

**Section  
32**

**WORKS**

**(Copies of CSIR OMs/Letters)**

**1**

*Copy of CSIR letter No.CE/121/94-95 dated 5.7.1996 from Chief Engineer  
addressed to COAs of all the National Labs/Instts.*

**Sub:- Preparation of preliminary estimates.**

It has been noted that the preliminary estimates of various projects/works received from various Labs for checking and certifying as correct by ESD are incomplete and often without full backup documents. The instructions issued vide our letter No.CE/121/94-Engg. Are not being followed. All the concerned engineers of the laboratory may, therefore, be directed to prepare the estimates based on the following guidelines to avoid delay in getting clearance from this office:

1. The preliminary estimate should be prepared on the standard format as given in PAR, CPWD, 1992.
2. The Preliminary estimates should be signed by the engineer preparing the estimate, Head (Civil) and F&AO of laboratory. An abstract of cost should be prepared containing the total cost of all components / buildings duly signed by the aforesaid officials.
3. The abstract of cost may be given on a separate sheet enclosed with detailed estimate sheet.
4. The cost index taken in the estimate should be supported with a document prepared by the laboratory engineer as per the guidelines described in PAR, 1992. This may please be worked out on the basis of latest market rates of specified materials and current labour rates.
5. The justification for adopting extras from PAR, CPWD 92 like earthquake forces, pile foundations, stronger structural members for taking additional loads, capacities of overhead and underground water tanks etc. should be given.
6. Details of plinth areas of each building should be given on a separate sheet. Ground floor area may be shown separately.
7. The justification of market rates wherever adopted should be given. Any deviations in specifications from the PAR, CPWD 92 should be justified alongwith the cost of them with analysis of rates.
8. Brief specifications adopted in each building works should be enclosed with the preliminary estimates.
9. The justification of rates for furniture/furnishing must be supported with the rate of reputed local firms.
10. A brief history of the project alongwith its necessity and the scope of work may be enclosed with preliminary estimates..

*Copy of CSIR letter No.30/635/-95-Engg dated 9.7.1996 from Chief Engineer addressed to Directors of all the National Labs/Instts.*

**Sub: Construction Management – Observation of Technical Examination.**

Further to this office letter No. CE/121/94-Engg. Dated 26.10.96 and 30/635/95-Engg. Dated 29.8.95.

2. Vide above referred letters it has been elucidated that CSIR is following CPWD norms and specifications including to a large extent their procedures in our work's management. The detailed estimate i.e. the schedule of rates is to be made based on CPWD Schedule of Rates 1993 (DSR 1993) as updated, after careful consideration of all the planning aspects highlighted in the above letters so as to have minimum possible changes during the execution of the project. Wherever there is the necessity of executing certain items of works not covered by CPWD Schedule, State Government schedule of rates or market rates of the items (where State Govt. schedule does not exist) would be taken after due justification and analysis of rates.
3. Few other aspects noticed during technical checks are given below for guidance and further action :-
  - a) Issue of Tender : Issue of tenders to various contractors should be as per the terms and conditions given in the Notice Inviting Tender (NIT). IN case of any deviation permission of the competent authority be recorded and then only the dilution of NIT conditions.
  - b) Quality Control : In a number of cases it has been observed that there is vast variation in the test results of various samples. This may indicate lack of appropriate control/supervision by the Site Engineer. This would apply specially to cement mortar and concrete works.
  - c) Accounting of dismantled/demolished material : It has been seen in a number of cases that this material is not properly accounted for or records maintained. To ensure no loss to CSIR / Undue benefit to the contractor this action is essential.
  - d) Secured Advance : Wherever secured advance is being paid, the rates of items to be paid should be worked out also considering the market rates of the items and not only the contracted rate. Whichever of the two i.e. the market rates/contract rate is lower should be followed for payment.
4. You may kindly issue appropriate directions to your staff.

*Copy of CSIR letter No.25/105/-75-Engg. dated 28.10..1996 from Chief Engineer addressed to Directors of all the National Labs/Instts.*

**Sub : Cost of tender documents – Works contracts.**

Please refer to our letter of even number dated 18.8.87 on the subject mentioned above. The cost of tender documents was based on the guidelines and practices which were being followed by CPWD. CPWD has since revised the

cost of tender documents vide letter No. DG(W)/Con/70 dated 10.6.94. The cost of tender document is as under :-

<b>Estimated cost of works</b>	<b>Cost of tender documents.</b>
Upto RS. 1.00 lakh	RS. 150
Above RS. 1.00 lakh upto RS. 50.00 lakh	RS. 500
Above RS. 50.00 lakh upto RS. 2.00 crores	RS. 1000
Above RS. 2 crore	RS. 1500

Since we are by and large following CPWD norms you are requested to charge the cost of tender documents as per above indicated rates. These uniform charges are recommended to be followed in all Labs./Instts. of CSIR.

#### 4

*Copy of CSIR letter No.CE/121/94-95-Engg. dated 26.11..1996 addressed to Directors of all the National Labs/Instts.*

**Sub: Part rates of the executive items.**

With reference to our earlier circular no. CE/121/94-95-Enging. Dated 13.1.95 (para 31.2.13 of compendium Vol. II) further clarification in respect of sub-para © is given as under :-

Any engineer /Officer preparing the R/A will record clearly the reasons for allowing part rates against the full rate of contract item. The officers recommending the part rates and the officer authorizing the payment should satisfy themselves that adequate rates/amount has been withheld for completion of the balance work.

#### 5

*Copy of CSIR letter No.CE/121/94-95-Engg. dated 31.12..1996 addressed to Directors of all the National Labs/Instts.*

**Sub: Test checking of measurements – Works contracts.**

Further to this office letter of even no. dated 13.1.1995 regarding construction management.

2. To ensure quality and correctness of measurements, it is essential that a minimum of two levels but preferably three level checks should be made. This would however, depend on the levels of engineering staff available. Recommended course is :-

(a)	Measurement/Recording	The junior most officer JE/AE/AEE should measure and record 100% of items.
(b)	Checking	Depending on recordings by JE/AEE, AE/AEE must check 50% of the items. However, in case of important hidden items and those of the high unit rate as per the guide list at Annexure A, 100% check

		should be done by AE/AEE. Whenever measurement is done and recorded by AEE, this checking should be done by the next senior.
©	Test checking	AEE/EE should test check at least 10% of items wherever recording/checking has already been done by JE/AE/AEE.

3. The Officer who records/test checks the measurement for an item of work will be responsible for the quantity/quality and dimensional accuracy of the work measured/test checked.
4. Wherever appropriate levels as indicated above are not existing for check/test checking, recourse may be taken to depute an SE(if existing) or a Committee of the two engineer/scientist/two scientist responsible to look after engineering unit or otherwise specially nominated persons. The contract awarding authority while nominating 'engineer' for the work should detail the checking /test checking body/authority.
5. You may kindly direct the concerned staff appropriately.

### Annexure A

#### **GUIDE LIST – HIDDEN /IMPORTANT/HIGH UNIT RATE ITEMS.**

1. Items of work which owing to their situation cannot subsequently be checked :-
  - (i) All work below ground levels such as concrete such as masonry , steel work etc., in foundation.
  - (ii) Fabricated steel work in columns, beams etc. which are encased either in masonry or concrete.
  - (iii) Wood work, iron work etc. hidden by ceilings, wall paneling or floor boardings.
  - (iv) Bitumen painting of roofs under mud, Phuska and tiles paving or under terrace concrete.
  - (v) Bottle proofing compounds used in gauging cement.
  - (vi) Lines of pipes buried in floor or masonry in internal sanitary , water supply or drainage installations.
2. Items of works which are considered to have very high unit rates:-
  - (i) RCC work
  - (ii) Items in sunk ashlar stone or marble work, plain sunk or moulded in walls, columns. Arches or domes.
  - (iii) Stone or marble work in wall lining.
  - (iv)
    - (a) All wood work in Chowkhats, frames or trusses whether in country, Indian or Burma teakwood.
    - (b) All joinery work in shutters, trellis works, miscellaneous wood work, etc. whether in country, Indian teak or Burma teakwood..
    - (c) All brass, oxidized brass or other similar costly fittings of doors, windows, etc. where payable separately.

- (v) (a) Steel work cut, hoisted and fixed or steel work fabricated hoisted and fixed.
- (v) (b) Steel or aluminium doors, windows, shutters, glazing work, grills, etc.
- (v) Flooring, skirting and dado work, in-situ mosaic, terrazo tiles, Shahbad stone slabs, Agra stone slabs, or marble slabs.
- (vi) Ceiling with AC sheets, hard board insulation or wooden planks; false ceiling and its support system.
- (vii) All sanitary fittings such as wash basins, sinks, urinals, stall urinals, bath tubs and water closets.
- (viii) (a) Storage tank items in water supply.
- (viii) (b) Sluice valves fire hydrants, etc. in water supply.
- (viii) (c) C I or hume pipes and specials and their lead caulked joints in water supply.
- (x) (a) Manholes, ventshafts, road gully chambers, adams syphons, manhole covers and frames.
- (x) (b) C I inspection bends and chambers in C I pipes drainage.
- (xi) Any other item as considered essential.

## 6

*Copy of CSIR letter No1(1.2)/96-97-Finance dated 17.1.97 addressed to  
Sr. F&AO. of all the National Labs/Instts.*

### **Sub: Works Contract.**

As you may kindly be aware, the Chief Technical Examiner's Organisation of Central Vigilance Commission takes up incentives examination of civil, electrical and horticulture works and gives its report for preventive/punitive action wherever required through CVO, CSIR. It is observed that some of the irregularities which are common in nature can be avoided if the following checks are exercised by the Finance Wing of the Labs./Instts. at various stages of Works beginning from the allocation of funds, during the course of finalisation of draft proposals and at the stage of pre-audit of bills relating to such construction activities :-

- (a) Variation in quantities of abnormally high/low rated items is duly justified and has been approved by the competent authority.
- (b) Justification of rates based on Market Rate Analysis is checked during pre-audit of tenders before acceptance of the contract.
- (c) Variation in quantities of the items during the currency of the contract is checked so as to ensure that the tender balance is maintained.

With a view to meet the principles of financial propriety and minimise the observations by CTE, it has been decided that the above noted checks should be exercised by the Finance Wing of your Lab./Instt.

Kindly acknowledge receipt.

*Copy of CSIR letter No.17/167/93-Engg. dated 5.2.97 addressed to Directors of all the National Labs/Instts.*

**Sub: Amendments – Conditions of Works’ Contract.**

New conditions of ‘Works Contract’ were forwarded to the laboratories vide this office letter No. 101/10/94-Engg. Dated 28.7.95. The experience of last two years and certain market changes have necessitated further modifications to these conditions. The changes now approved by DGSIR are enclosed for your further action.

2. The officers authorised to act on behalf of ‘Employer’ vide clauses at serials 4,7,10, and 12 as per Enclosure would be the Director/Chief Engineer (where the contract is accepted by Chief Engineer).

Annexure

**Amendments – Conditions for Contract for Works**

<b>S.No.</b>	<b>Page</b>	<b>Para</b>	<b>Modify</b>
1.	2	17(a)	Amend ‘six’ to ‘twelve’
2.	5	1(b)	Add a new sub para after ‘work’ as below :- “Employer : Shall mean Director-General, CSIR or any officer authorized by Director-General for the purpose.”
3.	6	After para 3	Add a new para 3 A: “Sufficiency of Tender – The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of the tender for the works and the rates and the prices quoted in the schedule of items, which rates and the prices shall, except as otherwise provided, cover all his obligations under the contract and all matters and things necessary for the proper completion and maintenance of the works.”
4.	8	6	Add sub para (g) as “In case of easy availability of approved quality of cement and steel in the open market it will be Employer’s discretion to make these items as contractor’s supply”

5.	8	8(a)	Add “Annexure III refers”	
6.	9	10	Add sub para 10 (f) as “Deviation limits”	
			Building work	30%
			Maintenance/emergency	50%
			Foundation works	100%
			Services works	30%
7.	9	11 (b) first line	Modify to read as “If it shall appear to the Engineer or to the Employer based on audit/technical examination that any work has been executed.”	
8.	12	19	Add “ Contractor shall obtain a valid licence under Contract Labour (R&A) Act, 1970 and Contract Labour (R&A) Central Rules, 1971 before commencing work, and which should be valid till the completion.”	
9	16	26(d)	Add “ However, release of security deposit would be only after written clearance of Labour Officer regarding no dues or claims is received.”	
10	17	28	Add sub para (d) as “ Employer shall have the discretion to permit the IEEMA(Indian Electrical & Electronics Manufacturers’ Association) clause for escalation in case of specialised works e.g. lifts and electrical and mechanical installations etc. where the price variation is not similar to building works.	
11	17	29	<p>Modify as below:-</p> <p><b>ARBITRATION</b></p> <p>(a) Except where otherwise provided in the contract, all questions and disputes relating to the interpretation of the specifications, designs, drawings and instructions herein before mentioned, and as to the quality or workmanship or materials used on the work or as to any other question, claim right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, specifications, estimates, instructions, orders on these conditions or otherwise concerning the works, or the execution or failure to execute the same, whether arising during the progress of the work or after the completion or abandonment thereof, shall be referred to the sole arbitration of the person appointed by the Director General, Council of Scientific and Industrial Research. The arbitrator shall be appointed within 30 days from the receipt of a request by any party. The arbitrator to whom the matter is originally referred, being unwilling or unable to act for any reason, the Director General shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. The arbitrator shall give a speaking award. The Award of the Arbitrator shall</p>	

			<p>be final and binding on the parties. The cost of the Arbitrator shall be borne equally by both the parties.</p> <p>(b) It is also a term of the contract that the party invoking arbitration shall specify the dispute or disputes this clause together with the amount of amounts claimed in respect of each such dispute.</p> <p>(c) It is also a term of the contract that if the contractor does not make any demand for arbitration in respect of any claim in writing within 90 days of receiving the intimation from the Employer that the final bill is ready for payment, the claim of the contractor will be deemed to have been waived and absolutely barred and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims.</p> <p>Subject as aforesaid the provisions the Arbitration and 6, or any statutory modification or re-enactment therefor and under and for the time being in force shall apply to the arbitration clause.</p>
<b>12</b>	<b>18</b>		<p>Add para 30 to as under : “DISMANTLED MATERIAL: The contractor shall treat all material obtained during dismantling of a structure, services sub systems/installations, excavation of the site of a work etc. , as employer’s property and such material shall be disposed of to the best advantage or the Employer according to the instructions issued in writing by the Engineer.</p>
<b>13.</b>	<b>18</b>		<p>Add para 31 as : Performance Guarantee “Performance Guarantee may be taken from the Contractor before the award of work, by the officer authorized to award the contract, if and where considered necessary, to ensure that a part or whole of the contract is completed by the contractor. In case of non-performance, this guarantee could be encashed.</p>
<b>14.</b>	<b>19</b>	<b>2</b>	<p>Modify as “In case of any discrepancy, the order of precedence in interpretation shall be as under :-</p> <ul style="list-style-type: none"> <li>(i) Schedule of quantities</li> <li>(ii) Drawings</li> <li>(iii) Additional conditions</li> <li>(iv) General conditions of contract</li> <li>(v) Special condition</li> <li>(vi) Additional Technical Specifications</li> <li>(vii) CPWD latest Civil and Electrical Specifications</li> <li>(viii) IS Codes</li> <li>(ix) International codes</li> <li>(x) Best Engineering practice</li> </ul>
<b>15.</b>	<b>24</b>		<p>Add Annexure III as below :- Contractor’s site superintendence Staff to be employed by contractor on works : The contractor shall employ the following technical staff during execution of works :-</p> <ul style="list-style-type: none"> <li>(a) For building and road works</li> </ul>



			<p>(i) One Graduate Engineer, when the tendered cost of work exceeds RS. 10 lakhs.</p> <p>(ii) One qualified Diploma holder (overseer) with experience not less than 3 years when the tendered cost of work exceeds RS. 5 lakhss but is less than RS. 10 lakhs.</p> <p>(iii) One qualified Diploma holder when the tendered cost of work is more than RS. 2 lakhs but less than RS. 5 lakhs.</p> <p>(b) For sanitary and water supply works One qualified diploma holder with experience of not less than 5 years, out of which one year should in sanitary and water supply works when the tendered cost of work is more than RS. 50,000.</p> <p>(c) For electrical works</p> <p>(i) One qualified Graduate Electrical Engineer with two years experience or a Diploma holder in Electrical Engineering with experience of not less than 3 years, or a Diploma holder in Electrical Engineering with an experience of not less than 7 years when the tendered cost of the work is not less than RS. 1.5 lakhs.</p> <p>(ii) One Graduate Electrical Engineer with two years experience or a Diploma holder in Electrical Engineering with experience of not less than 3 years, when the tendered cost of the work is more than RS. 75,000 but less than RS. 1.5 lakhs.</p> <p>(iii) One Diploma holder in Electrical Engineering with experience of not less than 3 years when tendered cost of work is more than RS. 37000 but less than RS. 75000/-.</p> <p>(iv) One licensed Supervisor with experience of not less than 3 years when the tendered cost of work is more than RS. 7500/- and less than RS. 37000/-</p> <p>(d) In case the contractor fails to employ the technical staff as aforesaid, he shall be liable to pay reasonable amount not exceeding the amount shown below for each month, of default. These recoveries are subject to modifications from time to time by CSIR based on CPWD :-</p> <p>(i) In case when a Graduate Engineer is to be employed -- --RS. 3000/-</p> <p>(ii) In case when a qualified Diploma holder is required to be employed----- RS. 1500/-</p> <p>(iii) In case when a technical supervisor is required to be employed -----RS. 750/-</p>
--	--	--	--

**8**

*Copy of CSIR letter No.CE/121/94-Engg. dated 6.2.97 addressed to COAs of all the National Labs/Instts.*

**Sub: Preparation of detailed estimates – Work contracts.**

Some important observations applicable to all projects need specific attention of Engineers/Scientists involved in construction works. These are as under :-

**a) 6mm dia Mild Steel in 115 mm thick Brick walls**

It has been seen that wherever 115 mm thick brick partition walls are provided in buildings estimates the reinforcement of 6mm dia at every third course of brickwork is also included. It may be noted that reinforcement in this brick work should not be provided as a matter of practice. Only when there is specific structural requirement, item of reinforcement should be added.

**b) 230 mm Brick work in buildings**

It has been noted that cement mortar of required mix in 230 mm thick is usually provided with coarse sand. However, the coarse sand in 230 mm brick work should be used for only load bearing walls. In case the walls are non load bearing then fine sand should be used in the brick work unless there is a specific structural requirement, This aspect should be specially looked into since fine sand is generally cheaper as compared to coarse sand there will be savings.

The concerned officials may please be advised to follow the above in all future works.

**9**

*Copy of CSIR letter No.30/635/95-Engg. Dated 28.4..97 addressed to Directors of all the National Labs/Instts.*

**Sub: Processing of Estimates.**

Ref : Our letter No. CE/121/94-Engg. Of 26.10.1994

This is in continuation to the above letter on this subject.

2. It has been found that the proposals of the building projects for which preliminary estimates are referred to this office for approval do not contain the information asked for in the above letter in general and the following information in particular :-
  - a) Sometimes no drawings are enclosed on the basis of which the estimate is prepared.
  - b) Where the drawings are enclosed, they are not adequate in details and information required.
  - c) In the case of staff quarters/scientist apartments, the plinth areas do not tally with those given in the Govt. norms for different types of quarters. Number of floors are also not mentioned since the

cycle/scooter sheds areas are allowed only for quarters having more than two floors for Type I and Type IV.

- d) Laboratories shall also confirm that the proposals are feasible/permissible based on local building bye-laws as applicable.
3. Details of local building bye-laws to be followed shall be indicated in advance to this office for Architectural Construction drawings.
4. For all the old and new proposals for which the drawings are issued by this office requisite No. of sets of Architectural drawings are sent to the laboratories for submission to the local building authorities for statutory/mandatory approval as applicable from the various building authorities before start of the construction to avoid further complications.
5. This office shall assist the laboratories in getting the approval from the local building authorities as and when requested to do so.

This issues with the approval of the Chief Engineer.

## 10

*Copy of CSIR letter No.30/36/97-Engg. Dated 5.7.1997*

### **Sub:- Speedy clearance of the Works Projects- Procedure regarding.**

The undersigned is directed to state that in order to facilitate speedy clearance of Works Projects by CSIR Hqrs., the following procedure may be adhered to while forwarding the proposals to CSIR Hqrs.

- (a) The existing instructions/guidelines or the instructions/guidelines that have been issued by ESD, CSIR for preparation of preliminary estimates requiring technical clearance by ESD may be kept in view while sending the estimates for technical clearance/certification.
- (b) Action for new Works Projects requiring approval of DG, CSIR/Governing Body, as the case may be , should be initiated at least six months before commencement of the financial year in which budget allocation is to be made.
- (c) While sending the proposals for Works-Projects seeking approval of DG, CSIR/Governing Body, necessary clarification/confirmation on the following points supported by documentary evidence may be given :
  - i) Whether land/site is available for taking up the works projects.
  - ii) Whether services' infrastructure for the proposal exists, if not, how are they be to be met.
  - iii) Whether the proposed Works Projects permitted under the local municipal bye-laws/rules and permission/clearance from all the angles has been obtained from the appropriate authority for taking up the project.

- iv) Whether estimate and technical clearance (wherever applicable) has been obtained and if so, a copy thereof to be enclosed.
  - v) Whether the proposal has been cleared by the Management Council.
  - vi) Realistic time schedule for completion of the project and budgetary requirement year-wise.
  - vii) Copy of the estimate certificate and technical clearance by ESD, CSIR Hqrs.
2. Priority for Works Projects to be undertaken in a new financial year shall be approved by the DG, CSIR and budget allocation made accordingly.

## 11

*Copy of CSIR letter No.11/33/95-Engg. Dated 20/01/1999*

**Sub: Procedure of clearing Preliminary Estimate from ESD, CSIR for obtaining administrative approval from the Competent Authority.**

As per CSIR directives CPWD norms and specifications are being followed for staff quarters. CPWD has published latest plinth area rates in 1992 (PAR 92) and the detailed schedule of rates in 1993 (DSR 93). PAR 92 may be followed for preparing preliminary estimates. The prevalent cost index over 1.1.92 base may be also added where available and published by CPWD. For electrical works the new schedule for internal works has been published in 1994.

- A. Guidelines were issued vide letter No.CE/121/94-Engg.dated 26.10.94 for preparation of preliminary estimates. These guidelines are being reproduced for ready reference.
- The estimate should be accompanied by the following:
1. Justification for necessity,
  2. The concept of construction i.e. the scheme in general along with schematic drawings.
  3. Specifications and special features.
  4. Contour Plan.
  5. Environmental data like temperatures, rainfall, wind velocity, altitude, water table, soil strata and bearing capacity to earthquakes.
  6. Local constructions practices and availability of construction material.
  7. Strength of brick available.
  8. Water analysis.
  9. Details of existing external services for all new projects pertaining to external services.
  10. Market rates for the construction material (if ESD is to make the detailed estimates and the NIT).

From time to time letters were issued for the procedure of Preliminary Estimates. This also refers letter nos. 30/635/95-Engg.dated 28.04.97 and 11/36/97-Engg. Dated 05.07.97 but is found that the estimates referred to in this office for approval do not contain information /documents required as per

guidelines circulated. However these are once again being indicated below for future references.

- B. Some of the common deficiencies noted are:
1. No proper planning is taken up at initial stage. Conceptual and preliminary drawings are not got prepared from Architects / Consultants. Line sketches are prepared by Junior Engineers / Assistant Engineer in labs which are grossly inadequate for making estimates.
  2. Municipal approvals are not taken before submitting proposals. Most labs, which were outside city limits when established, have now come within these cities due to expansion. These labs are paying property tax but for making any structures/ buildings they are reluctant to obtain statutory approvals.
  3. All components in the estimates for a project i.e. building, services, external developments, water storage tanks, equipments, furniture and furnishing, D.G.Sets, Architect's fee and municipal charges are not included in initial stages leading to deviations and additional expenditure which require revised approvals.
  4. Soil investigations are not carried out to ascertain the type of foundations to be adopted.
  5. Furnishing specifications are not finalized which result in cost escalations at later stages.
  6. Cost Indices on CPWD PAR'92 are published and CPWD for all regions in India. These should be obtained by labs from the respective officers of CPWD and adopted in the estimates. This is not normally done.
  7. Sometimes no drawings are enclosed, on the basis of which the estimate is prepared.
  8. Where the drawings are enclosed, they are not adequate in details and information is required.
  9. In the case of staff quarters / scientist apartments, the plinth do not tally with those given in the Govt. norms for different types of quarters. Number of floors are also not mentioned since the cycle / scooter sheds areas are allowed only for quarters having more than two floors for Type I to Type IV.
- C. It is suggested that the following may be kept in view while preparing preliminary estimate:
1. Proper planning is taken up at initial stages. Conceptual and preliminary drawings are not got prepared from Architects / Consultants. Line sketches are prepared by junior Engineers / Assistant Engineer in labs which are grossly inadequate for making estimates.
  2. Municipal approvals are to be taken before submitting proposals. Most labs. Which were outside city limits when established have now come within these cities due to expansion. These labs are paying property tax but for making any structures / buildings, they are reluctant to obtain statutory approvals.

3. All components in the estimates for a project i.e. building, services, external development, water storage tanks, equipments, furniture, and furnishing, D.G. Sets, Architects fee and municipal charges should be included in initial stages.
  4. Soil Investigations must be carried out to ascertain the type of foundation to be adopted in the project.
  5. The preliminary estimate should be prepared on the standard format as given in PAR, CPWD 1992
  6. The preliminary estimate should be signed by the engineer preparing the estimate, Head (Civil) and F&AO of the laboratory. An abstract of the cost should be prepared containing the total cost of all components/buildings duly signed by the aforesaid officials.
  7. The cost index in the estimate should be supported with a document prepared by the laboratory engineer as per the guidelines prescribed in PAR 1992. This may please be worked out on the basis of latest market rates of specified materials and current labour rates.
  8. The justification for adopting extra from PAR,CPWD, 1992 like earthquake forces, pile foundations, stronger structural members for taking additional loads, capacities of overhead and underground water tanks etc. should be given.
  9. The justification of market rates whenever adopted should be given. Any deviation in specifications from the PAR CPWD 1992 should be justified along-with the cost of them with analysis of rates.
  10. Specifications adopted in each building works should be enclosed with the preliminary estimates.
  11. Justification of rates for furniture/furnishing must be supported with the rate list of reputed local firms.
  12. A brief history of project along-with its necessity and the scope of work may be enclosed with preliminary estimate.
- D. Check list of documents to be attached before sending preliminary estimates for approval:
1. Justification for necessity, brief history of the project alongwith scope of work.
  2. The concept of construction i.e. scheme in general alongwith schematic drawings.
  3. Details of specifications and special features.
  4. Contour plan.
  5. Environmental data like temperatures, rainfall, wind velocity, altitude, water table, soil strata and bearing capacity of earthquakes.
  6. Soil investigations report.
  7. Local construction practices and list availability of construction material.
  8. Strength of brick available.
  9. Water analysis.
  10. Details of existing external services infrastructure for all new projects pertaining to external services

11. Document confirming availability of land/site for taking up the work project.
12. Documents of Municipal approval relating to the proposed Works Projects permitted under the local municipal byelaws/rules and permission clearance from all angles has been obtained from the appropriate authority for taking up the project.
13. Details relating to estimates and technical clearance (wherever applicable) has been obtained and if so, a copy thereof to be enclosed.
14. Documents that the proposal has been cleared by the Management Council.
15. Documents relating to realistic time schedule for completion of the project and budgetary requirement year-wise.
16. Documents in support of cost index taken in the estimate on PAR 92
17. Justification of Market rates if adopted in the estimate.
18. Obtain signature of Engineer preparing the estimate, head (Civil); and F&AO of laboratory.

12

*Copy of CSIR letter No.17/167/93-Engg. Dated 21.6.2000*

**Sub: Amendments – Conditions of Contractor for Works.**

Conditions of contracts for Works were forwarded/circulated to the laboratories vide this office letter No. 10/10/94-Engg. Dated 28.7.95. Subsequently some amendments were forwarded vide letter No. 17/167/93-Engg. Dated 5.2.97

It has now been decided to amend the Escalation Clause No. 28 ( Page 16) as under :-

<b>Sr. No.</b>	<b>Existing clause</b>	<b>Modified clause</b>
Clause 28 Para (ii) (Page 16)	“The cost of work on which escalation will be payable shall be reckoned as the cost of work as per the bills, running or final and from this amount the value of material supplied by the Employer..... any items at prevailing market rates.	“The cost of work on which escalation will be payable shall be reckoned as 85% of the cost of the work as per the bills, running or final and from this amount the value of material supplied by the Employer..... any items at prevailing market rates.

This is an important amendment which has direct financial implications. It may please be brought to the notice of all concerned including Finance & Engineering Division of the Lab. All future works, which are to be tendered, should have this amendment incorporated in the NIT & tender documents.

This issues with the approval of DG, CSIR.

*Copy of CSIR letter No.30/635/95-Engg. Dated 10.7.2000 to COAs of all the National Labs/Instts*

**Sub: General irregularities observed in construction work.**

During intensive Examination of CSIR Construction work by Chief Technical Examiner (CVC) a number of irregularities in the Planning and execution works have been observed. These are brought out for guidance of all concerned:-

- (i) In the item of Mud-Phaska waterproofing, the earlier specifications provided for mixing crude oil. However this provision has been changed now and in CPWD specifications water proofing compound is to be added in cement. The revised specifications may be referred during execution.
- (ii) Cutting/corrections and over writings at each page of the tender should be totalled and initiated by contractor and COA at the time of opening of tender. This is required to be done to avoid tempering with the agreement.
- (iii) The technical sanction and justification of rate may be got approved from the competent authority i.e. Director of the lab. before award of work.
- (iv) Extra items substituted items and additional quantities should be executed only after approval of competent authority.
- (v) Payment of full rates should not be made for the following items, where part of the work is yet to be carried out :-
  - (a) Till disposal of surplus earth in excavation work not completed. In case disposal of surplus earth included is th items.
  - (b) In RRC and CC work till honey combed portion not repaired, surface accuracy not set right and curing carried out sufficiently for the required period.
  - (c) For centering and shuttering items, till formwork not removed.
  - (d) In brick mammary work till joints not rakes to full depth required cement mortar not attained desired strength and curing carried out sufficiently for the required period.
- (vi)
  - (a) Number of lugs on each side of M.S. Tee door frame should be as per specification.
  - (b) MS plates at the back of the hinges should be fixed as per specification.
  - (c) Similarly MS flat clamps, curtain brackets, flat for fixing hinges for cleats should be provided as per specifications.  
(However, in future works CPWD specifications for points a, b,c should be referred)
  - (d) Continuous welding instead of tack welding should be done for MS door frames, MS Grills, Section Windows etc. as required as per CPWD specifications.



- (e) CC blocks for fixing lugs to doors/windows should be fully packed / filled with concrete. There should not be any gap in between the masonry and CC block.
- (f) Hinges to T-iron doorframes should be screwed where it is specified.
- (g) Single leaf doorframes of more than 80 cm width should be provided with four numbers of hinges.

(vii)

- (a) RCC surface should be hacked immediately after removal of formwork as required as per CPWD specification.
- (b) RCC surface should not be plastered without hacking/roughening the surface.
- (c) Grooves should be provided at the junction of RCC and BW to avoid irregular cracks at latter stage.

(viii)

- (a) To provide adequate bond to the cement plaster, racking of joints to the required depth on rough/even side of the brick wall should be done before plastering.
- (b) It should be ensured that all cement work should attain desired strength before releasing payment.
- (c) Lateral rein for cement provided in half brick work should be tied on both sides with column/brick wall and should be taken upto the full width of adjoining X-wall to have proper bond in between these walls.

In all planning and execution of construction works CPWD specifications and manual should be followed in all future works.

You are requested to advise the concerned officials to note these observations and prevent the irregularities in future.