

# BID DOCUMENT

**Design, Development, Construction of Rotary Park & Udit Nagar Park consisting of Civil works, Architectural works, design of benches, dust bins and Electrical works including decorative lights at Rourkela**

**2018 –19**



**ROURKELA**  
SMART CITY LTD.

**INDEX**

<b>Sl. No.</b>	<b>CONTENTS</b>	<b>PAGES</b>
1	Instruction to the Bidders	6-20
2.	Detailed Tender Call Notice(DTCN)	21-41
3	Eligibility Criteria	36-37
4.	Scope of Works & Supply	59-63
5.	Technical Specification( Civil , Architecture,Landscape,Painting)	64-91
6.	Scope of Work(Electrical)	92-93
7	Technical Specification(Electrical)	94-108
8	Annexure	42-58
9	Procedure of E-Tendering	109-111
9	BOQ	Attached separately in excel
10	Drawings	112-118

**INVITATION FOR BIDS (IFB)**  
**NATIONAL COMPETITIVE BIDDING**



Bid Id. No. RSCL/67/17-18/ 213(1)/Dt.04.06.2018  
**NATIONAL COMPETITIVE BIDDING**  
**(CIVIL WORKS)**

Name of work	Redevelopment of Rotary Park & Udit Nagar Park at Rourkela
Date of Invitation of Bid	04/06/2018
Date of pre-bid conference	11/06/2018 at 12:00 Hrs
Last date and time for receipt of bids	28/06/2018 at 17:00 Hrs
Last date of Physical Submission of Bid	03/07/2018 at 17:00 Hrs
Time and date of opening of bids	04/07/2018 at 12:00 Hrs.
Place of sale/receiving of bids	Online mode only
Officer inviting bids	The Chief Executive Officer, Rourkela Smart City Limited, Rourkela, Odisha.
Officer of Accepting bids	The General Manager(E&T), Rourkela Smart City Limited, Rourkela, Odisha

**CHECKLIST TO BE ENSURED BY THE BIDDER**

Sl. No	Particular	Reference to DTCN Clause No.	Whether furnished		Reference to Page no.
			Yes	No	
01.	Cost of tender paper Rs.10000.00 and GST Rs.1200/- (Scanned copy of financial instrument shall be furnished)	No.4 & 5(i)			
02.	E.M.D for Rs.1,29,000/- (Scanned copy of financial instrument shall be furnished)	No.5(i) & 150			
03.	Copy of valid Registration Certificate	No.5 (i) & 21			
04.	Copy of PAN Card	No.5 (i) & 21			
05	Turn over certificate	No. 111 (h)			
06.	No Relationship Certificate in Schedule – A	No.35			
07.	Information regarding current litigation, debarring / expelling of the tender or abandonment of the work by the tenderer (Schedule-D)	No.49			
08	Affidavit (Schedule-E)	No.49			
09.	Works Experience : List of projects under execution / executed that are similar in nature to the work	Schedule-B & Schedule -C			
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	Affidavit for Eligible Class of Contractor	Schedule K to Schedule-O			
11.	e-mail ID & Contact no				

## CONTRACT DATA

### A. GENERAL INFORMATIONS

SI No	Item	Details
1	Name of the Work	Design, Development, Construction of Rotary Park and Udit Nagar Park consisting of Civil works, Architectural works, design of benches, dust bins and Electrical works including decorative lights at Rourkela
2	Employer	Rourkela Smart city Limited
3	Employer's Representative	The Chief Executive Officer
4	Estimated Cost	Rs.2,58,71,933./-(Rs. Two Crores Fifty Eight Lakhs Seventy One Thousands Nine Hundred Thirty Three only)

### B. BID INFORMATION

5	Intended completion period/Time period assigned for Completion	Six Calender Months	
6	Last Date & time of submission of online Bid	Date: 28/06/2018.	
		Time 17:00 hours	
7	Cost of Bid Document		
	i	Bank draft amount	Rs.10,000/- + Rs.1200/-(GST)
	ii	in favour of	<b>Rourkela Smart City Limited(Smart City Mission Grant Fund)</b>
	iii	payable at	Rourkela
8	Earnest Money Deposite		
	i	Amount	Rs.2,59,000/-
	ii	in favour of	<b>"Rourkela Smart City Limited(Smart City Mission Grant Fund)"</b>
	iii	payable at	Rourkela
	iv	Type of instrument	<b>As specified in the bid document.</b>
9	Period of submission of original Bid security and Demand draft towards cost of Bid documents in the office of the Chief Executive Officer, Rourkela Smart City Ltd, Rourkela	Date: 28/06/2018. to 03/07/2018 <b>17:00 Hours</b>	

10	Bid validity period	<b>180 days</b>
11	Currency of Contract	Indian Rupee
12	Language of Contract	English
13	Retention Money	5(five)%
14	Additional percentage to be Deducted & Withheld from each payment-in-voice after correction if any , by RSCL for repair/replacement/ maintenance of the work during defect liability period of 365 days from the date of Completion of the Original Work vide Contract Agreement form	5(five)%

## Instruction to Bidders (ITB) e- procurement

(Relevant clauses in the DTCN/Bid document shall be superseded)

### 1. NOTICE INVITING BID AND OBTAINING BID DOCUMENTS:

- 1.1. The authority belonging to the major discipline is competent to invite tender of composite bids. He will also nominate the GM(E &T), Rourkela Smart city Limited, who will deal with all matters relating to the bids in the invitation of 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 GM (E&T) 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, paths ,sculpture and mural paintings  
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 , horticulture works, artistic & sculpture works in the composite tender. Intending Employers are not required to produce any documents viz. copy of Registration, PAN at the time of purchase of tender documents but will be required for verification purpose at later stage.
- 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](http://www.tendersodisha.gov.in)**, **[www.rmc.nic.in](http://www.rmc.nic.in)** , **[www.smartnet.niua.org](http://www.smartnet.niua.org)** 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 the *homepage*. Only a small notification will be published in the newspaper specifying the work details along with mention of the specific website for details. The publication of the tender will be for specific period of time till the last date of submission of bids as mentioned in the 'Invitation for Bid' after which the same will be removed from the list of Active tenders. Any bidder can view or download the bid documents from the web site.

- 1.8.3. 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.
- 1.8.4. 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 bid security and demand draft towards cost of bid as per IFB (except for exempted contractors) and upload the scanned copy of the draft and bid security 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 "contract data"**. **If the Bidder fails to deposit the original bid security and 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. 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.
- 1.11. 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 Special Class & A class contractors as per OPWD Code, 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 Government of Odisha in the concerned Department, he shall inform the same in **Schedule-G** 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. Bids from Joint ventures are not acceptable.
- 3.2. The bid shall include following information and documents.
  - (a) Copy of valid contractor's registration certificate, PAN card, GST Registration should accompany the technical bid.
  - (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) The contractor shall furnish ownership documents for those machineries which he is planning to deploy for the tendered work.
  - (d) Copy of sub-contract agreement (MOU) with eligible Registered Electrical Contractors having valid L.T. / H.T. license (Associated with the sub-contractor).
  - (e) Details of work under progress as per tender documents.
  - (h) Details of works executed during the last five years and works in hand (list of on-going works as per bid documents).
- 3.3. *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. Indulged in unlawful & corrupt means in obtaining bids.
  - d. 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. Goods Service 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 Government and local conditions and other factors having a bearing on the execution of work.
- 6.2. The bidder, in preparing the bid, shall go through the site Investigation Reports provided in the Contract Data before filling up the Bid document.
- 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 RSCL) 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, scope of work, 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 14 days prior to the deadline for submission of bids. The Employer's response will be uploaded in e-tendering portal before deadline for submission of bid.

8.5. **PRE-BID MEETING:** As scheduled in the NIT

#### **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](http://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 Engineer-in-Charge 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 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. Deleted.

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, Minutes of meeting of the Pre-Bid meeting, 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 GST 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. GST, purchase tax, turnover tax or any other tax on material in respect of this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same.
- 12.7. 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.
- 12.8. 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.
- 12.9. **FOR COMPOSITE BIDS: DELETED.**

**13. CURRENCIES OF BID AND PAYMENT:**

- 13.1. The estimated unit rates and the prices are in Indian Rupees.

**14. VALIDITY:**

- 14.1. Bids shall remain valid for a period not less than 180 **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.

**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 up load 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. Fixed deposit receipt of any scheduled bank approved by the Reserve bank of India / Indian Post Office Time deposit/ National Savings Certificate / Kisan Vikas Patra duly pledged in favour of The Chief Executive Officer, Rourkela Smart City Limited, Rourkela as per notice inviting bid by the Department.

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. 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 it's 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 after last date of receipt of bid and before opening of the bids 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, percentage rates, 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:**

- 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.

**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 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 after the 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 Rourkela Smartcity Limited, 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.
- 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

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: **Design, Development, Construction of Rotary Park and Udit Nagar consisting of Civil works, Architectural works, design of benches, dust bins and Electrical works including decorative lights at Rourkela** at an estimated cost of Rs.2,58,71,933./-(Rs. Two Crores Fifty Eight Lakhs Seventy One Thousands Nine Hundred Thirty Three 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, Electrical and PH works.
  - b) This detailed Tender Call Notice along with the Pre Bid Meeting minutes, 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> & [www.rmc.nic.in](http://www.rmc.nic.in), [www.smartnet.niua.org](http://www.smartnet.niua.org) from **04:06:2018 to 17:00 Hours of dt.28:06:2018**. 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 Chief Executive Officer, RSCL at 12:00 **Hours on 04:07:2018** 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 **Rourkela Smart City Limited(Smart City Mission Grant Fund)**, and payable at Rourkela for Rs.11,200/- towards tender paper cost. The online bid must be accompanied with scanned copies of demand draft towards cost of tender paper.
  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, Profit Loss statement, GST Registration Certificate, List of similar nature of works, work in hand, affidavit, turn over certificate and all other documents required as per the relevant clauses of this DTCN. Before award of final contract, such bidders will have to produce the GST clearance certificate.
    - ii) The similar nature of work are of following types:  
Development and Construction of Parks/Gardens/residential buildings/any Infrastructure Civil Works/commercial buildings consisting of civil works, architectural works and electrical works within last Five financial years i.e. from year 2013 – 2014

to year 2017-2018

iii) Cover-II is to contain the **PRICE BID** duly filled in and signed by the bidder.

6. Furnishing scanned legible copy of Original Registration certificate, PAN card & GST Registration Certificate along with the Technical Bid is mandatory otherwise his/ her bid shall be declared as non responsive and thus liable for rejection.
7. Deleted.
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 on behalf of Rourkela Smart City Corporation Ltd.

(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.

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 Six **(6)** 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 **180 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, 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).



The bid must be accompanied by security of the amount @ 1% (One per cent) of the estimated cost put to tender i.e. Rs.2,58,71,933./-(Rs. Two Crores Fifty Eight Lakhs Seventy One Thousands Nine Hundred Thirty Three only) rounded to nearest thousands 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 The Chief Executive Officer, Rourkela Smart City Limited and payable at Rourkela 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. Tenders not accompanied with scanned copy of E.M.D. as specified above shall be declared as non-responsive and thus liable for rejection. 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 shall be considered as E.M.D)***

21. The tender should be accompanied with the *Scanned copies of the valid Registration certificate of Class of Contractor , GST Registration Certificate and PAN card* which are mandatory, otherwise his/her bid shall be declared as non-responsive and thus liable for rejection..
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 / Kissan Vikash Patra / Post Office Savings Bank Account/National Savings Certificate / Post Office Time Deposit Account duly pledged in favour of the Chief Executive Officer Rourkela Smart City Limited. Rourkela & payable at Rourkela 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 and sign the agreement in the P.W.D. form No. P-1 (Schedule XLV No. 61) for the fulfilment of the contract in the office of the Chief Executive Officer and payable at Rourkela 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 fulfilment 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 GST 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 Engineer In Charge 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 Rourkela Smart City Limited. or Assistant/Under Secretary & above in the 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 –No price variation is allowed.**

Deleted

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

Deleted

**36.(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 :**

Deleted

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

Deleted

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

Deleted

**36.(e) APPLICATION OF ESCALATION CLAUSE :**

Deleted

**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.** Centring & 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 take 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-C**.
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-E** and information in **Schedule-D**
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 be directed by the Engineer-in-charge.

- b) Concrete test specimens 150mm x 150mm x 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 or sub-Divisional Officer. 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 Rourkela. 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 Rs.2,50,000.00. The apprentices may be selected by the Chief Executive Officer, Rourkela Smart City Limited. 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.
53. List of tool & plants in running condition in possession of contractor is to be furnished in a separate sheet.
54. It is the responsibility of the contractor to procure and store explosive required for blasting operation if necessary. 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, Octroi 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 RSCL 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. Deleted.
58. 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.

59. No extra payment will be made for removing spreading and consolidating salvaged metals and materials.
60. 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.
61. **Performance Security:**

61.1 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 through a transparent lottery system where all bidders / their authorized representatives, the concerned CEO and CFO will remain present.

(Amendment to Appendix-IX, Clause-36 of OPWD Code Vol.-II by inclusion).

61.2 Additional performance security shall be obtained from the bidder 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 Demand draft Nationalized Bank pledged in favour of the **Rourkela Smart City Limited(Smart City Mission Grant Fund)**. and payable at Rourkela or Term Deposit Receipt pledged in favour of **Chief Executive Officer, Rourkela Smart City Limited** before signing the Agreement. The additional performance security in any other form will not be accepted. 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.

The bid of the technically qualified bidders will be opened for evaluation of the price bid. in case of the 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 Demand draft/term Deposit receipt, their price bid will not be taken in to consideration for evaluation even if they have qualified in the technical bid evaluation.

RSCL has already been appointed Project Management Consultant to supervise Construction of Rotary Park, Udit Nagar Park and his role & responsibility as follows

- Project Planning and Construction Supervision
- Supervision Manual
- Review of design, drawings and tender specifications
- Material Testing Quality Control
- Environmental Protection and Safety during Construction
- Certification of Interim and final payments
- Contract Administration
- Operation & Maintenance Manual Approval
- As Built Drawing approval
- Certification in Defect Liability Period
- Any Contract Dispute and assist in case of Arbitration.

The contractor has to assist and obey the technical assistants and guidance's of the consultant.

62. **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 concerned Engineer in Charge.
63. 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.
64. 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.
65. 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.
66. The Contractor will have to submit to the PMC monthly return of labour both skilled and unskilled employed by him on the work.
67. 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/PMC of the respective wing before they are used on the work.
68. 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.
69. The Tenderer should furnish along with their tender **1.** A list of works, which are at present in their hand **Schedule-F** **2.** List of work executed (**Schedule-C**) in the prescribed proforma(s) enclosed herewith in appropriate place of bid document.
70. 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.
73. 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.
74. The contractor has to arrange the samples of materials required for execution to be got tested and approved by the Department 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 **Govt. Of Odisha/Govt. Of India accredited Laboratory**, at the cost of the Contractor with no extra cost to the Department.
75. 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 12 months after completion of work or if any, imperfection becomes apparent to the work within 12 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.

76. 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 confirm to the minimum strength and other criteria as per National Building Code.
77. 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.
78. 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.
79. 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.
80. 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.
81. **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/PMC has the right to prescribe other required test if any as will be considered from time to time.
82. 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.
83. 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.

84. In case of any complaint by the labour working about the non-payment or less payment of his wages as per latest minimum Wages Act, the Engineer in Charge 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 Engineer In Charge is final and binding on the contractor.
85. 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.
86. Wastage of bars and unnecessary lapping will not be considered for measurement and payment).
87. 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 concerned Engineer in Charge 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.
88. Trial Boring - The foundation level as indicated in the body of the drawings are purely tentative and for the general guidance only. The RSCL 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.
89. 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 Department may recover from the contractor the cost of making good the works. The contractor is also required to maintain the Constructed Work for 12 (Twelve) months from the date of successful completion of the work. The RSCL will deduct retention money which will be **Retention Money (5%) five percent from each running bill after correction if any by RSCL + Additional percentage to be deducted & withheld from each payment in voice after correction , if any by RSCL for repair/replacement/maintenance of the work during defect liability period of 365 days from the date of completion of original work.**
90. 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 RSCL 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.
91. **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.
92. Where it will be found necessary by RSCL, 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 Rourkela Smart City Corporation Limited 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 Department. The order Book shall be the property of the Rourkela Smart city Limited and shall not be removed from the site of work without written permission of the Engineer In Charge and to be submitted to the Engineer-in charge every month.

93. 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.
94. 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.
95. The rates quoted by the contractor shall cover the latest approved rates of SOR including GST i.e., 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.
96. 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.
97. The contractor shall make requisition of claim book from the date of commencement of the work from the RSCL 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 10<sup>th</sup> and 16<sup>th</sup> 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 Rourkela Smart city Limited 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 Department whichever is earlier for record.
98. 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. . Of Odisha/Govt. Of India accredited Laboratory 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.
99. 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.

**100.** 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.

**101.** The following documents which are not submitted with the Bid, will be deemed to be part of the Bid:

Sl. No	Particulars
1	Notice Inviting tender
2	Instruction to the Bidders
3	Conditions of Contract.
4	Contract data
5	Specifications
6	Drawings
7	Pre-Bid Meeting Minutes

**102. ELIGIBILITY CRITERIA:**

*To be eligible for qualification, applicants shall furnish the followings. Non-furnishing of the following particulars shall be treated as ineligible. The facility for exemption of EMD & ISD , either in full or in part ,as per instruction/guidelines of Govt of Odisha/ OPWD Code/Govt of India/direction of Hon'ble Courts in India(with specified limitation and liberty) can be availed by intending and eligible class/category of Bidder( Contarctors with Physical Disabilities/Engineer Contractors/ ST or SC Contractors/Such other Agency(s) conferred with this exemption facility if any). However this facility availed by any bidder for the above mentioned work shall be treated as genuine and admissinle/acceptable subject to submission of required documentary evidence /support in hard copy as described in DTCN and subsequent verification of the same by RSCL.*

- a. Scanned copy of required E.M.D as per the Clause No. 5 (i) and Clause No.20 of DTCN.
- b. Scanned copy of demand draft towards cost of tender paper as per Clause No.4 and 5(i) of DTCN.
- c. 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 date & time of opening of Bid as specified at Contract Data above, and as per date mentioned in contract Data during office hours on working days failing which the bid will be rejected.
- i. Scanned copy of valid Registration Certificate, PAN card along with the tender documents and the originals of all scanned documents & VAT clearance certificate in form VAT 612/GST Clearance Certificate of the successful lowest bidder only are to be produced within 5(five) days after opening of Cover-II of the tender in the office of the Chief Executive Officer,RSCL otherwise his/her bid shall be declared as non-responsive and he will be debarred in future from participating in tender for 3(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 tender at the negotiated rate equal to L-1 bidder.

- II. License criteria as per Clause No.8 of DTCN and Schedule-H need to be furnished.
- III. Joint Ventures are not accepted.

2.2.1 Bidder/ Firm should furnish list of similar works executed during last five years stating the Agreement No., date of commencement and completion, actual date of completion duly certified by the employer. The certificate to that effect has to be obtained from an officer not below the rank of Executive Engineer concerned with the work under report. The bidder must have completed similar nature of work i.e. Development and Construction of Parks/Gardens/residential buildings/any Infrastructure Civil Works/commercial buildings consisting of civil works, architectural works and electrical works within last Five financial years i.e. from year 2013 – 2014 to year 2017-2018 and up to one month prior to last date of submission of the bid of value not less than

- i) One contract of INR 207 lakhs (80 % of the estimated cost)  
or
- ii) Two contract of INR 129 lakh each (50 % of the estimated cost)  
or
- iii) Three Contract of INR 103 lakhs each ( 40% of the estimated cost)

Bidder should submit all the credentials along with all experience certificates. Copy of Completion Certificate or any other document in support of successful completion of job along with Reference of person under whom jobs are executed

2.2.2 The Bidder should have an average annual turnover of minimum INR 100 Lakhs at least for last three (3) financial years .

Turnover of previous year will be escalated @10% per financial year (on compound basis) shall be considered on the value of annual turnover of the proceeding years and cost of completed / executed similar nature of work shall be given additional weightage of percentage per year to bring them to current price level to account for price escalation as illustrated below:

Financial Year	Turnover/ Cost of Executed work	Effective cost of executed work at previous completed financial year's price level
2012-2013	F	1.61 xF
2013-2014	E	1.46 x E
2014-2015	D	1.33 x D
2015-2016	C	1.21 x C
2016-2017	B	1.10 x B
2017-2018	A	1.00 x A

The Turn over need to be certified by a registered Chartered Accountant.

- I. Scanned copy for information regarding current litigation, debarring / expelling of the applicant or abandonment of work by the applicant in schedule "D" and scanned copy of

**affidavit to that effect including authentication of tender documents in schedule “E” furnish the original affidavit in Schedule-E within 5 (five) working days of opening of Cover-II as per clause 49.**

- II. No Relationship Certificate in Schedule – A**
- III. List of projects under execution in Schedule-F**
- IV. List of projects executed that are similar in nature to the work as per Schedule-C**
- V. Affidavit of eligibility from schedule –K to O**
- VI. Certificate of employment of unemployed Engineering Graduate as per format Schedule-G for Class A Regd Contractor**
- VII. Undertaking of Bidder as per format Schedule G**
- VIII. Declaration of relation in the Dept if any in Schedule I**
- IX. MOU with Electrical Contractor in Schedule –J**
- X. List of equipment on Owned/lease basis in Schedule K**
- XI. Affidavit for SC/ST Bidder in format Schedule-L**
- XII. Affidavit for Physically Handicapped Bidder in format Schedule-M**
- XIII. Affidavit for Engineering Contractor in format Schedule-N**
- XIV. Affidavit for Bidder not registered in EPFO in format Schedule-O**

**103. Time Control :-**

*(Vide Works Department Office Memorandum No.24716 dtd.24.12.2005 and No.8310 dtd.17.05.2006)*  
Progress of work and Re-scheduling programme.

- i) The Engineer-in-Charge 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 Engineer-in-Charge 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 endeavours 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 Municipal Commissioner (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**

Deleted.

**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 Municipal Commissioner shall be conclusive evidence), 20% of the value of left over work will be realized from the contractor as penalty.

- 104.** 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.
- 105.** 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.
- 106.** 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.

**107.** 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.

**108.** 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 points 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% for individual items

subject to a maximum of 5% 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.

**APPROVED**

Chief Executive Officer  
(Rourkela Smart city Limited)

**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 Rourkela Smart City Limited of the rank of Assistant Engineer & above and any officer of the rank of Assistant /Under Secretary and above of the Works 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**

**A. Brief company profile**

SL.NO.	PARTICULARS Name of Bidder	DESCRIPTION OR DETAILS
1	Name of Bidder	
2	Legal status of Bidder (company, Pvt. Ltd., LLP etc.)	
3	Main business of the Bidder	
4	Registered office address	
5	Incorporation date and number	
6	GST Registration Certificate ( State And Central)	
7	PAN details	
8	Primary Contact Person (Name, Designation, address, mobile number, fax, email)	
9	Secondary Contact Person (Name, Designation, address, mobile number, fax, email)	
10	EMD details	

**B. Certificate of Incorporation**

**(To be Submitted by Sole Bidder )**

**C. Financial Turnover**

**(To be Submitted by Sole Bidder )**

The financial turnover of the company is provided as follows as per Clause no 102 of DTCN:

	2013 – 14	2014 – 15	2015 – 16	2016 – 17	2017-2018
Annual Turnover					

Copy of audited financial statements or declaration from the appointed Chartered Accountant to be provided as proof of the financial turnover

**SCHEDULE – C**

**WORK EXPERIENCE**

**LIST OF SIMILAR NATURE OF PROJECTS EXECUTED AS PER CLAUSE NO 102 OF DTCN**

<b>Name of Employer</b>	<b>Name of location and name of work</b>	<b>Contract price in Indian Rupees/ Agreement no.</b>	<b>Major Items of works</b>	<b>Date of starting the work as per Agreement</b>	<b>Stipulated date of completion of the work as per Agreement</b>	<b>Actual date of completion of the work</b>	<b>Reasons for delay in starting/ completion, if any</b>
1	2	3	4	5	6	7	8

**Note:** The above information is to be certified by the Engineer in Charge / Employer not below the rank of Executive Engineer vide Completion Certificate

Signature of the Tenderer  
Date.

**SCHEDULE – D**

**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 – E**  
**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 authorise(s) and request(s) any bank, person, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the Department 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 Department.

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

- Original Affidavit sworn before Notary Public or Executive Magistrate

**Schedule-F**  
**EXISTING COMMITMENTS AND ON-GOING WORKS :**

Description of works	Place & State	Contract No.	Name & Address of Employer	Value of Contract ('In lakh)	Stipulated Period of Completion	Value of works* remaining to be completed ('In lakh)	Anticipated date of completion

Signature of the Tenderer

Date.....



**Schedule-G**  
**Certificate of Employment of Unemployed Graduate Engineer/Diploma Holder**  
**(For 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 Contractors work with Address	Qualification	Date of Appointment	Monthly Emoluments	Whether full time engagement and continuous	If they are superannuated/retired/dismissed or removed personnel from State Govt /Central Govt/ PSU/Pvt Companies or any one ineligible for Government Service
1	2	3	4	5	6	7
2						
3						
4						
5						
6						
7						

**Schedule-H**

**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 wining before submission of this tender. I am aware that my contract is liable to 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.
4. I/We have visited the site and have fully acquainted with the local condition regarding the materials labour and factors pertaining to work for completion in all respect before submitting the tender.
5. I/We have carefully studied the conditions of the Construction ,specification, contract condition and all other documents relating to this work and agree to execute the same accordingly.
6. I/We solemnly pledge that I/We shall sincere in discharging my/our duties as responsible contractor and complete the work within the prescribed time limit. In case there are deviation from the Construction Programme , I/We shall abide by the decision of Engineer –In-Charge for revision of programme and arrange for the labours, materials, equipments etc accordingly.
7. In the event of award of the work to me/us. I/We undertake the entire responsibility for the structural stability to reconstruct/replace the whole or part of the Component of the structure in the event of failure or improper functioning /Improper Construction within a period of one year from the date of completion without asking extra payment from the account of department.
8. I/We undertake that I/We shall not claim any escalation of cost on account of materials , labours, taxes from any account in connection with work with execution of the work till the actual completion period and shall not be entertained by Rourkela Smart City Limited,
9. In case of vaiolation of contents of department's tender documents in shape of extra conditions or in any form , my offer/tender shall be rejected by the department without any intimations to me/us.

Signature of the Tenderer

Date:

**SCHEDULE – I**

**RELATIONSHIP DECLARATION**

To,

**Chief Executive Officer,**

**Rourkela Smart City Limited**

**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. 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.

<b>Sl No</b>	<b>Name of the my employee and his designation in the firm</b>	<b>Presently working at</b>	<b>Details of his relatives working in the Department</b>
			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.

**SCHEDULE – J**

**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 1<sup>st</sup> 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**

W<sub>1</sub> -

W<sub>2</sub> –

**Schedule-K**

Information (Machineries owned/possessed on lease/hire)  
Details of machinery possessed owned/ leased/ hired

SL No	Name of the Machineries	No of Machineries	Owned/Hired/Leased
1	Mixture Machine	1	
2	JCV Excavator	1	
3	Plate & Niddle Vibrator	1	
4	Tractor /Truck	1	
5	Water Pump 3 to 5 HP	1	
6	Centering shuttering plate- 2000 Sqft.		

**NB.** Scan copies of Owned or leased receipts of the above machineries must be uploaded into Technical Cover

**Schedule-L**  
**AFFIDAVIT**  
**(Applicable for SC/ST Bidders)**

1. I, Sri/Smt/Ms....., Son/Daughter/Wife of ....., hereby declare that;

a. I am a registered .....Class ST/SC Contactor under Govt. of Odisha

**or**

b. The Partnership Firm/Private Ltd. Company named/titled, as “.....” is a registered SC/ST Contractor under Govt. of Odisha within the ambit specified in Works Department Resolution No. 27748 dt. 11.10.77 and I, Sri/Smt/Ms....., Son/ Daughter/ Wife of ....., is the authorized signatory on behalf of the Firm/Company (scanned authorization copy with my signature duly certified and attested/identified has been submitted on-line with our tender).

**[Tick (a) or (b) above whichever is applicable and fill up accordingly.]**

2. As per Works Department, Govt. of Odisha Resolution No.27748 dt.. 11.10.77, I/My Firm am/is entitled for exemption of 50% EMD & ISD and accordingly, I/My Firm have/has submitted tender for the work.

3. I/My Firm hereby submit willingness to avail price preference as ST/SC category Civil Contractor as entitled in the aforesaid resolution.

4. Necessary documentary evidence(s) as prescribed in the Tender Notice at \* in support of my/our aforesaid claim for exemption of EMD & ISD have/has been duly up-loaded on- line/submitted along with my/our tender for the aforesaid work.

5. In addition to those, other documents and original(s), as required by CEO, RSCL to sustain my/our aforesaid claim shall be submitted by me/us within a week from the date of instruction/intimation of CEO,, RSCL through telephone/letter/e-mail failing which my/our tender shall be liable for rejection .

(\*) - Strike out which is not applicable

**(Deponent)**

**(Signature of the Tenderer/Authorised Signatory in case of  
Partnership Firm/Company with Seal of the Firm/Company)**

- Original Affidavit sworn before Notary Public or Executive Magistrate

## **Schedule-M**

### **AFFIDAVIT**

#### **(Applicable for Contractors with Physical Disabilities)**

1. I, Sri / Smt / Ms .....,Son / Daughter / Wife of ....., hereby declare that I am a registered .....Class Contactor with Physical Disabilities within the ambit prescribed in Works Department, Odisha- Resolution No.23934 dt.8.11.91.
2. As per the said Resolution, I am entitled for exemption of EMD & ISD and accordingly , I have submitted tender for the work.
3. Necessary documentary evidence(s) as prescribed in the Tender Notice at in support of my aforesaid claim for exemption of EMD & ISD have/has been duly up-loaded on- line/submitted along with my tender for the work.
4. In addition to those, other documents and original(s), as required by CEO, RSCL to sustain my aforesaid claim shall be submitted by me within a week from the date of instruction/intimation of CEO, RSCL through telephone/letter/e-mail failing which my tender shall be liable for rejection.

**(Deponent)**

- Original Affidavit sworn before Notary Public or Executive Magistrate

**Schedule-N**

**AFFIDAVIT**

**(Applicable for Engineer Contractors Intending to Avail Exemption of EMD & ISD as per OPWD Code)**

1) I, Sri/Smt/Ms....., hereby declare as the Contractor/as the authorized signatory on behalf of the Contractor,"....."(strike out whichever is not applicable) do hereby solemnly affirm and state as follows.

2) That, I/we am/are a registered ..... Class Engineer Contractor.

3) That, I/we herewith claim exemption of EMD during the year.....for participation in the tender for this work.

4) That, I/we have not exhausted the facility available to me/us an Engineer Contractor during the year..... for exemption of EMD & ISD as per Works Deptt. Guideline & OPWD Code.

5) That, I/we shall ensure production of my/our valid Original Contractor's Registration Certificate (license) after or during opening of bids (as per direction of CEO, RSCL for the above work for verification and also for subsequent entry of exemption of EMD and ISD (if selected as the contractor for this work and availed the exemption of EMD and ISD in my/our license as per direction of CEO,RSCL, within such time as directed by him failing which action, as decided by RSCL, may be taken against me/us and appropriate steps may be taken by RSCL to facilitate execution of the tendered work.

(\*) - Strike out which is not applicable

**(Deponent)**  
**(Signature of the Tenderer /Authorised Signatory in case of Partnership Firm/Company with Seal of the Firm/Company)**

- Original Affidavit sworn before Notary Public or Executive Magistrate



**Schedule-O**  
**Affidavit**  
**(Applicable for the Bidder not registered under EPF)**

I, Sri/Smt/ Ms.....hereby declare as the Contractor /as the authorised signatory on behalf of the Contractor .....**(Strike out whichever is not applicable)** do hereby solemnly affirm and state as follows

1. That as on date, I/We am/are not registered with RPF (Regional Provident Fund Commission) and solemnly affirm that, I/We shall follow the “ Employees Provident Fund and Misc Provision Act, 1952 & Rules /Schemes” made there under, in case the work is awarded to me/us.
2. That I/We shall submit, after execution of work and before payment of any bill, the detail list of labours, such as
  - a. Name:
  - b. Father’s name:
  - c. Place of Permanent Residence:
  - d. Statement of Wages paid to them till the completion of the Work
3. The RSCL Authority will be at liberty to deduct 26% of the labour component amount of the Contract & shall retain it as an additional security with RSCL.
4. That. In case I/We submit the EPF Registration Certificate, then the said additional security shall be released to me /us by RSCL without any interest subject to fulfilment of other Compliances/conditions.
5. That , this affidavit is required to be produced before the authority of Rourkela Smart City Limited for tender purpose.  
That the facts stated above are true to the best of my /our knowledge.

**(Deponent)**

**(Signature of the Tenderer/Authorised Signatory in case of Partnership Firm/Company with Seal of the Firm/Company)**

- Original Affidavit sworn before Notary Public or Executive Magistrate

**ANNEXURE-II  
FORM OF AGREEMENT**

**( First page to be filled up and signed in non –judicial stamp paper of worth Rs.100/-)**

This contract made on Dt.....between Rourkela Smart City Limited (RSCL) , hereinafter called “ the employer” and .....(name and address of the selected bidder), hereinafter called “the Contractor”

Whereas, the employer is desirous that the Contractor shall execute; “Redevelopment of Rotary park and Udit Nagar at Rourkela”RSCL vide Bid Reference no...../Dt.....(hereinafter called “the work”) and the employer has accepted the bid of the Contractor for execution and completion of such works and rectifications of defects , if any, at an accepted tender/contract price of Rs.....(Rupees ) only.

Now, therefore , it is hereby agreed upon by RSCL and the Contractor as follows:

1. In this contract, words and expressions shall have the same meanings as are respectively assigned to those in this DTCN and the Contract form as a whole. The DTCN and agreement shall be deemed to form and be read as construed as part of this contract with a view to maintaining the sanctity of this contract for successful execution and completion of the work unless otherwise clarified/redefined at a later stage during the Contract remains in force including the defect liability period.
2. In consideration of the payments to be made by the employer, the Contractor hereby covenants with the employer to execute and complete the work and rectify the defects therein, if any , in conformity with the provisions of this contract.
3. The employer hereby covenants to pay the Contractor in consideration of the execution and completion of the work and for rectification of defects , if any , wherein the contract price or such other sum, as may become payable under the provisions of the contract and in the manner prescribed under this Contract.
4. The following documents shall be deemed to form, read and construed in conjunction with other portions/clauses/conditions of this contract and DTCN.
  - I. DTCN invited for the work including the Short Notice
  - II. Contractor’s Bid and negotiation correspondence , if any
  - III. Letter of Acceptance/Letter of Intent for the Work(LOA/LOI)
  - IV. Notice to proceed with the work (Work Order) to be issued by RSCL and subsequent instructions of RSCL to the selected Bidder subject to confirmation of the same, if required , by RSCL through written notice to the selected bidder.
  - V. P1 Agreement which includes Items, Quantities, Rates and Amounts of the work to be duly signed by RSCL and the Contractor
  - VI. Copy of agreements drawn by the contractor with electrical Contractor vide scope of work of DTCN for Electrical Works

- VII. Instruction/intimation of RSCL for execution of extra work/item/quantity found essential for the work and corresponding rates not covered in the agreement/DTCN /Financial Bid and also curtailment/exclusion of any items of the Financial Bid from execution.
- VIII. Drawing, design, work programme or part thereof submitted by the contractor and duly approved by RSCL with or without modification.
- IX. Letter/ Intimation/ Instruction( including physically and over telephone) of RSCL for repair/replacement/ defect rectification, if any, with respect to modified quality/specification for such repair/ replacement/ defect rectification work and allowed time to accomplish the same either during the execution of the work or during the defect liability period of 365 days from the officially declared /notified/noted date of completion of the whole work including additional /curtailed items/ quantities of the work as per direction of RSCL. RSCL reserve the right to declare/ note the date of completion of the original work and date of expiry of defect liability period which will be binding upon the Contractor.

In witness whereof , the aforesaid two parties have entered into this contract on the date mentioned above.

Binding Signature of Employer signed by.....  
(for and on behalf of Rourkela Smart City Limited-Employer)

Binding Signature of Contractor signed by .....  
( authorised signatory in case of firm/company with applicable authorisation letter/declaration attached to this Contract)

In presence of witnesses

- 1. Name:  
Address:  
Tel No: Signature
- 2. Name:  
Address:  
Tel No: Signature

**Signature of Contractor  
(Authorised Signatory with Seal)**

**Signature of Employer  
(Authorised Signatory with Seal)**

## **SCOPE OF WORKS & SUPPLY**

For

**Request for Proposal for Design, Development, Construction of Rotary Park and Udit Nagar Park consisting of Landscape works, Civil works, Architectural works, design of benches, dust bins and Electrical works including decorative lights at Rourkela**

**OWNER: ROURKELA SMART CITY LIMITED**

## 1. SCOPE OF WORK

### 1.1 Broad Scope of Work.

The broad scope of work shall include Design and execution of all, Landscape works (Including Softscape & Hardscape Works), Civil works, Architectural works, design of benches, dust bins and Electrical works including decorative lights as per the Schedule of Rates (S.O.R), Specifications, Engineering Standards and construction Drawings.

### 1.2 Detailed scope of work

#### 1.3.1 Civil Works:

- Earthwork in excavation in all types of soil for civil works inside park of pathways, foundations, Play courts, Gazebo, Gardener's hut, Pre-fab Toilets, Amphitheatre, Splashpool or any other place as per direction of Engineer-in-Charge. The water table depth may fluctuate. The quoted rate of excavation shall include requirement of dewatering etc. for completion of total works including concreting, backfilling etc. and no extra amount is payable on this account.
- Earthwork in filling with available excavated earth for site grading or any other place including compacting to achieve at least 90% of maximum laboratory dry density as per IS: 2720 Part VII and testing the degree of consolidation all complete as per direction of Engineer-In-Charge.
- Earthwork in filling with borrow earth for site grading or any other place including compacting to achieve at least 90% of maximum laboratory dry density as per IS: 2720 Part VII and testing the degree of consolidation all complete as per direction of Engineer-In- Charge.(Borrow areas shall be arranged by Contractor at his own cost.)
- Supply & filling in foundation and plinth with sand including watering inside park for jogging track or any other place as per direction of Engineer-in-Charge.
- Filling with earth for mound (Maximum Height upto 1.8m) as per drawing, direction of Engineer-in-Charge all complete.
- PCC works for Pathways, foundation, retaining wall, or any other place as per direction of Engineer-in-Charge all complete.

- Rubberized flooring for Outdoor Gym area and Badminton court as the specifications.
- Waterproofing for structures as per the specification.
- Centering & shuttering in sub-structure at all depths and in super- structure at all heights/ elevations.
- RCC works including centering and shuttering for foundation of electric poles, play equipment or any other structure as per direction of Engineer-in-Charge all complete.
- Supplying and placing in HYSD confirming to Fe 500D for RCC works all complete as per direction of Engineer-in-charge.
- Brick masonry in substructure and superstructure for all depths and heights as per specifications.
- Providing and laying cast-in-situ C.C. Kerb stones M20 (with aggregate 20 mm nominal size) including setting in position all complete as per direction of Engineer-in-Charge.
- Dismantling/ Demolishing of PCC/RCC, brickwork for all depths below plinth level and all heights above plinth level including disposal of unserviceable item outside park area. Stacking & depositing of serviceable items at locations as identified and approved by Engineer- in-Charge.
- Disposal of malba /rubbish or similar unserviceable materials by mechanical means beyond 50m initial lead including all lifts involved including loading & unloading.
- Any other miscellaneous work as per specifications, codes etc. but not specifically mentioned in scope of work shall form part of scope of work.
- Obtaining statutory approvals (if required) from local bodies (including existing complex) and other designated authorities etc.

#### **1.3.2 Landscape works** (including Softscape and Hardscape)

***The detail scope of work shall include (but not shall be limited to) the following:***

- All Landscaping and horticulture works including planting operations (Lawn, shrubs, ground-covers & trees)
- Supply and installation of non-toxic lead free painted FRP play equipments, Outdoor fitness equipments, benches, dustbins, etc.

- Cement concrete interlocking paver blocks/ Chequerred Tiles/ Tactile flooring tiles/ Rubber edge flooring/ wherever specified as per design.
- Other miscellaneous items as per attached “Schedule of rates”.
- Third Party inspection and testing of Play equipment & Outdoor fitness equipment.

## 2.1 SCOPE OF SUPPLY

### 2.2 Contractor's Scope of Supply

All materials (consumables & non-consumables), tools tackles etc. as required for satisfactory completion of the job shall be supplied by the contractor. Prior approval from Owner/ Engineer In-charge shall be obtained prior to use of all material at site.

### 3.0 SPECIFICATIONS

The works shall be performed conforming to the Indian Standard codes, P.H.D & P.W.D. specifications of the State Government. Wherever such specifications are not available, CPWD specifications, relevant references, manuals etc. shall be followed as directed by Owner. For Horticulture and landscaping works CPWD-Delhi Schedule of Rates, Analysis of Rate and Specifications (Horticulture & Landscaping) 2014 and RMC-Rourkela Schedule of Rates 2014 shall be followed.

The Work Shall be executed on Preparation of Working Drawings, Procurement and Construction Basis . Details and drawings given in Tender document is for information purpose only and successful bidder shall undertake confirmatory survey for accuracy and completeness of data. It is in scope of successful Bidder to undertake all Site surveys, Geotechnical investigations, Underground Utility Survey and Scanning of the roads for utility shifting, obtaining all required approvals from the relevant authorities, Carry out Design and Drawings for all the components of the work as per Employers requirement and submit the same to client for review and approval, Prepare Good for Construction Drawings, submit maintenance manual to client for approval before start of Maintenance period.

The successful bidder shall have to prepare and submit 'As Built Drawings' depicting the exact construction carried out on site, in soft and hard copy format

## 4.0 LIST OF ATTACHMENTS

### 4.1 Scope of Work (Electrical)

### 4.2 Technical Specification

### 4.3 Drawings

Sr. No.	Drawing Number	Drawing Title
1	TCE-10839A-AC-1000-LP-10488	Proposed Landscape Layout - Rotary Park
2	TCE-10839A-AC-1000-LP-10489	Rotary Park 1- Garden Furniture Layout
3	TCE-10839A-AC-1000-LP-10490	Rotary Park 1- Landscape Details
4	TCE-10839A-AC-1000-LP-10486	Landscape Layout 1
5	TCE-10839A-AC-1000-LP-10487	- Landscape Layout
6	25-TCE-10839A-AC-1000-LP-10494-	Udit Nagar Park- Typical Details
7	26-Udit nagar package-1_Layout	
8	36-TCE-10839A-AC-1000-LP-10491	Udit Nagar Park- Landscape Layout



9	37-TCE-10839A-AC-1000-LP-10493	Udit Nagar Park- Softscape
10	38-TCE-10839A-AC-1000-LP-10495 2	- Udit Nagar Park- Hardscape & Garden Furniture -

## **TECHNICAL SPECIFICATIONS**

### **(Civil & Architectural Works)**

#### **For**

### **Redevelopment of Rotary park & Udit Nagar Park in Rourkela**

OWNER : ROURKELA SMART CITY LIMITED PROJECT

#### **TABLE OF CONTENTS**

- 1.1 General**
- 1.2 General Specification.**
- 1.3 Specification for Play Equipment and Out Door Fitness Equipment.**
- 1.4 Specification for Pre-Fab Handicap Toilet, Gardener's room, FRP Gazebo, Rubber Tile Flooring and Badminton Court Flooring**

#### **1.1 General**

The works shall be performed conforming to the Indian Standard codes, P.H.D & P.W.D. specifications of the State Government. Wherever such specifications are not available, CPWD specifications, relevant references, manuals etc. shall be followed as directed by Owner.

For Horticulture and landscaping works CPWD-Delhi Schedule of Rates, Analysis of Rate and Specifications (Horticulture & Landscaping) 2014 and RMC Schedules 2014 shall be followed.

#### **1.2 General specification: (Civil & Architectural work)**

Works shall be performed considering following points in addition to specification mentioned in above clause 1.1, whichever is more stringent.

1. Cement shall not be less than OPC-43 grade/PPC/PSC-53 grade of reputed manufactures confirming to relevant IS Specification.
2. Reinforcement to confirm HYSD Fe500D.

3. As & when required, the steel/cement & other building materials will be tested by Department at the cost of contractor to ensure proper quality as per IS specification.
4. Machine mix shall be used in concrete work for all structure. Design mix of concrete will be preferred. Vibrator of appropriate type shall be used for compaction of concrete.
5. All the structures are to be designed as permanent type and shall have aesthetic elevation.
6. Bricks should conform to IS: 1077. First class KB Bricks/Fly Ash bricks in cement mortar (1:4) in foundation and plinth. All non-load bearing outer walls shall be minimum-230 mm thick & inside partition walls shall be minimum 125 mm thick. First class KB bricks in cement mortar (1:6) in superstructure.
7. Providing and laying 8 layer Acrylic cushion flooring system with rubberized surface as per the specification for Badminton court.
8. The testing for water tightness of the structures shall be conducted as per IS: 3370 and the results shall have to satisfy the relevant provisions of the above code.
9. The joints in the form work shall be arranged in a regular pattern.
10. The stripping time of all form work shall be in accordance with recommendations contained in IS: 456.
11. The surplus earth and debris should be lifted after completion of work and proper leveling of site as directed by Engineer-in-charge without any extra claim.
12. All the work including supply of materials to be executed as per relevant IS specification and direction of Engineer-in-charge.
13. All foundation, superstructure, construction etc. including all mechanical, electrical & civil engineering works covered under the scope of work of contractor shall be subjected to inspection & testing by the Department for its material, quality, workmanship and the performance. The contractor shall arrange and carryout all such inspection, testing, trial run etc. and demonstrate in presence of the Engineer- in-charge of the Department.
14. The cost of such inspection, testing, trial run, demonstration etc. shall be borne by the contractor. All responsibility of such inspection, testing, trial run, demonstration etc. and any damage/loss that may cause directly or indirectly shall exclusively rest with the contractor.
15. Such inspection, testing, demonstration etc. shall, however, not relieve the contractor of their liability for replacing/rectifying any defects, which may subsequently appear or be detected during erection and guarantee period.

#### **1.0 Paver Blocks / Interlocking Concrete Block Pavement:**

- The concrete pavers should have perpendiculars after release from the mould and the same should be retained until the laying. The surface should be of anti-skid and anti-glare

type. The pave should have uniform chamfers to facilitate easy drainage of surface run off. The pavers should have uniform interlocking space of 2mm to 3mm to ensure compacted sand filling after vibration on the paver surface.

- The concrete mix design should be followed for each batch of materials separately and automatic batching plant is to be used to achieve uniformity in strength and quality.
- The pavers shall be manufactured in single layer only.
- Skilled labour should be employed for laying blocks to ensure line and level for laying, desired shape of the surface and adequate compaction of the sand in the joints.
- The pavers are to be skirted all round with kerbing using solid concrete blocks of size 100mm x 200mm x 400mm or as directed by the Engineer. The kerbing should. be embedded for 100mm depth. The concrete used for kerbing shall be cured properly for 7 days minimum.

**1.1. Bedding Sand Course :**

The bedding sand shall consist of a clean well graded sand passing through 4.75mm sieve and suitable for concrete. The bedding . should be from either a single source or blended to achieve the following grading.

**Bedding Sand Requirement**

In Sieve Size	% Passed
9.52mm	100
4.75mm	95-100
2.36mm	80-100
1.18mm	60-100
600 Microns	25-60
300 Microns	10-30
150 Microns	5-15
75 Microns	0-10

- Contractor shall be responsible to ensure that single-sized, gap-graded sands or sands containing an excessive amount of fines or plastic fines are not used. The sand particles should preferably be sharp not rounded as sharp sand possess higher strength and resist the migration of sand from under the block to less frequently areas even though sharp sands are relatively more difficult to compact than rounded sands, the use of sharp sands is preferred for the more heavily trafficked driveways. The sand use for bedding shall be free of any deleterious soluble salts or other contaminants likely to cause efflorescence.

- The sand shall be of uniform moisture content and within 4% - 8% when spread and shall be protected against rain when stock piled prior to spreading. Saturated sand shall not be used. The bedding sand shall be spread loose in a uniform layer as per drawing. The compacted uniform thickness shall be of 45mm and within +/- 5mm thickness variation shall not be used to correct irregularities in the base course surface.
- The spread sand shall be carefully maintained in a loose dry condition and protected against pre-compaction both prior to and following screening. Any pre-compacted sand or screened sand left overnight shall be loosened before further laying of paving blocks take place.
- Sand shall be slightly screened in a loose condition to the predetermined depth only slightly ahead of the laying of paving unit.

## **2.0 Bricks Masonry:**

- All bricks used on the works shall be burnt clay building bricks of second class quality having minimum crushing strength of 35 Kg/Sq.cm. and shall conform to IS: 1077 latest. All bricks shall be uniform in quality and size. The bricks shall be got tested as per IS: 3495 latest at the Contractor's cost.
- Bricks shall be unloaded by hand and carefully stacked and all broken bricks shall be removed from site.
- All bricks shall be subject to inspection on the site and shall be to the approval of the Engineer who may reject such consignments as are considered by him to be inferior to the quality specified.

## **2.1. Mortar: (DDK)**

- All mortar shall be prepared in accordance with IS: 2250 latest. The sand used shall conform to IS: 2116 latest and the water shall conform to relevant clauses of Concrete of this specification. Only river sand should be used. Re-stamping of set mortar will not be permitted
- Unless otherwise specified in the Schedule of Quantities, the cement mortar proportion shall be as follows:
  - i) 115mm thick brickwork and hollow brickwork 1:4
  - ii) 230 mm thick brickwork and hollow brickwork 1:6

## **2.2. Construction:**

- All masonry work shall comply with the requirements of IS: 2212 latest. It shall be of English Bond. All closure bricks, etc. necessary to comply with the requirements of the bond specified or to brick joints effectively shall be procured by the Contractor and used for the work.
- Ordinarily there shall be four courses per 0.3 m height or in other words, the horizontal bed joints shall be on average 10 mm thick, and the vertical joints 6 mm wide. The mortar shall be worked up to all joints and no hollow space shall be left in any portion of the work. All joints shall be laid truly horizontal and all vertical joints shall be truly vertical. Masonry work

shall be raised in a uniform manner so that no one portion is being raised more than 1.0 m above another portion at one time.

- For half brick-walls (115 mm thick) which exceed 2.0 m in height, a reinforced concrete band 75 mm thick (concrete band M-15/i0) shall be provided at intervals not exceeding 1.0m. the reinforcement in these bands shall consist of 2 no 6 m. mild steel rounder with 6 mm binders spaced at 150 mm centre to centre. Such band shall also be provided at the free edge of all masonry work including window sills and top of free standing walls.
- All bricks shall be thoroughly soaked by keeping them under water for at least 12 hours before use; the practice of dipping bricks in water just before use will not be allowed. All necessary water cisterns for this purpose shall be constructed or tubs brought by the Contractor to the satisfaction of the Engineer to ensure proper soaking of bricks.
- No bats or broken bricks are to be used otherwise than as closures. No under burnt or over burnt bricks shall be used.
- All concrete block work shall conform to IS: 2572. Well dried blocks shall be laid dry and shall only be moistened to the extent required to compensate the absorption of water from the mortar. Pieces of blocks shall not be used except where they are absolutely necessary to make a closure.

### 3.0 Specification for Play Equipment and Out Door Fitness Equipment.

All play equipment and Out Door Fitness Equipment shall be as per specification, of approved quality and procured from manufacturers approved by Owner.

#### A. Fiber Reinforced Plastics (FRP) :

For children play equipment all the **Fiber Reinforced Plastics (FRP)** (minimum 4-5 mm thick) materials shall be processed by the hand laid process as follows:

1. After the preparation of the mould a layer of gel coat (tested as per IS 6746:1994) shall be applied which shall be of N.P.G duly mixed with U.V stabilized pigment to give the required colour to the product.
2. Then a coat of G.P resin tested (as per standard IS 6746: 1994) shall be applied above the surface of the gel coat after it becomes tack free.
3. The constitutive layers of C.S.M (chopped strand matt) as per IS 11551-1996, glass fiber shall be laid down along with resin to the required extent to build up the required thickness in sandwich pattern.
4. The back side coating of the resin shall be done to give a smooth finish.
5. The mould shall be kept open to dry for a specified duration for strengthened the F.R.P
6. After the mould is completely cured FRP shall be removed from the mould. Then all the corners and edges of it shall ground to make them smooth and

harmless from the strands of the glass wool.

**B. Outdoor Fitness Equipments:**

**1. Forearm Twirl:**

**1.1. General:**

Product Area: 1.5 X 0.8 M

Safe Play area: 2.5 X 1.8M

**1.2. Technical Specification:**

25 NB Galvanizes pipe bend to form ring and spokes consists of 20NB G.I. pipes that connect to each other to form a pair of wheels of Forearm Twirl. These wheels are mounted on both ends of 40 NB G.I. pipe bend with specially designed bush bearing. This bend pipe is fixed to main frame of 100 NB G.I. pipe.

Handle is fixed over the pipe ring for free movement of wheels.

All pipes are uniformly powder coated up to min. 60 micron thickness to avoid corrosion.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.

Handle for rotating the ring to be fixed over the pipe ring.

**2. Hip Twister**

**2.1 General:**

Product Area: 1.2 X 0.9 M

Safe Play area: 2.2 X 1.9M

**2.2 Technical Specification:**

The main frame of Hip twister consists of 100NB G.I. pipe with handle attached to it.

Handle pipe is made up of 25 NB G.I. pipe with suitable rubber grip attached at both ends.

The rotating desk made from HDPR/LLDPE plastic is supported over 80 NB G.I. pipe with the help of heavy duty bearing.

This disk is bolted to main frame with the help of 40 NB G.I. pipe.

All pipes are uniformly powder coated up to minimum 60 micron thickness to avoid corrosion.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.

**3. Chest Press**

**3.1 General:**

Product Area: 1.2 X 0.9 M

Safe Play area: 2.2 X 1.9M

**3.2 Technical Specification:**

100 NB galvanized main vertical support pipe fixed over square tube of 25mm X 25mm bottom frame.

HDPE/LLDPE plastic seat fixed over rectangular tube of 80mm X 40mm with zinc plating for corrosion resistance.

Seat frame is hinged over vertical support pipe through 40 NB galvanized pipe links with the help of specially designed bush bearings.

The handle pipe consists of 25 NB galvanized pipe with rubber handle grip at both ends. Handle is linked to the seat with 40 NB pipe which is hinged to main vertical support pipe with the help of specially designed bush bearings.

All pipes are uniformly powder coated up to minimum 60 micron thickness to avoid corrosion.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.

#### **4. Aero Rider**

##### **4.1 General:**

Product Area: 1.2 X 0.5 M

Safe Play area: 2.2 X 1.5 M

##### **4.2 Technical Specification:**

The main frame of Aero Rider is made from 100 NB and 40 NB galvanized pipe with powder coating of minimum 60 micron thickness.

Handle support pipe linked to seat via 25 NB galvanized pipe.

Handle pipe consists of grip of 20 NB G.I. pipes with suitable rubber grip.

The handle pipe extended to connect foot grip of 25 NB and 20 NB G.I. pipes via 40 NB galvanized pipe.

The handle support pipe is pivoted over 100 NB support pipe with Zinc plated rectangular tube.

The HDPE/ LLDPE seat rest over the 50mm X 25mm rectangular tube hinged over the 100 NB main frame pipe with the help of specially designed bush bearings.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.

#### **5. Aerial Stroller (Air Walker)**

##### **5.1 General:**

Product Area: 1.0 X 0.5 M

Safe Play area: 2.0 X 1.5 M

##### **5.2 Technical Specification:**

The main frame of Aerial Stroller is made from 80 NB G.I. pipes with G.I. plating up to 40 micron thickness.

This main frame is resting on 100 NB G.I. pipe to give it strength.

Foot rest is made bend pipe is made up of 40 NB G.I. pipes. Foot rest is made with the help of 25mm X 25mm X 5mm thick MS angles having G.I. plating up to 40 micron thickness and Aluminium chequered plates.

Foot rest is mounted on main frame with the help of specially designed bearing for its free movement.

Handle is made by 25 NB G.I. pipes.

All pipes are uniformly powder coated up to minimum 60 micron thickness to avoid corrosion.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.



## **6. Shoulder Exerciser**

### **6.1 General:**

Product Area: 1.2 X 0.9 M

Safe Play area: 2.2 X 1.9 M

### **6.2 Technical Specification:**

100 NB galvanized main vertical support pipe fixed over square tube of 25mm X 25mm bottom frame.

HDPE/LLDPE plastic seat fixed over rectangular tube of 80mm X 40mm with zinc plating for corrosion resistance.

Seat frame is hinged over vertical support pipe through 40 NB galvanized pipe links with the help of specially designed bush bearings.

The handle pipe consists of 25 NB galvanized pipe. Handle is linked to the seat with 40 NB pipe which is hinged to main vertical support pipe with the help of specially designed bush bearings.

All pipes are uniformly powder coated up to minimum 60 micron thickness to avoid corrosion.

All open ends of pipe been closed by GI/HDPE caps for user safety against entrapment.

## **C. Outdoor Children's Play Equipments**

### **1. Double Post Swing**

#### **1.1. General:**

Age Group : 4-14 Years

Product Area : 3.5 X 1.0 M

Safe Play area : 4.5 X 2.0 M

#### **1.2. Technical Specification:**

The leg support of the single post swing is made up of 100 NB while the top bar is of 50 NB powder coated G.I. pipes.

Two swings are made up of 10mm thick skid reinforced.

Seats of the single support swing are made up of 10mm thickness anti-skid rubber.

The rubber seat is suspended on 6mm thick G.I. chain.

The ball bearings are mounted inside a specially designed nylon clamp.

### **2. Standard See-Saw**

#### **2.1 General:**

Age Group : 4-10 Years

Product Area : 2.5 X 0.3 M

Safe Play area : 3.5 X 1.3 M

#### **2.2 Technical Specification:**

The seats of the see saw are made from Roto moulded plastic.

The lever is made up of 15,20,25 NB G.I. pipes and is fitted on 40 NB G.I. pipe.

The bearing used is of heavy duty bush type.

### **3. Slide**

#### **3.1 General:**

Age Group : 4-12 Years

Product Area: 0.5 X 3.5 M

Safe Play area: 1.5 X 5.0 M

Platform Height : 1.5 M

#### **3.2 Technical Specification:**

The slide is made up of Fibre reinforced plastic (FRP) having thickness of 3-4mm with sufficient reinforcement given to acquire proper strength to the module.

The platform is supported on vertical 80NB powder coated G.I. pipes.

The railing provided to the platform is made from LLDPE and it is supported by 20 NB G.I. pipe.

The ladder is made up of 25 NB G.I. pipe and with triangular steps of 16 SWG. Ladder to be designed in such a way it won't entrap child's foot while playing.

The 'T' support under the slide is made up of 80 NB G.I. pipe.

### **4. Combination set 4 in 1**

#### **4.1 General:**

Age Group : 4-10 Years

Product Area : 5.5 X 8.4 M

Safe Play area : 8 X 10.5 M

#### **4.2 Technical Specification:**

This set has combination of four items such as swing, cross-n-zero, Spiral slide and Climber with bridge.

The complete frame of this item is fabricated from 20 NB and 25 NB powder coated G.I. pipes.

The spiral and straight slide in the set is made up of Fibre reinforced plastic (FRP). The slide landing support is made in 20 NB pipe. Slide is given a smooth finish so that the child does not hurt itself while playing.

The cross and zero boxes are made up of LLDPE and pipes inserted are of 15 NB.

The bucket swing is made up of LLDPE and is attached to a nylon rope. For the bucket swing a handle is given for gripping, which is made in rotational moulding and out of LLDPE.

Bridge and Climber to be fabricated from 20 NB and 25 NB powder coated G.I. pipes.

Climber stubs/ footrests to be made up of LLDPE and fixed to surface with bolts of suitable size.

### **D. Pipes & nut bolts**

1. All SS Nut Bolts shall confirm conforming to ASTM E-1086 : 1994

2. All metal shall confirm to Indian standard and shall be powder coated (60 micron) in desired shades.
3. Galvanized pipe shall confirm to IS 1239
4. All required nuts, bolts are included in items

**E. THIRD Party Inspection and Tests**

1. Third party inspection and testing of play equipment and outdoor fitness equipment shall be done as desired by OWNER. Contractor shall make all necessary arrangement for this.
2. The inspection and tests as required shall be done in the presence of OWNER's representative if so desired by OWNER.
3. Generally the following parameters shall be covered in inspection and testing
  - Dimensions
  - Material Quality
  - Performance requirement as /
    - EN 1176 (Playground Equipment Standard)
    - EN 16630 (Permanently installed outdoor fitness equipment. Safety requirements and test methods)
4. Necessary testing of samples shall be done in Government or Government designated/ NABL (Nation Accreditation Board for testing and calibration laboratories) accredited Laboratories and during factory visits. The cost of testing & inspection shall be borne by the contractor. No extra payment shall be paid by OWNER on this account.
5. In case defects are observed in the Equipment a performance Notice Shall be issued by the OWNER giving suitable time required for rectification of the defects, not exceeding 15 days from the date of notice, failing which Rejection Notes shall be issued to enable the CLIENT to proceed with further contractual action.
6. No extra payment on account of testing and inspection shall be paid by the OWNER. The rates in SOR are deemed to be inclusive of all the above activates as well.

**4 Specification for Pre-Fab Handicap Toilet**

Contractor shall supply Prefabricated fully assembled handicap toilet cubical confirming to following specifications.

Toilet size : 2.3 M x 1.5 M x 2.0 M

A	Super Structure	
Sr No.	Component in Building	Specification
a)	Nos. of Toilet cubicles	Single Handicap toilet unit
b)	Make	Nest-In or Equivalent
c)	External Size	2.3 M x 1.5 M x 2.0 M approx.(LxBxH) inbuilt with One WC and One Wash Basin
d)	Base	The toilet base floor shall be made out with Water Resistant Composite PUF Floor panel and WC Pan (Ceramic Western Style pot), skirting shall being be integrated with base floor making it a single unit fitted on suitable M.S. base frame etc.
e)	S- Trap	S-Trap shall be provided with each unit
f)	Roof / Walls	<p>The walls shall be made with 40mm thick PUF (having density 36±2 kg/m<sup>3</sup>) sandwiched panel clad with PPGI sheets of minimum thickness of 0.5 mm on both sides and shall be fixed with bottom with suitable U-Track &amp; molded PVC side corners or other anti-corrosive suitable joinery material.</p> <p>The roof shall be 30/60mm thick PUF sandwich panel made with minimum 0.5 mm thick ribbed PPGI sheet on top and plain inside with required slope etc. and fixed with suitable fasteners with provision for ventilation.</p> <p>Walls shall have provision of fixed SS railing at suitable height and location as per standard handicap toilet layout.</p>
g)	Door	The door shutter shall be made out of sandwiched PUF panel as above matching with wall PPGI sheets. The door shutter shall be fixed with door frame with hinges The door shutter shall be provided with 02 nos. Al drops one each at inside & outside, 01 no. tower bolts at the centre inside and handles shall be provided on both the sides.
h)	Wiring	One CFL point in each cabin with copper wiring in PVC batten / conduit.
i)	Accessories	1no. twin hook behind the door, 2 no. steel grab-bar on each side wall & 1no. Acrylic corner for holding mobile will be provided in the toilet block 1no. 15mm dia PTMT tap etc.
j)	Overall Design & Drawing	To be approved by Engineer-in-Charge

**5. FRP Gazebo structure :**

FRP Gazebo shall be designed as per the drawing and dimensions provided. Design shall follow local architectural style and shall be as approved by Engineer in charge.

FRP Gazebo structure to be manufactured in accordance with:

ASTM D 4385 – 10

ASTM D 696 – 08

ASTM D 790 – 10

ASTM D 695 – 10

ASTM D 638 – 10

ASTM D 2344M – 13

Structure shall have UV resistant properties as per ASTM G 154 – 12, ASTM G 155 – 13.

Structure shall be executed over suitable plinth at the location as per the drawing provided.

**B. Rubber Tile Flooring**

Rubber tile flooring to be laid at outdoor Gym area as per the drawing provided. Flooring shall be laid as per manufacturer's specifications and approval of Engineer in charge.

Rubber tile thickness : 10mm

Rubber tile dimension : 500mm X 500mm

**C. 8 Layer Acrylic Cushion System flooring for Badminton Court**

Acrylic flooring to be laid at Badminton Court area as per the drawing provided. Flooring shall be laid as per manufacturer's specifications and approval of Engineer in charge.

All the necessary civil works required during execution shall be carried out by contractor including,

- Excavation of Entire Area upto 6"
- Weedicide Process
- Slope creation, levelling & dressing
- Anti-termite Process
- Compaction of the sub-base will be by Heavy Roller
- Layer of Upto 4" compacted WBM/WMM
- Layer of Upto 30mm compacted thick Hot Mix asphalt BM course.
- Layer of Upto 20mm compacted thick Hot Mix A.C. course
- Seal Coat with Stone Dust

**D. Signage**

Signage with pole indicating distance every 50M to be installed at the location as indicated in the drawing provided.

Signage Material shall be Aluminum sheet or equivalent with pole of suitable height. Information on the signage shall be with standard text height as per manufacturer's specifications.

## TECHNICAL SPECIFICATIONS

### (LandscapeWorks)

#### 1.1 General

The works shall be performed conforming to the Indian Standard codes, P.H.D &P.W.D. specifications of the State Government. Wherever such specifications are not available, CPWD specifications, relevant references, manuals etc. shall be followed as directed by Owner.

For Horticulture and landscaping works OPWD Schedule of Rates, Analysis of Rate and Specifications (Horticulture & Landscaping) shall be followed.

#### 1.2 General Specifications

Part-I: Entire area of the garden is mainly distributed as,

(a) Hardscape

The landscape area involves pathways under paver block, sand where most of the children's play equipment's are placed and Rubberized tile flooring for Outdoor Gym Equipments etc.

(b) Softscape

The balance area that is covered under Softscape (lawn development, shrubbery, trees, small and medium palms, specimen shrubs, etc.)

The entire area is mildly rolling more or less flat and to be cleared of all debris, rock pieces, stumps, weeds, roots etc. thoroughly.

The area will be properly graded in a slope of 1:100 from the as per availability of SWD to facilitate drainage of rain water into the drain of the adjoining road.

Contractor to maintain the site slope as per the survey levels. Slope prepared for all finished surfaces shall be in a fashion to flow all storm water collected towards the nearest SWD available.

As per the plan, marking will be given on the land showing Hardscape area path under paver block, EPDM flooring and the rest area marked for Softscape area.

The area under Hardscape will be taken up under civil work. The balance area under Softscape will be treated by trenching, rough dressing, flooding with water, uprooting weeds, stumps etc. Operations involved in landscaping, procurement of manures, staking, digging of pits etc, measurements, rates, qualities of materials will be in accordance to the principles as laid out in Sub- head 2.0 of CPWD Analysis, 2016, Horticulture and Landscaping.

Irrigation Layout based on type of irrigation system finalized to be prepared and detailed at the later stages based on the survey drawings and availability of existing water source. Layout to be submitted for approval of Engineer in charge, and based on the approval, irrigation system shall be installed by contractor at site.

Part-II: Species to be planted:-

As specified in drawing

### **1.3 Horticulture Work**

Horticultural operations shall be started on ground previously levelled and dressed to required formation levels and slopes.

In case where unsuitable soil is met with, it shall be either removed or, replaced or it shall be covered over to a thickness decided by the Engineer-in-charge with good earth.

In the course of excavation or trenching during horticultural operations, any walls, foundations, etc. met with shall not be dismantled without pre-measurement and prior to the written permission of the Engineer-in-charge.

### **1.4 Trenching in Ordinary soil**

Trenching is done in order to loosen the soil, turn over the top layer containing weeds etc. and to bring up the lower layer of good earth to form a proper medium for grassing, regrassing, hedging and shrubbery.

Trenching shall be done to the depth ordered by the Engineer-in-charge. The depth is generally 30 cm for grassing and 60 cm for re-grassing in good soil.

The trenched ground shall, after rough dress, be flooded with water by making small kiaries to enable the soil to settle down. Any local depression unevenness etc. shall be made good by dressing and/or filling with good soil.

Weeds or other vegetation which appear on the ground are then uprooted and removed and disposed off and paid.

### **1.5 Trenching**

Trenching shall consist of the following operations:

1. The whole plot shall be divided into narrow rectangular strips of about 1.5 m width or as directed by the Engineer-in-Charge.
2. These strips shall be sub-divided lengthwise into about 1 m long sections. Such sections shall be excavated serially and excavated soil deposited in the adjacent section preceding it.
3. In excavating and depositing care shall be taken that the top soil with all previous plant growth including roots, get buried in the bottom layer of trenched area, the dead plants so buried incidentally being formed into humus.
4. The excavated soil shall be straight away dumped into the adjoining sections so that double handling otherwise involved in dumping the excavated stuff outside and in back filling in the trenches with leads is practically eliminated.

### **1.6 Good Earth**

The earth shall be stacked at site in stacks not less than 50 cm high and of volume not less than 3.0 cum.

### **1.7 Oil Cake**

Neem/Castor: The cake shall be free from grit and any other foreign matter. It should be un-decorticated and pulverized. The material shall be packed in old serviceable gunny bags of 50 kg capacity approximately. The weight of gunny bag shall be deducted @1 kg per bag and payment shall be made for net quantity. The quality of cake should be got approved by the Engineer-in-charge before supply.

### **1.8 Supply and Stacking of Sludge**

It shall be transported to the site in lorries with efficient arrangement to prevents pilling en-route. It shall be stacked at site. Each stack shall not be less than 50cm height and volume not less than 3cum.

### **1.9 Rough Dressing Of The Trenched Ground**

Rough dressing of the area shall include making kiaries for flooding.

The trenched ground shall be leveled and rough dressed and if there are any hollows and depressions resulting from subsidence which cannot be so leveled, these shall be filled properly with earth brought from outside to bring the depressed surface to the level of the adjoining land and to remove discontinuity of slope and then rough dressed again. The supply and spreading of soil in such depressions is payable separately.

In rough dressing, the soil at the surface and for 75mm depth below shall be broken down to particle size not more than 10 mm in any direction.

### **1.10 Uprooting Weeds from Trenched Areas**

After 10 days and within 15 days of flooding the rough dressed trenched ground with water, the weeds appearing on the ground shall be rooted out carefully and the rubbish disposed off as directed by the Engineer-in-charge.

### **1.11 Fine Dressing the Ground**

Slight unevenness, ups, and down sand shallow depressions resulting from the settlement of the flooded ground, in drying and from the subsequent weeding operations, shall be removed by fine dressing the surface to the formation levels of the adjoining land as directed by the Engineer-in-charge, and by adding suitable quantities of good earth brought from outside, if necessary.

### **1.12 Spreading Good Earth**

Good earth shall be removed from stacks by head load and spread evenly over the surface to the thickness ordered by the Engineer-in-charge. It shall be spread with a twisting motion to avoid segregation and to ensure that spreading is uniform over the entire area.

### **1.13 Spreading Sludge/Manure**

Good earth shall be thoroughly mixed with sludge or manure in specified proportion as described in the item or as directed by the Engineer-in-Charge. The mixing shall be spread to the thickness ordered by the Engineer-in-Charge.



#### **1.14 Mixing of Good Earth and Sludge/Manure**

The stacked earth shall, before mixing be broken down top particle of sizes not exceeding 6mm in any direction. Good earth shall be thoroughly mixed with sludge or manure in specified proportion as described in the item or as directed by the Engineer-in-charge.

#### **1.15 Grassing with Select Grass No.1**

The area from where the grass roots are to be obtained shall be specified by the Engineer-in- Charge at the time of execution of the work and no royalty shall be charged on this account from the contractor. Grass is to be arranged by contractor (cost of grass to be paid separately).

The soil shall be suitably moistened and then the operation of planting grass shall be commenced. The grass shall be dibbled at 10 cm, 7.5 cm, 5 cm apart in any direction or other spacing as described in the item. Dead grass and weeded shall not be planted. The contractor shall be responsible for watering and maintenance of levels and the lawn for 30 days or till the grass forms a thick lawn free from weeded and fit for moving whichever is later. Generally planting in other direction at 15 cm, 10 cm, spacing is done in the case of large open spaces, at 7.5 cm spacing in residential lawn and at 5cm spacing for Tennis Court and sports ground lawn. Rates are including cost of labour and material (grass shall be paid separately.)

During the maintenance period, any irregularities arising in ground levels due to water in accumulation due to trampling by labour, or due to cattle traying thereon, shall be constantly made up to the proper levels with earth as available or brought from outside as necessary, Constant watch shall be maintained to ensure that dead patches are replanted and weeds are removed.

#### **1.16 Renovation of Lawns**

The area shall be first weeded out of all undesirable growth. The entire grass shall be scrapped without damaging roots and level of the grounds. Slight irregularities in surface shall be leveled off and the area shall then be for ked so as to aerate the roots of the grass without, however up-rooting them.

Specified quantity of sludge or manure shall than be spread uniformly with wooden straight edge (phatti) as directed by the Engineer-in-charge. The area shall then be slightly sprinkled with water to facilitate proper integration of the manure or sludge with the soil and later flooded. The contractor shall be responsible for watering, proper maintenance and tending of the lawn for 30 days or till the grass forms a lawn fit for mowing, whichever is later.

During the above operations, all undesirable growths shall be constantly weeded out and all rubbish removed and disposed off as directed by the Engineer-in-Charge.

#### **1.17 Uprooting Rank Vegetation, Weeds and Preparing the Ground for Planting 'Select Grass No.1'**

Initially the area shall be dug up to a depth of 30 cm. and weeds and rank vegetarian with roots removed thereon by repeated forking. The whole area then shall be retrenched to a depth of 60 cm in

the same manner as described in 1.5.

Clods of excavated earth shall then be broken upto the size not more than 75 mm in any direction.

The area shall then be flooded with water and after 10 days and within 15 days of flooding, weeds shall be uprooted carefully.

The rubbish arising from the above operations shall be removed and disposed off in a manner directed by the Engineer-in-charge, away from the site. The earth shall then be rough dressed and fine dressed.

#### **1.18 Excavation and Trenching for Preparation of Beds for Hedge and Shrubbery**

Beds for hedges and shrubbery are generally prepared to width of 60 cm. to 125 cm. and 2 to 4 meters respectively.

The beds shall first be excavated to a depth of 60cm. and the excavated soil shall be stacked on the sides of the beds. The surface of the excavated bed shall then be trenched to a further depth of 30 cm, in order to loosen the soil, in the manner described in 1.5.

No flooding will be done at this stage but the top surface shall be rough dressed and leveled. The excavated soil from the top 60 cm depth of the bed stacked at the site shall then be thoroughly mixed with sludge over manner in the proportion 8:1 by ratio or other proportion described in the item.

The mixed earth and manure shall be refilled over the trenched bed, leveled neatly and profusely flooded so that the water reaches even the bottom most layers of the trenched depth of the bed.

The surface after full subsidence shall again be refilled with the earth and manure mixture, watered and allowed to settle and finally fine dressed to the level of 50mm to 75mm below the adjoining ground or as directed by the Engineer-in-Charge.

Surplus earth if any, shall be disposed off as directed by the Engineer-in-charge. Any surplus earth if removed beyond initially lead shall be paid separately. Stones, bricks bats and other foreign matter if met with during excavation or trenching shall be removed and stacked within initially lead & lift, such material as is declared unserviceable by the Engineer-in-charge shall be disposed by spreading and levelling at designated places. If disposed outside the initial lead & lift, then the transport for the extra leads will be paid for separately.

If a large proportion of material unsuitable for the hedging and shrubbery operations is met with and earth from outsides is required to be brought in for mixing with manure and filling, the supply and stacking of such earth will be paid for separately.

#### **1.19 Digging Holes for Planting Trees**

In ordinary soil, including refilling earth after mixing with oil cake, manure and watering.

Holes of circular shape in ordinary soil shall be excavated to the dimensions described in the items

and excavate soil broken to clods of size not exceeding 75 mm in any direction, shall be stacked outside the hole, stones, brick bats, unsuitable earth and other rubbish, all roots and other undesirable growth met with during excavation shall be separated out and unserviceable material removed from the size as directed. Useful material, if any, shall be stacked properly and separately. Good earth in quantities as required to replace such discarded stuff shall be brought and stacked at site by the contractor which shall be paid for separately.

The tree holes shall be manure with powdered Neem/ Castor oil cake at the specified rate along with farm yard manure over sludge shall be uniformly mixed with the excavated soil after the manure has been broken down to powder, (size of particle not be exceeded 6 mm in any direction) in the specified proportion, the mixture shall be filled into the hole up to the level of adjoining ground and then profusely watered and enable the soil to subside the refilled soil shall then be dressed evenly with its surface about 50 to 75mm below the adjoining ground level or as directed by the Engineer-in-charge.

#### **1.20 In Soil other than Ordinary Soil**

Where holes are dug in (a) Hard soil (b) Ordinary rock or (c) Hard rock, the above soils occurring independently over in conjunction with each other and /or ordinary soil in any hole, the different excavated soil shall be stacked separately. Excavation in hard rock shall be carried out by chiseling only. The stack measurement of ordinary rock and hard rock shall be reduced by 50% and of soil by 20% to arrive at the excavated volume. This excavation shall be paid for as extra over the rate for holes dug in ordinary soil above, at rate appropriate to particular soil concerned.

Sufficient quantity of good soil to replace the solid volume of stones, brick bats, unsuitable earth and other rubbish, all roots and other undesirable growth, ordinary and hard stacks shall be brought and stacked at site but the supply and stacking of such shall be paid for separately.

The useless excavated stuff shall be disposed off by spreading at places as ordered by the Engineer-in-charge. If such places are outside initially leads, carriage for the extra lead shall be paid for separately.

The ordinary soil excavated from the hole and the earth brought from outside shall then be mixed with manure screened through sieve of IS designation 16 mm in the proportion specified in the description of the item and filled with the pit and the same watered and finally dressed.

#### **1.21 Filling Mixture of Earth & Sludge Over Manure**

The separately specified earth and sludge shall be broken down to particles of size not exceeding 6mm in any directions before mixing.

Good earth shall be thoroughly mixed with sludge over manure in specified proportions as directed by Officer-in-Charge. During the process of preparing the mixture as above, trenches shall be flooded with water and leveled.

#### **1.22 Excavation of Dumped Stone or Malba**

Excavation operations shall include excavation and getting out water if required. During the

excavation stone, brick bats and other foreign material if met shall be removed and stacked within 50 meter lead sand lifts. Such materials is declared unserviceable by the Engineer-in-Charge be disposed within 50 m. The excavated surface shall be neatly dressed and leveled.

Measurements: Measurement shall be made in (Length, breadth and height of stacks) cubic meter. The cubical contents shall be worked out to the nearest two places of decimal in cubic meter.

Rate: The rate shall include the cost of all the labour and material involve in all the operations described above.

### **1.23 Excavation in Bajripath**

All excavated operations shall include excavation and stacking of serviceable and unserviceable material. Excavated surface of Bajri path shall be removed and stacked upto 50 meter lead and disposed material neatly dressed.

### **1.24 Excavation of Water Bound Macadam**

All excavated operations shall include excavation, stacking of serviceable and unserviceable material. Excavation shall be straight and uniform in width. Soling stone and aggregate obtained from excavation of W.B.M. shall be stacked separately and unserviceable material disposed off with lead upto 50 meter and lift upto 1.50 meter and neatly dressed.

### **1.25 Flooding the Ground with Water and Making Kiaries**

The water for flooding shall be of soft water and free from chemical and good for growing the trees and shrubs etc. Before flooding the kiaries shall be made in required size and shape as per directions of Officer-in-charge. After uprooting weeds from the trenched area and uprooting vegetation, kiaries shall be dismantled.

**Contractor can offer components of makes as per ISI/BIS Standard based on satisfactory track record and test certificates and shall be approved by Engineer In Charge before order execution**

### **Laying Specification of Grasscrete**

**1. Surface preparation;-**

- a. Dress level and compact the soil sub subsurface over which sub base is to be laid- make sure that there is no loose soil filling below
- b. lay first layer of sub base using mixed graded hard stone aggregate moist condition 40 mm and down size aggregate 80 mm thick and compact using mini road roller - compacted surface achieved 70mm aggregate may be mixed with fine sand in suitable proportion.
- c. Lay 2nd layer of sub base material same as above-60 mm thick and compact using roller to 50 mm thickness
- d. Lay 3rd layer of sub base 60 mm thick and roll to compact 50 mm
- e. Check level and correct if found any deviation
- f. Lay 15 to 20mm moist sand over the above compacted surface, compact using a wooden plank rammer.

**2. Laying of formers:**

Lay the first former at 100mm gap from formwork and place edge to edge.

**3. Reinforcement:**

Place mesh reinforcement in between the formers as per load requirement.

**4. Concrete:**

Concreting M-30 grade on the reinforced formers and leveled as one continuous process with Squeegee

**5. Curing:**

Surface curing should be done for approximately 14 – 28 days.

**6. Melting of Formers:**

The top of the formers to be pierced with a long steel pin to create a void in concrete.

**7. Top Soiling:**

Leveling of the top soil into the voids by using squeegee.

**8. Seeds :**

Grow grass seeds/ grass into the voids

## **PAINTING-SPECIFICATION**

### **1.0 SCOPE**

These specifications cover the use of paints for the plastered and concrete surfaces. It also includes the painting of wood and metal surfaces.

### **2.0 GENERAL**

The provisions of the latest revisions of the following IS : Codes shall form a part of this specification.

IS: 63	Whiting for Painting Ready mixed paint, brushing, grey filler, for Enamels, for use over primers.
IS: 426	Specification for paste filler for colour coats.
IS : 428	Specification for Distemper, Oil Emulsion, colour as required.
IS : 710	Marine Plywood
IS : 1200 (Part XIII)	Method of Measurement of Building & Civil Engg. Works - White Washing colour washing, distempering & other finishes.
IS : 1477 (Part I)	Code of practice for painting for ferrous metals in buildings Pretreatment.
IS : 1477 (Part II)	Code of practice for finishing of ferrous metals in building. Painting
IS : 2338 (Part I)	Code of practice for finishing of wood and wood based materials Operations and workmanship for finishing.
IS : 2338 (Part II)	Code of practice for finishing of wood and wood based materials, Schedule.
IS : 2395 (Part I)	Code of practice for painting concrete masonry and plaster surfaces. Operation & workmanship
IS : 2395 (Part II)	Code of practice for painting concrete, masonry and plaster surfaces. Schedule.
IS : 159	Specification for ready mixed paint, brushing, acid resistant.
IS : 2524 (Part I)	Code of practice for painting of non-ferrous metal in building Pre-treatment.
IS : 2524 (Part III)	Code of practice for painting of non-ferrous metal in

building Painting.

IS : 3140 Code of practice for painting asbestos cement buildings.

IS : 5410 Specification for cement paints, colour as required. IS:15489-04 Specification for External Paint

Other IS Codes not specifically mentioned here, but pertaining to painting form part of these specifications.

### **3.0 MATERIALS**

Materials shall strictly conform to the relevant IS: Specifications.

#### **3.1 PLASTERED OR CONCRETE SURFACES**

##### **3.1.1 General**

3.1.1.1 Wherever scaffolding is necessary, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be painted..

3.1.1.2 For painting on external surfaces secured double scaffolding to be used.

3.1.1.3 Where ladders are used, pieces of old gunny bags shall be tied at top and cotton to prevent scratches to the walls and floors. For painting of ceilings, proper stage scaffolding shall be erected, where necessary.

##### **3.1.2 Preparation of surfaces**

3.1.2.1 The surface shall be thoroughly cleaned off all dirt, dust, mortar dropping and other foreign matter, before paint is to be applied. New plaster surfaces shall be allowed to dry for at least 2 months, before applying paint. All unnecessary nails shall be removed. Pitting in plaster shall be made good with putty. The surface shall then be rubbed down again with a fine grade sand paper and made smooth.

3.1.2.2 The surface shall be allowed to dry thoroughly before the regular cost of paint is allowed.

3.1.2.3 The surface affected by mounds moss, fungi, algae lichens, efflorescence shall be treated in accordance with IS 2395 (Part I) before applying paint. The Adjoining surfaces/finishes shall be protected with either masking tape / plastic to avoid damages to other finishes.

3.1.2.4 The masking tape / plastic shall be removed without damaging the finishes.

### **4.0 WATER PROOF CEMENT PAINT**

#### **4.1 PREPARATION OF SURFACES**

The surfaces shall be thoroughly wetted with clean water before the waterproof cement paint is applied.

#### **4.2 PREPARATION OF PAINT**

4.2.1 Portland cement paints are made readily by adding paint power to water and stirring to obtain a thick paste, which shall then be diluted to a brushable consistency. Generally equal volumes of paint powder and water make a satisfactory paint. In all cases the manufacturer's instructions shall be followed. The paint shall be mixed in such quantities as can be used up within an hour of mixing as otherwise the mixture will set and thicken, affecting flow and finish.

4.2.2 The lids of cement paint drums shall be kept tightly closed when not in use, as by exposure to atmosphere the cement paint rapidly air set due to its hygroscopic qualities.

#### **4.3 APPLICATION OF PAINT**

- 4.3.1 No painting shall be done when the paint is likely to be exposed to a temperature of below 7 degree within 48 hours after application.
- 4.3.2 When weather conditions are such as to cause the paint to dry rapidly, work shall be carried out in the shed as far as possible. This helps the proper hardening of the paint film by keeping the surface moist for a longer period.
- 4.3.3 To maintain a uniform mixture and to prevent segregation the paint shall be stirred frequently in the bucket.
- 4.3.4 For undercoated surfaces, the surface shall be treated with minimum two coats of water-proof cement paint. Not less than 24 hours shall be allowed between two coats and the second or subsequent coat shall not be started until the preceding coat has become sufficiently hard to resist marking by the brush being used. In hot dry weather the preceding coat shall be slightly moistened before applying the subsequent coat.
- 4.3.5 The finished surface shall be even and uniform in shade without patches, brush marks, paint drops, etc.
- 4.3.6 Cement paints shall be applied with a brush with relatively short stiff hog or fibre bristles. The paint shall be brushed in uniform thickness and shall be free of excessively heavy brush marks. The laps shall be well brushed out.

#### 4.4 CURING

Painted surfaces shall be sprinkled with water two or three times a day. This shall do between coats and for at least two days following the final coat. The curing shall be started as soon as the paint has hardened so as not to be damaged by the sprinkling of water, say about 12 hours after its application.

### 5.0 **PAINTING WOOD AND METAL SURFACES**

#### 5.1 GENERAL REQUIREMENT

- 5.1.1 The material required for the execution of painting work shall be obtained directly from approved manufacturers and brought to the site in maker's drums, with seals unbroken. All paints of low VOC shall conform to relevant Indian Standards as mentioned under sub-head "Material".
- 5.1.2 All materials not in actual use shall be kept properly protected. Lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. Materials, which have become stale or fat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also, the paint shall be continuously stirred in the smaller container. No left over paint shall be put back into stock tins. When not in use, the containers shall be kept properly closed.
- 5.1.3 If for any reason thinning is necessary, in case of ready mixed paint, the brand of thinner recommended by manufacturer shall be used.
- 5.1.4 Painting except the priming coat shall generally be taken in hand after all other builder's work is practically finished. The rooms shall be thoroughly swept out and the entire building cleaned up at least one day in advance of the paintwork being started. The surface to be painted shall be thoroughly cleaned and dusted. All rust, dirt scales, smoke and grease shall be thoroughly removed before painting is started.
- 5.1.5 No painting on exterior or other exposed parts of the work shall be carried out in wet, humid or otherwise unfavorable weather and all the surfaces must be thoroughly dry before painting work is started.

#### 5.2 BRUSHING OF PAINT



5.2.1 The brushing operations are to be adjusted to the spreading capacity advised by the manufacturers of the particular paint. The painting shall be applied evenly and smoothly by means of crossing and laying off, the later in the direction of the grain of wood. The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternatively in the opposite directions two to three times and then finally brushing lightly in a direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying off will constitute out coat.

5.2.2 During painting, every time after the paint has been worked out of the brush bristles or after the brush has been unloaded, the bristles of the brush. (Which are drawn together due to the high surface tension) shall be opened up by striking the brush against a portion of the unpainted surface with the end of the bristles held at right angles to the surface, so that bristles thereafter will collect the correct amount of paint when dipped again into the paint container.

### 5.3 SPRAYING

5.3.1 Where so stipulated, the painting shall be done with spray. Spray machine used may be (a) high pressure (small air aperture) type or (b) a low-pressure (large air gap) type, depending on the nature and location of work to be carried out. Skilled and experienced workmen shall be employed for this class of work. Paints used shall be brought to the requisite consistency by adding a suitable thinner.

5.3.2 Spraying should be done only when dry conditions prevail. During spraying the spray gun shall be held perpendicular to the surface to be coated and shall be passed over the surface in a uniform sweeping motion. Different air pressures and fan adjustment shall be tried so as to obtain the best application with the minimum wastage of paint. The air pressure shall not be kept too high as otherwise the paint will clog up and will be wasted.

5.3.3 Spots that are inaccessible to the spray pattern shall be touched up by brush after spraying.

5.3.4 At the end of the job, the spray gun shall be cleaned thoroughly so as to be free from dirt. Incorrect adjustments shall be set right, as otherwise they will result in variable spray patterns, runs, sags and uneven coats.

5.3.5 Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand paper and loose particles brushed off before next coat is applied. Each coat shall vary slightly in shade and shall be got approved 'from the Engineer-in-charge before next coat is started.

5.3.6 Each coat except the last coat shall be lightly rubbed down with sand paper or fine pumice stone and cleaned off dust before the next coat is applied.

5.3.7 No hair marks from the brush or clogging of paint puddles in the corner panels, angles of moldings, etc. shall be left on the works. In painting doors and windows, the putty round the glass panes shall also be painted but care shall be taken to see that no paint stains etc. are left on the glass. Tops of shutters and surfaces in similar hidden locations shall not be left out in painting.

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

5.3.9 The additional specifications for primer and other coats of paints shall be according to the detailed specifications under the respective headings.

### 5.4 BRUSHES AND CONTAINERS

5.4.1 After work, the brushes shall be completely cleaned off paint and linseed oil by rinsing with turpentine. After cleaning, brushes are wrapped in heavy paper or waterproof paper for storage. It is to be used the next day; it shall be hung in a thinner or linseed oil in a container. On no account shall brushes to be made to stand on bristles. A brush in which paint has dried up in ruined and shall on no account be used for painting work.

5.4.2 The containers, when not in use, shall be kept closed and free from air so that paint does not thicken and also shall be kept guarded from dust. When the paint has been used, the containers shall be washed with turpentine and wiped dry with soft clean cloth, before they can be used again.

## 6.0 WHITE WASHING

6.1 GENERAL

6.1.1 The item refers to whitewashing over old and new concrete, stone masonry brick plastered surfaces and asbestos cement sheets.

6.1.2 White wash shall be prepared from fresh burnt white stone lime or shell lime. This lime shall be of class type as per IS: 712. Surkhi lime or lime of equivalent quality may be used. The lime shall be dissolved in a tub with sufficient quantity of water (about 4.5 liters/Kg. Of lime) and the whole shall be thoroughly mixed and stirred until it attains the consistency of thin cream. The white wash shall be taken out in small quantities and strained through a clear course cloth. Alternatively with IS : 63 may also be used. Clean gum dissolved in hot water shall then be added in suitable proportion of 2 gm of gum Arabic to a little of lime or whiting to prevent the white-wash coming off easily when rubbed. Rice may be used instead of gum.

6.2 SCAFFOLDING

This may be double or single according to requirements. If ladders are used, pieces of old gunny bags or cloth rags shall be tied on their tops to avoid damage or scratches to the wall. Proper stage scaffolding shall be created when whitewashing ceiling. The contract shall be responsible for accidents if any taken place.

6.3 PREPARATION OF SURFACE

6.3.1 The surface shall be prepared by removing all mortar dropping and foreign matter and thoroughly cleaned with wire or fiber brush or other means as may be ordered by the Engineer to produce an approved clean and even surface. All loose pieces and the scales shall be scraped off and holes stopped with mortar. In case where the surface has been previously colour washed, the old colour wash must be entirely removed before the white-wash is applied. In the case of surface, which has once been white-washed, the old loose white-wash shall be broomed down. In case, the loose whitewash cannot be removed by brooming, the Engineer may order scraping of the surface.

6.3.2 After cleaning the surface as specified above, the unwanted nails shall be removed and all nail holes, cracks and crevices stopped with mortar similar in composition to the surface to be stopped. The mortar should be cured.

6.4 APPLICATION OF WHITE-WASH

6.4.1 On the surface so prepared, the whitewash shall be laid. Each coat shall be laid on with a brush. The first stroke of the brush shall be from the top downward, another from bottom upwards over the first stroke, and similarly, one stroke from the right and another from the left over the first brush before it dries. This will form one coat. Each coat must be allowed to dry and shall be subject to inspection before the next coat is applied. When dry, the surface shall show no signs of cracking. It shall present a smooth and uniform finish free from brush marks and it should not come off easily when rubbed with a finger.

6.4.2 No portion in the surface shall be left out initially, to be patched up later on. For new work, the white washed surface shall present a smooth and uniform finish.

6.4.3 For old work, patches and repairs shall be white washed first. Thereafter, the whole surface shall be white washed with the required number of coats.

6.4.4 Doors, windows, floors and other articles of furniture, etc. shall be protected from being splashed upon. Splashing and droppings, if any, shall be removed and the surfaces cleaned.

6.5 PREPARING THE SURFACE FOR WHITE WASH INCLUDING THE SCAFFOLDING

Applying the white wash in required number of coats as specified above and prior white washing of repaired patched.

## **7.0 ACRYLIC PAINTING TO EXTERNAL SURFACES**

### **7.1 GENERAL**

- 7.1.1 Acrylic weather shield paint of low VOC from the approved brand shall be applied over plastered surfaces as directed by the EIC.
- 7.1.2 Other specifications including preparation of surfaces, application of paint etc. shall conform to section 7.0 above and as directed by EIC. The priming coat, anti-fungal treatment, preparation of paint etc. shall be carried out as per manufacturer's specification /as directed by EIC. General
- 7.1.3 Acrylic weather shield paint shall be applied on surfaces which are liable to external condensation and are to be used generally on masonry or plastered surfaces. Suitable primer as per manufacturer shall be provided.

### **7.2 PAINT**

Acrylic weather shield paint of approved brand and manufacture as per the required shade shall be used.

### **7.3 PREPARATION OF SURFACE**

The surface shall be thoroughly cleaned of dust, old white or colour wash by washing and scrubbing. The surface shall then be allowed to dry for at least 48 hours. It shall then be sand papered to give a smooth and even surface. Any unevenness shall be made good by applying external putty mixed with water on the entire surface including filling up the undulation and then sand papering the same after it is dry.

### **7.4 APPLICATION**

- 7.4.1 The number of coats shall be as stipulated in the item.
- 7.4.2 The paint will be applied in the usual manner with brush or roller.
- 7.4.3 The paint dries by evaporation of the water content and as soon as the water has evaporated the film gets hard and the next coat can be applied. The time of drying varies from one hour on absorbent surfaces to 2 to 3 hours on non-absorbent surfaces.
- 7.4.4 The thinning of paint is to be done with water and not with turpentine.
- 7.4.5 Thinning with water will be particularly required for the undercoat, which is applied on the absorbent surface. The quantity of thinner to be added shall be as per manufacturer's instructions.
- 7.4.6 The surface on finishing shall present a flat velvety smooth finish. If necessary more coats will be applied till the surface presents a uniform appearance.

### **7.5 PRECAUTIONS**

- 7.5.1 Old brushes if they are to be used with paints should be completely dried of turpentine or oil paints by washing in warm soap water.
- 7.5.2 Brushes should be quickly washed in water immediately after use and kept immersed in water during break periods to prevent the paint from hardening on the brush.
- 7.5.3 In the preparation of walls for painting, no oil base putties shall be used in filling cracks, holes etc it should be only the external putties.
- 7.5.4 Splashes on floors etc. shall be cleaned out without delay, as they will be difficult to remove after hardening.

7.5.5 Washing of surfaces treated with emulsion paints shall not be done within 3 to 4 weeks of application.

7.6 OTHER DETAILS

These shall be as per specification for "Painting" as far as they are applicable.

## **SCOPE OF WORK (ELECTRICAL)**

### **2.1 SCOPE AND BRIEF DESCRIPTION OF WORKS**

**2.2** *The scope consists of design, engineering and manufacturing; testing at Manufacturer's works, packing, forwarding and delivery to site; unloading and handling at site (shifting from unloading point to the storage area, storage and shifting from the place of storage to the place of installation), assembly, erection, cleaning & touch up painting, testing & commissioning at site of the Electrical Equipment and Systems, as listed.*

**2.3** *List of Equipment and system for park lighting system;*

- (a) Decorative Lighting Pole
- (b) LED Light fixtures
- (c) Feeder Pillar
- (d) Incoming Power cable from nearest source (Distribution Company's Feeder pillar) to park lighting feeder pillar.
- (e) All electrical works such as Cabling and terminations, earthing system etc. complete in all respects for street lighting system.
- (f) Miscellaneous statutory equipments
- (g) All mounting and foundation supports and hardware accessories for electrical equipment/system installations.
- (h) All civil works associated with equipment/system electrical installations like embedment, chipping, punching, making holes, openings in walls, pipe sleeves, fire/ water proof sealing etc.
- (i) Any other electrical equipment which are not specifically listed above but are necessary to make the system complete and functional in all respect as per specification and statute.

**2.4** *This specification is the minimum requirement and should be read in conjunction with relevant latest IS/IEC specifications, requirements, rules and regulations.*

**2.5** *The BIDDER shall be responsible for the selection and design of appropriate equipment to provide the best co-ordinated performance of the entire system. The design of various components, sub-assemblies and assemblies shall be so done that it facilitates easy field assembly and maintenance.*

**2.6** *Equipments furnished shall be complete in every respect with all mountings, fittings, fixtures, and standard accessories normally provided with such equipment and / or needed for erection, completion and safe operation of the equipment as required by applicable codes though they may not have been specifically detailed in the Technical Specification unless included in the list of exclusions. Materials and component not specifically stated in the specification but which are necessary for commissioning and satisfactory operation unless specifically excluded shall be deemed to be included in the scope of specification and shall be supplied without any extra cost. All similar standard components/ parts of similar standard equipment provided shall be inter- changeable with one another.*

**2.7** *CONTRACTOR shall make his own arrangement of 415 V, 50 Hz, TPN Construction Power supply at site to carry out all the site activities. CONTRACTOR shall use suitable size of cables and sub-distribution boards. All material like cables, switch-fuse units, sub-distribution boxes, etc. required for further distribution shall be arranged by CONTRACTOR.*

**2.8** *All consumable such as welding, drilling, gas etc. as required shall be included in contractor scope.*

**2.9** *List of Submissions*

- (j) Submission of equipment/ system as built drawings, Good for construction drawings, Data sheets, sizing Calculations etc for review and approval byEmployer before execution/ procurement and manufacturing; and test reports, commissioning reports and performance reports of all electrical system/ equipment for review & acceptance byEmployer.
- (k) Submission of Type test reports carried out at accredited laboratories like ERDA, CPRI or equivalent as per requirements of client.
- (l) Operation and Maintenance for specified no of years as mentioned in the Terms & condition of this Contract of the equipment and systems listed above.
- (m) Submission of relevant documents and drawings to the concerned statutory authorities/ agencies and getting clearance and approval for the supplied and installed equipment under this specification is solely the responsibility of the BIDDER.
- (n) All coordination for Liaison and obtaining required mandatory approvals/ NOCs from Electrical Inspector and any other Statutory Authority as applicable for drawings & documents, initiation of works, Load release, charging and commissioning of entire power distribution system within the scope of this Document

## **TECHNICAL SPECIFICATIONS**

### **(Electrical Works)**

#### **1 CODES AND STANDARD**

- 1.1** The design, material, construction, manufacture, inspection, installation, testing and performance of electrical equipments & systems conform to the latest applicable Central Electrical Authority (CEA) guidelines & rules, all currently applicable IS, IEC and IEEE standards, National and International codes of practice, statutes, regulations and safety codes in the locality where the equipment will be installed. Nothing in this specification shall be construed to relieve the CONTRACTOR of this responsibility.
- 1.2** All codes and standards referred to in this specification shall be understood to be the latest version on the date of offer made by the Bidder unless otherwise indicated.

#### **2 QUALITY CONTROL PLANS**

The Quality Control Plan shall list and define in sequential order all process control activities, inspection and tests proposed to be performed on the equipment/ material starting from component procurement and from testing stages to product dispatch. The Quality Control Plan shall indicate and identify the applicable standards, detailed description with diagram the procedure, acceptance criteria, extent of check and record to be generated.

#### **3 INSPECTION**

- 3.1** PURCHASER may inspect all the supply components/ equipments/ systems at VENDOR's works. All type test certificates of the bought out items and internal test certificates shall be furnished at the time of inspection.
- 3.2** Type/ Routine tests according to relevant standards shall be performed in the presence of Employer representative if agreed.
- 3.3** All necessary measuring and testing equipments shall be arranged by the VENDOR or its Sub- VENDOR at the time of inspection as well as during commissioning at site without any cost implication to the Employer. All such instruments shall be calibrated from Authorized agencies not older than a year from the date of inspection.

#### **4 STREET LIGHTING SYSTEM**

- 4.1** The scope of works includes Supply, installation, testing and commissioning of the Street lighting Pole with fixtures for parks specified in this document.
- 4.2** All the Poles shall be designed to withstand the maximum wind speed as per IS 875. The top loading .i.e. area and the weight of fixtures are to be considered to calculate maximum deflection of the pole and the same shall meet the requirement of BSEN 40-3:2000, pr EN-40-3-3.
- 4.3** All pole shafts shall be provided with the rigid flange plate of suitable thickness with provision for fixing foundation bolts. This base plate shall be fillet welded to the pole shaft at two locations .i.e. from inside and outside.
- 4.4** The pole shall be adequately strengthened at the location of the door to compensate for the loss in section.
- 4.5** Aesthetic appearance - All the grooves and carvings of the pole unit shall be free from any kind of distortion for a pleasing aesthetic appearance.
- 4.6** Top Mountings -The mounting bracket shall be supplied along with the Poles for

Installation of the luminaries.

- 4.7 The pole manufacturing & galvanizing unit shall be ISO 9001: 2000 & ISO 14001 certified to ensure consistent quality & environmental protection.
- 4.8 Electrical connections - Four way connectors shall be provided along with Slide lock suitable for connecting 1.1 kV grade, 4 core X6 sqmm Al cable. It shall also in house 1 no. 6 amps DP MCB, 2.5 sqmm connectors for looping with 2.5 Sqmm Copper wires for connecting to the luminaire through 1.1 kV grade, 3 core X 2.5 mm<sup>2</sup> PVC insulated copper conductor flexible un- armoured Cable from the terminal block to the fixture within the pole. All the cables laid through the pipe shall be without any joint.
- 4.9 Two nos. Earth Boss shall be provided at the bottom of the pole (diagonally opposite) suitable for connecting 25X6 mm GI earth strip or 6SWG GI wire for earthing of the poles.
- 4.10 Two nos. 50 mm NB HDPE Sleeves of suitable length shall be provided through the foundation upto the Junction Box for entry of power cable.
- 4.11 The Bidder shall carry out all the relevant tests and inspection in the presence of the Employer or Third Party Agency, as may be selected by the Employer, before the dispatch of the poles at no extra cost to the Employer.
- 4.12 The Bidder shall inform the Employer at least Fifteen (15) days in advance, about the manufacturing programme so that arrangement can be made for inspection .Employer reserves the right to waive the inspection at any stage.
- 4.13 All the material/equipment/accessories shall be supplied with manufacturer's test certificates.
- 4.14 Bidder shall submit the Proposed Product Catalogue, Detail Data sheet, spare parts list and drawing of Pole & Bracket along with the BID for each product quoted.
- 4.15 Bidder shall arrange for all the tools and equipments.
- 4.16 M20 concrete foundations shall be provided for all the poles. Approx dimension of the foundation for evaluation purpose is 600X600X1700 mm. However, Bidder shall design as per the stability requirement and Soil bearing Capacity of each location. The Poles shall be bolted on a pre-cast foundation with minimum four foundation bolts for greater rigidity.
- 4.17 Earthing of pole shall be carried out with G.I. Earth pipe 3 mtr. Long 40mm dia. For Hard strata, preparation similar to that mentioned in latest version of IS 3043 or the latest version of Rural Electrification Corporation (REC) manual can be carried out. The earth electrode shall be connected with two 6SWG sqmm GI wire to the two distinct earth boss on the pole.

## 5 LED LUMINAIRE

### 5.1 APPLICABLE STANDARDS

<b>Sr.No.</b>	<b>Brief Title</b>	<b>IS/IEC Code</b>
1.1	Testing procedure of photometric testing for LED luminaires	LM 79
1.2	Testing procedure on the lifespan of LEDs	LM 80
1.3	National Lighting Code	SP72
1.4	Method of Measurement of Lumen Maintenance of Solid State Light (LED) Sources	IS:16105



1.5	Method of Electrical and Photometric Measurements of Solid-State Lighting (LED) Products	IS:16106
1.6	Limits of Harmonic Current Emissions	IS 14700-3-2
1.7	DC or AC supplied electronic control gear for LED modules performance requirements	IEC 62384
1.8	Lamp control gear: particular requirements for DC or AC supplied electronic control gear for LED modules	IEC 61347-2-13
1.9	Environmental Testing: Test Z- AD: composite temperature/ humidity cyclic test	IEC 60068-2-38
1.10	Electro Magnetic compatibility (EMC)- Limits for Harmonic current emission-- (equipment input current $\leq 16$ A per phase)	IEC 61000-3-2
1.11	EMC Immunity requirement	IEC 61547
1.12	LED modules for general Lighting-Safety requirements	IEC 62031
1.13	Classification of degree of protections provided by enclosures (IP Codes)	IEC 60529
1.14	Fixed general purpose luminaires	IEC 60598-2-1
1.15	General Lighting - LEDs and LED modules – Terms and Definitions	IS:16101 / IEC TS 62504
1.16	LED Modules for General Lighting Part 1 Safety Requirements	IS:16103(Part1)
1.17	LED Modules for General Lighting Part 2 Performance Requirements	IS:16103(Part2)
1.18	Safety of Lamp Control Gear, Part 2 Particular Requirements Section 13 D.C. or A.C. Supplied Electronic Control gear for Led Modules	IS:15885(Part2/Sec13)

## 5.2 ENVIRONMENTAL CONDITION

The average atmospheric condition during the year is mentioned below. The equipment shall be designed to work in such environmental conditions:

- a) Maximum ambient air temperature: 50° C
- b) Minimum ambient air temperature: 7°C
- c) Max. Relative humidity: 90%
- d) Average Rainfall: 70 inches
- e) Atmosphere: Dusty and Heavy chemical smoke at times in certain areas.
- f) The equipment shall be suitable to sustain and work in the humid and corrosive atmosphere of the city.

## 5.3 LUMINAIRE DESCRIPTION

- a) The Luminaires shall have a sturdy and corrosion resistant high pressure Die

cast Aluminium housing with weatherproof gasket for lamp and control gear accessories. The Housing shall be Epoxy coated, without any cracks or thorough holes, made in a single piece of die-cast LM6 aluminium alloy. The luminaries shall be totally enclosed, dust tight and water proof.

- b) Heat sink used should be aluminium extrusion having high conductivity. The dimensions of luminaries shall be optimum and adequate to permit sufficient heat dissipation, through the body itself, so as to prevent abnormal temperature rise inside the lantern and consequential damage to the cover and gasket materials, LEDs, lenses and electronic drivers. Heat sink must be thermally connected to MCPCB/ LED light source.
- c) The Luminaries Housing shall be suitable for termination of Cable with Double Compression Cable Glands.
- d) Housing protection: IP-66. If the LEDs and LED Driver are in different compartments, then the two compartments must be individually IP-66. For achieving IP-66, proper gaskets should be provided. Test certificate of NABL accredited laboratory is to be submitted for the luminaire model/rating offered.
- e) Luminaires should conform to the photometric Distribution / requirements of Cut-Off / Semi Cut – off light distribution and optics as classified in IS 1944.
- f) Suitable number of LED lamps shall be used in the luminaries. The manufacturer shall submit the proof of procurement of LEDs from OEMs at the time of testing
- g) The Luminaries shall be provided with high tensile heat resistant toughened glass or UV resistant polycarbonate cover fixed with stainless Steel screws.
- h) An extruded silicon loop gasket shall be provided in the lantern body to ensure a weather proof seal between the cover and the metal housing to exclude the entry of dust, water, insects, etc. Luminaries should conform to degree of protection of IP 66 or above. Felt gasket will not be accepted.
- i) Year of Manufacture, Batch No., Serial Number or Identification No. Luminaries Manufacturer's Name / Logo, Wattage and Frequency should be embossed on the housing.
- j) LED luminaries, should conform to the various National / International standards for safety & performance. Manufacturer should provide test reports as per LM 79 & LM80. Lumen maintenance report as per LM 80 guidelines shall be submitted for the LEDs used along with the BID.
- k) Luminaries should conform to the IS standards for Safety & Performance and test certificates as per IS 16107 should be provided by the manufacturer. In case of luminaries are imported, the BIDDER shall conform to test parameters as per UL or equivalent standards.
- l) The electrical component of the LED and LED driver must be suitably enclosed in sealed unit to function in environment conditions mentioned earlier.
- m) All the connecting wires inside the Luminaries shall be low smoke halogen free, fire retardant cable.
- n) Adequate protection against Overloading, Short Circuit, Over Voltage, over temperature, Under Voltage, String Open shall be provided within the Luminaries.

- o) Design of the thermal management shall be done in such a way that it shall not affect the properties of the diffuser.
- p) The equipment should be compliant to IEC 60598-1, IEC 62031 and IEC/ PAS 62612 depending on the type of luminary.
- q) All the material used in the luminaries shall not contain any toxic material/ metal like mercury; shall be halogen free and fire retardant confirming to relevant standards.
- r) The Manufacturer shall have all the relevant testing facilities certified by an accredited laboratory and shall be offered for inspection to the Employer for verification of the required parameters and tests. BIDDER shall confirm the same in the BID.
- s) The control gear shall comply to the provisions of IEC 61347-2-13, IEC 62031 and IEC 62384 as appropriate.
- t) The lighting fixtures offered shall comply with the following requirements.

#### 5.4 Luminaire Data Sheet

S.N.	Parameter	Requirement / Value
1.	Type	LED Luminaries complete with all accessories for Street Lighting
2.	Rated Voltage	230 V
3.	Expected Frequency	50 Hz +/- 3%
4.	Operating Voltage Range	140 V to 270 V but luminaires shall be tested for 100V to 300 V AC
5.	Power Factor	> 0.90
6.	Operating Temperature Range	0 Deg C to 50 Deg C
7.	Working Humidity	10% - 90% RH
8.	Driver Type	Constant Current based Electronic Driver
9.	Driver Efficiency	> 85%
10.	Driver Life	>20000 hrs.
11.	Protection required in Driver module	
a.	Short Circuit	Yes
b.	Over Voltage	Yes
c.	Over Temperature	Yes
d.	Under Voltage	Yes
e.	String Open Protection	Yes
12.	Luminaire IP Protection	Minimum IP-66 and above
13.	Minimum Surge Protection	>4 KV
14.	THD	<10%

S.N.	Parameter	Requirement / Value
15.	Rated (L70) Minimum LED Life	>50000 Burning Hours
16.	Rated Minimum Driver Life	20000 Burning Hours
17.	CRI	>70
18.	Junction temperature rise	< 85 Deg C
19.	Solder point temperature	< 70 Deg C
20.	Maximum temperature rise for Driver	<30 Deg C at 45 Deg C ambient
21.	Make of LED	Cree / Nichia/ Philips / Osram
22.	Make of Driver	Cree / Nichia/ Philips / Osram
23.	Operating Hours	Dusk to Dawn (max 12 Hrs.)
24.	Luminous Efficacy	> 135 Lumens/watt (at operating current(design) and Tj = 85 deg C)
25.	System Efficacy	>100lm/W
26.	Colour Temperature	5000K – 6000K
27.	Illumination Regulation	<5%
28.	Material used for following	
a.	Housing	Single housing, Side entry, Corrosion free High Pressure Aluminum die cast/extruded Aluminium, grey color corrosion resistant polyester powder coating, with separate optical and control gear compartments, fixing arrangement –Maintenance friendly.
b.	Heat Sink	Aluminium extrusion
c.	Clip / Fastners	Stainless steel.
d.	Diffuser	Toughened glass/ UV stabilized Poly carbonate material
29.	Maximum	<70 Deg C
30.	IK protection of Optic Cover	>IK07
31.	Wires used Inside Luminaries	Cu conductor, low smoke halogen free, fire retardant e-beam cable
32.	Cable gland IP protection	IP 66

#### 5.5 Testing of Luminaries

- (a) The Routine test on each of the offered Luminaire shall be carried out by the Bidder before dispatch. Following tests shall be carried out as routine tests by

the Bidder for the offered Luminaries;

- (i) Visual and Dimensional check
- (ii) Checking of documents of purchase of LED
- (iii) Insulation resistance test
- (iv) HV test
- (v) Reverse polarity

(b) The Acceptance test shall be carried out by Employer or Employer's Representative on a sample of the lot offered for Acceptance. The Lot shall be different from the lot from which the Type test samples have been drawn. The cost of the testing shall be borne by the BIDDER. Following tests shall be carried out as Acceptance tests by the BIDDER for the offered Luminaries;

- (i) Visual and Dimensional check
- (ii) Checking of documents of purchase of LED
- (iii) Insulation resistance test
- (iv) HV test
- (v) Over voltage protection
- (vi) Reverse polarity
- (vii) Lux measurement

#### 5.6 Street Light Feeder Pillar

- (i) All OFP shall be Steel Support mounting, double door, single front, non-compartmentalised enclosure with locking facilities.
- (ii) The OFP shall be of sheet steel enclosed and shall be fully dust and vermin proof, providing as degree of protection of IP 55 or more with canopy. The sheet steel used shall be cold rolled and 2 mm thick. The gland plate shall be 3mm thick.
- (iii) The fabricated enclosure shall not have any welds or bolt heads apparent from outside. All fabrication work like cutting, drilling, punching, shearing & welding etc. related to the enclosure shall be complete before proceeding to 7 tank process. The fabricated body shall be thoroughly cleaned and treated by chemical agents as required to produce a smooth surface free of scales, grease and rust.
- (iv) Sheet metal components shall be pre-treated using the seven tank phosphating process consisting of de-greasing, acid pickling, de-rusting, phosphating and passivation including repeated rinsing in between each process. On completion of passivation of the components they shall be preheated and then epoxy powder coated with selected shade for exterior as well as interior and Glossy White shade for the gland plates (Inside the panel) and component mounting plate.
- (v) All interiors and exteriors of the enclosure shall be finished and painted to prevent rusting and corrosion. The paint should be carefully selected to withstand tropical heat, rain and environmental effects. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling. Thickness of all painting shall be minimum 80 - 100 microns DFT.
- (vi) All the feeder pillars shall be Outdoor type with permanent rain canopy and shall be dust, damp and vermin proof. All the feeder pillars shall be minimum IP55 certified. The gasket shall be of neoprene rubber suitable to withstand all weathers for long tenure of service. All hardware shall be HD Galvanized or stainless steel. Door shall be with concealed type hinges & captive screws.
- (vii) Both the doors shall have an Inspection/ View Window for monitoring the energy meter reading without opening the door. The window on the external door shall be provided with

a metal flip cover which can be moved up and down for viewing the meter.

- (viii) Both the doors shall have panel type lock with keys in duplicate as per the requirements of the Employer.
- (ix) All the feeder pillars shall be of uniform height and shall be mounted with the bottom of the panel at 1200mm above the Finished Ground or Floor level as the case may be.
- (x) A danger notice board written in English and Hindi shall be made of 2mm thick GI plate and shall be provided on the front door of the feeder pillar.
- (xi) The details of connected load in KW, service No., Meter No., area in which Street-light poles erected name of the agency and year of erection shall be labelled using radium sticker/radium paint.
- (xii) The enclosures shall be manufactured by hand layup process in approved moulds or any other approved process so as to ensure smooth finish on mould side i.e., on external face and reasonable smooth finish on internal face. There shall be confluency in the product equality and finish on surfaces.
- (xiii) The feeder pillar shall consist of Incoming Four Pole (FP) MCB, FP RCCB (100mA), 3 Phase Energy Digital Meter, FP Contactor for each outgoing circuit, Astronomical Timer, Outgoing FP MCB etc.
- (xiv) The other power and control components are as listed below;
  - a) All the contactors shall have high rupturing capacity rated for 3 phase 440 V, 50 Hz, Four Pole, AC 3 duty.
  - b) Astronomical timer having Single channel and capable of Auto resetting when power resumes, provision of manual over ride, switching ON / OFF the circuit as per the Sun set and Sun rise timings along the year.
  - c) 25X3 Copper bus bar with SMC support insulators shall be provided for power distribution within the feeder pillar. The size of phase and neutral shall be equal.
  - d) Outgoing FP MCB – Current limiting type, Characteristic Curve C, Breaking capacity 10 kA for 1 sec.
  - e) Terminal connectors suitable for terminating the above mentioned cables. Separate terminals shall be provided for tapping power for the luminaire with 2.5 sqmm Copper conductor PVC insulated Un- armoured cable. Twenty percent spare terminals shall be provided.
  - f) All connecting power & control wiring shall be carried out with stranded copper conductor PVC insulated LSHF wires. Minimum size of control wiring shall be 1.5 sqmm and power wiring shall be 4 sqmm.
  - g) Space Heater with MCB and Thermostat and 7W LED Luminaire with lamp shall be provided inside with a door limit switch. The lamp and the heater shall be tapped from the outgoing of the meter with separate DP MCB circuits.
  - h) Earth Leakage circuit breaker conforming to IS-12640/1988 & BS 4293/1983 with latest amendment having sensitivity 110 mA and suitable for 3-phase, 4 pole having characteristic of quick acting & tripping with all advance feature with suitable enclosure box/mounting rail.
  - i) An Aluminium / GI Earth bus shall be run at the bottom of the Feeder Pillar which shall be connected to the earth leads at the two extreme ends for connecting the GI earthing strip from the electrode.
  - j) Cast Resin CT of appropriate rating (---/5A) shall be provided at the incomer of each phase for measurement of the current.

5.7 The data sheet of the 3 Ph energy meter is as follows;

S. N.	Particular	Specifications
1.	Type of Meter/Design designation	AC Static Watt-hour Meter
2.	Standards	IS13779, CBIP-304
3.	Class of Accuracy	Class 1.0
4.	Rated Current	10-60A (10A basic current)
5.	Rated Maximum current as percentage of basic current	600% of Basic Current
6.	Rated voltage (volts)	3 X 240 V – Phase to Neutral 3 X 415 V – Phase to Phase
7.	Rated frequency (Hz)	50 Hz $\pm$ 3%
8.	Specified operating voltage range	0.8 to 1.1 V ref.
9.	Limit voltage range of operation	0.7 to 1.2 V ref.
10.	Temperature range of operation a) Specified operation range b) Limit range of operation c) Limit range for storage and transport	As per IS13779
11.	Relative humidity a) Annual mean b) For 30 days these days being spread in a natural manner over the years. c) Occasionally on other days	As per IS13779
12.	Power consumption at rated current a. Active b. Apparent	1 W 4VA
	b) Power consumption	1 VA
13.	Percentage minimum current which shall start the meter and continue to run thereafter at rated voltage and unit power factor of basic current (% of basic current)	0.2% of basic current
14.	Tamper & Fraud Protection details	As per IS 13779

5.8 Two nos. Pipe earthing electrode shall be provided for each Feeder pillar and connected with 25X6 mm GI earth strip. The pipe electrode shall be as per the latest version of IS 3043.

5.9 HDPE pipe of suitable for conveniently accommodating the above incoming and outgoing cables shall be laid upto the feeder pillar for carrying the buried cables upto the feeder pillar for termination. The GI strip for earthing shall also be laid through the same pipes.

5.10 The feeder pillar shall be mounted on prefabricated Galvanised Steel Support structure duly fastened with a concrete foundation with M20 concrete.

- 5.11 Insulation resistance between live parts and earth terminal shall be 5 MΩ minimum. All power equipment shall be able to withstand high voltage (HV) test at 1.5 kV for 1 minute between live parts (current carrying parts) and earth terminal without breakdown of insulation.

## **6 CABLES**

### **6.1 CONSTRUCTION AND SPECIFICATION**

#### **6.1.1 Conductor**

Aluminium conductor, circular, compacted stranded, grade H4, Class 2 as per IS 8130 for power cables.

#### **6.1.2 Conductor Screen**

All cables rated above 3.3/3.3 kV shall be provided with conductor screening. Conductor screening shall be provided over the conductor by applying non-metallic semi-conducting tape or by extrusion of semiconducting compound or a combination of the two.

#### **6.1.3 Core Identification**

Colour coding shall be acceptable for all cables upto 5 cores. Cables with more than 5 cores shall have printed numerals every 50mm on each core.

#### **6.1.4 Inner Sheath**

Inner sheath when specified shall be extruded type and shall be compatible with the insulation provided for the cables.

#### **6.1.5 Outer Sheath**

The outer sheath shall be of an extruded layer of suitable synthetic material compatible with the specified ambient and operating temperature of the cables. The sheath shall be heat resistant, resistant to water, ultra violet radiation, fungus, termite and rodent attacks. The colour of the outer sheath shall be black. Requirement of special sheath with Fire Survival (FS) and Flame Retardant Low Smoke (FRLS) characteristics shall be as per clause 7.2.

### **6.2 REQUIREMENT OF SPECIAL SHEATH FOR FRLS/FS CABLE**

Outer sheath for FRLS/FS (when specified in Data Sheet) cables shall meet the following test requirements related to flame retardance, low smoke emission, low acid and toxic gas emission. The BIDDERS shall have proper test apparatus to conduct all the relevant tests as per the applicable Standards mentioned herein.

#### **6.2.1 Test for Flame Retardance**

##### **(a) Oxygen Index**

The critical oxygen index value shall be minimum 29 when tested at 27±2°C as per ASTM-D-2863 and the temperature index value shall be minimum 250°C at oxygen index of 21 when tested as per ASTM-D- 2863 / NES 715.

##### **(b) Flammability**



- (i) Cables shall pass test under fire conditions as per IS-10810-Part-53.
- (ii) Cables shall also pass tests as per IS-10810 Part-61 & Part-62.
- (iii) Fire survival cables in addition to tests (i) and (ii) above shall pass tests as per IEC-331.
- (iv) For Cables which pass test as per IEC-332, IEEE-383, and Swedish chimney test F3 as per SS 424-1475.

#### 6.2.2 Test for Smoke Generation

The cables shall satisfy the tests conducted to evaluate the percentage obscuration by smoke in an optical system placed in the path of the smoke. The maximum smoke density rating shall not be more than 60% when tested as per ASTM-D-2843.

#### 6.2.3 Tests for Acid Gas Generation

The hydrochloric acid generation when tested as per IEC 754-1 shall be less than 20% by weight.

#### 6.2.4 Tests for Resistance to Ultra Violet Radiation

This test shall be carried out as per DIN 53387. The retention values of tensile strength and ultimate elongation after the tests shall be minimum 60% of tensile strength and ultimate elongation before test.

#### 6.2.5 Tests for Water Absorption

Outer sheathes shall be subjected to tests for water absorption as per IS 10810.

#### 6.3 1100 V Grade XLPE Insulated Power Cables

The cable shall be extruded XLPE insulated. The inner sheath over laid up cores and outer sheath over the armour shall be extruded PVC compound type ST-2. Core identification shall be by printed numerals.

The construction, performance and testing of the cable shall comply with IS 7098-Part1 (Cross linked polyethylene insulated PVC sheathed cables for working voltages upto and including 1100 V).

#### 6.4 1100 V Grade Lighting/Misc./Light duty unarmored cables

Cables shall be insulated with extruded PVC type-C. Outer sheath shall be extruded black PVC type ST-2. The sheathed cables shall be weather proof suitable for indoor/outdoor use. Twin and multicore cables shall be laid up and filled with thermoplastic material, bound by plastic tape and provided with outer sheath.

The construction, performance and testing of the cable shall comply with IS 694 (PVC insulated cables for working voltages upto and including 1100 V).

#### 6.5 Tests and Test Equipment

Cables shall be subjected to routine and acceptance tests in accordance with standards specified. Test methods shall conform to IS 10810 (Methods of Test for Cables). BIDDER shall ensure use of calibrated test equipment having valid calibration test certificates from standard laboratory traceable to National Standards.

**6.6 DATA SHEET**

S. N.	ITEM	UNIT	REQUIREMENT
1.0	<b>SYSTEM DATA</b>		
1.1	System Voltage	V	1100
1.2	Short circuit for 1 Sec.	kA (rms)	20
1.3	Design ambient temperature of cable	deg. C	50
1.4	Laying		underground
2.0	<b>CABLE DATA</b>		
2.1	Type of Cable		LV Power Cable
2.2	Core(Multi/single)	No.	Contractor to specify
2.3	Conductor(Aluminium/Copper)		CU/Al
2.3.1	Conductor (stranded/solid)		Stranded
2.3.2	Form-circular/segmented		SEGMENTED
2.3.3	Conductor Screen required	Yes/No	Yes
2.4	Inner Sheath required	Yes/No	Yes
2.5	Type of Insulation(XLPE/PVC)		XLPE- AL/PVC- CU
2.6	Insulation Screen required	Yes/No	YES
2.7	Design ambient temperature of cable	deg. C	50
2.8	Cable Drum Type (Wooden/Steel)		Wooden (+5% tolerance limit)
2.9	Armour material		F (Galvanized single steel strip)
2.10	Rated voltage of cable (U)	kV	1.1
2.11	Outer Sheath type(PVC/Fire Survival (FS) /Flame Retardant Low Smoke (FRLS)		FRLS
Contractor shall submit type tests certificates of similar rating as mentioned in Schedule of quantities within past 3 years after award of contract.			

**6.7 CABLING SYSTEM INSTALLATION WORK**

- i. The installation of buried cables shall conform in all respects to the details shown in dwg. no. TCE.M2-EL-CT-S-2045 which forms part of cable installation notes and details.
- ii. Supply & installation of first class quality brick covers for medium and low voltage cables and sand shall be in the scope of CONTRACTOR. CONTRACTOR to provide the cable route marker on both side of cable route corridor.
- iii. The CONTRACTOR’s scope of work for the cable trenches required for directly buried cables shall include excavation, preparation of riddled soil bedding, supply, filling, ramming, supply and installation of route markers and joint markers. The details of construction work and provision of protective covers and markers shall be as indicated in the enclosed drawings of installation practice for directly buried cables.
- iv. Water-proof sealing shall be done for all outdoor to indoor conduit/pipe sleeves by means of bell mouth termination pieces and bitumen based cold set water-proof compound.
- v. Location of cables laid directly underground shall be clearly indicated with cable marker made of galvanised steel plate.
- vi. Location of underground cable joints shall be indicated with cable marker with an additional inscription “Cable joint”.
- vii. The marker shall project 150 mm above ground and shall be spaced at an interval of 15 m and at every change in direction. They shall be located on both sides of road and drain crossings. Top of cable marker/joint marker shall be sloped, to avoid accumulation of water/dust on marker.
- viii. Cable tags shall be provided on all cables at each end (just before entering the equipment enclosure), on each duct /conduit entry. Cable tags shall also be provided inside the panel etc.
- ix. The minimum depth of laying for directly buried LT cable shall be not less than 750mm.
- x. All new cables shall be megger tested before jointing. After jointing is completed all L.V. cables shall be megger-tested. 650/1100 Volt grade cables shall be tested using 1000 Volt Megger.
- xi. Cable cores shall be tested for:
  - (a) Continuity
  - (b) Absence of cross phasing
  - (c) Insulation resistance to earth
  - (d) Insulation resistance between conductors

**7 List of Approved Makes**

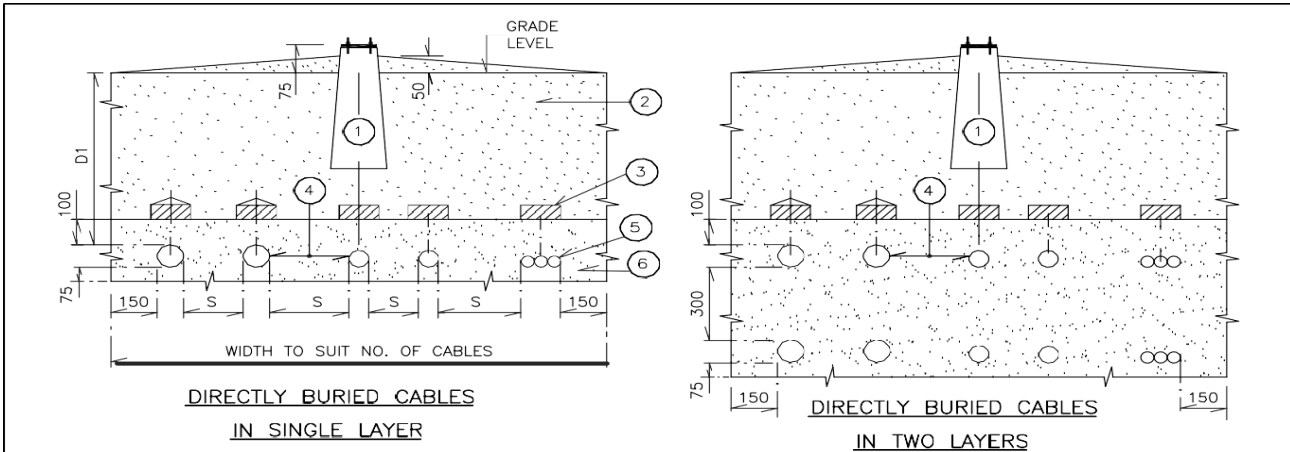
Vendor can offer components of makes other than specified below during order execution. The alternate make of components will be evaluated post order based on the satisfactory track record and test certificates to be furnished by the vendor. In case the alternate makes are not found acceptable, components shall be strictly as per vendor list below

S.N.	Equipment/ Accessories	Make
1	Luminaire	Philips, Bajaj, Wipro ,CGL
2	Decorative Pole	Bajaj, Crompton, Valmount, Klite
3	Feeder Pillar	Philips, Bajaj, Wipro ,CGL
4	1.1 kV Grade Armoured/ Unarmoured Cable	HAVELL'S/KEI/ FINOLEX/UNIVERSAL/POLYC AB

5	Cable Termination Kit/ Cable Joining Kit	CABSEAL/RACHEM/COMPAQ
6	Cable Lugs (Tinned Copper)	Dowells, Commet, Connectwell
7	Connectors / Terminals	Wago Controls / Elmex / Connectwell
8	MCB, ELCB Distribution Board	Legrand Schneider Siemens ABB
9	MCCB	ABB Schneider Siemens L & T
10	Time Switch	Schneider Siemens L&T Legrand
11	MFM	Schneider Siemens AE Socomec
12	Energy meter	L&T ,Secure, Enercon
13	Contactora	ABB Schneider Siemens L&T
14	Junction Box	Sintex, Hensel, Bajaj or equivalent
15	LED / Driver	Cree Nichia Philips Osram

**Note:-**

- 1) Only one of the above makes of the materials will be acceptable. The Contractor has to comply with the approved makes given in the tender document.
- 2) The Bidder shall offer the equipment of makes mentioned. All materials are subjected to Client approval before procurement.
- 3) The items manufactured in India shall be permitted only if the items are ISI marked (any other definition of compliance to BIS shall not be acceptable).
- 4) Samples from all the approved makes shall be offered for selection.
- 5) For standardization, inventory, electrical system coordination, the Employer/ Employer's Representative can insist on any one make from the makes indicated above.



DIMENSION (MIN.)	FOR 1.1kV GRADE CABLES	FOR 3.3kV & 11kV CABLES	FOR 22kV & 33kV CABLES
D1	750	900	1050
S	⊗ D — BETWEEN CABLES OF SAME VOLTAGE GRADE * 300MM — BETWEEN CABLES OF DIFFERENT VOLTAGE GRADE * 400MM — BETWEEN SINGLE CORE POWER CABLE AND COMMUNICATION CABLE * 300MM — BETWEEN MULTICORE POWER CABLE AND COMMUNICATION CABLE		

⊗ D — OVERALL DIAMETER OF THE BIGGER OF THE TWO CABLES  
 \* — SPACING SHALL BE KEPT BOTH HORIZONTALLY AND VERTICALLY

**LEGEND**

- ① — CABLE ROUTE MARKER
- ② — EARTH BACK FILLED & RAMMED
- ③ — PROTECTIVE COVERS
  - a) EARTHENWARE FOR LOW VOLTAGE CABLES
  - b) RCC FOR HIGH VOLTAGE CABLES, WITH HOLE AT EACH END TO TIE THEM TO EACH OTHER WITH NYLON WIRE
- ④ — ARMoured POWER CABLE
- ⑤ — ARMoured CONTROL CABLE
- ⑥ — FINE SAND / RIDDLED SOIL COMPACTED

**NOTES**

1. ALL DIMENSIONS ARE IN MM.
2. ALL DIMENSIONS INDICATED ARE THE MINIMUM VALUES.
3. FOR GENERAL NOTES REFER DRG. No. TCE.M2-EL-CT-S-2040 & 2041.
4. SINGLE CORE CABLES SHALL BE RUN IN TREFOIL FORMATION AND SHALL BE BOUND BY PLASTIC TAPES OR 3MM DIA NYLON CORD EVERY 750MM.
5. FOR CABLE ROUTE MARKER/JOINT MARKER, REFER SHEET 2 OF 2.
6. CABLE IDENTIFICATION TAG SHALL BE TIED AT BOTH ENDS OF THE CABLE AND ALSO AT AN INTERVAL OF 15 METERS. FOR DETAILS OF TAG REFER DRG. NO. TCE.M2-EL-CT-S-2058.
7. IF THE MINIMUM CLEARANCE AS INDICATED IN THE ABOVE TABLE FOR CABLES OF DIFFERENT VOLTAGE GRADE ARE NOT FEASIBLE, BRICK BARRIERS SHALL BE USED BETWEEN ADJACENT CABLES.
8. RCC PIPE (NP2/NP3)/DWC PIPE SHALL BE PROVIDED FOR ROAD CROSSING AT A MINIMUM DEPTH OF 1000MM FROM THE GRADE LEVEL UNLESS OTHERWISE SPECIFIED.

R6	GENERALLY REVISED	VBS	MVA	TSG		VVB						BSY	02.11.2015	
R5	NOTE REVISED	M.I.I				A.R.						SR	03.01.2011	
R4		MR				UGK						UGK	20.03.2002	
R3		MRK				SR						SR	05.11.1998	
R0													22.04.1980	
ISSUE	REVISIONS	DRN	DSN	CHD	CV	EL	IC	ME				PE/PM	APPD	DATE
											CLEARED			

DO NOT SCALE

FILE NAME : M2-EL-2045-REV-R6.DWG

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"P" (PRELIMINARY) ISSUES ARE NOT TO BE USED FOR CONSTRUCTION / FABRICATION BUT ARE ISSUED FOR LIMITED PURPOSES ONLY AS INDICATED IN THE SMALL BLOCK ABOVE THIS BLOCK. CONSTRUCTION / FABRICATION WORK IS PERMITTED ON "R" (RELEASED) ISSUES ONLY.

INFORMATION CONTAINED WITHIN "HOLD" IS NOT RELEASED FOR CONSTRUCTION / FABRICATION. FIELD MUST GET DESIGN OFFICE TO CLEAR "HOLDS" IN TIME BEFORE PROCEEDING WITH ANY CONSTRUCTION / FABRICATION WORK RELATED TO "HOLDS".

INSTALLATION PRACTICE FOR DIRECTLY BURIED CABLES (SHEET 1 OF 2)



TATA CONSULTING ENGINEERS LIMITED  
MUMBAI

SCALE : NTS  
DC & DISC : PUN-EL

DWG. NO.  
TCE.M2-EL-CT-S-2045

ISSUE  
R6

SIZE-A4

## **PROCEDURE UNDER E-TENDERING INSTRUCTIONS TO APPLICANTS**

### **DEFINITIONS:**

- a) Tender portal: The e-Procurement Portal of Government of Odisha introduced for the process of e-Tendering which can be accessed on <https://www.tendersorissa.gov.in>.
- b) Use of valid Digital Signature Certificate of appropriate class (Class II or class III) issued from registered certifying authorities (CA) as stipulated by Controller of Certifying Authorities (CCA), Government of India such as n- Code, Sify, TCS, MTNL, e-Mudhra is mandatory for all users.
- c) For all purpose, the server time displayed in the e-Procurement portal shall be the time to be followed by all the users.

Words in capital and not defined in this document shall have the same meaning as in the Request for Proposal ("BID").

### **1. PARTICIPATION IN BID:**

#### **1.1 PORTAL REGISTRATION:**

The Contractor/Bidder intending to participate in the bid is required to register in the portal using his/her active personal/official e-mail ID as his/her Login ID and attach his/her valid Digital signature certificate (DSC) to his/her unique Login ID. He / She has to submit the relevant information as asked for about the firm/contractor. The portal registration of the bidder/firm is to be authenticated by the State Procurement Cell after verification of original valid certificates/documents such as (i) PAN and (ii) Registration Certificate (RC) / VAT Clearance Certificate (for procurement of goods) of the concerned bidder. The time period of validity in the portal is at par with validity of RC/ VAT Clearance. Any change of information by the bidder is to be re authenticated by the State Procurement Cell. After successful authentication bidder can participate in the online bidding process.

1.2 Bidders participating through Joint Venture shall declare the authorized signatory through Memorandum of Understanding duly registered and enroll in the portal in the name and style of the Joint venture Company. It is mandatory that the DSC issued in the name of the authorised signatory is used in the portal. For participating in the tender, the authorized signatory holding Power of Attorney shall be the Digital Signatory. In case the authorized signatory holding Power of Attorney and Digital Signatory are not the same, the bid shall be considered non-responsive.

1.3 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 process that are undertaken through the e-Procurement system irrespective of who operates the system.

### **2. LOGGING TO THE PORTAL:**

The Contractor/Bidder is required to type his/her Login ID and password. The system will again ask to select the DSC and confirm it with the password of DSC as a second stage authentication. 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 Login ID, password and DSC combination and authenticates the login process for use of portal.

### **3. DOWNLOADING OF BID:**

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 before the closing date and time of submission.

### **4. CLARIFICATION ON BID:**

The bidder may ask question related to tender online in the e-procurement portal within the period of seeking clarification. The Officer inviting the bid /Procurement Officer-Publisher will clarify queries related to the tender.

## **5. PREPARATION & SUBMISSION OF BID**

5.1 Detailed BID may be downloaded from Tender Portal for detail study and preparation of his bid and the Application may be submitted online following the instructions appearing on the screen.

5.2 The following shall be the form of various documents in the Application:

A. Only Electronic Form (to be uploaded on the Tender Portal)

- (a) Power of Attorney for signing the Application
- (b) If applicable, the Power of Attorney for Lead Member of JV;
- (c) Copy of Memorandum of Understanding between JV partners, if applicable.
- (d) Copy of Memorandum of Understanding with Associate, if applicable.
- (e) Technical proposal as per format prescribed as per clause no 2.10 of BID
- (f) Bid Security of Rs.2,59,000 (Rupees Two Lakh Fifty Nine Thousands only) in shape of Demand Draft in Schedule Bank , Rourkela Payable at Rourkela in favor of beneficiary mentioned in the Instruction to Bidder or as mentioned in DTCN
- (g) Financial proposal as per format prescribed as per clause no 2.11.2 of BID.
- (h) Other documents as per requirement of BID.

5.3 The Applicant shall upload scanned copies of the documents as specified in 5.2(A) above on the Tender Portal in designated locations of Technical Proposal and Financial Proposal before 17:00 hours Indian Standard Time on the Application due date i.e. on 03.05.2018 (date to be specified).

5.4 It may be noted that the scanned copies can be prepared in file format i.e. PDF and/or JPEG only. The Applicants can upload a single file of size of 5 MB only but can upload multiple files.

5.5 The bidder shall log on to the portal with his /her DSC and more to the desired tender for up loading the documents in appropriate place one by one simultaneously checking the documents.

5.6 Bids cannot be submitted after due date and time. The bids once submitted cannot be viewed, retrieved or corrected. The Bidder should ensure correctness of the bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid.

The bids cannot be opened even by the OIT or the Procurement Officer Publisher/ opener before the due date and time of opening.

5.7 Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.

5.8 The Bidder should ensure clarity/legibility of the document uploaded by him to the portal.

5.9 The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender

5.10 The bidder should check the system generated confirmation statement on the status of the submission.

5.11 The Bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.

5.12 The tender inviting officer is not responsible for any failure, malfunction or breakdown of the electronic system used during the e-procurement process.

5.13 The Bidder is required to upload documents related to his eligibility criteria and qualification information and Financial Proposal duly filled in.

5.14 The Bidder will not be able to submit his bid after expire of the date and time of submission of bid (server time). The date and time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer Inviting the Bid.

## **6. SIGNING OF BID:**

The 'online bidder' shall digitally sign on all statements, documents, certificates uploaded by him, owning responsibility for their correctness /authenticity as per IT ACT 2000. If any of the information

furnished by the bidder is found to be false / fabricated / bogus, his EMD/ Bid Security shall stand forfeited & his name shall be recommended for blocking of portal registration and the bidder is liable to be blacklisted.

#### **7. SECURITY OF BID SUBMISSION:**

7.1 All bid uploaded by the Bidder to the portal will be encrypted.

7.2 The encrypted Bid can only be decrypted / opened by the authorized openers on or after the due date and time.

#### **8. RESUBMISSION AND WITHDRAWAL OF BIDS:**

8.1 Resubmission of bid by the bidders for any number of times before the final date and time of submission is allowed.

8.2 Resubmission of bid shall require uploading of all documents including price bid a fresh.

8.3 If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.

8.4 The bidder should avoid submission of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc.

8.5 The Bidder can withdraw his bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the Procurement Officer Publisher (Officer Inviting Tender) citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.

#### **9 OPENING OF THE BID:**

9.1 Bid opening date and time is specified during tender creation or can be extended through corrigendum. Bids cannot be opened before the specified date & time.

9.2 All bid openers have to log-on to the portal to decrypt the bid submitted by the bidders.

9.3 The bidders & guest users can view the summary of opening of bids from any system. Contractors are not required to be present during the bid opening at the opening location if they so desire.

9.4 In the event of the specified date of bid opening being declared a holiday for the Officer inviting the Bid, the bids will be opened at the appointed time on the next working day.

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

#### **10. EVALUATION OF BIDS:**

10.1 All the opened bids shall be downloaded and printed for taking up evaluation.

The officer authorized to open the tender shall sign and number on each page of the documents downloaded and furnish a certificate that "the documents as available in the portal containing--- nos of pages".

10.2 The bidder may be asked in writing/ online to clarify on the uploaded documents provided in the Technical Bid, if necessary, with respect to any doubts or illegible documents. The officer inviting tender may ask for any other document of historical nature during Technical evaluation of the tender. Provided in all such cases, furnishing of any document in no way alters the Bidder's price bid. Non submission of legible documents may render the bid non-responsive.

10.3 The bidders will respond in not more than 7 days of issue of the clarification letter, failing which the bid of the bidder will be evaluated on its own merit.

10.4 The Technical evaluation of all the bids shall be carried out as per information furnished by Bidders.

10.5 The Procurement Officer-Evaluators; will evaluate bid and finalize list of responsive bidders.

10.6 The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.

10.7 The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorised representative who wish to be present.

10.8 At the time of opening of "Financial Bid", bidders whose technical bids were found responsive and qualified as per clause 3.4.2.2 will be opened.

10.9 The responsive bidders' name, bid prices will be announced.

10.10 Procurement Officer-Openers shall sign on each page of the downloaded Financial Proposal.

10.11 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.



10.12 System provides an option to Procurement Officer Publisher for reconsidering the rejected bid with the approval of concern Chief Engineer / Head of Department.

10.13 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.

**DISCLAIMER**

The Applicant must read all the instructions in the BID and submit the same accordingly





















