M.R.O. 1—77,006—8-6-37.

(1) Number of pages 14

(2) Date of repair 14-2-41

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 382 Press ~~Mis.~~

13-14

Dated 1 2 1870.

Not to be folded or roughly handled

No. 13. Read the following Proceedings of the Government of India in the Public Works Department, (Buildings and Roads—Civil Miscellaneous,) dated Fort William, 11th December 1869, No. 101 :—

Preparation of and adherence to Estimates.

Read the following, received with Secretary to Chief Commissioner's letter, No. 2,522, of 4th November 1869 :—

Circular from the Chief Engineer of Oudh, to the Executive Engineer, — Division, dated 20th October 1869, No. 18 C.

THE Chief Engineer has been much struck of late with the imperfect manner in which the majority of the estimates in the province are prepared and submitted, and he therefore desires to call the attention of the Executive Engineers, their Assistants, and subordinates, to the rules on the subject laid down for their guidance.

2. The first thing to be attended to is the *necessity of the work and of an estimate at all*, (see Code XII., 13, 14, page 171). In many cases estimates are prepared without orders or authority, and when they come up for sanction, the necessity of the work is doubted or denied, and the estimate rejected, perhaps to the annoyance of the officer concerned, who may have expended some time and labour on it.

3. This may be avoided by attending to the rules on the subject in Code III., iii., 12, page 58 : "Executive Engineers will prepare designs and estimates under the orders of the Superintending Engineers." It goes on to say that they *may* prepare designs and estimates if required by local authorities, and if they *themselves agree to the necessity of the work;* clearly implying that if they do not agree in the necessity, they need not do so, but offer instead to refer the case to higher authority for orders.

4. The same thing is repeated in other words in VII., i., 29, page 122, where Executive Engineers are told to obey an order from a Commanding Officer of Station or Division to *report* on a proposal and state *roughly* the probable cost. If Executive Engineer *does not concur* with the Commanding Officer as to necessity, he may make his report very brief and state the cost in even hundreds or round numbers. If he does concur, he can only be ordered to prepare detailed drawing and estimate for a work up to the Commanding Officer's powers of sanction, *i.e.*, for a Brigadier-General Commanding a Brigade or Station Rupees 200, and an Officer Commanding a Division Rupees 500. The power of Commanding Officers to take up Executive Engineer's time with plans and estimates is thus very limited, and confined *entirely* to the cases *in which they concur in opinion* with the Commanding Officer.

5. Similarly, Code VII., ii., 21, page 128, for Deputy-Commissioners, Commissioners, and other Civil Officers and heads of departments noted at page 123.

6. In all cases they are to treat Commanding Officers (Code VII., i., 5, page 115) with becoming respect, *i.e.*, if they decline to prepare a detailed drawing and estimate, they must do so without giving offence, state their reasons respectfully, and that the case has been, or will be referred to Chief Engineer for orders if required.

7. Also in the case of Civil Officers (Code VII., ii., 17, page 127), they are not to comply blindly and instantly with their demands, but exercise their own judgment, *oppose the application of public funds to works of doubtful necessity*, and refer to Chief Engineer before putting the work in hand, even if within the competence of the Civil Officer to sanction.

8. These rules are sufficiently clear, and if attended to, ought to prevent all risk of time being wasted on abortive estimates and plans.

9. *2nd.—Executive Engineer's opinion as to necessity.*—In many cases Executive Engineers forward for orders as to preparation of estimate a letter or docket from a Civil or Military officer, without giving any opinion or making any recommendation, and Chief Engineer is therefore left to form his decision on the enclosure only. If, as is too often the case, this is brief or imperfect, Chief Engineer may thus reject an application which, if all the facts of the case as known by Executive Engineer and local officer were fully explained, would have his entire concurrence.

10. An Executive Engineer is (III., iii., 5, page 56) the professional adviser of all departments within his division; he is (paragraph 6) "not only authorized but bound to act upon his own judgment" (paragraph 7); to facilitate the transaction of business (paragraph 8) in his dealings with all functionaries; to honestly exercise his judgment of what he deems conducive to the public interests, authorized (paragraph 10) to offer advice to unprofessional officers carrying out public works; and to report bad work, or important defects in such cases.

11. An Executive Engineer does not fulfil these duties if he allows himself to degenerate into a mere Post Office for the transmission of letters under covering dockets, and in future Chief Engineer will return all such applications or estimates in which Executive Engineer does not clearly state in precise terms whether he does not, or does recommend the work, and the reasons or grounds of his recommendation in either case.

12. *3rd.*—The submission of *rough outline projects.* Code III., i., 6, page 49, rules that Executive Engineer must prepare the whole of the arrangements and general plan of works in concert with the Superintending Engineer. Code XII., i., 7, page 173, directs that in all important works a rough design shall be submitted for approval of Superintending Engineer before proceeding to prepare detailed drawings and estimates, XII., ii., 2, page 180. The site is to be definitely settled before anything further is done; local authorities to be consulted regarding it (paragraph 5), its soil (paragraph 6), block-plan of site submitted giving the information detailed in paragraph 28, page 183; in the case of large buildings (paragraph 9), designs to be submitted, in the first instance, in the rough, for orders, to prevent unnecessary waste of time.

13. These rules also have been in many cases disregarded, and the result has been the waste of time which it was the object of these orders to prevent, estimates returned for revision, etc. Chief Engineer desires that in future all projects, estimated roughly to cost over Rupees 500, may be submitted in pencil outline, with a report only giving the information above required, with Executive Engineer's opinion as to necessity and recommendation. In most cases it will not be necessary, in the first instance at least, to prepare a special plan of site, the District Map, the Map of Cantonments, or other Map existing in Executive Engineer's office, with the site marked in pencil, would probably suffice, and would be returned with the necessary orders. The outline plan, if drawn on drawing paper, with a soft pencil, could in many cases be corrected without being entirely re-drawn, and the report might be on one of the printed forms of estimates, so as, if approved, to be available afterwards for the detailed estimate; or if written on ½ or ⅓rds margin, the necessary corrections and additions could be made to it by Executive Engineer, and it would then merely require to be re-copied fair for the detailed estimate. In this way the above requirements could be met with very little additional labour. The same remarks apply to the rough specification.

14. *4th.—The specification.*—This is a point on which Chief Engineer has generally more fault to find than on any other in all divisions. In most cases, the specification is meagre in the extreme; often consisting only of a report that all the works will be done according to the standard specification of the division; in other cases a bald reference is made to Major Peile's Book of Specifications, as if it were sufficient to put the plan and that book into the hands of an Overseer or Contractor to ensure the work being properly carried out. In many cases the specification consists of a few lines written by the Sub-Overseer, Overseer, or Upper Subordinate who took out the details of measurements, and has evidently had no attention whatever paid to it by the Executive Engineer himself.

Proceedings of the Madras Government, Public Works Department, 1st February 1870.

15. This is a great mistake. It is impossible for an Engineer, who is unacquainted with the details of work, or who has not carefully studied the rough project, to prepare a proper specification. It is not too much to say that a good specification cannot be prepared except by a competent Engineer, and that the abilities and experience of an Engineer may, in a great measure, be gauged by his specifications. The Executive Engineer is the officer of the greatest experience in the division, and it is therefore clearly his duty to superintend personally this most important part of his work, and to instruct his Assistants and Subordinates in it, instead of leaving it entirely to them; in important cases, he should write the specification with his own hand. The rules in the Code are clear enough.

16. Code III., i., 23, page 47; "It will be the Chief Engineer's duty to cause the specification to be drawn out with all proper precautions to prevent, as far as may be practicable, the possibility of any additional charge being incurred for completing the work in all respects as intended." III., iii., 25, page 60: "Executive Engineers will furnish their subordinates with working drawings and written instructions as to the execution of the works they are entrusted with." Chief Engineer has lately noticed a case in which the Executive Engineer going on leave the Overseer and Contractor were left without any instructions of any kind, verbal or written, and in consequence a large quantity of unnecessary work was done, for which there was no provision in the estimate.

17. Again (XII., i., 15, page 174) the specification must "show fully and clearly, but as briefly as possible, the details of the work, how each portion is to be done, and what materials are to be used." Paragraph 17, "a general specification, describing clearly the nature of construction of the various parts of the work, will usually be necessary *in addition* to the standard specifications;" and paragraph 18, "a reference to the standard specification will generally suffice for all the details of artificer's work." These rules apply when the work is to be done by departmental agency, under the supervision of the Overseer and Executive Engineer, who prepared the estimate, and show clearly that though a book of specifications may shorten the writing by permitting references to paragraphs which would otherwise have to be copied out at length, it does not by any means dispense with the necessity for a full, clear, and satisfactory specification.

18. In fact, it is not fair to the Overseer in charge to expect him to execute the work satisfactorily if he has not a clear specification for his guidance. An Executive Engineer's visits to the work, and verbal instructions, even if frequent and constant, cannot supersede this; he is required to see that the work is being carried out strictly in accordance with the plan, estimate, and specification, and to prevent (III., iii, 15, page 59) "any *deviation* from any sanctioned design in the course of its execution *unless under specific authority*, or in case of emergency, when it is to be *forthwith reported.*"

19. When the work is to be done by contract, the same rules apply, but with greater force and exactness. (XIV., 13., page 206), the Executive Engineer must first draw up "a *careful and complete* specification detailing the work to be done." Reference to standard specifications is permitted, but it is added: "a general specification will usually be necessary for each work in addition to these. The work of each kind to be done will be fully described in all cases; the nature and quality of materials to be used; the proportion of the ingredients; the mode of doing the work; the time within which it is to be completed, must be fully specified." Also "complete sets of drawings, showing dimensions and details of the various parts, so that the contractor may have complete information as to the work actually required." See also Form No. 101, where a form of estimate is given.

20. The Chief Engineer can safely say that in no estimate that has yet come before him have these rules been attended to. Executive Engineers appear to consider preparation of specifications a waste of time, and that as the Overseer and the Contractor know what is wanted, it is not worth while to tell them. The Chief Engineer will insist on a more careful preparation of specifications in future, and refrain from recommending for promotion any officers who are careless or slovenly in this respect.

21. *5th.—The estimate itself.*—On this point Chief Engineer wishes to draw special attention to the following points:—*Exact adherence to sanctioned estimates.* Paragraph 15, page 59, has been already alluded to, also paragraph 25, page 60. Special attention is also requested to XII., i, 5, page 172, regarding "strictness in enforcing explanations of the causes of any changes in a design once sanctioned, and in prohibiting alterations except on very sufficient grounds." Also para. 37, page 179; "sanction to an estimate must be looked upon as strictly limited by the precise objects for which the estimate was intended to provide, and savings should not be applied to carry out work not contemplated in the original project, and not provided for in the estimate, *without special authority.*" Paragraph 38; "any development, while a work is in progress, must be covered by a supplementary or revised estimate which must also be submitted. Paragraph 39, when the original estimate is likely to be exceeded from any cause whatever."

22. These rules must be strictly attended to in future; and before ordering or permitting any change or alteration in a sanctioned estimate, Executive Engineer must, if necessary, stop the work, report the proposed change for orders, and obtain sanction to the extra charge as against contingencies, or to a revised estimate, before the work is proceeded with. This delay may be inconvenient, but it is the necessary result of imperfect estimates which require revision; and the inconvenience may be diminished by anticipating, as early as possible, the proposed change, and reporting it for orders in sufficient time to obviate the necessity for stopping the work.

23. If the change is not material or important, it is better that it should not be made, but the work carried out exactly as sanctioned, and this is more especially applicable when the work is being done by contract. In such cases it may be preferable to allow the work to be completed on the sanctioned estimate, making the alteration required afterwards on a separate estimate. But in any case, the alteration *must not be made without report and authority.* An Executive Engineer has no discretion in such matters *except in case of emergency* as above explained. In 99 cases out of 100 there is no emergency; there is plenty of time to obtain sanction to a change, and the responsibility of delay and stoppage of work will rest on Executive Engineer.

24. It is the more necessary to insist strongly on this point, as the practice hitherto appears to have been extremely lax. Executive Engineers appear to have considered themselves competent to sanction any and all changes and additions they thought necessary, not only without authority, but without report, and Chief Engineer first became acquainted with the changes by a report from Controller that the estimate had been exceeded, or by observing in the completion report, that in some cases no single sub-head of the estimate had been adhered to. This state of things is not only unsatisfactory in itself, and discreditable to all concerned, but it requires, in many cases, explanations to be submitted to the Government of India, and re-appropriations to provide for the necessary excess expenditure, which give an immensity of trouble, cause far more correspondence than a more regular system, and may bring down censure on the local administration, which could and should have prevented the possibility of its occurrence.

25. *6th.—As to the rates*—In future for all estimates exceeding Rupees 500 in amount, it will be necessary, besides the regular abstract, to prepare a separate abstract showing the labour and materials for each rate and their totals. From the total of materials must be deducted the materials on stock, at the stock rates, and a memorandum added at foot showing the cost of the labour, and of the remaining materials that have to be purchased.

26. The stock lists of the Province are far too large already, and considerably in excess of the reserve limit, and have increased by more than Rupees 64,000 since 1st April. Every possible opportunity must therefore be taken to reduce the stock, not only to the reserve limit, four lacs, but even if possible to half that amount, and this can only be done by using stock on every possible occasion, even if not quite so suitable as new material. In the present financial difficulties and the prospect of reduced expenditure for the future, this utilization of stock is also essential to enable the Budget funds, which represent the cash limit, to go as far possible.

27. *As to the sufficiency of rates.*—If the rates required are higher than have hitherto sufficed, it will be necessary to furnish a detail of the labour and materials per 100 feet, etc., making up the rate. If this is not done, the estimate will be returned; if it is due to the high price of stock, this must not only be stated, but a similar detail given proving it, when the higher

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rates will be sanctioned, the increase being nominal only. In the case of contractors, for a work at schedule rates, (if lump-sum contracts, which are to be preferred, cannot be obtained), any increase of rates after the contract has been sanctioned and signed by Executive Engineer or Chief Engineer will not be listened to, and Executive Engineers are positively prohibited, at the risk of deduction from their salaries, from paying rates in excess of those sanctioned. All contractors expect a profit on the rates at which they undertake works, and if this expectation is not realised in every case, they have no claim to compensation, and it will not be given except under very special circumstances, nor where work in excess of the estimate has been done without authority. In the latter event, the contractor will be at liberty to sue the Executive Engineer personally for the excess, which will be considered as due to his neglect for having permitted it. These remarks are rendered necessary by the numerous cases of unauthorized excesses that have come to Chief Engineer's notice, and where the remark, "work necessary, but not provided for in estimate" appears to have been considered sufficient justification for very large excesses.

28. Lastly, with reference to the *contingencies* of an estimates (XII., i., 22, page 176), Executive Engineers are reminded that these are not at their disposal for any purpose whatever, The rates are intended to cover all incidental charges usual to or necessary for the execution of the works, and the contingencies are meant to provide for accidental and unforeseen expenditure of moderate amount, which would otherwise require a revised estimate, and are not to be disbursed without the Chief Engineer's sanction, first obtained.

29. The necessity of obtaining *the approval and countersignature of all officers in any way concerned* in an estimate has been lately pointed out in Circular No. 16 C, and need not be again repeated.

30. The above instructions are so plain that there can be no excuse for misunderstanding or neglecting them, and Chief Engineer will not fail to punish, and, if necessary, procure the removal of officers who neglect them.

OBSERVATIONS.—The Governor-General in Council observes that the foregoing excellent Circular brings together very clearly the general rules and principles which the Government of India desire to see followed in the preparation of, and adherence to estimates, and may be circulated with advantage to the department for general information.

ORDER.—Ordered, that this Resolution be communicated accordingly to the several Governments and Administrations for information.

(Signed) W. A. CROMMELIN, Colonel,
Deputy-Secretary to the Govt. of India.

No. 14. ORDER THEREON, 1st February 1870, No. 382.

ESTABLISHMENT, No. 1.

COMMUNICATED to all Superintending Engineers for information and guidance.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Superintending Engineers.
,, Major R. B. Kennedy.
To the Controller of Public Works Accounts.
,, Officer in charge of Public Works Operations at Cochin.
Exd. F. R. Bantleman.

Govt. of [1870] Madras.

PUBLIC WORKS.

To

SUPERINTENDING ENGINEERS.

&c, &c, &c.

Dated February 1st.

Read.

G. O., 1st February 1870, No. 382.

FEBRUARY.

Nos. 13-14

Estimates.—Circular from the Government of India regarding the preparation, etc., of estimates, communicated to the officers concerned.

CIRCULAR No. 101 PUBLIC WORKS.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

BUILDINGS AND ROADS.
Civil Miscellaneous.

FORT WILLIAM, DECEMBER 11, 1869.

Preparation of and adherence to Estimates.

Read the following, received with Secretary to Chief Commissioner's letter No. 2522 of 4th November 1869:—

Circular No. 18 C, dated 20th October, 1869.

From—COLONEL W. MAXWELL, R. A., *Chief Engineer, Oudh,*
To—Executive Engineer, ——— Division.

The Chief Engineer has been much struck of late with the imperfect manner in which the majority of the estimates in the Province are prepared and submitted, and he therefore desires to call the attention of the Executive Engineers, their Assistants, and Subordinates to the rules on the subject laid down for their guidance.

2. The first thing to be attended to is the *necessity of the work, and of an estimate at all,* (see Code XII; 13, 14, page 174). In many cases estimates are prepared without orders or authority, and when they come up for sanction, the necessity of the work is doubted, or denied, and the estimate rejected, perhaps to the annoyance of the Officer concerned, who may have expended some time and labour on it.

3. This may be avoided by attending to the rules on the subject in Code III, iii, 12, page 58—"Executive Engineers will prepare designs and estimates under the orders of the Superintending Engineers." It goes on to say that they *may* prepare designs and estimates if required by Local Authorities, and if they *themselves agree to the necessity of the work*; clearly implying that if they do not agree in the necessity, they need not do so, but offer instead to refer the case to higher authority for orders.

4. The same thing is repeated in other words in VII, i, 29, page 122, where Executive Engineers are told to obey an order from a Commanding Officer of Station or Division to *report* on a proposal and state *roughly* the probable cost. If Executive Engineer *does not concur* with the Commanding Officer as to necessity, he may make his report very brief and state the cost in even hundreds or round numbers. If he does concur, he can only be ordered to prepare detailed drawing and estimate for a work up to the Commanding Officer's powers of sanction, *i. e.*, for a Brigadier-General Commanding a Brigade or Station Rs. 200, and an Officer Commanding a Division Rs. 500. The power of Commanding Officers to take up Executive Engineer's time with plans and estimates is thus very limited, and confined *entirely* to the cases *in which they concur in opinion* with the Commanding Officer.

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6. In all cases they are to treat Commanding Officers (Code VII, i, 5 page 115) with becoming respect, *i. e.*, if they decline to prepare a detailed drawing and estimate, they must do so without giving offence, state their reasons respectfully, and that the case has been, or will be referred to Chief Engineer for orders if required.

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12. 3*rd*.—The submission of *rough outline projects*. Code III, i, 6, page 49, rules that Executive Engineer must prepare the whole of the arrangements and general plan of works in concert with the Superintending Engineer. Code XII, i, 7, page 173, directs that in all important works a rough design shall be submitted for approval of Superintending Engineer before proceeding to prepare detailed drawings and estimates, XII, ii, 2, page 180. The site is to be definitely settled before anything further is done, Local Authorities to be consulted regarding it (para. 5), its soil (para. 6), block plan of site submitted giving the information detailed in para. 28, page 183; in the case of large buildings (para. 9), designs to be submitted in the first instance in the rough, for orders, to prevent unnecessary waste of time.

13. These rules also have been in many cases disregarded, and the result has been the waste of time which it was the object of these orders to prevent, estimates returned for revision, &c. Chief Engineer desires that in future all projects, estimated roughly to cost over Rs. 500, may be submitted in pencil outline, with a report only giving the information above required, with Executive Engineer's opinion as to necessity and recommendation. In most cases it will not be necessary in the first instance at least, to prepare a special plan of site, the District Map, the Map of Cantonments, or other Map existing in Executive Engineer's Office, with the site marked in pencil, would probably suffice, and would be returned with the necessary orders. The outline plan, if drawn on drawing paper, with a soft pencil, could in many cases be corrected without being entirely re-drawn, and the report might be on one of the printed forms of estimates, so as, if approved, to be available afterwards for the detailed estimate; or if written on ½ or ⅓rds margin, the necessary corrections and additions could be made to it by Executive Engineer, and it would then merely require to be re-copied fair for the detailed estimate. In this way the above requirements could be met with very little additional labour. The same remarks apply to the rough specification.

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15. This is a great mistake. It is impossible for an Engineer, who is unacquainted with the details of work, or who has not carefully studied the rough project, to prepare a proper specification. It is not too much to say that a good specification cannot be prepared except by a competent Engineer, and that the abilities and experience of an Engineer may, in a great measure, be gauged by his specifications. The Executive Engineer is the Officer of the greatest experience in the Division, and it is therefore clearly his duty to superintend personally this most important part of his work, and to instruct his Assistants and Subordinates in it, instead of leaving it entirely to them; in important cases, he should write the specification with his own hand. The rules in the Code are clear enough.

16. Code III, i, 23, page 47.—"It will be the Chief Engineer's duty to cause the specification to be drawn out with all proper precautions to prevent, as far as may be practicable, the possibility of any additional charge being incurred for completing the work in all respects as intended." III, iii, 25, page 60.—"Executive Engineers will furnish their Subordinates with working drawings and written instructions as to the execution of the works they are entrusted with." Chief Engineer has lately noticed a case in which the Executive Engineer going on leave, the Overseer and Contractor were left without any instructions of any kind, verbal or written, and in consequence a large quantity of unnecessary work was done, for which there was no provision in the estimate.

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by permitting references to paragraphs which would otherwise have to be copied out at length, it does not by any means dispense with the necessity for a full, clear, and satisfactory specification.

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19. When the work is to be done by contract, the same rules apply, but with greater force and exactness. (XIV, 13, page 206), "the Executive Engineer must first draw up a *careful and complete* specification detailing the work to be done." Reference to standard specifications is permitted, but it is added, "a general specification will usually be necessary for each work in addition to these. The work of each kind to be done will be fully described in all cases; the nature and quality of materials to be used, the proportion of the ingredients, the mode of doing the work, the time within which it is to be completed, must be fully specified." Also "complete sets of drawings, showing dimensions and details of the various parts, so that the contractor may have complete information as to the work actually required." See also Form No. 101, where a form of estimate is given.

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21. 5*th*.—*The estimate itself*.—On this point Chief Engineer wishes to draw special attention to the following points:—*Exact adherence to sanctioned estimates*. Para 15, page 59, has been already alluded to, also para. 25, page 60. Special attention is also requested to XII, i, 5, page 172, regarding "strictness in enforcing explanations of the causes of any changes in a design once sanctioned, and in prohibiting alterations except on very sufficient grounds." Also para. 37, page 179, "sanction to an estimate must be looked upon as strictly limited by the precise objects for which the estimate was intended to provide, and savings should not be applied to carry out work not contemplated in the original project, and not provided for in the estimate, *without special authority*." Para. 38, "any development, while a work is in progress, must be covered by a supplementary or revised estimate which must also be submitted. Para. 39, when the original estimate is likely to be exceeded from any cause whatever."

22. These rules must be strictly attended to in future; and before ordering or permitting any change or alteration in a sanctioned estimate, Executive Engineer must, if necessary, stop the work, report the proposed change for orders, and obtain sanction to the extra charge as against contingencies, or to a revised estimate, before the work is proceeded with. This delay may be inconvenient, but it is the necessary result of imperfect estimates which require revision; and the inconvenience may be diminished by anticipating, as early as possible, the proposed change, and reporting it for orders in sufficient time to obviate the necessity for stopping the work.

23. If the change is not material, or important, it is better that it should not be made, but the work carried out exactly as sanctioned, and this is more especially applicable when the work is being done by contract. In such cases it may be preferable to allow the work to be completed on the sanctioned estimate, making the alteration required afterwards on a separate estimate. But in any case, the alteration *must not be made without report and authority*. An Executive Engineer has no discretion in such matters *except in case of emergency* as above explained. In 99 cases out of 100 there is no emergency; there is plenty of time to obtain sanction to a change, and the responsibility of delay and stoppage of work will rest on Executive Engineer.

24. It is the more necessary to insist strongly on this point, as the practice hitherto appears to have been extremely lax. Executive Engineers appear to have considered themselves competent to sanction any and all changes and additions they thought necessary, not only without authority, but without report, and Chief Engineer first became acquainted with the changes by a report from Controller that the estimate had been exceeded, or by observing in the completion report, that in some cases no single sub-head of the estimate had been adhered to. This state of things is not only unsatisfactory in itself, and discreditable to all concerned, but it requires, in many cases, explanations to be submitted to the Government of India, and re-appropriations to provide for the necessary excess expenditure, which give an immensity of trouble, cause far more correspondence than a more regular system, and may bring down censure on the Local Administration, which could and should have prevented the possibility of its occurrence.

25. 6*th*.—*As to the rates*.—In future for all estimates exceeding Rs. 500 in amount, it will be necessary, besides the regular abstract, to prepare a separate abstract showing the

labour and materials for each rate, and their totals. From the total of materials must be deducted the materials on stock, at the stock rates, and a memorandum added at foot showing the cost of the labour, and of the remaining materials that have to be purchased.

26. The stock lists of the Province are far too large already, and considerably in excess of the reserve limit, and have increased by more than Rs. 64,000 since 1st April. Every possible opportunity must therefore be taken to reduce the stock, not only to the reserve limit, four lakhs, but even if possible to half that amount, and this can only be done by using stock on every possible occasion, even if not quite so suitable as new material. In the present financial difficulties and the prospect of reduced expenditure for the future, this utilization of stock is also essential to enable the Budget funds, which represent the cash limit, to go as far possible.

27. *As to the sufficiency of rates.*—If the rates required are higher than have hitherto sufficed, it will be necessary to furnish a detail of the labour and materials per 100 feet, &c., making up the rate. If this is not done, the estimate will be returned; if it is due to the high price of stock, this must not only be stated, but a similar detail given proving it, when the higher rates will be sanctioned, the increase being nominal only. In the case of contractors, for a work at schedule rates, (if lump-sum contracts, which are to be preferred, cannot be obtained), any increase of rates after the contract has been sanctioned and signed by Executive Engineer or Chief Engineer will not be listened to, and Executive Engineers are positively prohibited, at the risk of deduction from their salaries, from paying rates in excess of those sanctioned. All contractors expect a profit on the rates at which they undertake works, and if this expectation is not realised in every case, they have no claim to compensation, and it will not be given except under very special circumstances, nor where work in excess of the estimate has been done without authority. In the latter event, the contractor will be at liberty to sue the Executive Engineer personally for the excess, which will be considered as due to his neglect for having permitted it. These remarks are rendered necessary by the numerous cases of unauthorized excesses that have come to Chief Engineer's notice, and where the remark, "work necessary, but not provided for in estimate", appears to have been considered sufficient justification for very large excesses.

28. Lastly, with reference to the *contingencies* of an estimate (XII, i, 22, page 176), Executive Engineers are reminded that these are not at their disposal for any purpose whatever. The rates are intended to cover all incidental charges usual to or necessary for the execution of the works, and the contingencies are meant to provide for accidental and unforeseen expenditure of moderate amount, which would otherwise require a revised estimate, and are not to be disbursed without the Chief Engineer's sanction, first obtained.

29 The necessity of obtaining *the approval and countersignature of all Officers in any way concerned* in an estimate has been lately pointed out in Circular No. 16 C, and need not be again repeated.

30. The above instructions are so plain that there can be no excuse for misunderstanding or neglecting them, and Chief Engineer will not fail to punish, and if necessary, procure the removal of Officers who neglect them.

OBSERVATIONS.—The Governor General in Council observes that the foregoing excellent Circular brings together very clearly the general rules and principles which the Government of India desire to see followed in the preparation of, and adherence to estimates, and may be circulated with advantage to the Department for general information.

ORDER.—Ordered, that this Resolution be communicated accordingly to the several Governments and Administrations for information.

W Muncelin Colonel

Depy. Secretary to the Govt. of India.

To
The Secy to the Govt of Madras
PW Dept

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

BUILDINGS AND ROADS.
Civil Miscellaneous.

To

CIRCULAR No. 101 PUBLIC WORKS.

Dated December 11, 1869.

Received

No 382. 1st February 1870

Preparation of and adherence to Estimates.

P. W D. Press—11-12-69-590.

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Govt. of Madras.

PUBLIC WORKS.

To The Superintending Engr

Dated

Recd. Encl.

G. O., 1st Feby 1870, No. 382.

Nos. 13-14

Estimates Circular from the Govt of India regarding the preparation of Estimates. Cond Ctte Offices circulated.