber insertion packing when closed and bolted.

WEIGHT OF HCI PIPES

2. Dia of Pipe in mm	Thickness in mm	Length of pipe & width piece	
		1.8mtr. D/s	1.8mtr.
50 mm	5mm	16.00kg.	15.00 kg.
75 mm	5mm.	13.83kg.	16.52kg.
100 mm	8mm	24.00kg.	22.00kg.
150mm	8mm	26.70 kg.	31.82kg.

Tolerance 10%

3. The jointing should be done with pig lead confirming to I.S. 782-1966 - grade 99.94. The spigot and of Pipes and Fittings should enter into the socket end. The annular space shall be packed with spun yarn gasket, compacted so as to leave a depth for receiving required quantity of lead in a continuous pouring from ladder. After pouring lead in the joints in full, caulking is to be done three times round with the caulking chisels, so that the joints may be sealed with lead. The depth of lead in a point should be 35mm and the rest depth of the joint should be packed with spun yarn Gasket.

4. Requirement of lead and Gasket cement for jointing H.C.I. Pipes (Each Joint)

Dia of pipe in mm.	Lead in kg.	Gasket in kg.	Cement kg.
(same for lead & cement joint)			
100	1.2kg.	0.13kg.	0.12kg.
50	0.36 kg.	0.06 kg.	0.06 kg.

5. The inside of the pipes and fittings shall be well coated with special tar or bitumen solution of approved quality. Where the pipe and fittings are laid below the ground, the outer surface of the pipes and fittings shall also to be painted with two coats of black anticorrosive paint of approved quality. On completion of the work, the exposed pipes and fittings are to be painted with two coats of synthetic enamel paint of approved color & quality over a coat of red oxide primer. The cost of paint should include in the rates.

6. Soil pipes for ventilation is to be connected to the sewer at its floor and without a trap and be carried to such a height, at least above roof level, to prevent damage to health by commission of foul air, The pipe shall terminate as open and protected by a cowl.

7. The waste water pipe shall be connected with the nearest yard gully or a surface drain.

8. The traps should be of hard cast iron and should have a water seal at least 50mm deep.

9. All the soil and waste pipes and fittings, after laid and fixed shall be smoke tested, to the entire, satisfaction of the Engineer-in-charge. The Cost of testing is to be included in the offer. For smoke-test the materials usually burst greases cotton waste, which gives out a clear pungent smoke, which is easily detected by sight and smell. Smoke shall be pumped to the drains from the lower end from a smoke machine, which consists of lower, and burner.

a) P.V.C (S.W.R.) & P.V.C. (Rigid) Pipes & Fittings

9.01. The P.V.C. (S.W.R.) and P.V.C. (Rigid), soil Waste & Vent Pipes (Spigot & Socket, & couples joints), shall be of make & brand as specified (Under Specification of materials) confirming to I.S.S., B.S.S. & DIN are tube used.

The main specification of P.V.C. Soil & Waste pipes and fitting are as below.

- a) Materials – Un-plasticized Poly Vinyl-Chloride (UPVC).
- b) Color - Grey
- c) Dimensions -
 - (i) Diameter - Fittings - 75mm/110mm/63mm & 63mm.
 - Pipes - 75mm, 110mm, on lengths of 3.or 6 mtr.
- d) Wall thickness - Fittings - Minimum 3.2mm at any port.
 - Pipes - As per application
 - For Rainwater - 75mm-1.8. to 2.2.mm, 110mm-2.5. to 3mm
 - Waste & Soil - 75mm -1.8 to 2.2mm, 110mm -2.5 to 3 mm, 63mm –
 - Underground drainage with
 - light/NIL Traffics - 110mm - 2.5 to 3mm
 - Light/Nil in Heavy traffic - 110mm 3.7 to 4.3mm
- e) Standard Confirming to Attributes Confirms to Standard No.
 - i) Fittings & Wall B.S.4514, DIN 10531
 - Thickness - DIN 19534 I.S.7834 - PVC (Rigid)
 - ii) Pipe Wall thickness - IS 4905
 - iii) Rubber ring - IS 5382
 - iv) Fitting dimensions - DIN 19531 - P.V.C.,
DIN 19534-S.W.R.
IS - 7834 V.C. (Rigid)
 - v) Pipe Dimensions - IS 4985

b) Laying instructions & Jointing Procedure

1 Jointing of P.V.C. (S.W.R.) Pipes & Fittings

Clean the outside of the pipes spigot and the inside of the sealing groove of the fitting. Apply the rubber lubricant, to the spigot end, sealing ring and pass the spigot end into the socket, containing sealing ring, until fully homed. Mark and position of the Socket edge with pencil on the pipe, then withdraw the pipe from the socket by approx. 10mm towards thermal expansion gap.

2 Fixing of the Pipes and fittings on wall surface.

P.V.C. pipes both (S.W.R.) & (Rigid), fixed on wall surface, are to be supported by P.V.C. pipe clips, specially made for these pipes, with horizontal runs, the pipe clips should be spaced at intervals of more than 10 times the outside diameter of the pipes. In vertical lines the clips are to be spaced at intervals of one meter to a maximum of two meters according to pipe diameter. •

3 Jointing of P.V.C. (Right) Pipe Fittings

Clean the Outside of the pipes and inside of the socket of a fitting of the inside of the couplers (where 2 plain ended pipes are jointed) of. Apply solvent cement solution, evenly and smoothly on the outer surface of the pipe end and inside surface of either the coupler or the socket and pass the pipe end into the socket of the fittings. Up to full depth of socket. In case of jointing 2 plain-ended pipes 1st. push the coupler up to half depth on the end of one pipe and the outer half of the coupler should be pushed to the end of other pipe and thus, both pipes are jointed.

4 Fixing of P.V.C. pipes and Fittings through holes of Walls or Chajja of roofs etc.

The Wall/concrete slots should allow for a stress free installation, Pipes and fittings to be inserted into the slots, without a cement base, have to be applied first with a thin coat of P.V.C. Solvent cement, followed by sprinkling of dry sand (medium size). Allow it to dry. This process gives a sound base for cement concrete fixation, around the pipes/fittings while mending the damages.

5 Anti-siphon Pipes

The entire anti siphon pipes and fittings to be used are of 63mm. If these are not available under the items of P.V.C. (S.W.R.) materials, 63mm pipes and fittings, manufactured under P.V.C.(right) materials can be used, since the raw materials for both is same.

6 All traps should have a minimum water seal of 50mm as per I.S. 5329 and IS 2556 (Part XIII). Where anti-siphon connection is required, the traps to be supplied and used should have a 50mm anti-siphon gend horn on the outlet side. All the Traps used with the closets, should be of the size 125mm X 110mm i.e. Inlet (Socket end) of 125mm & outlet (spirit end) of 110mm only.

7 Installation of Water Closet

Determine the correct Location of the P/S Trap & set on a firm base, relative to the floor finish by pouring concrete on a slab. Bedding can be carried out by pouring concrete around the trap, ensuring that the traps outlet is left clear of concrete. Place the W.C. Connector ring to the socket end of 125/110mm R/S trap. Apply rubber lubricant on W.C. Connector ring as well as outer side of water closet (connection point) and now complete the joint by pushing the W.C. to home of 125mm socket of the trap.

8 P.V.C. (Rigid) Pipes and Fittings

63mm (O.D.) P.V.C. Pipes to be used for these work either in anti-siphon system or elsewhere, should be of "Quick Fit" Pipes Class 2 (4kg. F/Cm²), Quick Fit, Pipes have one end socket. The P.V.C. (Rigid) fittings, such as 63mm elbow, 63mm equal Tees 110mm x 63mm reducer etc. used in the work, should be of injection-molded fittings.

9 One -jointing rubber ring will be available, with each P.V.C. (S.W.R.) pipe and fitting and hence, the cost of therein will not be added in the joint.

10. Measurement

All pipes shall be measured not/length as laid or fixed and shall be measured over all fittings such as bends, junctions, traps etc. The length shall be taken along the counter line of the pipes and fittings. Fittings will be counted extra over.

31. Before fixing and painting, the pipe shall be tested hydraulically to pressure 0.4Kg/Cm² for pipes under I.S.-1729/1964 and at a pressure 0.7 Kg/Cm² for pipes under I.S. 3989-1970 without showing any sign of leakage, sweating or her defect of any kind. The pressure should be applied internally and shall be maintained for not less than 15 seconds.

c) Water Supply Pipes and Fittings:

1. Materials.

All galvanized Iron Pipes are to be of mild steel continuous welded, screwed tubes, medium quality confirming to I.S.S. and bearing ISI Marks manufactured by reputed Firms and approved brands as specified. The pipes shall confirm to LS.1239 (Part-I) -1975.All G.I. Fittings shall be of 'R' Brand manufactured by M/s. R.M. Engineering Ltd., Ahmadabad and 'C' brand manufactured by Present Engineering works or equivalent best quality.

2. Laying of Pipes

The layout of the mains and service pipe set etc., will be done in accordance with the drawings. The contractor is to mark out the exact position of the pipes and fittings at site and take approval of the Engineer In-charge, before taking up the work.

3. Where the Pipes are laid, underground these must not be laid less than 450mm below ground level and coated with one coat of approved black bituminous paint. For laying the G.I. pipes and fittings below ground level, the width and the depth of the trenches for different dimensions for the pipes shall be given as below :

Dia of Pipe	Width of Trench	Depth of Trench
15mm to 50 mm	300 mm	600 mm
65mm to 100mm	450 mm	750 mm

The pipes shall be laid on a layer of 75mm thick sand and filled up with sand up to 75mm above pipes and the remaining portion of the trench shall then be filled up with proper ramming as described in "Excavation and refilling". The surplus earth shall be disposed of as directed.

Thrust or anchor blocks of cement concrete 1.2.4 in hard granite chips shall be constructed on all bends or branches to transmit the hydraulic pressure without impairing the ground and spreading it over a sufficient area. Pipes shall not be laid to pass through manholes, catch pit, drain, where, it is unavoidable the pipes shall be carried in sleeve pipe of M.S./G.I., as approved by the Engineer-in-charge. The rate should include such a situation.

4. Where Pipes run along walls, the same are to be fixed to the wall with holder bat clamps /M.S. Hooks as below:

Dia of pipe in mm	15	20	25	32	40	50
Horizontal line	2m	2.50m	2.50m	2.50m	3m	3m
Vertical line	2.5m	3m	3m	3m	3.5m	3.5m

Where the pipes are passing through the R.C.C. / Masonry wall / Column / beam or pillars, these must pass through the appropriate higher sizes of C./G.I Sleeve Pipes and are to be included in the rates. In case the pipes are embedded in walls and floors it should be painted with one coat of anticorrosive paint of approved quality. .

All pipes should be fixed horizontal and vertical. For taking the pipes through the walls and floors & roof slabs etc. the holes shall be made by filling with chisels or jumper and not by dismantling the brickwork or concrete. After fixing, the holes shall be made good with cement concrete 1:2:4 and properly finished with C. Plaster 1.4 to match the adjacent surface. Union Nuts are to be provided in each of the vertical riser or drop on and from G.I. Tank and near the Valve and as and where necessary. The long screw fittings of 3 mtrs. for long horizontal lines and inside the lavatory / Kitchen etc.

5. After laying and jointing the pipes and fittings shall be inspected under working condition of pressure and flow. Any joint found leaking pipes should be removed and replaced without extra cost. The pipes and fittings after they are laid shall be tested to hydraulic pressure of 6 Kg/Cm². The test pressure should maintain without loss of for at least half an hour.

6. Painting

On completion of the test, the exposed pipes and fittings are to be painted with two coats of synthetic enamel paint of approved color and brand over a coat of priming.

7. Measurement

The length shall be measured in running meter. Correct to centimeter for the finished work, which shall include the pipes and fittings such as Bends, Tees, Elbows, etc., but excludes brass or Gun-metal fixture like tap, Cooks, Valves, PVC connection pipes etc.

8. Ball Valve

The ball valve shall be high or low pressure class as stipulated in the Tender Schedule and shall confirm to I.S. 1703-1968, the nominal size of ball valve shall be that corresponding to the size of Pipe for which it is used. The BAL valve shall be of brass or gun-metal and the float for low pressure polyethylene and for high pressure in copper. Each and every ball valve while in closed position shall withstand and internally applied hydraulic pressure of 20 Kg/Cm² for a minimum period of two minutes without leakage or sweating.

Every high pressure ball valve when assemble in working condition, with the float immersed to not more than half its volume shall remain closed against a test' pressure of 10.5Kg/Cm² and a low pressure ball valve against a test pressure of 5.3 Kg/Cm².

Polyethylene floats shall be watertight and non-absorbent and shall not contaminate water and with do jointing adhesive jointing parts. The minimum thickness of the copper sheet used for making copper floats shall be of 0.45 mm. The thickness of materials of the float shall be uniform throughout.

9. Ferrule

The ferrules for connection with C.I. main shall generally confirm to I.S. 2692-1964 and shall be of nominal bore as specified. The ferrule shall be fitted with 3 screw and 1 plug or valve capable of complete cutting off the supply to the connected pipe as and when required. For fixing the ferrule, the C.I. main shall be drilled and tapped during non-supply hour at 45 to the connected Pipe as that when required. The ferrule must be so fitted, that no portion of the sunk shall be left projecting within the main on which it is fitted. After the ferrule is connected, one C.I. bell mouth cover or with bricks (as specified) shall be kept over the ferrule to cover the ferrule to protect it and the cost thereof is to be included in the item, even if there is no mention.

10. Non-return Valve (Check Valves)

The non-return valve shall be of Brass or Gunmetal and shall be of horizontal or vertical flow type and of the size as specified and confirm to I.S. 7810-1959 and I.S. 778-1957. The approximate weights of the valves are given below.

Dia in mm	Horizontal type (in kg)	Vertical type (in kg)
15	0.30	0.25
20	0.55	0.25
25	0.90	0.75
32	1.25	0.90
40	1.70	1.20
50	2.90	1.45
65	5.25	2.15
80	7.70	4.10
	±Tolerance 5%	

11. Foot Valve

Foot valve is generally placed at the lower end of the suction pipe of the centrifugal pump to prevent the suction pipe from emptying. On vertical non-return valve may also be fixed in place of foot-valve. The foot valve shall confirm to I.S.038-1967.

12. Water meters (Domestic types)

Water meter up to 50m nominal size shall confirm to I.S.-779-1968. The meter body shall be of bronze/ Gun-metal and marked to read in liters complete with registration box and lid. The water meters shall be provided with Strainers. Strainers shall be of material, which is not susceptible to electrolyte, clean and shall be fitted on the inlet side of water meter. It shall be possible to remove and clean the strainer and not permit disturbing the registration box. The offer should include the same. The water meters shall bear ISI Mark.

13. Bibcock & Stopcock

These shall conform to I.S.781-1967 and bear ISI Mark. The bibcock is a draw off tap with a horizontal inlet and free outlet and stopcock is a valve with a suitable means of connection for Insertion in a pipeline for controlling or stopping the flow. This shall be of screw down type. The cock shall open in anti-clockwise direction. The stopcocks should be of C.P open type/concealed type/angle valves type as specified in tender schedule. Bibcock should be also C.P Brass bibcock.

14. Full way Valve (Brass)

Full way valve is a valve with suitable means of connection for insertion in a pipeline for controlling or stepping the flow. The valve shall be of brass fitted with a cast-iron wheel and shall be of gate valve type conforming to I.S, 780-1960, opening Full way and of the size as specified.

Dia in mm	Flanged End Valves in kg	Screwed End Valve in kg
15	1.021	0.567
20	1.503	0.680
25	2.498	1.077
32	5.232	1.559
40	6.082	2.268
50	6.691	3.232
65	10.149	6.840
80	13.281	8.845

15. Gun Metal Full way Valve

This shall be of the Gun-Metal fitted with wheel and shall be of Gate-Valve type opening full way. This shall conform to I.S, 778-1971. Class I. The Valves should bear ISI Mark.

TECHNICAL SPECIFICATION FOR STONEWARE PIPE ETC.

1. Stoneware Pipes (Materials)

The S.W. pipes & fitting should be of Grade 'A' conforming to I.S 651/1965. The pipes shall be sound, free from visible defects such as fire crack or hair crack and flow or blister. The pipes shall give a sharp clear line when struck with a light hammer and should be perfectly salt glazed.

Internal dia of Pipe in mm.	Thickness of the Barrel in mm.	Weight of each pipe in kg.
100	12	14
150	16	23
200	17	33
230	19	44
250	20	52
300	25	79
350	30	100
400	35	125
450	38	147

The length of pipes is 600mm exclusive of the internal depth of socket.

2. Excavation of Trench for laying Sewer Pipes

The trenches for the pipes shall be excavated to the lines & level as directed. The bed of the trench shall have to be evenly dressed throughout from one change of grade to the next. The gradient is to stout by means of sight rails and boning rods and required depth be excavated at any point. The depth of the trench shall not less than one meter, measured from top of the pipe to the surface of the ground under roads and not less than 0.75m elsewhere. The width of the trench shall be the nominal diameter of the pipe plus 350mm. The bed of the trench if in soft or made up earth, shall be well watered and rammed before laying the pipes and the depressions if any shall be properly filled with sand and consolidated in 200mm layers. Depending on soil condition, piling may even be necessary if so desired by the Engineer In-charge. If rock is met with, it shall be removed 150 mm below the level of the pipe and the trench will be refilled with sand and consolidated.

The excavated materials shall not be placed within One Mtr. or half of the depth of the trench whichever is greater from the edge of the trench. The trench shall be kept free from water. Shoring and shuttering shall be provided wherever required. Excavation below water level shall be done after dewatering the trenches.

After the excavation of the trench is completed, foundation of cement concrete 1.4.8 in hard granite metal (size 40mm) shall be laid with proper level all along under the length of the pipe with launching on all around concrete as per drawing.

3. Laying, Jointing, hunching of the Pipes and fittings.

Drain Pipes (S.W. pipe & other pipes used for drain and Sewer) shall be laid in straight lines and to the even gradients as shown in the layout drawings. The socket and of the pipes shall face stream. Adequate care shall be exercised in setting out and determining the level of the pipes and the contractor shall provide suitable instruments, templates, sight rails, boning rods and other equipments necessary for the purpose. In the case of pipes with joints to be made with loose collars, the collars shall be slipped on before the next pipe is laid. In those joints, a tight ring of twisted tarred jute soaked in cement mortar filling to ensure proper alignment and prevent. Cement entering the pipes, Cement compound joints is to be finished with proportion 1.1 with 45 beveling. The joints are to be kept wet with wet bag until the same are properly set with. The cement mortar joints shall be cured at least for 7 (Seven) days.

In the case of S.W. Pipe joints (socket & spigot), they should be caulked first with tarred jute (Spun) of required diameter, almost quarter depth of the socket, after which cement mortar 1:1 is pushed in with wooden chisel and finishing beveled at outside at 45 degree. Instead of jute of hump rubber gasket of proper size may also be used. The whole joint must be cured for not less than three days. In case of pipes less than 250mm dia, joints should be made at ground level with three pipes at a time and for larger ones two pipes at a time and after curing they should be soiled in foundation with the help of the ropes. All pipes should be properly launched with cement concrete 1.3.6 with washed gravel where the pipes are crossing the drain or all round concrete 1.3.6 with washed gravel is to be done to 150 mm thick over the barrel of the pipe. The whole of the drain work shall be tested when laid, and at the completion of the contract, to the satisfaction of the Engineer-in-charge and shall be retested if necessary until found satisfactory. The test shall be made by means of water under pressure at the highest point of the Section under test and providing an air pipe at the lower end of the line. Maximum head of 5 (five) fact (1.5m) must be maintained.

4. Excavation and refilling.

Excavation for drain and pipe trenches shall be straight and to correct depth and gradient. The trench bottom shall be of required width as per specification to allow working space for pipe jointing.

Excavated materials shall be dumped away from the site as directed by Engineer-in-charge. Suitable precautions are to be taken to prevent in flow of water into the excavated area, during construction.

The contractor at his own expense shall pump out or otherwise remove any or all water which during the continuance of contract may be found in the excavated trenches to keep the trench clear of water during the work under progress. The pipeline shall not be refilled and covered, until the line therein has been passed and tested.

5. Burried Services

All pipes, cable mains and other services exposed by the excavations shall be effectively supported by timbering or other means for which no extra payment will be allowed. The contractor shall be responsible for any damage occurring to burried services and make good the same at his own cost to the satisfaction of the

Engineer-in-charge.

6. Trench condition:

Where a trench is excavated and refilled after laying the pipe, settlement of the earth in the refilled trench take place. The filling above the top of pipe, settles relatively, more than the sides of the trench, thereby developing frictional resistance. The contractor is required to take special precaution against this, while refilling the trenches. Procedure for backfilling as stipulated earlier should be strictly followed.

7. Inspection Chambers/Manholes

At every change of alignment, gradient or diameter of a drain there shall be a manhole or Inspection Chamber. The maximum distance between man hole chamber shall be 30 metres for the line laid straight.

All manhole and inspection chamber shall have internal dimension as shown in drawing and B.O.Q. The depth of invert shall be fixed to the gradient. The foundation for Manhole shall be 175mm thick & with cement concrete 1.3.6 in hard stone metal / granite metal of 40mm size. The concrete shall project 150mm beyond the external faces of the brickwork.

The brick masonry shall be done in cement mortar in the proportion of 1:4 and thickness of the brick wall should be 250mm thick up to 1200mm depth from Ground Level and beyond that the wall thickness shall be maintained 375mm. The inside surface of the walls of the chamber, shall be finished with cement plaster 1.3 and outside with cement pointing 1.3. In addition to this, the inside surface should also be provided with cement punning.

On the top of base concrete channeling on C.C. 1.2.4 with granite chips is to be done keeping the diameter equal to the dia of drain pipe and depth equal to half of the dia of pipe. The channel, 'should¹ be done longitudinally at the center, connecting both the ends of the pipe. The channel is to be hunched up with concrete 1.2.4 with hard granite chips of size 12mm sloping upwards from the edge of channel to meet the side of chamber at gradient of 1.6. The channel and benching are to be finished smooth and cement mortar 1.3 and punning unless it is unavoidable. The branch should deliver sewerage in the Manhole in the direction of main flow and the junction must be made with care so that the flow in the main is not impeded. Channels for drains coming from the side of the Manhole Chamber shall be curved to meet the main drainage channels.

The Manhole and Inspection Chambers shall be covered with R.C.C. cover slab of thickness 100mm to 150mm according to the requirement at site. One C.I. Manhole cover of diameter and weight as stipulated in the tender schedule shall be fixed, on the cover slab. Unless otherwise mentioned the C.I. Cover and Frames and shall conform to I.S. 1726/1960. Heavy duty covers etc., under heavy vehicular traffic condition and capable of bearing wheel loads up to 11.25 tons are to be used and medium duty under light type wheel traffic loads and light duty for domestic premises are to be used. Covers and Frames shall be clearly cast, double water seal type and they shall be free from all and sand holes. The cover shall be gas tight and water tight with proper water-seal. The C.I. Cover and frame shall be coated with two coats of black bituminous paint. The frame of Manhole cover shall be fixed on the slab while the slab is cast. R.C.C.M.H. covers of 50cm dia and 100mm thickness shall be fitted in line of C.I.M.H. cover if stipulated in the bill of quantity of the tender schedule.

8. Gully Trap Chamber

The size of chamber for 100mm HCl yard gully shall be of 250mm X 250mm (Inside). Foundation with 100mm thick cement concrete 1.3.6 with hard granite metal of size 40mm from outer surface of wall and Brick work in cement mortar 1.4, 125mm thick, depth up to 600mm maximum. The finishing of masonry wall both inside and outside should be done in cement mortar 1.4 cement punning should be provided on the inner surface the trap should be buried in cement concrete 1.2.4 in H.G. chips up to the mouth and one hinged C.I. Grating of size 300mm x 300mm are to be fixed on the top of mouth of Gully trap to arrest rubbishes shall be provided. The foundation, should project 75mm from outer.

9. Kota/Marble Stone flooring

The Kota/Marble stones shall be of thickness specified but not less than 20mm and of uniform with edges absolutely square & straight. They shall be laid in Cement Mortar (1.4) over masonry or concrete base. The sides of the stones shall be arranged to butt against each other truly so as to come the joints practically invisible and certainly not more than 0.8mm in width anywhere. The joints shall not be filled with mortar but may afterwards be grouted with neat white cement mixed with matching colour pigment. When the floor has completely set, it, should be polished with pumice stone and finally with pads of felt.

10. Glazed tile dado

The glazed porcelain tiles shall be of approved size and thickness 5mm to 6mm with edges absolutely straight & surface accurately plain. They shall be fixed in 6mm. thick cement mortar 1.3 using cement slurry over pre-cement plastered base. The sides of the tiles shall be arranged to but against each other truly so as to make the joints practically invisible. However, the joints may be grouted with white cement mixed with coloring materials to match the tiles and neatly cleaned leaving no trace of excess grouting materials. The tiled surface and edges should be perfectly vertical and straight. The corner points must be normally right angled unless the site condition demands otherwise,

ADDITIONAL APPENDIX TO BILL OF QUANTITY:

(For P.H. Items of Work)

1. The quantities of items mentioned in the tender schedule may increase or decrease during execution of works but the contractor will complete the work as per his tendered rates in accordance with the instruction of Engineer in charge.
2. **Specification:** The standard PHD and PWD specification will be followed for execution of work. During the course of execution of work, the instructions of the Engineer in charge shall be final and binding.
3. The Sales Tax element should not be added to the analysis of rates and the previous practice should be followed as per the Works Department letter No.IIT.22-89-18170 dt.18.7.1989
4. There should be no clause either in the tender or in agreement for payment of any additional claim on account of Sales Tax on completed works which will be deemed to be recovered by existing omnibus stipulation as per the works Department letter No.TIT 22/89-18170 dt.18.7.89.
5. It is the responsibility of the Contractor to arrange watch and ward to the installations until testing commissioning and handing over for which no extra payment towards watch and ward will be paid,
6. The contractor shall maintain a separate site order book for P.H. portion of work.
7. The P.H. portion of work shall be open for inspection by the authorities of BSCL, Bhubaneswar and the higher authorities and instructions imparted during the course of Inspection should be binding on the contractor.
8. Materials not covered by any of the above categories of items in the bill of quantity have to be approved by the competent authorities before utilizing the 'same in works. In such event, the payment of such item will be made as per actual on due approval by the competent authority.
11. All materials required for the work shall be supplied by the contractor as per standard specifications appended with due approval by the Engineer in charge of G.P.H. Wing. In case the materials as per make specified are not available, the materials of equivalent make and as per I.S. Specifications or of best quality when not covered by I.S. Specifications can be utilized on prior approval of concerned S.E./ E.E., GPHD (R&B) Circle/Division or the officers duly authorized. It is binding on the part of the contractor to use such items of materials which are available in the Departmental store and in such case the deduction from the bills will be made at stock issue rates.

TECHNICAL SPECIFICATION OF INTERNAL ELECTRIFICATION WORKS

The details of internal wiring, the position of fittings, fans, switches and plug sockets etc. are indicated in the layout drawings. The position of light fittings, fans, switchboards etc. indicated in these drawings are only for the guidance of the supplier and the actual position of these shall be mutually decided between the supplier and the purchaser. The supplier shall submit the purchaser of his consideration and approval all runs of wiring and the exact position of all the points and the switch boxes first marked on the points buildings.

All internal wiring shall be done in conformity to the latest Indian standard specification/Rules, code of practice adopted by CPWD and other standard practices prevalent in the part of the country. For the purpose of the specification the terminology used shall be as defined in IS: 732 and IS: 1356 of the definition of points wiring. The installation shall be carried out in conformity to all requirements of IE Act, 1910 and IE Rules 1956.

- a) Ceiling rose in (in case of ceiling and exhaust fan).
- b) Ceiling rose or connector (in case of pendants except stiff pendant points)
- c) Back plate (in case of stiff pendant).
- d) Socket outlet (in case of socket outlet points)
- e) Lamps holder (in case of wall Bracket, batten holder bulk head fitting and similar other fittings)
- f) Call bell / buzzer (in case words 'via' the switch shall be read 'via' the ceiling rose / socket outlet for bell push, where no ceiling rose / socket outlet it's provided.

The following shall be deemed to be included in the point wiring

- a) Switch and ceiling rose are required
- b) In case of wall brackets, bulk head fittings, cables as required up to the lamp holders]
- c) Bushed conduit for porcelain tubing where cables pass through walls.
- d) All wood or metal blocks, boards and boxes, R.J. Boxes sunks or surface type including those required for fan regulator but excluding those under the distribution board and main control switch.
- e) Earth wire from 3 pin socket point to the common earth including connection to the earth dolly.
- f) Earth wire of 16SWG/14 SWG/I.G. wire for loop earthing of the fixture
- g) All fixing accessories such as clips, nails, screw, plug, rawl plug, wooden plug, round blocks etc. as required
- h) Joint for junction boxes and connecting the same as required
- i) Connections to ceiling rose or connection socket outlet, lamp holders, switch, fan regulators etc

The point wiring in case of fan and light points shall mean the distance between the control switch and ceiling rose, connect or back plate, socket outlet or lamp holder depending upon the fittings measured along the runs of wiring irrespective of the number of wires in run. In the case of socket outlet points, the length shall mean the distance between the socket outlet and the tapping point of live wire on the nearest switchboard or junction box, as the case may be.

In the case of exclusive socket outlet circuits wired on 'Joint Box' system of wiring, any junction provided for extending the wiring beyond the point referred to, shall be treated as the nearest tapping point. In case of call bell / buzzer points the length shall mean the distance between the call bell and the ceiling rose / socket outlet or the bell push (when the ceiling rose / socket outlet is not used).

Sub main shall include the earth wire of adequate size main distribution Board up to sub distribution board B.B. such wiring has been classified on the basis of length. For the internal lighting, either surface conduct wiring system or recessed conduit or batten wiring system shall be provided as specific in the bill of quantities and working drawings.

LED LIGHTS

1. LED light distribution pattern, luminance, Luminous flux, chromaticity, color temperature, color rendering Index to applicable standard Lm79 & Lm80.
2. LED lights should be as per standards IEC EN 60598 and IEC61547.
3. LED luminaires should in function in a temperature range -30°C + 60°C under 95% relative humidity condition to simulate adverse operating environment.
4. The LED produces should meet safety standards as per EN60598, EMC/EMI standard as per EN611547/EN 55015 and EN61000-3-2 and 61000-3-3 for Harmonics.
5. The electronic driver should work in the short circuit and open circuit conditions and should work in the voltage range 90V to 3000 volts.
6. LED lighting fixtures should be manufactured with LEDs of only reputed makes such as Cree, Samsung, Lumileds/osram and other equivalent.
7. The officer-in-charge has reserve the right to inspect and tested the quality in Govt. laboratory to ensure technical qualifications to meet the requirements.
8. LED lights no toxic materials U V and IR spectrum protects insect life.
9. It should be manufacture with die-cast aluminum with required colour as per manufacture for released months.
10. The LED lights should function 90 to 380V, 50/60 Hz, PF-0.9 (230V AC), Copper temp- 3000K/4000K/ 6000K/ operation temperature - 20°C + 50°C in-gross protection-IP 20, lifespan 30000hrs.

Firefighting

1. No advance payment will be made by the Department. However Part / full Payment shall be made by the Chief Executive Officer, BSCL after completion of supply, erection testing and commissioning, inspection and satisfactory operation.
2. In the event of failure or refused to execute the order the ISD will be forfeited and the order will be cancelled after the completion time period from the date of issue of the order. In the event of delay in supply erection, testing and commissioning of the materials with work pertaining to order, penalty @ 0.5% of the order value per month delay will be imposed subject to a maximum of 5% (Five percent) along with the EMD.
3. All the materials should be ISI marked and duly approved by the fire Deptt. Govt. of Odisha.
4. 3rd Party Audit should be done by registered agency of Fire Deptt. Govt. of Odisha by the firm.
5. Drawing and design duly approved by the Fire Deptt. Govt. of Odisha should be submitted before execution of work.
6. If addition alternation required as per guide line of Fire Deptt., the fire will execute the same with due approval of the authority.
7. After completion of the work the firm should made a mock fire drill demonstration in presence of Engineer-in-Charge, authorized officer of the Fire Deptt. and building authority.

A.C. Machine

The tenders should furnish following documents in cover-1.

1. Detail drawing and design.
2. Technical specification as per manufactures norms supp.
3. Detail of equipments and material supplied.
4. Make, model with individual price may be furnished.
5. All the materials and equipments must be confirming to ISI.

Lighting arrester

Supply, Installation, Testing and Commissioning of Copper Plate Earthing (600x600x3mm) with running Copper Flat 25x5mm from copper plate to funnel of 40mm dia GI PIPE heavy duty with including all accessories, excavation of earth and providing masonry work with cover plate having locking arrangement and and, charcoal, salt, funnel, tinned brass bolt, check nut and washer complete in all respect as per Direction of Engineering -in-Charge.

ABB optimized plus rod 30 ESE Terminal & mounting mast or pole (2meter) mounting MAST (3Meter) with gay wire and base plate.

D.G. Set

DG set should be capable of running continuously for unlimited hours in a year, stopping required only for service duration.

Diesel Engine

Duty: Continuous running

Type: 4Stroke, Turbo Charged, aftercooled

Capacity: 32 Liter.

Cooling: Radiator

Governing: Full electronic

Fuel injection: Electronic Unit injectors

Alternator:

Rating: 1010 KVA/808 KW at 415 volt, 0.8pf, 50Hz, 3phase, 4wire@1500rpm.

Duty: Continuous running

Type: Self excited, self regulated, single bearing, IP-23

Efficiency: 92%

- Above engine alternator should be assembled on a steel fabricated common base frame.
- Five sided Acoustic enclosure would be required to reduce noise.
- 990 L fuel tank would be placed outside acoustic enclosure.
- 2Nos. 12Volt, 180AH reputed make batteries.
- Set of Ant vibration mountings.
- First fill of engine oil.
- Heavy duty silencer.

Design Criteria

The generator asset meets transient response and block loading steps as per ISO 8528-5

Single-Source Supplier

Fully prototype testes with tensional analysis.

ACCEPTABLE MAKES FOR FIRE FIGHTING

S.NO	ITEM	ACCEPTABLE MAKE
1	Pump	Kirloskar / Crompton / ABB /Siemens
2	Motor	Kirloskar / Crompton / ABB /Siemens
3	Diesel Engine	Kirloskar / Cummins
4	M.S. Pipe	Tata /Jindal / Sail/Nizon/ (ISI Marked)
5	C.I. Pipe	IS :1537
6	G.I. Pipe	Tata /Jindal / Sail/Nizon /(ISI Marked)
7	C.I. Pipe Fitting	IS :1537
8	Sluice Valve	Kirloskar / Leader /Sant/Zolta /(ISI Marked)
9	Gun Metal Valve	-Do-
10	Butterfly Valve	-Do-
11	Water Solenoid Valve	-Do-
12	Cushy Foot Mountings	ISI Marked
13	Pressure Switch	ISI Marked
14	Pressure Gauge	ISI Marked
15	Water Level Controller	ISI Marked
16	Batteries	OEM/OEA
17	Flow Switch	
18	Internal/External Hydrant (Landing Valve)	Cosmos/ Newage / Jayshree / GETECH
19	Hose Reel 20 mm Dia	-Do-
20	Installation Control Valve	-Do-
21	Fire Bridge Intel / Connection	-Do-
22	Sprinkler Head	-Do-
23	RRL Hose pipe 63 mm Dia	-Do-
24	GM Branch Pipe 63mm x 20mm dia	-Do-
25	First Aid Hose Reel Drum	-Do-
26	Power Cables	Havell,s /Finolex / Mescab/Polycab
27	Control Cables	-Do-
28	Single Phase Preventor	L&T /GE /Siemens
29	SDFU / SFU with HRC Fuses	-Do-
30	Starters / Control	-Do-
31	Electrical Panel / System Controller & Control Console	From CPRI approved panel manufacture
ADRESSABLE FIRE ALARM SYSTEM		
01	Microprocessor based Photo electric smoke / Heat Detector	Apollo / Cooper / Honeywell / Edward/L&T
02	Microprocessor based Manual call Box	-Do-
03	Microprocessor based Control Module	-Do-
04	Fire Alarm Control Panel	-Do-
05	Steel Conduit	AKG / BEC/RMCON
06	FRLS and Twisted Cables	Finolex / Havell's / RR cable

Conduit wiring

For recessed conduit wiring system the conduit shall be placed in the ceiling / columns etc. before the casting of the slab or column. The conduit pipes shall be properly positioned and fixed so that it will not be displaced at the time of concreting. The junction boxes provided shall be so arranged that its cover will be flushed with the finished surface of the ceiling or column.

For placing the conduits in the walls, chases of ample dimension shall be made neatly to fix the conduit in a desired manner. The conduit pipe shall be fixed by means of staple or saddles not more than 600mm apart. Fixing of standard bends or elbows shall be avoided and all curves maintained by bending the conduit itself with a long radius will permit easy drawing of the conductors. Suitable inspection boxes shall be provided to permit periodical inspection and removal or replacement of wires if necessary. There shall be mounted flush with the wall with holes in the cover of the box.

The switch or regulator box shall be made of metal on all sides except on the front where backlight sheet or Perspex cover painted to match the colours of the wall shall be used in case of surface wiring system. For recessed wiring system, these boxes shall be made flush with the conduit of each conduit or section shall be completed before conductors are drawn in. The entire system of conduit after installation shall be tested for mechanical strength and electrical continuity throughout the earthing of the entire installation shall be carried out in accordance with I.E. Rules and standards. The number of wires drawn in the conduits shall not exceed the numbers those specified in Indian standard specification No.732.

Main and Sub distribution Boards:

The position of main boards for lighting and sub distribution board for different buildings are approximate and the exact location shall be given to the successful tenderer at the time of installation. The scope of this specification includes installation of the panel boards and distribution boards and making necessary connections. The installation of the boards shall be done strictly in accordance with the details supplied with the specifications; the instructions supplied by the switchgear manufacturer, Indian standard specifications and H.E. rules. The supplier shall submit the details of installations to the purchaser for his consideration and approval, prior to installation.

When the switchboards are wall / column mounted top, they shall, be mounted on a suitable angle iron framework. All the metal supports etc. shall be protected against corrosion. The mounting height for such switchboards shall be such that it can be conveniently operated.

Earthing

Earthing shall generally be carried out in accordance with the requirements of Indian Electricity Rules and the relevant rules and regulations of electrical supply authorities. The complete earthing work for the installation covered by this specification shall also be provided taking into account Indian Standard Specification No.IS:732 and IS: 3043. The earthing system adopted shall also have adequate mechanical strength.

The work shall include earthing of non-current carrying metallic parts of all the equipment, light fittings, conduit pipes, cable and cable supports and earth strips (the design to be approved by the purchaser) and all the inter connection between the earthing system to a value mutually agreed upon between the purchasers and the supplier.

Installation, testing and commissioning:

The supplier shall be responsible for the installation testing the commissioning of all the equipment and materials supplied by him against this specification. This shall also include the provision of miscellaneous wiring and supports and earthing in compliance with Indian Electricity rules and to the full satisfaction of the Government Electrical Inspector. All small items such as clamps, bolts, nuts, racks, supports, miscellaneous wiring etc. required to make the installation complete, shall constitute the part of major items specified in the bill of quantities and the tenderer should quote for each item taking these into consideration.

The responsibility of the supplier shall include receiving all the equipment and materials at site, storage for required period, handling the same at the site of erection, final execution, erections, revisions of equipment, if any, testing and commissioning and handing over the installation complete in all respect to the entire satisfaction of the purchaser's authorized representative. The supplier shall make good of all the damaged equipment and materials during this period at his own expense. The supplier shall submit sample of each and every equipment and materials for the final approval of the purchaser's representatives

immediately after the acceptance of offer. All the equipments and materials shall be supplied exactly as per to the approved samples. If at any stage the purchaser brings to the notice of the supplier any discrepancy or defect the supplier shall replace the same at his own expense.

The supplier shall render all reasonable assistance to the purchaser in getting the installation approved by the Government Electrical Inspector prior to the energy station and supply necessary drawings, test certificates and both for tests carried out at the factory and site as well as the tests which the inspector may demand. In case any addition of alternations are required, to be made in the installation or in the equipment as per the directive of the Government Electrical Inspector / Local Authorities, the same will have to be carried out by the supplier, at his own expense.

The position of light fittings, main board, switches, sockets and routes of pipes and cables shown in the drawings are only indicative. The actual position of these shall be decided at site at the time of execution joints by the supplier and the purchaser's authorized representative. The position of light fittings, pipes and board if required, to be changed / shifted due to the change in the building design etc by the purchaser's authorized representative, the same shall be carried out at no extra cost.

All the materials supplied to the contractor according to the Contract condition will be subject to inspection and approval of the officer or his representative from time to time. The contractor will provide all facilities of such inspections free of cost. At the time of inspection, the owner or his representative will have full liberty to reject any such materials, which does not conform to the specification / requirement. No claim for any rejected materials will be entertained by the owner. The contractor will remove all rejected materials from site at his own cost. No surplus materials procured by the contractor will be accepted by the owner. The contractor will be responsible to get the Electric installations cleared by the Electrical Inspector of Odisha Government. Only the inspection fee will be reimbursed by BSCL on production of challan copy.

Installation and Maintenance Tools:

The supplier along with the tender shall furnish a complete list of tools, appliances and accessories required for the installations of switch gear, light fittings, pipes cables and wires.

Drawings:

All drawings, test certificates, instructions manuals etc. shall be in English Language and all dimensions and weights shall be in metric units.

The tenderer shall submit with the tender general arrangement drawings for the installations work, typical methods and cabling and cables supports pipe work and pipe supports, typical methods of earthing and fixing of light fittings earthing etc. as offered by him in the tender.

The contractor shall submit for the purchaser's approval all layouts, the general arrangement drawings as well as the typical details of all types of installation work in three sets before commencing the manufacture and the site installations work well in advance so that the site work shall not suffer.

After obtaining approval of the above drawings the contractor shall supply three sets of the following drawings:

- (a) The arrangement and support of conduit pipe
- (b) The position of light fittings switches / plug socket and switch boards
- (c) Earthing installations
- (d) Layout plan showing the entire cable network

On completion of work, the successful tenderer shall supply one set of tracing in transparent linen and five sets of prints of all drawings incorporating all the changes / modifications affected during the execution of the contract. All wiring diagrams shall indicate clearly, the switch board, the runs of main and sub main wiring and the position of all the points with their controls. All the circuits shall be clearly indicated and numbered in accordance with IS:375. The technical literatures and operating instructions and the maintenance manuals shall also be supplied in triplicate to the purchasers after the completion of the installations work.

Test:

Manufactures standard tests in accordance with Indian Standard and other standards, adopted shall be carried out on all the equipment and accessories covered by this specification so as to ensure efficient and satisfactory performances of all the components and also the equipment as a whole under working conditions at site. The tenderer shall submit a complete list of all such tests. If the purchaser, if so desired for special tests, to be carried out, under certain conditions the same shall be made by the successful tenderer at his own expenses. All equipment shall be tested at site before the commissioning in accordance with the adopted standard and Indian Electricity Rules. Voltage test shall be carried out on each circuit on completion of wiring and cabling.

Technical Data:

The tenderers shall submit with their tender all such technical data, which are required for complete evaluation of the equipment offered. The suppliers shall give complete technical information of the equipment as detailed in Annexure and relevant Indian standards. The tenderer should supply such details of all equipment and materials offered specially with regard to the following.

- a) Fuse switch board and distribution boards
- b) Light fittings
- c) Conduits and the accessories for them
- d) Switches / plug sockets
- e) Cable and wires

The tender shall give along with his tender the following details:

- a) Complete details of earthing electrodes, earthing station and earthing conductors
- b) Details of conduit supports
- c) Details of all the equipment and accessories to be supplied

Exception to Specifications:

The object of this specification is to have all tenderers quote for equivalent materials and workmanship. It is, however, understood the certain manufacturers may not be able to offer as specified in every case, where the tenderer may find it necessary to deviate from the exact letter and not the intent of the specification, he must specifically state what these deviations may be at the time he submits the tender. All deviations must be grouped in one statement. No deviations other than those includes in the tender will be permitted.

PVC insulated Cables and Wires:

For 415V Distribution system, cables of voltage grade not less than 1000V shall be used. These cables shall be heavy-duty class, PVC insulated and PVC sheathed with aluminum/ copper conductors. The wires used in the lighting installation shall be PVC insulated and PVC sheathed copper / aluminum wire in case of conduits wiring and of 660V grade. Wires of different colours shall be made use of for quick\ identification of phase wire / neutral wire etc. All cable of wires shall comply with the requirements regarding the manufacture and testing etc as specified in India Standard Specification IS: 1554 and IS: 694.

The length of cables indicated in the bill of quantities and drawings are only indicative and the Successful tenderer will be paid for the exact length of cables laid at site. No joint shall be allowed in a run of cables, which can be covered by a possible drum length of cables.

Fuse switch / switch fuse shall be metal clad dust and vermin proof suitable for use under climatic conditions prevailing at site. Switch fuse / fuse switch units shall comply in general to IS: 1567/4064 with regard to design and constructional / features.

The 'ON' and 'OFF' position of the switch handles shall be distinctly indicated and interlocks shall be provided to ensure that the switch cover cannot be opened unless the switch is in the 'OFF' position. Means shall, however, be provided for releasing the interlock to permit closing of switch with cover open for testing purposes. Designs with normal conventional position of switch handles, i.e. with switch handle up in the 'ON' position and down in the 'OFF' position shall be preferred. All live parts inside the switch shall be properly surrounded and inter phase barrier shall be provided.

Switch fuse / fuse switch units, distribution boards shall be provided with necessary metal frame work so that they can be mounted on wall / columns structure etc. as desired. The panel boards shall be wall

mounted type or floor mounted type as specified in the bill of quantities or drawings. Necessary supporting metal frame of approved design shall be provided for all panel boards

The arrangements of work boards shall be such that the operational handle of the top mounted switches are within the convenient of operators (about 1.2 M from the finished floor level) and proper space shall be provided for the termination of the cable in the switches provided below the bus-bars.

The bus-bars within the bus-bar chamber shall be liberally spaced for taking the riser connection. The bus bars with aluminum conductors shall be provided and PVC sleeves of different colour shall be mounted on them for easy identification, Clamped joints for taking the riser connections, instead of bolted type shall be preferred.

Two bolted type earthing terminals shall be provided on the switch boards. All individual switches shall be connected with suitable size earth wire to the main earthing terminals of the switchboard. Hanger Board and shock treatment / charts shall be supplied wherever required. At the incoming side of each pen phase, 3-neon type indicating lamps should be provided at the main board.

Switches and Plug Sockets

Switches provided for control of light points shall conform to IS: 1087 and shall be rated for 5A/15A 250V

Ceiling Fans and Exhaust Fans:

Ceiling fans shall conform to Indian standard specification IS: 374-1960. The fans shall be supplied with all standard accessories like regulator and capacitors etc.

The performances rating of the propeller fans shall in accordance with stipulations of IS: 2312. All fans shall be robust in design and construction and shall be supplied complete with wall brackets / clamps etc.

Fluorescent Fittings:

All fluorescent fittings supplied shall confirm in general to IS: 1913 and shall be complete with all standard accessories like choke, starter and capacitor etc. The type of enclosure provided for the fittings shall be of that specified in the bill of quantities and the working drawings. The materials of construction for fittings used for outdoor installations and for use in the work anodes shall be such that they shall withstand the atmospheric condition in that area. Lamp holders used shall be fully shock proof, spring-loaded rotary type to ensure positive lamp locking. It should also be not possible to touch live parts of the lamp holder both after the lamp has been taken out and during the insertion or removal of the lamp. The starters shall be designed to give designed starting characteristics that shall promote full lamp life. Starter shall have high mechanical strength and topic proof construction. It should be incorporated with radio suppression capacitor o adequate rating and\ capacity. Power factor improvement capacitors are provided with hermetically sealed housing to ensure long and trouble fee service. Terminal soldering tango shall be provided for easy electrical connections. The capacitors in general shall confirm to IS: 1569-1963 and P.F improvement up to 0.95 for twin fluorescent light fittings and 0.9 for single fluorescent light fittings is to be maintained.

The ballast provided in the fluorescent fittings shall generally be in accordance to IS: 1534.The ballast should incorporate the following design features.

- i) Low working temperature
- ii) Correct pre heating current for the electrodes
- iii) Proper wave foam
- iv) Small in dimensions
- v) Correct power supply to the lamp
- vi) No hum.
- vii) Easy connection leads.

All the metal construction of the fittings shall be such that they shall:

- 1) Withstand the atmospheric condition prevailing in the area
- 2) Provide maximum mechanical protection to the tubes and fittings accessories. Assists in maximum and uniform light distribution. All fittings shall be provided complete with florescent lamps. All lamps shall confirm to IS: 2418.

Incandescent Fittings:

The incandescent fittings shall be supplied strictly as per the details given in the enclosed annexure and bill of quantities, deviation if any regarding designs; construction of materials should be specified clearly. All the metal parts used in construction of the fittings shall have no effect due to dust / fumes / gases likely to exist in the atmosphere. All the bolts, clamps, nuts and guard wire etc shall be galvanized. The wall fittings shall be provided with necessary hooks / clamps / supports etc for fixing the light fittings on wall / ceiling etc as detailed in the bill of quantities and the working drawings. Light fittings shall be suitable for connection with 19mm dia. Conduit pipe as required. If fittings are to be connected through PVC cables, glands of adequate size and capacity shall be provided. The lamp holders provided in the fittings shall conform to IS: 1528.

C O D E S

Codes shall mean the following including the latest ascendants and / or replacement if any.

- a) Indian Boiler Act, 1923 and Rules and Regulations made there under
- b) Indian Electricity Act, 1923 and Rules and Regulations made there under
- c) Indian Factories Act, 1948 and Rules and Regulations made thereunder
- d) The minimum wages Act
- e) The Women's Compensation Act
- f) The Payment of Wages Act
- g) The Fatal Accident Act
- h) The Industrial Employment Act
- i) The Employment provident Fund Act
- j) Indian Explosive Act 1984 the Rules and Regulations made there under
- k) Indian Petroleum Act 1934, and Rules and Regulations made there under
- l) A.S.M.E. Test Codes
- m) AIRE Test, Codes
- n) American Society of Materials Testing Codes
- o) Standards of the Indian Standards Institution

1)	Low Tension Circuit Breakers :	IS 2516-1955 Part I Sec.1
2)	Switchgear Bus Bars	IS 375-1963
3)	HRC fuse links	IS 2208-1962
4)	Distribution fuse boards	IS2675-1966
5)	Enclosure for Low Voltage switchgear	IS214701962
6)	PVC Cables	IS1554-1975
7)	Tabular fluorescent lamps for Cameral lighting service	IS2418-1963
8)	Tungsten Filament Lamps for cameral service	IS415-1963
9)	Ceiling Fans	IS274-1966
10)	Flood lights	IS1947-1961
11)	Wall Glass flame-proof electric light fittings	IS2206-1962 (Part 1)
12)	Water Tight Electric Light Fittings	IS3553-1956
13)	Steel Boxes for Enclosure of Electrical Accessories	IS5133-1969
14)	Fittings for Rigid Steel conduit	IS2667-1979
15)	Rigid steel circuits for electrical wiring	IS3837-1966
16)	Accessories for Rigid Steel Conduits for Electrical Wiring	IS3837-1966
17)	Switch Socket Outlets	IS3837-1966
18)	PVC Wiring	IS694-1977
19)	Switches for domestic and similar purpose	IS3854-1966

20)	PVC wiring	IS694-1977
21)	Call Bell and Buzzers	IS2268-1966
22)	Straight through joint boxes and leads sleeves or paper insulated cables-	EID-0032-1964
23)	Earthing	IS3043-1966
24)	Electrical Wiring installations	IS732-1963
25)	Switchgear	IS3072-1965 (Part I)
26)	Lighting protection	IS2309 –1969
27)	Public Address system	IS1882-1962
28)	Low Tension switch use units	IS4064-1978
29)	Code of Practice for Automatic FIRE ALARM system	IS2189-1970
30)	Specification for Heat Sensitive Fire Detectors	IS2175-1977
31)	Guide for Safety procedure in Electric work	IS5216-1969
32)	Rubber Mats for Electric works	IS5424-1969

p) Other internationally approved standards and / or Rules and Regulations touching the subject matter of the contract

(List of Plants & Equipments to be deployed on contract work)

Sl. No	Type of Equipments	No. of machines required	Total Marks
1	Water Tanker mounted with Truck / Tractor	2	10
2	Truck and Tipper	2	10
3	Welding machine	1	5
4	Generator of 40 KVA Capacity	1	5
5	Ready mix Plant with pumping accessories of Capacity 15 cum/hr	1	15
6	Concrete mixer	1	5
7	Concrete vibrator : Needle type	2	5
8	Concrete vibrator : Screed type	1	5
9	Concrete vibrator : Plate type	2	5
10	Complete staging, shuttering, centering arrangement a. For steel shuttering – Not older than 5 years b. For wooden/Ply shuttering – Not older than 2 years	1500sqm	20
11	5 Ton Capacity Winch Machine	1	10
12	Water Pump – 1 HP Capacity	2	5
	Minimum Qualifying marks - 80	Total=	100

Tenderer(s)is/are required to submit the information in the following Schedules

SCHEDULE - A

CERTIFICATE OF NO RELATIONSHIP

I/We hereby certify that I/We* am/are* **related / not related**(*) to any officer of H&UD of the rank of Assistant Engineer & above and any officer of the rank of Assistant / Under Secretary and above of the H&UD Department, Govt. of Odisha I/We* am/are* aware that, if the facts subsequently proved to be false, my/our* contract will be rescinded with forfeiture of E.M.D and security deposit and I/We* shall be liable to make good the loss or damage resulting from such cancellation.

(*) - Strike out which is not applicable

Signature of the Tenderer

Date:-

SCHEDULE - B

EXISTING COMMITMENTS AND ON-GOING WORKS:

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract (Rs In lakh)	Stipulated Period of Completion	Value of works* remaining to be completed (Rs In lakh)	Anticipated date of completion
1	2	3	4	5	6	7	8

*The above information is to be certified by the Engineer in Charge / Employer not below the rank of Executive Engineer or equivalent. In case of there is no existing commitment and ongoing works, the bidder will furnish a declaration in shape of affidavit that he has no work in hand in schedule B.If it found in correct the bid shall be summarily rejected.

Signature of the Tenderer

Date.....

CERTIFICATE OF TOOLS AND PLANTS

I/We hereby certify that the following tools and plants, machineries and vehicles are in my /our possession and in working order.

Sl. No	Type of Equipments	No. of machines required	No. of machines owned / leased/hired
1	Water Tanker mounted with Truck / Tractor	2	
2	Truck and Tipper	2	
3	Welding machine	1	
4	Generator of 40 KVA Capacity	1	
5	Ready mix Plant having pumping accessories	1	
6	Concrete mixer	1	
7	Concrete vibrator : Needle type	2	
8	Concrete vibrator : Screed type	1	
9	Concrete vibrator : Plate type	1	
10	Complete staging, shuttering, centering arrangement a. For steel shuttering – Not older than 5 years b. For wooden/Ply shuttering – Not older than 2 years	1500sqm	
11	5 Ton Capacity Winch Machine	1	
12	Water Pump – 1 HP Capacity	2	

I/We also note that, non-submission of this certificate will render my/our tender liable for rejection.

Signature of the Tenderer
Date.

WORK EXPERIENCE

LIST OF SIMILAR NATURE OF PROJECTS EXECUTED

Name of Employer	Name of location and name of work	Contract price in Indian Rupees/ Agreement no.	Major Items of works	Stipulated date of commencement / completion of the work as per Agreement	Actual date of completion of the work	Value of work actually executed during last 5 financial years		Reasons for delay in starting/ completion, if any
						Financial year	Value	
1	2	3	4	5	6	7	8	9

Note: The above information is to be certified by the Engineer -in - Charge / Employer not below the rank of Executive Engineer or equivalent.

Signature of the Tenderer
Date.

SCHEDULE – E

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

1. a) Is the tenderer currently involved in any litigation relating to the works. Yes / No
- b) If yes: give details:
2. Has the tenderer or any of its constituent partners been debarred/ expelled by any agency in India during the last 5 years. Yes / No
3. a) Has the tenderer or any of its constituent partners failed to perform on any contract work in India during the last 5 years. Yes / No
- b) If yes, give details:

Note:

If any information in this schedule is found to be incorrect or concealed, qualification application will summarily be rejected.

Signature of Tenderer

SCHEDULE – F

AFFIDAVIT

1. The undersigned do hereby certify that all the statements made in the required attachments are true and correct.
2. The undersigned also hereby certifies that neither my / our firm / company / individuals _____ nor any of its constituent partners have abandoned any road/ bridge/Irrigation /Buildings or other project work in India nor any contract awarded to us for such works have been rescinded during the last five years prior to the date of this bid.
3. The undersigned hereby authorize(s) and request(s) any bank, person, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the BSCL authority to verify this statement or regarding my (our) competency and general reputation.
4. The undersigned understands and agrees that further qualifying information may be requested and agree to furnish any such information at the request of the BSCL.

(Signature of Tenderer)
Title of Officer
Name of Firm
Date:

**CERTIFICATE OF EMPLOYMENT OF UNEMPLOYED GRADUATE
ENGINEER / DIPLOMA HOLDERS
(For Super Class / Special Class / 'A' Class Contractors only)**

I / We hereby certify that at present, the following Engineering personnel are working with me / in our firm / company and their bio-data are furnished below.

Sl. No.	Name of Engineering personnel appointed for supervising contractor's work with address	Qualification	Date of Appointment	Monthly emolument	Whether full time engagement and continuous	If they are superannuated / retired / dismissed or removed personnel from state Govt./ Central Govt. / Public Sector Undertaking / private Companies and s or any one ineligible for Government service
1	2	3	4	5	6	7

Signature of the Tenderer.
Date:-

SAMPLE FORMATS

UNDERTAKING

This is to certify that

1. My firm has neither been associated, directly or indirectly, with the Consultant or with any other entity that has prepared the design, specifications, and other documents for the Project nor has any person associated with been proposed as Project Manager for the Contract.
2. My firm has not engaged any agency and any of its affiliates engaged by the Engineer-in-Charge to provide consulting services for the preparation or supervision of this work.
3. My firm has not engaged any Engineer of gazetted rank employed in Engineering or Administrative duties in an Engineering Department of the Government of Odisha or other gazetted officer retired from Government service during last two years without prior permission of the Government of Odisha in writing on or before submission of this tender. I am aware that my contract is liable to be cancelled if either I or any of my employees is found any time to be such a person who had not obtained the permission of the Government of Odisha as aforesaid.

Signature of the Tenderer.

Date:-

- Note:
- i. Strike out whichever is not applicable
 - ii. In case any person is under his employment with due permission from Government, the same may be cited in a separate letter.

RELATIONSHIP DECLARATION

To,

The Tender Inviting Officer,

Subject: (Name of the Work)

Reference: (Bid reference number)

Sir,

Pursuant to clause 2 of the ITB, it is to inform that I have relative(s) employed as an Officer in the rank of an Assistant Engineer/Under Secretary under the _____ Department, Government of Odisha. His (Their) details are as follows.

Relationship:

Name:

Designation

Office

Address

Pursuant to clause 2 of the ITB, I am to submit herewith the names of persons who are working under my firm having near relatives to any gazetted officer in the rank of an Assistant Engineer/Under Secretary in the _____ Department.

SINo	Name of the my employee and his designation in the firm	Presently working at	Details of his relatives working in the Department
			Relationship Name: Designation Office Address
			Relationship Name: Designation Office Address

I am also duty bound to inform the relationship of any subsequent employment with any gazetted officer in the rank of an Assistant Engineer/Under Secretary in the _____ Department. I **am aware that** any breach of this condition would render my firm liable for penal action for suppression of facts.

Yours Sincerely

Signature of the Tenderer.

Date:-

MEMORANDUM OF UNDERSTANDING

First Party I Sri/Smt....., Aged years, S/O-, At / P.O. / Dist-..... (hereinafter called the First Part)

AND

Second Party I Sri/Smt....., Aged years, S/O-, At / P.O. / Dist-..... (hereinafter called the Second Part) having H.T. / L.T. license registration No..... valid upto

AND WHEREAS the First Party of 1st part is the managing partner of

AND WHEREAS the First Party willing to appoint the Second Party to execute the E.I. portion for the tender work, “.....”

AND WHEREAS the Second Party accepted the offer of First Party.

NOW THIS DEED OF AGREEMENT WITNESSES AS FOLLOWS;

- 1) That, the Second Party shall do all E.I. works, if the tender is awarded to First Party.
- 2) That, the Second Party shall fulfill all the E.I. works as per the tender schedule by instruction of Engineer-in-Charge.
- 3) That, the First Party shall receive payment, signing the bill the document for the concerned work.
- 4) That, the Second Party shall abide the rules, regulations and specification of E.I. works of above said matter.

In witness where of both the party have signed in presence of

WITNESS

W₁ -

W₂ -