NAYA RAIPUR DEVELOPMENT AUTHORITY

Tender document for the Work of Design, supply, installation, Testing & commissioning of Facade lighting system for State Secretariat Buildings at Naya Raipur

(Following Three-Envelope Tender Procedure)

Schedule – A

Price tender

To be submitted in ENVELOPE-3

NIT no., 15 /FL/ELECT/CE(E)/NRDA/2011-12, Raipur, dated: 18 .04.2012

Issued by: Chief Executive Officer,
Naya Raipur Development Authority (NRDA)
Near Mantralaya Mahanadi Dwar
Raipur 492 001, Chhattisgarh
Tel: (0771) 4066011, Fax: (0771) 4066188,
E-mail: ceo@nayaraipur.com

Tender Document Contains

(a) Only schedule "A" and Section-I of schedule "D" are to be filled & singed by the tenderer
(b) All the certificates as per pre qualification criteria shall be appended with relevant forms of schedule"D"

1. PART ONE (NRDA F-1)-(Attached herewith, to be submit along the tender)

Part (A)

a) Press Notice

b) Detailed NIT

Part (B)

a) Schedule-A

(i) Cost Abstract

(ii) Bill of Quantities

b) Schedule-B –NIL

c) Schedule-C –NIL

d) Schedule-D

Section-I..... Technical tender forms

(i) Letter of Technical Tender

(ii) Tenderer's Information Sheet

(iii) Annual Turnover

(iv) Specific Construction Experience

(v) Declaration

(vi) Check list for Technical tender evaluation

Section –II .....Scope of work

Section –III..... Technical specifications of work

Section –IV..... Special Conditions of Contract

Section –V..... List of approved makes.

Section –VI..... Drawings

e) Schedule-E

f) Schedule-F

2. PART TWO (NRDA F-2/3))-Standard form (Not Attached herewith, and not to be submitted along the tender)
Important note: - Link site http:// nayaraipur.com/documents/gcc.pdf

1. General Guidelines
2. Tender
3. General rules and directions
4. Conditions of contract
5. Clauses of contract
6. Model rules relating to labour, water supply and sanitation in labour camps safety code
7. N/A
8. Contract forms

(a) Draft Format for Performance Security

(b) Earnest Money Deposit Form (Bank Guarantee)

(c) Format of Contract Agreement

(d) Draft Format for Performance Guarantee for Water Proofing and Anti-termite Works

(e) Indemnity Bond

(f) Indenture Bond

(g) Notice for Appointment of Arbitrator

9. Proforma of schedules (Schedule 'A' to Schedule 'F')

Signature of Contractor……..... Signature of NRDA……..……

NAYA RAIPUR DEVELOPMENT AUTHORITY (NRDA)
RAIPUR, CHHATTISGARH

Document details

Name of work : **"Design, supply , installation, Testing & commissioning of Facade lighting system for State Secretariat Buildings at Naya Raipur ".**

Name of Tenderer : _____

_____

Details

(a) Cost of tender document : Rs ----------

(b) EMD : Rs ----------.

Signature of Tenderer

Date:_____

Press Note

NAYA RAIPUR DEVELOPMENT AUTHORITY

Near Mahanadi Dwar, Mantralaya, Raipur-492001,Chhattisgarh
Ph:0771-4066011 Fax:0771-4066188, Website: www.nayaraipur.com

Tender Notice

NIT no. 15/FL/ELECT/CE(E)/NRDA/2011-12, **Raipur, dated: 18.04.2012**

Sealed tenders are invited from OEMs, who are manufacturer of façade lights as per approved make and fulfill the Pre-Qualification criteria, for the work of **"Design, supply, installation, Testing & commissioning of Facade lighting system for State Secretariat Buildings at Naya Raipur".**

Time allowed including rainy season	Estimated Cost(Rs in Lacs)	EMD (Rs in Lacs)	Cost of Tender Document (Rs)	Pre -Qualification Criteria	
				Average Annual turnover in last three financial years (Lacs)	Should have completed satisfactorily similar works during last 7 years i.e. after 01/04/2005 as below: - a) One similar work costing not less than INR 50 Lacs OR b) Two similar works costing not less than INR 30 Lacs each.
4 month	90	0.90	5,000	300	

Note: - Similar work shall mean a project consisting of "Supply, installation, Testing & commissioning of Facade lighting system individually or any combination of this works in a single project.

Tenders can be downloaded from the website www.nayaraipur.com from **18.04.2012**. The last date for submission of the tenders by speed post/registered post/ courier is **09.05.2012,** upto **15.00** hrs. Documents shall be opened thereafter on same day after **16.00hrs**. **Amendment in tender, if any, will only be uploaded on the website and shall not be published in any newspaper.**

Chief Executive Officer

Signature of Contractor……..... Signature of NRDA……..……

NAYA RAIPUR DEVELOPMENT AUTHORITY (NRDA) RAIPUR, CHHATTISGARH

DETAILED NIT

NIT No.: 15/FL/ELECT/CE(E)/NRDA/2011-12, Raipur, Dated 18.04.2012

Last date and time for submission of tenders: 1500 hrs on 09.05.2012

1. Item Rate Tenders are invited in the prescribed tender documents by the Chief Executive Officer, Naya Raipur Development Authority (NRDA), Raipur Chattishgarh from OEMs who are manufacturers of façade lights as per approved make and fulfill the prequalification criteria. The detailed NIT is as under:-

Name of work	**Design, supply , installation, Testing & commissioning of Facade lighting system for State Secretariat Buildings at Naya Raipur.**
Estimated Cost (INR in Lacs)	**90.00**
EMD (INR in Lacs)	**0.90**
Time allowed including rainy season	**4 month**
Cost of Tender (In INR)	**5000.00**
Start Date of Tender download	**18.04.2012**
Last Date of download Tender	**09.05.2012**
Last Date and time of submission of Tender	**09.05.2012 & 15.00Hrs**
Date and time of opening of Tender	**09.05.2012 & 16.00Hrs**

2. Intended eligible Tenderers may obtain further information from the office of Employer and inspect the Tender Document at, NRDA Raipur from 11 AM to 4 PM on all working days.

Pre Qualification Criteria -To be eligible under the contract, the intending tenderer should meet the following mandatory criteria **3.1 and 3.2.**

3.1 Financial Criteria

Average Annual Turnover: The intending tenderer's average annual turnover during last three (3) years ending 31st March (i.e 2008-09, 2009-10 & 2010-2011) of the previous financial year,should be equal to INR 300 Lacs or more. Annual turnover is total certified payments received for contracts in progress and completed during the financial year.

For above, the Tenderer has to submit audited balance sheets of their financial turn over/ accounts along with profit and loss acount for the last three(3) years, along with the Tender. Where necessary, the Employer can make enquiries with the Tenderer's Bankers.

3.2 Technical Criteria

Intending tenderer should have completed satisfactorily similar works during last 7 years i.e after 01/04/2005, in any Government. or Public sector undertaking as below: -

(a) One similar work costing not less than **INR 50** Lacs.

OR

(b) Two similar work costing not less than **INR 30** Lacs each.

Note: -

a) *Similar work shall mean a project consisting of "Supply , installation, Testing & commissioning of Facade lighting system individually or in any combination of works in a single project in which the façade lighting part is of the required amount as alone.*
b) *Ongoing project / part project experience shall not be considered for evaluation.*
c) *For the benefit of the intending tenderer's a checklist is enclosed at Schedule-D (vi), for the documents to be submitted along with tender.*

Certificates:

a) All tenderers should submit the valid registration certificate. Commercial tax certificate, balance sheet with profit and loss statement.

b) The tenderers shall also submit satisfactory completion certificates in support of each quoted experience along with work order. The satisfactory completion certificate should be signed by an officer not below the rank of Executive Engineer concerned in case of Government department or the rank of General Manager in case of public/ private sector as the case may be.

c) All the documents to be submitted shall be duly notarized.

3. The tender document for the above work is available on NRDA's **websites: www.nayaraipur.com and www.cg.gov.in** Tenderer will have to download the tender document, and shall submit the tender along with the tender cost as mentioned in the Para 1 above. For tender cost, DD drawn in favor of "**CHIEF EXECUTIVE OFFICER, NRDA**" should be enclosed. The tenderers shall attach the cost of tender document along with EMD as mentioned in the Para 1 above.

4. Three envelope Tender procedures shall be followed. Tenderer has to submit three sealed envelopes containing the documents as detailed below simultaneously, enclosed in a **Fourth Envelope.**

ENVELOPE-1	EMD & Cost of tender in the prescribed format
ENVELOPE-2	Technical Tender consisting of the documents/certificate in proof of prequalification criteria PART ONE and (NRDA F-1) excluding schedule-A
ENVELOPE-3	Financial Tender PART ONE (Schedule-A)

All the three tenders shall be put in a fourth envelope which shall be dully sealed. All the 4 envelopes shall be super-scribed with the Name of Work and Name of intending tenderer. Respective envelopes shall also be marked as envelope 1, envelope 2, and envelope 3 as detailed above. Tenders who do not conform to the specified requirements will be held non-responsive.

Initially, only the **envelope -1** shall be opened, if found responsive then the **envelope-2** (Technical tender) shall be opened at the date and time given in the Tender Document. The Price tender shall remain sealed and unopened in the custody of NRDA.

5. **Mode of Selection**

The selection of tenderer shall be based on following stages :-
Stage-I : Technical Evaluation shall comprise of:-

A. Technical bid

a. Tenderer shall propose design of façade lighting along with complete details of light fixtures and Bill of Quantity of proposed design including cables and other accessories which has been considered in the design. The cost of all the above shall be quoted in price tender.
b. Tenderer shall submit soft copy of presentation and also submit hard copy of presentation in coloured form and also submit technical specifications of each item

proposed to be installed.

c. Type Test certificates of all the items shall be submitted during presentation.

Those found eligible in the technical bid shall be invited for presentation and mockup.

B. Presentation

a. Tenderer are required to make a presentation for proposed design of façade lighting. Presentation must include the 3D view(Soft), animation and night simulation, energy consumption pattern of proposed design. The presentation will be held at Conference Hall,NRDA, Raipur. The office address is as under:

Naya Raipur Development Authority,
Near Mantralaya, Mahanadi Dwar, Raipur,
492001

b. Maximum duration of presentation is not more than 15 mins.

Mockup

a. Tenderer are required to submit light fixtures of all specified types as per submitted design and specifications mentioned in the submitted tender documents(by the tenderer) for mockup. Submission of light fixtures & Lamp shall be at site address –

State Secretariat Building, Naya Raipur, Chhattisgarh.
The exact location shall be communicated at site.

b. The mockup shall be done in 10 meter space on west side of the building.
c. Tenderer shall depute representative having complete knowledge to explain their product in detail.
d. Tenderer shall organize & bear all cost of providing samples material, illumination arrangement, power generator, transport, loading, unloading, security, etc for the mockup.
e. The mockup shall be removed from site within three days of the date of Mockup.

f. Presentation and Mockup will be evaluated by a committee, nominated by NRDA. If required modifications will be suggested and an undertaking to agree to the modifications without any financial implications will be taken from the tenderer. However, in case major changes, if any in the work or if NRDA feels that some modification need to be done to create a level playing field, a revision in the price-bid could be allowed only at the discretion of NRDA.
g. In case the tenderer is not found up to required standard, the tenderer shall be technically disqualified on this ground and his financial bid shall not be opened.

Stage II – Price Bid

After technical evaluation, the date and time of opening of price bid shall be communicated to the successful tenderer. The Price tenders of only the tenderer found qualified in Stage I shall be opened in presence of the tenderers who wish to be present. The Contract shall be awarded to the tenderer whose tender has been determined to be the lowest evaluated as per tender conditions.

All Tenders must be accompanied with the **Earnest money** as mentioned in the Para 1 above. The Earnest money shall be payable in favor of Chief Executive Officer NRDA, in the form of a **Bank Draft payable at Raipur**/ / **Bank Guarantee operatable at Raipur drawn on a nationalized bank** which shall be valid for a period of 6 (Six) months from the date of submission of tender.

6. Tenders shall be submitted at the address below on or before due date. Tenders received after the due date or time for tender submission (Late tenders) will either not be accepted or if inadvertently accepted, will not be opened and shall be rejected and returned back to the tenderer subsequently.

7. **(a)** NRDA reserves full rights to reject any or all the tenders without assigning any reason, and to seek any further information from the tenderers. The selection shall be at the entire discretion of NRDA and the NRDA's decision in this respect shall be final and binding. Further NRDA reserves right to split the contract in two or more parts. This shall be at the entire discretion of NRDA and NRDA's decision in this matter shall be final and without appeal.

   (b) The competent authority on behalf of NRDA does not bind himself to accept the lowest or any other tender, and reserves to himself the authority to reject any or all of the tenders received without the assignment of a reason. All tenders in which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer, shall be summarily rejected.

8. Tenders shall be valid for 90 (Ninety) days from the last date of submission of the tender. NRDA will not be responsible for any costs or expenses incurred by Tenderers in connection with the preparation or delivery of Tenders. If any tenderer withdraws his tender before the said period or issue of letter of acceptance/intent, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the NRDA, then the NRDA shall, without prejudice to any other right or remedy, be at liberty to forfeit entire amount of Earnest Money as aforesaid.

9. Pre tender meeting with the tenderers will be held as mentioned above in the Office of **Chief Executive Officer**, NRDA, Raipur. Tenderers are advised to participate in the pre-tender meeting. The intending tenderers are advised to send their queries to NRDA either by post or by email to **ceo@nayaraipur.com** and **cee@nayaraipur.com** **3**days prior to the pretender meeting.

10. **Clarification/ amendments, if any shall be posted on website only.**

11. Period for completion of work as mentioned above at Para 1is inclusive of rainy season.

12. Approved hard copy of the standard document is available in the office of the employer and could be seen on any working day during office hours at the following address:-

    Chief Engineer, NRDA

    2nd floor, Guru Govind Sarang Complex, New Rajendra Nagar,

    Raipur-492002, Phone: 0771-4094035

13. The intending tenderers are advised to cross check the downloaded version of the tender document with the hard copy available with NRDA.

14. In case of any discrepancy between the downloaded tender and the approved hard copy, the approved hard copy shall hold good for contractual as well as legal purposes.

15. Tenderers 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 is 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 at their own cost obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect the execution of work and shall incorporate the cost of such effects while quoting the tender. A tenderer 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 tenderer shall be responsible for arranging and maintaining at his own cost all materials tools & plants, water, electricity, access facilities for workers and on all materials tools & plants, water, electricity, access facilities for workers and on all other services required for executing the work unless otherwise specifically provided in the contract documents. Submission of tender by a tenderer 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 local conditions and other factors having a bearing on the execution of the work.

16. 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 to rejection.
17. The successful tenderer shall be required to execute an agreement on a non judicial stamp paper of appropriate value with the Engineer-in-charge in the Proformas annexed to the tender document, within 7 days of the issue of letter of acceptance/ award by the NRDA. The cost of non judicial stamp paper shall be borne by contractor. In the event of failure on the part of the successful tender to sign the agreement within 7 days, the entire earnest money will be forfeited and tender shall be cancelled.
18. The successful tenderer, upon issue of letter of acceptance, in addition to execution of an agreement on a non judicial stamp paper of appropriate value, shall also be required to furnish an irrevocable Performance Bank Guarantee of requisite amount to the Engineer-in-Charge in the Performa annexed to the tender document, within 7 days of the issue of the letter of acceptance /award of Tender by the NRDA. In the event of failure on the part of the successful tenderer to furnish the Performance Bank Guarantee within 7 days, the earnest money will be forfeited and tender shall be cancelled.
19. This Notice Inviting Tender shall form a part of the contract document. In accordance with clause 1 of the contract, the letter of acceptance/ award shall be issued in favour of the successful tenderer/ contractor. After submission of the performance guarantee, by the contractor, the General arrangement drawings and other details for commencement of work shall be issued. The contract shall be deemed to have come into effect on issue of communication of letter of acceptance of the tender. On such communication of acceptance, the successful Tenderer/Contractor shall, within 7 days from such date, formally sign the agreement consisting of:-
    a) PART ONE of the Tender documents along with detailed NIT as issued to the contractor at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto and

    b) PART TWO of the Tender document i.e. “General conditions of contract duly modified / corrected to the extent as specified under PART ONE (though not issued to the contractor but always available for inspection on written demand at the office of the officer inviting tenders specified under Schedule F of PART ONE of the Tender Document) and deemed to have been consulted, inspected, understood and considered by the tenderer before quoting and submitting his tender.

    c) Agreement signed on non-judicial stamp paper of appropriate value as per prescribed proforma of tender documents.

20. **GCC is available as a standard NRDA Publication and can also be downloaded free of cost from the NRDA web site under title “General conditions of contract” for Contractors in construction Contracts” However contractors are advised to refer to PART ONE of the tender document carefully and thoroughly for corrections/ modifications in the “General conditions of contract” Standard is also available for inspection in the office of the Engineer in charge on written demand from contractors. Link site http:// nayaraipur.com/documents/gcc.pdf**
21. While submitting the tender the contractor shall clearly and legibly write his full mailing address including PIN code, Telephone / Fax Numbers / e-mail address etc for communication purposes and shall inform the Engineer in Charge about any change from time to time in his postal / mailing address. The communication shall be dispatched only at the contractor’s such latest informed address and NRDA shall in no way be responsible for non-receipt of correspondence by the contractor.
22. It is found that the contractor has misrepresented that facts or has attempted to secure or has secured the work by misrepresenting the facts or by submitting false or forged documents then

the Entire Earnest Money submitted by the contractor and or the Performance Guarantee and/ or the Security Deposit as the case may be, shall be liable to be absolutely forfeited and such contractor / individuals shall also be liable to be prosecuted for cheating / forgery / fraud etc as per law.

23. Bill of quantities must enclosed with tender document, the rate shall be quoted against each item separately in figures as well as in words

    During price Tender evaluation, the Employer will correct arithmetical errors on the following basis:

    a) if there is a discrepancy between words and figures, following procedure shall be followed:
       i. the unit price which correspond to the total price for the item worked out by the Tenderer shall be followed;
       ii. If the total price of an item is not worked out by the Tenderer or it does not correspond with the rates written either in words or figures then the rate quoted by the Tenderer in words shall be taken as correct.
    b) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected;
    c) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
    d) The unit wise amounts will be rounded to the nearest rupee
    e) The tendered rates of items against which no rate or price is entered by the tenderer will be taken as zero and the price of the same shall be deemed to have been covered by the rates/amount quoted in other items.

24. The tender document shall be written legibly and free from erasure, overwriting or conversion of figure. Any correction where unavoidable shall be made by crossing out, rewriting and attestation by the tenderer.

25. All royalties be paid by the contractor as also all tolls, duties, local and other levies including sales tax, insurances & workman compensation act etc.

26. Contractor will be bound to follow CG Model rules relating to its water supply & sanitation in labour camp.

27. The contractor shall pay not less than the minimum wages to labours engaged by him on the work.

28. Department reserves the right to take up the work departmentally or to award any work on contract in the vicinity without prejudice to the terms of contract.

29. If the rate quoted by the lowest (LI) of the tenderer is considered unbalanced (in relation to the Department's estimate of cost of work to be performed under the contract) by the CEO, NRDA, then tenderer shall submit detail price/rate analysis of major items of the work within 7 days of such notice so as to demonstrate the internal consistency of these price/rate(s) with his quoted price/rate(s). After evaluation by tender sanctioning authority CEO, NRDA may require the tenderer to submit additional Security upto 5% of the estimated cost put to tender for the performance of the agreement in the shape of F.D. receipt in favor of the CEO, NRDA before signing of the agreement, which shall be refunded along with the normal S.D. after Completion of work. If he fails to complete the work or leave the work in complete, this 5% additional SD, shall also be forfeited by the department, & the agreement shall be terminated and action shall be taken in accordance of relavent contract clause of the agreement.

30. Approved OEMs : PHILIPS/ WIPRO/ BAJAJ/ GE/SCHREDER

31. Important Instructions to **Tenderers :**The tenderers who have down loaded the tender documents from the web site, should read the following important instructions carefully before

actually quoting the rates & submitting their tender on the tender document downloaded from the web site:

a) The tenderer should see carefully & ensure that all the pages of PART ONE (NRDA F-1) of the tender document including schedule of quantities of items of work (NRDA F-1 Schedule-A) has been down loaded properly & completely.

b) The printout of the downloaded tender document shall be taken on A-4 size plain white paper only & the printer settings shall be dept to ensure that the downloaded document is printed in the same manner and pattern / setting as appearing on the web site & there is no change in the formatting, number of pares etc.

c) The tenderer should ensure that no page in the down-loaded tender document is missing and all pages in the down-loaded tender document as printed are legible & clear & are printed on a good quality paper.

d) The tenderer should ensure that every page of the down-loaded tender document is signed by tenderer himself.

e) The tenderer should ensure that the down loaded tender document is properly bound and wax sealed before submitting the same in the envelope. Loose / Spiral binding shall be liable to be rejected.

f) In case of any correction/ addition / alteration/ omission in the downloaded tender document vis a vis that in the **Standard DRAFT Tender Document** available in the office of NRDA, it shall be liable to be rejected.

g) The tenderer shall furnish a declaration to this effect that no addition/ deletion/ corrections have been made in the downloaded tender document being submitted by him and it is identical to the tender document appearing on the Web-site and with the **Standard DRAFT Tender Document** available in the officer of the office inviting the tenders.

Chief Executive Officer,
NRDA Near Mantralaya Mahanadi Dwar,
Raipur 492 001 Chhattisgarh
Phone No (0771) 4066011, 4268643.

SCHEDULE– D

Section-I
Technical Tender Forms

Schedule-D
Section I - Tender Forms Technical

This Section contains the forms which are to be completed by the Tenderer and submitted as part of his PART ONE (NRDA F-1).

Table of Forms

(i) Letter of Technical Tender

Date: _____

Tender Package No.:_____

NIT No.: _____

To:

Chief Executive Officer,

NRDA, Near Mantralaya Mahanadi Dwar, Raipur 492 001,

Chhattisgarh.

Ref for NIT no:----------

Subject: Name of the work:- ----------

Dear Sir,

I/We, the undersigned, declare that:

(a) I/We have examined and have no reservations to the Tender Document, including Addendum if any, minutes of meeting, clarification to the queries etc.

(b) I/We offer to execute the subjected under in conformity with the Tender Documents and the addendums.

(c) I/We have satisfied ourselves as to the location of the site and working conditions, examined the requirements of NRDA and have obtained all the information necessary for the successful and timely completion of the work.

(d) I/We have submitted the Earnest Money Deposit as specified in the tender document which will not bear any interest and shall be subjected to forfeiture on following defaults.

(i) if we withdraw our Tender during the period of tender validity as specified in Detailed NIT para 9 or

(ii) if we fail to:

- furnish a Performance Security in accordance with Detailed NIT Para 19 or
- sign the Contract in accordance with Detailed NIT Para 18; or
- accept the correction of its Tender Price pursuant to Detailed NIT Para 24.

(iii) if we have given the false documents in support of qualification with the technical tender.

(e) My/Our Tender shall be valid for a period of ~~90~~ 180 days from the date fixed for the tender submission deadline in accordance with the Tender Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) If my/our Tender is accepted, we commit to obtain a Performance Security in the amount as specified in the tender document for the due performance of the Contract and sign the agreement;

(g) I/We are not participating, as Tenderers, in more than one Tender in this Tendering process, in accordance with the Tender Document;

(h) My/our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by NRDA, Raipur;

(i) I/We understand that this Tender, together with your written acceptance thereof included in your letter of acceptance, shall constitute a binding contract between us, until a formal Contract is prepared and executed;

(j) I/We understand that you are not bound to accept the lowest evaluated tender or any other tender that you may receive.

(k) I/We hereby pay the Earnest Money Deposit of required amount in the form of a demand draft on a nationalized bank (----------Bank Name and address) and operatable at Raipur in favour of the 'Chief Executive Officer, NRDA, Raipur' for the said amount and is attached.

(l) I/We hereby declare that, the entire work including Addendum/ Corrigendum, if any, shall be completed in all respect within the time limit specified in the NIT.

(m) I/We here by authorize the Employer to get all bank guarantee verified and got confirmed from concerned Bank.

Signature: ----------

Signed by: ----------(Name)

Designation: ----------

For and on Behalf of --------(Name of Tenderer)

Date:

(ii)Tenderer's Information Sheet

Tenderer's Information		
Tenderer's legal name		
Tenderer's legal address		
Tenderer's authorized representative (name, address, telephone numbers, fax numbers, e-mail address)	Name:	Address:
	Telephone : Fax :	E-Mail:
Tenderer's details of Incorporation	Place of incorporation/ registration:	Year of incorporation:
Attached are copies of the following original documents. ❑ 1. Articles of incorporation or constitution of the legal entity named above. ❑ 2. In the case of government-owned entity, documents establishing legal and financial autonomy and compliance with commercial law.		

Details of the office closest to Raipur (if available)

1.	Address of Office	
2.	Telephone :	Contact :
3.	Fax :	E-Mail :

Signature of Tenderer

Date:_____

(iii) Annual Turnover

Annual Turnover Data for the Last 3 Years			
Year	**Amount and Currency**	**Exchange Rate if any**	**INR Equivalent**
2008-09			
2009-10			
2010-11			
Average Annual Turnover for the last 3 years in INR			

All Tenderers are requested to complete the information in this form

The information supplied should be the Annual Turnover of the Tenderer in terms of the amounts billed to clients for each year for contract in progress or completed, converted to INR at the rate of exchange at the end of the period reported.

As a proof of the above, the contractor shall submit the copies of the balance sheet for last three years along with audited profit & loss statement duly signed by the charted accountant.

Signature of Tenderer

Date:_____

(iv) Specific Construction Experience

Fill up one (1) form per contract.

Details of Contract			
Contract No . . . . . of	Name of work		
Award Date		Completion Date	
Role in Contract	❑ Contractor	❑ Sub-contractor	
Total Contract Amount			INR
Employer's Name Address Telephone/Fax Number E-mail			
Description of the work executed			

Note: Attach copies of work order and satisfied completion certificates in support of each quoted experience. The completion certificate should be signd by the officer not below the rank of concerned Executive Engineer in case of Government department or in the rank of General Manager in case of public sector/private sector as the cases may be.

Signature of Tenderer

Date:_____

(v)DECLARATION

(*TO BE SIGNED BY THE TENDERER SUBMITTING THE TENDR ON DOWNLOADED TENDER DOCUMENT*)

I/We hereby declare and certify that:

1. I/We are submitting the tender in the tender document downloaded by me /us from the website & we certify that there is no change in formatting, numbering of pages etc. In the downloaded documents.
2. I/We are submitting the tender in the tender document which is exactly similar and identical to the one available on the website and also as available with the officer inviting tenders.
3. I / We have no made any modifications / corrections / additions / omissions etc in the tender documents downloaded from web by me / us.
4. I / We have checked that no page in the downloaded tender document is missing and all the pages as per web site are available & that all the pages of tender document submitted by us are clear & legible.
5. I / We have signed (with stamp) all the pages of the tender document before submitting the same.
6. I / we have wax sealed the tender documents properly before submitting the same.
7. I / We have submitted the application for issue of tender documents on the prescribed format separately along with the cost of tender documents and also the attested Xerox copies of the eligibility documents prescribed for respective work in the NIT.
8. I / We have read carefully & understood the entire Tender document including important instructions to the tenderers submitting the downloaded tender.
9. In case at any stage whatsoever at a later date it is found/ revealed that there is a difference in our downloaded tender documents from the original **Standard DRAFT Tender Document**, NRDA shall have the absolute right to take any action as deemed fit without any prior intimation to me / us.
10. In case at any stage whatsoever at a later date it is found that there is difference in our downloaded tender document from the Standard DRAFT Tender Document, we clearly understand that our work shall be liable to be cancelled and Earnest Money/ Performance Guarantee / Security deposit etc all are liable to be forfeited by NRDA and in such an eventuality I / We shall have no right or claim for any damages / compensation from NRDA on this account. Further in such case I / We may also be debarred by NRDA for further participation in the tendering in the concerned NRDA & be removed from the approved list of contractors of NRDA.

Dated…… **(TENDERER)**
(SIGNATURE WITH SEAL/ STAMP)

Signature of Contractor……..... Signature of NRDA……..……

(vi) CHECK LIST FOR TECHNICAL TENDER EVALUATION

Name of the Agency:

S. No	Document	Details	Enclosed at annexure Page No	
			From	To
1	Tender Document Cost	**Downloaded from NRDA Website Details of DD** Amount: Name of the Bank & Branch: Date: D.D no & Photo copy attached: Yes / No		
2	Earnest Money Deposit (EMD)	Amount: Form of EMD: **DD** Issuing Bank & Branch: No & Date Photo copy attached: Yes / No		
	Contractor Registration Certificate	Class in which registered: Name of Department: Registration Number & Date: Validity: **Notarized: Yes/No**		
4	Commercial Tax Certificate	Registration Number: Name of the Office: **Notarized: Yes/No**		

Signature of Contractor……..... Signature of NRDA……..……

Name of the Agency:

S. No	Document	Details	Enclosed at annexure Page No	
			From	To
5	Average Annual Turnover in Lacs (For the Financial year2008-09,2009-09,2010-11)	2008-2009 | 2009-2010 | 2010-2011 | Charted accountant certificate in original or photo copy duly notorized can be submitted		
6	Details of the projects/works completed as pre-qualification criteria	Name of the Work; Work Completed **Yes/No**; Cost of the Project; Certificate Enclosed **Yes/No**; **Notarized** **Yes/No**; Name of the Work; Work Completed **Yes/No**; Cost of the Project; Certificate Enclosed **Yes/No**; **Notarized** **Yes/No**		

Note: The above check list only provides for those documents which are mandatory for the tender pre-qualification criteria. Tenderers are required to append, other documents also with the technical tender as required in the detailed NIT or elsewhere in the PART ONE (NRDA F-1).

Signature of Tenderer

Date:_____

Signature of Contractor……..... Signature of NRDA……..……

SCHEDULE– D
Section-II
Scope of work

Signature of Contractor……..... Signature of NRDA……..……

Works Requirement

This section contains the brief idea of scope of work, supplementary information drawings etc. regarding the work to be executed under instant tender, may vary as per site requirement. In case of any change the decision of Engineer-in-charge will be final and binding to the contractor.

GENERAL SCOPE OF WORK

1. SCOPE OF WORK

The broad scope for the proposed work shall be :-

(i) Design of Façade lighting of State Secretariat Building at Naya Raipur as per the plan of building. This Building consist of 5 blocks namely Mantralaya, Secretariat, Section and two Ancillary Block. Further building consists of 5 lobbies and courtyard area.

(ii) The front face of building is on west side which contains lobby-3. The proposed façade design shall be such that front face of building shall be majorly focused than other sides of building.

(iii) The basic light system i.e. Bollards and underwater lighting fixtures have already been included in the building contractor`s BoQ.

(iv) The tenderer shall provide control panel. Design of control panel shall be such that its accommodation proposal load and nos. of circuits as well as future expansion, if required.

(v) The operating panel shall install in the shift incharge room in ancillary block.

(vi) The length of cable and other accessories shall be calculated on the above basis.

(vii) Within 15 days of award of work the approved tenderer shall submit the following for approval to NRDA:
   a) The design.
   b) BoQ.
   c) The detailed drawings showing the distribution network.
   d) The consumption pattern for various modes i.e. peak mode and off peak mode.

(viii) Supply, installation, testing and commissioning of various light fixtures as described in the BoQ of light fixtures and as per approved drawing including all accessories, heat resistant flexible cables for final connections and terminations.

(ix) Full technical details, representative samples and lux calculation shall be furnished indicating the construction details and standards applicable.

(x) The period of Operation, Maintenance and defect liability shall be 12 months after 2 months of trial run period after successful commissioning.

(xi) The Contractor will be required to rectify any deficiencies which are attributable to defects in the workmanship or quality of materials, Plant or equipment during the Contract Period and defect liability period.

(xii) The records maintained by the contractors shall be produced periodically to the Engineer-in-charge for proper monitoring as desired by NRDA.

(xiii) During O & M period the tenderer has to keep their staff engaged continuously without any break for Operation, Maintenance and Monitoring of the system.

(xiv) The comprehensive manual shall be submitted before the operation and maintenance period, as specified. It shall be periodically updated to incorporate the “best practices” experience gained while carrying out the O&M activities.

(xv) The manual so prepared must be updated after the end of six month of operation and maintenance, giving effect to the experience gained and the observations made by the Department during the maintenance period.

(xvi) All personnel selected by the NRDA to be responsible for the operation, maintenance and repair of the facilities shall be provided with practical training in all aspects of the operation, maintenance and repair facilities

(xvii) a) The scope of work shall include training of atleast six personals nominated by NRDA, who can takeover the O&M, after the O&M period as per contract is over.

b) The tenderer shall submit separately, details of his proposed training program, the facilities required, and the training personnel to be provided. All costs for the tenderer's personnel and the training facilities required for the training, and any incidental training expenses, shall be included in the bid price. The training shall be carried out atleast 3 months prior to the completion of O&M period and the staff deputed by NRDAshall work hand in hand with the tenderers team during last 3 months of O&M, to help in proper transition of O&M.

(xviii) At the time of handing over after completion of O&M period, all the equipment, including standby equipment, must be in good working order as at the time of commission.

(xix) The tenderer shall have to replace and make good if the material supplied is *having any defect/damage/discrepancy/shortage.*

(xx) The tenderer should provide the facility in conformity with the relevant codes, rules and regulations.

(xxi) The tenderer should ensure that they provides all the documentation including general arrangement drawing wiring diagrams and instructions for installation and operation of the lighting fixtures.

(xxii) The Tender will have to provide their engineer's in pre commissioning checks and tests and commissioning of the lighting fixtures.

(xxiii) The Engineer-in-charge who is responsible for proper functioning of Facade system.

(xxiv) As Build Drawings

(a) The Contractor will supply four hard copies & softcopy of the as built drawings of completed work.

(b) The cost of preparing all such items of work shall be deemed to have been **included in the respective rates/ prices quoted by the Contractor in the "Bill of Quantities."**

(xxv) The price quoted shall include all the activities as mentioned in the scope of work, in addition to contingencies required for the above scope of work.

SCHEDULE– D

Section-III

Technical Specification of Work

The broad design specifications for the works are provided in this section of document, but the general specifications for all works are provided in Notice Inviting tender

(i) TECHNICAL SPECIFICATIONS

INDEX

1. LIGHT FIXTURE AND LAMPS

1.1 Except where they conflict with specific requirement in the specification, the light fixtures and lamps shall comply with the following Indian Standard Specification and its amendment from time to time.

1.	IS 1777 : 1978	Industrial luminaire with metal reflectors
2.	IS 1913 (pt-1) : 1978	General & Safety requirements for luminaries : Part 1, Tubular fluorescent lamps
3.	IS 1944 (pt-6) 1981	Code of parctice for lighting of public thovaughfave : Part 6, Lighting for towns & city centres & areas of civic importance (group E)
4.	IS 2206 (pt-1) : 1984	Flameproof electric lighting fittings : Part 1, Well glass and bulkhead types
5.	IS 2206(pt-2) : 1976	Flameproof electric lightings : Part 2, Fitting using glass tubes
6.	IS 2206(pt-4) : 1987	Flam proof electric lighting fittings : Part 4,Protable flam proof hard lamps
7.	IS 2672 : 1976	Code od partice for linary lighting
8.	IS 3287 : 1965	Industrial lighting fitting with plastic reflectors
9.	IS 3528 : 1966	Waterproof electric lighting fittings
10.	IS 3528 : 1966	Watertight electric lighting fittings
11.	IS 3646 (pt-1)	Code of practice for interior illumination : Part 1, Principal for good lighting & aspects of design
12.	IS 3646 (pt-2) : 1966	Code of pratice for interior illumination : Part 2. Schedule of illumination & glare index
13.	IS 3646 (pt-3) : 1968	Code of pratice for interior illumination of coefficient of utillzation & glare index
14.	IS 4012 : 1967	Dust proof electric lighting fittings
15.	IS 4013 : 1967	Dust tight electric lighting fittings
16.	IS 4347 : 1967	Codeof practric for hospitals lighting
17.	IS 5077 : 1969	Decorative lighting outfits
18.	IS 6665 : 1972	Code of practice for industrial lighting
19.	IS 7569 : 1987	Cast acrylic sheets for use in luminaires.
20.	IS 9583 : 1981	Emergency lighting units
21.	IS 10322 (pt-1) : 1982	Luminaires Part 1, General requirements
22.	IS 10322 (pt-2) : 1982	Luminaires Part 2, Constructional requirements
23.	IS 10322 (pt-3) : 1984	Luminaires Part 3, Screw & screwiess terminations
24.	IS 10322 (pt-4) : 1984	Luminaires Part 4, Method of tests
25.	IS 10322 (pt-5 / sec 1) : 1987	Luminaires Part 5, particular requirements, section 1, General purpose Luminaires
26.	IS 10322 (pt-5 / sec 2) : 1987	Luminaires Part 5, particular requirements, section 2, recessed luminaires.
27.	IS 10322 (pt-5 / sec 4) : 1987	Luminaires Part 5, particular requirements, section 4, Protable general purpose luminaires
28.	IS 10322 (pt-5 /sec-5) : 1987	Luminaires Part 5, particular requirements, section 5, flood lights.

The luminaries & Lamps conforming to any other internationally accepted standard which ensures equal or better quality than the above standard would also be acceptable. Where the material is offered according to the international standards, an English version of the specifications shall be attached with tender.

1.2 GENERAL REQUIREMENTS:-

The design, material and performance shall conform, except where otherwise specified, to the latest issues and amendments of the following codes and standards:

a) CIBSE Lighting Guides

b) Indian Standards.
c) For LED and LED luminaries must confirm test prescribed in IES LM-79 & LM-80.
d) All the tubular fluorescent lamps shall be triphospheric type.
e) All ballast for fluorescent tubes and compact fluorescent lamps shall be electronic type. Not more than two lamps shall be connected to one ballast.
f) Lighting fixture dimensions and fixing arrangements shall suit the locations where they are to be installed.
g) Lighting fixtures shall be resistant to corrosion and suitable for installation in the required ambient conditions.
h) The types of lighting fixtures to be provided for each area / location and their specifications shall be as given in schedule below and as shown on design drawings.

1.3 CONTROL GEARS

a. Electronic ballast shall be high frequency with THD<10%, PF-.99 and EMI and RFI as per international specification.
b. Electromagnetic ballast shall be wound with enamelled copper wire on low loss Silicon Steel (ferromagnetic) Lamination. Hum free operation and better heat dissipation shall be maintained throughout its long life.
c. The coil shall be insulated with F class insulation to withstand temperature rise due to ohmic resistance and magnetic losses up to 150^{o}C to have long life on continuous operation.
d. Maximum permissible temperature and coil temperature rise and insulation class shall be marked on the ballast.
e. Power supplier for LED shall have safety assurance of CE, UL and RoHS with no UV or IR radiation and also comply IES LM-79 tests.
f. All electronic ballasts are APFC type electronic ballast of less than 10% of THD content.

2. TECHNICAL SPECIFICATION FOR POWER CABLES/WIRES

(a) General Requirements

Cables shall be laid under the following conditions.

- In air : Ambient temperature of 45 Degree Celcius
- In ground : Ground temperature of 35 Degree Celcius
- Depth of laying in Ground : 750 mm for LV cables (Single Layer)
- In conduits/pipes : Space factor of not more than 60 % (Ratio of cable area to internal conduit area)
- In trays : Single layer, touching each other

Cables shall be rated for 1100 V and shall conform to the latest edition of IS 694 & IS 1554 for PVC cables and latest edition of IS 7098 for XLPE cables. PVC Cable shall be insulated with extruded PVC type 'A' for PVC cables. The XLPE cables shall be insulated with Cross Linked poly ethylene confirming to latest IS 7098. All the cables are fire retardant low smoke type .The inner sheath and outer sheath shall be of extruded PVC compound type ST-1. Power cable shall be of stranded aluminium conductor of grade H2/H4 as per IS 8130. The core identification shall be by printed numerals.

(b) Applicable standards

The standards and code of practices referred to below shall be the latest editions including all official amendments and revisions.

- PVC insulated Cables : IS: 694
- XLPE Insulated cables : IS 7098

- PVC insulated cables : IS: 1554
- PVC insulation and sheath of electric cables : IS: 5831
- Conductors for insulated electric cables : IS: 8130

(c) Inspection & testing

The cables shall be tested in accordance with the latest edition of IS 694 & IS: 1554 for PVC cables and latest edition of IS 7098 for XLPE cables. The test shall include:

- Test for conductor
- Test for thickness of insulation
- Test for laying up
- Test for thickness of laying up
- Test for thickness of inner sheath
- Test for armouring
- Test for thickness of outer sheath
- And other test as per IS

(d) Construction

- The cables shall be of stranded aluminium conductor, extruded inner and outer XLPE sheath, flat/round galvanized steel armour.
- The wires shall be of stranded copper conductor, extruded inner and outer PVC sheath.
- Cables up to 10 Sq.mm conductor size shall have round steel wire armour. Above 10 Sq.mm size flat steel armour shall be used.
- For 3½ core cables the current carrying capacity of the neutral conductor shall be 50% of that of the main phase conductors.
- The cables shall operate satisfactorily without any damage/deformation in shape and size at site conditions and at a continuous conductor temperature of 90^{o}C.
- The cables shall successfully withstand the rated short circuit current for the duration specified by the manufacture without exceeding conductor temperature of 160^{o}C.
- All cables shall be of 1.1 KV grade.
- Cores shall be identified by different colouring of PVC/XLPE insulation. Following colour scheme shall be adopted.

(a) Single Core : Red, Black, Yellow or Blue
(b) Single Core : Red, and Black
(c) Single Core : Red, Yellow and Blue
(d) Single Cores : Red, Yellow, Blue and Black
(e) Neutral of 3½ Core : Black

(e) Installation

- Contractor's scope of work includes unloading, laying, fixing, jointing, bending and terminating of cables. Contractor shall also supply all the necessary hardware for jointing and terminating of cables. Cables shall be laid directly, buried in earth, on cable

trays and support in conduits and ducts or bare on walls, ceiling etc. as directed by employer's representative.

- All cable work and the allied apparatus shall be designed and arranged to reduce the risk of fire and any floor of walloping suitable bushes shall be supplied. If required by the employer, the bushes shall be sealed using fire resisting materials to prevent fire spreading.
- Standing cable installation tools shall be utilized for cable pulling. Maximum pull tension shall not exceed manufactures recommended value. Cable grips, reels of pulleys used shall be properly lubricated. The lubricant shall not injure the overall covering and shall not set up undesirable conditions of electrostatic stress. Cable pulling shall permit performance of collateral work without obstruction.
- Sharp bending and linking of cables shall be avoided. The bending radius for various types of cables shall be more than those.
- Power and control cables shall be laid in separate cables trays. The order of laying of various cable in trenches and overhead trays shall be as specified below:
- Cables of highest system voltage at the topmost tier with second highest voltage on the second tier from top, third highest on the third tier from top etc. with control instrumentation and other service cables in bottom most cable tier.
- Where cables cross roads and water, oil, gas or sewage pipes the cables shall be laid in reinforced spun concrete pipes of space for future if more than one cable is to be laid through pipe. For road crossing the pipe for the cable shall be buried at not less than one metre depth.
- Some extra length shall be kept in each cable run at a suitable point to enable one or two straight through joints to be made at a later date, if any fault occurs.
- To facilitate visual tracing, cables in trays shall be laid only in single layers where design permits, cables shall be laid in proper sequence so as to avoid unnecessary crossing of other cables upon entering or leaving a run of tray. Cable splice shall to be permitted.
- Cable jointing shall be accordance with relevant Indian Standard Codes of Practice and Manufacturer's special instructions. Materials and tools required for cable jointing work shall be supplied by contractor. Cables shall be firmly clamped on either sides of a straight through joint at not more than 300 mm away from the joints. Identification tags shall be provided at each joint and at all cable terminations. Single core cable joints shall be marked so that phase identifies at each joint can be determined easily. The joints shall be located at most suitable places. When two or more cables are laid together, joints shall be arranged to be staggered by about three metres. Before jointing, insulation resistance of both sections of cables to be jointed shall be checked.
- Contractor shall install and connect the power, control and heater supply cables, for meters. Contractor shall be responsible for correct phasing of the motor power connections and shall interchange connections at the motor terminal box if necessary after each motor is test run.
- Metal sheath and armour of the cable shall be bonded to the earthing system of the station.
- Cable clamps shall be minimum 3 mm thick and 25 mm wide galvanised MS flat spaced at every 1.0 m interval.

(f) Cable Termination

Cable termination shall include the following:

- Making necessary holes in bottom/top plates for fixing cable gland/box.
- Fixing cable gland/box, connecting armour clamp to cable armour.
- Dressing cable, pouring, compound etc. wherever necessary to make termination complete.
- Putting cable lugs, crimping them on to cores of cables, taping bare conductors up to lugs, wherever necessary.
- Termination to equipment terminals.
- Supply and fixing of cable and core identification ferrules.
- Wherever MS plates are not provided for fixing cable tray supports, Contractor shall install approved concrete fasteners and fixing cable tray supports.

(g) Tests

Cables shall be subject to testing as per IS by third party as per Third Party Inspection Condition specified in Sec3 of the bidding document.

3. Earthing

Earthing as per latest IS: 3043 and IE Rules and IEC 60034 and as per bid specifications and requirements.

(i) Specifications for Earthing

The entire earthing of the equipment to be supplied and erected shall be carried out strictly in accordance with the latest IS-3043 / IER/ IEC 60034.

- Earth electrodes for L.T. system: - Main earth electrodes 40 mm dia 2.9 mm thick 3.00 m long GI pipe providing with 12 mm dia through holes, 150 mm intervals staggered along with the main electrode, the main electrode shall be coupled to a 19 mm dia GI pipe of suitable of length at one end through a reducing socket of size 40 mm x 19 mm size. The other end of 19 mm dia GI pipe is required to be provided with a funnel with wire mesh, GI check nuts, GI nut washers etc.
- Earth electrodes for HT System: GI Plate type electrodes shall be of 600 mm x 600 mm x 6.3 mm size. There shall be a 19 mm dia GI pipe of suitable length with a funnel with wire mesh, GI checkouts, GI nut washers etc.
- A suitable pit of 200 mm diameter to be dug all round the main electrode, the pit shall be filled with alternate layer of coal or charcoal and salt in 150 mm thick layers up to the entire length of the main electrode.
- An inspection chamber of size 300 mm x 300 mm x 300 mm size in CC 1:3:6 with 150 mm thick side walls, 100 mm thick at bottom shall be provided. The inspection chamber shall be covered with MS or CI frame and cover. The cover shall be hinged to the frame and provided with padlocking arrangements. Inspection chamber frame and cover shall be finished with anticorrosive primer and numbered.
- Earthing strip of the following sizes shall be provided for the various equipment as per IS 3043/IEC60034/IER:

System	Size mm x mm	Material
Main earthing grid (Below Ground)	50x10	GI strip
Auxiliary earthing grid (above Ground)	50x10	GI strip
Lighting distribution board, auxiliary board etc.	25 x 6	GI strip
Street lighting poles	8 SWG	GI wire
Local push button stations, junction boxes, lighting, fixtures, small motors	12 SWG	GI wire
Transformer neutral earthing electrode	600 x 600 x 3.15	Cu. Plate
Transformer neutral earthing conductor	25 x 6	Cu. strip

- Fault clearing time for sizing earthing conductor shall be as per latest IS / I.E. rules and plant earthing system shall be designed such that overall earthing resistance is less than one ohm. The Bidder shall measure the soil resistivity at site.
- Each transformer body and neutral, 11 KV switchgear, and motor control panel shall be connected to two separate and distinct earth electrodes.
- Each L.T. motors, switchgear and distributions boards and every street light pole shall be connected to earth electrode as per IS 3043.
- Testing of Earthing System: Employer may ask to carry out earth / continuity tests, earth resistance measurements and other tests in presence of him which in his opinion are necessary to prove that the system is in accordance with design, specifications, Indian Code of Practice and Indian Electricity Rules. Contractor shall have to bear the cost of all such tests.

4. TECHNICAL SPECIFICATION FOR LAYING OF UNDERGROUND CABLE

(a) GENERAL

(i) Cables with kinks, straightened kinks or any other apparent defects like defective armouring etc. shall not be laid.

(ii) Cable shall not be bent sharp to a small radius, while handling or laying. The minimum safe bending radius for PVC/XLPE (MV) cables shall be 12 times the overall diameter of the cable.

(iii) If cable is cut, the ends of cable shall be sealed with suitable sealing compound/ tape/ heat shrinkable caps immediately.

(iv) The cables shall be tested for continuity and insulation resistance.

(v) The cables shall be laid direct in ground, pipe, closed or open ducts, cable trays or on surface of wall etc. as specified.

(b) UNCOILING OF CABLE BEFORE LAYING

(i) The cable drum shall be properly mounted on jacks, or on a cable wheel of suitable capacity. The spindle should be horizontal in the bearings to prevent creeping of drum to one side while rotating.

(ii) PVC/XLPE cables less than 120 sqmm size may be removed by “Flaking” i.e. by making one long loop in the reverse direction.

(iii) The cable shall be pulled over on rollers in the trench steadily and uniformly without jerks and strain. The entire cable length shall as far as possible be laid off in one stretch.

(iv) For short runs and sizes upto 50 sqmm of MV cables, any other suitable method of direct handling and laying can be adapted without strain or excess bending of the cables.

(c) LAYING DIRECT IN GROUND

(i) For laying a single cable the minimum width of the trench shall be 35 cm and the depth shall not be less than 75cm. The bottom of the trench shall be level and smooth

(ii) Where more than one cable is to be laid in the same trench in horizontal formation, the width of the trench shall be increased such that the inter-axial spacing between the cables shall be at least 20 cm.

(iii) In case of vertical formation of cable laying, the depth of the trench shall be increase by 30 cm for each additional vertical tier.

(iv) There shall be a clearance of at least 15 cm between axis of the end cables and the sides of the trench.

(v) The trenches shall be excavated in reasonably straight lines. While changing direction of trench, suitable curvature shall be adopted.

(vi) The changes in gradients or in depth shall be gradual.

(vii) While excavating trench, the excavated soil shall be stacked firmly by the side of the trench such that it may not fall back into the trench.

(viii) Adequate precautions should be taken not to damage any existing cable(s), pipes or any other such installations in the route during excavation.

(ix) Wherever bricks, tiles or protective covers or bare cables are encountered, further excavation shall not be carried out without the approval of the Engineer-in-Charge.

(x) Existing property, if any, exposed during trenching shall be temporarily supported adequately as directed by the Engineer-in-Charge. The trenching in such cases shall be done in short lengths and necessary pipes shall be laid for passing cables therein and then the trench shall be refilled.

(xi) Excavation through lawns shall be done in consultation with the Department concerned.

(d) SAND CUSHIONING

(i) The trench shall then be provided with a layer of clean, dry sand cushion of not less than 8 cm in depth, before laying the cables therein.

(ii) Cables laid in trenches in a single their formation shall have a covering of dry sand of not less than 17 cm above the base cushion of sand before the protective cover is laid.

(iii) In the case of vertical multi-tier formation, after the first cable has been laid, a sand cushion of 30 cm shall be provided over the base cushion before the second tier is laid. If additional tiers are formed, each of the subsequent tiers also shall have a sand cushion of 30 cm as stated above. Cables in the top most

tiers shall have final sand covering not less than 17 cm before the protective cover is laid.

(e) LOOPS

(i) At the time of original installation, approximately 3m of surplus cable shall be left on each terminal end of the cable and on each side of the underground joints. The surplus cable shall be left in the form of a loop. Where there are long runs of cables such loose cable may be left at suitable intervals as specified by the Engineer-in-charge.

(ii) Where it may not be practically possible to provide separation between cables when forming loops of a number of cables, measurement shall be made only to the extent of actual volume of excavation, sand filling etc. and paid for accordingly.

(f) PROTECTIVE COVERING

(i) Unless otherwise specified, the cables shall be protected by brick of specified size or 20cmx10cmx10cm or locally available size, placed on top of the sand. The bricks shall be placed breadth-wise for the full length of the cable. Where more than one cable is to be laid in the same trench, one row of bricks shall used for each cable.

(ii) Where bricks are not easily available, or are comparatively costly, there is no objection to use locally available material such as stone tiles or slates or stone/ cement concrete slabs, where such an alternative is acceptable, the same shall be clearly specified in the tender specifications.

(g) BACK FILLING

(i) The cable cores shall be tested for continuity, absence of cross phasing, insulation resistance from conductors to earth /armour and between conductors

(ii) Insulation resistance shall be tested with a 500V meggar for cables of 1.1 KV grade, or with a 2500/ 5000V meggar of cables of higher voltage. Unless the insulation resistance values are satisfactory, the trench shall not be covered or filled.

(iii) The trenches shall be then back-filled with excavated earth, free from stones or other sharp edged debris and shall be rammed and watered, if necessary in successive layers not exceeding 30 cm depth.

(iv) A crown of earth not less than 50 mm and not exceeding 100m in the center and tapering towards the sides of the trench shall be left to allow for subsidence unless otherwise specified. The crown of the earth however, should not exceed 10 cms so as not to be a hazard to vehicular traffic.

(v) The temporary re-statement of roadways should be inspected at regular intervals, particularly during wet weather and settlement should be made good by further filling as may be required.

(vi) Where it is necessary to cut road berms or displace kerb stones, the same shall be repaired and made good, except for turning/ asphalting, to the satisfaction of the Engineer-in-Charge, and all the surplus earth or rock shall be removed to places as specified.

(h) MEASURMENT

(i) Cable laid direct in ground, duct and surface/ cable tray shall be measured in running metre straight along trench (excluding ramble length) in running metre correct to 1 cm.

(ii) Cable laid pipes/ closed duct shall be measured in running metre correct to 1 cm taking actual length of the pipe/ duct for each run of the cable (excluding ramble length), irrespective of the length of cable drawn through it.

(iii) Cable length used in connections shall be measured as item of cable laid in open duct.

(iv) Jointing and route marker shall be counted in number.

5. **TECHNICAL SPECIFICATION FOR LAYING OF WIRE IN SURFACE/CONCEALED PVC CONDUIT**

(A) DEFINITION:

(i) **POINT WIRING:** Point wiring means wiring from switch box to connector or ceiling rose for light/ twin control light/ group control light and from Distribution board to switch box for light plug point/ power plug point.

The wiring system for point wiring shall be looping system. Phase/ live conductors shall be looped in the switch box, neutral wire/ earth wire shall be looped in the switch box for the 1st point and from point outlets for subsequent points. In wiring no joints will be permitted any where, except in switch box or point outlets, where jointing or wires will be allowed with use of suitable connector.

Points are categorized based on length of live conductor as under:

Table 1

S.No	Category	Length
1	Short point	Up to 3 metre
2	Medium point	Beyond 3 metre and up to 6 metre
3	Long point	Beyond 6 metre and up to 10 metre
4	Extra Long point I	Beyond 10 metre and up to 15 metre
5	Extra Long point II	Beyond 15 metre and up to 20 metre
6	Extra Long point III	Beyond 20 metre and up to 25 metre

(i) Submain wiring: Submain wiring means the wiring from one main/ distribution board to another main/ distribution board. Every single-phase sub-main will have one phase, one neutral and one earth continuity conductor. The 3- phase sub-main wiring will have three phase, one neutral and two earth continuity conductors.

(ii) Circuit wiring: Circuit wiring shall mean the wiring from the distribution board to the 1st tapping nearest switch box, from where point wiring starts. Every single-phase circuit will have one phase, one neutral and one earth continuity conductor. The 3- phase circuit will have three phase, one neutral and two earth continuity conductors.

(iii) Earth Conductor: The material of earth conductors shall be the same as of phase conductor.

The size of earth conductor shall be the same size as phase conductor for wiring of conductor size up to 16 sqmm. The size of earth conductor shall be 16 sq.mm for wiring of conductor size above 16 sq.mm and up to 35 sq mm.

The earth pin of socket outlets as well as metallic body of fan regulators shall be connected to the earth conductor. Twisted earth connections shall not be accepted in any case

(B) SCOPE OF WORK

The following shall be deemed to be included in scope of work

(i) **POINT WIRING:** All material i.e. wires, conduit, bend, junction box, saddle/ iron clips/ hooks, screws, rawl plug, connector, switch box, phenolic laminated sheet or modular base & cover plate, control switch or MCB, socket as specified, chase cutting and repairing with mortar etc required for shall be include in the scope of point wiring.

(ii) **Circuit/ Submain wiring:** All material i.e. wires, conduit, bend, junction box, saddle/ iron clips/ hooks, screws, rawl plug, chase cutting and repairing with mortar etc required shall be including in the scope of sub main wiring.

(iii) **Painting:** M.S. Switches boxes shall be painted with 2 coats of black enamel paint over coat of red oxide paint.

(iv) **Building Repair**: All chases in wall shall be filled with 1:4 cement mortar after installation of pipe and finished neat. All floor opening made for carrying any wiring shall be suitably sealed after installation.

(v) **Any other thing required to make the item of work complete.**

(C) MATERIAL: All material shall be of approved make:

(i) **Conduit:** PVC shall be ISI marked, rigid "Medium class" and not less than 2mm thick

(ii) **Conduit accessories:** All PVC conduit accessories shall be grip type.

(iii) **Conduit joints:** All joints shall be sealed/ cemented with approved solvent cement

(iv) **Wires:** wires shall be ISI marked. Following colour coding of wires shall be followed in wiring:

Phase	:	Red/ Yellow/ Blue. (Three phase wiring)
Live	:	Red (Single phase wiring)
Neutral	:	Black
Earth	:	Yellow/ Green.

The conductor resistance of wire/ cable used in wiring should not be more than the maximum specified value given in table below duly corrected with correction factor for the ambient temperate at the time of measurement of resistance.

Table for Maximum permissible resistance of conductor

Nominal Cross Sectional Area	Maximum Resistance of conductor at 20^0C		
	Copper		Aluminium
	Plain	Tinned	
mm^2	ohm/km	ohm/km	ohm/km
0.5	36.0	36.7	-
0.75	24.5	24.8	-
1.0	18.1	18.2	-
1.5	12.1	12.2	18.1
2.5	7.41	7.56	12.1
4	4.61	4.70	7.41
6	3.08	3.11	4.61
10	1.83	1.84	3.08

16	1.15	1.16	1.91
25	0.727	-	1.20
35	0.524	-	0.868
50	0.387	-	0.641
70	0.268	-	0.443
95	0.193	-	0.320
120	0.153	-	0.253
150	0.124	-	0.206
185	-	-	0.164
240	-	-	0.125
300	-	-	0.100

Table for Temperature Correction Factors For Conductor Resistance
To Correct The Measured Resistance At T^0 C To 20^0 C

Temperature of Conductor at Time of measurement t^0C	Temperature Correction Factor k	Temperature of Conductor at Time of measurement t^0C	Temperature Correction Factor k
5	1.064	14	1.025
6	1.059	15	1.020
7	1.055	16	1.016
8	1.050	17	1.012
9	1.046	18	1.008
10	1.042	19	1.004
11	1.037	20	1.000
12	1.033	21	0.996
13	1.029	22	0.992
23	0.988	37	0.936
24	0.984	38	0.933
25	0.980	39	0.929
26	0.977	40	0.926
27	0.973	41	0.923
28	0.969	42	0.919
29	0.965	43	0.916
30	0.962	44	0.912
31	0.958	45	0.909
32	0.954	46	0.906
33	0.951	47	0.903
34	0.947	48	0.899
35	0.943	49	0.896
36	0.940	50	0.893

(v) **Switch box**: Switch box for piano type switches shall be made of MS sheet of thickness not less then 1.2mm for boxes upto 200mm X 300mm size and above this size of thickness 1.6mm for modular switches the switch box shall be galvanized iron and of same make as of modular switches. Every switch box shall have at least one earth terminal.

(vi) **Switch/ socket:** switch, socket, bell push, etc shall be ISI marked:

(vii) **Modular base and cover plate:** Modular base and cover plate shall be of same make as that of switch/ socket**.**

(viii) **Saddle:** Saddle thickness and width shall not be less than 0.55mm and 19mm for conduit upto 25mm and not less than 0.99mm and 25mm respectively for conduit above 25mm dia.

(ix) **Phenolic laminated sheet:** Phenolic laminated sheet shall be ISI marked and of thickness 3mm and shall be fixed on switch box with aluminium alloy/ cadmium plated iron screws**.**

(D) EXECUTION OF WORK

(i) Fixing of conduit pipes:

In chase the conduit pipe shall be fixed by means of staples, J- hooks, or saddles, at not more than 50cm apart. Junction boxes shall be provided at suitable locations.

In RCC, the conduit pipes shall be laid in position and fixed to the steel reinforcement bars firmly by steel binding wires before the concreting is done. Steel fish wire shall be laid in conduit if supplying & drawing of wire is not included in the scope of work. Cost of fish wire shall be paid extra.

(ii) Joint in wiring: No twisted joints in phase, neutral, earth conductors shall be permitted. There shall be no joints in the through-runs of wires. If the length of circuit or submain is more than the length of a standard available coil, and is necessitating a through joint, such joints shall be made by means of mechanical connectors in suitable junction boxes.

(iii) Termination of multithreaded conductors shall be done using suitable crimping type thimbles.

(iv) Capacity of Circuits: Lighting circuit shall feed light/fan/exhaust fan/call bell points. Each circuit shall not have cumulative connected load of point more than 800 Watt.
Power circuit will have only one outlet per circuit in office building and may have two outlets in residential building.

(v) Power wiring shall be kept separate and distinct from light wiring from the level of circuit and onward.

(vi) Essential, non-essential and UPS distribution will have a completely independent from main switchboard upto final wiring for each system.

(vii) Position of switch box: If otherwise not specified the position of switch box shall normally be mounted with their bottom 1.25 metre above from floor level unless otherwise directed by the Engineer-in-charge. Socket out let in kitchen shall be provided 23cm above the working platform and away from the position of stove and sink.

(viii) Maximum number of wire to be drawn in a conduit shall be as per table below.

Nominal cross sectional area of	20 mm		25mm		32 mm		38 mm		51 mm	
	Straight	Bend	Straight	Bend	Straight	Bend	Straight	Bend	Straight	Bend
1.5	5	4	10	8	18	12	-	-	-	-
2.5	5	3	8	6	12	10	-	-	-	-
4	3	2	6	5	10	8	-	-	-	-
6	2	-	5	4	8	7	-	-	-	-
10	2	-	4	3	6	5	8	6	-	-
16	-	-	2	2	3	3	6	5	10	7
25	-	-	-	-	3	2	5	3	8	6
35	-	-	-	-	-	-	3	2	6	5

(E) **TESTING:** Following testing shall be done by the contractor executing the work before energizing the installation

(i) Polarity testing
(ii) Earth continuity
(iii) Insulation testing

SCHEDULE– D

Section-IV

Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

<table>
<tr><td>GCC Clause 2A

Incentive for early completion</td><td>The clause is deleted.</td></tr>
<tr><td>GCC Clause 2B

(New clause added)</td><td>Compensation for failure to achieve the functional guarantees:

In case of failure to deliver the required quality of work, liquidated damages shall be imposed for such failure to meet the performance criteria, as described hereunder. The Employer will be entitled to recover any such damages from the payments to be made to the Contractor or from any other payment due to the contractor.

However, the contractor shall be allowed to take up routine / periodical maintenance as per manual, with prior permission of the Authority.

a) For each breakdown of any unit of Façade system for more than 1 day during operation period: Rs. 200.00 each time

b) For complete break down / non operation of Façade system for One day : Rs. 2,000. If break down exceeds more than one day the compensation penalty shall be levy for each day.

c) Non redressel of any complaint within 24 hours : Rs. 5 00.00 for each such complaint.

d) Compensation for absence of Supervisory / Operating staff shall be as follows:

<table>
<tr><th>Sl. No.</th><th>Staff Category</th><th>No. of Staffs</th><th>Compensation for abscence</th></tr>
<tr><td>1</td><td>Electrician</td><td>1</td><td>Rs. 700.00 per day</td></tr>
<tr><td>2</td><td>Helper</td><td>2</td><td>Rs. 500.00 per day per person</td></tr>
<tr><td colspan="4">Note: However contractor can depute substitute staff with permission of the Authority in case leave of any staff member. In such case this Compensation shall not be levied.</td></tr>
</table>
</td></tr>
<tr><td>GCC Clause 7</td><td>Payment

The Contractor, at the time of bidding, will be responsible to ensure the completeness and adequacy of his Bid Price to fulfill the entire responsibilities as described above

During Design to commissioning Phase

The tenderer shall quote a comprehensive price(Lump sum Amount) for the complete scope of work for design to Operation & Maintenance for period of one year which shall further be sub divided in 6 installments for working out intermediate payment:</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><th>Sr no</th><th>Description of work</th><th>Percentage of intermediate Payment wrt quoted rates</th><th>Cumulative Percentage</th></tr>
<tr><td>1</td><td>Planning, designing and approval of entire Façade system</td><td>5%</td><td>5%</td></tr>
<tr><td>2</td><td>Supply of equipments and lighting fixtures and lamps etc.</td><td>50%</td><td>55%</td></tr>
<tr><td>3</td><td>Installation of equipments and lighting fixtures and lamps etc.</td><td>10%</td><td>65%</td></tr>
<tr><td>4</td><td>Testing and satisfactory run of equipments and lighting fixtures and lamps etc.for 3 hrs continuously for 3 days</td><td>15%</td><td>80%</td></tr>
<tr><td>5</td><td>Commissioning of equipments and lighting fixtures and lamps etc.</td><td>10%</td><td>90%</td></tr>
<tr><td>6</td><td>Operation & Maintenance</td><td>10%</td><td>100%</td></tr>
</table>
During O& M Period
The Installment against O&M work as per Sr. No. 6 above shall be paid quarterly basis as per following schedule:
During first Quarter of O & M period : 20% of O&M charges.(2% of the amount quoted)
During second Quarter of O & M period : 20% of O&M charges. .(2% of the amount quoted)
During third Quarter of O & M period : 30% of of O&M charges. .(3% of the amount quoted)
During fourth Quarte r of O & M period : 30% of of O&M charges. .(3% of the amount quoted)
</td></tr>
<tr><td>GCC clause 10B(ii)</td><td>The clause is deleted.</td></tr>
<tr><td>GCC clause 10CA - Escalation</td><td>The clause is deleted.</td></tr>
</table>

SCHEDULE– D
Section-V
List of approved makes

"NRDA" APPROVED MAKE LIST FOR ELECTRICAL WORK

S. No.	MATERIAL		MAKE
1	L.T. Panels	:	Schneider/ L & T/ Siemens/ ABB/C&S
2	MCCB	:	L & T/ Schneider/ Siemens/ Legrand / ABB/C&S
3	Connectors	:	Elmex/ Connect well/ Raychem/ Andrew Yule
4	MCB	:	L & T/ ABB/ GE/ Schneider/ Legrand/ Andrew Yule/C&S
5	Capacitors	:	Epcos/ PUCAT/ Areva/ Unistar
6	Wires	:	Finolex/ Polycab/ RR Cables/ Gloster/Havells
7	HRC	:	L & T/ Schneider/ Standard/ ABB/C&S
8	Power Switch (upto 32A)	:	L & T/ C&S/ Schneider/ Siemens/ ABB
9	Cable Jointing kit:		Densons/Raychem/3M
10	Lighting Fixture	:	Philips/ WIPRO/ BAJAJ/ GE/SCHREDER
11	Lamps		Osram / Philips / GE
12	LED		Osram// Philips/Cree
14	APFC type electronic ballast		Intellux / Atco / Vossloh / Philips / Wipro/GE
15	LT Cable	:	Finolex/ Universal/ Polycab/ Prime-cab/ Gloster/ CCI
16	PVC Pipe		Sarswati ABS, PolyCab, Finolex, Precision

Note:- Wherever makes have not been specified for certain items conform to **IS**, the same shall be as per BIS and as per approval of NRDA.

Signature of Contractor……..... Signature of NRDA……..……

SCHEDULE– D

Section – VI

Drawings

Approved hard/Soft copy of the standard drawings is available in the office of the employer and could be seen on any working day during office hours at the following address:-

Chief Engineer, NRDA
2nd floor, Guru Govind Sarang Complex, New Rajendra Nagar,
Raipur-492002, Phone: 0771-4094035.

SCHEDULE– E

Reference to General Conditions of contract.

SCHEDULE-E

Reference to General Conditions of contract.

Name of Work : "Design, supply , installation, Testing & commissioning of Facade lighting system for State Secretariat Buildings at Naya Raipur".

Estimated cost of work		: Rs 90 **Lacs**
(i)	Earnest Money	: Rs. **0.90 Lacs**
(ii)	Performance Guarantee	: 5% of tendered value
(iii)	Security Deposit	: 5% of tendered value

Signature of Contractor……..... Signature of NRDA……..……

SCHEDULE– F

General Rules & Directions

SCHEDULE-F

GENERAL RULES & DIRECTIONS : Officer inviting tender

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3:	See below

Definitions:

2(v)	Engineer-in-Charge	**Any Officer Appointed by CEO, NRDA**
2(viii)	Accepting Authority	**Chief Executive Officer, NRDA**
2(x)	Percentage on cost of materials and Labour to cover all overheads and profits:	15 %
2(xi)	Standard Schedule of Rates	_____
2(xii)	Department	Naya Raipur Development Authority

Clause 1

(i)	Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	**7 days**
(ii)	Maximum allowable extension beyond the period provided in (i) above	**7 days**

Clause 2

Authority for fixing compensation under clause 2	**CEO, NRDA**

Clause 2A

Whether Clause 2A shall be applicable	**No**

Signature of Contractor……..... Signature of NRDA……..……

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start — **15 days**

Mile stone(s) as per table given below:-

To be submitted by the tendered on award of work

Sl. No.	Description of Milestone (Physical)	Time allowed in days(from date of start)	Amount to be with-held in case of non achievement of mile stone
1.		**NA**	
2.		**NA**	
3.		**NA**	
4.		**NA**	
5.		**NA**	

Time allowed for execution of work — **4 months including Rainy Season**

Authority to decide:

(i) Extension of time **CEO, NRDA** (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)

(ii) Rescheduling of mile stones **Chief Engineer (Engineering)**

Clause 6, 6A

Clause applicable - (6 or 6A) — **6A**

Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment — **Rs15 Lakhs**

Signature of Contractor……..... Signature of NRDA……..……

Clause 10A **All the materials as per contract.**

1. …… 2. …… 3. ……

4. …… 5. …… 6. ……

Clause 10B(ii)

Whether Clause 10B (ii) shall be applicable **No**

Clause 10C

Component of labour expressed as percent of value of work **Not Applicable**

Clause 10CA **Not Applicable**

Clause 11 Not Applicable

Specifications to be followed for execution of work **Tender specification attached with Tender document, CPWD, MOSRTH, CPHEEO, relevant IS Specifications and IES LM-79 & LM-80.**

Clause 12 Not Applicable

Clause 16

Competent Authority for deciding reduced rates. **Chief Engineer (Engineering), NRDA**

Clause 18 Not Applicable

Clause 36 (i)

Requirement of Technical Representative(s) and recovery Rate

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1.	Graduate Engineer	Electrical	Project Manager	10	1	2000/day	Two thousand per day
2.	Diploma Engineer	Electrical	Site Engineer	5	1	1000/day	One thousand per day

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

Signature of Contractor……..... Signature of NRDA……..……

Comprehensive price(Lump sum Amount) for the complete scope of work for design to Operation & Maintenance for period of one year			
Sl. No.	**Description of Items**	**Amount in INR**	**Amount in Words**
A	**Design, Supply, Installation ,Testing, Commissioning and Operation & Maintenance of Facade lighting system as per Design submitted in Tender Document**		
	TOTAL AMOUNT		

BILL OF QUANTITY

Sl. No.	Description of Items	Unit	Quantity	Lumsum Amount in INR	Amount in INR
				In Words	In Figure
A	**Supply, Installation ,Testing, commissioning and Operation & Maintenance of following items as per Design submitted in Tender Document**				
1	**Luminaries (of various specification)**				
a					
b					
c					
2	**Cables & Wires(of various sizes & specification)**				
a					
b					
c					
3	Accessories				
a					
b					
c					
	Total				