GUIDELINES FOR THE PREPARATION OF TOTAL COST ESTIMATES

PROVINCIAL ENGINEERING ORGANAIZATION WESTERN PROVINCIAL COUNCIL

VERSION 2019/01 **ISO/……**

Preface

These guideline has been prepared based on my experience gained at the Department of Buildings and thereafter at the Western Provincial Council.

The guideline intends to streamline the procedures and to provide uniform guidance and best practices that describe the departmental process, procedures and standards to be adopted in the preparation, checking and approval of a Total Cost Estimate for Construction Works in the public sector.

It should however be clearly understood that guidance these noted are not to be adopted blindly and every officer preparing or checking an total cost estimate should use his/her own discretion and ensure that the estimate suit the particular circumstances. He should bring to bear in his work the technical knowledge, experience and skill so that estimate will be perfect and complete in every respect. Under-estimating as well as over –estimating are both bad. It should be appreciated that the estimate has to be a realistic assessment of the probable cost of the identified scope of Work and is the starting point for the procurement of construction work.

An estimate is a calculation of the quantities of various items of work, and the expenses likely to be incurred thereon. The total of these probable expenses to be incurred on the Work is known as estimated cost of the work. The estimated cost of a work is a close approximation of its actual cost. The agreement of the estimated cost with the actual cost will depend on accurate use of estimating methods and correct visualization of the work.

Hence, there exist a dire need for the personal involved in the preparation and checking of estimates to have the necessary skill, experience, knowledge and judgment in addition to practical knowledge of the construction process.
I hope this guideline would be of benefit to those involved in the preparation and checking of Total Cost Estimates.

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1.0 Introduction

For the purpose of procurement, all Construction activities are categorized as "Works" (as per procurement guide line- 2006}.Majority of the procurement of "Works" are based on "measure and pay" type contract document. (CIDA/SBD/01, CIDA/SBD/02 and ICTAD/SBD/03}. The basis of a "measure and pay" type contract is the Bill of Quantity (BOQ}
Public .procurement process start with the formation of a "Total Cost Estimate" for an identified "Work". For the purpose of monetary allocation "Work" is identified as a "Project".
The word "Works" is defined in the procurement guideline.

Brief reference is made in procurement guide line Clause 4.3 for casting a "Total Cost Estimate" for Works. Clause 4.3.1 of the hand book to procurement guide line refers to "Direct Construction Cost"

Direct Construction Cost is computed based on a rated Bill of Quantity prepared for the "Works". The rates that are to be adopted by a government entity in pricing a Bill of Quantity are generally known as "Schedule of Rates" applicable for a particular year. In case of Building trade, these rates are known as "Building Schedule of Rates" and abbreviated as "'BSR". (Similarly abbreviation HSR stand for Highway schedule of rates and ISR stand for Irrigation schedule of Rates)
"Direct Construction Cost" (arrived at by pricing a BOQ with valid Building Schedule of rates) would be the basis for comparing bid prices at the time of evaluation in case of competitive bidding. In fact, Direct Construction Cost could be considered as a forecast of a contractor's bid amount.

Also "Direct Construction Cost" will be the initial contract price in case of "Works" awarded to approved societies as per clause 3.9 of procurement guideline.

Following are the key stages of implementing a "Works"

a) For the purposed of defining the "Works" first an outline conceptual Drawings/ proposal is Prepared based on an Employers requirement and specifications (Which cover material and Workmanship)

b) For the purpose of Preparation of a Total Cost Estimate, detailed D r a w i n g s along with a rated Bill of Quantity based on market prices of Labour, Material, Machinery, Tools with mark-up are to be decided.

c) For the purpose of Procurement of the identified scope of work in addition to(a) and (b) Contract documents are to be prepared depending on the type of procurement.

d) For the Execution of works (a)+(b)+(c)

2.0 Estimating

An Estimate is a prediction of the quantities of various items of work, and the expenses likely to be incurred thereon on a pre-defined scope of Work. The total of these probable expenses to be incurred on the Work is known as estimated cost of the work.

Have the word “Estimating” can be defined as the technique of calculating or computing the various quantities and the expected expenditure to be incurred on a particular Work or Project.

Purpose of Estimating:

Purpose of Estimating is to give a reasonably accurate forecast of the cost of a Work to give the Employer an opportunity to decide whether the works can be undertaken as proposed or needs to be curtailed or abandoned, depending upon the availability of funds and prospective direct and indirect benefits.

The unit Cost of Construction work seperatly consist of (cost of material, transportation, labour, temporary work, tools, plant and in-case of a contractor his establishment and supervision costs, taxes, reasonable profit and over heads.)

Hence, in-order to define the scope of Work (and there- after to prepare a cost Estimate) following details are required.

1. Detail drawing.
2. Material Specification.
3. Standard of Work man ship.
4. Method specification/ statement of the intended construction
5. Time period
6. Reasonable up to date rates applicable for various trade items. Involved with construction

Note: Rate is the unit cost of a construction work item and computed based on the unit cost of material, machinery and a labour component derived based on method study, work study and comparing market price.

The following steps outline the typical process involved in the preparation of a Total Cost Estimate for a Construction Work.

1. Request for an estimate
2. Well defined scope of work.

A template for the format summary sheet of a “Total Cost Estimate” is given in the Annex. 1 to ensure consistency.

Conceptual Cost Estimate (Also known as “Preliminary Cost Estimate” or “Tentative Cost Estimate”) In order to evaluate the economic feasibility of proceeding with a project, there is a need to determine the approximate cost of the project during its conceptual phase. The conceptual estimate is also defined as approximate estimate and used to arrive at a cost of a project for budgetary purposes.

Since conceptual estimate is made prior to the completion of detailed design, the margin of error will be relatively large. Hence, adequate contingency provision shall be allowed in the estimate.

Following conceptual estimating techniques are recommended for the preparation of preliminary estimates.

a) Superficial method

This is a single price rate method based on the cost per unit area of the building.

Ex: The current rate for a normal office building is Rs. 5000/- per SQ. feet

b) Unit method

The unit method is a single price rate method based upon the cost per functional unit for a

a. School – cost per student
b. Hospital – cost per bed space etc.
c. Cost of a road per unit length

PRELIMINARY ESTIMATE

Preliminary Estimates are prepared depending on the type of construction work as given below:

- Buildings
  - Per Unit Basis- Per student for schools and hostels, per class room for schools, per bed for hospitals, per seat for cinema and theatre halls, per tenement for residential buildings.
  - Plinth area basis
- Roads- Per km basis depending upon nature of road,width and pavement thickness
- Irrigation Channels
  - Per km basis
  - Per hectare basis
- Bridges and Culverts- Per running meter of span depending upon type of structure, type and depth of foundation.
- Sewerage and Water Supply Project
  - Per head of population served
  - Per hectare basis (Area covered)
- Over Head Water Tank- Per liter of tank depending upon type of structure and height oftank.

Types of Construction Estimates

There are several kinds of estimating techniques; these can be grouped into two main categories

1. Approximate estimates
2. Detailed estimates

1. Approximate Estimates

Preliminary or approximate estimate is required for studies of various aspects of work of project and for its administrative approval. It can decide, in case of commercial projects,

Whether the net income earned justifies the amount invested or not. The approximate estimate is prepared from the practical knowledge and cost of similar works. The estimate is accompanied by a report duely explaining necessity and utility of the project and with a site or layout plan. A percentage 5 to 10% is allowed for contingencies. The following are the methods used for preparation of approximate estimates.

a) Plinth area method
b) Cubical contents methods
c) Unit base method.

a) **Plinth area method:** The cost of construction is determined by multiplying plinth area with plinth area rate. The area is obtained by multiplying length and breadth (outer dimensions of building). In fixing the plinth area rate, careful observation and necessary enquiries are made in respect of quality and quantity aspect of materials and labour, type of foundation, height of building, roof, wood work, fixtures, number of stores etc.,

An approximate estimate is an approximate or rough estimate prepared to obtain an approximate cost in a short time. For certain purposes the use of such methods is justified.

2**. Conceptual Estimate**

Planning estimate are used for feasibility studies and for preliminary budget proposal The basis for the planning estimate must describe the purpose of the project, general design criteria, significant features and components proposed methods of accomplishment, proposed construction schedule. Any assumption made by the estimator in his phase shall be documented for review and concurrence. Planning estimates are based on past cost experience with similar type facilities, where available, and order of magnitude of estimates in the absence of previous cost experience cost of estimate of this time are generally based on a percentage of estimated construction costs, and consideration will be given to the complexity of the project in establishing the percentage to be used. Similarly an allowance for contingency will be included in the total project estimate using a percentage of total construction costs established on the basis of complexity and uncertainties of the component parts of the projects.

Here a planning estimate is an order of magnitude estimate; it can estimated on a per square foot, liner foot, cubic yard, kilowatt, etc., basis. The estimator shall get all available information about the project from the requestor. On many projects, the available data will be minimal and only and an allowance can be made for various segments of the estimate. It is imperative that the estimator fully describe the basis of the estimate, how the estimate was prepared, and any items specifically excluded from the estimate.

Degree of Accuracy: Because this estimate is an order of magnitude estimate, the degree of accuracy is generally plus or minus 40 percent. This range could be wider if the design criteria are not well defined.

To prepare a conceptual estimate following information should be available.

- A cost analysis of a previous similar building.
- Sketch plans and elevations of the proposed project.
- Outline specification/ levels of services installation, etc. for the proposed project.

Unit method

The unit method is a single price rate method based upon the cost per functional unit of the building, a functional unit being, for example, a hotel bedroom. This method is often regarded as a way of making a comparison between buildings in order to satisfy the design team that the costs are reasonable in relation to other buildings of a similar nature. It is not possible to adjust the single rate price and therefore is very much a ball park approach. It is suitable for clients who specialize in one type of projects; for example, hotel or supermarket chains, where it can be accurate. Other examples where unit costs may apply are:

- Schools – cost per pupil
- Hospital – cost per bed space

Superficial method

The superficial method is a single price rate method based on the cost per unit area of the building. The use of this method should be restricted to the early stage of the design sequence and is probably the most frequently used method of approximate estimating. Its major advantage is that most published cost data is expressed in this form. The method is quick and simple to use though, as in the case of the unit method, it is imperative to use data from similarly designed projects. Another advantage of the superficial method is that the unit of measurement is meaningful to both the employer and the design team. Although the area for this method is relatively easy to calculate, it does require skill in assessing the price rate. External works and non-standard items such a piling are calculated separately and then added into the estimate. Figures for specialist works may be available from sub-contractors and specialist contractors.

Parametric Cost Estimate Models uses historical data as the basis of the model's predictive features. However, the characteristics that are input into the process are primarily based on performance indicators such as seed, accuracy, tolerance, reliability, friendliness, error rate and complexity of the environment of the deliverables.

3. Detailed Estimate

A detailed estimate of the cost of a project is prepared by determining the quantities and costs of everything that a contractor is required to provide and do for the satisfactory completion of the work. It is the best and most reliable form of estimate. A detailed estimate may be prepared in the following two ways

a) Unit quantity method
b) Total quantity method

a) Unit Quantity method

In the unit quantity method, the work is divided into as many operations or items as are required. A unit of measurement is decided. The total quantity of work under each item is taken out in the proper unit of measurement. The total cost per unit quantity of each item is analyzed and worked out. Then the total cost for the item is found by multiplying the cost per unit quantity by the number of units. For example, while estimating the cost of a building work, the quantity of brickwork in the building would be measured in cubic meters. The total cost (which includes cost of materials, labor, plant, overheads and profit) per cubic meter of brickwork would be found and then this unit cost multiplied by the number of cubic meters of brickwork in the building would give the estimated cost of brickwork. This method has the advantage that the unit cost on various jobs can be readily compared and that the total estimate can easily be corrected for variations in quantities.

b) Total Quantity Method

In the total quantity method, an item of work is divided into the following five subdivisions:

I. Materials
II. Labour
III. Plant
IV. Overheads
V. Profit

Data Required for Preparing a Total cost Estimate:

In order to prepare a detailed estimate for a construction Work, following data:

1. Project brief for project proposal which shall include the following
   a) Necessity and feasibility of the project in the form of a feasibility report
   b) Selection of the site
   c) Survey plan (preferable a digital survey plan)
   d) Brief description of work – (defining the scope of "work")
   e) Nature of soil" topography of land etc.
   f) Functional requirements approved by the Employer along with a conceptual design
   g) Basis of design calculation
   h) Arrangement for water supply, sanitation and electrical installations etc.
   i) Roads and trains
   j) Temporary accommodations for staff, labor etc. included under miscellanies item group
   k) Manner of execution
   l) Total cost and how to be financed
   m) Return or revenue income
   n) Time of execution and duration

2. Plans, sections and other relevant details of the work.
3. Specifications indicating the exact nature and type of materials to be used.
4. The rates at which the different items of work are carried out. To enable an estimator to take out the quantities accurately, the drawings must themselves be clear, true to the fact and scale, complete, and fully dimensioned. The estimator has also to bear in mind certain principles of taking out quantities.

Standard method of Measurement of Works:

In case of Building Works, it is described in case of building work published by SLSI. It is preferable referred the metho of measure in the contract document.

(a) Administrative and expenditure sanction of the works (b) Technical Sanction of works (c) Procurement Works Agency/ Contractor (d) Execution of the work including Contract Administrate (e) Payment of the bills (f) Personal management.

a) **Administrative Sanction of the works:** Administrative Sanction for Capital Works is accorded by Government of U.P. This approval is accorded as per provisions of Financial handbook Volume 6, Para 316 (I) Administrative Sanction is accorded after scrutiny of the estimate as per provisions of Budget Sanctions for PWD. Proposals called Preliminary estimate, as per proposals received from the public / public representatives and field 'requirements or as per Govt. policies are prepared. It reaches the Chief Engineer of the concerned Zone through AE (Assistant Engineer),EE (Executive Engineer) and SE (Superintending Engineer). Depending up on availability of funds and priority of the work, CE(Chief Engineer)/E-in-C (Engineer-in-Chief) takes decision whether to sanction /recommend it to Government for Administrative Sanction or not.

b) **Expenditure Sanction to the works:** This approval is accorded as per provisions of Financial Handbook Volume 6, Para 317.This is accorded by the Govt. after scrutiny and approval of Finance Department, Administrative Department and other concerned Departments.

c) Technical Sanction to the Estimates for the procurement of works:- After administrative approval and financial/expenditure sanction is accorded; technical sanction is required to be given. Technical sanction is accorded after preparing detailed estimate based on ground requirement of a project. Surveys and detailed engineering are conducted to assess the requirement and the detailed estimate or detailed project report is submitted to higher technical authorities for technical sanction.

The power delegated to different officers for technical sanctions of the estimate is annexed as Annexure-3. This approval is accorded as per provisions of Financial.

DIFFERENT TYPES OF COST "ESTIMATES"

- Conceptual/ Preliminary/ Approximate/ Rough Cost Estimate
- Detailed Cost Estimate.
- Revised Cost Estimate Amended Cost Estimate
- Supplementary Cost Estimate
- Annual Repair or Maintenance Estimate

PLINTH AREA ESTIMATE

- Plinth area should be calculated for covered area by taking external dimensions of the building at the floor level
- Plinth area rate is known from cost of similar building in the locality.

3.0 Preparation of Total Cost Estimate

Estimates are generally categorized under following headings according to the type of works.

1. New works- comprise of works which are independent of existing facilities.
2. Additions- work that are intended to be extended to an original work.
3. Alterations and Additions (Inside a building with internal arrangement)

In case of multi-storied buildings, before trying any alterations or addition structural condition survey report from a Structural Engineer will have to be obtained.

4. Repairs and renovations - mainly structural repairs and replacing of building elements.
5. Refurbishments- these are mainly cosmetic repairs to the fabric of the building.
6. Restoration (heritage)- mainly concerned with buildings of historical importance which are in dilapidated conditions.

3.1 NEED FOR ESTIMATING AND COSTING

1. Estimating give an idea of the cost of the work and hence its feasibility can be determined i.e. whether the project could be taken up with in the funds available or not.
2. Estimate gives an idea of time required for the completion of the work.
3. Estimate is required to invite the tenders and Quotations and to arrange contract.
4. Estimate is also required to control the expenditure during the execution of work.
5. Estimate decides whether the proposed plan matches the funds available or not.

Cost of Construction work consist of cost of material, transportation, labour, temporary work, tools, plant and in-case of a contractor his establishment and supervision costs, taxes, reasonable profit and over heads.

Analysis of rate for Works is the process of separation of works in to components/ elements (viz; labour, materials, machinery, transport, overheads and profits) of work and pricing them on current market prices.

Note:

The capacity of doing work by an artisan or skilled labour in the form of quantity of work per 8 hour day is known as the “task work”, “turn out” or “work norm”

3.2 DRAWINGS

If the drawings are not clear and without complete dimensions the preparation of estimation become very difficult. So, it is very essential before preparing an estimate.

3.2 SPECIFICATIONS

a) General Specifications: This gives the nature, quality, class and work and materials in general terms to be used in various parts of work. It helps no form a general idea of building.

b) Detailed Specifications: These gives the detailed description of the varies items of work laying down the quantities and qualities of materials, their proportions, the method of preparation workmanship and execution of work.

DETAILED ESTIMATE:

The preparation of detailed estimate consists of working out quantities of various items of work and then determine the cost of each item. This is prepared in two stages.

i) Details of measurements and calculation of quantities:

The complete work is divided into various items of work such as earth work concreting, brick work, R.C.C. Plastering etc., The details of measurements are taken from drawings and entered in respective columns of prescribed performance . The quantities are calculated by multiplying the values that are in numbers column to Depth column as shown below:

Details of measurements form

S. No	Description of item	No.	Length (L) M	Breadth (B) M	Depth/ Heigh	Quantity	Explanatory Notes

ii) Abstract of Estimated Cost:

The cost of each item of work is worked out from the quantities that already computed in the details measurement form at workable rate. But the total cost is worked out in the prescribed form is known as abstract of estimated form 4% of estimated Cost is allowed for Petty Supervision, contingencies and unforeseen items.

Factors to be considered While Preparing Detailed Estimate:

i) **Quantity and transportation of materials:** For bigger project, the requirement of materials is more. such bulk volume of materials will be purchased and transported definitely at cheaper rate.

ii) **Location of site:** The site of work is selected, such that it should reduce damage or in transit during loading, unloading, stocking of materials.

iii) **Local labour charges:** The skill, suitability and wages of local labours are considered while preparing the detailed estimate.

Fixing of Rate per Unit of an Item:

The rate per unit of an item includes the following:

i) **Quantity of materials & cost:** The requirement of materials are taken strictly in accordance with standard data book (S.D.B). The cost of these includes first cost, freight, insurance and transportation charges.

ii) **Cost of labour:** The exact number of labourers required for unit of work and the multiplied by the wages/ day to get of labour for unit item work.

iii) **Cost of equipment (T&P):** Some works need special type of equipment, tools and plant. In such case, an amount of 1 to 2% of estimated cost is provided.

iv) **Overhead charges:** To meet expenses of office rent, depreciation of equipment salaries; of staff postage, lighting an amount of 4% of estimate cost is allocated

The Activities involved in the preparation of a TEC

Reference clause 4.3 of the procurement guideline, the Total Cost Estimate prepared for a
"Works" comprise of following components.

a) Direct Construction Cost. (This cost component represent the scope of Work identified foe procurement)

b) Cost of items to be directly p'ayable to Agencies

Ex.
i) Permanent CEB/ LECO connection
ii) Permanent water supply connection
iii) Permanent sewer connection (in case of the CMC area)
iv) Cost _of Road re-instatement payable to RDA/ PRDA/ Local Authority (Cost may include with or without VAT)

c) Cost of items intended to be procured separately (a decision made to separately)

Ex. Elevator, Generator, Water pumps, Solar power panels, Air conditioning units, Medical gas systems, etc..,

d) Fee for DAB
e) Provision for Physical Contingencies
f) Provision for Price Contingencies
g) Provision for VAT component

Total Cost Estimate is the summation of items (a) +(b)+ (c) +(d) +(e) +(f) +(g)

Basis for computation of items (a) to (g) are as given below

Item No	**Basis**
Item (a)	Based on a rated BOQ prepared based on Drawings, Specifications, approved schedule of rates
Item (b)	Based on estimates received from the respective agencies
Item (c)	Based on tentative price quotations from reputed dealers/ Agents/ Market Survey
Item (d)	Based on the complexity and duration
Item (e)	As a percentage of item (a) - refer clause of procurement guideline
Item (f)	As a percentage of items (a)- refer clause .... of the Procurement guideline.
Item (g)	As per statutory declarations

4.0 Bills of Quantity

Bill of Quantities (BOQ) is basically an itemized list of construction activities that are required in order to construct, maintain or repair a specific structure. (In this case a building or an associated work)

A "Bill of Quantity" (abbreviated as "BOQ") referred to in the "Conditions of Contract" comprise of following. (and hence collectively referred to as BOQ)

(a) "General preamble Notes" which indicate general guidance on pricing a BOQ.

(b) The "Pricing Preamble Notes" set out the basis on which the rates in BSR have been computed. "Pricing Preamble Notes" also indicate the inclusiveness of the unit prices and the method of measurement that has been adopted in pricing the BSR items.

(c) Quantified list of items to be priced by a prospective bidder on a "measure and pay" type contract along with a summary sheet to insert the bid price.

Quantified items of a BOQ are grouped under following categories.

- Preliminaries
- Quantified items relating to the “Works” arrange according to Trade Categories or any other manner
- Summary Page

The Bill of Quantities are generally prepared in accordance with the principles of standard method of measurement of works in Sri Lanka; published by the Sri Lanka Standards Institution of SLS573:1999. However, "General Preambles Notes" and "Pricing Preambles Notes" together with the BOQ units finally define the "method of measurement" applicable to respective items of the BOQ.

Steps in Preparation of a Bill of Quantity:

There are three clearly defined steps in the preparation of a B.O.Q.

1. Taking out quantities

In the first step of taking out quantities, the measurements are taken off from the drawings and entered on measurement sheet or dimension paper.

2. Squaring out

The second step consists of working out volumes, areas, etc. and casting up their total in recognized units.

3. Abstracting

In the third step all the items along with the net results obtained in the second step are transferred from measurement sheet to specially ruled sheets having rate column ready for pricing. The second and third steps above are known as working up. All calculations in these stage and every transferred should be checked by another person to ensure that no mathematical or coping error occurs.

Items described in the "General Preambles Notes" and "Pricing Preambles Notes" of the Bill of Quantities are deemed to qualify and to form part of every description of measured Work items appearing in the BOQ to which they refer including composite descriptions.

In the Bill of Quantities, items of "Work" are briefly described. Hence contractor's rates for all items throughout the BOQ must take account of, and include for, all of the obligations, requirements and specification given in the "General Preambles Notes" , "Pricing Preambles Notes", "General Specification" ,"Special Specification" ,"Standards" and "drawings".

An Estimate is a calculation of the quantities of various items of work, and the expenses likely to be incurred thereon. The total of these probable expenses to be incurred on the Works is known as an "Estimated Cost" of the Works. Generally the Estimated Cost of a Work is a close approximation of its actual cost. The actual Cost of the "Works" will be known only after construction.

When BOQ are prepared by Divisional Engineers for "Works", the Building schedule of rates help to standardize the preparation of BOQ item descriptions and at the same time will ensure uniformity of estimates prepared by using the BSR. Also BSR along with supporting documents
(viz. Preamble Notes) will be a basis for enforcing the minimum quality of work expected.

The BSR has been developed to incorporate majority of the possible items that may arise and/or required for the construction, maintenance and improvement of a Building based on "measure and pay type" (re - measurement) contract. However, a particular building project may require work items that are not covered in the BSR. In such an event, rates for such additional items are to be derived in the manner described elsewhere in this document. Items appearing in the Preamble Notes shall be modified to include any new items.

The item descriptions given in the BSR and relevant notes appearing at the beginning of each trade are short descriptions and the exact scope of work covered by the respective items are fully defined and described in the relevant clause of the preamble notes, specification (both general and special), drawings and contract conditions.

The objectives of the Bill of Quantities are

a) to provide sufficient information on the quantities of Works to be performed to enable

   Bids to be prepared efficiently and accurately.

b) Provide a common basis for bidding

c) When a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Work executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

a) Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, for payment to the contractor. The necessary authority shall be obtain from the respective CAO / AO through a delegation of Authority unless it is deemed to be covered by a clause in the procurement guideline and / or a circular issued by NPA

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should indicated in the relevant part of the Bill of Quantities as a " Provisional Sum" with an appropriate brief description. A separate procurement procedure is normally carried out by the Employer to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities,
attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related "Provisional" Sum item should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc. as attendance fee.

Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with the Conditions of Contract.

b) Day work Schedule

A Day work Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Employer of the realisticness of rates quoted by the Bidders, the Day work Schedule should normally comprise the following:

a) A list of the various classes of labor, materials, and equipment for which basic Day work rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a day work basis.

b) Nominal quantities for each item of Day work, to be priced by each Bidder at Day work rates as bid. The rate to be entered by the Bidder against each basic Day work item should include the Contractor's profit, overheads, supervision, and other charges.

c) The total amount assigned to such competitive Day work is normally 3--5 percent of the estimated base contract price and is regarded as a Provisional Sum for contingencies to be expended under the direction and at the discretion of the Engineer. A limitation on quantity should not apply, and the unit rate quoted should be invariable whatever quantities of work are ordered.

5.0 Rate Analysis

Every construction work comprise of activities. Each activity consists of different types of construction trades. For example, in the construction of a building, the activities can be excavation or earthwork, Concrete work, masonry work, Wood work such as doors and windows, plumbing, flooring, waterproofing, finishing work such as plastering, painting or colour washing.

Rate analysis of Building Works is the determination of cost of each construction work per unit quantity. This cost includes the cost of materials, labors, machinery, contractors profit and other miscellaneous expenses required for the particular work to be complete in unit quantity

In order to prepare a Total Cost Estimate for an Employer designed ''Works", there shall be an itemized bill of quantity prepared to capture the scope of Work. Next step would be to rate the itemized bill of quantity to arrive at a total value of the Construction Work as defined in the bill of quantity. In order to rate the Bill of Quantity, unit rates of each item of work is required.

In order to determine the unit rate of a particular work item, the factors affecting the rate of that item are to be studied carefully and then finally a rate is decided for that item. This process of determining the unit rate of an item is termed as analysis of rates" or rate analysis."

Rate build up from first principle using labor component (adopted from work study data published by the construction industry),market prices of materials, labor hourly rates (derived from 8 hour labor day) ;hire rate of machinery and allowance for overheads and profit

Elements which constitute the rate analysis are: (i.e. For arriving at the unit rates of each item)

> Specifications of Works and construction material, about their quality ,proportion and constructional operation method.
> Quantity of Material and cost inclusive of wastage, transport
> Quantum of both skilled and unskilled labour cost
> Plant & machinery owning/hire and operating charges
> Utility charges
>Taxes (excluding VAT)
> Insurance/ risk coverage charges
> Contractor’s overheads and profit (in case of bidding)

Note : there may be site specific costs associated with rates depending on the location of the site.

The rate of labour is based on skill category of the labour, such as skilled labour, semi-skilled and unskilled labour as described below.

Types of labour applicable for standard schedule of rates:
The labour is classified in to following categories for the rate analysis.

B.S.R	**H.S.R**	**I.S.R**
1) Skilled	Skilled	Skilled
2) Skilled - 2d Class	Semi-Skilled-A	
	Semi-Skilled-B	Unskilled
3) Unskilled	Unskilled	

The 8 hour labour rates are obtained from the District price fixing committee rates.

The cost of materials in rate analysis is calculated inclusive of the cost of material at origin, its transportation costs, taxes. (Excluding VAT)
The rates of material for Works are fixed based on the market prices every year and approved by the price fixing committee. These rates are incorporated in the standard schedule of rates and published as BSR , HSR and ISR.

The rate analysis is required in construction projects for following purposes:

- For the purpose of tendering. In the case of tendering, the contractor may calculate cost of unit work involved in each construction activity for justified quoting of rates.
T-he client may also require rate analysis to calculate the cost of construction project.

- To assess the requirements of quantities of labours, materials, machineries and capital to complete the project.

- To optimize the use of labour, materials and machineries and to know the alternatives to optimize the resources.

- To assess the rate of unit work from time to time for payment increase in material or labour costs or any deviations in work specifications, extra items of work to the contractor.

- To compare the cost of project with the sanctioned capital of the project to take necessary action or regularization of excess or less cost.

- To work out the budget of the construction project and control the cash flows at various stages of construction work.

6.0 Schedule of Rates

The unit rates appearing in the approved Schedule of Rates (i.e BSR, HSR, ISR) shall include all constructional plant, labour, supervision, material, transportation, installation/erection, Head office and site over heads, profit, together with all general risks, liabilities and obligation set out or implied in the Contract Documents (i.e General Preamble Notes, Pricing Preamble Notes, General Specifications, Special Specifications, Standards, Drawings , Special condition of contracts etc.)

The over - head and profit margin adopted for the basic rate is 20% (this comprise of
4% site over-heads, 4% head-office over-heads, 4% taxes, transportation etc. and 8% profit)

An attendance fee of 10% is added to the average market price for the following items. Instead of 20% over-head and profit margin.

I. Supply of ready mix concrete to the site
II. Leveling charges
III. Pumping charges

The Building Schedule of rates has been compiled purely for the purpose of preparing Total Cost Estimates (Please note that "Total Cost Estimate" is sometimes referred to as "Departmental Estimate" or "Engineer's Estimate").
However the Schedule of Rates may not necessarily reflect the exact market price/rate of material /products/ works at every location of the western province or may be statronary in any given time frame. Such variances will have be addressed from time to time.

7.0 Post Procurement related items connected with Total Cost Estimates

8.0 Terminology

- **Contingencies** – Indicates incidental expenses of miscellaneous character which cannot be classified under any distinct item. (3% to 5% of the estimated cost is provided to allow for contingencies)
- **Work-charged Establishment** – Work-charged employees are temporary staff whose services are terminated at the expiry of sanctioned period but usually one month notice is given. (1.5% to 2% of the estimated cost is added)
- **Tools and Plants** – Normally contractor has to arrange tools and plants. (1% to 1.5% of estimated cost is provided)
- **Centage charges or Departmental charges** – Also known as Supervision charges for works. To meet the expenses of establishment, designing, planning, supervision etc. (10% to 15% of the estimated cost.) When engineering department takes up work of other department.
- **Schedule of Rates** – It is a list of rate of various items of works maintained by engineering department under the name ”Schedule of Rates Book”
- **Administrative Sanction/ Approval** – It is the formal acceptance by the department concerned of the proposal. After the proposal, design, estimates etc. are prepared and thereafter execution of work.
- **Expenditure Sanction** – It represents allotment of money to meet the expenditure for the particular financial year
- **Technical Sanction** – It is the sanction of the detailed estimate, design calculation, quantities of work etc. Technical sanction is accorded by engineering department and execution of work is carried out thereafter.
- **Quantity Survey** – It means estimating of quantities of different items of works.
- **Plinth Area** – It is the built up covered area of a building measured at floor level of any story by taking external dimensions of the building at the floor level.
- **Site Plan** – Plan showing orientation of building, boundaries of land, position of roads, drains, sewer line, water pipelines and adjoining plots of lands. North direction is also shown on one corner of site plan.
- **Layout Plan –**
    - Plan showing proposed building, structures etc. shoeing their locations, size and orientations.
    - Roads, drains, pipe lines, electric lines, parks etc. are shown.
    - The boundary, main approach roads and adjoining areas are also indicated.

For the purpose of costing, a quantities BOQ which provides descriptions of the work required and the quantity of each type of work.

The quantities in the BOQ reflect the of work which consume the labour hours, material, tools, plant, scaffolding etc. and may even reflect a over- head component.

The method of measurement for preparation of a BOQ are given herewith.

The purpose of this document is to give guidance on the use of schdule of rate

Inaccurate Estimates

Excess Provision in Estimate

Deficient/ wrong provision in Estimates

1. Physical contingencies

   Physical contingencies are a provision allowed to Direct Construction cost of a total cost Estimation to account for uncertainty associated with estimated quantities and risk event that typically take place during construction.

   Physical contingencies are calculated as a percentage of the Direct Construction cost. (Refer procurement manual)

2. Price contingencies

   Price contingencies are a provision for price increases over the project implementation period due to either inflation or expected real price increases.

   Price contingencies are calculated as a percentage of the sum of the Direct Construction Cost.
   (Refer procurement manual)

   Definition of “Works” – refer clause of the procurement manual

Variation

The term Variation as used in the Contract Conditions means the Alteration or Modification of the Design, Quality or Quantity of the Works as shown upon the Contract Drawings and described by or referred to in the Specifications, BOQ and includes the Additions, Omissions or Substitution of the Works.

i. Increase or decrease the quantity of any work included in the Contract BOQ items.
ii. omission of any contract BOQ items such work.
iii. Change the contractor or quality or kind of any such work by changing/ amending BOQ item descriptions/ Schedules/
iv. Change the levels, lines, position and dimension of any part of the works as defined in the Contract drawings
v. Execute additional work (i.e. items which are not fitting into contract BOQ item description) of any kind necessary for the completion of the works.

Where extra work is not of a similar character or not executed under similar conditions to that specified in the Drawings, Specifications or Tendered Bill of Quantity, the shall determine a price as is fair, taking into account the prices quoted in the Engineer Tender BOQ

Where extra work cannot properly be Measured and Valued, the Contractor shall be allowed day – work prices and cost of materials used at the rates, if any, inserted by the Contractor in the Tender BOQ Schedule of Prices of materials and labour.

The price in the Schedule of Rates shall determine the Valuation of items Omitted, Provided that if Omissions Substantially vary the conditions under which any remaining items of work are carried out the prices for such remaining items shall be valued as indicated herein before.

In determining the value of Variations for items not included in the Tender BOQ a reasonable allowance shall be credited to the Contractor for overheads. The Retention sum shall be Applicable to all Variations as well.

9.0 Appendix

Appendix – 1 –(a) Format of a Total Cost Estimate

(b) format of Bill of Quantities Grand Summary

(a) Format of a total cost estimate

Sample Total Cost Estimate (TCE) for a works contract.

Construction of Proposed two-storied building at .....

	Item No	Description	Amount	Total
Project Brief. This estimate include necessary for the construct of the proposed two-storeyed building as per the Draw. No. ..... **OR** This estimate include expenses necessary for the complement not part of the existing ..... Following items are not included in the estimate 1. Loose furniture 2. Curtains 3. Generator 4. T'Phone connection. Etc. (Describe as appropriate)	1	Construction of proposed two-storeyed building as per the Draw. No. ..... And as per the B.O.Q. No. ..... Direct construction cost (DCC)	Rs.A	
	2	Preperation of contour plans, survey plans and soil investigations, Local authority approval etc. (1% of DCC)	Rs.B	
	3	Administrative cost (Travelling, stationary, photocopy charges) (0.5 - 1 % DCC)	Rs.C	
	4	Provision for the payment to be made to CEB/LECO for the 3-phase/single phase connectionfee including VAT.	Rs.D	
	5	Provision for the payment for water supply connection to NWS & DB including VAT	Rs.E	
	6	Provision for physical contingencies 10% of (D.C.C.)	Rs.F	
	7	Provision for price escallation (1.5% to 10% D.C.C. depending on the contract period)	Rs.G	
	8	VAT 12% of(A+F+G)	Rs.H	
		Total Cost Estimate (T.C.E.) (A+B+C+D+E+F+G+H)	Rs.I	
The measurements are correct as per the relevent drawings and field measurements.All the rates are fair and reasonable and that all necessary items have been included in to the estimate to par with the identified scope of work ..... *(Name & Signature)* Prepared By: Date: ..... Name of the T.O. who has prepared the B.O.Q.	I have checked the rates and quantities of following major items (Name the item Nos. of the B.O.Q.) and that rates are found to be reasonable and quantities are accurate ..... *(Name & Signature)* Checked By: Date: ..... Name of the T.O. who has checked the B.O.Q.	I certify that the rates adopted in pricing the BOQ are fair and reasonable and the Quantities are in commensurate with the Drawings.Hence estimate of Rs. .....is recommend for certification ..... Div.Engineer Date:	Recommend the estimate of Rs..... For certification ..... Director (Building)	The estimate Amount of Rs..... Certified ..... Deputy Chief Secretary (Engineering)

(b) format of Bill of Quantities Grand Summary

BILL OF QUANTITIES

GRAND SUMMARY

B.O.Q. NO.	DESCRIPTION	BID AMOUNT Rs. Cts.
1	Site Development	
2	Excavation & Earth work	
3	Concrete work	
4	Masonry work	
5	Water Proofing	
6	Structural Metal Work	
7	Metal Work	
8	Wood Work	
9	Partitions	
10	Roof Covering & Roof Plumbing	
11	Plumbing/ Sanitary Installations	
12	Fire Installations	
13	Electrical Installations	
14	Floor/ Wall/ Ceiling Finishes	
15	Painting	
16	Waste water & Soil water Drainage	
17	Special Works	
	Gross Amount of Bid	
	Discount if any (.....%)	
	Bid Price before VAT carried to form of Bid	

Bid Price in Words. Rupees

.....

.....

Amount of VAT. .....

Company Seal. .....

Signature of Bidder. .....

VAT Registration No. .....

Date: .....

The measurements are correct as per the relevent drawings and field measurements.All the rates are fair and reasonable and that all necessary items have been included in to the estimate to par with the identified scope of work ..... *(Name & Signature)* Prepared By: Date: ..... Name of the T.O. who has prepared the B.O.Q.	I have checked the rates and quantities of following major items (Name the item Nos. of the B.O.Q.) and that rates are found to be reasonable and quantities are accurate ..... *(Name & Signature)* Checked By: Date: ..... Name of the T.O. who has checked the B.O.Q.

Appendix – 2 – Definitions

Appendix:
Definitions,

1. "Estimate" in relation to construction –
   It is the anticipated or probable cost of "Construction work"

2. "Cost of construction work"

3. Total Cost Estimate – (TCE)

4. Revised Estimate

- is prepared when original sanctioned estimate is likely to exceed
- when expenditure on Work is likely to exceed
- when there are material deviation from original proposal even though cost may be met from sanctioned cost
- shall accompanied by a comparative statement showing variation of each item of works and reasons for the same.

5. Amended TCE

6. Supplementary Estimate

- it is the fresh detailed estimate of the additional works on addition to the Original Estimate
- it is required when further development is required during the progress of work
- abstract should shoe the mount of original estimate and total amount including supplementary amount

7. Supplementary and Revised Estimate

- when a work is partially abandoned and estimated cost of remaining work is less than 95% of the original sum
- when there are material deviations and changes in the design
- if at any time before or during the execution of work. It is found that original estimate is less

8. Comparison of Cost Estimate

If the bid, which results in the lowest evaluated bid price, is seriously unbalanced on front loaded, in relation to the Engineer's Total Cost Estimate of the items on the work to be performed under the contract, the TEC/ TB may request the bidder, though the Executing Agency to produce detailed priced analysis for any or all items of the bill of quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed

After evaluation of the price analysis, taking in to consideration the schedule o estimated contract payments, on the recommendation of the TEC/ TB, the Executing Agency may request the bidder that the amount of the performance security set forth be increased a the expenses of the bidder to a level sufficient to protect the Executing Agency against financial loss in the event of default of the successful bidder under the contract.

Tender which are considerably high or low in comparison to the TCE may be rejected.

Guideline No. 153.2 – heading is changed as "Approving" Authority for Contract Variation Orders" and he content will be as follows.

153.2 Contract Variation Orders may be authorized by the Head of the Department, provided that the net sum of the variation order and any previous variations does not exceed the amount of the contingency provisions, provided in the approved Contract Budget (normally 10% of the original contract amount).

10. Reference Documents

In this manual an attempt has been made to clearly distinguish the roles and responsibility of the officers involved in the preparation, checking, recommending and according technical approval of Total Cost Estimates prepared for works.

What is important to understand here is the fact that an estimate may be realistic at a particular time.

In case of ad-measurement contractsthe accuracy of quantities may also be questionable unless it is a type plan which has been constructed and refined.

In case a TEC has be revised i.e. the original TEC exceeds, then the revised TEC shall be based on the bidder's rates in order to be realistic.

11.0 Historical Evolution of Total Cost Estimate

EVOLUTION OF THE "TOTAL COST ESTIMATE" IN PUBLIC FINANCE

1. Manual of Public Works Department -19..
2. Inacurate cost estimation - Both overestimation and underestimation have negative consequences:

- When costs are overestimated, .
- When costs are underestimated, there are many unforeseen expenses There is always some uncertainty when estimating the cost of a construction project, but accuracy can be improved if the calculation is performed by experienced professionals, using reliable data and aided by software to speed up repetitive calculations.

Cost overestimation should not be confused with over-engineering,
. Overestimation occurs when certain project elements have unreasonably high prices, while over-engineering occurs when excessive capacity is specified - your project costs more than necessary in both cases!

Extracts from the Government Procurement Guideline -2006

Extracts from the Government Procurement Guideline …… and Manual

3.

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මුල් පිටපතේ ඇමුණුම පිළියෙල කර අනුමත කිරීමේ ක්‍රියාවලියට අදාල උපදෙස්.

FINANCIAL REGULATIONS OF THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

1992

F.R. 20. Total Cost Estimates

(1) The Total Cost Estimate (if revised, the revised Total Cost Estimate) of any capital work should be shown in a special column in the Annual Estimates. In addition, information should also be provided in separate columns as follows:-

(a) Anticipated date of completion of work.
(a) Actual expenditure up to the end of the year prior to the year in which the draft estimates are being prepared.
(b) The Actual expenditure in the year prior to the year in which the draft Estimates are being prepared.
(d) Estimate for the year in which the draft Estimates are being prepared.
(e) Estimate for the budget year.

The total (b) plus (d) plus (e) should not exceed the approved Total Cost Estimate.

(2) The Total Cost Estimate of each project should be determined on the basis of a carefully priced Bill of quantities which is supported by detailed schedules showing requirements of material, labour, plant, and equipment utilization and schedules of prices on which the Bill of Quantity rates were arrived at. There should be supporting documents to monitor price changes and translate them to rate changes, as a matter of routine, for use if needed. The Total Cost Estimate prepared for Examination of Works Proposals in terms of Financial Regulations should be prepared on this basis adding 10 percent for Contingencies and a further 10 percent to allow for escalation of prices within that year. If the work has to be phased over more than one year, the allowance for price escalation should be 10 percent for the first year, 20 percent for the second year, 30 percent for the third year and so on, in respect of the work to be done in each year. The allowance for Contingencies and price escalation should be indicated separately in the preparation of Total Cost Estimates and should not be disclosed even at the time of calling for tenders or at negotiation with the Contractors, when the exact approved Total Cost Estimated (excluding these percentages) should be used.

(3) Authority for approving a Total Cost Estimate will be either the Cabinet or Department of National Planning or the Department of National Budget as the case may be (see F.R. 35 & F.R. 36).

F.R. 21. Block Provision. (a) When a Capital Budgetary project, already approved in terms of F.RR 35 and 36 and provided for in the Estimates, comprises a number of similar but separate Projects or Components, and these cannot be separately itemized in the Estimates, the Total Cost Estimates, and the particulars in the other column referred to in F.R. 20(1), may be shown in the form of " Block Provision" for all the contemplated items.

(b) Projects or items of works each costing not more that Rs. 5,000,000 may be incorporated in a "Block Provision" if separate items cannot be detailed at the time provisions is sought in the Estimates. Projects or items of works each estimated to cost over Rs. 5,000,00 should be separately itemized and shown in the Estimates.

(No F.RR. Issued Under Nos. 22 – 33)

Section 3 - New Proposals

F.R. 34. New Project Proposals - Capital Expenditure. (1) New Projects will be admitted in the Budget according to the availability of resources and on the basis of investment priorities approved by Government. It should be noted that only projects which have been approved in accordance with the prescribed approval procedures and included in the Public Investment Programme will be accepted for financing. It should also be noted that a new phase or the extension of an ongoing project in the Total Cost Estimate of which the activities to be undertaken under the new phase or the extension are not included, should be treated as a new project and the prescribed approval procedures should be followed.

(2) Before inclusion of new Projects in the Draft Estimates of Expenditure the Director General of National Budget should be satisfied that following steps regarding the new projects have been taken in addition to approvals referred to in F.RR 35 & 36.

(a) The firm Total Cost Estimate of the Project should be compiled.
(b) If it is a foreign aided project negotiations should be completed and agreements signed or confirmed.
(c) Programming of implementation of the project and phasing of expenditure over the period required to complete the project should be finalized.
(d) Arrangements should be made to monitor and co-ordinate the activities necessary for the completion of the project and to provide for the operation and maintenance of the project after completion.

F.R. 40. Revision of Total Cost Estimate. The Total Cost Estimate of any work, supply or service already appearing in the current year's Estimates, cannot be increased without prior authority under Financial Regulation 72.

F.R.72 Revision of Total Cost Estimates

(1) The total Cost Estimates of any project (see F.R.20) shall not be exceeded during the financial year without authority in terms of (2) below. Departments should apply for the necessary authority as soon as an increase in cost is anticipated.

(2) When it is found that the Total Cost Estimates of a Work will be exceeded, authority should be obtained as follows to increase the Total Cost Estimate:-

(a) an increase upto 10 per cent but not exceeding Rs.25,000 approval of the Head of the Department;

(b) an increase upto 20 per cent but not exceeding Rs.500,000 approval of the Chief Accounting Officer who is a Secretary to a Ministry;

(c) an increase upto 25 per cent but not exceeding Rs.2,500,000 approval of the Secretary to the Treasury or Deputy Secretary to the Treasury;

(d) an increase over 25 per cent but not exceeding Rs.2,500,000 approval of the Minister of Finance;

(e) an increase exceeding Rs.2,500,000 approval of the Cabinet.

A comparative statement as indicated in Appendix 2 should accompany every application for authority to revise the Total Cost Estimate.

(3) Where provision for works appears under the votes of one Department, but the works are executed by another Department, action for obtaining approval under (2) above should be initiated by the Department in whose votes the provision appears.

Section 2 – Authorities for and Control of Expenditure, Incurring of Commitments (Liabilities) and Power to engage Casual Employees

F.R. 93 Powers of Accounting Officers to incur expenditure

Subject to the general control of the Chief Accounting Officer, and the Financial and the other Regulations and instructions of Government, Accounting Officers are empowered to incur, on their own responsibility, expenditure authorized by Warrants and Requisitions. The following types of services, however, require the additional authorities indicated:-

(1) *New Construction Works and Projects.*- If, notwithstanding the provisions of F.R.37, specific provision has been made in the Annual Estimate for any new construction work or project for which final Total cost Estimate and plans have not been prepared, expenditure should not be incurred thereon until the estimate and plans are drawn up and approved:-

(a) by the Secretary to the Ministry concerned if the estimate exceeds Rs.100,000.

(b) by the Head of Department, or an officer duly authorized by him, in other cases.

(2) *Block Provision.* – The following instructions and procedures should be followed in utilizing funds from Block Provisions:-

(a) The Relevant Financial Regulations should be complied with in undertaking and executing each scheme, service or work, and in the management of any establishment created under such provision. For example, tender procedure, where applicable, should be followed in the case of works; and, in the creation of posts or increasing of cadre, F.R.71 should be applied.

(b) In the case of construction and maintenance works financed from
Block Provision, the detailed Cost Estimates and Plans should receive the approval of the Head of the Department before any expenditure on such works could be incurred.

However, the Secretary to the Ministry concerned may, on the recommendation of the Head of a large Department, grant specific or general authority to Heads of Divisional Units of such departments, to approve the detailed Cost Estimates and Plans, before incurring expenditure from Block provision, on construction and maintenance works which do not exceed Rs.15,000 in cost. This authority should be exercised personally by the Head of such Unit.

(3) Where provision appears under the votes of one department, but the works are executed by another department, approvals required under (1) and (2) (b) above, should be granted by the Chief Accounting Officer or Accounting Officer, as the case may be, of the former department.

F.R.94 Incurring of Commitments (Liabilities)

(1) General Rule. – Except where otherwise provided for, no expenditure or commitment shall be incurred by any department for work, service or supply, unless financial provision exists therefore in the Annual Estimates, and at no time shall the commitments, and the expenditure incurred exceed such provision for the financial year. Expenditure or commitment shall not be incurred in the expectation that necessary authority or additional financial provisions will be received before actual payment falls due.

(2) Annually Recurrent Supplies. - When financial provision appears in the Estimates of the current financial year for annually recurrent services or supplies (e.g. stationery), and similar expenditure is envisaged even in the ensuing financial year, a department may, notwithstanding the provisions of (1) above, incur a commitment which will fall due to be discharged in the ensuing financial year, provided that it does not exceed 50 per cent of the average provision during the previous three financial years.

(3) Total Cost Estimates. – When a total cost estimate appears in the annual estimate for a scheme or project, and the Head of the Department is satisfied that such scheme or project cannot be undertaken or carried out according to the programme of work prepared for it, without incurring a deferred Liability, he may, notwithstanding the provisions of (1) above, personally authorize the incurring of such commitment, provided that it does not cause an excess on the approved Total Cost Estimate, and provided also that such liability accords with the phasing of expenditure set out in the programme.

Note.- In these Regulations the term 'Deferred Liability' is used to indicate a liability or commitment which will fall due to be discharged in a financial year, subsequent to that in which it is incurred. In regard to accounting for such liabilities see F.R.447(5)

(4) application should be made to the Treasury (Department of National Budget) whenever it is necessary to incur a Deferred Liability which is not covered by the provisions of paragraphs (1) to (3) above. The Treasury will consider whether the authority of the Cabinet should be obtained in any particular case.

F.R.95 Engagement of casual employees and substitutes

(1) Casual Daily-paid Labour. – Subject to the provisions of (3) below, Heads of Departments are empowered to employ casual daily-paid labour necessary to perform urgent or essential work, the expenditure being met from provision in the appropriate votes, Advance or other Accounts.

F.R.135. Delegation of Functions for Financial Control. (1) An accounting Officer may delegate his functions either generally or with regard to individual transaction; but he must do so in a reasonable way. In particular he must satisfy himself in regard to the competence of those to whom authority is delegated, and in regard to the adequacy of internal checks in the system of delegation. The Accounting Officer will be responsible for his scheme of delegation and for supervising the system of financial control generally. His scheme of delegation will naturally be determined by the organization of the department, except where geographical and technical factors necessitate special arrangements. Whenever possible the duties should be so divided that each transaction passes through two or three different officers.

(2) An officer to whom functions have been delegated will have full discretion to perform the duties delegated to him and will be held accountable for his acts. It will also be his duty to keep the Accounting Officer acquainted of any transactions, which involve novel principle, or are of sufficient importance, to merit the Accounting Officer's personal attention. On the other hand, and act of delegation will not relieve an Accounting Officer of his ultimate responsibility. If an officer exceeds or misuses his delegated powers, or fails to carry out his duties, he will be accountable for such acts and defaults. In such a case, however, the Accounting Officer will not be held responsible, unless the excesses, misuses or defaults are attributable to causes within his control.

(3) In turn, an officer holding a delegation can entrust to his subordinates the routine or minor tasks connected with and within the limits of his delegation. **This does not, however, absolve him of his own responsibility to his Accounting Officer.**

(4) Whenever the Accounting Officer intends to delegate one or more of his functions, he should prepare a Schedule specifying each officer, by name or office, and the functions delegated to him. In the case of delegation for the control of expenditure, the Accounting Officer may

Link particular functions with specific allocations. At the same time any limitations imposed on the character or amount of individual transactions should be specified. Arrangements to cover absence from duty must also be shown on the Schedule, which should be revised periodically and calculated in the department generally. Copies of delegations relating to expenditure should be supplied, in particular, to each Authorizing, Approving, Certifying and Paying officer; and copies of delegations in respect of the receipt of money, to each Assessing, Collecting and Accepting Officer. A copy should also be sent to the Auditor-General. If necessary the advice of the Chief Accounting Officer or of the Treasury (Department of Public Finance) may be sought concerning the Schedule.

It is important that the scope of delegation should be set down in writing so that there may be no doubt in the future about the nature of the responsibilities of the officers to whom authority has been delegated. Such delegations should be periodically reviewed and any revisions brought to the notice of officers concerned.

(5) The following stages or functions may be distinguished :-

(a) Expenditure :
- (i) Authorization.
- (ii) Approval.
- (iii) Certification.
- (iv) Payment.

(b) Income :
- (i) Assessment.
- (ii) Collection.
- (iii) Acceptance.

In particular circumstances, a delegation of authority granted to an individual officer by an Accounting Officer may involve more than one of the above stages or functions.

F.R. 136. Authorization. An officer, who is empowered to commission supplies, works or services, is referred to in these Regulations as Authorizing Officer. The decision to make such an authorizations is in his discretion and he must accept full responsibility with regard to it. Any officer empowered to commission supplies, works or services will do so in writing and will be responsible to the Accounting Officer in the following respects :-

(1) that the work, supply or service is covered by appropriate authority, and falls within the scope of the vote or other authorized financial provision and/or is properly chargeable to the accounts involved;

(2) that he exercises due judgement; that he does not exceed the specified limits of his authority; and that every step in the procedure set down in the Financial Regulations has been duly taken (e.g. decisions of tender boards);

(3) that the commitments which are expected to mature for payment in a particular financial year do not exceed the funds available in his respective allocations;

(4) that the sums due on commitments as they arise against each of his allocations (or his allocations to other departments) and the amounts recorded are subjected to continuous review in the light of further information that becomes available as work progresses;

(5) that the information mentioned in (4) above is passed periodically to the Certifying Officer;

(6) that his records are compared and reconciled at least once a month with those of the Certifying Officer so that he may know the precise amount available for further commitments;

(7) that in any case involving reasonable doubt as to the availability of funds, or as to the economy or financial propriety of transactions generally, he seeks the advice of the Accountant or Officer in charge of accounting operations.

Note 1 - An officer empowered to authorize services must first ensure that the necessary preliminaries – such as the approval of Annual Estimates, works estimates, etc. have been carried out. Nevertheless, these prior decisions, at whatever level, do not produce firm commitments. The final authorization must involve a free judgement by the Authorizing Officer personally. Where a proposed transaction is subject to Tender Board procedure, the Authorizing Officer will vouch for the necessity for the expenditure, but the Board will take responsibility for deciding the basis of purchase, etc.

Note 2. – Also see F.R. 201 (1)

F.R. 137. Approval. An officer who is empowered to approve services, works or supplies on completion and to admit claims is referred to in these Regulations as Approving Officer. He will be responsible to the Accounting Officer for verifying :

(1) that the work, service or supply arises out of an authorization by the appropriate Authorizing Officer and/or out of an Agreement;

(2) That the work or service has been performed or the supply rendered in terms of such authorization and/or a relevant Agreement and any authorized variations therefrom in any respect, especially with regard to compliance with terms relating to qualify of materials used, the quantities and the period or periods of time within which portions of the contract have to be completed ;

(3) that the rates and the total sums approved for payment are in accordance with authorized scales or in terms of the Agreement or any authorized variations and where there is no authorized or standard rates or Agreement, that the rates are fair and reasonable ;

(4) that in a contract of employment the appropriate conditions, rules and regulations have been complied with ;

(5) that in the case of supplies, they have been examined and correctly taken on charge or otherwise accounted for in terms of the Regulations or instructions of Government ;

(6) that in the case of bills for payment of electricity, gas, water, telephone and other similar services supplied, they are checked with Registers kept to show the monthly meter readings and other relevant particulars. If the amounts billed in a particular month deviate widely from the average normal monthly consumption pattern, such cases should be investigated and remedial action, where necessary, taken.

Note.- See also Financial Regulation 201 (2).

F.R. 781. Schedules of Departmental Rates. Departments regularly undertaking civil engineering works should maintain departmental schedules or rates for different parts of the Island. These schedules should be used as a basis for estimates and to check tenders, quotations, etc. They should be periodically revised and maintained up-to-date.

F.R. 157. Delegation of Authority in terms of particular Financial Regulations. (1) When authority vested on a particular officer is delegated to others in terms of any Financial Regulation which provide for such delegation, the terms of the delegation should be immediately recorded in a register maintained for the purpose. Separate folios should be opened therein for delegations under each Financial Regulation in terms of which the delegation is granted. The delegations should be serially numbered, such numbers being quoted when the particular delegation is referred to. Details of the limits applicable, and the file number should also be noted in the Register. A copy of every letter granting a delegation should be filed separately in serial order of the registration numbers.

(2) Whenever such a delegation of authority is revised, it is preferable to withdraw or cancel the letter by which authority has already been granted, and substitute therefore a letter in which the delegation of authority, as revised, is fully embodied, granting it a new serial number under the date on which the revision is issued, and duly entering it in the Register. This will ensure that the Register of Delegations is kept up-to date. The old entry in the register should be deleted and authenticated, quoting reference to the new entry.

(3) It would be the duty of the officers granting such delegations to review them from time to time, in the light of experience, and revise them, where necessary, in the manner prescribed above.