



MEASUREMENT BOOK LEVEL FIELD BOOK BILL PREPARATION

MEASUREMENT BOOK / LEVEL FIELD BOOK - BILL PREPARATION



Objective:

- **Know about Measurement Book**
- **Know about Level Field Book**
- **Preparation of Bills**

Measurement Book:

INITIAL RECORDS OF ACCOUNTS.

- **Para 290-APPWD Code:-**
- **The initial records upon which the accounts of the works based are:-**
 - **(a)The Nominal Muster Roll (NMR)**
 - **(b)The casual labour roll**
 - **(c) The MEASUREMENT BOOK (MB)**

Measurement book (M.Book):

- Para 292 APPWD Code
- The Measurement Book is a MOST IMPORTANT RECORD since IT IS THE BASIS OF ALL ACCOUNTS OF QUANTITIES WHETHER OF WORK DONE BY DAILY LABOUR, PIECE WORK, LS.CONTRACT, DEVIATIONS IN A LUMP SUM 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.
- **Rules regarding the maintenance of measurement books and the manner of making entries therein are found in the APPWA Code paras 293 &294).**

Measurement book (M.Book):

- M.Book being a very important document requiring great care in handling, it is very necessary that a strictly correct record of its movement is maintained.
- Whenever a measurement book changes hands, even if it is only sent from one officer to another within the same building, some responsible person of a grade not below that of clerk should acknowledge receipt of it in writing.

LEVEL FIELD BOOK (L.F. BOOK)

- The detailed rules regarding the measurement to be taken in the case of earthwork excavation are found in A.P.D.S.S. specification no 301.
- The levels taken in such cases are to be recorded in Level Field Books (which are to be issued by the Executive Engineer from his office) and calculations made after plotting the levels on section sheets.
- The level Field books (LF.Books), section sheets and calculation statements are to be treated as adjuncts to the M.Books.
- A certificate to the effect" Certified that levels recorded in the L.F.Books, levels plotted in section sheets and the areas/quantities worked out in the calculation sheets have been checked and found correct".

LEVEL FIELD BOOK (L.F. BOOK)

■ L.F. BOOK MODEL: FORMAT:

Left Side page:

Back sight	Intermediate Sight	Fore sight	Height of Collimation	Reduced level

Right side page:

<u>Distance</u>	<u>Total Distance</u>	<u>Ramarks</u>

Measurement book (M.Book):

- M.Book / Level field book are to be issued to the execution officer from the concerned authority (Executive Engineer) duly numbered & duly certified the number of pages contained by the concerned authority.
- Model of M Book: (format):
- Left side page:

Date of Measurement	Description of work	Measurement up to date				
		No	L	B	D	Contents
Right side page: 1	2	3	4	5	6	7

Rate		per	Total Value		Deduct/previous		Since Last			Remarks
Rs.	Ps		Rs.	Ps.	Page no.	Quantity	Quantity	Rs	Ps	
8	9	10	11	12	13	14	15	16	17	18

Handling of M. Book & L.F. Book



- Every newly recruited Assistant Executive Engineer (Asst.E.E.) on joining the department confronts with a situation requiring handling of measurement Books.
- The Measurement book is a very important record in the department and should be used maintained and kept with the greatest of great care. Instances, where newly recruited Asst.E.E found themselves in precarious situations which was due to either their ignorance or negligence. Ignorance cannot be pardoned. One should learn and know the importance and operation of measurement book.

■ **SOME MORE VERY IMPORTANT POINTS TO BE KEPT UPPERMOST IN MINDS**

- 1) Every AEE/AE must thoroughly familiarize himself with the maintenance of M.Books.
- The Asst.E.E must understand that measurements have to be RECORDED ONLY IN THE M.BOOKS SUPPLIED TO HIM FROM THE EXECUTIVE ENGINEER OF THE DIVISION CONCERNED. Though copies of the M.Books are available for purchase from the open market, the Asst.E.E must bring into use only those M.Books which are issued from the Division office. Same precautions are to be taken even in case of L.F.Books.
- 2)The M.Books have a flyleaf attached to each book. These instructions noted in the fly leaves should be studied and grasped well in order to familiarize himself.

Recording Measurements

- Government servants should strictly observe the following general instructions in regard to measurement books:
- All measurements should be taken down neatly in a measurement book issued for the purpose and nowhere else. No one may record any measurement in a measurement book except a Government servant who is empowered to make payment for the work done or a duly authorized executive subordinate in immediate charge of the work who has been supplied with a measurement book.
- The lines under columns (1) to (6) on each page, beginning with the top line, should invariably be filled up at the work. No line should be left blank. Any lines that are not required on any page should be carefully scored through so that no additional entry can be made afterwards.

Each set of measurements should begin with entries showing :
(para 294 of APWA code)

In the case of work done:

- Full name of work as given in the estimate,
- Situation of work,
- Name of contractor,
- Number and date of his agreement, if any,
- Date of commencement of work (i.e date on which site was handed over).
- Date of actual completion of work, and
- Date of measurement: or

In the case of materials supplied:

- Name of supplier,
- Number and date of his agreement, if any, or of the order,
- Purpose of supply,
- Date of written order to begin supplies,
- Date of actual completion of supplies and
- Date of measurement.

Each set of measurements should end with the date signature and designation of the Government servant who takes the measurement.

A suitable abstract should then be prepared which should show, in the case measurements for work done, the total quantity of each distinct item of work relating to each sanctioned sub-head.

As per para 294(d) of APW Accounts Code:

- Since all payments of work or supplies are based on the quantities recorded in the measurement book, the Government servant who takes the measurements must take all possible care to record the quantities clearly and accurately.
- He will also be held responsible for the correctness of the entries in the column “Contents or area” in respect of the measurement recorded by him.
- If the measurements are taken in connection with running contract account on which work has been previously measured, he will also be held responsible for recording a reference to the last set of measurements on a running account, or the first and final measurement, this fact should be suitably noted against the entries in the measurement book, and in the later case the actual date of completion should

- The signature of the contractor or his agent should be obtained in the measurement book after each set of measurements below the statement “I accept the measurements”. If the contractor or his agent is illiterate, his thumb mark should be attested by independent witness.

- Entries should be recorded continuously in the measurement book. No page should be left blank or torn out. If a page is left blank inadvertently it should be cancelled by diagonal lines as soon as this is noticed and the cancellation should be attested by the dated initials of the Government servant concerned. (See para 292 of APPWD Code)
- No entry should be erased. If a mistake is made, the Government servant who is responsible should correct it and attest the correction by his dated initials. When any measurements are cancelled, the cancellation must be attested by a reference to his orders installed by the Government servant who took the measurements. In either case the reason for the cancellation should always be recorded.
- Entries should be made, if possible, in ink and otherwise in indelible pencil. Pencil entries should never be inked over. Every entry in the “Content or area” column should be made in ink.

- Each measurement book should contain an index and the Government servant in charge of it should keep the index upto date.
- A word of caution: Every time overall measurements must be recorded and evaluated duly deducting the value already made and settled. This procedure is to be followed in order to obviate the possibility of any overpayment at any stage.
- At the time of payment, the Government servant who authorizes payment should draw a diagonal red ink line across every page containing the detailed measurements relating to the work or supplies paid for and should record reference to the number and date of the voucher or sub-voucher on the abstract of measurements.

- The measurement book should be produced for inspection on request by the Accountant-General or a duly authorized member of his staff.
- The Officer specified for this purpose in the concerned department manuals are competent to deal with losses of measurement books. All losses of measurement books should at once be reported to them so that the losses may be written off and necessary disciplinary action taken against those responsible for the loss.
- All the above instructions are by way of illustration only. The Asst.E.E. is informed that he should thoroughly familiarize himself with all the codal provisions and rules on the subject by reference to APPWD code (para 292 to 296) and APPWA Code (293 to 297) & Financial Code.

Pre – measurements:



- The pre-measurements of an item of work has to be recorded in advance under the heading pre-measurements for the item of works which are not seen directly for measurement after getting the work done.
- After completing such item of the work, a finished work done certificate is to be furnished, on the right side of the page, where the pre-measurements are recorded.
- Ex:- 1). For jungle clearance. 2) For dismantling items of works 3). For filling foundations 4). For road materials before laying the road etc.,

Pre - measurements: Certificates for finished work



- 1). For jungle clearance:
“Certified that the Light Jungle recorded vide pre-measurements at page-4 to 6 of this M Book has been completely removed and burnt in to ashes as they are not useful for any other purpose.”

- 2) For dismantling items of works:
“Certified that the Brick Masonry recorded vide pre-measurements at page-8 to 9 of this M Book has been completely dismantled and the debris has been disposed from the site as they are not useful for any other purpose. The useful wooden material such as old doors and windows etc., have been stacked and taken to ‘7F’ Account.”

■ **For filling foundations:**

On left side page:

Quantity of Sand filling for foundations = Quantity of earthwork foundations – Quantity of foundation concretes up to ground level

On right side page:

“Certified that the filling sand quantity recorded vide page 14& 15 of this M book has been completely utilized for filling in the foundations of

.....

■ **For road materials before laying the road:**

“Certified that the 40 mm HBG metal quantity recorded vide page 18 to 21 of this M book has been completely spread and utilized for the road work recorded at page 24 to 25 of this M book.

Check - measurements of works:



- When a departmental rule or order requires that a work be check-measured before payment, the contractor should not be paid for work done until it has been check-measured by the prescribed authority. Superior officers also should make a point of checking the detailed measurements of works in course of their tours.
- Check-measurement is intended to detect errors and prevent fraudulent entries. It should therefore be done with discretion and method. The items which appear most likely to be incorrect and most easily susceptible of fraud and those which would seriously affect the total of the bill, if inaccurate, should be selected for check-measurement.

Check - measurements of works:

- When measurements are taken jointly by more than one Government servant, the senior most of them should record and sign the measurements.
- Minimum 25% of the measurements recorded has to be check measured by the check measurement offices, & any work has to be super checked by the next higher authority / agreement authority. At least once in a year, before making final payment.
- The work has to be check measured by the EE, duly covering 30% expenditure.
- The work has to be check measured by the SE, at 1/3rd / 2/3rd / Final stage of work duly covering 30% expenditure.

Bill Preparation:

- The payments can be released either intermediate or final for the work done as per agreement specification by preferring the Running Bill in case of intermediate payment or by preferring final bill in case of final payment.
- **Model Bill forms**
- For running bills CC1, CC2 & Part & so on for final bill, CC6 & final.
- If the bill is preferring at a time for whole work first & final bill has to be preferred i.e (F& F)

When the work done is billed for, on the top of the bill, the following particulars shall be written:



- **Serial Number of Bill (say, LS II and LS II and Part Bill, etc.;**
- **Name of Work (as per Technical Sanction);**
- **Estimate Amount (+ Revised Estimate Amount, if any);**
- **Technical Sanction No. (+Approval No. of R E/Work slip, if any);**
- **Agreement No. & Date (+Supplemental Agt. Nos. & date, if any);**
- **Period of Completion as per Agreement;**
- **Actual date of completion;**
- **Extension of Time granted, if any, duly noting the date up to which it is granted, duly giving reference No. and date of the authority;**
- **Head of Account to which charged (Also, indicate 'Plan' or 'Non-Plan');**
- **Details of EMD / FSD/ ASD, etc, on the work.**

While writing 'Abstract of Bill' in the M Book, all items covered in the Agreement should be written up with full description as found in the Agreement.

Contra noting should be indicated with page Nos. and M Book Nos. for

the relevant items while arriving the abstract quantities and the contra

page references the abstract quantities should be referred at each and

every item of the bill.

Certificates for Part Bills/Intermediate Bills



Certified that

- **The works are in progress;**
- **The work has been carried out satisfactorily as per the drawings, designs and terms and conditions of the agreement**
- **All recoveries have made in this bill;**
- **The contractor has engaged technical personal viz., ...(technical qualifications to be indicated) as technical agents (as in the agreement) throughout the period of the execution of the work and that they were available at the site of the work during the course of execution of work.**
- **The rock spoil available with the department was found that not useful (if not re used) the pre levels and final levels have been recorded at page no.....of LF. Book no.(of AE/AEE, DEE, EE , SE & CE shall be given separately)**
- **The extension of time is granted up to, with necessary liquidated damages/penalties /fines of Rs.....(vide Proc. No.)**

Certificates for Part Bills/Intermediate Bills



- No departmental machinery has been lent to the contractor and the contractor has made his own arrangements for the machinery.
- The work has been check measured by the EE on pages..... of M. B. No. duly covering 30% expenditure.
- The work has been check measured by the SE on pages of M. B. No. at 1/3rd / 2/3rd / final stage of work duly covering 30% expenditure.
- The VAT registration numbers of the contractor is
- The Contract has insured the work vide Insurance Policy No.....dt:..... (Name of the Insurance Company) and the policy is obtained in the joint names of the contractors and EE/SE and the policy is in Currency including the extended period as well as the defects liability period thereafter and the policy is retained in the safe custody of division office.

Certificates for final bill



- Certified that
- The work is completed as per agreement.
- The contractor has engaged technical personnel(technical qualifications to be indication at the end of each name) as Technical Agents (as in the Agreement) throughout the period of execution of the work and that they were available at the site of work during the course of execution of the work.
- No recoveries are due for recovery from the contractor other than those proposed in the bill
- There are no further dues to be recovered from the contractor;
- The contractor has conveyed the materials for use of the work as per the lead statement appended to the Agreement;

Certificates for final bill



- Certified that
- The revised Estimate/ Workslip is approved by the competent authority duly covering all the deviations;
- The useful earth obtained from canal cutting has been utilized for banking before resorting to borrow earth;
- The useful stone obtained from canal cutting / cutting / excavation has been stacked separately;
- The leads and lifts are covered in actual execution
- No liabilities are outstanding against the contractor;
- The rock spoil available with the Department was found to be not useful (if not re-used);
- The final profile has been reached, where full rate is allowed;
- No Departmental Machinery has been lent to the contractor and the contractor has made his own arrangements for the machinery;

Certificates for final bill



- Certified that
- The materials required on the work were of good quality conforming to the standards of B.I.S. and were procured by the contractor at his own cost and were used by him on the work after proper tests as prescribed;
- The remarks of Quality Control Wing / Department have been attended to satisfactorily and necessary recoveries proposed by them have been effected in the bill and no remarks are outstanding against the work;
- No AG's IR Paras / Audit Objections are outstanding against the work;
- The pre-levels and final levels have been recorded in page Nos. of LF Book Nos. (of AE / AEE, DEE, EE, SE & QC staff shall be given separately);
- The Extension of Time is granted up to (date) with necessary liquidated damages / penalties / fines of Rs..... are imposed as per Proc No. dt:(EE/SE/CE) and the same is recovered in this bill and the work is carried out as per the Milestones set out in the Agreement read with the Revised Milestones approved by the competent authority

Certificates for final bill

- Certified that
- The system has been tested/ subjected to full function / working condition and no leakages are found (to be furnished for Pipelines /Reservoirs, etc.) ;
- The recovery of Mobilization Advance / Equipment Advance and interest thereon are proposed as under

Principal Rs.	Interest Rs.	Period
Adv. Paid/Interest due		:
Recovered up to Previous Bill		:
Balance now proposed		:
- The work has been check measured by the EE on pages _____ of MB Nos _____, duly covering 30% expenditure;
- The work has been checkmeasured by the SE on pages _____ of M Book Nos. _____ at 1/3rd / 2/3rd / Final stage of work duly covering 30% expenditure;
- The VAT Registration No. of the contractor is _____ dt _____
- The contractor has insured the work vide Insurance Policy No. _____ dt _____ of _____ (Insurance Comp. Name and the policy is obtained in the joint names of the contractor and EE/SE and the policy is in currency including the extended period as well as the Defects Liability Period thereafter and the policy retained

Certificates / Signature of the Contractor:



- 1) For Final Bills: The contractor shall furnish 'Release and Discharge' certificate as under (under the signature of the contractor):
 - Release and Discharge Certificate:
 - “ I do hereby release and discharge from any / and all claims and demands whatsoever for all matters arising out of or / and in connection with the contract under the Agreement bearing No. _____ dt _____--.”
- 2) If the contractor intends to empower the execution and signing of documents / acceptance of measurement in M Books /LF Books/ CS Books, etc. to an individual through a ' Power of Attorney', the said 'Power of Attorney' shall be made a legally valid document duly got registered and approved and accepted by the authority who entered in to the Original Agreement; the “Power of Attorney” should clearly indicate in lucid terms and purposes specifically ('general' or 'specific').
- 3) The Signatures of the contractor / authorized agent / Power of Attorney Holder shall be affixed in the M Books for each set of measurements (with the seal of the firm, if it is a firm) with the endorsement 'I accept the Measurements' / Accepted the Measurements'. Similarly, signatures shall also be obtained in LF Books, CS booklets and Calculation statements which are treated as adjuncts to MBs.
- *Note: Signature of the Contractor with stamped (Rev Stamp) acknowledgement for the gross amount of the bill shall also be obtained on the bill.*
- (Ref. to _____ to _____)

■ Scrutiny of work Bills

- After signing the agreement by the Contractor and concerned departmental officer authorized on behalf of Government the work will be started for execution by the contractor after executing some portion of work the part bill be submitted to the division office for scrutiny and submit to PAO for payment.
- The portion of measurement rendered based on levels i.e., earth work excavation, embankments in some divisions and entire bill in some divisions are to be checked by the drawing branch. In such a case the measurement shall be recorded in measurement Books (M. Books) with reference to the levels recorded in L.F Books through cross section sheets and after computation in the calculation statements.

Observations to be made during the scrutiny of the bills in the Drawing branch (JTO/ATO/TO)



- Checking of L.F. Books.
- Checking of levels in the ledger with reference to L.F. Books.
- Calculation of Areas with reference to the levels and Cross Sections.
- Required level Certificate by the AE/AEE and DEE in the M.books and bill form.
- Verification of quantities with reference to estimate and agreement.
- Data for excess of quantities and supplemental items if any included in the bills for payment.
- All the intermediate payments should be made based on levels only.
- The level certificate of the Execution Engineer in the Ledger and M. Book is to be furnished in the Division office.

Scrutiny of the bills



- Soon after receiving of Bills to the payment authority the details of the Bill has to be entered in the work bill register.
- While scrutinizing the work bills in the office of the payment authority the following aspects are to be viewed.
- The quantities of work done which are preferred for payment are to be verified with reference to the agreement quantities. The specification of the item of the work & the rates claimed for each individual item of work are to be verified with reference to the agreement. The arithmetical calculations of the amount of individual items & the total work done are to be verified.
- The calculations in respect of the deductions towards seigniorage & less are to be verified as per the work done quantities & the amount of deduction have to be arrived as per the rates specified.
- The certificates on the Bill which are to be written by the execution officers have to be verified.

Memo of Payment - Model:



- After check of the bill in entirety, the memo of payment is drawn in the format prescribed (forms for Part Bill and Final Bill under K-2 contract and for Part Bill and Final Bill under L.S. Contract are prescribed) by the Assistant in the Division Office and checked by the DAO(W).
- The exhibition of Memo. Of Payment for L.S. Part Bill is given below;
- (The other Parts viz., I & II are not exhibited here)
- Memo of Payments Part - III

Rs.

Rs.

- Gross value of Work done _____(1)
- Withheld Amount @ _____% _____}
- * with held for want of sufficient LOC/ other reasons
(2) _____} (-) _____
- Balance (1-2) _____(3)
- (Ded): Previous Payments (Up to Previous Bill)
(4) (-) _____
- Balance NOW payable (3-4) (as detailed below):
_(5) _____

■ 5 (a) By recovery of amounts creditable to works:

■ (i) Recovery of Advance

■ (ii) Q.C. Recovery / Fines for bad work

■ iii) Materials supplied (like cement / Steel rice issued departmentally)

■ iv) Any other recovery creditable to work

■ Total: 5 (a):

■ 5 (b): By Recovery of amounts creditable to heads:

■ i) Income Tax

■ ii) VAT

■ iii) Seigniorage Charges

■ iv) CM's Relief Fund

■ v) EMD / FSD (Cr. to Deposits)

■ vi) Interest on Advance (cr. to R&R)

■ vii) Penalties / fines for slow progress of work / liquidated damages

■ viii) Any other recovery

■ Total: 5 (b)

■ 5 (c) By cheque:

:5 (c)

Deductions & Remittances to be made



■ Deductions to be	Percentage	Department which it is to be remitted
■ VAT	@ 5%	Commercial Tax Department
■ Seigniorage Charges Department	@ as approved in Data	Mining
■ IT	@2.06%	IT Department
■ FSD	@2.5%	Deposits Account
■ Labour Cess	@1%	Labour Department

Pass order

- Passed for Gross amount of Rs.....
Rupees.....Only, duly deducting of
Rs..... towards the deductions shown
in the memo of payment and net payable to the contractor
of Rs.....
(Rupees.....) only.

Payment order

- Paid for net amount of Rs.....
Rupees.....Only for payment
to M/s., Sri.....vide cheque
No.....Dt.....

Cash Book Entries & Register of Recoveries:

- The Details of payment made to the contractor & the deductions made will be entered both in the work bill register and cash book.



THANK YOU !!