THIRTEENTH KERALA LEGISLATIVE ASSEMBLY

COMMITTEE

ON

PUBLIC UNDERTAKINGS
(2014-2016)

Eighty Second Report

(Presented on 2 -7-2015)

SECRETARIAT OF THE KERALA LEGISLATURE

THIRUVANANTHAPURAM

2015

FCPII/AV/PUC/WATER AU/25-6-15

THIRTEENTH KERALA LEGISLATIVE ASSEMBLY

COMMITTEE

ON

PUBLIC UNDERTAKINGS
(2014-2016)

Eighty Second Report

On

The action taken by Government on the Recommendations contained in the Seventy First Report of the Committee on Public Undertakings (1995-96) relating to Kerala Water Authority based on the Report of the Comptroller and Auditor General of India for the year ended 31st March, 1991 (Civil)

FCPII/AV/PUC/WATER AU/25-6-15

CONTENTS

COMMITTEE ON PUBLIC UNDERTAKINGS (2014-2016)

Chairman:

Shri. K.N.A. Khader

Members:

Shri. Abdurahiman Randathani

Shri. A. A. Azeez

Shri. P. K. Gurudasan

Dr. N. Jayaraj

Shri. Elamaram Kareem

Shri. T. N. Prathapan

Shri. Palode Ravi

Shri. S. Sarma

Shri. P. Thilothaman

Shri. P. C. Vishnunadh

Legislature Secretariat:

Shri. P.D. Sarangadharan, Secretary

Smt. P.K. Girija, Additional Secretary

Smt. M.R. Maheswary, Deputy Secretary

Shri. P.S. Selvarajan, Under Secretary

INTRODUCTION

I, the Chairman, Committee on Public Undertakings having been authorised by the Committee to present the Report on their behalf, present this Eighty Second Report on the action taken by Government on the recommendations contained in the Seventy First Report of the Committee on Public Undertakings (1995-96) on the working of the Kerala Water Authority based on the Report of the Comptroller and Auditor General of India for the year ended 31st March, 1991 (Civil).

The Statement of action taken by the government included in this Report was considered by the committee constituted for the years (2006-08) (2008-11) and (2014-16).

This Report was considered and approved by the Committee at the meeting held on 19-6-2015.

The Committee place on record their appreciation of the assistance rendered to them by the Accountant General (Audit), Kerala, in the examination of the statements included in this Report.

K.N.A. KHADER,
Chairman,
Committee on Public Undertakings.

Thiruvananthapuram,
2 - 7-2015.

FCPII/AV/PUC/WATER AU/25-6-15

Report

The Report deals with the action taken by the Government on the recommendations contained in the Seventy First Report of the Committee on Public Undertakings (1995-96) relating to Kerala Water Authority based on the Report of the Comptroller and Auditor General of India for the year ended 31st March 1991 (Civil)

The Seventy First Report of the committee on Public Undertakings (1995-96) was presented to the House on 14th March 1996. The Report contained 13 recommendations and the Government furnished replies to all the recommendations. The Committee considered the replies received from the Government at it's meetings held on 09.09.2008, 13.01.2011 and 06.08.2014. The committee accepted the replies to the recommendations No. 1(13), 4 (27), 5 (28), 6 (43), 7 (44), 8 (45), 9 (55), 10 (66), 11(67) and 12 (68) without any remark. The recommendations and their reply furnished by Government form chapter I of the Report.

The Committee accepted the replies to the recommendations No. 2(14), 3 (15), 13 (69) with remarks. The recommendations, its replies and the remarks of the Committee form chapter II of the Report.

General remarks made by the committee during the consideration of Action Taken Statements form Chapter III of the Report.

CHAPTER - I

REPLIES FURNISHED BY GOVERNMENT WHICH HAVE BEEN ACCEPTED BY THE COMMITTEE WITHOUT REMARKS				
Sl. No.	Para No.	Department Concerned	Conclusions/Recommendations	Action taken by Government
(1)	(2)	(3)	(4)	(5)
1	13	Water Resources	The Committee is of the opinion that the original estimate was unrealistic and might have been prepared even without bothering to go to the site. This adversely affected the interest of the Authority, as the calculation of such extra works were based on observed data available from the site resulting in the payment of high rates. The Committee view this aspect seriously and recommended to look into the matter and take necessary remedial measures to avoid such practice in future.	Construction of bund is dependent on the specific site conditions of each project area. Therefore no specific yardsticks can be adopted. However the Technical committee had studied the issue and had concluded that the design of bunds shall be adopted only after detailed study of the particular site conditions. This is the practice now being followed. A circular instruction has been issued in this respect vide Circular No. KWA/JB/WS1/241/2000 Vol II dated 24.03.2010 (Copy enclosed) Annexure I

(1)	(2)	(3)	(4)	(5)
4	27	Water Resources	The Committee had pointed out that despite the pressure from the public men, the Authority should not have diverted the fund actually allotted under special component plan for undertaking water supply scheme to the Harijan colony of Dharmapuri. Moreover, the Committee found that the work was undertaken without conducting a study on its technical feasibility based on proper investigation. A fresh survey conducted in October 1998 revealed that free flow of water to the area beyond the Harijan colony required construction of an additional ground level tank and pump house. Due to this the expenditure of Rs. 10.08 lakh incurred for the work had become infructuous.	**Para 27 & 28** The Water Scheme to the Harijan colony of Dharmapuri was sanctioned in 1983. The scheme was initially implemented by the Public Health Engineering Department and was taken over by the Kerala Water Authority from April 1984. During 1985, after studying the technical feasibility, the distribution line was extended by 4 Kms over and above the original proposal. The extension was carried out by using available quantity of HDPE pipes purchased under DGS & D rate contract. The extension was carried out taking into consideration the extreme drought situation prevailed in the state during 1983 and on the basis of frequent requests from the public as well as local authorities. However, the extended portions could not be commissioned due to frequent bursting of the HDPE pipes. The failure of extended pipes was not due to any technical reasons or lapse on the part of any officer, but was due to the inferior quality of the pipes. The HDPE pipes were purchased during 1983-84 and the bursting was noticed while the scheme was being

(1)	(2)	(3)	(4)	(5)
5	28	Water Resources	The committee found that the replacement cost for the inferior quality of pipes comes to Rs. 3.18 lakh. The Committee found that no steps had been taken to recover the loss suffered by the Authority even after 10 years for supply of inferior quality pipes. The Committee therefore recommend that action should be initiated to recover the loss from DGS & D or from the persons responsible for the lapse of taking timely action.	commissioned in 1987. The guarantee period of the HDPE pipes is normally for one year and hence no action could be taken against the firm or against DGS & D. Subsequent to the review made by the COPU senior officials of KWA again reviewed the entire issue and it was observed that the non-supply of water to the extended area was only due to the bursting of the HDPE pipes at several places. After replacing the entire poor quality pipes in the extended area, these areas could now get sufficient quantity of water supply. Hence the Expenditure of Rs. 10.08 Lakhs incurred on the scheme has not become infructuous. No further action against officers, most of whom are already retired, was taken by the Authority. In view of the above, the Committee is requested to take a lenient view in the matter and drop further action.
6	43	Water Resources	One of the reasons for the higher estimate according to the witness was the use of HDPE pipe instead of AC pipes. They also informed that HDPE pipes used for the above work were	**Para 43 & 44** Strict instructions have been given to all officers concerned through circulars (Annexure 2,3,4,&5) to ensure that appropriate sanctions are obtained for any deviation in the schemes. This is being enforced.

(1)	(2)	(3)	(4)	(5)
			bought in 1983 as per DGS & D rate contract actually meant for some other scheme of lesser urgent nature. The Committee pointed out that laying of pipes for some other work, other than the work for which the A.S. was sanctioned was not proper. It will naturally affect the original work.	
7	44	Water Resources	The Committee also noticed that prior approval had not been obtained from the higher authority for using HDPE pipes. The concerned official should have submitted a proposal citing the reasons for using HDPE pipes and prior sanction of the higher authority was necessary for the use of these costly pipes. Committee found that in this case, the field level officers have bypassed the decision making authority by directly sending the revised estimate	

(1)	(2)	(3)	(4)	(5)
			instead of obtaining orders for a deviation from the original estimate. The committee view the above case very seriously and recommend that the correct procedure should be followed in the working of the Authority. The committee termed the above case as a clear indication of dereliction of duty on the part of the Authority and condemn the failure in this regard. The Progress in the implementation of the new procedure evolved may be intimated to the committee.	
8	45	Water Resources	The contention of the witness that the purchase of pump sets was made in anticipation of completing the work of pumping main within 2 or 3 years lacks justification as the forest land on which the above work was to be carried out had not come under the possession of	Instruction have been issued to invite tenders for supply and erection of pump sets, electrical equipments, etc only when it is due to be erected as per implementation schedule of civil work and completion of the scheme. This is included in Para "A" of circular No. KWA/HO/Tech/ 3/97 dated 30.07.97 (Annexure 6).

(1)	(2)	(3)	(4)	(5)
			the Authority till 1994. Therefore the two pump sets worth Rs. 3.62 lakhs rendered idle for more than 7 years. The committee recommended that the practice of purchasing costly materials without ascertaining the progress of the work should be stopped.	
9	55	Water Resources	The Committee expressed it's anxiety over the delay in the completion of the scheme and opined that the Authority took 10 years to complete the scheme and added that the delay in this case was mainly due to lack of foresight on the part of the Authority. Had the Authority undertaken the above work with practical vision it could have been possible to provide drinking water to the people in the Harijan Colony in November 1984 itself. The Committee, therefore, recommended that in future,	The Authority will, in future be more cautious in selecting the locations and source of water. Due instructions have been given to all officers concerned in this regard vide circular No. CE/IPD/PL-1148/97 dated 28.05.1997 (Annexure 7)

(1)	(2)	(3)	(4)	(5)
			Authority should be more cautious, while selecting the location and the source of water so as to avoid delay in completing the work on drinking water supply schemes.	
10	66	Water Resources	The Committee came to the conclusion that the violation of KPWD manual, ie tendering the work, before getting possession of the land resulted in an unfruitful expenditure of Rs. 3.01 lakhs, for ever 9 years and in the non fulfillment of the objective of providing drinking water to the less privileged sections of the society. Committee express its unhappiness over the functioning of the Authority and recommend that works under taken for providing drinking water should be completed within the stipulated period itself.	The recommendation of the committee has been noted by the Authority. A circular relating to this has been issued by the Authority. This circular lays down that the extensions beyond 50% of the original period of completion shall not be granted and action should be taken to terminate the work at the risk and cost of the contractor. However, there are limitations for KWA in ensuring sufficient funds/materials/expert man power to complete the ever increasing number of schemes within the original schedule. All out efforts are being taken to improve the system in general.

(1)	(2)	(3)	(4)	(5)
11	67	Water Resources	About the steps taken to give priority to the works for which Administrative sanction was already obtained, it was informed that a program to complete the works, which are pending for more than five years had been earmarked in the next year Budget. A list showing the completion and progress of such works should be given to the Committee	It had been decided to take up the RWSS started in the 5th, 6th, and 7th five year plan periods and to complete them on a war footing, the status of 83 such schemes which was taken up is given as Annexure 8.
12	68	Water Resources	The Committee also noticed that there are cases, in which the Authority instead of completing the original works, had gone for extension of some other works which adversely affect, those works, which were given Administrative and Technical Sanction. Committee condemn the above practice and recommend that work on the extension of pipeline should be	The recommendations of the Committee will be adhered to in future. Necessary instruction have been issued to all concerned to ensure that prior permission of Superintending Engineer and Chief Engineer is obtained to evaluate works in excess of the agreed quantities up to 5% in feasible cases.

(1)	(2)	(3)	(4)	(5)
			undertaken only after studying it's feasibility and after completing the work on the original plan. The Committee also recommend that instructions should be issued in this regard to those concerned urgently.	

CHAPTER - II

REPLIES FURNISHED BY GOVERNMENT WHICH HAVE BEEN ACCEPTED BY THE COMMITTEE WITH REMARKS				
Sl. No.	Para No.	Department Concerned	Conclusions/Recommendations	Action taken by Government
(1)	(2)	(3)	(4)	(5)
2	14	Water Resources	In this case the Committee, was not quite sure whether the officials had suggested another alternate and cheap method instead of the gunny bags to prevent the slushing into the well. The Committee is surprised to note that the Authority had allowed the use of gunny bags not only in the above case but also to the works relating to laying of pipes. The Committee cited the Adoor Water supply Scheme as an example for the above practice. The Committee criticizes the unhealthy practice being followed by the Authority in the name	**Para 14 & 15** Kerala Water Authority and PWD use gunny bags to prevent slushing. Sandy soil if available locally can be used for filling the cement bags. In that case cost of sand need not be provided. Instead provision for earth work excavation vide item 56 of PWD statutory data can be admitted. The rate for filling and stacking of gunny bags has been standardized to avoid payment of excess rate for the same. Further it was stipulated that gunny bags were to be filled with local earth instead of river sand to reduce cost. Volume of earth to be filled in a bag has been increased to reduce expenses. The above charges have been included in the Technical Circular No. KWA/HO/PL/DP/14/90 dated 07.11.1991 of the Authority

(1)	(2)	(3)	(4)	(5)
			of extra items of work. The Committee therefore opined that Water Authority should also use the cheaper methods being used by Public Works Department to prevent slushing. The Committee expressed it's displeasure over the issue and direct the Authority to chalk out methods for expediting its development works with the best available technology but with utmost effectiveness.	and is in force. A copy of the same is enclosed as Annexure 9. <u>The details of ARWSS to Eraviperoor</u> Original AS and TS under ARP – Rs. 33.97 lakhs Revised AS and TS under LIC – Rs. 217.57 lakhs Upto date Expenditure – Rs. 213.527 lakhs Commissioned on 2/92. In view of the above the Committee is requested to take a lenient view in the matter and drop further action.
3	15	Water Resources	The efforts taken by Government and Authority to make use of the cheapest but effective methods for construction of bunds may be intimated. The Committee urge the Authority to finalize the completion certificate at an early date to ascertain total expenditure incurred for the scheme. A comparative	

(1)	(2)	(3)	(4)	(5)
			statement of original estimate and actuals may also be furnished.	
			Remarks: The details of action taken against the delinquent officials shall be furnished to the Committee	
13	69	Water Resources	About the material worth Rs. 2.05 lakhs supplied to the contractor during November 1989 and July 1990 the witness informed that steps would be taken to recover the loss if any, when the final bill is closed. The action taken on the above may be intimated to the Committee	Final bills has not been settled. Executive Engineer has been instructed to settle the Final bill and fix the liability of the contractor.

Remarks: During the witness examination on the above paragraph the witness had assured that a report containing the details regarding amount and the materials to be recovered from the Contractor would be furnished to the Committee within one month. But it had not been furnished even after the lapse of four years. Therefore the Committee recommends to make available the report containing the above details and the final settlement of the bill to the Committee within one month.

CHAPTER - III

General Remarks : The Committee expresses it's severe displeasure over the careless attitude of the Authority and the inordinate delay in furnishing action taken statements to the recommendations contained in the report.

Thiruvananthapuram.
2.07.2015

K.N.A. KHADER,
Chairman,
Committee on Public Undertakings.

Annexure-I

E-mail : kwafin@vsnl.com
Website : http://www.keralawater.org

Tel : 91-0471-2328654
Fax : 91-0471-2324903

KERALA WATER AUTHORITY

Jala Bhavan
Thiruvananthapuram - 695 033
Kerala, India

KWA/JB/WS1/241/2000 Vol II

Date 24.03.10

CIRCULAR

Sub:- Preparation of estimate – reg
Ref:- Committee on Public Undertakings (1995-96) – 71st report (para 13) –
ARWSS to Eraviperoor in Kottayam district

In the Committee on Public Undertakings (1995-96) (71st report) the witness informed that the location of the well was proposed at a safer place at the time of awarding the work and also informed that the location had not changed later. But at the time of construction of the well they found that it would be difficult to proceed with the work without a bund to avoid slushing. Hence the Committee is of the opinion that the original estimate was unrealistic and might have been prepared even without bothering to go to the site. This adversely affected the interest of the Authority as the calculation of such extra works were based on observed data available from the site, resulting in the payment of high rates. The Committee view this aspect seriously and recommended Government to look into the matter and take necessary remedial measures to avoid such practice in future.

In the above circumstances, you are hereby directed that utmost care shall be observed in the preparation of estimate with relevant data based on the actual site conditions. If any violation or procedural lapses, the concerned field officers will be personally held responsible.

Sd/-
Managing Director

To: The Chief Engineer(SR)/CR/NR, Thiruvananthapuram/Kochi/Kozhikode
Copy to: TheSuperintendingEngineer,PHCircle,Thiruvananthapuram /Kollam/Kottayam/Muvattupuzha/Kochi/Thrissur/Palakkad /Kozhikode/Kannur
Copy to: The Executive Engineer, PH Division/Water Supply Division/Project Division,
.....
Copy to: Deputy Chief Engineer,W-I/W-II/P&M/Vigilance/General

Copy to: Executive Engineer, Works(S)/Works (N)/MMU/P&M (P)/P&M (M)/ Vigilance/Training
Copy to: AEE, WS1/WS2/WN
Copy to: TA to MD/AEE to TM/CA to CE(HRD & GL)/FM&CAO/Stock file/File
Copy to: AM/IA

Forwarded/By Order,

Asst. Executive Engineer I(WS)

28

ANNEXURE-2

KERALA WATER AUTHORITY

TECHNICAL CIRCULAR

DATED : 21-07-1995

VOL III

Annexure-2

No.KWA/HO/E6/17554/93/Vol.II

Jalabhavan
Thiruvananthapuram - 695 033
KERALA - INDIA

Dated : 21-7-1995

TECHNICAL CIRCULAR

PART I

Sub:- Alleged irregularities in the execution of World Bank Aided Projects under World Bank Project Circle, Kollam, Thiruvananthapuram.

Ref:- Resolution No.3470 of the 143rd meeting of Kerala Water Authority held on 30-6-1995.

Certain irregularities were noticed in the execution of World Bank Aided Projects under the World Bank Project Circle, Kollam and in certain Accelerated Rural Water Supply Schemes of Thiruvananthapuram. In order to conduct an enquiry into the alleged irregularities and to evolve some permanent remedial measures, a Tribunal was constituted as directed by the Government vide order G.O.(Rt) No.7386/93/LAD dated 4-12-1993 with 3 retired Chief Engineers of Kerala Water Authority as Members of the Tribunal. The Tribunal conducted a detailed enquiry and submitted the report. A set of circular instructions on the basis of suggestions by the tribunal is prepared and placed in the Authority meeting for approval. The Authority vide resolution NO.3470 of its 143rd meeting held on 30-6-1995 has approved 5 technical circulars to prevent malpractices in future as stated under Part I.

PART II

The Technical Committee on standardisation of Non-schedule items has prepared data for 4 Non-schedule items after five sittings and placed before the Authority for approval. The Authority vide resolution No.3466 of its 143rd meeting held on 30-6-1995 has approved the standard data for the 4 Non-schedule items listed below and resolved to include these items in the data book of the Kerala Water Authority.

1. Data for jointing of C.I. tyton pipes.
2. Data for conveying street fountain.
3. Data for jointing sluice valves.
4. Data for cutting of P.S.C. pipes.

The above technical circular (Part I & II) shall come into force forthwith.

Sd/-
Managing Director

CONTENTS

PART – I

CIRCULAR 1

Measurement Books :

It has been brought to the notice of the Kerala Water Authority recently that there are no proper records for the upkeep and maintenance of measurement books in some of the subordinate offices. Instances have been brought to the notice of this office of the use and circulation of previous measurement books. The attention of all officers of the Kerala Water Authority are drawn to clauses 10:2:9 of the PWA Code and 283 of the PWD Code wherein the importance of the measurements recorded in the measurement book are stressed and elaborated. In order to streamline the procedure and upkeep of distribution of measurement books the following instructions are hereby issued.

1. In future measurement books with machine numbered pages shall be serially numbered and each book got signed by the Chief Engineer. Books shall be arranged to be numbered and issued from the Chief Engineer's Office and a register for the issue of the same is to be maintained by the Chief Engineer. Only books serially numbered and signed by the Chief Engineer shall be issued for recording measurements. The Chief Engineer shall issue the books to the varioys circles in bundles of (200 - 300) which the Superintending Engineers shall issue to the respective divisions in bundles of 25 - 50 Nos. The Superintending Engineer shall also maintain a distribution register for the above purpose. Each division shall number the books received serially by suffixing their identification number to the main number. An example is shown below:

   C.E.'s No.CE(SR)1178/95
   Division No.CE(SR)1178/95/(PH Trivandrum 210/95).

   A register for the M.Books shall be maintained in form KPW, 84 (copy enclosed) in the Division Office showing the serial number of each book, the names of the Sub-divisions to which issued, the date of issue and the date of return, so that its eventual return to the division may be watched.

2. All the unused M.Books under the custody of the Division Office as on 1-10-'95 shall be recalled by the Executive Engineers and returned to the Chief Engineer's Office for renumbering and authentication. M.Books issued before the above date and in use now as on this date shall be valid for recording. Unused M.Books if any kept in various subordinate offices should be surrendered to concerned Chief Engineers immediately within 2 weeks for getting it renumbered.

3. The Section Officers shall submit a statement in the following format to the Sub-divisional Officers of all works measured and recorded by them in the M.Book in the previous month before 30th of every succeeding month with a copy to the Division Office. (This shall be subject to verification by the Internal Audit Wing of the Head Office and also by the Regional Vigilance Unit or the Head Quarters Vigilance Unit). The Sub-divisional Officer shall consolidate and submit the same to the Divisional Office.

Statement of measurements done

by(i) (Name of Officer) .....

at (Name of Office) .....

for the period from ..... to .....

Name of Scheme	*Name of work*	*Appendix name*	*Item No.*	*Recorded on M.Book No.*	*Page* From	To	*Remark*

Place :

Date :

Signature :

Name and Designation :

The measurements are to be recorded in the measurement books (M.B) as provid in clause 10.2.11 of the PWA Code (extract enclosed). The check measurements are to done routinely as stipulated in clause 10.2.15 of the PWA Code (extract enclosed). Su checking whenever required shall also be made by Divisional Officers as laid down clause 284 and 285 of the PWD Code (extract enclosed). The Superintending Engin shall scrutinise the measurements and M.Books as laid down in clauses 286 and 287 the PWD Code (extract enclosed).

Assistant Engineer and Asst. Executive Engineer should initial with designation date on all pages of M.Books recorded and full signature with date & name should given on the last page of each stage of measurement.

Measurements should be written only on the lines provided and no writing sh be done in between lines or in the blank space at top and bottom.

These instructions are being issued for the information and guidance of Subordinate Officers. All the Officers of the Kerala Water Authority are hereby infc that adherence to the above instructions shall strictly be followed and lapses noticed se be dealt with.

Acc : Relevant extracts from

PWA Code and D Code.

MANAGING DI

ABSTRACT OF PWA CODE ITEMS 10.2.11 & 10.2.15

DETAILED MEASUREMENTS

10.2.11 In recording detailed measurements, the following general instructions should be carefully observed:-

(a) The top most lines under columns 1 to 4 on each page of a Measurement Book should invariably be filled in the field. None of the lines should be left blank. Any lines not required should be carefully scored through in order to prevent additional entries being made later on. Detailed measurements should be recorded only by Executive or Assistant Engineers or by executive subordinates in charge of works to whom measurement books have been supplied for the purpose.

CHEQUE MEASUREMENT

Note:- (1) (Measurements made by an executive subordinate in charge of a work should be checked by the Sub-Divisional Officer by actual measurements by comparison with plans and estimates or by inspection. When measurements are taken by the Sub-Divisional Officer himself, they should, as far as possible, be checked by the Executive Engineer).

For further details refer PWA Code

CHECKMEASUREMENT OF WORKS

10.2.15 (1)

(a) Sub-divisional Officers should necessarily checkmeasure before payment and in proper time in the following cases:-

(i) all final bills on running accounts.

(ii) all first and final bills over Rs.200, and

(iii) works (included in all kinds of bills over Rs.25), which will not be susceptible of checkmeasurement after a certain stage, for example, works in channel, river on tank beds, foundations which will be covered up, etc.

(b) As regards other bills not pertaining to works of the kinds mentioned in item (iii) in the above sub-clause vi 3(i) intermediate bills on running accounts and (ii) first and final bills over Rs.25 and not over Rs.200 Sub-divisional Officers should checkmeasure a large proportion of them. If in such case, it is not possible for the Sub-divisional Officer to checkmeasure before payment owing to pressure of work, etc., then the reasons for not having done the checkmeasurement before payment should be recorded by him in the "remarks" column of the measurement books concerned and the checkmeasurement should be done by him at the earliest opportunity after payment has been made.

For further details refer PWA Code.

ABSTRACT OF PWD CODE ITEMS 283, 284, 285, 286, 287

MEASUREMENT BOOKS

283. The measurement Book Form K.P.W.21 is a most important record since it is the basis of all accounts of quantities whether of work done by daily labour, piece work, schedule contract, or of materials received. It is the original record of actual measurement or count. The description must be lucid so as to admit of easy identification and check. A reliable record is the object to be aimed at as it may have to be produced as evidence in a Court of Law. Rules regarding the maintenance of Measurement Books and the manner of making entries therein are found in the Kerala Public Works Account Code, Paragraphs 316 and 317.

Note: *Whenever Measurement Books, change hands, even if it is only from one office to another situated in the same buildings, the receipt of the books should be acknowledged in writing by some responsible person of a grade not inferior to that of a clerk.*

284. Sub-divisional Officers are expected to check the calculations, etc., recorded in measurement books as laid down in paragraph 327 of the Kerala Public Works Account Code and to checkmeasure works as laid down in paragraph 320 of the Kerala Public Works Account Code. Executive Engineers will checkmeasure the work done on not less than 50 of their important works in each year. The items in the Measurement Books actually checkmeasured should, as a rule, be initialled by the Checking Officer.

285. A register of checkmeasurements should be maintained in each division showing all checkmeasurements made by the Divisional Officer and this register should be available for inspection by the Audit Officer during his inspection.

286. During their tours and inspections of Divisional Offices, Superintending Engineers should make it a special duty to see that Measurement Books are carefully kept, that measurements are properly recorded, and that the books are complete records of the actual measurements of each kind of work done and are maintained in accordance with the above rules.

287. Superintending Engineers are competent to deal with losses of Measurement Books. All losses of Measurement Books should at once be reported to the Superintending Engineer who will deal further in the matter. He will write off the loss and will take disciplinary action if necessary.

FORM 84

REGISTER OF MEASUREMENT BOOKS

[Referred to in paras 10.2.9 and 10.2.13]

Part I–For Ordinary Measurement Books

Division : .....

Sub-division : .....

Serial No. of book	*Name of Sub-division/ Subordinate* to whom issued (To be corrected according to its use in the Divisional or Sub-divisional Office)*	*Date of issue*	*Date of return*	*†Year from the last day of which period of preservation is to be counted †*	*Remarks*
1	2	3	4	5	6

† *May be destroyed after ten years from the date of final record in the Division Office, i.e., the date entered in this column.*

FORM 84 – (contd.)

Part II – For Standard Measurement Books

Serial No. (Alphabetical)	*Sub-division*	*Particulars of works*		*By whom certificated as correct to form the basis of*				*Remarks*
				Annual Repair Estimates		*Payment to Contractors*		
		Name of building	*Pages*	*Name and Designation*	*Date*	*Name and Designation*	*Date*	
1	2	3	4	5	6	7	8	9

CIRCULAR 2

Works :

The Committee constituted by Government to enquire into serious irregularities noticed in the execution of some works of Kerala Water Authority has made several recommendations with a view to prevent the occurance of such things in future. Based on their recommendations the following instructions are being issued for observance and strict adherence by all the officers of Kerala Water Authority.

1. Pipeline extensions :

It has been observed that under several works very large extensions of pipe lines are sanctioned and got done without any control. Often the length of extensions provided exceed the original length of the distribution system. Such extensions are seen done through the same contractor doing the work of the distribution system. This has resulted in considerable variation from the PAC of the works awarded to these contractor resulting in delay of works. To curb the above it is hereby ordered that whenever the total extensions proposed to distribution system or pipe lines are likely to exceed 5% of the sanctioned length, fresh tenders shall be invited for the entire pipe line works if the work has not been awarded or for the additional quantity over and above the estimated quantity where works have already been awarded. Prior permission from the Superintending Engineer/ Chief Engineer to execute the work in excess of the agreed quantities upto 5% in hydraulically feasible cases should be obtained in identified cases which are found advantageous to Kerala Water Authority.

2. Time of completion :

It is seen that in most of the contracts, the agreed time of completion of the wo is not seen followed in practice, resulting in considerable delay in the completion of the works. This practice has to be strictly discouraged. All the officers of the Kerala Wa Authority are hereby informed that in future a realistic time of completion should be assess at the initial stage taking into consideration the factors involved in the process extensi of time of completion beyond 50% of the original period shall not be allowed. Where it is felt that the work shall not be completed within the above extended period acti should be intimated by the competent officer to terminate the works and rearrange same at the risk and cost of original contractor. In this case the Kerala Water Autho officers should see that necessary land, pipes and materials are ready for timely su before awarding the work.

3. Percentage of bidding :

The estimates for works preferred in the Kerala Water Authority are based on PHED schedule of rates. There is some variation between the PWD/PHED schedu rates and market rates for materials as well as labour, the PWD/PHED rates being lower side. Even then it is seen that in several works contractors quote percentages less than the estimated cost of works. This is unrealistic. But several of such works completed are seen to exceed the PAC., of the work by several times. It is felt

contractors quote very low or unrealistic rate which in the long run is not found to be advantageous to Kerala Water Authority. It is therefore suggested that workability of the rates should be scrutinised by the officers in each of such cases.

4. Liquidated damages :

Deliberate and unnecessary delays in the completion of works can be offset to large extent if penal provisions are introduced in the contract against delays. As the Kerala Water Authority is allowing contractors to use their own materials such as cement, steel etc., (excepting pipes) departmental delays are likely to be less. Hence the officers of the Kerala Water Authority are hereby instructed that in future suitable clauses shall be added in the contract agreements and also in NIT to levy penalty for the delay in the completion of the works beyond the agreed time of completions. The quantum of penalty and the method of recovery of the same shall be decided in consultation with regional Chief Engineers.

5. Agreements :

It is seen that agreements of the works executed by subordinate officers are not getting scrutinised by Superior Officers leading to several short comings in the agreement conditions. To prevent such situations it is hereby instructed that in future action may be initiated by Superintending Engineers to standardise the agreement conditions in consultation with Chief Engineers.

MANAGING DIRECTOR

CIRCULAR 3

The Tribunal set up by the Government to look into the irregularities which occurred in the Quilon Region of the Kerala Water Authority has made certain observation about the non-adherence of codal provisions in carrying out the works. Based on the recommendations of the tribunal the following instructions are issued for the strict compliance of all the officers of the Kerala Water Authority.

1. Technical Sanction :

The project estimates now being prepared by the Investigation, Planning and Design Wing of the Kerala Water Authority. Though drawn up after survey investigation and design do not often contain detailed estimates for many sub heads. In such cases technical sanction should however be issued by the competent authority only on the basis of a detailed estimate after satisfying himself about the suitability of the work to meet the requirement its structural soundness, the quantities, soil classifications by test specifications and rates for the different items of work involved. Availability of Administrative sanctions and source of funds should be insisted before commencement of the work. Once the Administrative sanction is issued for a project the Chief Engineer should convene a meeting and finalise programme schedule for the preparation of estimate/technical sanction and implementation of the work. These schedules should be forwarded to the Technical Member. The Authority competent to issue technical sanction for the project as a whole

should as far as possible approve the detailed estimates, for the group works also. However he can delegate the subordinate officers to issue sanction for working estimate within their monetary limit provided prior approval for the group estimates are obtained by him. List of such estimates sanctioned by subordinates officers for a project should be reported to the Chief Engineer every month. A register should be maintained in Chief Engineer's Office noting the detailed estimate sanctioned for each project. For the preparation of the detailed estimate provisions in the PWD manual may be adhered to.

2. Investigation estimates :

The investigation estimates now being prepared lack information on geological and hydrogeological data. This in turn contributes to a lot of variation and ambiguity during the stages of preparation of detailed estimate and construction. Investigation Wing may therefore arrange for taking borings at site of all intake wells & along routes of major transmission mains wherever the sites are accessible for such studies. Till the required machineries are procured in the department the studies may be arranged through consultancy and such studies should form separate appendixes of the project report.

Observed data :

The Tribunal has criticised the exorbitance of items being sanctioned in Kerala Water Authority on the basis of observed data. The officers may please note that observed data should invariably be approved by the Chief Engineer. No observed data already sanctioned for one work should be made applicable to another work as a rule when such works anticipated are found necessary during inspection of the work the next superior officer should be immediately informed of the situation. The necessity shall be recorded in the work site book by the officer and countersigned by inspecting officer. The actual data on the basis of observation should be reported to the Executive Engineer/Chief Engineer immediately. The Executive Engineers should invariably select such works which they are expected to super check and satisfy themselves regarding the necessity and reasonableness. Delay in reporting, non-reporting supersession of facts, false recording etc. if noted should be immediately reported to the Chief Engineer or Technical Committee.

Deviation from estimates :

No deviation from the sanctioned estimate which is likely to involve excess over the estimated cost should be done without orders from the competent authority. In exercising the power the total excess involved in the work including the deviation under contemplation should be taken into account. Deviation which may involve hydraulic changes should consulted with the respective IPD Wing. All deviation should be reported to the tech- sanctioning authority of the project as a whole and prior approval obtained whether involved or not. The technical advantages or reason for deviation should be ghted. No vague remarks like "items are necessary for satisfactory com- should be mentioned herein after. Deviation ordered during site inspec- minuted, signed and should be submitted along with revised estimate for ase refer appendix X(a) of the PWD manual for guidance (extract enclosed).

Excess quantities over estimates

As far as possible carrying out excess quantities should be avoided. In inevitable cases the fact should be reported to the Executive Engineer and written orders obtained. If the excess quantities is beyond the powers of sanction of Executive Engineer sanction of competent authority may be obtained over and the rates are approved earlier. Additional works not contemplated in the estimate should not be carried out in anticipation of sanction. The powers to sanction excess quantities will be within the powers to sanction excess over estimate in each tendered item. Executive Engineers are therefore empowered to sanction excess quantities upto their delegated powers for excess on sanctioned estimate only. Any payment made without such written approval will be considered irregular and officers will be held responsible for the lapses and therefore 75% payment anticipating sanctioned should not be allowed hereinafter.

ACC - Relevant Extract from
PWD Manual

MANAGING DIRECTOR

APPENDIX X(a)

(Vide para 10. 1. 8. 3)

KERALA ..... DEPARTMENT

Deviation statement in the course of actual construction of works

Name of work	*Sub-heads in which departure occurs*	*Name of departure*		*Reasons for the deviation*	*Results anticipated*	*Orders of the ..... Engineer*
		Original or sanctioned arrangement	*Arrangements proposed to be carried out*			

CIRCULAR 4

Tenders :

The following instructions shall be observed by the tendering officer to avoid last minute rush and to prevent the unhealthy practice of collusion among tenderers.

1. The licence registration of a tenderer who purchase the tender form but fails to quote continuously three times in a row, shall be cancelled.
2. The tenderer or his agent shall compulsorily attend the tender opening and affix their signature in the tender opening register.
3. The rates, total amount and percentages shall be clearly written both in figures and words by the tenderer on the tender schedule.
4. The percentages quoted shall be allowed only in round figures and no decimals shall be allowed.
5. Bids received at percentages for below the estimate rate say below 25% of above should be discouraged if found unworkable.

Contact works :

1. The works shall be done only as per specifications.
2. Monthly progress report of each contract both physical and financial shall sent by Executive Engineer to the Superintending Engineer, Chief Engineer and Managing Director. This shall be duly verified by the concerned officers and if irregularities are detected directions shall be issued to the Executive Engineers to rectify them.

CIRCULAR 5

Objection Register :

Divisional Accountants in the division should maintain an objection register and should write his remarks whenever he disagrees with the view of the Executive Engineer. An abstract of the objections should be sent to the Superintending Engineer and Finance Manager quarterly. Regarding auditing of bills the Technical Assistant/Head Draftsman shall be held responsible for technical matter. Similarly Divisional Accountant, Accounts Officer, shall be held responsible for implementing agreement condition, budget provision, availability of funds, adherence to codal provisions.

Flow of Funds :

Flow of funds to divisions has to be maintained as regularly as possible throughout the year. The Executive Engineer shall send the requisition for funds to the Finance Manager through the Superintending Engineer/Chief Engineer. A copy of the requisition for funds and allotment of funds made by the Superintending Engineer shall be furnished to the Chief Engineer by the Superintending Engineer.

Construction of Intake Well :

Several adverse observations have been made by the commission, which looked into the serious allegations on the works executed by the Kerala Water Authority, on the construction of wells at different sites under the Kerala Water Authority. They have pointed out that in most of the intake well works the original work though awarded at a lower rate has been exceeded exorbitantly in several cases. To prevent such occurrences in future the commission has suggested several measures based on which the following are hereby ordered.

1. The diameter of the well in no case shall be changed from that given in the project report, unless it is jointly convinced in an inspection by IPD. Chief Engineer and got approved by Technical Member.
2. Soil explorations have to be done at the site before any work or the project report is tendered. For wells a minimum of 4 nos. of bores at the peripherry and one at the centre portion of well shall be made either by IPD and if not incorporated in the project report thereby the territorial wing know the nature of the soil. The bore holes shall be taken to a depth more than the anticipated depth of the finished well.
3. Well work shall be done only in working seasons and shall be executed and completed during the seasons from January to May. The works shall not in any case be allowed to drag of the finished well.
4. Construction of baby wells shall be discouraged as a policy unless it is mentioned as collection well for infiltration galleries. In inevitable cases they could be recommended by IPD. Chief Engineer to Technical Member for approval.
5. Side protection works if any to be done has to be assessed at the investigation stage itself. If the necessity for the protection works is realised only at a later stage then the same shall be arranged as separate work after getting sanction from Head Office.
6. In case where larger pump houses are required than the dia of the well, then the pump house may suitably be enlarged by cantilevering the same from the well steining without in any case altering the dia of the well.

7. Based on the results of the soil exploration the mode of construction of the wells to be decided i.e. whether open well excavation or well sinking. Once the mode of construction is decided it shall not be altered without the joint inspection of the Chief Engineer IPD and the Chief Engineer of the execution wing under whose jurisdiction the well falls. The finding shall be reported to Technical Member for approval.
8. The Chief Engineer, IPD may initiate actions for developing data for well sinking based on the per meter perimeter run of the well for estimate purposes. The datas prepared thus may be submitted for the perusal of Technical Committee.
9. Unjustificable provisions are seen made for dewatering in the Revised estimates being received in the Head Office for approval. The log details of pumping should invariably be maintained at site and weekly returns of daily reports authenticated by Assistant Engineers/Asst. Executive Engineers should be filed and copied to the Vig. unit of Head Office. If due to unprecedented rain or for any other reasons if the quantity of pumping is found more than 5,000 kw. sanction to use higher capacity pumps may immediately be made.
10. The double expenditure on ring bund and heavy dewatering is normally inadmissible. Ring bunds intended to prevent in flow of water should be effective and in such circumstances dwatering will have to be limited to the minimum allowable within the seepage rate of the river.
11. Unworkable provisions for stacking of sand bags inside the well are seen included in the revised estimates under scrutiny in the Head Office. If the use of sand bags inside the well is found inevitable during the construction of intake well in addition to the constructions of the ring bund the necessity for the same shall be certified, after inspection of the Chief Engineer.
12. Proper technical control and strict supervision should be maintained by the site officers and proper records to verify the approval of such works should be maintained in the work files of such sub division and division offices.
13. The present practice of allowing extra items on the basis of more changes in the diameter of the well shall immediately be stopped. The rates for extra quantities involved should be worked out on pro-rata basis as per schedule of rates with reasonable variations and got approved by the next higher officer before inviting tender.

SHORING USING SAND BAGS

The tribunal has severely criticised about the item of work followed in certain areas of Kerala Water Authority. It is therefore hereby ordered that shoring as per specification in the data book need alone be followed. In inevitable cases where sand bags shoring is need for protection and structures the written order of the Executive Engineer should be kept in the file and a copy of the intimation should be forwarded to Vigilance wing of Head Office and that of concerned Chief Engineers. If subsequently the necessity of providing a different method of shoring other than that of specified stand and practices of data book is found not justifiable, the excess expenditure incurred therein will be recovered from the officers concerned. Executive Engineer should invariably check measure these items selecting the same within their delegated powers.

MANAGING DIRECTOR

PART – II

DATA FOR JOINTING OF C.I. TYTON PIPES

Sl. No.	Qty.	Description of item	Unit	Rate	Amount	Remarks
1	2	3	4	5	6	7
1.	1 No.	Jointing of 100mm C.I.Tyton pipes already laid in trenches using rubber gaskets after cleaning the ends of pipes inserting the rubber gasket inside the groove of the socket and making the joints watertight without causing any damages to the rubber gasket including cost of all labours, hire charges for winch and other appliances etc. complete but excluding cost of rubber gasket.				
	0.10	Pipe fitter for inserting the rubber gasket etc.	Each			
	0.20	Heavy load mazdoor for operating winch etc.	Each			
	L.S	Hire charges for winch and other appliances.	L.S.	6.00		
		Total				
2.	1 No.	Jointing 150 mm C.I. Tyton Pipe etc., etc.,				
	0.12	Pipe fitter	Each			
	0.24	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	6.00		
		Total				
3.	1 No.	Jointing 200 mm C.I.Tyton Pipe etc., etc.,				
	0.14	Pipe fitter	Each			
	0.28	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	7.00		
		Total				

1	2	3	4	5	6	7
4.	1 No.	Jointing 250 mm C.I.Tyton pipe etc., etc.,				
	0.15	Pipe fitter etc.,	Each			
	0.30	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	8.00		
		Total				
5.	1 No.	Jointing 300 mm C.I.Tyton pipe etc., etc.,				
	0.18	Pipe fitter	Each			
	0.36	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	8.00		
		Total				
6.	1 No.	Jointing 350 mm C.I.Tyton Pipe etc., etc.,				
	0.20	Pipe fitter	Each			
	0.40	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	8.00		
		Total				
7.	1 No.	Jointing 400 mm C.I.Tyton pipe etc., etc.,				
	0.25	Pipe fitter	Each			
	0.50	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances	L.S.	10.00		
		Total				
8.	1 No.	Jointing 450 mm C.I.Tyton pipe etc., etc.,				
	0.30	Pipe fitter	Each			
	0.60	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	10.00		
		Total				

1	2	3	4	5	6	7
9.	1 No.	Jointing of 500 mm C.I. Tyton pipes etc., etc.,				
	0.35	Pipe fitter	Each			
	0.70	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances	L.S	12.00		
		Total				
10.	1 No.	Jointing of 600 mm C.I.Tyton pipe etc., etc.,				
	0.45	Pipe fitter	Each			
	0.90	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances	L.S.	15.00		
		Total				
11.	1 No.	Jointing of 700 mm C.I.Tyton pipe etc., etc.,				
	0.55	Pipe fitter	Each			
	1.10	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	18.00		
		Total				
12.	1 No.	Jointing of 750 mm C.I.Tyton pipe etc., etc.,				
	0.65	Pipe fitter	Each			
	1.30	Heavy load mazdoor	Each			
	L.S.	Hire charges for winch and other appliances.	L.S.	25.00		
		Total				
13.	1 No.	Jointing 800 mm C.I.Tyton Pipe etc., etc.,				
	0.70	Pipe fitter	Each			
	1.40	Heavy load mazdoor	Each			

1	2	3	4	5	6	7
	L.S.	Hire charges for winch and other appliances.	L.S.	30.00		
		Total				
14.	1 No.	Jointing 900 mm C.I.Tyton pipe etc., etc.,	Each			
	0.85	Pipe fitter	Each			
	1.70	Heavy load mazdoor				
	L.S.	Hire charges for winch and other appliances	L.S.	35.00		
		Total				

DATA FOR CONVEYING STREET FOUNTAIN

		A. K.W.A. PATTERN				
1.	1 No.	Conveying carefully the precast street fountain from the stacked site within initial lead, placing in correct position after doing necessary earthwork and levelling including all incidental expenses but excluding pipe connections.	Each			
	0.50	Heavy load mazdoor	Each			
	1.00	Man for earthwork and levelling				
	L.S.	Sundries	L.S.	5.00		
		Total				
		B. BILATERAL PATTERN				
1.	1 No.	Conveying carefully the precast street fountain from the stacked site within initial level, placing in correct position, after doing necessary earthwork and levelling including all incidental expenses but excluding pipe connection.	Each			
	1.00	Heavy load mazdoor	Each			
	1.50	Man for earthwork and levelling				

1	2	3	4	5	6	7
	L.S.	Sundries:	L.S.	15.00		
		Total				

DATA FOR CONVEYING, LOWERING, ALIGNING AND KEEPING IN POSITION READY FOR JOINTING C.I. PE/DF NON RAISING STEM TYPE SLUICE VALVE CAPS OR HAND WHEELS.

1.		Conveying from stacks within initial lead 80 mm CI PE/DF non raising sluice valves, cleaning the ends/faces, dismantling and repacking the stuffing box, greasing the spindle etc., complete checking the working of the valve, carefully lowering into trenches manually or by means of shear legs pulley blocks or such other mechanical devices, aligning the valves in position so as to be connected to the pipes and specials already laid or to be laid as the case may be, and keeping ready for jointing (jointing to be paid separately) including hire of tools and plants and other sundries etc., complete.				
	L.S.	Conveyance of valve from stacks	L.S.	3.00		
		Labour for cleaning the ends dismantling, greasing and repacking the stuffing box, lowering and aligning the valve in position.				
	0.10	Fitter	Each			
	L.S.	Hire of tools and plants	L.S.	1.00		
		Total				
2.		-Do- -do- for 100 mm size.				
	L.S.	Conveyance of valves from stacks	L.S.	4.00		
		Labour for cleaning the ends, dismantling greasing and repacking the stuffing box lowering and aligning the valve in position				

1	2	3	4	5	6	7
	0.11	Fitter	Each			
	L.S.	Hire for tools and plants	L.S.	2.00		
		Total				
		-Do- -do- 125 mm size	L.S.	5.00		
3.	L.S.	Conveyance of valve. Labour for cleaning the ends, dismantling greasing and repacking the stuffing box lowering and aligning the valve in position.				
	0.12	Fitter	Each			
	L.S.	Hire for Tools and Plants	L.S.	2.00		
		Total				
		-Do- -do- 150 mm size.	L.S.	6.00		
4.	L.S.	Conveyance of valves				
		Labour for cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position				
	0.15	Fitter	Each			
	L.S.	Hire of tools and plants	L.S.	3.00		
		Total				
		-Do- -do- 200 mm size	L.S.	10.00		
5.	L.S.	Conveyance of valve				
		Labour for cleaning the ends, dismantling greasing and repacking the stuffing box lowering and aligning the valve in position				
	0.20	Fitter	Each			
	L.S.	Hire for tools and plants	L.S.	5.00		
		Total				
		-Do- -do- 250 mm size.	L.S.	15.00		
6.	L.S.	Conveyance of valve				

1	2	3	4	5	6	7
		Labour for cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	0.30	Fitter	Each			
	L.S.	Hire for Tools and plants	L.S.	6.00		
		Total				
7.		-Do- -do- 300 mm size				
		Labour for conveyance cleaning the ends, dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	0.50	Heavy load mazdoor	Each			
	0.50	Fitter	Each			
	0.25	Man	Each			
	L.S.	Hire for Tools and Plants	L.S.	10.00		
		Total				
8.		-Do- -do- 350 mm size.				
		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	0.75	Heavy load mazdoor	Each			
	0.75	Fitter	Each			
	0.30	Man	Each			
	L.S.	Hire for tools and plants	L.S.	10.00		
		Total				
9.		-Do- -do- 400 mm size				
		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	1.00	Heavy load mazdoor	Each			
	1.00	Fitter	Each			

1	2	3	4	5	6	7
	0.40	Man	Each			
	L.S.	Hire for Tools and plants	L.S.	12.00		
		Total				
		-Do- -do- 450 mm size.				
10.		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	1.25	Heavy load mazdoor	Each			
	1.25	Fitter	Each			
	0.50	Man	Each			
	L.S.	Hire for tools and plants	L.S.	15.00		
		Total				
		-Do- -do- 500 mm size.				
11.		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	2.00	Heavy load mazdoor	Each			
	2.00	Fitter	Each			
	1.00	Man	Each			
	L.S.	Hire for tools and plants	L.S.	18.00		
		Total				
		-Do- -do- 600 mm size.				
12.		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	3.00	Heavy load mazdoor	Each			
	2.50	Fitter	Each			
	1.50	Man	Each			
	L.S.	Hire shear leg pulley blocks etc.,	L.S.	25.00		
		Total				

1	2	3	4	5	6	7
13.		-Do- -do- 700 mm size				
		Labour for conveyance cleaning the ends dismantling, greasing and repacking the stuffing box lowering and aligning the valve in position.				
	4.00	Heavy load mazdoor	Each			
	3.00	Fitter	Each			
	2.00	Man	Each			
	L.S.	Hire for tools and plants	L.S.	35.00		
		Total				
		DATA FOR CUTTING OF PSC PIPES				
1.		Cutting the 400 mm PSC pipe diametrically to the required length to suit the successive pipe/specials of the pipe line and levelling the edges of cutting to have a neat finishing of the edge including all labour charges and hire for tools etc., complete.				
	0.85	Fitter	Each			
	0.50	Heavy load mazdoor	Each			
	0.50	Man mazdoor	Each			
	L.S.	Hire for tools	L.S.	10.00		
		Total				
2.		Cutting the 500 mm PSC Pipe				
		-do- -do-				
	0.90	Pipe fitter	Each			
	0.60	Heavy load mazdoor	Each			
	0.60	Man mazdoor	Each			
	L.S.	Hire for tools	L.S.	12.00		
		Total				

1	2	3	4	5	6	7
3.		Cutting the 600 mm PSC Pipe				
		-do- -do-	Each			
	1.00	Pipe fitter	Each			
	0.70	Heavy load mazdoor	Each			
	0.70	Man to asst. the fitter	L.S.	14.00		
	L.S.	Hire for tools				
		Total				
4.		Cutting the 700 mm PSC pipe				
		-do- -do-	Each			
	1.25	Pipe fitter	Each			
	0.90	Heavy load mazdoor for shaping the edge of the pipe	Each			
	0.90	Man to asst. the fitter	L.S.	16.00		
	L.S.	Hire for tools				
		Total				

Annexure-5

Annexure-8

Office of the Managing Director,
Kerala Water Authority,
Thiruvananthapuram.

No. KWA/HD/PLI/3594/93. Dated 24-4-1993.

C I R C U L A R

Sub: Changes in the approved project report - sanction regarding.

Ref: i) Circular No. KWA/HD/PMU/112/87 dt. 18-8-89.

ii) Resolution No.2714 of the 117th Authority Meeting held on 29-3-93.

On observing the instances of execution of works deviating from the sanctioned estimates Authority has issued a circular vide ref(i). In that circular, it has been directed that all territorial Engineers should have close liaison with Chief Engineer, IPD and his subordinate officers and that the changes from the sanctioned project proposal may be discussed and finalised and minutes recorded etc etc.

.....

But it has come to the notice that the instructions already issued is not strictly adhered to and hence Authority vide resolution No.2714 has issued certain direction in this regard.

In the circumstances, Chief Engineers are directed that any deviation exceeding Rs. 50,000/- from the approved project report such as change of source, increasing the diameter of the well, additional works not envisaged in the sanctioned estimate, increasing the scope of the scheme such as pipe line extensions, change of locations/capacity of Reservoirs etc should be reported to the Technical Member, through the Chief Engineer (IPD), for examining the deviations in detail. The deviations proposed should be executed only with the written consent of the Technical Member. The officers are directed that deviations should be regularised immediately by preparing necessary revised estimates and got approved by the competent authority.

Instructions issued in this regard should be strictly followed and the Executive Engineers will be held personally responsible for execution of works deviating from the approved project report without written sanctions from the Technical Member.

P.T.O

Annexure 5

KERALA WATER AUTHORITY

No.KWA/HO/W3/REE/839/94

Office of the Managing Director,
JALABHAVAN,
Thiruvananthapuram-695 033.
Dated 20-9-'95
28

C I R C U L A R

Sub:- Approval of revised estimate from competent authorities - regd.

Ref:- Resolution no:3547 of 145th meeting of KWA held on 16-8-95.

The 145th meeting of Kerala Water Authority held on 16-8-95 vide resolution no:3547 has resolved that for new schemes/works taken up for execution hereafter prior approval of the revised estimate from the competent Authorities shall be obtained before incurring expenditure above the sanctioned estimate amount.

All officers are directed to strictly comply by the above decision of the Authority.

sd/-
DIRECTOR.

The Chief Engineer
Kerala Water Authority
Northern Region, Kozhikode/IPD, Kochi
Southern Region, Thiruvananthapuram.
Deputy Chief Engineer's, KWA.
Superintending Engineer's, KWA.
Exe.Engineer's, KWA.
Asst.Exe.Engineer's
Asst.Engineer's, KWA.

Copy to: PA to MD/CA to FM/PA to CE(P&GL)/CE
CA to FM & CAO/CA to Secretary/WP/EE

Forwarded/By.

EXECUTIVE ENGINEER (WORKS)

Annexure 6

KERALA WATER AUTHORITY

~~No. KWA/HO~~/Tech/3/97

KWA (NR) KDE	
CE	
DCE	
AE	
EO	
SO	
SS	
D.A	
JS [illegible]	
JS Accts	

Office of the Managing Director
Kerala Water Authority,
Jala Bhavan, Thiruvananthapuram
Date: 10.07.1997

CIRCULAR

Sub: KWA - Supply and installation of pumps and other electrical equiments - procedure to be adopted - further clarification - issued.

Ref: This office circular no. KWA/FW/SC(Cell) Dtd. 19.3.94.

As per this office circular cited under reference directions were issued to all subordinate officers to treat the supply and erection of pumps and motors as a work and deal with them as per delegation of powers of respective officers. But of late it has been brought to the notice of the undersigned that the circular instructions are not complied with and the supply and erection works are arranged in a haphazard manner without observing the formalities for a work. It is often seen that no departmental estimates are prepared for such works and the tenders are invited with 1% of the quoted amount as EMD. The tenders so received are accepted by the officers inviting tenders without adhering to the powers delegated for acceptance of tender excess for works and in some cases they are decided based on the powers delegated for purchase of materials, T&P etc. The acceptance are often seen communicated in the form of supply order contained in Appendix XIII of the S.P. manual and 90% payment against proof of despatch of materials are seen accepted and agreement executed. It has also been reported that in some cases the pumps and other machineries supplied are not tested for the rated capacities before the installations are accepted and paid for by the officers. World Bank aided Water Supply Scheme to Quilon, supply of pumps at Sasthankottah is a typical example of such an instance. It is also seen that in some cases fresh orders debiting to the original sanction are seen issued when the material/equipment originally purchased are substandard or incapable of delivering the required output. Purchase of pumps for ARWSS to Kottakkal Parappur, WSS to Ponnani etc. are typical example for the same. It is also

noticed that huge amounts are being spent debiting to maitenance for the so called standardisation for the electrical equipments. The Authority which met on 26.6.1997 discussed this issue in detail and decided to issue strict instructions to all concerned to adhere to the laid down instructions in future very strictly. Accordingly all officers of KWA are hereby directed to strictly follow the following detailed procedures for the supply of pumps and electrical equipments in future.

a) Tenders for the supply and erection of pumpsets, electrical equipments etc. shall be scheduled to be invited only when it is due to be erected as per Implementation Schedule of civil works and completion of the scheme. In the rare event of absence of implementation schedule, they shall be invited in such a manner that the pumpset would be ready for operation when required for commissioning of the schemes without affecting the guarantee period of pumpset and related equipments. The authority issuing technical sanction shall specify the designated officer, time of invitation of tender etc. in the implementation schedule prepared as part of technical sanction and such designated officers only shall invite tenders for these works.

b) Departmental specification and cost estimate for the work of supply and erection should be prepared and got approved by the appropriate authority before tenders are invited. Separate items for supply and erection shall be incorporated in the estimate. For purpose of estimation the L.S. rates approved by Chief Engineer, IPD from time to time for supply and erection of pumps and allied electrical works may be followed.

c) The specified forms for arrangement of works contract together with special conditions necessary for satisfactory completion of the work should be used for invitation and processing of tenders.

d) The EMD prescribed for works contract by Authority from time to time shall be insisted and the EMD required for each work shall clearly be spelt out in the tender notice.

e) The tenders shall be invited preferably from manufacturers and their authorised dealer / stockist only.

Since all the tenderers are often not registered with the Authority the preliminary agreement inclusive of paying the Authority for any loss sustained, in case the tenderer backs out from the contract without executing the agreement even after award of the work, may be insisted upon. No tender shall be considered in its absence. The sample preliminary agreement followed in KWA may be used for the purpose and included in the tender documents supplied to the tenderers.

g) The tenders received shall be properely tabulated and compared with the departmental estimate both in technical and financial terms. The approval and acceptance of tenders received shall be done strictly based on the delegated powers of the respective officers for acceptance of tender excess for works.

h) Authority have resolved in principle to accept Bank Guarantee for supply and installation contract towards security deposit at present. Each individual cases are referred to the Managing Director for approval. But hereafter if the total cost of supply portion of the contract is more than 75% of the tendered PAC requests for acceptance of Bank Guarantee can be sanctioned by the tender approving authority without refering the matter to the Managing Director for approval. In all other cases the present system of getting prior approval of Managing Director shall continue.

i) Advance payment against documentary evidence for proof of despatch should on no account be accepted for works contract. However in unavoidable circumstances not more than 75% of the landed cost of the materials can be sanctioned as secured advance against supply of materials at site.

j) The guarantee insisted should be from date of commissioning of the installation after trial running and formal taking over of the installation by KWA. The security deposit shall be released only after the satisfactory trial running or expiry of guarantee period which ever is later.

k) In all installations connected to electrical power supply, approval of Electrical Inspectorate should be insisted upon as per rules. Modifications and suggestions made by the

KERALA WATER AUTHORITY

GOVERNMENT OF KERALA-15 POINT PROGRAMME

DETAILS OF SCHEMES

Sl.No.	Name of District	Name of Division	Name of Scheme	Category	Present Status of Work
1	Kasargode	P.H. Div: Kasargod	Bela	ARWSS	Completed
2	Kasargode	P.H. Div: Kasargod	Madikai	ARWSS	Completed
3	Kannur	W.S Div: Mattannur	Kottayam	ARWSS/LI	Completed
4	Kannur	P.H. Div: Kannur	Edakkad	ARWSS	Completed
5	Wayanad	P.H. Div: Sl: Battery	Valiapara	RWSS	Completed
6	Wayanad	P.H. Div: Sl: Battery	Muttil	ARWSS/LI	Completed
7	Wayanad	P.H. Div: Sl: Battery	Pulpally-Mullankolly	ARWSS/LI	Completed
8	Wayanad	P.H. Div: Sl: Battery	Ambalavayal	ARWSS/LI	Completed
9	Wayanad	P.H. Div: Sl: Battery	Thavinhal	ARWSS/LI	Completed
10	Wayanad	P.H. Div: Sl: Battery	Noolpuzha	LIC	Completed
11	Wayanad	P.H. Div: Sl: Battery	Nenmeni	LIC	Completed
12	Kozhikode	P.H. Div: Kozhikode	Elathur	LIC	Completed
13	Kozhikode	P.H. Div: Kozhikode	Koduvally-Kizhakkottu	ARWSS/LI	Completed
14	Kozhikode	P.H. Div: Kozhikod	Kodenchery	ARWSS/LI	Completed
15	Kozhikode	P.H. Div: Vadakara	Panangad-Kinalur	ARWSS/LI	Completed
16	Kozhikode	P.H. Div: Vadakara	Badagara	LIC/HUDCO	Completed
17	Kozhikode	P.H. Div: Vadakara	Kavilumpara	LIC	Completed
18	Kozhikode	P.H. Div: Vadakara	Quilandy	ARWSS/LI	Completed

19	Kozhikode	P.H. Div: Vadakara	Kuttiyadi	ARWSS	Completed
20	Kozhikode	P.H. Div: Vadakara	Edachery	ARWSS	Completed
21	Kozhikode	P.H. Div: Vadakara	Thiruvallur-Ayancherry	ARWSS	Completed
22	Kozhikode	P.H. Div: Vadakara	Maniyur-Palayad	ARWSS	Completed
23	Kozhikode	P.H. Div: Vadakara	Maruthomkara	ARWSS II	Completed
24	Kozhikode	P.H. Div: Vadakara	Kayanna	ARWSS	Completed
25	Kozhikode	P.H. Div: Vadakara	Onchiyam-Chorode	ARWSS II	Completed
26	Kozhikode	P.H. Div: Vadakara	Purameri	ARWSS/LI	Completed
27	Kozhikode	P.H. Div: Vadakara	Unnikkulam-Sivapuram	ARWSS	Completed
28	Malappuram	P.H. Div: Edappal	Kottakkal-Parappur	ARWSS/LI	Completed
29	Malappuram	P.H. Div: Edappal	Ezhuvanthuruthy	ARWSS/LI	Completed
30	Malappuram	P.H. Div: Malappuram	Munniyur-Thenhippalam	ARWSS/LI	Completed
31	Malappuram	P.H. Div: Malappuram	Urakam-Vengara	ARWSS/LI	Completed
32	Malappuram	P.H. Div: Malappuram	Manjeri	LIC	Completed
33	Malappuram	P.H. Div: Malappuram	Chelembra	ARWSS	Completed
34	Palakkad	P.H. Div: Shorannur	Mannarkkad	ARWSS/LI	Completed
35	Palakkad	P.H. Div: Shorannur	Ongallur & Vallappuzha	LIC	Completed
36	Palakkad	P.H. Div: Shorannur	Ambalappara	ARWSS/LI	Completed
37	Palakkad	P.H Div: Palakkad	Marutharode	ARWSS/LI	Completed
38	Thrissur	P.H Div: Irinjalakuda	Avinissery-Pallissery	ARWSS/LI	Completed
39	Thrissur	P.H Div: Irinjalakuda	Azhikode	ARWSS/LI	Completed
40	Thrissur	P.H Div: Irinjalakuda	Karalam-Padiyur	ARWSS/LI	Completed
41	Thrissur	P.H Div: Irinjalakuda	Aloor-Thazhekkad	ARWSS	Completed

42	Thrissur	P.H Div: Thrissur	Wadakkanchery	ARWSS/LI	Completed
43	Thrissur	P.H Div: Thrissur	Desamangalam	ARWSS/LI	Completed
44	Ernakulam	P.H Div: Perumbavoor	Pothanikkad	ARWSS	Completed
45	Ernakulam	P.H Div: Perumbavoor	Cheranalloor	ARWSS	Completed
46	Ernakulam	P.H Div: Perumbavoor	Arakkuzha-Palakkuzha	ARWSS II	Completed
47	Ernakulam	P.H Div: Perumbavoor	Kothamanglam	LIC	Completed
48	Ernakulam	P.H Div: Aluva	Ayyampuzha-Manjappara	LIC	Completed
49	Idukki	P.H Div: Thodupuzha	Chakkuvallam-Periyar	ARWSS/LI	Completed
50	Idukki	P.H Div: Thodupuzha	Mlappara	LIC	Completed
51	Idukki	P.H Div: Thodupuzha	Munnar	LIC	Completed
52	Idukki	P.H Div: Thodupuzha	Rajakkad	ARWSS	Completed
53	Kottayam	P.H Div: Kottayam	Lalam-Vallichira	ARWSS	Completed
54	Kottayam	P.H Div: Kottayam	Kumarakom-Thiruvarpu	ARWSS/LI	Completed
55	Kottayam	P.H Div: Kottayam	Thalanadu	LIC	Completed
56	Kottayam	P.H Div: Kottayam	Puliyannur-Meenachal	ARWSS	Completed
57	Kottayam	WSP Div: Thiruvalla	Thiruvalla-Changanacherry	LIC/HUDCO	Completed
58	Alappuzha	P.H Div: Alappuzha	Puthuppally	ARWSS	Completed
59	Alappuzha	P.H Div: Alappuzha	Purakkad	ARWSS	Completed
60	Alappuzha	P.H Div: Alappuzha	Punnakkutty	SCP	Completed
61	Alappuzha	P.H Div: Alappuzha	Thamarakkulam	ARWSS	Completed
62	Alappuzha	P.H Div: Alappuzha	Pathiyur-Keerikkad	ARWSS	Completed
63	Alappuzha	P.H Div: Thiruvalla	Kavalam-Pulinkunnu	ARWSS	Completed
65	Pathanamthitta	P.H Div: Pathanamthitta	Vechuchira	LIC	Completed

66	Pathanamthitta	P.H Div: Pathanamthitta	Aranmula	ORWSS	Completed
67	Pathanamthitta	P.H Div: Pathanamthitta	Mylapra	LIC	Completed
68	Pathanamthitta	P.H Div: Pathanamthitta	Adhichippuzha	ORWSS	Completed
69	Kollam	W.S.Div: Kollam	Thazhava	LIC	Completed
70	Kollam	W.S.Div: Kollam	Chavara	ARWSS	Completed
71	Kollam	W.S.Div: Kollam	Mynagappally	ARWSS/LI	Completed
72	Kollam	W.S.Div: Kollam	Thodiyur	ARWSS/LI	Completed
73	Kollam	W.S.Div: Kollam	Kunnathur	ARWSS/LI	Completed
74	Kollam	W.S.Div: Kollam	Panmana	ARWSS	Completed
75	Kollam	P.H Div: Kollam	Adichanalloor	ARWSS/LI	Completed
76	Kollam	P.H Div: Kollam	Anakkottur	SCP	Completed
77	Kollam	P.H Div: Kollam	Kottamkara	ARWSS/LI	Completed
78	Kollam	P.H Div: Kollam	Thenmala	ARWSS/LI	Completed
79	Kollam	P.H Div: Kollam	Velinallur	ARWSS/LI	Completed
80	Thiruvananthapuram	W.B.Div: Thiruvananthapuram	Vamanapuram	ARWSS/LI	Completed
81	Thiruvananthapuram	W.B.Div: Thiruvananthapuram	Elamba	ARWSS/LI	Completed
82	Thiruvananthapuram	W.B.Div: Thiruvananthapuram	Karavaram-Alancode	ARWSS/LI	Completed
83	Thiruvananthapuram	W.S.Div: Thiruvananthapuram	Neyyattinkara Portion	ARWSS/LI	Completed

3 3+6 ANNEXURE 9

1.

KERALA WATER AUTHORITY

No. KWA/HO/PL/DP14/90

Office of the Managing Director,
Water Works Campus,
Vellayambalam,
Thiruvananthapuram – 695 033.
Dated : 7-11-1991.

TECHNICAL CIRCULAR

Sub : Irregularities in execution, measurement and payments of Earth Work Excavation.

Ref : Resolution No. 2205 of the 101st meeting of Kerala Water Authority held on 30-8-1991.

Certain irregularities in the execution, measurement and payment for earth work excavation pertaining to some of the water supply schemes were pointed out by the Accountant General. In order to conduct an indepth study on these irregularities to evolve some remedial measures, a technical committee was constituted as directed by the Government with the Technical Member as Chairman, the Chief Engineers (Southern Region, Northern Region and IPD) and two Superintending Engineers (one from each region) as members. The Technical Committee presented its report before the Authority during the Board meeting held on 30-8-1991 and was approved vide Board Resolution No. 2205.

Based on the report of the Technical Committee, the following guidelines are issued for works connected with earth work excavation and other works as detailed below:

1. CLASSIFICATION OF SOIL :

The excavations for pipe line trenches are likely to be spread over long distance extending to kilometres where the strata and classification may vary abruptly. To avert possible manipulation in measurements, the following procedure for earthwork excavation is to be followed:

i) The Assistant Executive Engineer in charge of the work shall report in writing to the Executive Engineer and Estimate sanctioning authority of the work with copy to all

concerned whenever the difference in classification of soil exceeds 50% during actual execution.

ii) In cases of such variations, the Executive Engineer shall invariably super check the item as per rules without which no payment shall be made for the earthwork items.

2. EXCAVATION IN ROCK :

There is no standard data for protective measures being adopted where essential due to site condition, during blasting operations for excavating in rock. The protective measures will vary widely from site to site due to the different nature of protection required and as the characteristics of the rock met with differ considerably in different places.

The following guidelines are issued to avoid the possibility of boosting up of rates in future.

i) Necessity of such an item should be reported by the Executive Engineer after inspecting the site and written approval for the work should be obtained from the authority who sanctioned the estimate, before executing the work.

ii) Locally available filler materials need only be used for filling empty cement bags for providing the required protection for rock blasting in trenches. But in wet conditions such as in blasting for well sinking, sand can be used as filler material.

iii) Only empty cement bags for filling filler materials may be used and the rate fixed should be in conformity with the prevailing departmental cost for empty cement bags prescribed in the agreement.

iv) Average quantity of filler materials in a bag shall not be more than 0.025 M3 as the bags are filled up loose and tied.

v) The filled up bags can be used minimum twice. It can be more as per site condition and as per observations.

vi) The number of earth filled bags shall not exceed 200 Nos for blasting 10M3 of hard rock and the bags shall be used mininium twice. For well sinking in wet conditions, the maximum number of sand filled bags shall be limited to 300 Nos. For medium rock blasting with protection, the quantum of protection shall not exceed 50% of that for hard rock.

vii) The contractor can be allowed to use additional protection such as the use of M S plates etc. but the total cost of protective measures shall not exceed the rate worked out as per the above provisions as the use of M.S. plate will enable the contractor to use the filled up bags more than twice.

viii) The quantum of work anticipated shall be duly certified by the concerned Assistant Engineer, Assistant Executive Engineer and Executive Engineer before submitting the same to the competent authority for sanction of rates.

Based on the above guidelines, standard data for excavation in hard rock with protected blasting for pipe laying works and granite rock blasting with or without protection under different site conditions for well sinking works are worked out and given in Annexure-A. These new items will be included in the standard data book as detailed in Annexure-A.

The executing officers can adopt more economical methods in executing such items of works as per the site conditions. Additional form works for constructing platforms etc. for removing blasted rubble during the well sinking operation shall be avoided as admissible lifts and leads can be admitted as per standard data provision to remove the blasted debris.

3. EXCAVATION IN MEDIUM ROCK :

The pipe laying works etc. are to be done through public roads by the side of which many buildings and other structures might have come up and even with protective arrangements, people generally object to blasting fearing the consequent hazards. In such cases, the arrangements to be provided for protection is generally the same as that for hard rock, but can be limited to 50% of that for hard rock. In the absence of any separate PHED data provision

for the item the PWD standard data provision in item No. 5(a) can be adopted with an allowance of 10% extra for labour charges to compensate for narrow sections with the required observed data provision for the protection, if absolutely essential limiting the same as mentioned above.

4. DRY RUBBLE PACKING OVER FILLED UP TRENCHES :

For carrying out this work, the following guide lines are issued:

i) The work can be done where essential at steep gradients and where no other road surfacing work is expected to be done by other agencies. But it need be done only with the written permission of an officer not below the rank of the Executive Engineer.

ii) The thickness of the paving shall be limited to a maximum of 150mm and the quantity shall be measured in volume.

iii) The rate can be worked out based on the PWD data provision in item Nos. 278 or 657 less the provision for rolling etc. as the case may be.

5. PICKING PAVED METAL FROM ALIGNMENT OF TRENCHES :

Picking old metalled surface and sectioning of the road is covered by item 653 of the PWD data book. But in PWD roads where the Authority is required to pay the road restoration charges, the item need not be separately reckoned and measured. It can be measured as earthwork excavation in hard soil as per Note (b) under 'Excavation and Earthwork' in the PWD standard data book.

6. APPROVAL OF RATES FOR EXTRA ITEMS :

Considering the practical expediency, and to have uniform procedure, the following guide lines are issued for future guidance and observance.

i) Extra items based on standard Data Book (either PWD or PHED) can be sanctioned by the estimate sanctioning Authority as per the codal provisions.

ii) Extra items based on observed data shall be sanctioned by the estimate sanctioning authority based on codal pro-

visions and subject to the following monetary limit in each contract.

Executive Engineer	—	upto Rs. 25,000/-
Superintending Engineer	—	upto Rs. 1,00,000/-
Chief Engineer	—	Unlimited

The above financial limit can be exercised and supplemental agreement for the rate executed by the Executive Engineer/Superintending Engineer only after the work is completed. Till, then only advance not more than 75% as per rules can be admitted and subject to the above financial limitations.

iii) For executing any extra item of work, there shall be an order in writing by an Officer not below the rank of the concerned Assistant Executive Engineer.

iv) The quantity and rate provisions in the data for observed item should be certified by the Assistant Engineer, Assistant Executive Engineer and Executive Engineer before submitting the same to the competent authority for sanction. The anticipated quantity with financial implication shall also be certified.

7. EARTHWORK EXCAVATION FOR LAYING PVC/HDPE PIPES

For uniformity, the following average trench widths will have to be adopted for laying different sizes of PVC/HDPE pipe in future.

Upto 90mm dia	—	50 cm width
110mm to 160mm dia	—	60 cm width
Above 160mm upto 215mm dia	—	70 cm width

8. MEASUREMENT :

Specification 106 under section 16 of the M.D.S.S can be made applicable to earthwork alone. In the case of rock blasting, it is not practicable to limit the blasting to the exact sectional dimensions. It is therefore decided that the actual quantity limiting to a maximum of 20% above the quantity of rock to be blasted as per standard trench measurement can be admitted in hard rock blasting for trenches, in view of the practical considerations of blasting in narrow trenches.

9. SHORING, FFNCING :

The item of shoring is necessitated where slipping occures and this normally happens in loose ordinary soil, sandy soil etc. However, to have a proper control, the works of fencing and shoring should be authorised an officer not below the rank of the Executive Engineer subject to codal provisions and delegation of powers and without authorisation, such works should not be carried out.

10. PUTTING RING BUND AND BAILING OUT WATER :

The specification for earth work excavation in trenches does not normally include provision for bailing out of water. Hence, when bailing out of water is done, it has to be measured separately and paid for.

When the quantity of bailing out water exceeds the schedule quantity, the fact should be reported and sanction obtained from the estimate sanctioning authority subject to codal provisions and delegation of powers.

Acc: Annexure 'A'

Sd/-

Technical Member 10-12-91

APPROVED DATA FOR INCLUSION IN THE P. H. E. D STANDARD DATA BOOK

'Annexure A'

Ref: Technical Circular No. KWA/HO/PL/DP 14/90 dated 7-11-'91
Rate as per P. W. D Schedule of Rates with effect from 1-6-'90.

Sl. No.	Description	Remarks
1.	New item No. 1004 (A) Excavating in hard rock for trenches by blasting for laying pipes and stacking useful materials for measurements and disposing unserviceable materials within the initial lead of 50m and lift upto 1.50m and providing protection by earth filled cement bags during blasting to avoid damages to nearby structures (200 Nos of earth filled cement bags for 10m3 of blasting. Rate vide item 1004, 658.70/10m3	
	Rate for 1m3 of blasting 658.70/10m3 — 65.87 20 Nos of earth filled cement bags for providing protection. (Rate vide sub data 9) separately attached. 4.62/bag — 92.40 158.27 Add 10% C. P — 15.82 174.09	
	Say Rs. 174.10m3	
2.	New item No. 1098 Granite rock blasting in wells, measured in solids, including collecting and stacking spoil for measurement, within initial lead of 50m and lift upto 1.50m but excluding bailing out water	

Sl. No.	Description	Remarks
	(a) Initial depth of 1.50m Rate as per item No.54 of P. W. D standard data (seperately attached) 682.58/10M3	682 58
	Add 10% C. P.	68 25
	Say Rs. 750 83/10m3	750 83
	(b) Do do for 1 st depth of 1.50m to 3.00m do do Rate vide item (a) above	682.58
	i) 1/3 of the rate vide item (a) excluding cost of materials (614.04)	204.68
	ii) 5% of the total for difficult working condition (614.04 + 204.68 = 818.72)	40.94
	iii) 0.75 man for lifiting materials from well, removing outside and stacking 27.00/E	20.25
	iv) 1/6 quarry man - extra for waste of time in getting into the well and charging 33.00/E	5.50
	v) 1.50m extra fuse 3.42/m	5.13
		959.08
	Add 10% C. P	95.91
	Say Rs. 1055.00/10m3	1054.99
	(c) Do. do. for 2nd depth of 3 00m to 4.50 do. Rate vide item (b) above Extra 15% for additional lift. (Excluding cost of materials.....Rs.885.41)	959.08 132.81
	Add 10% C. P	1091.89 109.18
	Say Rs.1201.05/10m3	1201.07
	(d) Do. do. for 3rd depth 4.50m to 6.00 do. do. Rate vide item (c) above (959.08 + 132.81)	1091.89
	Extra 15% for additional lift (Excluding cost of materials Rs. 885.41)	132.81
	10% C.P	1224.70 122.47
		1347.17

Sl. No.	Description	Remark
	Say Rs. 1347.15/10m3	
(3)	New item No. 1098 (A)	
	Granite rock blasting in wells measured in solids, including collecting and stacking spoil for measurement within initial lead of 50m and lift upto 1.50m but excluding bailing out water and including providing protection by sand filled cement bags (300 Nos of sand filled cement bags/10m3 blasting) to avoid damages to the nearby structures.	Sandy soil, if available locally, can be used for filling the cement bags for protection
	(a) Initial depth of 1.50m Rate vide item 54 of PWD Standard data 682.58/10m3	
	1m3 blasting 682.58/10m3	68.25
	30 Nos. of sand filled cement bags for providing protection 5.04/Bag	151.20
		219.45
	Add 10% C. P	21.94
		241.39
	Say Rs. 241.40/m3 + Cost of conveyance of sand :	
	(b) Do. do. for the 1st depth of 1.50 m to 3.00m do. do. 1m3 blasting (Rate vide item 54 of PWD) 682.58/10m3)	682.58
	(i) 1/3 of the rate vide item (a) (excluding cost of materials Rs. 614.04)	204.68

Sl. No.	Description	Remarks
(ii)	5% of the total for difficult working conditions (ie. 614.04 + 204.68 = 818.72)	40.94
(iii)	0.75 Man for lifting materials from well removing outside and stacking etc. 27.00/E	20.25
(iv)	1/6 quarry man – extra for waste of time in getting into the well and charging 33.00/E	5.50
(v)	1.50m extra fuse 300 Nos. sand filled cement bags 3.42/m for providing protection during blasting 5.04/bag	5.13 1512.00
	Add 10% C. P	2471.08 247.10
		2718.18
	Rate for 1m3 = 271.80/m3	
(c)	Do. do. for the 2nd depth of 3.00m to 4.50m do. do Rate vide item (b) above	959.08
	Extra 15% for additional lift (excluding cost of materials Rs. 885.41)	132 81
	300 Nos. sand filled cement bags for providing protection during blasting 5.04/bags	1512.00
	Add 10% C. P	2603.89 260.38
		2864.27

11

Sl. No.	Description	Remark
	∴ Rate for 1m³ = Rs. 286.40/m³	
(d)	Do. Do. 3rd depth of 4.50m to 6.00m	
	do. do rate vide item (c) above (959.08 + 132.81)	1091.89
	Extra 15% for additional lift (Excluding cost of materials Rs. 885.41)	132.81
	300 Nos. sand filled cement bags for providing protection during blasting, 5.04/bag	1512.00
		2736.70
	Add 10% C. P.	273.67
		3010.37
	∴ Rate for 1m³ = Rs. 301.05/m³	
(4)	New item No. 1098 (B)	
	Granite rock blasting in wells, measured in solid in wet condition, excluding bailing out water, using machinery such as jack hammer with compressor and explosives such as jelatine, detonators and conveying the blasted rock and stacking for measurement within initial lead of 50m and lift upto 1.50m.	
(a)	Initial depth of 1.50m (Rate vide item 54(b) of PWD standard Data sub data seperately attached,	
	696.25/10m³	696.25
	Add 10% C. P	69.62
		765.87
	Say Rs. 765.85/10m³	
(b)	Do. do. for the Ist depth of 1.50m to 3.00 do. do- Rate vide item (a) above	696.25
	i) 1/3 of the rate of item (a) above. (Excluding cost of materials - Rs.316.35)	105.45
	ii) 5% of the total for difficult working condition. (316.35 + 105.45 = 421.80)	21.09

1	2	3
	iii) 0.75 Man forlifting materials from well, removing outside and stacking etc. 27.00/E	20.25
	iv) 1/6 quarry man - Extra for waste of time in getting into the well and charging. 33.00/E	5.50
	v) Extra for water proof fuse L.S.	6.00
		854.54
	Add 10% C. P.	85.45
		939.99
	Say Rs. 940.00/10m3	
	(c) Do. do. for 2nd depth of 3.00m to 4.50m	
	do. do. Rate vide item (b) above	854.54
	Extra 15% for additional lift	70.30
	(excluding cost of materials Rs. 468.64)	924.84
	Add 10% C. P.	92.48
	Say Rs. 1016.30/10m3	1016.32
	(d) Do. do. for 3rd depth of 4.50m to 6.00m	
	do. do.	
	Rate vide item (c) above (854.54+70.30)	924.84
	Extra 15% for additional lift	70.30
	(Excluding cost of materials Rs. 468.64)	995.14
	Add 10% C. P.	99.51
	Say Rs. 1094.65/10m3	1094.65

1	2	3
5)	New item No. 1098(c)	
	Granite rock blasting in wells, measured in solid in wet condition excluding bailing out water, using machinery such as jack hammer with compressor and explosives such as jelatine, detonators and conveying the blasted rock and conveying the blasted rock and stacking for measurement within initial lead of 50m and lift upto 1.50m including providing protection by using sand filled cement bags during blasting.	Sandy soil, if available locally can be used for filling the cement bags for protection
	(a) Initial depth of 1.50m Rate vide item 54(b) of PWD standard data (seperately attached)	696.25
	300 Nos. of sand filled cement bag Rs. 5.04/bag,	1512.00
		2208 25
	Add 10% C. P.	220.82
		2429.07
	Say Rs. 242.90/m3	
	(b) Do. do. 1st depth of 1.50m to 3.00m do, do Rate vide item (54 b)	696.25
	i) 1/3 of the rate vide item above (excluding cost of materials Rs. 316.35)	105.45
	ii) 5% of the total for difficult working condition (316 45+105.45=421.90)	21.09
	iii) 0.75 man for lifting materials from well, removing outside and stacking 27.00/E	20.25
	iv) 1/6 quarry man-Extra for waste of time in getting into the well and charging 33.00/E	5.50
	v) 1.50m extra fuse 3.42/m	5.13
		853.67

1	2	3
		853.67
	300 Nos. sand filled cement bag for giving protection during blasting. Rs 5.04/bag	1512 00
		2365.67
	Add 10% C. P.	236.56
		2602.23
	Rate for 1.00m3 = 260 20/m3	
	(c) Do. do. for 2nd depth of 3 00m to 4.50m do. do. Rate vide item (b) above	853.67
	Extra 10% for additional lift (Excluding cost of materials Rs 468.64)	70 30
	300 Nos. sand filled cement bag for providing protection during blasting. Rs. 5.04/bag	1512.00
		2435.97
	Add 10% C. P.	243.59
		2679.56
	Rate for 1 m3 = Rs. 267.95/m3	
	(d) Do. do. for 3rd depth of 4.50m to 6.00m do...do. Rate vide item (c) above (853.67 + 70.30)	923 97
	Extra 15% for additional lift (excluding cost of materials Rs. 483.64)	70.30
	300 Nos. sand filled cement bag for providing protection during blasting. Rs. 5.04/bag	1512.00
		2506.27
	Add 10% C. P.	250.62
		2756.89

1	2	3
	Say Rs. 275.70/m3	
6.	Sub Data vide item No 1004 of PHED Standard data.	
	Excavating in hard rock for trenches by blasting for laying pipe lines...	
	5 Kg. Country blasting powder	11.80 Kg - 59.00
	15 m Country fuse	3.42 m 51.30
	12 Nos. Quarry men (for boring holes)	33.00 E 396.00
	2 Nos. Quarry men (for charging holes)	33.00 E 66.00
	1.20 Hammer men (for breaking big boulders)	27.00 E 32.40
	2 Nos. Man (for removing blasted rock to a distance of 50 m)	27.00 E 54.00
		658.70/10m3
7.	Sub Data vide item No 54 of PWD Standard data.	
	Blasting in hard rock (measured in solids) conveying blasted rock and stacking for measurement, within initial lead of 50 m and lift upto 1.5 m.	
	3.20 Kg. Country blasting powder	11.80 Kg. 37.76
	9.00 m Country fuse	3.42 m 30.78
	10.60 Nos. Quarry men (for boring holes)	33.00 E 349.80
	1.20 Nos. Quarry men (for charging holes)	33.00 E 39.60
	1.20 Nos. Hammer men (for breaking big boulders)	27.00 E 32.40
	4.50 Nos. Men (for conveying blasted rubble)	27.00 E 121.50
	2.62 Nos. Men (for stacking blasted rubble)	27.00 E 70.74
		682.58/10m3

1	2		3
8.	Sub Data vide item No. 54 (b) of PWD Standard Data.		
	Blasting and removing hard rock (measured in solid) in wet condition using machinery such as jack hammer with compressor, and explosives such as jelatine detonators and conveying the blasted hard rock and stacking for measurement with an initial lead of 50 m and lift upto 1.50m		
	3.20 Kg 80% gelatine 23 Nos. Detonators	(@450.00/25Kg	57.60
	0.33 Drilling rod (one rod per 30m3)	(@150.00/rod	49.50
	0.74 Quarry man	@33.00 E	24.42
	0.74 Man	@27.00 E	19.98
	0.37 Blaster (for charging hole and fixing)	@33.00 E	12.21
	2.50 Hammer men (for breaking boulders)	@27.00 E	67.50
	4.50 Men for removing blasted rock to a distance of 50m)	@27.00 E	121.50
	2.62 Men (for stacking)	@27.00 E	70.74
	0.37 day Hire for air compressor	@450.00/day	166.50
	0.74 day Hire for jack Hammer	@25.00/day	18.50
	0.37 day Hire for Air Line	LS	10.00
	14.80 Lit. Diesel Oil for compressor	@4.20/lit	62.16
	0.185 Lit. Engine Oil	@17.50/lit.	3.24
	LS current charges	LS	7.40
	L. S. Sundry	LS	5.00
	Say Rs. 696.25/10m3		696.25
9)	Sub Data for earth filled cement bags for providing protection during blasting		
	(a) Earth work excavation in ordinary soil (vide item 56 of PWD standard data)		
	0.90 Man	27.00/E	24.30
	2.75 boys	18.00/E	49.50
			73.80/10m3