**Bid Identification No. UCE- 02/2008-09**

# UNIVERSITY COLLEGE OF ENGINEERING

**BURLA, SAMBALPUR**

## COVER – I

BID DOCUMENT

FOR

## COMPOSITE TENDER

NAME OF THE WORK : - "**CONSTRUCTION OF 100 SEATED SC LADIES HOSTEL OF U.C.E. AT BURLA(Civil, E.I. & P.H. Works)"**

## ESTIMATED COST: - Rs. 1,98,72,122.00

**OFFICE OF THE PRINCIPAL**

**UNIVERSITY COLLEGE OF ENGINEERING**

**BURLA, SAMBALPUR**

# INDEX

**OFFICE OF THE PRINCIPAL**

**UNIVERSITY COLLEGE OF ENGINEERING**

**BURLA, SAMBALPUR**

**INVITATION FOR BIDS**

**No. UCE/MAINT/ 5278 Dt. 30/12/2008 Bid Identification No. UCE/02/2008-09**

1. The Principal, UCE, Burla invites sealed **Percentage Rate** bids in double cover system for the work as detailed in the table below, from eligible **Special Class/ 'A' Class** contractors registered with the State Government and contractors of equivalent Grade / Class registered with Central Government / M.E.S. / Railways or other Licensing Authorities for execution of Civil, P.H. and E.I. works on production of definite proof from the appropriate authority.

| *Sl No* | Name of the work | Approx Value of work(Rs.) | Place of Sale & receipt | Security (Rs) | Cost of Document (Rs) | Class of Contractor | Period of completion | Special Condition |
|---|---|---|---|---|---|---|---|---|
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| 1 | Construction of 100-seated SC ladies hostel of U.C.E. at Burla | 1,98,72,122/- | Sale:Cash Counter Receipt:PA section | 1,98,700/- | 10,400/- Non-refunda-ble in crossed DD | Special Class/ "A" Class | 11 Months | Experience in building work of minimum value **Rs 25.00** lakhs executed within last 5 (five) years successfully. |

2. Bid documents consisting of plans, specifications, the Schedule of Quantities and the set of terms and conditions of contract and other necessary documents can be seen in the office of the Maintenance Engineer, UCE, Burla during office hours on working days except Sundays and College Holidays till last date & hour of sale and receipt of tender papers. Interested bidders may obtain further information at the above address.
3. Bids must be accompanied with bid security of Rs1,98,700/- of any scheduled commercial/Nationalized Bank in the shape of fixed deposit pledged in favour of the Principal, UCE, Burla**.**
4. The sale and receipt of the Bid documents shall start from **4.00PM** of **02.01.2009** and close on **19.01.2009** at **4.00PM**.
5. Bids must be delivered in the tender box having identification No. **UCE/02/2008-09** available in the PA section of the College.
6. The Bid documents can be downloaded from official Website of University College of Engineering, Burla **(http://www.uceburla.ac.in)** or Website of Government of Orissa (http://www.orissa.gov.in) or may be purchased from the Cash Counter of UCE, Burla against a non-refundable fee of **Rs.10,400/- (Rupees Ten thousand Four hundred)** only towards cost of bid documents including VAT @ 4% in shape of crossed demand draft issued from any scheduled bank in favour of **Principal, University College of Engineering, Burla,** payable **at SBI, Burla**. The Demand Draft must be prepared on or before the last date of receipt and be accompanied with the Bid documents downloaded.
7. Bid documents requested by mail will be despatched by registered post / speed post on payment of an extra amount of Rs.500.00 in addition to the cost of Bid documents. The **Principal, UCE, Burla** will not be held responsible for any postal delay if any, in the delivery of the document or non-receipt of the same.
8. The Technical Bids (Cover-I) will be opened on **20.01.2009** at **11.30 AM** in the office of the undersigned in the presence of the bidders or their authorised representatives who wish to attend. If the office happens to be closed on the date of receipt / opening of the bids as specified, then the bids will be received / opened on the next working day at the same time and venue unless otherwise notified.
9. The undersigned reserves the right to accept or reject any or all the tenders without assigning any reason thereof..
10. Other details can be seen in the bidding documents.

Sd/-

**Principal, UCE, Burla**

Memo No.UCE/MAINT/**5279 / Dt. 30/12/2008**

Copy to M/s Interads Ad. Pvt. Ltd. with a request to get it published in THE DHARITRI, THE SAMAJA & THE TIMES OF INDIA on or before **02.01.2009** for wide circulation of the tender call notice. Copy of the News Papers containing the tender call notice along with the bills may be sent to this office for reference and payment.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/**5280 (02)/ Dt. 30/12/2008**

Copy forwarded to the Head State Portal Group I.T. Centre, Department of Information & Technology, North Annexe of the State Secretariat (Ground floor) Bhubaneswar-01/ Dean, Planning and Co-ordination, UCE, Burla with a request to display the Tender Call Notice and Tender documents in their respective Web-sites i.e. Government of Orissa/ UCE, Burla till **4.00PM** of **19/01/2009 free of cost.** The CD containing the above tender call notice (TCN) and Tender documents are enclosed herewith for the purpose.
Encl.: CD – 1 No.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/**5281 (04) / Dt. 30/12/2008**

Copy submitted to the Engineer-in-Chief cum Secretary to Government of Orissa, Works Department / Commissioner – cum-secretary to Government of Orissa, ST & SC Development Department/Secretary to Government of Orissa, Industries Department/ Hon'ble Vice Chancellor, BPUT, Bhubaneswar for favour of information.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/**5282 (02)/ Dt. 30/12/2008**

Copy submitted to the Engineer-in-Chief (Civil), Orissa, Nirman Soudha, Bhubaneswar & E.I.C., Water Resources, Bhubaneswar for favour of information and wide circulation.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/ **5283 (09)/ Dt. 30/12/2008**

Copy submitted to the F.A.-cum-Joint Secretary to Govt. in Works Department, Orissa / Chief Engineer,(R.D.Q.&P.) / Chief Engineer, Rural Works-I/II / Chief Engineer, N.H. / Chief Engineer, P.H. (Urban), Orissa, Bhubaneswar / Chief Engineer , Hirakud Dam Project, Burla/ G.M.(Civil), MCL, Burla/ M.D., M/s. O.B.&C.C. Limited, Bhubaneswar / M.D., O.C.C Limited, Bhubaneswar for favour of information and wide circulation.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/ **5284 (09) / Dt. 30/12/2008**

Copy forwarded to the Collector, Sambalpur / A.D.M. Sambalpur / Superintending Engineer, Northern (R&B) Circle, Sambalpur / Superintending Engineer , Hirakud Dam Circle, Burla/ Executive Engineer, Sambalpur (R&B) Division, Sambalpur/Executive Engineer, Bargarh (R&B) Division/ Registrar, Sambalpur University, Jyoti Vihar, Burla/Superintendent, VSS Medical College, Burla/Chairman, NAC, Burla for information and wide exhibition / publication of the tender call notice.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/ **5285 (02) / Dt. 30/12/2008**

Copy forwarded to the Superintendent of Police, Sambalpur & IIC, Burla Police Station with request to deploy adequate Police Personnel in the O/o the **Principal, UCE, Burla** , both on **19/01/2009** at **3.30PM** and **20/01/2009** at **11.00** AM to avoid any chance of hostile law and order situation in the office premises.

Sd/-
**Principal, UCE, Burla**

Memo No.UCE/MAINT/ **5286 (07) / Dt. 30/12/2008**

Copy forwarded to PA to Principal/ Chairman, Construction Committee/ Chairman, Electrical Maintenance/Administrative Officer/Accounts Officer In-Charge/ Maintenance Engineer I/C for information and necessary action. Copy to College Notice Board for display..

Sd/-
**Principal, UCE, Burla**

# DETAILED TENDER CALL NOTICE

1. Sealed percentage rate bids are invited **in double cover system** from eligible **Special Class /'A' Class** contractors registered with the State Government and contractors of equivalent Grade / class registered with Central Government / MES / Railways having registration for Civil, Electrical and P.H. works for execution of Civil / E.I. / P.H. works on production of definite proof from the appropriate authority in prescribed form to be eventually drawn in P.W.D. FORM P-1 for the work **"Construction of 100 seated SC Ladies Hostel of U.C.E., Burla (Civil, E.I. & P.H. Works)"** at an estimated cost of **Rs.1,98,72,122.00 (Rupees one Crore Ninety Eight Lakhs Seventy Two Thousand One Hundred Twenty Two)** only.

(a) Tenderers with sound financial background capable of investing required amount for advance procurement of all materials required for the work need apply. University College of Engineering(UCE), Burla(herein after and in the conditions of contract will be called 'College') shall not supply any material for the work. However, the College may consider to give advance up to Rs.15.00 Lakhs against Bank Guarantee for the work, which will be fully adjusted in the subsequent Running Account Bill.

(b) This detailed tender call notice along with the clauses mentioned herein shall form a part of the contract and agreement.

2. The sale and receipt of the bid document shall start from **4.00PM** of **02.01.2009** & close on **19/01/2009** at **4.00PM** during the office Hour. Bids will be sold and received in the cash counter and PA section of the College respectively.

3. The tender will be opened in the office of the Principal, UCE, Burla at **11.30 AM** on dated **20/01/2009** in the presence of the bidders or their authorised representatives who wish to attend. The Cover-I will be opened first. After verification of the documents contained in Cover-I, if found okay then the Cover-II containing price bid will be opened. The date, time and place of opening the price bid will be intimated to the eligible qualified bidders.

4. The Bid documents can be downloaded from official Website of Government of Orissa(http://www.orissa.gov.in) or website of UCE, Burla (**http://www.uceburla.ac.in**) or may be purchased from the Cash Counter of UCE, Burla against a non refundable fee of **Rs.10,400/- (Rupees Ten thousand Four hundred)** only towards cost of bid documents including VAT @ 4% in shape of crossed demand draft issued from any scheduled bank in favour of **Principal, University College of Engineering, Burla,** payable **at SBI, Burla.**

5. The **Principal, UCE, BURLA** will not be responsible if any portion of the bid document is modified and in all cases the conditions stipulated in the original document kept in the Office of the undersigned shall prevail.

6. Bidding documents requested by mail will be despatched by registered/speed post on payment of an extra amount of Rs.500.00 (Rupees Five hundred) only in addition to the cost of documents. The authority will not be held responsible for the postal delay if any, in the delivery of the documents or non-receipt of the same.

7. If the tender documents sent through registered / speed post do not reach in the concerned office by the above date and time, the offer will not be considered on any account even if the tender documents were despatched by the tenderer before the due date.

8. The tender is to be submitted in two covers. Cover-I is to contain EMD, DTCN duly filled in and signed by the contractor, attested copy of registration certificate, PAN card, valid VAT clearance certificate, the demand draft towards cost of bid in case the tender is downloaded or the original money receipt as evidence as to purchase of the bid documents and documents required as per relevant clauses of the DTCN. The cover is to be sealed and super scribed as **Cover-I** for the work **"Construction of 100 seated SC Ladies Hostel of UCE at Burla (Civil, E.I. & P.H. Works)". Cover-II** is to contain the price bid duly filled in and signed by the tenderer and to be super scribed as cover-

II for the work **"Construction of 100 seated SC Ladies Hostel of UCE at Burla (Civil, E.I. & P.H. Works)", f**ailing which the BID will be treated as non-responsive and liable for rejection. Both the covers are then to be kept inside a third cover duly sealed and super scribed with the name of the work **"Construction of 100 seated SC Ladies Hostel of UCE at Burla (Civil, E.I. & P.H. Works)".** In order to ensure that the envelopes are properly sealed, the contractor can seal them with superglue and add tamperproof tapes as additional precaution. The tenderers are not required to write their name on the outer cover containing the bid documents. They are only required to write the name of the work and authority who had issued the tenders. The tender submitted in the wrong box shall not be taken in to consideration.

9. All tender documents in sealed cover super scribed with name of work and shall be put inside the tender box bearing Identification No. **UCE/02/2008-09** placed at the PA Section of the college within the prescribed time. Any tender given by hand to any body will not be accepted for opening and shall not be considered.

10. The companies or individuals registered with State Government and contractors of equivalent Grade / class registered with Central Government / MES / Railways having registration for Civil, Electrical and P.H. works having both legal competency and expertise in Civil, Public Health and Electrical Engineering works need put tenders for this composite work and the documentary evidence under appropriate Act in support of their legal competency and expertise to execute Civil, Electrical and P.H. work invariably should accompany their tender papers. The Civil Contractor in order to take part in the composite tender should enter into a joint venture agreement with eligible Registered P.H. & Electrical Contractors (Associate with the joint venture) and a copy of such agreement for the work after due registration should be attached with the Tender in original and this shall also form a part of the tender. If the Civil Contractor is having registration in P.H. and Electrical works under the same name and style, the question of joint venture does not arise. The tender papers shall bear signature of authorised person of the tenderer, the letter of authorization should accompany tender papers. The authorization should clearly indicate the name of legal person to sign and enter in to agreement and receiving payment and will be responsible for all contractual obligations for execution of work for Civil, S/I and W.S and Electrical Items of work to the Principal, UCE, Burla.

11. (i) The contract will be drawn in P.W.D. P-1contract form and will constitute 3 parts as follows.

    a. Part – I : For Civil items of works

    b. Part – II : For P.H. items of works

    c. Part – III : For Electrical items of work

    The contract shall be drawn & signed by Principal, UCE, Burla. (ii) The **Chairman, Construction Committee (herein after & in the conditions of contract will be called 'CCC,)** for this work will approve the quality & quantity of the Civil items of works as per Part-I of Schedule of quantities, P.H. items of works as per part-II of Schedules of quantities and Electrical items of works (both internal & external) as per Part-III of the Schedule of quantities of the Agreement. In the interest of expeditious execution of work, payment of interim bills (Running A/c bills) shall be made by the College after due approval of the CCC..

12. No tender documents will be sold to the intending tenderer beyond the date and time of sale mentioned in the tender notice.

13. No tenderers will be permitted to furnish their tender in their own manuscript papers. No letter should accompany the tender.

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 **Eleven (11)** calendar months from the date of issue of work order. Tenderer whose tender is accepted must submit a programme of work including E.I. & P.H. work (both internal and external) immediately

after issue of work order for approval of the CCC.

16. All tenders received will remain valid for a period of 90 days from the last date prescribed for receipt of tenders and validity of tenders can also be extended if agreed by the tenderers and the College.

17. Instruction for quoting percentage rate below/ above the estimated cost Amendment to para – 3.5.5 of O.P.W.D. Code Volume – 1.

**3.5.5 (V) Percentage Rate Contract:**

In Percentage rate contracts, the schedule of quantities shall mention estimated rate of such item and amount thereto. The contractor has to mention percentage excess or less over the estimated cost of the project in figures as well as words in the prescribed format appended to the tender documents.

The adopted format for percentage rate is same as that of the form adopted for item rate tenders but the work **"item rate"** shall be replaced by **"percentage rate"** and the contract form may be named as p-1. In this form, time is the essence. The Contract is required to maintain a certain rate of progress specified in the contract. The contract can also be terminated with penalty when the progress of work is not as per the conditions of contract.

**In case of percentage rate tenders, only percentage quoted shall be considered. Percentage quoted by the Contractor shall be accurately filled in figures and words, so that there is no discrepancy. 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. If any discrepancy is found in the percentage quoted in percentage excess / less and total rate quoted by the Contractor then percentage will taken as correct. The percentage quoted in the tender without mentioning excess or less and not supported with the corresponding amount will be treated as excess. The contractor will write percentage excess or less up to one decimal point only. If he writes the percentage excess or less up to two or more decimal points, the first decimal point shall only be considered without rounding off. Where the Contractor has omitted to quote the rates either in figures and words, the officer opening the tender should record the omission.**

**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.**

18. Every page of the D.T.C.N. and tender paper should be signed by the tenderer, failing which the tender will be rejected.

19. 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 Orissa, 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.

20. 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 **CCC** as and when required.

21. By admission of a tender for the work, a tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the work, about the quality and availability of the required quantity of material including the wheat/ rice referred to above, medical aid, labour and food stuff etc., and that rates quoted by him in the tender will be adequate to complete the work according to the specifications attached there to and that he had taken in to account all conditions and difficulties that may be encountered during its progress and to have quoted rates including labour and

materials with taxes, octroi, other duties, lead, lifts, loading and unloading, freight for all materials and all other charges necessary for the completion of the work, to the entire satisfaction of the **Chairman, Construction Committee** and his authorised subordinates. After acceptance of the contract rate College 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.

22. The bid must be accompanied by security of the amount @ 1% (One percent) of the estimated cost put to tender of **Rs.1,98,72,122.00** rounded to nearest hundred rupees i.e. **Rs.1,98,700.00 (Rupees One Lakh Ninety Eight Thousand Seven Hundred)** only along with tender in shape of fixed deposit receipt of any scheduled / Nationalized bank duly pledged in favour of the **Principal, UCE, Burla** and in no other form. Tenders not accompanied with E.M.D. as specified above will not be considered.

23. The tender should be accompanied with the attested true copies of the valid Registration certificate, valid VAT clearance certificate and PAN card which are mandatory and the original certificates are to be produced **within three (3) days** of opening of Cover-I of the tender before **Principal, UCE, Burla** for verification, other wise his/her bid shall be declared as non-responsive and thus liable for rejection.

24. 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.

25. Letters found in the tender box raising or lowering the rates or dealing with any point in connection with the tender and regarding adjustment of E.M.D. or any other matter will not be considered.

26. The **Principal, UCE, Burla** reserves the right of authority to reject any or all tenders received without assigning any reason whatsoever.

27. The earnest money will be retained in the case of successful tenderers and will be dealt with as per terms and condition of the College. The earnest money will be refunded to the unsuccessful tenderers on application after intimation is sent to them about rejection of their tenders. The retention of E.M.D. with the College will carry no interest.

28. The **Principal, UCE, Burla** will notify the bidder / tenderer whose bid has been accepted for 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 **Principal, UCE, Burla** 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 the shape of fixed deposit receipt pledged in favour of the **Principal, UCE, Burla** 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 NoP-1 (Schedule XLV No. 61) for the fulfillment of the contract in the office of the **Principal, UCE, Burla** as directed. The security deposit together with the earnest money and the amount withheld according to the provision of P-1 agreement shall be retained as security for the due fulfillment of this contract and additional performance security in accordance with the provisions of the agreement. The agreement will incorporate all agreements between the **Principal, UCE, Burla** 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 **Principal, UCE, Burla**. 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 into 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 six 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, dtd.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.

29. The contractor should be liable to fully indemnify the **Principal, UCE, Burla** 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.

30. Tenderers are required to liable by fair wages clause as introduced by Govt. of Orissa, Works Department letter No.VII (R&B) 5225, dt.26-2-55 and No.II, M-56/61-28842 (5), dt.27-9-61.

31. The contractor shall bear cost of various incidentals, sundries and contingencies necessitated by work in full within the following or similar category.

a) Rent royalties, cess and other charges of materials, Octroi and all other taxes including prevailing sale tax / VAT 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 **Principal, UCE, Burla** for 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.

32. 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.

33. 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 this should be inclusive in the rates. No extra payment will be made to the Contractor in this account.

34. Any item of works, for which no rate is specified in this contract shall be carried out at the rates entered in sanctioned schedule of rates of the PWD (R&B) Sub-Divn. Burla, during the period when the work is being carried on.

35. The tenderers shall have to abide by the rules introduced by the Govt. of India, Ministry of Works and Housing & Supply in their standing order no.44150, dtd.25-11-57.

36. No part of the contract shall be sublet without written permission from the **Chairman, Construction Committee** or transfer be made by the power of attorney authorising others to receive payment on contractors behalf.

37. 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 office of the Maintenance Engineer during office hours everyday expect on Sundays and College 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.

38. **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 University College of Engineering, Burla or Assistant/Under Secretary & above in the Industries 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.

39. All items of work as per schedule of quantities of this tender should confirm to Orissa 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.

40. Shuttering & centering 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.

41. Form work including complete false work shall be designed by the Contractor without any extra cost and the College will have the right to inspect the scaffolding, centering and shuttering made for the work and can reject partly of fully such structures, if found defective in their opinion. Any eventualty such as loss of lives or properly due to failure of centering and shuttering shall be the responsibility of the Contractor regarding compensation of all claims thereof.

42. Cement Concrete should be machine mixed by weight by means of concrete mixture/batching plant confirming to relevant grade and approved by the Engineer-in-charge for all types of concrete works. The Contractor should arrange his own batching plant concrete mixer appropriate vibrators, pumps, etc. for this purpose at his own cost.

43. Cement shall be used by bags and weight of one bag of Cement should be 50 (fifty) Kg. net & the CCC or his representative shall have the right to test the weight & quality from time to time.

44. 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 College. The College 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.

45. 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 into consideration before tendering and no consideration for extra time or compensation thereof shall be considered.

46. 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.

47. The contractor shall properly co-ordinate with the execution of P.H. and Electrical works and shall take care of the safety of workers.

48. No claim whatsoever will be entertained for supply of machineries.

49. The tenderers should furnish along with their tender a list of works executed during the last three 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-H**.

50. An applicant 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 the 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 including bank guarantee. An **affidavit** to this effect is to be furnished in **Schedule-F. Non-furnishing** of the information in **Schedule - E** and required affidavit in **Schedule – F**, the bid document will be **summarily rejected.**

51. **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 CCC.

b) Concrete test specimens 150mm × 150mm × 150mm in size (whether plain or reinforced concrete) for the testing shall be taken for each structural member by a representative of the contractor in the presence of the Chairman, Construction Committee or his authorised representative. The contractor shall bear the cost so involved in testing. The tests on cube specimens should be carried out in the Laboratory of Civil Engineering Deptt of UCE, Burla. 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) All the samples of materials and steel rod specimens will be tested in the Laboratory of Civil Engineering Deptt of UCE, Burla. Cost of testing of all specimens and samples will be borne by the Contractor.

52. 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.

53. The contractor shall employ one or more Engineering Graduate or Diploma holders as apprentice at his cost. 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 of Orissa. The number of apprentices to be employed should be fixed by the Principal, UCE, Burla in the manner so that the total expenditure does not exceed one percent of the tendered cost of the work.

54. List of tool & plants in running condition in possession of contractor is to be furnished in a separate sheet of **schedule-C**.

55. It is the responsibility of the contractor to procure and store explosive required for blasting operation. College may render necessary possible help for procuring license.

56. 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 Food 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 Chairman, Construction Committee and his authorised subordinates. After acceptance of the contract rates the Principal, UCE, Burla 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 College properties 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.

57. The prevailing percentage of I.T., as per the latest circular of the I.T. Department, of the gross amount of the bill towards income tax will be deducted from the contractor's bill.

58. Prevailing rate of VAT on the gross amount of the bill will be deducted from the contractor's bill.

59. It must be clearly understood that under no circumstances any interest is chargeable for the dues or additional dues if any payable for the work executed and final bill pending disposal due to any reason whatsoever.

60. No extra payment will be made for removing, spreading and consolidating salvaged metals and materials.

61. Under section 12 of contractors labour (Regulation and Abolition) Act. 1970 the contractor who undertakes execution of work through labour should produce valid license from licensing authorities of labour Department.

62. **Additional Performance Security:**

(i) **Additional Performance Security** shall be deposited by the successful bidder when the bid amount is seriously unbalanced i.e. less than the estimated cost by more than 10%. In such an event , the successful bidder will deposit the additional performance security to the extent of the differential cost of the bid amount &90% of the estimated cost .(Additional Performance Security = 90% of the Estimated Cost – Bid Amount).

(ii) The additional performance security as per clause 62 (i) shall be furnished by the bidder before execution of the agreement in the form of NSC / KVP / POTD pledged in favour of Principal, UCE, Burla or in shape of Fixed Deposit Receipt at any scheduled bank or in any other form as per the decision of the Principal, which will be over and above the performance security.

63. **Sample of all material -** The contractor shall supply sample of all materials fully before procurement for the work for testing and acceptance as may be requiring by the Chairman, Construction Committee.

64. Special class contractor shall employ under him one graduate Engineer and two Diploma Holders belonging to the state of Orissa. Like wise 'A' class contractor shall employ under him one Graduate Engineer or two Diploma Holders belonging to state of Orissa. The contractor shall pay to the Engineering personnel monthly emoluments, which shall not be less than the emoluments of the personnel of equivalent qualification employed under the State Govt. of Orissa. The Engineer-in Chief (Civil), Orissa may however assist the contractor with names of such unemployed Graduate engineers and Diploma Holders if such help is sought for by the contractor. The names of such Engineering personnel appointed by the Contractors should be intimated to the

Principal, UCE, Burla along with the tender as to who would be supervising the work. Each bill of the Special Class or 'A' Class Contractor shall be accompanied by an employment Roll of the Engineering personnel together with a Certificate of the Graduate Engineer or Diploma Holder so employed by the contractor to the effect that the work executed as per the bill has been supervised by him.( Vide Works Department No. Codes M-22/91-15384 dated 9.7.91). The required certificate is to be furnished in the proforma contained in a separate sheet vide **Schedule-I**.

65. An engineering personnel of the executing agency should be present at work site at the time of visit of High level Inspecting officers in the rank of CCC and above.

66. All reinforced cement work should conform to Orissa Detailed specification and should be of proportion 1:2:4 or 1:11/2:3 (as the case may be)having a minimum compressive strength (in work test) 150Kg/200Kg per $Cm^2$ in 15 Cm cubes at 28days, after mixing and test conducted in accordance with IS 456 and IS 516 using 12mm size hard black crusher broken granite chips (20mm size not be exceed 25%).

67. Bailing out of water from the foundation, pipeline trenches S. Tanks/Soak pits/Sumps/M.H. etc. either rainwater or sub-soil water if necessary should be borne by the contractor. No payment will be made for benchmarks. Level pillars, profiles and benching and levelling the ground wherever required. The rates quoted should be for finished items of works inclusive of these incidental items of work.

68. The Contractor will have to submit to the Principal, UCE, Burla monthly return of labour both skilled and unskilled employed by him on the work.

69. 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 Chairman, Construction Committee before they are used on the work.

70. 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.

71. 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.

72. **DELETED**.

73. The contractor has to arrange the samples of materials required for execution to be got tested and approved by the Chairman, Construction Committee before taking up the work and during course of execution required from time to time. All such samples are to tested in the Laboratory of Civil Engineering Deptt of UCE,Burla at the cost of the Contractor with no extra cost to the College.

74. If there is any damage to the work due to natural calamities like flood or cyclone or any other cause during the course of execution of work or up to 6 months after completion of work or if any, imperfection becomes apparent to the work with in 6 months from the date of final certificate of completion of work the contractor shall make good of all such damages at his own cost with no extra cost to the College. No claims, whatsoever, in this regard will be entertained.

75. The K.B. bricks should be well burnt and of good qualities. The bricks should be approved by the Chairman, Construction Committee before use in the work and should conform to the minimum strength as per National Building Code.

76. Under Section 1 of contract labour Regulation and Abolition Act 1970 the contractor who undertakes execution of work through labour should produce valid licence from the licensing authority of labour Department.

77. 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.

78. Graduate Engineer of 'A' lass & above should furnish E.M.D. along with the tenders as specified in the Tender Notice where he has already availed exemption of E.M.D. for three

works, failing which the tender will be summarily rejected.

79. 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 Orissa 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 Orissa.

80. **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 Chairman, Construction Committee 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 Chairman, Construction Committee has the right to prescribe other required test if any as will be considered from time to time.

81. 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.

82. DELETED.

83. Schedule of quantities is accompanied in Cover-II (Price Bid). It shall be definitely understood that the authority 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 nonpayment or less payment of his wages as per latest minimum Wages Act, the Principal, UCE, Burla 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 Principal 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. The contractor is required to pay the taxes if any to Govt. as fixed from time of time and produce such documents in support of their payment to the Principal, UCE, Burla with their bills, falling which the amount towards royalties of different materials as utilised by them in the work will be recovered from their bills and deposited in the revenue of concerned department.

87. **DELETED.**

88. Any defects, shrinkage or other faults which may be noticed within 6 (Six) months from the completion of the work arising out of defective or improper materials or workmanship timing are upon the direction of the CCC to be amended and made good by the contractor at his own cost unless the CCC for reasons to be recorded in writing shall be decided that they ought to be paid for and in case of default the authority may recover from the contractor the cost of making good the works. The contractor is also required to maintain the road/ building for 6 (Six) months from the date of successful completion of the work.

89. 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 College 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.

90. **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.

91. Where it will be found necessary by the authority, the Chairman, Construction Committee 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 with their dated signatures and duly noted by the contractor or his authorised 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 authority. The order Book shall be the property of the College and shall not be removed from the site of work without written permission of the Chairman, Construction Committee and to be submitted to the Chairman, Construction Committee every month.

92. 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.

93. The rates quoted by the contractor shall cover the latest approved rates of labours, materials, P.O.L. and Royalties. Arrangement of borrow areas; land, approach road to the building site etc. are the responsibility of the contractor.

94. 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.

95. 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 decided by the Chairman, Construction Committee. 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 Chairman, Construction Committee and on both the accounts the cost shall be borne by the contractor.

96. Even qualified criteria are met, the bidders can be disqualified for the following reasons, if enquired by the College.

(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.

97. In case the 1$^{st}$ 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 disincentivising the tenderer.

98. **ELIGIBILITY CRITERIA:** To be eligible for qualification, applicants shall furnish the followings.

**a.** Required **E.M.D** as per the **Clause No. 22.**
**b.** The Crossed Demand Draft towards cost of Bid in case of the tender is downloaded or the original Money Receipt as evidence as to purchase of bid.
**c.** Copy of valid Registration Certificate, Valid VAT clearance certificate, PAN card along

with the tender documents and furnish the Original Registration certificate, VAT clearance certificate and Pan card, for verification within (3) three days of opening of Cover-I of the tender before Principal, UCE, Burla, as per **Clause No.23.**

**d.** Information regarding current litigation, debarring / expelling of the applicant or abandonment of work by the applicant in **schedule "E"** and **affidavit to that effect including authentication of tender documents and Bank guarantee in schedule "F"** as per **clause 50**.

**e.** The tenderer has to furnish the list of Key plant and equipment to be deployed in the work as per Annexure-1 of DTCN, tenderer has to secure 80% marks for eligibility otherwise the tender is liable for rejection.

**f.** The Tenderer must have experience in building work of minimum value not less than Rs.25 Lakhs during last (5) five years and furnish the required information in **Schedule – H** duly certified by the employer not below the rank of an Executive Engineer failing which the tender will be summarily rejected.

99. ADDENDUM TO THE CONDITION OF P-1 CONTRACT

**Clause-2(a) of P-1 Contract:-TIME CONTROL:**

**2.1. Progress of work and Re-scheduling programme.**

2.1.1. The Principal, UCE, Burla 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.

2.1.2. Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Chairman, Construction Committee for approval a Program commensurate to Clause no.3 showing the general methods, arrangements, and timing for all the activities in the Works along with monthly cash flow forecast.

2.1.3. 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, 1/4$^{th}$ of the whole time allowed under the contract has elapsed, ½ of the whole of the work before ½ of the whole time allowed under the contract has elapsed, 3/4$^{th}$ of the whole of the work before 3/4$^{th}$ of the whole time allowed under the contract has elapsed.

2.1.4. If at any time it should appear to the Chairman, Construction Committee 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 Chairman, Construction Committee, 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 Principal, UCE, Burla 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 over due Programme has been submitted.

2.1.5. 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.

2.1.6. The Chairman, Construction Committee's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Chairman, Construction Committee again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

**2.2. Extension of the Completion Date.**

2.2.1. 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 15$^{th}$ day or such time period as mentioned in letter of Award after the date on which the Principal, UCE, Burla 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, Principal, UCE, Burla 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.

2.2.2. As soon as possible after the Agreement is executed, the Contractor shall submit the

Time & Progress Chart for each milestone and get it approved by the Chairman, Construction Committee. 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 Principal, UCE, Burla 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.

2.2.3. In case of delay occurred due to any of the reasons mentioned below, the Contractor shall immediately give notice thereof in writing to the Principal, UCE, Burla 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 Principal, UCE, Burla to proceed with the works.

i) Force majeure, or

ii) Abnormally bad weather, or

iii) Serious loss or damage by fire, or

iv) Civil commotion, local commotion of workmen, strike or lockout affecting any of the trades employed on the work, or.

v) Delay on the part of other contractors or tradesmen engaged by Principal, UCE, Burla in executing work not forming part of the Contract.

vi) 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

vii) Any other cause, which, in the absolute discretion of the Principal, UCE, Burla in Contract data is beyond the Contractors control.

2.2.4. Request for reschedule and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen 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.

2.2.5. 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 Principal, UCE, Burla 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 Principal, UCE, Burla and this shall be binding on the contractor.

**2.3. Compensation for Delay.**

2.3.1. If the contractor fails to maintain the required progress in terms of clause 2 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 College on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Principal, UCE, Burla (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 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 will be @ 1.5% per month of delay of work, delay to be computed 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 College. 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.

**2.4. Deleted.**

**2.5. Management Meetings**

2.5.1. Either the Principal, UCE, Burla 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.

2.5.2. The Principal, UCE, Burla 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 Principal, UCE, Burla either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

**Clause-2 (b) of Percentage Rate P1 Agreement:- Rescission of Contract (Amendment as per letter No.10639 dt. 27.05.2005 of Works Department, Orissa):-**

To rescind the contract (of which rescission notice in writing to the contractor under the hand of the Principal, UCE, Burla shall be conclusive evidence), 20% of the value of left over work will be realised from the contractor as penalty.

100. The tenderers are required to go through each clause of P.W.D. Form P-1carefully in addition to the clauses mentioned here in before tendering.

101. The contractor shall make requisition of claim book from the date of commencement of the work from the College 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 authorised 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 for as possible regarding the quantities as well as the total amount claimed. The claim book must be submitted by the contractor regularly by 10th and 16th days of each month for orders of the CCC. Claims not made in this manner or the claim book not maintained from the commencement of the work are liable to be summarily rejected. The claim book is the property of the College and shall be surrendered by the contractor to the CCC after completion of the work or before recession of the contract by the College whichever is earlier for record.

102. 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.

**Total 102 (One Hundred two) Clauses only**

**Submitted by** **APPROVED BY**

**Sd/-**
**CHAIRMAN**
**Construction Committee**

**PRINCIPAL**
**University College of Engineering, Burla**

## TECHNICAL SPECIFICATION OF CIVIL PORTION OF WORK

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

| | | |
|---|---|---|
| 1. | Cement | Will be as per I.S. 269/455 (However the grade of cement to be selected by the Engineer-in-Charge of work and complete cube test before commencement of work in each batch). |
| 2. | Steel | I.S. 432 (Plain) and 1785 (Tor) |
| 3. | Vibrator | I.S. 7246 |
| 4. | Aggregate | I.S. 383, I.S. 515 |
| 5. | Water for mixing and curing | Shall be clean, free from injurious amount of oil, salt, acid, vegetable materials and other substances and harmful to concrete in conformity to I.S. 456 and I.S. 2025. |
| 6. | Sand / Fine Aggregate | I.S. 2116, 383 |
| 7. | Binding wire | I.S. 280 (galvanized minimum 1 mm) |
| 8. | Rain water pipe | I.S. 2527 |
| 9. | Construction joints | I.S. 3414 |
| 10. | Steel Window Frame | I.S. 1038/83 |
| 11. | Steel Door Frame | I.S. 4351/75 |
| 12. | Fitting & Fixtures for journey works | Conforming to I.S. 7452/82 strictly conform to I.S. specification and as per direction of Engineer-in-Charge. |

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

## ITEM OF WORK

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

# TECHNICAL SPECIFICATIONS OF P.H. PORTION OF WORK

**A) WATER SUPPLY & SANITARY INSTALLATIONS:**

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

| | | |
|---|---|---|
| **(a)** | **Sanitary fixtures :**<br>To be of best quality vitreous ware of porcelain. (i) Indian water closet<br>(ii) Foot Rests<br>(iii) Wash Hand Basin<br>(iv) Kitchen Sink<br>(v) Urinals (vi) Drain Board (vii) Orissa Closet (viii) European Water Closet & Low Level Flushing Cistern. | Hindustan Sanitary Ware/Parry<br>Ware / Neycer ISI marked |
| **(b)** | **C.I. High Level Flushing Cisterns :** | Sushila Industries Prabhat Iron Foundry/ East India Steel / I.S.I. marked. " |
| **(c)** | **H.C.I. Soil Waste Pipes:** | Confirming to I.S.I. 1729-1954, having I.S.I. Mark. |
| **(d)** | **C.P. Bath Room Fittings:** | ZJM / Kingstone / Jaquar I.S.I. marked & confirming to-latest ISS |
| **(e)** | **Brass Fittings :** | Anupama /Luster/I.S.I.Marked. |
| **(f)** | **Gunmetal Valves :** | Anupama / Leader / B.S.I.S.I. marked. |
| **(g)** | **G.I. Pipes (Medium Class):** | Manufactured by TATA / JINDAL / B.ST. having I.S.I. Mark. |
| **(h)** | **Galvanised Iron fittings :** | I.S.I. marked C/R brand. |
| **(i)** | **Paints:** | Asian / Berger / Jonson/Confirming to I.S.S |
| **(j)** | **Cast Iron Manhole cover frame:** | Sushila Industries / Prabhat Iron Foundry / East India Steel make confirming to I.S.S. 7.26 |
| **(k)** | **Stone Ware Pipes & Fittings:** | Manufactured by Orissa Ceramic Industries / Orissa industries / Keshab Ceramic confirming to I.S.S. Specification No.651 / 1980 {Grade A) |
| **(l)** | **P.V.C. (S.W.R.) &**<br>**P.V.C. (Rigid) Pipe/Fittings:** | Manufactured by the Supreme Industries Ltd., Bombay / Oriplast, Balasore Duroplast confirming to I.S. Specification No. 4985/81 (Class IV) |

**(B) BUILDING MATERIALS:**

**(a) Bricks:**

Bricks shall be of locally available best quality clean burnt. Bricks shall be well burnt, uniform deep red, cherry or copper coloured, free from cracks and flows, well shaped, uniform in size,

homogeneous in textures and shall omit a clear metallic sound when struck, bricks shall have a minimum crushing strength 75 Kg/$Cm^2$ and shall not absorb water more than 20% by weight.

**Cement Mortar:**

Mortar shall be well mixed to a uniform colour and consisting in the proportion as specified in the items of work. Sand shall be measured on the basis of its dry volume and the quantity shall be adjusted for bulking of damp sand. Cement shall be mixed, taking 50 kg. or 0.035 Cum. In volume only required quantity that can be consumed within 30 minutes of adding water shall be mixed at one time.

**Cement:**

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

**Sand:**

Locally available best river sand medium size.

**Course Aggregates:**

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

**Reinforcements:**

Mild steel Round Bars, cold twisted and deformed bars of steel of medium tensile strength will be used as reinforcement as per drawing and design and directions.

Mild steel bars shall confirm to I.S.;226/1962 standard quality or IS:432/1966 - Grade-I. Black annealed wire (Not thinner than 24 gauge for tying the reinforcements shall be used.

## PART-II APPENDIX TO BILL OF QUANTITY

1. All materials required for the work will have to be supplied by the contractor to execute the finishing items of work at his quoted rates approved by the authority.,
2. The materials to be supplied by the contractor should be made available for inspection and then the quality should be approved by the Engineer in charge before their use in the work,
3. List of approved make of materials
   a. HCI pipes and fittings: - Conforming to I.S. Specification No. 1729-1971 or latest edition
   b. Brass fittings: - Conforming to I.S. Specification No.781-1984 or latest edition
   c. G.I. pipes and fittings: - Con forming to I.S Specification No. 1239-1990 or latest edition
   d. S.W. pipes: - Conforming to I.S. Specification No.651-1992 or latest edition
   e. PVC pipes conforming to ASTM- D-1785/89
   f. U-PVC SWR soil waste ventilating pipes and fittings conforming to ISI No. 13592/1992
   g. Rotational moulded polyethylene cylindrical vertical water storage tanks conforming to IS : 12701-1996
4. Materials not covered by any of the above categories will have to be approved by the competent authority before use in works.

5. Specifications: Standard P.H.D, P.W.D. and I.S specifications will be followed for execution of the works.

6. Type designs: Type design and proposed alignment for the work can be seen in the office of the undersigned during office hours and days.

7.

(a) Details of materials including sanitary fittings with their make available with contractor at present should be attached with their bid.

(b) Fair wages clause as in operation under the Works Department of Government of Orissa will be binding on the contractor.

(c) The cut pieces of GI and HCI pipes below 0.45m length without threads and socket respectively will not be accepted.

(d) The quantities of items mentioned in the tender schedule may increase or decrease during execution of works but the contractor will complete the work as per his tendered rates.

(e) It is the responsibility of the contractors for watch and ward to the PH installations until testing and hand over for which no extra payment towards watching to be paid.

8. The Sales Tax element should not be added to the analysis of rates and the previous practice should be followed as per the Works Department letter No. IIT.22-89-18170 dt.18.7.1989

9. There should be no clause either in the tender or in agreement for payment of any additional claim on account of Sales Tax on completed works which will be deemed to be recovered by existing omnibus stipulation as per the works Department letter No.MT 22/89-18170 dt.18.7.89/

10. The contractor shall maintain a separate site order book for P.M. portion of work.

11. Materials not covered by any of the above categories of items in the bill of quantity have to be approved by the competent authorities before utilizing the 'same in works. In such event, the payment of such item will be made as per actual on due approval by the competent authority.

## TECHNICAL SPECIFICATION FOR SANITARY & PLUMBING WORKS

**(A) Sanitary ware & allied fittings :**

**1. General:**

All Sanitary fixtures and their allied fittings, should be of first quality, manufactured by Hindustan Sanitary Ware / Parryware / Nycer, These should be approved by the CCC before use.

**2. Squatting Pattern W.C. (pan) (Orissa Pattern Closets):**

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

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

**3. Flushing Cistern :**

The flushing of the Indian water closet (Orissa Closet) shall be done by C.I. or Polyaterine High Level low-level porcelain valve-less syphonic flushing cistern of approved brand and quality I.S.I. Marked and capacity as specified. The connection between the cistern and water closet shall be made by 32 die O.I. flush pipe, made from G.I. Pipe (Light Quality) or 32 dia P.V.C, Pipe as specified in the tender schedule. The flush pipe with an offset should be fixed to wall by using C.I. Holder Bat Clamps. The

capacity of the cistern should be 10 Ltrs. as per I.S.S. 15 Ltrs. In case of low-level cisterns. The Cistern shall be fixed on cast Iron or Rolled Steel Cantiliver Brakets (Bulltin type), which shall be firmly embedded in the wall, with C.C. 1.2.4. The Cistern shall be provided with 20mm dla P.V.C. Overflow Pipe with fittings, which shall terminate into mosquito proof coupling secured in a manner that will permit it to be readily cleaned or renewed.

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

The inlet connection to the Cistern shall be made with 450 mm 1 cmg 15 mm dia P.V.C. Heavy type connection Pipe.

**4. Wash Hand Basin :**

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

The Basin shall be supported on a pair of R.S. or C.I. Cantilever brackets (built in type) embedded and fixed in wall with cement concrete, 1.2.4. These brackets shall be painted to the required shade with two coats of approved synthetic enamel paint over a coat of priming.

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

**5. Kitchen Sink:**

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

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

The sink shall be supported on a pair of M.S. or C.I. Cantilever Brackets (Built in type) embedded or fixed in position in the wall by Cement Concrete 1.2.4. The brackets shall be painted to required shade with two coats of approved synthetic enamel paint over a coat of priming. The waste should discharge into a floor Trap or Channel. The waste pipe should be 40mm dia P.V.C. Pipe jointed to the waste of the Sink with a Brass union nut.

**6. Standing Urinals:**

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

Where no. of Urinals are fixed in a line, the distance between the centre to centre of each Urinal shall be kept 750mm. and each Urinal should be separated from one to other by a partition plate. The centre to centre of partition plates shall be kept 750mm apart. The partition plate shall be of one-piece 25mm thick marble plates, cut to size and front corners rounded. The partition plates shall be embedded in wall with cement concrete and finished smooth. The bottom of the partition plate should be kept 350mm above floor level and top should be kept at 1250mm above floor level. The plates should

project 600mm from wall surface. The width of the plates to be embedded inside the wall should not be less than 100mm. The thickness of the plates shall be minimum 25mm.

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

**7. Squatting Urinal Plates :**

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

For flushing arrangement, one 25mm dia G.I. Common Water Pipeline (minimum size) shall be fixed on the wall parallel to floor. For each urinal one 20mm dia G.I. Branch Pipe shall be taken down up to t200mm from floor level just at the centre of each plate, in which one 20mm dia Gate Valves is fixed at 350mm above floor level. At 1200mm height, the 20mm dia flush pipe shall be divided into two branches shall be taken downward and connected to the inlets of the urinals plate at floor level. By operating the valve as above, the water will rush into the rims of the urinal plate and flush it.

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

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

**(B) Soil and waste pipes and fittings**

1. **H.C.I. Plpe Fittings**

The Cast iron Soil, Waste and design pipes (spigot & socket joints) shall be of make and brand as specified (under specification of materials), confirming to I.S.S. 3989-1970 and IS) marked with approved clamps are to be used. The pipes and fittings shall be free from cracks, laps, pinholes, and other imperfection and carefully cited.

The access door fittings shall be designed and made so as to avoid dead space in which filth may accumulate and door shall be provided with 3mm thick rubber insertion packing when closed and bolted.

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

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

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

4. The inside of the pipes and fittings shall be well coated with special tar or bitumen solution of approved quality. Where the pipe and fittings are laid below the ground, the outer surface of the pipes and fittings shall also to be painted with two coats of black anticorrosive paint of approved quality.

On completion of the work the exposed pipes and fittings are to be painted with two coats of synthetic enamel paint of approved colour & quality over a coat of red oxide primer. The cost of paint should include in the rates.

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

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

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

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

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

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

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

| | | | |
|---|---|---|---|
| a) | Materials | – | Un-plasticised Poly Vinyl-Chloride (UPVC). |
| b) | Colour | - | Grey |
| c) | Dismensions | - | |
| | (i) Diameter | - | Fittings - 75mm/110mm/63mm & 63mm. |
| | Pipes | - | 75mm, 110mm, on lengths of 3.or 6 mtr. |
| d) | Wall thickness | - | Fittings - Minimum 3.2mm at any port. |
| | Pipes | - | As per application |
| | For Rainwater | - | 75mrn-1.8. to 2.2.mm, 11 Omm-2.5. to 3mm |
| | Waste & Soil | - | 75mm -1.8 to 2.2mm, 110mm -2.5 to 3 mm, 63mm – |
| Underground drainage with | | | |
| | light/NILTrafflcs | - | 110mm - 2.5 to 3mm |
| | Light/Nil in Heavy traffic | - | 110mm 3.7 to 4.3mm |
| e) | Standard Confirming to Attributes Confirms to Standard No. | | |
| | i) Fittings & Wall B.S.4514, DIN 10531 | | |
| | Thickness | - | DIN 19534 I.S.7834 - PVC (Rigid) |
| | ii) Pipe Wall thickness | - | IS 4905 |
| | iii) Rubber ring | - | IS 5382 |
| | iv) Fitting dimensions | - | DIN 19531 - P.V.C., DIN 19534-S.W.R. IS - 7834 V.C. (Rigid) |
| | v) Pipe Dimensions | - | IS 4985 |

**(a) Laying instructions & Jointing Procedure**

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

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

**a-2 Fixing of the Pipes and fittings on wall surface.**

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

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

Clean the Outside of the pipes and inside of the socket of 9 fitting of the inside of the couplers (where 2 plain ended pipes are jointed) of. Apply solvent cement solution, evenly and smoothly on the outer surface of the pipe end and inside surface of either the coupler of the socket and pass the pipe end into the socket of the fittings. Up to full depth of socket. In case of jointing 2 plain-ended pipes 1st. push the coupler up to half depth on the end of one pipe and the outer half of the coupler should be pushed to the end of other pipe and thus, both pipes are jointed.

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

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

**a-5 Antisyphonage Pipes**

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

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

**a-7 Installation of Water Closet**

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

**a-8 P.V.C. (Rigid) Pipes and Fittings**

63mm (O.D.) P.V.C. Pipes to be used for these work either in antisyphonage system or else where, 2 should be of “Quick Fit” Pipes Class 2 (4kg. F/Cm ), Quick Fit, Pipes have one and socketted. The P.V.C. (Rigid) fittings, such as 63mm elbow, 63mm equal Tees 110mm x 63mm reducer etc. used in the work, should be of injection-moulded fittings.

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

**10. Measurement**

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

and fittings. Fittings will be counted extra over.

**11.** **Before** fixing and painting, the pipe shall be tested hydraulically to pressure Q.4Kg/$Cm^2$ for pipes under I.S.-1729/1964 and at a pressure 0.7 Kg/$Cm^2$ for pipes under I.S. 3989-1970 without showing any sign of leakage, sweating of or her defect of any kind. The pressure should be applied internally and shall be maintained for not less than 15 seconds.

**(c) Water Supply Pipes and Fittings :**

**1. Materials.**

All galvanised Iron Pipes are to be of mild steel continuous welded, screwed tubes, medium quality confirming to I.S.S. and bearing IS! Marks manufactured by reputed Firms and approved brands as specified. The pipes shall confirm to LS.1239 (Part-!) -1975.

All G.I. Fittings shall be of 'R' Brand manufactured by M/s. R.M. Engineering Ltd., Ahemadabad and 'C' brand manufactured by Present Engineering works or equivalent best quality.

**2. Laying of Pipes**

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

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

| **Dla of Pipe** | **Width of Trench** | **Depth of Trench** |
|---|---|---|
| 15mm to 50 mm | 300 mm | 600 mm |
| 65mm to 100mm | 450 mm | 750 mm |

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

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

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

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

Where the pipes are passing through the R.C.C. / Masonry wall / Column / Beam or pillars, these must pass through the appropriate higher sizes of C.I/G.I Sleeve Pipes and are to be included in the rates.

In case the pipes are embedded in wails and floors it should be painted with one coat of anticorrosive paint of approved quality. ,

All pipes should be fixed horizontal and vertical. For taking the pipes through the walls and floors & roof slabs etc. the holes shall be made by filling with chisels or jumper and not by dismantling the brickwork or concrete. After fixing, the holes shall be made good with cement concrete 1:2:4 and properly finished with C. Plaster 1.4 to match the adjacent surface.

Union Nuts are to be provided in each of the vertical riser or drop on and from G.I. Tank and near the Valve and as and where necessary.

The long screw fittings of 3 mtrs. for long horizontal lines and inside the lavatory / Kitchen etc.

5. After laying and jointing the pipes and fittings shall be inspected under working condition of pressure and flow. Any joint found leaking pipes should be removed and replaced without extra cost. The pipes and fittings after they are laid shall be tested to hydraulic pressure of 6 Kg/$Cm^2$. The test pressure should maintain without loss of for at least half an hour.

**6. Painting**

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

**7. Measurement**

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

**8. Ball Valve**

The ball valve shall be high or low pressure class as stipulated in the Tender Schedule and shall confirm to I.S. 1703-1968, The nominal size of ball valve shall be that corresponding to the size of Pipe for which it is used. The Bal valve shall be of brass or gun-metal and the float for low pressure polyethylene and for high pressure in copper.

Each and every ball valve while in closed position shall withstand and internally applied hydraulic pressure of 20 Kg/$Cm^2$ for a minimum period of two minutes without leakage or sweating. Every high pressure ball valve when assemble in working condition, with the float immersed to not more than half its volume shall remain closed against a test' pressure of 10.5Kg/$Cm^2$ and a low pressure ball valve against a test pressure of 5.3 Kg/$Cm^2$.

Polyethylene floats shall be watertight and non-absorbent and shall not contaminate water and with do jointing adhesive jointing parts.

The minimum thickness of the copper sheet used for making copper floats shall be of 0.45 mm. The thickness of materials of the float shall be uniform throughout.

**9. Ferrule**

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

**10. Non-return Valve (Check Valves)**

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

| Dia in mm | Horizontal type (in kg) | Vertical type (in kg) |
|---|---|---|
| 15 | 0.30 | 0.25 |
| 20 | 0.55 | 0.25 |
| 25 | 0.90 | 0.75 |
| 32 | 1.25 | 0.90 |
| 40 | 1.70 | 1.20 |

| | | |
|---|---|---|
| 50 | 2.90 | 1 .45 |
| 65 | 5.25 | 2.15 |
| 80 | 7.70 | 4.10 |

**±Tolerance 5%**

**11. Foot Valve**

Foot valve is generally placed at the lower end of the suction pipe of the centrifugal pump to prevent the suction pipe from empting. On vertical non-return valve may also be fixed in place of foot-valve.

The foot valve shall confirm to I.S.038-1967.

**12. Water meters (Domestic types)**

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

**13. Bibcock & Stopcock**

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

**14. Full way Valve (Brass)**

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

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

**15. Gun Metal Full way Valve**

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

# TECHNICAL SPECIFICATION FOR STONEWARE PIPE ETC.

## 1. Stoneware Pipes (Materials)

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

Internal dia of Pipe in mm. Thickness of the Barrel in mm. Weight of each pipe in kg.

| | | |
|---|---|---|
| 100 | 12 | 14 |
| 150 | 16 | 23 |
| 200 | 17 | 33 |
| 230 | 19 | 44 |
| 250 | 20 | 52 |
| 300 | 25 | 79 |
| 350 | 30 | 100 |
| 400 | 35 | 125 |
| 450 | 38 | 147 |

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

## 2. Excavation of Trench for laying Sewer Pipes

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

The excavated materials shall not be placed within One Mtr. or half of the depth of the trench whichever is greater from the edge of the trench.

The trench shall be kept free from water. Shoring and shuttering shall be provided wherever required. Excavation below water label shall be done after dewatering the trenches.

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

## 3. Laying, Jointing, launching of the Pipes and fittings.

Drain Pipes (S.W. pipe & other pipes used for drain and Sewer) shall be laid in straight lines and to the even gradients as shown in the layout drawings.

The socket and of the pipes shall face stream. Adequate care shall be exercised in setting out and determining the level of the pipes and the contractor shall provide suitable instruments, templates, sight rails, boning rods and other equipments necessary for the purpose. In the case of pipes with joints to be made with loose collars, the collars shall be slipped on before the next pipe is laid. In those

joints, a tight ring of twisted tarred jute soaked in cement mortar filling to ensure proper alignment and prevent. Cement entering the pipes, Cement compound joints is to be finished with proportion 1.1 with 45 bevelling. The joints are to be kept wet with wet bag until the same are properly set with. The cement mortar joints shall be cured at least for 7 (Seven) days.

In the case of S.W. Pipe joints (socket & spigot), they should be caulked first with tarred jute (Spun) of required diameter, almost quarter depth of the socket, after which cement mortar 1:1 is pushed in with wooden chissel and finishing bevelled at outside at 45 degree. Instead of jute of hump rubber gasket of proper size may also be used. The whole joint must be cured for not less than three days. In case of pipes less than 250m dia, joints should be made at ground level with three pipes at a time and for larger ones two pipes at a time and after curing they should be soiled in foundation with the help of the ropes. All pipes should be properly launched with cement concrete 1.3.6 with washed gravel where the pipes are crossing the drain or all round concrete 1.3.6 with washed gravel is to be done to 150 mm thick over the barrel of the pipe.

The whole of the drain work shall be tested when laid, and at the completion of the contract, to the satisfaction of the Engineer-in-charge and shall be retested if necessary until found satisfactory. The test shall be made by means of water under pressure at the highest point of the Section under test and providing an air pipe at the lower and of the line. Maximum head of 5 (five) fact (1.5m) must be maintained.

**4. Excavation and Hilling.**

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

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

The contractor at his own expense shall pump out or otherwise remove any or all water which during the continuance of contract may be found in the excavated trenches to keep the trench clear of water during the work under progress.

The pipeline shall not be refilled and covered, until the line therein has been passed and tested.

**5. Burried Services**

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

**6. Trench condition :**

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

**7. Inspection Chambers/Manholes**

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

All manhole and inspection chamber shall have internal dimension as shown in drawing and B.O.Q. The depth of invert shall be fixed to the gradient.

The foundation for Manhole shall be 175mm thick & with cement concrete 1.3.6 in hard stone metal / granite metal of 40mm size. The concrete shall project 150mm beyond the external faces of the brickwork.

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

On the top of base concrete channelling on C.C. 1.2.4 with granite chips is to be done keeping the diameter equal to the dia of drain pipe and depth equal to half of the dia of pipe. The channel, 'should[1] be done longitudinally at the centre, connecting both the ends of the pipe. The channel is to be hunched up with concrete 1.2.4 with hard granite chips of size 12mm sloping upwards from the edge of channel to meet the side of chamber at gradient of 1.6. The channel and benching are to be finished smooth and cement mortar 1.3 and punning unless it is unavoidable. The branch should deliver sewerage in the Manhole in the direction of main flow and the junction must be made with care so that the flow in the main is not impeded. Channels for drains coming from the side of the Manhole Chamber, shall be curved to meet the main drainage channels.

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

**8. Gully Trap Chamber**

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

**9. Kota/Marble Stone flooring**

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

**10. Glazed tile dado**

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

## GENERAL CONDITIONS

**1. Drawings & Specifications**

The Contractor, after the award of the contract and on signing the agreement shall be furnished free of cost two copies of each of the drawings specifications, descriptive schedules and other details necessary for execution of the work. All further drawings and details as may be prepared by the department from time to time for reasonable development of the work described in the contract documents and reasonably necessary to explain and amplify the contract drawings and to enable the contractor to execute and complete the work shall also be supplied in duplicate to contractor free of cost.

Any further copies of such drawings, required by the contractor shall be paid for by him.

The contractor shall keep one copy of all the drawings specifications, price schedule of items and quantities at work site and the Engineer-in-charge or his authorised representative shall at all reasonable times have access to the same.

**2. Contractor's Responsibility.**

a The contractor shall provide at his cost everything necessary for the proper execution of the works according to the intend and meaning of the drawings, schedule of items and quantities and specifications taken together, if the same is not particularly shown or described therein, provided that the same can reasonably be inferred there from, if the Contractor finds any discrepancy in the drawings or between the drawing and schedule of quantities and specifications, he shall .immediately in writing refer the same to the Engineer-in-charge whose decision shall be final & binding.

b) Any work done at any time or even before receipt of such details shall be removed/replaced by the contractor without any expense to the department If the work is not in order and if so directed by the Engineer-in-charge error inconsistencies in drawings and local conditions affecting the works shall be brought to the notice of the Engineer-in-charge immediately for his decision.

All drawings, bill of quantities and specifications and copies therefore furnished by the department, are their property. They shall not be used on any other work and shall be returned to the Department on request on completion and before issue of final certificate or termination of the contract.

c) All materials and workmanship shall be of the respect kinds described in the specification. B.O.Q, contract and in accordance with the instruction of the Engineer-in-charge. The contractor must satisfy himself about the same while furnishing samples for approval of the Engineer-in-charge before incorporation in the works.

d) The Engineer-in-charge may from time to time cause at his discretion such tests on samples of materials or workmanship of all/any materials and work, as he may consider necessary at places of manufacture, fabrication, on the site or at such other places. The expenditure incurred for all such tests shall be borne by the contractor.

e) All approved samples are to be preserved by the contractor in a regular manner in the site office for inspection and verification of the Engineer-in-charge or his representative from time to time.

c) **Alteration / Addition & Omissions**

The Engineer-in-charge shall make any variation of the form, quality or quantity of the works or any part thereof that may be in his opinion be necessary and for that purpose or if for any, other reason it shall, in his opinion be desirable, he shall have power to order the Contractor to do so and the Contractor shall do any or allot followings : .

a) Increase or decrease the quantity of any work included in the contract.

b) Omit any such work.

c) Change the levels, lines, position and dimensions of any part of the works, and

d) Execute additional works of any kind necessary for the completion of the work.

No such variation shall in any way ratidate or invalidate the contract, but the value of all such variations shall be taken into account and shall be added to or deducted from the contract sum accordingly, but no such variation shall be made by the contractor without prior written instruction from the Engineer-in-charge.

e) The Schedule of quantities/rates shall be deemed to have been prepared and included in accordance with the method of measurement of work set out and as per the relevant specifications or in its absence relevant I.S. code of practice.

Any error in the specification or in quantity or omission of any item from the schedule of quantities/ rates shall not vitite the contract, but he adjusted by adding to or deduction from the contract sum provided that no rectification of errors, if any, shall be allowed in the contract schedule of rates.

**3. Valuation of variations**

a) All extra or additional work done or work omitted shall be valued at the rates and price set out in the prices schedule of quantities, and/or derived there-from, if in-arriving at the contract sum, the Contractor have added to or deducted from the total of the items in the tender any sum either as a percentage or proportion, then the same percentage of proportion shall apply to all. items or works in the prices schedule as also for valuation of variation.

b) If the contract does not contain any rate or price applicable to the extra or additional work, or the rate or price in the priced schedule of quantities has become inapplicable in the opinion of the Engineer-in-charge by virtues of such addition or omission, then suitable rates or price shall be agreed such rates shall be derived by analysis based on standard schedule of rates of State P.W.D. / P.H.D or in case such is not available therein, from any approved schedule with the various elements valued at local market price plus 15 (fifteen) percent towards over-heads.

## TECHNICAL SPECIFICATION OF INTERNAL ELECTRIFICATION WORKS

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

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

a) Ceiling rose in (in case of ceiling and exhaust fan).

b) Ceiling rose or connector ( in case of pendants except stiff pendant points)

c) Bank plate (in case of stiff pendant).

d) Socket outlet (in case of socket outlet points)

e) Lamps holder (in case of wall Bracket, batten holder bulk head fitting and similar other fittings)

f) Call bell / buzzer (in case words ‘via’ the switch shall be read ‘via’ the ceiling rose / socket outlet for bell push, where no ceiling rose / socket outlet is provided.

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

a) Switch and ceiling rose are required

b) In case of wall brackets, bulk head fittings, cables as required up to the lamp holders]

c) Bushed conduit for porcelain tubing where cables pass through walls.

d) All wood or metal blocks, boards and boxes, R.J. Boxes sunks or surface type including those required for fan regulator but excluding those under the distribution board and main control switch.

e) Earth wire from 3 pin socket point to the common earth including connection to the earth dolley.

f) Earth wire of 16SWG/14 SWG/I.G. wire for loop earthing of the fixture

g) All fixing accessories such as clips, nails, screw, plug, rawl plug, wooden plug, round blocks etc. as required

h) Joint for junction boxes and connecting the same as required

i) Connections to ceiling rose or connection socket outlet, lamp holders, switch , fan regulators etc

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

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

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

**Conduit wiring**

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

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

The switch or regulator box shall be made of metal on all sides except on the front where backlight sheet or Perspex cover painted to match the colours of the wall shall be used I case of surface wiring system. For recessed wiring system, these boxes shall be made flush with the conduit of each conduit or section shall be completed before conductors are drawn in. The entire system of conduit after installation shall be tested or mechanical strength and electrical continuity throughout the earthing of the entire installation shall be carried out in accordance with I.E. Rules and standards.

The number of wires drawn in the conduits shall not exceed the numbers those specified in Indian standard specification No.732.

**Main and Sub distribution Boards:**

The position of main boards for lighting and sub distribution board for different buildings are approximate and the exact location shall be given to the successful tenderer at the time of installation.

The scope of this specification includes installation of the panel boards and distribution boards and making necessary connections. The installation of the boards shall be done strictly in accordance with the details supplied with the specifications; the instructions supplied by the switchgear manufacturer, Indian standard specifications and H.E. rules.

The supplier shall submit the details of installations to the purchaser for his consideration and approval, prior to installation.

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

**Earthing**

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

adequate mechanical strength.

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

**Installation, testing and commissioning:**

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

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

The supplier shall submit sample of each and every equipment and materials for the final approval of the purchaser's representatives immediately after the acceptance of offer. All the equipments and materials shall be supplied exactly as per to the approved samples. If at any stage the purchaser brings to the notice of the supplier any discrepancy or defect the supplier shall replace the same at his own expense.

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

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

All the materials supplied to the contractor according to the Contract condition will be subject to inspection and approval of the officer or his representative from time to time. The contractor will provide all facilities of such inspections free of cost. At the time of inspection, the CCC or his representative will have full liberty to reject any such materials, which does not conform to the specification / requirement. No claim for any rejected materials will be entertained by the CCC. The contractor will remove all rejected materials from site at his own cost.

No surplus materials procured by the contractor will be accepted by the owner.

The contractor will be responsible to get the Electric installations cleared by the Electrical Inspector of Orissa Government.

Only the inspection fee will be reimbursed by College on production of challan copy.

**Installation and Maintenance Tools:**

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

**Drawings:**

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

The tenderer shall submit with the tender general arrangement drawings for the installations

work, typical methods and cabling and cables supports pipe work and pipe supports, typical methods of earthing and fixing of light fittings earthing etc. as offered by him in the tender.

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

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

(a) The arrangement and support of conduit pipe

(b) The position of light fittings, switches / plug socket and switch boards

(c) Earthing installations

(d) Layout plan showing the entire cable network

On completion of work, the successful tenderer shall supply one set of tracing in transparent linen and five sets of prints of all drawings incorporating all the changes / modifications affected during the execution of the contact. All wiring diagrams shall indicate clearly, the switch board, the runs of main and sub main wiring and the position of all the points with their controls. All the circuits shall be clearly indicated and numbered in a accordance with IS:375.

The technical literatures and operating instructions and the maintenance manuals shall also be supplied in triplicate to the CCC after the completion of the installations work.

**Test:**

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

All equipment shall be tested at site before the commissioning in accordance with the adopted standard and Indian Electricity Rules. Voltage test shall be carried out on each circuit on completion of wiring and cabling.

**Technical Data:**

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

a) Fuse switch board and distribution boards

b) Light fittings

c) Conduits and the accessories for them

d) Switches / plug sockets

e) Cable and wires

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

a) Complete details of earthing electrodes, earthing station and earthing conductors

b) Details of conduit supports

c) Details of all the equipment and accessories to be supplied

**Exception to Specifications:**

The object of this specification is to have all tenderers quote for equivalent materials and

workmanship. It is, however, understood the certain manufacturers may not be able to offer as specified in every case, where the tenderer may find it necessary to deviate from the exact letter and not the intent of the specification, he must specifically state what these deviations may be at the time he submits the tender. All deviations must be grouped in one statement.

No deviations other than those includes in the tender will be permitted. These deviations should be listed as per Annexure.

**PVC insulated Cables and Wires:**

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

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

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

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

Switch fuse / fuse switch units, distribution boards shall be provided with necessary metal fame work so that they can be mounted on wall / columns structure etc. as desired. The panel boards, shall be wall mounted type or floor mounted type as specified in the bill of quantities or drawings. Necessary supporting metal frame of approved design shall be provided for all panel boards.

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

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

Two bolted type earthing terminals shall be provided on the switch boards. All individual switches shall be connected with suitable size earth wire to the main earthing terminals of the switchboard.

Hanger Board and shock treatment / charts shall be supplied wherever required.

At the incoming side of each pen phase, 3-neon type indicating lamps should be provided at the main board.

**Switches and Plug Sockets**

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

**Ceiling Fans and Exhaust Fans:**

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

The performances rating of the propeller fans shall in accordance with stipulations of IS:2312.

All fans shall be robust in design and construction and shall be supplied complete with wall brackets / clamps etc.

**Fluorescent Fittings:**

All fluorescent fittings supplied shall confirm in general to IS:1913 and shall be complete with all standard accessories like choke, starter and capacitor etc

The type of enclosure provided for the fittings shall be of that specified in the bill of quantities and the working drawings. The materials of construction for fittings used for outdoor installations and for use in the work anodes shall be such that they shall withstand the atmospheric condition in that area.

Lamp holders used shall be fully shock proof, spring-loaded rotary type to ensure positive lamp locking. It should also be not possible to touch live parts of the lamp holder both after the lamp has been taken out and during the insertion or removal of the lamp. The starters shall be designed to give designed starting characteristics that shall promote full lamp life. Starter shall have high mechanical strength and topic proof construction. It should be incorporated with radio suppression capacitor o adequate rating and capacity. Power factor improvement capacitors are provided with hermetically sealed housing to ensure long and trouble fee service. Terminal soldering tango shall be provided for easy electrical connections. The capacitors in general shall confirm to IS:1569-1963 and P.F improvement up to 0.95 for twin fluorescent light fittings and 0.9 for single fluorescent light fittings is to be maintained.

The ballast provided in the fluorescent fittings shall generally be in accordance to IS:1534.

The ballast should incorporate the following design features.

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

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

1) Withstand the atmospheric condition prevailing in the area
2) Provide maximum mechanical protection to the tubes and fittings accessories. Assists in maximum and uniform light distribution.

All fittings shall be provided complete with florescent lamps. All lamps shall confirm to IS:2418.

**Incandescent Fittings:**

The incandescent fittings shall be supplied strictly as per the details given in the enclosed annexure and bill of quantities, deviation if any regarding design, construction of materials should be specified clearly.

All the metal parts used in construction of the fittings shall have no effect due to dust / fumes / gases likely to exist in the atmosphere. All the bolts , clamps, nuts and guard wire etc shall be galvanized.

The wall fittings shall be provided with necessary hooks / clamps / supports etc for fixing the light fittings on wall / ceiling etc as detailed in the bill of quantities and the working drawings.

Light fittings shall be suitable for connection with 19mm dia. Conduit pipe as required. If fittings are to be connected through PVC cables, glands of adequate size and capacity shall be provided.

The lamp holders provided in the fittings shall confirm to IS:1528.

## C O D E S

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

a) Indian Boiler Act, 1923 and Rules and Regulations made their under

b) Indian Electricity Act, 1923 and Rules and Regulations made there under

c) Indian Factories Act, 1948 and Rules and Regulations made thereunder

d) The minimum wages Act

e) The Women's Compensation Act

f) The Payment of Wages Act

g) The Fatal Accident Act

h) The Industrial Employment Act

i) The Employment provident Fund Act

j) Indian Explosive Act 1984 the Rules and Regulations made there under

k) Indian Petroleum Act 1934, and Rules and Regulations made there under

l) A.S.M.E. Test Codes

m) AIRE Test, Codes

n) American Society of Materials Testing Codes

o) Standards of the Indian Standards Institution

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

| | | |
|---|---|---|
| 15) | Rigid steel circuits for electrical wiring | IS3837-1966 |
| 16) | Accessories for Rigid Steel Conduits for Electrical Wiring | IS3837-1966 |
| 17) | Switch Socket Outlets | IS3837-1966 |
| 18) | PVC Wiring | IS694-1977 |
| 19) | Switches for domestic and similar purpose | IS3854-1966 |
| 20) | PVC wiring | IS694-1977 |
| 21) | Call Bell and Buzzers | IS2268-1966 |
| 22) | Straight through joint boxes and leads sleeves or paper insulated cables- | EID-0032-1964 |
| 23) | Earthing | IS3043-1966 |
| 24) | Electrical Wiring installations | IS732-1963 |
| 25) | Switchgear | IS3072-1965 (Part I) |
| 26) | Lighting protection | IS2309 –1969 |
| 27) | Public Address system | IS1882-1962 |
| 28) | Low Tension switch use units | IS4064-1978 |
| 29) | Code of Practice for Automatic FIRE ALAM system | IS2189-1970 |
| 30) | Specification for Heat Sensitive Fire Detectors | IS2175-1977 |
| 31) | Guide for Safety procedure in Electric work | IS5216-1969 |
| 32) | Rubber Mats for Electric works | IS5424-1969 |

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

## Tenderers 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 U.C.E., Burla of the rank of Assistant Engineer & above and any officer of the rank of Assistant / Under Secretary and above of the Industry Department, Govt. of Orissa 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.

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

(*) - Strike out which is not applicable

Signature of the Tenderer

Date:-

**SCHEDULE - B**

## CERTIFICATE OF LIST OF WORKS IN HAND

I/We do hereby certify that at present the following works are in my/our hand.

| Sl. No. | Particulars of work now in hand | Amount of each work | Period in which the work is stipulated to be completed (in month) | Approximate value of work done on each project till the date of submission of tender | Department under which the work is being taken up |
|---|---|---|---|---|---|
| 1. | 2 | 3 | 4 | 5 | 6 |
| | | | | | |

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

Signature of the Tenderer

Date……..

**SCHEUDL– C**

## CERTIFICATE OF TOOLS AND PLANTS

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

(i)

(ii)

(iii)

(iv)

(v)

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

Signature of the tenderer

Date.

**SCHEUDLE – D**

## CERTIFICATE OF LIST OF WORKS EXECUTED

I/We do hereby certify that the following works have been executed by me/us in the past

| **Sl No.** | **Particulars of works already executed** | **Approximate amount of each work** | **Name of Department under which the works were executed** | **Period of commencement and period of completion** | **Whether the works were completed in stipulated period** |
|---|---|---|---|---|---|
| 1 | 2 | 3 | **4** | **5** | **6** |

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

Signature of the tenderer

Date.

**SCHEDULE – E**

## INFORMATION REGARDING CURRENT LITIGATION, DEBARRING EXPELLING OF TENDERED 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. | a) | 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

**SCHEDULE – F**

## AFFIDAVIT

1. The undersigned do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither my / our firm / company / individuals _____ _____ nor any of its constituent partners have abandoned any road/ bridge/Irrigation /Buildings or other project work in India nor any contract awarded to us for such works have been rescinded during the last five years prior to the date of this bid.

3. The undersigned hereby authorise(s) and request(s) any bank, person, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the **University College of Engineering, Burla** 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 College.

(Signature of Tenderer)

Title of Officer

Name of Firm

Date:

**SCHEDULE - G**

## CERTIFICATE OF EMPLOYMENT OF UNEMPLOYED GRADUATE ENGINEER / DIPLOMA HOLDERS

**(For Super Class / Special Class / 'A' Class Contractors only)**

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

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

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

Signature of the tenderer.
Date:-

**SCHEDULE – H**

## Amendment to condition of contract (Past performance)

The Contractor shall have to furnish report in the following proforma duly certified by the Executive Engineer under which he has executed works in order to judge their past performance.

**PERFORMANCE RECORD OF CONTRACTORS**

1. Name of the Contractor
2. Registration No and Date
3. Class of Contractor
4. Licensing Authority
5. Licence valid up to :
6. Details of works executed.

| Sl No | Jobs under Execution | Agreement amount | Date of commencement | Stipulated date of completion | Whether work is progressing as per programme | Reasons for delay, if any |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

7. Whether the contractor has requisite machineries and personnel deployed (details of machinery and personnel deployed)
8. Whether the quality of on construction is satisfactory
9. Whether he has capability to make good the loss time:
10. Whether the contractor has abandoned any work in the past three years, if yes, the details thereof
11. Whether the contractor has entered in to any litigation in the past if yes, the details thereof.

Name of the Certifying Officer with Official seal

Signature of Contractor

**ANNEXUERE – 1**

**List of Key Plant & Equipment to be deployed on Contract Work**

| Sl No | Type of Equipment | No of Machineries required | Marks |
|---|---|---|---|
| 1. | Water Tanker trailing unit | 1 No | 10 |
| 2. | Water pump | 1 No | 10 |
| 3. | Tractor | 1 No | 10 |
| 4. | Concrete Vibrator(plate ) | 1 No | 10 |
| 5. | Concrete Mixer with batch mix arrangement | 2 Nos | 20 |
| 6. | Concrete Vibrator with Needle | 2 Nos | 20 |
| 7. | Complete staging centring and shuttering arrangement | 500 Sqm | 20 |
| | | | 100 |

**Certificate of Executive Engineer rank of State PWD (R&B) Division prior to 3 (three) months of date of receipt of tender is allowable regarding the proof of ownership of complete staging centring and shuttering arrangement**

This list is suggestive to the Contractor. However, the contractor can furnish a list of machineries he plans to deploy at the site as per his work program and duly agreed by the Engineer.

The Bidders are required to furnish evidence of its ownership of principal machineries / equipments as and when mentioned in **Annexure-I** and shall have to secure minimum 80% of mark failing which the tender may be liable for rejection subject to final decision of the Tender Committee.

The bidder intending to hire / lease machineries & equipments is required to produce for verification the original documents in proof of ownership from the company / person providing such machineries. The original agreement or lease-deed between the tenderer and the agency intending to give him/her machineries on hire / lease should also be furnished clearly stating therein the duration of such agreement. The duration of the lease-deed should be on long-term basis for a minimum period of 18 months from the last date of receipt of bid documents or at least up to the completion period of the tendered work.

Sold for the work **Construction of 100 seated SC Ladies Hostel of UCE at BURLA**

On payment of **Rs.10,400/- (Rupees ten thousand four hundred**)only

Vide Receipt No. _____ / Dated _____

PRINCIPAL, UCE, BURLA

**CHECK LIST**

(To be filled up by the Contractor)

| Sl. No | Documents | Submitted | | Page No | Issuing authority |
|---|---|---|---|---|---|
| | | Yes | No | | |
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | Cost of tender paper | | | | |
| 2 | Copy of valid license | | | | |
| 3 | Copy of valid I.T / Pan Card | | | | |
| 4 | Copy of VAT clearance certificate | | | | |
| 5 | Required EMD in approved form | | | | |
| 6 | List of machineries duly certified by an officer not below the rank of Executive Engineer(should not be more than 90 days old) | | | | |
| 7 | No relationship Certificate | | | | |
| 8 | Affidavit of no litigation | | | | |
| 9 | Affidavit of authencity of true document attached | | | | |
| 10 | List of Engineering personnel to be engaged in the work | | | | |
| 11 | Certificate of tools & plants | | | | |
| 12 | List of project in hand | | | | |
| 13 | List of work executed | | | | |
| 14 | Past performance record(schedule-H) | | | | |

Certified that all the information mentioned above have been attached with the tender paper & are true and correct to the best of my knowledge & belief.

**CONTRACTOR**

**FOR OFFICIAL USE ONLY**

1. E.M.D.

   Furnished / Not furnished

   Rs. _____

   In shape of _____

   Pledged / Not Pledged

2. Valid Registration Certificate: - Copy Furnished / Not Furnished

3. PAN Card: - Copy Furnished / Not Furnished

4. Valid VAT clearance certificate: - Copy Furnished / Not Furnished

5. Nos of Tender paper: - _____

**Bid Identification No. UCE- 02/2008-09**

# UNIVERSITY COLLEGE OF ENGINEERING

**BURLA, SAMBALPUR**

**COVER – II**

# PRICE BID

BID DOCUMENT

FOR

## COMPOSITE TENDER

NAME OF THE WORK : - "**CONSTRUCTION OF 100 SEATED SC LADIES HOSTEL OF U.C.E. AT BURLA(Civil, E.I. & P.H. Works)"**

## ESTIMATED COST: - Rs. 1,98,72,122.00

| Schedule of Quantities for the work:- Construction of 100 seated SC Ladies of UCE at BURLA (Civil Portion) | | | | | |
|---|---|---|---|---|---|
| | | Estimated Amount = Rs 1,76,90,786.00 | | | |
| **Sl.No.** | **Item of work** | **Qnty.** | **Unit** | **Rate in Rs.** | **Amount in Rs.** |
| **1** | **2** | **3** | **4** | **5** | **6** |
| **1** | Earth work in excavation of foundation trenches in hard soil including moorum, stoney earth and earth mixed with boulders except sheet rocks and boulders requiring blasting including dressing and leveling the bed up to the required depth and depositing the excavated materials with all leads and lifts T & P shoring & Shuttering if required etc. complete as directed by the Engineer – in – Charge. | 1844 | One Cubic Meter. | 40.45 | 74584 |
| **2** | Supplying filling in foundation and plinth with sand including watering ramming, cost, conveyance, royalties and all taxes of materials and cost of labour with T & P required for the work etc. complete (measurement will be taken on finished section only). | 2519 | One Cubic Meter. | 311.22 | 783808 |
| **3** | Cement concrete (1:3:6) in foundation and floors i.e., below the base course of terrazzo flooring using 4 cm (1 ½ ") size hard crusher broken granite stone metals of approved quality from approved quarry including lowering laying concrete watering and curing etc. complete to required levels laid in layers not exceeding 0"– 6" thick including cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work complete. | 221.88 | One Cubic Meter. | 2336.91 | 518504 |
| **4** | K. B. Brick masonry in cement mortar (1:6) using K. B. Bricks of size 10"x5"x3" having crushing strength between 75 Kg. / $Cm^2$ to 99 Kg. / $Cm^2$ after immersing the bricks for six hours in water before use in foundation, plinth & basement and for ornamental flower beds plinth molding and similar such type of works with all necessary projections flooring, molding, corbelling, champhering, watering and curing etc. including cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete. | 251 | One Cubic Meter | 1835.31 | 460224 |

| | | | | | |
|---|---|---|---|---|---|
| **5** | R.C.C. work (1:1½ : 3) in having minimum compressive strength (in works test) 200 Kg/Cm² in 15 cm cubes at 28 days after mixing and test conducted in accordance with IS 456 and IS 516 using 12mm size black hard crusher broken granite chips including hoisting, lowering laying and compacting concrete by using vibrator with watering and curing for 28 days, centering and shuttering and finishing the exposed surface smooth providing grooves or beds wherever necessary including cost, conveyance, royalties & all taxes of all materials and cost of all labour with T & P required for the work etc. complete in all respects but excluding cost of M.S. Rods or Tor Steel and binding wires and labour charges for bending, binding and tying the grills. | | | | |
| **A.** | Column Base & Footing | 340 | One Cubic Meter. | 3075.19 | 1044387 |
| **B.** | Plinth Beam | 55.13 | One Cubic Meter. | 3301.38 | 182012 |
| **C.** | Column Superstructure –Gr. Floor | 46.93 | One Cubic Meter. | 5678 | 266452 |
| **D.** | Column Superstructure -1st. Floor | 46.86 | One Cubic Meter. | 6235.59 | 292227 |
| **E.** | Column Superstructure - 2nd.Floor | 2.40 | One Cubic Meter. | 6903.82 | 16569 |
| **F.** | Lintel Band – Gr.Floor | 35.80 | One Cubic Meter. | 5038.68 | 180400 |
| **G.** | Lintel Band – 1st. Floor | 35.80 | One Cubic Meter. | 5468.4 | 195786 |
| **H.** | Lintel Band – 2nd. Floor | 0.11 | One Cubic Meter. | 5983.2 | 658 |
| **I.** | 6.5 cm thick Chajja – Gr.Floor | 202.6 | One Square Meter. | 422.51 | 85591 |
| **J.** | 6.5 cm thick Chajja –1st. Floor | 202.6 | One Square Meter. | 469.43 | 95096 |

| | | | | | |
|---|---|---|---|---|---|
| **K.** | 6.5 cm thick Chajja –2nd. Floor | 2.04 | One Square Meter. | 525.69 | 1072 |
| **L.** | Staircase – Gr.Floor | 6.60 | One Cubic Meter. | 4879.25 | 32182 |
| **M.** | Staircase – 1st. Floor | 6.60 | One Cubic Meter. | 5277.09 | 34806 |
| **N.** | All kinds of Beams – Gr.Floor | 65.36 | One Cubic Meter. | 5678 | 371139 |
| **O.** | All kinds of Beams – 1st. Floor | 65.36 | One Cubic Meter. | 6235.59 | 407586 |
| **P.** | All kinds of Beams – 2nd. Floor | 2.31 | One Cubic Meter. | 6903.82 | 15948 |
| **Q.** | Fins & Parapet – Gr.Floor. | 63.36 | One Square Meter. | 683.53 | 43307 |
| **R.** | Fins & Parapet – 1st.Floor. | 63.36 | One Square Meter. | 776.88 | 49223 |
| **S.** | 5cm thick Shelve –Gr. Floor | 150.50 | One Square Meter. | 383.75 | 57754 |
| **T.** | 5cm thick Shelve –1st Floor | 150.5 | One Square Meter. | 434.49 | 65391 |
| **U.** | 5cm thick Jally – Gr. Floor | 14.72 | One Square Meter. | 364.1 | 5361 |
| **V.** | 5cm thick Jally –1st Floor | 14.72 | One Square Meter. | 410.91 | 6049 |

| | | | | | |
|---|---|---|---|---|---|
| **6** | R.C.C. work (1:1½:3) in roof slab in all floors having a minimum compressive strength (in work test) 200 Kg per Cm² in 15 cm cubes at 28 days after mixing and tests conducted in accordance with IS 456 and IS 516 using 12 mm size hard crusher broken granite chips including hoisting, lowering, laying and compacting concrete by using vibrator with watering and curing for 28 days centering, shuttering and finishing the exposed surface smooth providing grooves or beds where necessary and providing required No. of Fans hooks as directed, including cost, conveyance royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete in all respect but excluding cost of M.S. Rods or Tor Steel and binding wires and labour charges for bending, binding and tying the grills. | | | | |
| **A.** | Ground Floor | 173.21 | One Cubic Meter. | 5059.33 | 876327 |
| **B.** | First Floor | 167.48 | One Cubic Meter. | 5493.18 | 919988 |
| **C.** | Second Floor | 6.51 | One Cubic Meter. | 6012.93 | 39144 |
| **7** | K. B. Brick masonry in cement mortar (1:6) using K. B. Bricks of size 10″x5″x3″ having crushing strength between 75 Kg / Cm² after immersing the bricks for six hours in water before use in super structures including splays cutting circular molding and corbelling champhering and similar such type including cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete. | | | | |
| **A.** | Ground Floor | 299.09 | One Cubic Meter. | 1868.31 | 558794 |
| **B.** | First Floor | 305.73 | One Cubic Meter. | 1929.31 | 589848 |
| **C.** | Second Floor | 52.73 | One Cubic Meter | 1994.01 | 105144 |

| | | | | | |
|---|---|---|---|---|---|
| **8** | K. B. Brick masonry in cement mortar (1:4) using K. B. Bricks of size 10″x5″x3″ having crushing strength between 75 Kg / Cm² after immersing the bricks for six hours in water before use in super structures including splays cutting circular molding and corbelling champhering and similar such type including cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete | | | | |
| **A.** | Ground Floor | 21.4 | One Cubic Meter. | 2007.84 | 42968 |
| **B** | First Floor | 21.40 | One Cubic Meter. | 2068.84 | 44273 |
| **9** | Cutting straightening coiled or bent up M. S. Rods or Tor Steel bending, binding, moulding and joining if necessary and tying the grills and placing in position as required for R.C.C. work and for providing Fan hooks hoisting lowering and laying including cost conveyance and all taxes of all M. S. Rods or Tor Steel and binding wires of 18 to 20 gauge as required for the R.C.C. work for bending, binding and tying the grills in all floors (payment will be made on weight of M. S. Rods or Tor Steel only and no separate payment will be made towards the weight of binding wires). | | | | |
| **A.** | Ground Floor | 722.91 | One Quintal. | 5278.17 | 3815659 |
| **B.** | First Floor | 422.75 | One Quintal. | 5283.09 | 2233435 |
| **C.** | Second Floor | 13.21 | One Quintal. | 5288.26 | 69866 |
| **10** | Cement concrete of proportion (1:2:4) with 12mm (½″) size hard granite crusher broken chips including watering, curing, cost, conveyance and royalties and all taxes of all materials labour with T & P required for the work etc. complete. | | | | |
| **A.** | Ground Floor | 0.44 | One Cubic Meter. | 3010.52 | 1325 |
| **B.** | First Floor | 0.43 | One Cubic Meter. | 3073.75 | 1322 |

| | | | | | |
|---|---|---|---|---|---|
| **11** | 12mm (½") thick cement plaster (1:6) in finished smooth to outside smooth surface of brick walls after racking out joints including watering and curing etc. complete with cost, conveyance, royalties, all taxes and cost of all materials and cost of all labour with T & P required for the work complete. | | | | |
| **A.** | Ground Floor | 2486.74 | One Square Meter. | 42.92 | 106731 |
| **B.** | First Floor | 2275.73 | One Square Meter | 43.61 | 99245 |
| **C.** | Second Floor | 271.4 | One Square Meter | 44.32 | 12028 |
| **12** | 16mm (5/8") thick cement plaster (1:6) in finishing smooth to inside rough surface of 10" thick brick walls after racking out the joints including watering and curing with cost, conveyance, royalty, all tax of all materials and cost of all labour with T & P required for the work etc. | | | | |
| **A.** | Ground Floor | 2040.00 | One Square Meter. | 58.12 | 118565 |
| **B.** | First Floor | 2064.50 | One Square Meter. | 59.15 | 122115 |
| **C** | Second Floor | 314.1 | One Square Meter. | 60.21 | 18912 |
| **13** | 12mm (½") thick cement plaster (1:4) with neat cement punning in finished smooth brick walls in dados and skirting after racking out the joints including watering and curing complete with cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete. | | | | |
| **A.** | Ground Floor | 425.10 | One Square | 55.31 | 23512 |
| **B.** | First Floor | 422.59 | One Square Meter. | 56.01 | 23669 |
| **C.** | Second Floor | 9.4 | One Square Meter | 56.71 | 533 |

| | | | | | |
|---|---|---|---|---|---|
| **14** | 12mm (½″) thick cement plaster (1:4) finished smooth over brick walls after racking out the joints including watering and curing complete with cost, conveyance, royalties and all taxes of all materials and cost of all labour with T&P required for the work etc. complete. | | | | |
| **A.** | Ground Floor | 240 | One Square Meter. | 50.79 | 12190 |
| **B.** | First Floor | 240 | One Square Meter. | 51.48 | 12355 |
| **C.** | Second Floor | 8.5 | One Square Meter | 52.19 | 444 |
| **15** | 6 mm (½″) thick cement plaster (1:4) for ceiling plaster finished smooth including watering and curing complete with cost, conveyance, royalties and all taxes of all materials and cost of all labour with T&P required for the work etc. complete. | | | | |
| **A.** | Ground Floor | 1153.44 | One Square Meter. | 45.07 | 51986 |
| **B.** | First Floor | 1118.88 | One Square Meter. | 45.88 | 51334 |
| **16** | 2.5cm (1″) av. thick A.S. flooring with cement concrete of proportion (1:2:4) with black hard crusher broken granite chips laid in two layers the bottom layer being ½″ thick with ½″ size hard crusher broken granite chips & the top layer ½″ thick with ½″ size black hard crusher broken chips laid in ground floor and after chipping and chiseling the top of floor slabs in upper floors laid to proper slope including rounding of corners watering and curing with cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete in all floors. | | | | |
| **A.** | Ground Floor | 966 | One Square Meter. | 109.72 | 105990 |
| **B.** | First Floor | 1045.00 | One Square Meter. | 111.82 | 116852 |

| | | | | | |
|---|---|---|---|---|---|
| **17** | Supplying, fitting and fixing of minimum 16mm thick Marble tiles of approved quality in all floors with cement mortar (1:1) including polishing the surface smooth etc. complete including cost, conveyance, royalty, taxes of all materials and cost of all labour T&P required for the work etc. complete as per the direction of the Engineer – in – Charge. | | | | |
| **A.** | Ground Floor | 152.14 | One Square Meter. | 837.7 | 127448 |
| **B.** | First Floor | 84.5 | One Square Meter. | 842.14 | 71161 |
| **C.** | Dado & skirting in Ground Floor | 40.27 | One Square Meter. | 819.24 | 32993 |
| **D.** | Dado & skirting in First Floor | 19.32 | One Square Meter. | 825.62 | 15951 |
| **18** | Supplying, fitting and fixing of minimum 16mm thick Kota tiles of approved quality in all floors with cement mortar (1:1) including polishing the surface smooth etc. complete including cost, conveyance, royalty, taxes of all materials and cost of all labour T&P required for the work etc. complete as per the direction of the Engineer – in – Charge. | | | | |
| **A.** | Ground Floor | 67.90 | One Square Meter. | 624.7 | 42416 |
| **B.** | First Floor | 67.9 | One Square Meter. | 629.14 | 42719 |
| **C.** | Dado in Ground Floor | 22.30 | One Square Meter. | 606.24 | 13517 |
| **D.** | Dado & skirting in First Floor | 22.3 | One Square Meter. | 612.62 | 13661 |
| **19** | Supplying fitting and fixing in position well dressed seasoned sal wood work in choukhats (0′-4″ x 0′-5″) size as per approved drawing including two coats of coal taring to wall side faces including cost, conveyance, royalties and all taxes of all materials and cost of all labour with T & P required for the work etc. complete. | | | | |

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| **A.** | Ground Floor | 4.07 | One Cubic Meter | 39348.69 | 160149 |
| **B.** | First Floor | 4.07 | One Cubic Meter | 39348.69 | 160149 |
| **20** | Supplying, fitting ad fixing of 32mm Piasal wood panel shutter complete with all fittings such as Handle, T bolts, Hinges, Aldrops etc. complete with cost, conveyance, taxes of all materials with labour & T&P etc required for the work etc. complete as per direction of Engineer – in – Charge of the work... | | | | |
| **A.** | Ground Floor | 85.84 | One Square Meter. | 2600.98 | 223267 |
| **B.** | First Floor | 85.84 | One Square Meter. | 2600.98 | 223267 |
| **21** | Labour for fitting, fixing in all floor W. I. grills, grill gates, M. S. gates with top and bottom rails, steel window, frames for stair -case and parapet railing including making holes in walls and R.C.C. structure, wood works etc. and making good the damages to walls with (1:2:4) with black hard crusher broken granite chips of 12mm size complete in all respect as per direction of Engineer – in – Charge. | | | | |
| **A.** | Ground Floor | 341.31 | One Square Meter. | 70.1 | 23926 |
| **B.** | First Floor | 309.73 | One Square Meter | 70.1 | 21712 |
| **22** | Cement washing one coat of exterior surface of wall including cost of cement and cost of all labour with T&P etc. complete as per direction of Engineer – in – Charge. | | | | |
| **A.** | Ground Floor | 1570 | One Square Meter. | 6.21 | 9750 |
| **B.** | First Floor | 1385 | One Square Meter | 6.21 | 8601 |

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| **23** | Painting 2 coats with cement paints of approved shade by means of brush to outside surface of walls after cleaning the surface including watering and curing etc. complete in all floors using cement paint including cost of cement with all taxes and cost of all labour with T&P required for the work etc. complete in all respect. | | | | |
| **A.** | Ground Floor | 1570 | One Square Meter | 13.72 | 21540 |
| **B.** | First Floor | 1385 | One Square Meter. | 13.72 | 19002 |
| **C.** | Second Floor | 302.57 | One Square Meter | 13.72 | 4151 |
| **24** | Distempering 2 coats with any approved shade over the interior surface of walls etc. complete as directed by the Engineer – in – Charge over a coat of chalk washing using distemper including cost, conveyance of all materials including cost of distemper with all taxes and cost of all labour with T & P required for the work etc. complete in all respect. | | | | |
| **A.** | Ground Floor | 238.30 | One Square Meter. | 23.18 | 5524 |
| **B.** | First Floor | 261.50 | One Square Meter. | 23.18 | 6062 |
| **25** | Painting three coats in all floors (Two coats with synthetic enamel paints of approved shade and base coat with primer) to new wood and iron work including sand papering polishing the surface including cost, conveyance, taxes and royalties of all materials and with T & P required for the work including cost of paints and primer complete in all respect. | | | | |
| **A.** | Ground Floor | 1097.75 | One Square Meter. | 60.94 | 66897 |
| **B.** | First Floor | 1034.58 | One Square Meter. | 60.94 | 63047 |

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| **26** | White washing 3 coats with shell-lime over the interior surface of walls and ceiling in all floors including cost of indigo, glue, cost, conveyance, royalties and all taxes of all materials and labour with T&P required for the work etc. | | | | |
| **A.** | Ground Floor | 4655.00 | One Square Meter. | 6.55 | 30490 |
| **B.** | First Floor | 4628.00 | One Square Meter. | 6.55 | 30313 |
| **27** | Supplying, fitting & fixing A.C. Sheet in roof in all floors including fixing of ridges, wind ties etc. complete including drilling holes in wind- ties etc. complete. | 49.5 | One Square Meter. | 188.33 | 9322 |
| **28** | Dressed well seasoned sal wood work framed and fixed (wrought and put-up) in small beams, burgahs, rafters and posts including cost, conveyance royalty and all taxes of all materials and labour with T&P required for the work etc. complete. | 0.41 | One Cubic Meter | 34961.89 | 14334 |
| **29** | Supplying, fitting and fixing of Glazed wall tiles of approved make & quality with cement mortar (1:3) jointed with neat cement slurry mixed with pigments to match the shade of tiles etc. complete including cost, conveyance, royalty, taxes of all materials and cost of all labour T&P required for the work etc. complete as per the direction of the Engineer – in – Charge | | | | |
| A. | Ground Floor | 112.64 | One Square Meter. | 519.24 | 58487 |
| B. | First Floor | 124.74 | One Square Meter. | 525.62 | 65566 |
| 30 | Supplying, fitting and fixing 32mm thick Factory made ISI approved flush shutters in doors and windows including mending and cutting sizes of grooves in choukaths and for over-lapping portion of the shutters where necessary, fitting and fixing of oxidized iron or chromium plated iron aldrops tower bolts, handles iron hinges screws etc. complete as per requirement or any additional fittings over and above the standard fittings as directed by the engineer-in-charge complete in all respect. | | | | |

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| **A.** | Ground Floor | 98.66 | One Square Meter | 2000 | 197320 |
| **B.** | First Floor | 98.66 | One Square Meter. | 2000 | 197320 |
| **31** | Supplying, fitting & fixing 4mm thick glass strip in floors including cost, conveyance, royalty, taxes of all materials and cost of all labour T&P required for the work etc. complete as per the direction of the Engineer – in – Charge. | | | | |
| **A.** | Ground Floor | 800 | One R.Meter | 12.68 | 10144 |
| **B.** | First Floor | 800 | One R.Meter | 12.68 | 10144 |
| **32** | Supplying, fitting & fixing of stainless steel of 304 grade in handrails using 50 mm dia of 2 mm thick circular pipe with balustrade of size 32 mm x 32 mm x 2 mm @ 0.90 m c/c and stainless square pipe bracing of size 32 mm x 32 mm x 2 mm in 3 rows in staircase as per approved design & specification, buffing, polishing etc. including cost, conveyance, taxes of all materials, all labour, T & P etc. required for the work complete in all respect. | | | | |
| **A.** | Ground Floor | 5.5 | One R.Meter | 3122.05 | 17171 |
| **B.** | First Floor | 6.5 | One R.Meter | 3122.05 | 20293 |
| **33** | Supplying, fitting & fixing 16mm dia 60cm long Holding down bolts with base plate, washer & nuts etc. with C.C. (1:2:4) including cost, conveyance, royalty, taxes of all materials and cost of all labour T&P required for the work etc. complete as per the direction of the Engineer – in – Charge. | 200 | each | 65 | 13000 |
| **34** | 25mm thick grading concrete (1:2:2) over roof slab after chipping and chiseling the same and cleaning the surface by wire brushes watering and curing including cost, conveyance, royalties taxes of all materials and cost of all labour with T & P required for the work etc. complete in all respect. | | | | |
| **A.** | Second Floor | 1624.14 | One Square Meter. | 110.4 | 179305 |

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| | **(RUPEES ONE CRORE SEVENTY SIX LAKH NINETY THOUSAND SEVEN HUNDRED EIGHT SIX )ONLY** | | **17690786/-** |
| | | | |
| | **TOTAL –34 ( THIRTY FOUR ) ITEMS ONLY.** | | **APPROVED FOR 34 ( THIRTY FOUR ) ITEMS ONLY.** |

***Submitted for favour of kind approval*** ***APPROVED***

***Sd/-***

CHAIRMAN
Construction Committee

PRINCIPAL
University College of Engineering, Burla

**Schedule of Quantities for the work:- Construction of 100 seated SC Ladies Hostel of UCE at BURLA(P.H. PORTION)**

| | | Estimated Amount = Rs 7,39,166.00 | | | |
|---|---|---|---|---|---|
| **Sl.No.** | **Description of items** | **Quantity** | **Unit** | **Rate in Rs.** | **Amount in Rs.** |
| **1** | **2** | **3** | **4** | **5** | **6** |
| 1 | Supplying all materials, labour, T&P and providing and fixing to wall or ceiling and floor galvanized mild steel tubes (medium grade) conforming to IS: 1239/1990, part-1 of the following nominal bore, tube fittings and clamps including making good the wall, ceiling and floor, testing all complete as per specification and direction of the Engineer in charge(TATA make) | | | | |
| (A) | 15mm dia G.I. pipe | 144.00 | Each Mtr | 75.40 | 10858 |
| (B) | 20mm dia G.I.pipe | 240.00 | Each Mtr | 94.15 | 22596 |
| (C) | 25mm dia G.I. pipe | 400.00 | Each Mtr | 135.24 | 54096 |
| (D) | 32mm dia G.I. pipe | 200.00 | Each Mtr | 170.84 | 34168 |
| (E) | 40mm dia G.I.pipe | 100.00 | Each mtr. | 198.25 | 19825 |
| 2 | Supplying all materials, labour, T&P and fitting and fixing brass/CP fittings of the following nominal bore with supply of all jointing materials complete as per specification and direction of the Engineer in charge. | | | | |
| **(A)** | 15mm dia CP bib cock (Plaza make) | 46.00 | Each No. | 276.65 | 12726 |
| **(B)** | 25mm dia C.P. flush cock | 24.00 | Each No. | 855.10 | 20522 |
| **(C)** | 15mm dia CP angle stop cock(Plaza make) | 42.00 | Each No. | 280.10 | 11764 |
| **(D)** | 15mm dia CP concealed stop cock(Plaza make) | 32.00 | Each No. | 510.10 | 16323 |
| **(E)** | 25mm dia brass or gun metal fullway valve(Shakti make) IS:778 Cl-1 | 16.00 | Each No. | 440.00 | 7040 |
| (F) | 32mm dia brass F.W. Valve | 8.00 | Each No. | 666.25 | 5330 |
| (G) | 125mm C.P. Gratting | 32.00 | Each No. | 34.50 | 1104 |

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| 3 | Supplying all materials, labour, T&P and fixing Rotational molded polyethylene cylindrical vertical water storage tanks conforming to IS : 12701--1996 including cutting holes through the tank and fixing mild steel tubes and fittings and providing extra sockets and jam nuts, fixing ball valve etc, including hoisting up to a height of 5 meters above ground level and placing the tank to the required position and providing 1st class K.B brickwork in cement mortar (1:6) of 0.46m height in staging and in circular protection wall to support the tank, 12mm thick cement plaster (1:6) over brickwork, R.C.C slab of size 1.60mx1.60m and 0.10m thick, R.C.C beam of 0.25mx0.30m and 2.60m average length in cement concrete (1:2:4) using 12mm size h.g chips including centering and shuttering, watering, curing, conveyance of all materials to worksite etc all complete as per specification and direction of the Engineer in charge | | | | |
| A | 2000 liter PVC water storage tank | 4.00 | Each No. | 15266.92 | 61068 |
| 4 | Supplying all materials, labour, T&P and constructing brick masonry chamber for stop cock or FW valve etc. all complete as per PH specification and design | | | | |
| | | 1.00 | Each | 375.00 | 375 |
| 5 | Supplying all materials, labour, T&P and cutting holes through existing brick work including making good the damages in cement mortar (1:4) for taking G.I. Pipes and fittings/ P.V.C pipes and fittings etc. all complete as per P.H. Specification and direction of the Engineer in charge. | | | | |
| | 250mm thick wall | 36.00 | Each No. | 13.30 | 479 |
| 6 | Supplying all materials, labour, T&P and cutting holes through existing RCC floor roof cornice including making good the damages in cement mortar (1:4) for taking G.I. Pipes and fittings/ P.V.C pipes and fittings etc. all complete as per P.H. Specification and direction of the Engineer in charge. | 15.00 | Each No. | 39.30 | 590 |
| 7 | Supplying all materials, labour, T&P and painting two coats with white enamel paint brushing interior over one coat of priming with red oxide zinc chrome primer on the external surface of new galvanized mild steel tubes and fittings of following nominal diameter to give an even shade including preparing the surface and clearing the surface of all dirts, dusts and foreign materials as per direction of the E-I-C. | | | | |

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| **(A)** | 15mm. to 20mm. Dia | 384.00 | Each Mtr. | 5.00 | 1920 |
| **(B)** | 25mm. to 32mm. Dia | 600.00 | Each Mtr. | 7.10 | 4260 |
| **(C)** | 40mm Dia | 100.00 | Each Mtr. | 10.00 | 1000 |
| 8 | Supplying all materials, labour, T&P and cutting grooves in pucca floors and walls for taking G.I./ P.V.C. Pipes and making good the damages as per the direction of the Engineer in charge | | | | |
| | | 384.00 | Each Mtr. | 58.67 | 22529 |
| 9 | Supplying all materials, labour, T&P and fitting and fixing U-PVC, SWR soil waste ventilating pipes and fitting of the following outside diameter conforming to 13592/1992 to walls with nails bobbins and wooden plugs or laying in trenches including with supply of approved rubber lubricant by non-heat application method as per manufactures specification testing earth work in excavation in all kinds of soil and refilling of trenches all complete as per specification and direction of the Engineer in charge. | | | | |
| A | 110mm U-PVC SWR Pipe | 232.00 | Each Mtr | 132.90 | 30833 |
| **B** | 110mm 'P' trap | 20.00 | Each | 205.00 | 4100 |
| **C** | 110mm U-PVC S/J door | 16.00 | Each | 125.00 | 2000 |
| **D** | 110mm U-PVC door bend | 48.00 | Each | 120.00 | 5760 |
| **E** | 110mm dia D/M door | 16.00 | Each | 290.00 | 4640 |
| **F** | 110mm dia socket | 50.00 | Each | 30.00 | 1500 |
| G | 110mm U-PVC offset without ear | 12.00 | Each | 105.00 | 1260 |
| **10** | Supplying all materials, labour, T&P and fixing the vitreous china Water Closet (Indian type W.C pan/Orissa pattern squatting pan) duly embedded in cement concrete(1:5:10)using 4cm.size hard granite metal including fixing a pair of vitreous china 250mm x130mm x 30mm foot rest fixing 100mm dia HCI 'P' or 'S' trap (with/without 50mm dia horn) for water closet squatting pan including jointing the trap with pan in cement mortar(1:1),cutting the floor and mending good the damages etc. all complete as per specification and direction of the Engineer in charge(Parry ware make) | | | | |

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| | 580mm size Orissa Pan | 24.00 | Each | 1154.00 | 27696 |
| 11 | Supplying all materials, labour, T&P and fixing wash basins with hole for pillar taps with cast iron or M S brackets painted white including cutting holes in walls and making good the damages with supply of wooden plugs, screws and cement etc, fixing pedestal for wash basin recessed at the back for the reception of pipes and fittings, fixing PVC waste pipe of 32mm nominal diameter for wash basin including brass check nut complete, fixing pillar taps capstan head screw down high pressure lettered 'Hot' and 'Cold' with long screws, shanks and back nuts of 15mm dia nominal bore, fixing 15mm dia PVC inlet connection pipe and making connection with pillar cocks and supply mains for wash basin, fixing 32mm dia CP brass waste, etc all complete as per specification and direction of the Engineer in charge (parry ware make) | | | | |
| **(A)** | 550mmx440mm size wash hand basin | 42.00 | Each | 1113.10 | 46750 |
| **(B)** | Sink | 2.00 | Each | 1384.10 | 2768 |
| **12** | Supplying all materials, labour, T&P and fixing standard sized CP towel rail complete with CP brass brackets fixed to wooden plugs with CP screws as per specification and direction of the Engineer in charge | | | | |
| | 25mmx600mm long CP towel rail | 58.00 | Each | 275.20 | 15962 |
| **13** | Supplying all materials, labour, T&P and fixing standard sized glass-shelf with CP brass brackets and guard rail complete fixed to wooden plugs with CP screws as per specification and direction of Engineer in charge.600mmx125mm plate glass shelf with CP guard rails | | | | |
| | | 42.00 | Each | 282.80 | 11878 |
| **14** | Supplying all materials, labour,T&P and fixing mirror of superior glass mounted on 6mm.thick A.C.sheet or ply wood sheet and fixed to wooden plugs with CP screws and washers complete as per specification and direction of Engineer in charge. | | | | |
| | 600mmx450mm size B.E mirror | 42.00 | Each | 283.40 | 11903 |
| **15** | Supplying all materials, labour, T&P and fixing CP soap holder complete with CP brass brackets fixed to wooden plugs with CP screws as per specification and direction of the Engineer in charge. | | | | |

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| | CP soap holder | 32.00 | Each | 123.20 | 3942 |
| 16 | Supplying all materials, labour, T&P and fixing CP shower with him with supply of red lead and yarn nail complete as per specification and direction of the Engineer in charge | | | | |
| | 1/2" x 5" CP Shower | 32.00 | Each | 207.20 | 6630 |
| 17 | Supplying all materials, labour, T&P and cutting holes through existing brick or laterite masonry wall for taking H.C.I. Pipes and fittings including making good the damages etc. all complete as per P.H. Specification and direction of the Engineer in charge | | | | |
| | Up to 380mm thick wall | 32.00 | Each | 54.70 | 1750 |
| 18 | Supplying all materials, labour, T&P and cutting of RCC chajja for taking HCI/SWR pipes and making good the damages etc. all complete as per PH specification and direction of the Engineer-in-charge. | 16.00 | Each | 70.50 | 1128 |
| 19 | Supplying all materials, labour, T&P and constructing type drain as per PH design specification including lead of all materials to site (Type A-1/A-2/A-4 Drain) | 206.00 | Each mtr | 80.00 | 16480 |
| 20 | Supplying all materials, labour, T&P and constructing inspection chamber of the following size with cement concrete(1:3:6) using 40mm. size hard granite metal on bed, 1st class K.B.brick work in cement mortar(1:6), molding and shaping the channel inside and benching with cement concrete(1:2:4) using 12mm. size h.g. chips, 12mm.thick cement plaster(1:3) with punning to inside cement flush pointing (1:3) to outside, RCC cover slab in (1;2:4) using 12mm. size h.g. chips with RCC man hole cover, earthwork in excavation in all kinds of soil and refilling the cavity around the chamber including watering, curing, conveyance of all materials to work site, payment of royalty, taxes etc. all complete as per approved specification and direction of the Engineer-in-charge. | | | | |
| | (a) Inside size 760mm x 760mm x 460mm | 4.00 | Each | 3643.60 | 14574 |
| | **EXTERNALS/D PORTION** | | | | |

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| 21 | Supplying all materials labor T&P and binding glazed stone ware pipes and aligning to requisite gradient inside the trench to jointing with tarred cascade and cement motor prop.(1: )encasing the pipe all around with CC(1:3:6) with washed gravel CC(1:1:8) with hard stone metal size 25mm to 50mm on bed on the trench lowering the pipe to bed on trenches in earth work in excavation trenches in all kinds of soil and refilling the same in 30mm layers watering ramming and removal of surplus earth disorient sewer line including use of T&P sight rails binding rods plug lights etc .all complete as per P.H .Specification. All round concrete encasing up to 1.50metre depth. | | | | |
| a | 100 mm dia SW inside glazed pipe. | 100.00 | Mtr. | 461.00 | 46100 |
| b | 150mm dia S.W.inside glazed pipe | 100.00 | Mtr. | 690.40 | 69040 |
| 22 | Supplying all materials labor T&P and constructing MH chamber of sizes earth work in excavation in all kinds of soil CC(1:1:8) with black granite chips size 46mm brick work with K.B. brick having crossing strength not less than 75 Kg /CM2 to 90 Kg/$CM^2$s in CM(1:6)12mm C.P(1:8) inside MH chamber over benching with cement slush pointing (1:3)outside the MH chamber providing painting MS or CI step iron RCC(roof of slab with CC(1:2:4)with black granite chips size 12mm bending binding tying the grills placing of the reinforcement providing RCC color of required size refilling the cavity around the MH chamber with excavated earth including channeling the bed of MH etc all complete as per PH specification. | | | | |
| (a) | MH size 0.914 m x 0.914 m with 0.4572m (18" dia ) | 12.00 | Each | 6452.70 | 77432 |
| (b) | - do - for every additional depth | 10.00 | Each | 845.27 | 8453 |
| 23 | Supplying all materials labour T&P and constructing 1.219m dia x 2.5900 m deep soak pit with dry brick having crossing strength not less than 75Kg/CM2 to 99Kg/CM2 in CM(1:6) for the remaining 0.4572mm height of wall at top CC(1:3)inside and outside inside fill with dry brick khoa size 38mm,CM thick RCC perforated slab to a height of 1.9012m from bottom covered by means of 50mmthick RCC wall cover in pieces filled with iron plugs including earth work in excavation refilling of cavity around the pit and painting the iron works complete as per PHD design and specification including carriage of all materials to site. | 2.00 | Each | 7640.00 | 15280 |

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| 24 | Supplying all materials labour T&P and laying soak way gallery with SW pipe with jointing laid packed all around with supply of stone boulders size 50mm to 150mm in (1:6)other than granite cover at top with layer of flat taller size 0.3048 x 0.3048x 0.2510m including earth work in excavation of trenches in all kinds of soil to an average depth of 1.52 m cover of earth at the gallery top all complete as per approved design and including carriage of all materials to site. | | | | |
| (a) | 150mm dia SW pipe | 6.00 | Each Mtr. | 455.60 | 2734 |
| | **(RUPEES SEVEN LAKHS THIRTY NINE THOUSAND ONE HUNDRED SIXTY SIX)ONLY** | | | | **Rs. 7,39,166** |

***Submitted for favour of kind approval*** ***APPROVED***

***Sd/-***

CHAIRMAN
Construction Committee

PRINCIPAL
University College of Engineering, Burla

| Schedule of Quantities for the work:- Construction of 100 seated SC Ladies Hostel of UCE at BURLA(E.I. PORTION) | | | | | |
|---|---|---|---|---|---|
| | | Estimated Amount = Rs 14,42,170.00 | | | |
| **Sl.No.** | **Description of items** | **Quantity** | **Unit** | **Rate in Rs.** | **Amount in Rs.** |
| **1** | **2** | **3** | **4** | **5** | **6** |
| 1 | Recessed wiring to light point in 20mm dia non metallic flexible polythene conduit, conforming to IS-694/6946/1973 with 1.5 sqmm 1.1KV PVC insulated single core Phinolex multistand HRFR wire product code No. 10303 copper wire with ISI marked and earth continuity with 1.22mm dia HDBC wire with metallic switch board of size 100 x 100 x 62mm made of 1.22mm thick M.S sheet including provision of earth screw painted with one coat of red oxide paint p & two coat of grey enameled paint conforming to IS-5133 Part-I 1969 with 3mm thick B.K. cover with S/F of 5A 250v. Flush type switch of ISI marked conforming to IS-371/1999 Mounted on C.I circular Box having front B.K. cover complete with all accessories & connections. | | | | |
| | (a) Short Point | Nos | 170 | 244.00 | 41480.00 |
| | (b) Medium Point | Nos | 144 | 376.00 | 54144.00 |
| | (c) Long Point | Nos | 82 | 548.00 | 44936.00 |
| 2 | Recessed wiring of Fan point in 20mm dia non metallic flexible polythene conduit conforming to IS-6946/1973 with 1.5 sqmm 1.1 K.V. PVC insulated single core Finolex (HRFR) multistand copper wire product code No. 10303 copper wire with ISI marked and earth continuity in 1.22mm dia HDBC wire with metallic switch board of size 100mm x 62mm made of 1.22mm thick M.S sheet painted with one coat of red oxide paint & two coat of grey enameled paint conforming to IS-5133 part-1 1969 with 3mm thick B.K. front cover with steel screw including S/F of 5A 250v. flush type switch with ISI marked conforming to IS-3854/1999 mounted on C.I circular Box having front B.K. cover complete with all connection. | | | | |
| | (a) Medium Point | Nos | 128 | 445.00 | 56960.00 |
| | (b) Long Point | Nos | 20 | 614.00 | 12280.00 |

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| 3 | Recessed wiring to 3 pin 5A plug point in 20mm dia non metallic flexible conduit with 1.5sqmm PVC insulated S/C Finolex (HRFR) electrical wire product code No. 10303 copper wire with ISI marked and earth continuity in 1.22mm dia HDBC wire with metallic switch Board of size 175mm x100mm x 62mm made of 1.22 mm thick M.S sheet including provision of earth screw painted with one coat of red oxide paint & two coat of grey enameled paint conforming to IS-5133 Part-I 1969 with 3mm thick B.K. cover with steel screw including S/F of 5A 250v. flush type socket & switch conforming to IS-3854/1997 flexed on board complete with all accessories. | | | | |
| | (a) On existing Board | Nos | 236 | 59.00 | 13924.00 |
| 4 | Recessed wiring to submain with s/c A1 conductor / sl multi strand copper conductor in 20mm dia PVC conduit | | | | |
| | (a) 2 x 2.5 sqmm | Mtr. | 2700 | 76.30 | 206010.00 |
| | (b) 2 x 4 sqmm | Mtr. | 320 | 98.00 | 31360.00 |
| | © 2 x 6 sqmm | Mtr. | 1360 | 141.40 | 192304.00 |
| 5 | S/F of B.K. Angle holder complete with shade but without bulb with ISI marked(except the cost of ceiling rose) | Nos | 90 | 26.00 | 2340.00 |
| 6 | Supplying and fixing metal box 180mmx100mmx 60mm deep (nominal size) on surface or in recess with suitable size phenolic laminated sheet cover in the front including providing and fixing 3 pin 15/16 amps socket out let and 15/16 amps tumbler/piano type switch, connections, painting etc. as required (for power plugs). | each | 8.00 | 291.00 | 2328.00 |
| 7 | Supplying & fixing of down lighter FCs 518/211 2xPL-S 11Watt with lamp etc complete (Phillips make) | each | 125.00 | 1450.00 | 181250.00 |
| 8 | Supply, installation, testing and commissioning of prewired fluorescent fitting of all types complete with all accessories and tubes etc. directly on ceiling/wall including connection with 1.5sq.mm PVC insulated copper conductor, single core cable etc. as required. | | | | |
| | a. Suppy & fixing (1x40 watt tube light complete fitting) (strip type fittings) ( Philips) | each | 130.00 | 350.00 | 45500.00 |
| 9 | Supply and fixing of 250 watt, 230 volt HPI-T 250 W GLA light fitting complete with lamp, copper ballest and ignitor and capacitor etc. type : SGP 325/HPI-T250W GLA make: Philips | each | 5.00 | 9300.00 | 46500.00 |

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|---|---|---|---|---|---|
| | and errection of the 150 watts including wiring by 2Cx.5sq.mm PVC insulated copper wire from pole box and fixing of lamp and testing etc. as required. | | | | |
| 10 | Supply, installation, testing and commissioning of ceiling fan and regular including wiring with the down rod of standard length (upto 30 cm) with 1.5 sq.mm PVC insulated copper conductor single core cable etc. as required. | | | | |
| | a. Supply (Bajaj Elegance/USHA prima make : 56" sweep 1400 mm) | each | 148.00 | 1650.00 | 244200.00 |
| 11 | Supply, installation of exhaust fan upto 450mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connections, testing, commissioning etc. as required. | | | | |
| | a. Supply & Installation(400mm sweep exhaust fan, 1400 RPM). (Usha Turbo/Hevells Turbo) | each | 2.00 | 2950.00 | 5900.00 |
| | b.Supply & Installation of 12" exhaust fan (Usha Turbo/Hevells Turbo) | each | 10.00 | 1650.00 | 16500.00 |
| 12 | Supply and fixing 5 amps to 32 amps rating, 240 volts 'L' series, miniature circuit breaker of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required (Category-B). C-Curve (Make-HPL Techno) | | | | |
| | a. Single pole 10 amps MCB | each | 16.00 | 135.00 | 2160.00 |
| | b. Single pole 6 amps MCB | each | 60.00 | 135.00 | 8100.00 |
| 13 | Supply and fixing 5 amps to 32 amps rating, 240 volts 'L' series, miniature circuit breaker of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required (Category-B). | | | | |
| | a. Single pole & neutral. (HPL Techno make) | each | 10.00 | 405.00 | 4050.00 |
| 14 | Earthing with GI pipe 3.3m longx38mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement etc. complete as required. | set | 4.00 | 1318.00 | 5272.00 |
| 15 | Supply and fixing of penal board out door type of size 46"x50"x10" made of up 16 SWG CR sheet with supporting MS angle as required and painted with one coat of red oxide and two coat of enamel paint of reputed make, colour factory fabricated and factory made with suitable design. The penal shall consist of the following equipments.<br>**a**. Incoming : 300 A cut out - 3 nos<br>200 A MCCB(4 pole) HPL/L & T - 1 no with handle<br>300 A Busbar - 1 set<br><br>**b**. Outgoing : | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | 100 A MCCB 4 pole with handle(HPL/L & T make)- 2 nos<br>200 A Busbar - 1 set, 40 A DP MCB - 9 nos<br>63 A TPN MCB -2 nos<br>**c**. Accessories : Volt meter, Amp. Meter, selector switch-digital type, Indicator-3 nos and Internal wiring etc. | set | 1.00 | 106581.00 | 106581.00 |
| 16 | Supply and fixing of penal board out door type of size 36"x30"x8" made of up 16 SWG CR sheet with supporting MS angle as required and painted with one coat of red oxide and two coat of enamel paint of reputed make, colour factory fabricated and factory made with suitable design. The penal shall consist of the following equipments.<br>**a**. Incoming : 100 A MCCB(4 pole)<br>HPL/L & T - 1 no with handle<br>**b**. Outgoing :<br>200 A Busbar - 1 set, 40 A DP MCB - 9 nos<br>63 A TPN MCB -1 nos<br>**c**. Accessories : Volt meter, Amp. Meter, selector switch-digital type, Indicator-3 nos and Internal wiring etc. | set | 1.00 | 40651.00 | 40651.00 |
| 17 | Supply, laying and fixing of one no. 1.1 KV grade PVC insulated and PVC sheathed single wire armored aluminum conductor AYFY cable conforming to IS:1554 part-I with the latest amendment of the following sizes in direct in ground including excavation and sand cushioning with second class bricks, protective covering & refilling the trench etc. as required. | | | | |
| | a. 4C x 16 sq.mm. | mtr | 400.00 | 193.60 | 77440.00 |
| | | | | **TOTAL** | **1442170.00** |
| **(Rupees Fourteen Lakhs Forty-two thousand one hundred seventy)only** | | | | | |

***Submitted for favour of kind approval*** ***APPROVED***

***Sd/-***

CHAIRMAN
Electrical Maintenance

PRINCIPAL
University College of Engineering, Burla

| | |
|---|---|
| **Est. Cost of Civil work** | **Rs.17690786.00** |
| **Est. Cost of P.H. work** | **Rs.739166.00** |
| **Est. Cost of E.I. work** | **Rs.1442170.00** |
| **Total Cost of the work** | **Rs.1,98,72,122.00** |

Total Estimate cost of the work:- **Rupees One Crore Ninety Eight Lakhs Seventy Two Thousand One Hundred Twenty Two only**

My/our quoted rate is ----------%(both in figure and words ) excess over/ less than/ equal to the above estimated cost.

## Notes

1. The tenderer should not write anything/except quoting of percentage and in case anything else regarding tender rate is mentioned, the tender is liable for rejection.
2. Strike out which is not applicable.
3. Percentage should be quoted up to 1(one)digit after the decimal point.
4. Rate of all items is inclusive of cost, carriage, royalty and other taxes of material.

**Full signature of the Tenderer**

***Total No of Corrections :***

***Total No of Over writings :***

***Total No of Interpolations :***