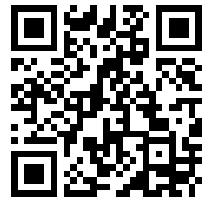

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FEDERAL EMERGENCY ADMINISTRATION
OF PUBLIC WORKS

HAROLD L. ICKES, Administrator

WASHINGTON

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MARCH 1934

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THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF CHEMISTRY
CHICAGO, ILLINOIS

1955

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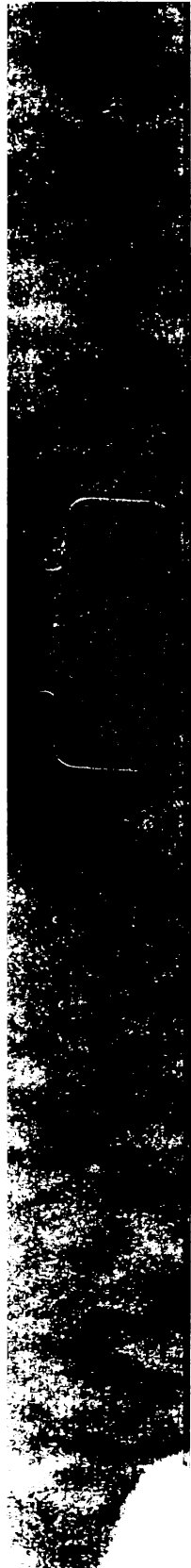
FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

WASHINGTON, D.C., *March 26, 1934.*

To assist the governments of public bodies in their handling of Public Works loan and grant funds and the accounting for expenditures under such funds, this manual has been prepared.

HAROLD L. ICKES,
Administrator.

(v)



THE
UNIVERSITY OF CHICAGO
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MANUAL OF FINANCIAL PROCEDURE FOR PUBLIC BODIES

SECTION I

GENERAL REQUIREMENTS

Item 1. The Federal Public Works program.—The Seventy-third Congress of the United States, in enacting the National Industrial Recovery Act, appropriated under title II the sum of \$3,300,000,000 for public works. Under the authority of this act, the President is authorized to make loans and grants to States, municipalities, or other public bodies for the construction, repair, or improvement of a public works project, "but no such grant shall be in excess of 30 percent of the cost of the labor and materials employed upon such project"; the act also provides "that in deciding to extend any aid or grant hereunder to any State, county, or municipality the President may consider whether action is in progress or in good faith assured therein reasonably designed to bring the ordinary current expenditures thereof within the prudently estimated revenues thereof."

To make effective the purposes of this act, the President has established the Federal Emergency Administration of Public Works, which has proceeded to make loans and/or grants to non-Federal public bodies for construction, repair, and improvement projects.

Item 2. Circulars and bulletins issued.—To carry out the intent of Congress in enacting title II of the National Industrial Recovery Act, the President issued on July 31, 1933, Circular No. 1, setting forth the "purposes, policies, functioning, and organization of the Emergency Administration of Public Works." Under the authority set forth in this circular, for the purpose of expediting the development of a public works program and of assisting public bodies in applying for loans and grants and in administering such projects when approved, the Federal Emergency Administration of Public Works (called hereafter Public Works Administration or P.W.A.) has prepared and issued a number of circulars, bulletins, and administrative orders. Circular 2, titled "Information Required with Application for Loans to States, Counties, Municipalities, and other Public Bodies", is of particular interest to public bodies. Copies of all circulars and other publications appropriate to a public body should be obtained from the P.W.A. State engineer and studied thoroughly by public bodies interested in cooperating with the Federal Government in this Public Works program.

Item 3. Administration of Federal funds.—It should be recognized that the Public Works Administration cannot, on its own initiative, prescribe all procedures to be followed with respect to the handling of funds loaned and granted to public bodies. Federal statutes, some of long standing, and court decisions, as well as rules and regulations of the Comptroller General set forth disbursement, contract, and other fiscal procedures which must be followed by all Federal agencies. P.W.A. is no exception, so that public bodies expending Federal funds are therefore required to adjust their procedures to fit these standard Federal requirements.

Public bodies similarly are controlled by State constitutions and statutes and by local charters and ordinances. With this variety of sources of authority governing the procedure which must necessarily apply in the handling of projects financed jointly by P.W.A. and public bodies, it is obviously indispensable that there be complete cooperation between the Federal agency disbursing the funds and the local public bodies that directly expend them.

Item 4. Application and approval of projects.—The circulars and bulletins referred to under item 2, specify in detail the steps to be followed by public bodies which wish to participate in the Public Works program. An adequate description of the nature, cost, and means of financing the project and all pertinent factors which enter into the consideration of its desirability, must accompany all applications for loans and/or grants, to the end that approval or disapproval by the P.W.A. may be well founded.

Item 5. Allotments to public bodies.—After the public body has furnished information and evidence sufficient to assure the fulfillment of the legal, financial, engineering, and social requirements of the act and the project has been approved as to eligibility and terms, a tentative allotment of the P.W.A. appropriation is made to the public body for such project.

Item 6. Loan and/or grant agreements.—Immediately upon the making of a tentative allotment to the public body, an agreement is drawn, embodying the approved terms of the application and if agreed to by both parties, it is executed by the applicant and the Administrator. Some of these agreements cover both loans and grants to public bodies; others, in cases where the public bodies obtain their finances from other sources than P.W.A., are for grants only. These loan and/or grant agreements set forth in specific detail the steps to be followed in financing and executing P.W.A. projects. A thorough knowledge and observance of the provisions of such agreements will save public bodies many delays and difficulties in obtaining loan and grant payments.

Item 7. Public body's responsibility for P.W.A. funds.—The loan and/or grant agreements between the Federal Government and the

public body place the responsibility for the proper management of P.W.A. funds in the hands of the public body to which such funds are advanced. One of the conditions of these agreements is the keeping of certain designated accounts by the public body in such fashion as to present an accurate exhibit of all receipts and expenditures relating to a P.W.A. project. This manual explains how such accounts may be most effectively established and maintained.

Item 8. Inspection and audit of P.W.A. projects.—Although responsibility for the use of P.W.A. funds is placed squarely upon public bodies, the P.W.A. retains the power as specifically expressed in each agreement to audit the accounts of the borrower and/or grantee and of the contractors employed by the public body for the construction of the projects. To this end the P.W.A. maintains inspectors, auditors, and other field agents whose duty it is to ascertain that the provisions of the agreements have been complied with and that all expenditures are reasonable and proper charge against the project.

Item 9. Mandatory report forms.—Five report forms have been designed and distributed by P.W.A. to public bodies for the purpose of informing P.W.A. of progress on projects and to support requests for advances on loans and payments of grants. These forms are mandatory and must be prepared accurately and in detail, if public bodies are to avoid delays in receiving loan and grant payments. The method of preparing these five report forms is fully described in section II of this manual. Public bodies maintaining an adequate accounting system should have no difficulty in the preparation of these reports.

Item 10. Accounting system optional.—Bulletin No. 1 of the Accounting Division of Public Works Administration states in part:

The established policy of the Administrator is to accept such accounting systems as are encountered where the essential detail of transactions is recorded. It is only when systems are inadequate or essentially incorrect and essential data cannot be abstracted that requests will be made for their revision, or the development of adequate accounting systems. These are to be made only after administrative review of auditor's reports of conditions encountered.

Recognizing that many public bodies do not possess an accounting system adequate to furnish the essential data referred to, there is submitted in sections III and IV of this manual, a model plan of a system of general and cost accounting designed to record such data and to provide readily the information that may be required by the P.W.A. This model plan of accounting is not obligatory on any public body which has a system of accounting which provides the essential details of P.W.A. projects. This system may be expanded, contracted, or adjusted to meet the individual requirement of the public body.

Item 11. Contract and force account methods.—Two methods are employed by public bodies to carry out construction, repair, or improvement of projects: (1) By receiving bids and awarding contracts; (2) by the "force account" (or day labor) method. In some cases a public body may employ both the contract and force account methods. No public body may undertake a P.W.A. project by force account without specific approval of the Public Works Administration. Under the contract method the public body accepts a unit or a lump sum bid price for each feature of work, work operation, or other division of the project. In this case all of the detailed construction cost accounting is done by the contractor. In the case of force account work the public body must do all of the accounting for expenditures and costs entering into the project.

Item 12. Public bodies pay large portion of P.W.A. project costs.—Under existing Federal law and regulations, public bodies pay at least 70 percent of the total cost of projects approved by the P.W.A. Reference to this fact is made here to emphasize the need for public bodies to use an adequate accounting system such as that outlined in this manual. In this way only can income and expenditures be properly accounted for and work and costs be subjected to definite control. Such a system, therefore, is of value for any public body engaged in construction projects, whether or not they are P.W.A. projects.

Item 13. Definition of terms.—These terms are those used but not elsewhere defined in this manual.

Appropriation.—This term means a sum of money which has been authorized by Federal statute to be expended from general or bond funds for the objects or purposes and under the conditions described in the statute. With respect to this manual, it means the sum or sums from which the total authorized expenditures of the Federal Emergency Public Works Administration may be made for non-Federal public works projects. When this term is used with respect to public bodies, it means the amount which the governing body authorizes to be spent for a project.

Allotment.—This term means a sum of money which has been apportioned from an appropriation or from the proceeds of a bond issue and authorized to be expended for one or more of the objects or purposes stated in the statute which authorized the appropriation or bond issue. In respect to this manual, this term refers to the sum allotted to the financing of a project authorized by the Public Works Administration to be undertaken or administered by a public body.

Agreements.—These are contracts between the P.W.A. and public bodies for financing projects by means of grants and loans to the public body. Some agreements are for grants and loans; others, where the public body employs other sources of funds, are for grant only.

Contracts.—This term as employed in this manual refers to contracts between public bodies and private contractors for the construction of a P.W.A. project.

Force account.—By this term is meant the method whereby a project, or a part of a project is undertaken by a public body directly instead of letting the work to a private contractor. Under this method the public body may contract for the plant necessary, though normally this too will be owned and furnished by the public body.

Estimate.—This term means a statement of the anticipated quantities of work, and the probable cost of a project. The extent and nature of the detail into which estimates of this cost may be classified depend upon the type of project for which prepared.

Project costs.—This term covers all costs, directly or indirectly incurred in connection with a construction, repair, or improvement project. A specific classification of these costs is furnished in section II, items 5 to 11, inclusive.

Construction costs.—Under this term is classified only that part of the project costs defined as "labor and material" incurred in actual construction work. It is explained fully in section II, item 7.

Project.—This term refers to the specific undertaking described in the application approved by the P.W.A. and as set forth in the loan and/or grant agreement.

Job.—A job may be a project, or a portion of a project, treated as a unit so that data may be supplied concerning such unit. A job, as thus defined, may represent the paving work to be done on one street of several streets, or it may represent the sewerage or water supply system to be installed in one or more of the several streets included in the project.

Feature of work.—This term means one of the several main classes of work operations into which a project or job may be classified for convenience of execution and effective administrative control of the detailed costs of the project. Classification into features of work is desirable for comparison of the preliminary estimates and the actual costs of work. Feature of work in a building project would be "excavation", "concrete", "structural steel", etc.

Work operation.—This term means one of the several classes of operations into which a "feature of work" may be subdivided, so as to secure convenience of execution and meet the requirements of administrative control. Thus, for example, as subdivisions of a work feature such as "base construction" (see Work feature above), there would be several relatively independent work operations, such as "unloading materials", "pouring and raking", "curing", etc.

Inspection and supervision.—This term includes the expense of physical inspection and general supervision necessary to control the construction work in the field on a project.

SECTION II

ESTIMATING AND REPORTING PROJECT COSTS BY PUBLIC BODIES

Item 1. General procedure.—The Federal Emergency Administration of Public Works requires submission of an estimate of project costs which is approved by the P.W.A. before agreements for loans and/or grants are drawn. Circular No. 2 of P.W.A. describes the steps to be followed in estimating project costs. Other data, as described in P.W.A. Bulletin No. 1, dated August 10, 1933, must also be provided by the public body. Regular and special reports must be submitted to the P.W.A. at Washington after work is started on the project. In addition, inspectors and field auditors from the P.W.A. will inspect and audit the reports and accounts of the public body.

This section II of the manual describes the classifications required for such estimates and accounts, the basis of grant payments, and the reports which the public body must submit to the P.W.A. to secure grant and loan payments.

ESTIMATES OF PROJECT COSTS

Item 2. Classification of estimates.—Article IV of Circular No. 2 sets forth the following classification of project costs to be observed in the preparation of project estimates:

- (1) Preliminary expense.
- (2) Lands, rights-of-way, and easements.
- (3) Construction costs.
- (4) Engineering charges.
- (5) Legal, administrative, and other overhead charges.
- (6) Interest during construction.
- (7) Miscellaneous.

Comprehensive definitions of each of these classes are included in this section under items 4 to 11.

Item 3. Estimates under contract and force account construction.—In order to afford uniformity in project estimates submitted to the P.W.A., the estimates of project costs must be segregated according to the foregoing classification, regardless of whether construction is to be done by contract, by force account, or by a combination of these two methods. The observance of this classification also in the accounting for actual costs on projects will facilitate the preparation of reports to the P.W.A. and provide the necessary comparison between the actual and the estimated costs of a project.

UNIFORM CLASSIFICATION OF PROJECT COSTS

Item 4. Use of classification.—The following definitions of project costs are to be observed in preparing cost estimates and in accounting for and reporting actual costs. Even though a public body may not have observed this classification previously in the preparation of estimates for projects now approved by the P.W.A., it must do so in its reports of project costs submitted to the P.W.A.

Item 5. Preliminary expenses.—This class of project costs includes such expenses applicable to the project which are incurred prior to the time of approval of the project by the Federal P.W.A. in Washington as evidenced by the signing of the loan and/or grant agreements other than those expenses which are included in item 6, Lands, rights-of-way, and easements; item 8, Engineering charges; and item 9, Legal, administrative, and other overhead charges.

Item 6. Cost of lands, rights-of-way, and easements.—This class of project costs includes all costs incurred in the acquisition of real property or rights therein necessary to the completion of a project other than expense included under item 9, Legal, administrative, and other overhead charges. If any buildings are included on such lands so acquired, the purchase price thereof will be included as a part of the cost of the land; provided, however, that the salvage value of such buildings so acquired will serve as a credit to this class of project costs.

Item 7. Construction costs.—Construction costs as defined here cover only those costs which may be included in determining the basis of grant payments as provided in the P.W.A. administrative order listed under item 12 below. The classification of construction costs must recognize contract and force account methods, either of which or both may be employed in a construction, repair, or improvement project.

I. Contract work.—Where the work is done by contract, the construction cost is thus the aggregate of payments made by the public body pursuant to the contract or contracts for the construction, repair, or improvement of the project, plus cost of inspection and supervision by the public body in the field.

II. Force account work.—Where the work is done by force account (by labor employed by the public body) the construction cost is the cost of materials in place and authorized work incidental thereto plus the cost to the public body for inspection and supervision in the field as these costs are defined in the following paragraph under this item 7:

LABOR: This term, as applied to construction costs, includes the wage cost of all employees in the field on any feature of work or work operation of the project other than on inspection and supervision in the field and other overhead personnel as described under Miscellaneous below. No salaries or wages which are applicable to any of the several other classes of project costs defined under items 5, 6, 8, 9, 10, and 11 will be charged to construction costs under the head of Labor.

MATERIALS: This class of construction costs includes all commodities, raw, manufactured, or otherwise, which are used on any work feature in the construction of the project. The cost of the materials and supplies used in the construction will be the net purchase price thereof plus the freight, cartage, insurance, storing, and other charges necessary to place the materials and supplies on the site of the project.

PLANT AND EQUIPMENT: This type of construction costs includes only the cost of the use of construction plant and equipment, regardless of whether such plant and equipment is owned and maintained by the public body or rented from private parties.

The method employed by public bodies for managing and accounting for plant and equipment expense varies considerably. Many public bodies maintain equipment bureaus and charge costs of work done for the use of such plant and equipment on the basis of actual costs or of hourly, mileage, cubic yard, ton-mile, etc., rates with such actual costs or rates including the expense of supervising, servicing, repairing, and maintaining the central shop, garage, or plant and the equipment under its charge, including a due portion of the original cost of the equipment (depreciation). If no rental system for plant and equipment as described above be in use in connection with a P.W.A. project, the periodic determination of the plant and equipment costs will be dependent on such other system as may be used on the project for obtaining the factors of costs similar to those included in the system described. Under any system that may be employed, the accounting records of the public body should be clearly kept to show at any time required the correctness and fairness of the base charges billed to each P.W.A. project for the use of the plant and equipment.

MISCELLANEOUS: This type of construction costs when incurred under force account includes field personnel (other than persons engaged in inspection and supervision) who cannot be charged to particular features of work or work operations; field office expense, telephone, telegraph, workmen's compensation, damages, the erection and upkeep of temporary structures or the rental thereof for offices, lavatories, etc. (other than plant buildings), on the grounds of the project, and other similar expenses directly applicable to the construction in the field and which are not chargeable to any of the other six classes of project costs, as such classes are defined in this section of the manual.

Hand tools are defined here as hand shovels, saws, wheelbarrows, wrenches, picks, etc., including small tools requiring air, electricity, steam, or other similar power to operate, which are of such short life as to make it impractical to charge cost accounts for their use on a rental or other basis as employed for plant and equipment. Power and other major tools, having an ordinary life of more than 1 year, should be classified as "plant and equipment" when they can be accounted for under such system as the public body employs for this type of construction cost. Each public body will need to decide individual cases to fit the nature of the jobs on which the tools are used and to harmonize with its plant and equipment accounting practices. (In connection with this subject, see section IV, items 25 and 26.)

Included also in this miscellaneous class of expense, but which must be reported separately, is the cost of "inspection and supervision" in the field. This cost must be limited to include only the expense of physical inspection and general supervision over the construction work on the project.

Item 8. Engineering charges.—This class of project costs covers only expenses incurred by engineers, architects, and similar technical personnel engaged wholly or part time on the project with adequate separation of costs incurred before and after the signing of the loan and/or grant agreements other than the expense which is incurred for inspection and supervision of the project in the field, which latter expense will be included as a part of Construction Costs as defined above under item 7.

Item 9. Legal, administrative, and other overhead charges.—This class of project costs includes those expenses which are incurred in connection with the legal and administrative phases of the project before and after the signing of the loan and/or grant agreements and which are not covered by any of the other classes of costs.

The legal charges referred to in this class are those incurred in connection with the acquisitions of property referred to under item 6, above, or which are incurred in connection with the handling of damage or other claims, contracts, and any other features of the project which require legal assistance.

The administrative and other overhead charges referred to in this class are only those expenses of the public body which are proratable to the project. Thus, these charges will include the proportionate share of the expenses of the department or departments of the public body responsible for the administration of the project incurred both before and after the grant and/or loan agreement with the P.W.A. has been signed. This class does not include those expenses referred to under item 8 above as engineering charges, nor those referred to under item 7 for inspection and supervision in the field.

Item 10. Interest during construction.—This class of project costs includes net interest charges on the capital provided during the period of construction, repair, or improvement of a project.

Item 11. Miscellaneous costs.—This class of project costs will include those expenses, if any, which cannot be properly classified in any of the foregoing six classes of project costs.

LOAN AGREEMENTS AND PAYMENTS

Item 12. Provisions governing loans.—The Industrial Recovery Act, title II, and the P.W.A. circulars referred to under item 2 of section I set forth the general conditions under which loans and grants are made to public bodies. The loan and/or grant agreements entered into by P.W.A. with public bodies, specify in detail the procedure to be followed under each particular project.

With respect to requisitions for advances of loan funds, the loan agreements enumerate the steps to be followed before payment of funds will be authorized by P.W.A.

Public bodies are cautioned to comply strictly with the provisions and instructions contained in loan and/or grant agreements. Any unauthorized deviations from the terms of the agreements will subject the borrowers and/or grantees to delay in receiving payments thereunder and may result in the cancellation of agreements.

Item 13. Steps in securing loan.—Briefly the general procedure by means of which a public body secures a loan from the Federal Government is as follows:

1. An application for the loan is made by the public body to the State engineer of the P.W.A.

2. Upon approval, the State engineer forwards the application to Washington for review by the P.W.A. engineering, financial, and legal divisions.

3. A proposed loan agreement is drawn and after approval by the Administrator is forwarded to the applicant for signature.

4. After signature by the applicant, the proposed agreement is returned to Washington to be executed by the Administrator.

5. Before the borrower may obtain funds on the loan, a nationally known bond counsel must approve the bond issue.

6. When all preliminary proceedings shall have been complied with to the satisfaction of the Government, the borrower will then take the necessary proceedings to authorize the bonds and may at any time thereafter, file with the Government a requisition for advance, P.W.C.A. Form 22, requesting the Government to purchase such amount of the bonds as will provide sufficient funds for the construction of the project for a reasonable period. The preparation of this form 22 is described under item 22 of this section. Form 22 which must be prepared in an original and four copies ordinarily must be accompanied by the following documents and certificates:

(a) A certificate by a duly qualified officer of the borrower, in such detail as the Government's engineers may request showing the purposes for which the borrower proposes to expend the proceeds from the sale of such block of bonds;

(b) A certified transcript of all bond proceedings taken to date (other than proceedings of which a certified transcript has already been delivered to the Government) including the form of the bond;

(c) Two signed and dated no-litigation certificates by the borrower's attorney, covering all of the bonds;

(d) Two specimen bonds with coupons attached;

(e) Two signed and dated copies of a preliminary opinion of bond counsel covering all of the bonds, and to the effect that the bonds, when executed, sold, delivered, and paid for, will be valid and binding obligations of the borrower in accordance with the terms thereof, payable and secured as stated in the loan agreement;

(f) Two unsigned and undated drafts of a final opinion of bond counsel, to the effect that the bonds included in such block are valid and binding obligations of the borrower in accordance with the terms thereof, payable and secured as stated in the loan agreement;

(g) Two unsigned and undated drafts of a certificate by the borrower, showing the changes, if any, in the financial condition of the borrower, other than such changes as are necessary and incidental to the ordinary and usual conduct of the borrower's affairs, since the date of the most recent financial statement or certificate previously submitted to the

Government (specifically describing such statement or certificate), and declaring whether or not the financial condition of the borrower is as favorable as at the date of said most recent financial statement or certificate;

(h) Two unsigned and undated drafts of a signature and no-litigation certificate covering all of the bonds, and relating to the execution thereof;

(i) Two unsigned and undated drafts of a delivery and payment certificate;

(j) A letter from a bank, which is a member of the Federal Reserve System to the effect that such bank will accept deposit of the proceeds of the sale of the bonds and secure such deposit as hereinafter provided;

(k) A statement on or before the date such bonds are purchased, or subsequently as shall be satisfactory to the Government, that the borrower will enter into contracts for the construction of the project, or the major portions thereof, at prices which will assure completion of the work within the estimated cost previously submitted to the Government's engineers and that the borrower will furnish the Government with satisfactory assurances as to the ability of such contractors to meet their obligations in accordance with the terms thereof.

First requisition.—The foregoing certificates and documents are forwarded with the first requisition for funds to the Public Works Administration at Washington. If found satisfactory to the Government, the borrower is then so notified and a delivery and payment date is set at which time the borrower will deliver the amount of bonds (having all unmatured coupons attached) called for in the requisition to a branch of the Federal Reserve System. With the bonds must usually be delivered to the Federal Reserve bank the following papers:

(a) Two signed and dated counterparts of the final opinion of bond counsel.

(b) Two signed and dated counterparts of each of the certificates described under paragraph 6 (f), (g), (h), and (i) above.

(c) An affidavit by a duly authorized officer of the borrower approved by the engineer or architect in responsible charge of the construction of the project, covering, in such detail as the Government engineers may request, the purposes for which the borrower proposes to expend the funds to be derived from the sale of bonds.

Intermediate requisition.—When the borrower wishes to make intermediate requisitions for funds, an original and four copies of P.W.C.A. Form 22 is prepared and submitted to the Government, and accompanied ordinarily by the following certificates and documents, in addition to those described above in this item 6 under (g), (h), (i), (j), (k), and (l).

(a) An affidavit of a duly authorized officer of the borrower, approved by the engineer or architect in responsible charge of the construction of the project, covering in such detail as the Government's engineers may request;

1. The purposes for which the borrower proposes to expend the amount requisitioned on account of the grant and the proceeds of the bonds of such block;

2. An accounting for the expenditures made from the portions, if any, of the grant previously paid and the proceeds of all blocks of the bonds theretofore sold, covered by P.W.C.A. Form 45;

3. The quantities of work actually completed, covered by P.W.C.A. Form 29;

4. The amount of funds expended upon the project, covered by P.W.C.A. Form 45;

5. The amount of funds expended for labor performed and for materials employed upon the project, covered by Form 29.

(b) A statement by each bank in which any prior payments on account of the grant or the proceeds of any prior purchase of the bonds have been deposited in a special account or accounts, the collateral security therefor, and how such collateral is held, provided that no such statement need to be submitted by any bank in which no such balance remains on deposit and which has previously so certified.

All of the report forms referred to are described below.

GRANT AGREEMENTS AND PAYMENTS

Item 14. Steps in grant procedure.—The procedure in obtaining money on requisitions against grants is very similar to that in obtaining money on bonds, except that as a general rule the grant agreements provide that 50 percent of the cost of the project must have been incurred before the first requisition for payment of grant can be made. Requisitions for payment of grant must then be made on P.W.C.A. Form 21, with an original and four copies, as explained under item 21, to which must be attached certain other certificates and documents called for under the grant agreement, which usually includes the following:

(a) One certified copy of each necessary authorization, permit, license, and approval from Federal, State, county, municipal, and other authorities, for the construction of the project;

(b) A signed and dated opinion of the duly qualified and acting attorney of the grantee to the effect that the grantee has complied with all the above preliminary requirements, and that all such proceedings are in accordance with the State constitution and State and local statutes. Such opinion shall also state that the grantee has lawfully obtained and/or arranged to obtain the funds, which together with the amount to be represented by the grant may be used lawfully to pay all costs of constructing the project;

(c) A signed and dated affidavit of a duly authorized officer of the grantee, approved by the engineer or architect in responsible charge of construction of the project, covering in such detail as the Government's engineers request;

1. The purposes for which the grantee proposes to expend such portion of the grant;

2. An accounting for all deposits in and expenditures from the special account or accounts required by the grant agreement; covered by P.W.C.A. Form 45;

3. The cost of the labor and materials employed upon the project to the date thereof; covered by P.W.C.A. Form 29;

4. The quantities of work actually completed to the date thereof; covered by P.W.C.A. Form 29;

5. The amount of funds expended upon the project to date thereof; covered by P.W.C.A. Form 45;

6. The amount of funds expended to the date thereof for labor and materials employed upon the project; covered by P.W.C.A. Form 29;

(d) A signed and dated no-litigation certificate of the duly qualified and acting attorney of the grantee (see provisions below for form);

(e) A statement by each bank in which have been deposited, in the special account or accounts required by the grant agreement, the funds for the construction of the project, showing all deposits made therein and the balance then remaining in each such special account (see provisions below for form).

The accounting division of P.W.A. has prepared forms in addition to those referred to for the convenience of public bodies in reporting the above-required information to the Government.

As soon as Form 21 together with the necessary papers and documents required by the grant agreement are received and if found satisfactory to the Government, a payment of the grant will be authorized and a check will be mailed direct to the grantee, unless other means of payment are provided for.

As in the case of loan agreements, the provisions of the grant agreement must be rigidly adhered to if delays in payment of grants are to be avoided.

Item 15. Administrative order defining basis for grant payments.—Public bodies operating accounting systems which segregate expenditures and costs according to the classification provided in items 4 to 11 in this section should have no difficulty in computing grant payments. As a guide in calculating the basis of grant payments, an administrative order dated December 20, 1933, has been issued by the Administrator to P.W.A. State engineers. This order is reproduced in exhibit A. The accounting system outlined in this manual segregates as "Construction costs" those elements of cost as defined in this order which constitute the basis of grant payments.

EXHIBIT A

ADMINISTRATIVE ORDER ON BASIS OF GRANT PAYMENTS

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS,

December 20, 1933.

To State Engineers:

The Administrator, having under consideration the provisions of section 203 of the National Recovery Act reading as follows, "but no such grant shall be in excess of 30 percent of the cost of labor and materials employed on such projects", has issued instructions for the government of his staff for the purpose of administering the contracts entered into relating to such clause.

The general principle to govern with reference to "the cost of labor and materials employed upon such project", as used in the above-quoted clause is embodied in the following general rules:

1. Where the work is done by contract, the base of the grant is the aggregate of the payments made by the public body pursuant to the contract for the construction, repair, or improvement of the project, plus its cost of inspection and supervision in the field.

2. Where the work is done by force account, the base of the grant is the direct cost of material in place, plus inspection and supervision in the field.

3. The amount of the grant may be paid from time to time upon the determination of such costs paid by the public body.

4. The amount of the grant shall in no case exceed the maximum amount specified in the loan contract.

The examination and inspection under the general direction of the Accounting and Inspection Divisions will be designed to afford data requisite to determine the grant in accordance with the above general principles. Necessary instructions will be issued by such divisions to those concerned.

The established policy will be to accept such accounting systems as are encountered where the essential detail of transactions is recorded. It is only when accounting systems are inadequate or essentially incorrect and essential data cannot be abstracted that requests will be made for their revision, or the development of adequate accounting systems. These requests will be made only after administrative review of auditors' reports of the conditions encountered, either direct or by auditors on direct instructions from superiors. Mandatory accounting requirements will not be approved when existing systems and records are such that essential information can be determined.

HAROLD L. ICKES, *Administrator*.

P.W. 2699

Item 16.—Accounting records for grant payments.—The accounting for expense included in the base of the grant for a P.W.A. project must recognize the two types of construction: (1) By contract and (2) by force account.

Grant payment under contract method.—Where a public body has entered into a contract for the construction of a project, it must maintain sufficient and appropriate accounting records to compute the “cost of labor and materials” as defined under 1 of the administrative order, exhibit A. Item 7 of this section of the manual under *I. Contract work* furnishes an expense classification in accordance with the rule established under 1 of the above order so that the system of accounts employing this classification will provide the needed information on “Construction costs” for P.W.C.A. Forms 29, 57, and 45. These three forms are used by P.W.A. in the determination of the amount of grant payments to the public body. Suggested accounting procedures for computing construction costs under the contract method are described in section III, item 37.

Grant payment under force account work.—A more detailed system of records and accounts is needed to compute the “cost of labor and materials” as defined for force account work under item 2 of the administrative order, exhibit A. Item 7 of this section under *II. Force account work*, furnishes a detailed classification of expense to be included under construction cost in accordance with the rule estab-

lished under item 1 of the above order. Cost accounts based on this classification will provide the needed information on Construction Costs for P.W.C.A., Forms 29 and 45, which are used by P.W.A. in the determination of the grant payment to the public body. Section IV of this manual contains forms and procedures suggested to public bodies for accounting for force account work.

REPORTS REQUIRED BY PUBLIC WORKS ADMINISTRATION

Item 17. Mandatory forms for public bodies.—Five mandatory report forms have been designed and already sent to the P.W.A. State engineers for distribution to public bodies:

- P.W.C.A. Form 45. Summary and Reconciliation Statement—Receipts Costs, and Balances.
- P.W.C.A. Form 57. Statement of Unpaid Project Costs.
- P.W.C.A. Form 29. Statement of Quantities and Costs of Work Completed.
- P.W.C.A. Form 21. Public Voucher—Payment of Grant.
- P.W.C.A. Form 22. Requisition for Advance.

Forms 45, 57, and 29 are designed to produce the accounting information concerning project costs required of the public body as advances of funds are needed in accordance with the grant or loan agreement. Forms 21 and 22 are employed as requisitions for grant and loan payments. A description of the manner of preparing these five forms is furnished below.

Item 18. Preparation of P.W.C.A. Form 45.—The purpose of P.W.C.A. Form 45 is to furnish an analysis of project receipts, costs, and fund balances. An original and four copies must be submitted to P.W.A. A schedule showing the source of entries for this form is provided in section III, item 38. It is prepared in the following manner:

In the space at the top of P.W.C.A. Form 45, following the words "Date of agreement", "Allotment symbol", and "Amount of allotment", the following information will be entered by the public body:

Date of agreement: This refers to the date of the agreement between the United States Government and the public body, in which the project mentioned in the top center heading of this form has been approved by the P.W.A.

Allotment symbol: This refers to the code symbol which has been assigned to identify the total amount of P.W.A. funds which has been authorized under the agreement for the project.

Amount of the allotment: This refers to the total amount of P.W.A. funds which has been authorized as stated in the preceding paragraph. The allotment symbol and the amount of the allotment referred to above may be obtained from the P.W.A. State engineers if not otherwise known by the public body.

P.W.C.A. Form 28
 Summary and Reconciliation Statement
 (To be filled in by the contractor)

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

SUMMARY AND RECONCILIATION STATEMENT—RECEIPTS, COSTS, AND BALANCES

1. DATE OF AGREEMENT ON PROJECT AT

2. ALLOTMENT SYMBOL Report No. covering period from to

3. AMOUNT OF ALLOTMENT, \$ inclusive

1	CONSTRUCTION FUNDS								REMARKS
	FROM PUBLIC WORKS ADMINISTRATION				Other Funds Borrowers' Account Charges	Total All Funds	ACQUIRED INTEREST ON SECURITIES SOLD	9	
	Loan (principal of securities sold)	Grant	Total (loan and grant)	5					
II Project costs to date: <ol style="list-style-type: none"> Preliminary expense..... Land, rights of way, and assessments..... Construction costs (from P.W.C.A. Form 28)..... Engineering charges..... Legal, administrative, and other overhead charges..... Interest during construction..... Miscellaneous..... TOTAL TO DATE..... 									
III Reconciliation—Costs to expenditures: <ol style="list-style-type: none"> Unpaid project costs (amounts included in II (8) and unpaid)..... 									

Borrower and/or grantees will fill below such supporting schedules and statements as are submitted with this summary and reconciliation statement, as referred to in the certification, and attach copies of such other pertinent notes or data as necessary.

REPORTS REQUIRED BY
 IV of this manual contains forms for bodies for accounting for force
 the determination of the grant
 State for P.W.C.A. Forms 28
 information on Construction
 which are used by P.W.A. Sect
 to the public body. Sect
 requested to pub

IV Funds expended upon the project:

1. Expenditures to date. (II (6) minus III (3))

V Depository balances—Books of borrower and/or grantee:

TOTAL OF BALANCES—Books of borrower and/or grantee:

VI Checks outstanding—By totals against such account:

TOTAL OF CHECKS OUTSTANDING:

VII Depository balances—Statements of banks:

TOTAL OF BALANCES—Statements of banks:

CERTIFICATE

I, **SESSER CARTER**, That I am

of **WEST VIRGINIA** (Name of office)
 That I am duly authorized and properly qualified to certify to the contents of the statements and vouchers hereon appearing, and that I have deposited such statements and vouchers with the auditor of the project, and that the same are correct and true, and that the accounts shown thereon have been taken from the records maintained in connection with the project and are true and correct.

Dates of

Covered by

Before me, a notary public, personally known to me, **SESSER CARTER**, who being by me duly sworn, did depose and say that he deposited the foregoing certificate as the true act and deed and that the statements contained therein are true.

Witness my hand and seal this **15th** day of **October**, 191**8**.

Notary Public.

Enter below the estimated of project number:

(1918)

Approved:

State Engineer.

(Name)

Notary Public.

On ——— project at ———: In the top center spaces of Form 45, following the words "on" and "project at" will be entered the class of project authorized, such as "Sewer", "Highway", "Bridge", etc., and the name of the city or other public body for which the project is authorized.

Report no.: In the top center space following the words "Report no." will be entered the number given to the report on this form by the public body. The number entered will begin with no. 1 for the first such form and continuing thereafter with no. 2, no. 3, and so on as subsequent reports follow the first such report submitted.

Period from and to: After the words "covering period from ——— to ———, inclusive" the public body will enter first the date following the closing date of the previous report, and next, the date terminating the period covered by the report.

The following is a description of the classification and columnar distribution of project funds, costs, and cash balance:

I. Funds received.—As indicated by the subheadings of columns 3, 4, 5, 6, and 8, on P.W.C.A. Form 45, the funds received or employed on the project may be derived from one or more sources. The amount made available from each source will be entered in the appropriate column provided therefor, on line 1 or 2, or both lines, according as to whether the amount has been previously reported or has been received during the current period.

Column 7, "Total all funds", will include only the total of the funds received which are noted in columns 3 to 6, inclusive. Column 8, "Accrued interest on securities sold", will include only the amount or amounts of coupon interest which has accrued on bonds or other similar certificates of indebtedness which have been sold by the public body to the United States Government and which has been paid by the latter to the public body at the time of the sale of the said bonds or certificates. Obviously in such cases, this accrued interest will be returnable to the purchaser or holder of the bonds or certificates at the time the first interest coupons become due and payable. The procedure for this latter operation will be described hereafter in connection with the instructions below pertaining to interest during construction of "II. Project costs to date", and also "IV. Funds expended upon the project."

In addition to the amount of interest accrued that may be received from the United States Government by the public body, the latter may receive bank interest on deposit balances of loans or grants from the United States Government, which, under the terms of the agreement with the latter, will be applied to meet the costs of the project. Such interest, when earned and credited by the depository bank, will be entered in column 6 and form part of the total of Funds Received, column 7. As a contra item to this bank interest earned, although obviously of a different amount; there will be interest that

is chargeable to the project, the amount of which will be reflected in the item of project costs described hereafter under Interest during Construction. If local laws prevent the payment of interest from bond moneys the public body may provide the funds for payment of interest and transfer such funds to the P.W.A. project accounts from which the coupons will be retired. Such funds will be reported as Other Funds of borrower and/or grantee, in column 6 on the line for Funds Received.

II. Project costs to date.—The seven classes of project costs listed under caption II in Form 45 must be observed in the preparation of this report. A definition of each of these classes of costs will be found under items 5 to 11 of this section.

Project costs listed shall be the total of paid and unpaid project costs shown on the books and records of the borrower and/or grantee. Costs will be listed in columns applicable to conditions of the project as explained in the following:

- (1) When project is financed wholly by Government funds, on basis of loan without grant, enter costs in column 3.
- (2) When project is financed by loan and grant, enter costs in column 5.
- (3) When grant only is involved; in connection with request for first grant payment, show costs in column 6.
- (4) When grant only is involved; in connection with subsequent requests for grant payments, show costs in column 7.
- (5) When project is financed by loan (without grant) in connection with borrower's own funds, show costs in column 7.

The amount entered opposite *Interest during construction* shall be the total amount of interest paid on the loan on interest maturity dates plus interest accrued since last maturity date, less amounts received as payment for accrued interest on unmatured coupons attached to bonds at the time of sale.

In all cases this gross cost for interest during construction shall be credited with amounts of interest earned on deposit balances of loans and grants, if any (see above *I, Funds received*), so that the difference between paid and earned interest only will appear on the form.

III. Reconciliation—Costs to expenditures.—Under the caption, "Unpaid project costs", will be entered in the proper columns the total of those classes of "II. Project costs to date", previously described, which has been entered as such but which, at the date of the current report thereon, has not been paid. The entries made here will be supported by Form 57 explained in item 19.

IV. Funds expended upon the project.—Opposite this caption, will be entered in the proper columns the amount of the difference between the total of "II. Project costs to date", paid and unpaid, and the total of those costs which are unpaid at the date of the current report thereon.

If the entry referred to in II and III described above falls in column 5, and if funds from sale of securities (loan), and funds from grant

payments are segregated in separate bank accounts, the amounts of expenditures from the loan funds shall be shown in column 3, from the grant funds in column 4, the total of columns 3 and 4 to agree with amount of entry in column 5.

If the entry referred to in II and III above falls in column 7, and if funds from grant payments and other funds of the borrower are segregated in separate bank accounts, the amounts of expenditures from the two sources of funds shall be shown separately in columns 4 and 6, in proper amounts to aggregate the entry in column 7. (In the case of loan money from P.W.A. segregated from borrower's own funds the entries would be in columns 3, 6, and 7.)

In column 8, opposite the caption "IV. Funds expended on the project", will be entered the amount of accrued interest which has been repayed by the borrower on a secured loan from the United States Government.

V. Depository balances—Books of borrower and/or grantee.—Names of all banks in which borrower and/or grantee has a balance of project funds shall be listed in column 2 and the amount of such balances, according to books of the borrower and/or grantee shown in appropriate columns. Total of balances should equal its total "I. Funds received", less "IV. Funds expended", except for petty cash funds, which may be noted in "Remarks" column.

VI. Checks outstanding—By totals against each account.—The total amount of the bank checks issued by the public body and not paid by the depository bank or banks on which they were drawn at the close of the period for which Form 45 is rendered, will be entered in the proper columns under this caption VI.

VII. Depository balances—Statements of banks.—Under this caption in proper columns there will be shown the same information as described above in connection with "V. Depository balances—Books of borrower and/or grantee", except that the cash balances in the bank or banks will obviously be greater than the same accounts on the books of the public body to the extent of the amount of bank checks issued and not presented to the bank or banks for payment, referred to in the preceding paragraph.

Column 8 is for use only when there is a P.W.A. loan secured by bonds on which interest has accrued at date of purchase by the Government. The proper entries in:

(a) IV Funds Expended—Amounts repaid to the Government by the borrower at interest dates.

(b) V, VI, VII Depository Balances—Amounts to reflect the status of accrued interest account.

Item 19. Preparation of P.W.C.A. Form 57.—The object of Form 57, "Statement of unpaid project costs", is to assemble the details of all those unpaid project costs which are reported in total under "III. Reconciliation costs to expenditures" of P.W.C.A. Form 45.

Form 57, therefore, will serve as a detailed schedule supporting Form 45, in all cases where unpaid project costs are reported on the latter form.

In column 1, will be entered the serial number of the invoice which represents an unpaid project cost. This serial number is required to identify the invoice in case such identification is necessary to the purposes of the P.W.A. If a series of voucher numbers is in use to identify such invoices, such numbers may be stated in this form instead of serial invoice numbers.

In column 2, will be entered the name of the claimant or person or firm to whom the invoice is payable together with such other data as may be necessary to complete the other identifying information called for in columns 3 to 6 inclusive. If, for example, the amount of the invoice includes or is made up of two or more of the seven classes of project costs listed in "II. Project costs to date", of Form 45, it will be necessary to tabulate in this column 2, a brief description of each class of project costs affected in order that the number of such class and the distribution of the unpaid cost thereof may be entered in the columns to the right of such description.

In column 3 will be entered the number of the particular class of the several classes of project costs listed in "II. Project costs to date", of Form 45, for which the claim represented by the invoice was incurred.

In columns 4 and/or 5, as the case may be, will be entered the amount of the invoice according as such amount, in whole or in part, corresponds to an unpaid construction cost incurred under force account or private contract of class 3 of "II. Project costs to date", of Form 45.

In column 6 will be entered the amount of the invoice, in whole or in part, which was incurred for or which corresponds to one or more of the seven classes of project costs, other than class 3, listed under "II. Project costs to date", of Form 45.

In column 7 will be entered the subtotals and the grand total of the invoice accounts of each of the seven classes of project costs described above. This grand total should agree exactly with the total of unpaid project costs reported in Form 45.

Item 20. Preparation of P.W.C.A. Form 29.—The Statement of Quantities and Costs of Work Completed, P.W.C.A. Form 29, will accompany P.W.C.A. Form 45, Summary and Reconciliation Statement—Receipts, Costs, and Balances, and will be the detailed report of the project "construction costs" which is class 3 under "II. Project costs to date", of Form 45. Obviously none of the costs reported in Form 29 will be reported in Form 45 except as stated above. All such costs are those incurred and applicable to the project whether they are paid or accrued at the date of the report. This form has been designed for borrower's and/or grantee's statement of quantities of work completed and costs incurred upon the project in such detail as is practicable and pertinent. This form will be submitted in quadruplicate, along with Form 21, Public voucher—

Payment of grant. It is also to be submitted monthly by borrowers and/or grantees whether or not money is requested; but when not accompanying other forms in connection with requisitions for money, it need be submitted in duplicate only.

Subtotals should be shown in this report of the construction costs of the separate major work divisions of a project, corresponding wherever practicable to the major work divisions of the original estimate on which the project was approved by the Public Works Administration. The dates to be entered in the top center heading of this report will be the opening and closing dates of the current period.

I. Columns applicable to both force account and contract work.—Column 1, is provided for the use of the public body to indicate, if desired, the account or symbol number or letter adopted by it to identify any particular cost account or subdivision thereof against which there are costs recorded in this report.

Column 2, "Feature of work", is provided so that each of the several features of work of a project may be shown therein. If all the construction work on the project is to be done by force account, the titles of the features of work adopted will be entered in this column and the distribution of the cost applicable to each of such features will be entered in the columns provided therefor on this form.

If the project is to be constructed by contract on a unit price or lump-sum basis, the terms of the contract will determine the titles of the several features of work to be entered in column 2. If the project is to be constructed in part by force account and in part by contract, the features of work to be shown in this report will be separated for each of the two methods and distinctly shown in the appropriate column.

In column 3, "Unit of measure", will be entered the unit customarily employed to measure the quantity of work completed at a given time under each feature of work of the project as listed in column 2, such as "cu. yd.", "lin. ft.", "lump sum", etc.

Columns 4, 5, and 6 included under the caption "Quantities of work completed" are self-explanatory. They will be applicable to either a force account or contract project or to a project combining both of these methods of construction.

II. Force account costs.—Columns 7, 8, 9, 10, and 11 included under the caption "Force account" will be utilized to record therein, in accordance with the features of work noted in column 2, the costs of force account work which have been incurred from the beginning of the project up to the closing date of this report.

In column 7, "Labor", will be entered the amount paid or accrued for labor directly employed on the project. A definition of the term "labor" will be found above under item 7 of this section.

In column 8, "Material", will be entered the cost of materials and supplies used on the project under force account. A definition of the term "material" will be found above under item 7 of this section.

In column 9, "Plant", will be entered that amount which corresponds to the cost for the use of construction plant and equipment as such costs are defined under item 7 of this section.

Whichever method is employed in determining plant costs for the purposes of Form 29, a brief description thereof will be made in the remarks column on this form or included in a supplemental schedule to be attached thereto.

The amount of plant costs entered in this Form 29 will, wherever practicable, be shown opposite the feature of the work listed in column 2 for which the plant costs were incurred. If impracticable to distribute a portion of such costs, in this way, the amount of that portion will be entered in column 9 opposite a feature of work item entitled "Undistributable Plant Costs."

In column 10 "Miscellaneous", will be entered, opposite a feature of work item entitled "Construction Cost Overhead", the amount of miscellaneous costs as this term is defined in item 7 of this section.

After all other features of work have been listed on Form 29, a subtotal will be drawn. Immediately following this subtotal, and opposite a feature of work entitled "Field Inspection and Supervision", there should be entered the amount incurred in connection with the "inspection and supervision" of the project in the field. This element of construction costs must not be confused with overhead construction costs or those costs defined above under item 8 as "Engineering charges."

In column 11, "Total," will be entered the total of the several amounts entered in columns 7, 8, 9, and 10, for each feature of work listed in column 2.

III. Contract construction costs.—Columns 12 to 16 of P.W.C.A. Form 29 are employed for showing costs of construction contract work completed from the beginning of the project up to the closing date of this report. In column 12 headed "Unit cost" will be entered the appropriate unit or item cost of the work according to the terms of the contract. An entry will be made in this column opposite each feature of contract work listed in column 2.

Column 13, "Total cost construction contract", is to be employed for entering the amounts paid or due the contractor, in accordance with the terms of his contract with the public body. These amounts, whether they are allocable to specific features of the contract or are allocable to the contract as a whole, will be entered only in column 13. If the contract provides for separate features of the work at a unit cost or lump-sum basis for each feature, the cost of the latter to be entered in column 13 will be the quantity thereof noted in column 6 multiplied by the unit cost noted in column 12. Where the project or particular portions are paid for by a lump sum the partial or final

percentage on which the payment is based will be entered in column 6. Column 14 will be used only when plant other than contractor's plant is charged to a project under the contract method. Ordinarily there will be no entries in this column.

Appropriate subtotals for the separate structures or subdivisions of the work should be shown when practicable and if possible for such major divisions of the work that were segregated in the original estimate, on which the grant and/or loan allotment was based.

After the features of work have been entered as described above, a subtotal should be made of all columns. Immediately following this subtotal there should be entered in column 15, "Miscellaneous", the cost with appropriate explanatory notation to the public body of inspecting and supervising in the field of work of the contractor. Field inspection and supervision must not be confused with "Engineering Charges." See classification under items 7 and 8 of this section.

Column 16 provides for the total of the amounts shown in columns 13, 14, and 15 for each feature of work.

Column 17, "Total Force Account and Contract", is for the total of the amounts shown in columns 11 and 16.

Item 21. Form P.W.C.A. 21, Public Voucher—Payment of Grant.—This voucher will be prepared and submitted by the public body in charge of a P.W.A. project on which a grant payment is due from the Federal Government pursuant to the terms of the agreement under which the project was approved by the Public Works Administration.

The title of the Federal appropriation or allotment from which the payment is to be made will be indicated by the public body in the space provided therefor in the heading of this voucher. The name and address of the public body entitled to the payment, and the date on which the voucher is prepared will be entered in the space provided. The space provided for "D.O. Voucher No.", "Contract No.", "Requisition No.", and "Docket No.", will not be filled in by the public body.

The blocked space provided for the title of the project, project symbol number, etc., is self-explanatory and will be filled in by the public body.

The word "partial" or "final", as the case may be in respect to the payment requested, together with the date up to the close of which the project has been completed, in whole or in part, will be entered in the blocked space provided for this information. The date referred to will normally correspond to the closing date of the accounting period for which P.W.C.A. Forms 45 and 29 have been submitted.

The information called for in the blocked space with columnar references to the work project and to the payments made or claimed thereon is of sufficient clearness so as to require no detailed explanation here with the exception of the first column entitled "Total Cost of Labor and Materials." The total cost referred to is explained above in the administrative order under item 15 and is defined specifi-

cally under item 7, Construction costs. In other words, the "Total Cost of Labor and Materials" listed on Form P.W.C.A. 21 is the construction costs as reported in P.W.C.A. Forms 45 and 29. See description of these forms above under items 18 and 20 of this section. According as these construction costs (exclusive of inspection and supervision) relate to force account or to contract work, they

Form P.W.C.A. 21
Form approved by Comptroller
General U.S.
December 15, 1935

PUBLIC VOUCHER—PAYMENT OF GRANT

D.O. Year: No.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

19.....

Appropriation: THE UNITED STATES, D.C.,

Contract No.
Requisition No.
Docket No.

To:

Address:

Project: Project symbol No.
Project agreement executed: Plans, specifications, and estimates approved:

Requisition for* payment of grant, not to exceed 30 per centum of the cost of labor and materials employed upon the above-mentioned project, to and including 19..... as follows:

WORK	TOTAL COST OF LABOR AND MATERIALS	GRANT ALLOWABLE (Percent)	TOTAL AMOUNT CLAIMED FROM UNITED STATES	LESS PREVIOUS PAYMENTS	NET AMOUNT CLAIMED	APPROVED FOR PAYMENT (Paper must not use this column)
Force account.....						
Contract.....						
Inspection and supervision.....						
TOTAL						

I CERTIFY that the above is a true statement of the cost of labor and materials employed upon the project above mentioned, in accordance with the plans and specifications heretofore approved therefor under the above contract, and in amounts stated above; that the work upon said project has been performed in accordance with said plans and specifications; that no claim has been presented to or payment made by the United States for the labor and materials for which payment is claimed; and that these and all other conditions precedent to the payment of the grant imposed by the terms of the above-mentioned contract have been met and performed.

(Payee)
(Per) (Title)

I CERTIFY that the labor and materials herein described have been inspected by me and that work has been performed in accordance with the plans and specifications heretofore approved.

Approved: State Engineer. Resident Engineer Inspector. State Engineer Inspector.

Amount submitted for \$..... Difference (explained herewith), \$..... Approved for \$.....

(a) By check on the Treasurer of the United States in the amount of dollars (\$.....), or

(b) By release from custody by the Federal Reserve Bank of and delivery to the payee, or his properly identified agent.....

maturities serial numbers par value, \$.....
upon payment of \$..... representing the amount of difference between the par value of the securities plus accrued interest to 19....., and the approved amount of this voucher:

Chief Accountant.

I CERTIFY that there has been released from custody and delivered as directed (per memorandum receipt dated per value, \$.....) and that the proceeds amounting to \$..... have been received and deposited in the Treasury under Certificate of Deposit No. dated 19.....

FEDERAL RESERVE BANK OF

(By) (Title)

Paid by check No. dated 19..... for \$..... (On Treasurer of the United States. In favor of the payee named above.)

*Partial or final.

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will be so distributed in this voucher in the spaces provided therefor. The part of such costs which corresponds to inspection and supervision will be listed separately in the space provided.

The certificate on this form which immediately follows the project data mentioned in the preceding paragraph will be signed by the public body or its authorized representative.

The remaining spaces on this voucher will be left in blank by the public body presenting it.

P.W.C.A. Forms 29, 45, and 57, together with other documents as specified under item 14, must accompany P.W.C.A. Form 21, and all of these forms must bear the same date.

This Form 21 with attached documents will be submitted to P.W.A. State engineer, who will care for further certifications and forward to Washington.

Item 22. Form P.W.C.A. 22, Requisition for Advance.—To secure an advance of funds, as provided for in the terms of its loan agreement with the Federal Emergency Administration of Public Works, a borrower must make a request on P.W.C.A. Form 22.

The title of the Federal appropriation from which payment is to be made will be indicated in the space provided therefor in the heading of this form. The name of the city or other governmental subdivision and State where the project is located and the date of the requisition will be entered in the spaces provided. The space for "D.O. Voucher No.", "Requisition No.", "Contract No.", and "Docket No.", should be left blank.

The first paragraph is self-explanatory, except that the contract date refers to the date of the loan agreement entered into between the borrower and the United States Government.

The delivery date called for in the second paragraph is the date on which the actual securities under the loan will be turned over to the United States Government or its agent, the place for such delivery usually being designated as the nearest branch of a Federal Reserve Bank.

The securities to be given in exchange for the advance of funds requested are to be described in the block schedule. The par value of a single bond or other certificate of indebtedness is the denomination of such security. Only securities of the same denomination and maturing on the same date should be entered on one line. Enter the denomination in the second column, the maturity date in the third column, and the total par value of the securities of such denomination and such maturity date in column 1. In the fourth column list the serial numbers of the bonds or other certificates of indebtedness. Use columns 5 to 8 in the same manner if there is not sufficient space in columns 1 to 4. The sum of the amounts in the "Dollars" columns must be equal to the amount requested in paragraph 1.

The name of the member bank of the Federal Reserve System in which the funds will be deposited when received must be stated in the next paragraph.

The exact legal title of the borrower or the borrower's agent to whom the check for the advance shall be payable should be shown in

SECTION III

GENERAL ACCOUNTING RECORDS AND PROCEDURE

Item 1. General accounts.—This section deals with the general accounting records and procedures suggested for public bodies to record the transactions that arise in connection with Federal Public Works Administration projects. These transactions concern the assets, liabilities, revenues, expenses, and reserves which need to be considered in connection with each project. The general accounts should summarize the expenses according to the seven major classes of cost, as defined in section II, items 5 to 11. In the case of construction by force account, a separate set of cost accounts is needed to accumulate costs in detail by work operations or jobs. Such cost accounts are described in section IV.

The general accounting system should be on a double-entry basis. The accounts, where practicable, should be separated by fund groups for each project so that each group is independent of the other groups in the sense that it may be balanced separately and contain all of the assets, liabilities, revenues, expenditures, reserves, and surplus pertaining to each group. For each P.W.A. project it is essential that the transactions be recorded in separate accounts.

In this way the transactions in connection with a P.W.A. project will be separated from all other unrelated transactions, and the P.W.A. auditors will encounter less difficulty in making their audits, thus facilitating the prompt settlement of grant payments to the public body. However, this does not mean an entirely separate set of books must be kept, but only that separate project accounts as a part of the general accounting system of the public body will suffice.

The general accounting records described in this section will furnish the information required for P.W.C.A. Form 45, described in item 18 of section II, whether the work is done by contract or force account method. These records will also furnish the information for preparing P.W.C.A. Form 29, described in item 20 of section II, if the work is done by the contract method. In case the work is done by the force account method, the entries for P.W.C.A. Form 29 will be obtained from the cost accounting records described in section IV of this manual.

Item 2. Alternative accounting methods.—It is the policy of P.W.A. to abide by existing accounting systems of public bodies receiving loans and/or grants from the P.W.A. if such systems produce the information required. When they fail to produce such information,

a system of accounts which will correct this deficiency will be a prerequisite to any grants of P.W.A. funds. The chief purpose of this section of the manual is to outline an accounting system which will serve as a guide to public bodies for recording the transactions in connection with P.W.A. projects. Thus the procedures described here are only suggestive, not mandatory.

GENERAL LEDGER ACCOUNTS

Item 3. General accounting classification.—The classification of general ledger accounts immediately following in items 4 to 7 is recommended to public bodies in order to furnish at all times an accurate picture of the financial status of P.W.A. projects. Not all of the accounts given below may be needed by all public bodies. On the other hand, some public bodies may require additional accounts to those listed and adjustments may be required to conform to State statutes or city charters.

Item 4. Debit accounts—Assets.—These accounts cover the recognized current assets involved in construction fund accounting.

Construction fund—Bank account.—A separate ledger account should be used for each construction fund bank account or, if there are a large number of bank accounts, a subsidiary record controlled by a single general ledger account, may be kept to show the balance in each bank account.

Bond and interest fund—Bank account.—To be used where loan is made from the United States Government.

Petty cash.—Ordinarily no petty cash accounts should be used but may be necessary under certain conditions.

Miscellaneous accounts receivable.—

Due from other funds.—

Stores account.—

Work in progress.—To be charged with all project costs. If the project is divided into several separate jobs, separate work in progress accounts may be set up for each job.

Item 5. Other debit accounts.—This group represents the contingent assets and balancing account.

Estimated amount of P.W.A. grant.—This account will carry the amount estimated to be received from this source.

Amount raised or to be raised by bond issue.—This account will carry the amount involved in bond issues.

Estimated amount to be obtained from other sources.—To be used where funds are appropriated from moneys belonging to the public body or where funds are received from sources other than bond issues or P.W.A. grants.

Bonds authorized—Not issued.—This account is set up primarily for memorandum purposes and is offset by reserve for bonds authorized—not issued.

Item 6. Credit accounts—Liabilities.—This group includes all active liability accounts.

Accounts payable.—

Notes payable.—To be used if necessary.

Contracts payable—Completed work.—To record amount of contract work completed but not yet paid, less the percentage retained as a guarantee of completion of the work.

Contracts payable—Retained percentage.—The amount retained from payment as guarantee of completion of work.

Accrued bond interest sold.—To set up amount of accrued interest received when bonds are sold.

Interest accrued on bonds.—To set up liability for bond interest accrued each month, after the sale of the bonds, on bonds outstanding. The amount in this account plus the amount in the Accrued Bond Interest Sold account will equal the amount of the bond interest when it becomes due.

Due to other funds.—

Bonded debt.—

Item 7. Other credit accounts.—This group is employed to record revenues, appropriations, and for balancing purposes.

Appropriation for P.W.A. project.—To be credited with the total funds estimated to be available for the project.

P.W.A. grant received.—This account is an offset account against Estimated Amount of P.W.A. Grant.

Funds received from other sources.—Offset account against Estimated Amount to be Obtained from Other Sources.

Interest earned on bank balances, etc.—Interest earned is credited to this account to obtain a record of the total amount received. It is immediately closed out of this account and credited to work in progress. In the expenditure ledger the amount is credited to Interest During Construction.

Reserve for bonds authorized—Not issued.—Contra account to the debit Account Bonds Authorized—Not Issued.

LOAN AND GRANT FUNDS RECEIVED

Item 8. Handling funds under loans from United States Government.—The funds received by public bodies under loan and grant agreements with the P.W.A. must be accounted for in strict accordance with the provisions of such agreements. The loan funds are advanced from time to time, in exchange for the securities issued. The amounts to be advanced are based on the estimated requirement for a certain period and the estimates are forwarded to the P.W.A. on P.W.C.A. Form 22. Other information required to be submitted with each request for an advance and the place to which the securities must be sent are specified in the loan and grant agreements. (See item 13 in Sec. II.)

The grant and/or loan agreements require the principal amount of loan funds and/or grants received to be deposited in a special account or accounts therefor, in a member bank of the Federal Reserve System, and called construction fund accounts. If a part of the funds will not be needed for some time, such part may be deposited in a special account with such member bank as a time deposit so that interest can be obtained on such deposit. As needed, the money is transferred to the special checking account where the balance of the funds is deposited. Similarly, other funds which the public body has represented as being available for the P.W.A. project should be deposited in the bank accounts opened for loans and grants.

All disbursements in payment of project costs should be made from these construction fund bank accounts; no other disbursements from such accounts are permitted, except to transfer money from one special account of a project to another of the same project.

In the case of grant payments to a public body where such payments are final and are used directly to reimburse other funds out of which the project has been financed, there is no need of opening a special bank account, for such grants would be withdrawn immediately to reimburse such other funds.

When bonds are sold to the P.W.A., all unmatured coupons must be attached. Unless the date on which the bonds are sold coincides with one of the bond interest dates, accrued interest must be accounted for in the sale. The Government pays par plus interest accrued to the date of the sale in the case of 4-percent coupon bonds. Special arrangements are made where bonds carry coupons bearing a higher rate. The amount of money received for accrued interest on such bonds must be deposited in a special account of a member bank in the Federal Reserve System, to be known as a bond and interest fund account. This money must be left in this account until the coupons on such bonds become due. It is then used to pay the portion of the coupons which was accrued when the bonds were sold.

As soon as the loan and grant agreement has been executed and the bonds have been authorized, the accounts applicable to the project should be set up in the general ledger of the public body.

Item 9. Hypothetical accounting entries described.—If a balanced fund group accounting system as described here is in effect, a general ledger account will be needed for each account listed under items 4 to 7 in this section. When established, the sheets for these ledger accounts should be placed in a separate section in the general ledger.

Entries setting up the estimated cost and the means of financing the project should be made on these general ledger accounts. To illustrate the method of doing this, certain illustrative figures are assumed in the following hypothetical journal entries for the project:

Total estimated cost of the project.....	\$1, 250, 000
Bonds to be issued.....	1, 000, 000
Estimated amount of the P.W.A. grant.....	240, 000
Funds to be obtained from sources other than bond issues and P.W.A. grant.....	10, 000

The following entries should be made to set up this data:

Dr. Estimated amount of P.W.A. grant.....	240, 000
Amount raised or to be raised by bond issue.....	1, 000, 000
Estimated amount to be obtained from other sources.....	10, 000

Cr. Appropriation for P.W.A. project.....	1, 250, 000
---	-------------

This entry is necessary in order to set up the amount of the appropriation for the project. The estimated amount of P.W.A. grant and the estimated amount to be obtained from other sources are contingent assets. The amount raised or to be raised by bond issue is a balancing account set up to permit an accounting for the appropriation and for the bonds issued in the same fund group of accounts.

Another entry should be made when the bonds are authorized in order to make a record of the amount authorized but not issued, as follows:

Dr. Bonds authorized—not issued.....	\$1, 000, 000
Cr. Reserve for bonds authorized—not issued.....	1, 000, 000

Item 10. Sale of securities.—The United States Government purchases the securities in blocks from the borrower from time to time, the amount of each block to be sufficient to pay project expenses for a certain period of time. After the preliminary proceedings as outlined in the loan contract have been completed, the borrower should submit the first requisition for advance on P.W.C.A. Form 22. Each loan agreement specifies the data which are to be submitted with the requisition. (See item 13 in sec. II.) After these steps are completed, the securities in the first block are purchased by the Government in accordance with instructions furnished to the borrower.

For purposes of illustrating the entries concerning the receipt of bond principal and accrued interest, we will assume that the securities of \$1,000,000 mentioned in item 9 are to be purchased by the United States Government in blocks of \$100,000 each, one block each month as requested. Further, it is assumed that the interest dates are January 1 and July 1 and the interest rate is 4 percent. The entries in a fund accounting system are as follows:

(1) Jan. 1, 1934:	
Dr. Construction fund, bank account.....	\$100, 000
Cr. Bonded debt.....	100, 000
(Entry in cash-receipts register.)	
Dr. Reserve for bonds authorized, not issued.....	100, 000
Cr. Bonds authorized, not issued.....	100, 000
(Entry in general journal.)	

(Note to Jan. 1 entries: These entries serve to record the receipt of cash for bonds sold to the U.S. Government and to set up the liability for bonds issued; also to reduce the balances in the accounts for bonds authorized but not issued. Further, they assume that this block of bonds was sold on an interest date so that no accrued interest is involved.)

(2) Feb. 1, 1934:

Dr. Construction fund, bank account.....	\$100,000.00
Bond and interest fund, bank account.....	333.33
Cr. Bonded debt.....	100,000.00
Accrued bond interest sold.....	333.33
(Entry in cash-receipts register.)	
Dr. Reserve for bonds authorized, not issued.....	100,000
Cr. Bonds authorized, not issued.....	100,000
(Entry in general journal.)	

(Note to Feb. 1 entries: To record the receipt of cash for principal and accrued interest on bonds sold to the U.S. Government and to set up the liability for these items; also to reduce the balances in the accounts for bonds authorized but not issued. This sale includes accrued interest on the bonds sold from Jan. 1, the interest date, to Feb. 1, the date of sale.)

(3) Mar. 16, 1934:

Dr. Construction fund, bank account.....	\$100,000.00
Bond and interest fund, bank account.....	833.33
Cr. Bonded debt.....	100,000.00
Accrued bond interest sold.....	833.00
(Entry in cash-receipts register.)	
Dr. Reserve for bonds authorized, not issued.....	100,000.00
Cr. Bonds authorized, not issued.....	100,000.00
(Entry in general journal.)	

(Note to Mar. 16 entries: To record the receipt of cash for principal and accrued interest on bonds sold to the U.S. Government and to set up the liability for these amounts; also to reduce the balances in the accounts for bonds authorized but not issued. The above assumed sale was not consummated until Mar. 16, so accrued interest from Jan. 1, the interest date, to Mar. 16 is included in the cash advanced by the Government.)

Subsequent sales to the Government would be handled in the same manner, except that the amounts of principal and/or interest would be different. The amount of accrued interest would increase with each sale up to July 1. On sales subsequent to July 1 the accrued interest would be computed from July 1 to the date of the sale.

ACCOUNTING FOR BONDS AND INTEREST

Item 11. Bond and Interest Record, Form 100.—A detailed record of bonds issued and outstanding, such as Form 100, must be kept by each public body in addition to the control account in the general ledger. Such a record serves several purposes. It records the history, authorization, and other pertinent data concerning each bond issue. It also shows the date issued, the maturity dates, and the numbers of all the bonds of each issue, and the total bonds of each issue outstanding at all times. This form also provides a statement of bond maturi-

ties and interest requirements by dates. The budget requirements for debt service are taken directly from this record.

A public body should keep a bond record for all its bonds whether sold to the United States Government or to others and whether on P.W.A. projects or not. The recommended Bond and Interest Record, Form 100, is designed particularly for bonds sold to the

Form 100

BOND AND INTEREST RECORD

Borrower		Sold to.		Denominations of Bonds:		Bonds Issued		Bonds Paid		Bonds Outstanding		Debt Service Requirements		
Date Issued	Maturity Date	Project No.	Amount Authorized	No. to	Legal Opinion by	No. to	Interest Rate	Date	Amount	Date	Amount	Date	Principal	Interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1/1/34	1/1/37	1 to 50	50,000.00	1/1/37	50,000.00	1/1/34	100,000.00	1/1/35	-0-	1/1/35	20,000.00	1/1/35	-0-	20,000.00
1/1/34	1/1/38	51 to 100	50,000.00	1/1/38	50,000.00	2/1/34	200,000.00	7/1/35	-0-	7/1/35	20,000.00	7/1/35	-0-	20,000.00
2/1/34	1/1/39	101 to 150	50,000.00			3/16/34	300,000.00	1/1/36	-0-	1/1/36	20,000.00	1/1/36	-0-	20,000.00
2/1/34	1/1/40	151 to 200	50,000.00			4/1/34	400,000.00	7/1/36	50,000.00	7/1/36	50,000.00	7/1/36	50,000.00	50,000.00
3/1/34	1/1/41	201 to 250	50,000.00			5/1/34	500,000.00	1/1/37	-0-	1/1/37	19,000.00	1/1/37	-0-	19,000.00
3/1/34	1/1/42	251 to 300	50,000.00			6/1/34	600,000.00	7/1/37	-0-	7/1/37	19,000.00	7/1/37	-0-	19,000.00
4/1/34	1/1/43	301 to 350	50,000.00			7/1/34	700,000.00	1/1/38	-0-	1/1/38	18,000.00	1/1/38	-0-	18,000.00
4/1/34	1/1/44	351 to 400	50,000.00			8/1/34	800,000.00	7/1/38	-0-	7/1/38	18,000.00	7/1/38	-0-	18,000.00
5/1/34	1/1/45	401 to 450	50,000.00			9/1/34	900,000.00	1/1/39	-0-	1/1/39	17,000.00	1/1/39	-0-	17,000.00
5/1/34	1/1/46	451 to 500	50,000.00			10/1/34	1,000,000.00	7/1/39	-0-	7/1/39	17,000.00	7/1/39	-0-	17,000.00
6/1/34	1/1/47	501 to 550	50,000.00			1/1/37	950,000.00	1/1/40	-0-	1/1/40	16,000.00	1/1/40	-0-	16,000.00
6/1/34	1/1/48	551 to 600	50,000.00			1/1/38	900,000.00	7/1/40	-0-	7/1/40	16,000.00	7/1/40	-0-	16,000.00
7/1/34	1/1/49	601 to 650	50,000.00					1/1/41	50,000.00	1/1/41	50,000.00	1/1/41	50,000.00	50,000.00

United States Government, because bonds so sold are issued in blocks at periodic intervals. A somewhat simpler form can be used if all the bonds are issued at one time.

A separate sheet of Form 100 is needed for each bond issue. The top section of each sheet provides for showing bond data to identify the issue. Each time bonds are sold, an entry should be made in this record. Do not enter on the same line bonds with different maturity

dates. The date sold will be entered in column 1, the maturity date in column 2, the numbers of the bonds maturing on such date in column 3, and the total par value in column 4. When the bonds are retired, the date paid and amount retired should be entered in columns 5 and 6 on the same line on which the sale of such bonds was entered.

The balance of bonds outstanding is shown in column 8. Each time bonds are issued or retired this balance will be increased or decreased accordingly, and the date and new balance should be entered in columns 7 and 8. The entries in columns 7 and 8 will be made in chronological order according to dates whenever bonds are issued or retired and will have no direct connection with entries on the same line in columns 1 to 6. If the issues and retirements of all bonds of a public body are entered on sheets of this bond and interest record, the total bonded indebtedness can be obtained quickly at any time by adding together the last entry in column 8 on the various sheets of Form 100.

Columns 9, 10, and 11 show the amounts of interest and principal becoming due, by dates, over the life of the issue. This section of the record cannot be filled out until all the bonds are sold. Furthermore, most loan and grant agreements specify that any funds unexpended when the project is completed shall be used to retire bonds issued (with certain restrictions), so this section of form 100 should not be filled out until it is determined whether or not any of the bonds are to be retired. As soon as this is done, the amount of principal and interest falling due on each date should be computed and the dates and amounts should be entered in columns 9 to 11. Entries on a particular line in columns 9 to 11 of the form have no direct connection with entries on the same line in the other sections.

Item 12. Accounting for interest during construction.—The P.W.A. Act provides that interest during construction may be included as a part of the cost of a P.W.A. project. This is entirely optional with the public body, and if it wishes it may pay such interest; it may do so according to the loan and grant agreements from moneys received on loans. On the other hand, if local laws prevent the payment of interest from bond moneys, the public body may provide the funds for interest from its regular bond interest account in its general fund, which may or may not be transferred to the P.W.A. project accounts, out of which the coupons will be paid. In such a case, the amount if transferred would be credited to the project general ledger account "Funds Received from Other Sources." The accounting from this point would be handled in the same manner as if the interest were paid from bond moneys.

The amount to be charged as interest during construction includes the interest cost of funds borrowed during construction less any interest earned on the funds before they are disbursed. In most cases, the

interest to be charged can be computed at the end of each month by calculating the interest on the bonds outstanding during the month and deducting any interest credited by the reserve bank for funds on deposit in the special accounts previously described and amounts received in payment of accrued interest on coupons attached to bonds at the date of sale.

The entries necessary to set up the interest during construction at the end of each month, to be made in the general journal, are as follows:

(1) Jan. 31, 1934:	
Dr. Work in progress (interest during construction).....	\$333. 33
Cr. Interest accrued on bonds.....	333. 33
(To set up interest on bonds outstanding during January. The figures used represent the interest for 1 month at 4 percent on \$100,000 of bonds issued Jan. 1.)	
(2) Feb. 28, 1934:	
Dr. Work in progress (interest during construction).....	666. 67
Cr. Interest accrued on bonds.....	666. 67
(To set up February interest on bonds outstanding. The figures used represent the interest for 1 month at 4 percent on \$200,000 of bonds.)	
(3) Mar. 31, 1934:	
Dr. Work in progress (interest during construction).....	833. 33
Cr. Interest accrued on bonds.....	833. 33
(To set up March interest on bonds outstanding. The figures used represent the interest for 1 month at 4 percent on \$200,000 of bonds and for one half month on \$100,000 of bonds—\$100,000 issued Jan. 1, \$100,000 issued Feb. 1, and \$100,000 issued Mar. 16.)	

A similar entry should be made each month for the interest on the total bonds outstanding during the month, including any interest for the fraction of a month on bonds sold during the current month. If the entries have been made properly, the balance in the "Interest accrued on bonds" account plus the balance in the "Accrued bond interest sold" account should be equal to the total amount of the coupons maturing on any interest due date.

It is suggested that arrangements be made with the bank to have the bank interest credited at the end of each month. The entries to be made for such bank interest in the general books of the public body are as follows:

For amounts credited on construction fund accounts:	
Dr. Construction fund, bank account.....	\$83. 40
Cr. Interest earned on bank balances.....	83. 40
(Entry in cash-receipts register.)	
Dr. Interest earned on bank balances.....	83. 40
Cr. Work in progress (interest during construction).....	83. 40
(Entry in general journal) to record interest credited by bank for month.	

(A credit and debit are made to "Interest earned on bank balances" so that a record of all interest earned will be shown in one place.)

For amounts credited on bond and interest fund accounts:

Dr. Bond and interest fund, bank account.....	\$9. 65
Cr. Interest earned on bank balances.....	9. 65
(Entry in cash-receipts register.)	
Dr. Interest earned in bank balances.....	9. 65
Cr. Work in progress (interest during construction).....	9. 65
(Entry in general journal) to record interest credited by bank for month.	

Item 13. Accounting for payment of interest on securities.—When coupons or registered bond interest become due it is desirable to pay the entire amount from the bond and interest fund account. In order to do this it will be necessary to transfer part of the funds from the construction fund bank account. The amount to be transferred will be the total amount of coupons (or registered bond interest) maturing less the amount received from United States Government on account of accrued interest when the bonds were sold and less the amount of interest credited by the bank to the bond and interest fund bank account. The entry to make the transfer is as follows (assuming \$100,000 is sold on the first of each month from January 1 to June 30, except in March when the sale was made on March 16, and that interest in the amount of \$16.50 during the 6-month period was credited to the bond and interest fund account):

July 1, 1934:

Dr. Bond and interest fund, bank account.....	\$6, 816. 83
Cr. Construction fund, bank account.....	6, 816. 83
(Entry in check register.)	

The entry for the payment of the interest is as follows:

July 1, 1934:

Dr. Accrued bond interest sold.....	\$5, 166. 67
Interest accrued on bonds.....	6, 833. 33
Cr. Bond and interest fund, bank account.....	12, 000. 00
(To record payment of interest on bonds, due today.)	

(Interest on \$600,000 bonds issued during six months from Jan. 1 to June 30, 1934).

ACCOUNTING FOR GRANTS

Item 14. Accounting for grants under loan and grant agreements.—When the public body receives grant funds, it is suggested that the general ledger credit entry should be made to a credit account entitled "P.W.A. Grant Received", as indicated in the journal entry described below, rather than to the debit account for estimated amount of P.W.A. grant set up in the original entry previously described. In this way, the total amount of grant funds received will be shown in the credit account at all times. The amount of the original estimate still to be received can be determined at any time by deducting the amount in the credit account from the balance in the estimated amount of P.W.A. grant account.

The entry necessary to record the receipt of grant funds is as follows:

Dr. Construction fund—Bank account.....	\$60,000
Cr. P.W.A. grant received.....	60,000

(Entry in cash receipts register to record receipt of cash from the Public Works Administration on account of grant.)

An entry similar to the above is made each time funds are received on account of the grant.

Under some agreements, grants made by the Government will not be made in cash, but will be applied to the retirement of bonds purchased by the Government. In such cases, instead of sending cash to the borrower-grantee, the Government will send bonds which the borrower-grantee may retire.

To record this transaction the following entry should be made:

Dr. Bonded debt.....	\$60,000
Interest accrued on bonds.....	400
Cr. P.W.A. grants received.....	60,400

Item 15. Grant only agreements.—The preceding items referred to agreements with the Public Works Administration which involved a combination of a loan and grant from the Federal Government to a public body to complete a P.W.A. project. An agreement between the P.W.A. and a public body may be restricted, however, to a grant only from the Federal Government for such purpose. In such cases the funds provided by the public body for a project, must be accounted for in the manner specified in such agreements. In some cases the agreements state that the funds available or represented as to be available must be deposited in a special bank account. In such instance the accounting for these funds would be the same as outlined for loan and grant agreements.

If the project is financed by the sale of securities to purchasers other than the United States Government, the methods of accounting for the securities and for receipts and expenditures in connection with the securities and grant may be handled exactly as in the case of securities sold to the Government.

Item 16. Temporary financing by the public body.—The public body may find it necessary to finance part of the cost of the project temporarily, pending receipt of grant funds from the P.W.A., in order to complete the project without delay. For such purpose the public body may borrow the money from other funds of the public body. In such cases, the money should be deposited in the project bank account (if there is a special bank account) before being disbursed to pay project costs. If there is no such special bank account, entries are made to charge the construction fund cash account and to credit a liability account in the project general ledger for the amount borrowed.

Assuming that \$10,000 is loaned to the project by the general fund and that special bank accounts are maintained for project moneys, the entry to record the loan is as follows:

Dr. Construction fund, bank account.....	\$10,000
Cr. Due to general fund.....	10,000

(Cash receipts register entry.)

When the grant funds are received from the Federal P.W.A. they should be deposited and accounted for in the regular manner, and a check issued to repay the general fund. The entry to record the payment of the loan is as follows:

Dr. Due to general fund.....	\$10,000
Cr. Construction fund, bank account.....	10,000

(Entry in check register.)

ACCOUNTING FOR FUNDS RECEIVED

Item 17. Necessary records and procedures.—The accounting for funds received in connection with a P.W.A. project does not require many accounting entries. The funds for the construction work are ordinarily obtained in relatively large sums primarily from the proceeds of bond issues, grants by P.W.A., and in some cases from appropriations by the public bodies out of its own available funds. In any of these cases, the money will be advanced for construction purposes in large amounts and probably at intervals of a month or more between advances.

However, other cash transactions, mostly of a small amount, need be accounted for, such as, cash refunds on invoices, returned goods, etc. These transactions must be credited to the same accounts to which the original invoices were charged.

Item 18. Cash Receipts Register, Form 101.—The general accounting department in each public body should operate a cash receipts register, such as form 101, for recording essential data about receipts for P.W.A. projects. A separate sheet of this form should be used for each project. One or more lines are needed for each entry. Enter the date of the transaction in column 1. Enter the receipt number in column 2. Enter in column 3 the name of the person or institution from whom the money is received with a brief explanation of the entry when needed.

If a special bank account is used, the title of the account for construction funds, and the name of the bank should be shown at the top of column 4 of Form 101. If two or more bank accounts are opened for construction funds, columns should be added to the form so that a separate column is available for each account. The amount received is entered in the column for the bank account in which it is deposited. In column 5 enter the amount of cash received for and deposited in the bond and interest fund. The monthly or weekly

totals of columns 4 and 5 are posted as debits to the respective bank or cash accounts in the general ledger.

The amount of the receipt is also entered in columns 6 to 10, distributing it to the credit of the proper accounts in these columns. Enter any refunds applicable to invoices originally charged to stores

Form 101
Sheet No.

CASH RECEIPTS REGISTER

Date	Public Body of	Source and/or Explanation or Receipt	Debit	Credit	Detail Account	Other Credits	Other Debits
			Cash or Bank	Stores		Work in Progress	Stores
1			(4)	(5)	(7)	(8)	(9)
2		U.S. Gov't. Bonds - Sale	100,000.00				100,000.00
3		Auto Supply Co. - Refund on Order	210.00				210.00
4		E. Jones-Baird Refund	3.00				3.00
5		Current Fund - Appropriation for Project	10,000.00				10,000.00
6		U.S. Gov't Grant from PWA	60,000.00				60,000.00
7				333.33			
8				210.00			
9				3.00			
10				10,000.00			
11				60,000.00			
12							
13							
14							
15							
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accounts in column 6 and credit the total of the column to the stores account in the general ledger at the end of a week or month.

In column 8 of Form 101 enter cash refunds on goods or services charged to work in progress when purchased or rendered. The same accounts must be credited that were charged when the purchase was made or the service rendered. The total of column 8 will be credited to the work in progress account in the general ledger and the details posted to the accounts in the expenditure ledger.

Other kinds of receipts are entered in columns 9 and 10. Ordinarily, only a few accounts will receive more than 1 or 2 credits each month from columns 9 and 10. For this reason, the amounts in column 10 should be posted individually to the accounts shown in column 9. In case a certain account receives a large number of credits each month, a column should be added for such account so that the total for the month can be posted as one item. Some public bodies may profitably add 1 or 2 blank columns to Form 101 so that if certain accounts receive a large number of credits each period, the titles of these accounts can be written in at the top of the blank columns and the amounts segregated therein as they occur. The entries appearing on Form 101 are for illustrative purposes.

EXPENDITURE ACCOUNTING

Item 19. Accounting for funds expended.—The larger and usually the most complicated part of a system of public body accounts is that which relates to expenditures. The instructions under the following items of this section are designed to simplify and expedite the accounting operations that may arise in connection with the expenditures on P.W.A. projects, while at the same time furnishing control over funds so as to prevent their diversion to uses other than that for which appropriated.

Item 20. Accrual accounting essential.—Expenditures on projects should be accounted for on an accrual basis rather than on a cash basis. Under this plan the purchase price of commodities and services received are considered to be a charge against the project even though payment may not be made therefor until days or weeks later. Under the cash system of accounting which is still employed by the majority of public bodies, actual payments or disbursements of cash alone are recognized as charges. Accounts kept in this fashion show the cash condition of the public body, but they fail to show the real status of project expenditures.

Failure to account for expenditures on the accrual basis may financially embarrass the public body. For example, P.W.A. grant payments are generally based on construction costs which include commodities and services used on the project whether paid for or not. If a public body keeps its records on a cash basis, it will find itself in the position of having to pay all obligations before the final payment on the grant is received from P.W.A. which will necessitate the raising of additional funds to complete the project pending the receipt of final payment.

For purposes of appropriation control, many public bodies carry accrual accounting one step further than that described above; they treat a purchase order or contract entered into as an encumbrance against the appropriation, rather than await receipt of the invoice

or auditing the voucher before making a charge. This principle should be followed in controlling P.W.A. project appropriations. The expenditure ledgers described below provide two different methods of obtaining this rigid control over appropriations.

Item 21. Alternative methods of accounting for expenditures.—Three alternative methods are described here for accounting for expenditures on an accrual basis. Form 102 illustrates an expenditure ledger employed by many public bodies which control their objects of expenditures by specific appropriations or allotments. Such a ledger is suitable for P.W.A. project accounts. Encumbrances are posted to it, so that it furnishes the unencumbered balance at all times of the whole or of any feature of the project for which a specific maximum sum has been authorized to be expended. This form is described below under item 23.

Form 102-a is a common type of expenditure ledger. Encumbrances are not posted on this ledger; thus a separate analysis of purchase orders and contracts outstanding is required to ascertain the unencumbered balance of the funds available for a P.W.A. project account. The operation of this ledger and the making of such an analysis is described below under item 24.

A Project Register, Form 102-b, offers a third method which public bodies may employ in accounting for project expenditures. This register also requires a separate analysis of purchase orders and contracts to obtain the unencumbered balance in each account. The posting of this register is explained below under item 25.

Item 22. Expenditure ledger accounts.—Regardless of the kind of the expenditure ledger, accounts under each project must be carried for the seven classes defined in items 4 to 11 of section II. The Project Register, Form 102-b, carries seven columns for distributing these seven classes of project costs. If either form 102 or 102-a is employed, a separate sheet must be carried for each of these accounts. The total appropriation for the project serves as the control over project expenditures; but with respect to each of the seven classes of project costs, the estimates as approved by the Federal P.W.A. should be set up as accounting controls. Public bodies should not permit expenditures to exceed these approved estimates, except under properly authorized additions thereto. Obviously the amount of appropriation for the project as a whole is the maximum which can be spent under all seven classes of expense.

The appropriation account in the general ledger provides the amount of the appropriation for each project. Expenditures are not posted direct to the appropriation account in the general ledger, but to the work in progress account. This account may be posted either weekly or monthly with the total vouchers or invoices as shown in a voucher or invoice register. No form is supplied here for a voucher

or invoice register. Other amounts are posted from the general journal and the Cash Receipts Register for P.W.A. Projects, Form 101. Encumbrances are not posted in the general ledger. The general ledger appropriation account less the work in progress account will furnish the unexpended balance for the project.

Item 23. Expenditure Ledger, Form 102.—This form records all obligations incurred by a public body which are chargeable against a P.W.A. project and shows the unencumbered balances at all times. The amount of the appropriation or the approved estimate is set up in column 10 as a credit and the balance of such appropriation or estimate is reduced each time a purchase order or contract is issued. Any subsequent changes in the amount of the appropriation are entered in column 10. The total of the appropriation amounts on the sheets for the seven expense classes referred to above for each project must at all times be equal to the amount in the appropriation account in the general ledger.

The first entry on Form 102 after setting up the identification data at the top, is the noting in column 10 of the amount of the appropriation or the approved estimate for the class of project cost to which the sheet relates. Following this will be the first purchase order which is posted when issued. The date is placed in column 1 and the name of the vendor or explanation in column 2. In column 3 show the purchase order number, and in column 4 the amount of the order. Then add the amount of the order to the previous total of encumbrances outstanding and enter the new total in column 6. The amount of the order must also be deducted from the previous unencumbered balance and the new balance entered in column 11.

These purchase-order encumbrances are liquidated when the corresponding expenditure is entered on Form 102. If a voucher system is in effect and vouchers are prepared as soon as invoice approval is given, the liquidation and expenditure charge should be made from the voucher. If vouchers or warrants are not prepared immediately, the entries should be made from the invoice.

The entries for the vouchers (or invoices) are made on Form 102 in the following manner: The date and explanation are posted in columns 1 and 2. The number of the purchase order which the voucher (or invoice) covers is listed in column 3 and the amount of such purchase order in column 5. This amount must be the same as was entered in column 4 when the order was set up as an encumbrance. This amount is readily obtained from the copy of the purchase order which should be attached to the invoice and voucher. Next the amount entered in column 5 should be deducted from the previous total of encumbrances in column 6, and the new total entered in the same column. Then on the expenditure side of the form and on the same line the voucher (invoice) number or reference is posted in column 7.

and the amount of the voucher in column 8. The amount of the voucher or invoice is also added to the previous total of expenditures and the new total inserted in column 9. If the amount of the voucher (or invoice) is different from the amount of the purchase order covered by it, the unencumbered balance in column 11 must be increased or

Form 102

EXPENDITURE LEADERS

Date	Project Symbol No.	Sub-Account	Explanation	Purchase Order			Encumbrances		Expenditures		Total Expenditures	Appropriations; or Budget Balances Approved	Unencumbered Balance
				Order Number	Amount	Cancelled	Purchase Order	Voucher Number or Ref. or Encumbrance	Amount	Total Expenditures			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
2/10/34			Red Flag gravel Co. - Stone	3-1534	10.00						10.00	100.00	89.00
2/19/34			Ironwood Hardware - shovels	3-1535	15.00						25.00	100.00	74.00
2/27/34			Red Flag Gravel Co.	3-1534		10.00		15.75	9.80	9.80	9.80	100.00	64.20
2/27/34			Ironwood Hardware	3-1535		15.00		17.10	46.90	46.90	55.90	100.00	48.10

decreased by the amount of such difference; increased if the voucher is for less than the order, and decreased if it is for more.

Pay rolls and other than purchase or contract transactions are charged directly in the expenditure columns on Form 102 without first being set up as encumbrances. Contracts are set up in the same manner as purchase orders; as partial estimates of work are invoiced

the total of encumbrances is reduced accordingly by an entry in column 5. At the same time expenditures in column 8 are charged.

When purchase orders are canceled, the amount of each order is posted in column 5. This reduces the total encumbrance figure in column 6 and increases the unencumbered balance in column 11 by the amount canceled. If credits are received they should be noted in red in column 8, which reduces at the same time the total expenditures and increases the unencumbered balance.

The total expenditures shown in column 9 on a sheet of Form 102 for any one of the seven classes of project costs represents the total of expenditures to date under such class of project costs. The unencumbered balance in column 11 tells at any moment the available funds with the exception of accrued pay rolls, which can be readily ascertained. This form of ledger sheet is particularly suitable for use with bookkeeping machines as it is not so satisfactory for hand posting methods because of the number of calculations which must be made with each entry.

Item 24. Expenditure Ledger, Form 102-a.—The expenditure ledger sheet illustrated in Form 102-a does not record encumbrances for purchase orders. The charges are set up only after the invoice is received. A filing system is employed to obtain the encumbrances outstanding on account of purchase orders and contracts.

EXPENDITURE LEDGER						Form 102a																			
<table border="1"> <tr> <td colspan="3">Appropriation Data</td> </tr> <tr> <td colspan="3">Original Appropriation \$ _____</td> </tr> <tr> <td colspan="3">Changes in Amount of Appropriation</td> </tr> <tr> <td colspan="2">Additions-Black</td> <td>Deductions-Red</td> </tr> <tr> <td>Reference</td> <td>Amount</td> <td>Revised Total</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>								Appropriation Data			Original Appropriation \$ _____			Changes in Amount of Appropriation			Additions-Black		Deductions-Red	Reference	Amount	Revised Total			
Appropriation Data																									
Original Appropriation \$ _____																									
Changes in Amount of Appropriation																									
Additions-Black		Deductions-Red																							
Reference	Amount	Revised Total																							
Date	Explanation	Voucher Number or Reference	Debits	Credits	Net Totals																				
(1)	(2)	(3)	(4)	(5)	For Month or Other Period	For Entire Project to Date																			
(6)	(7)																								

On this type of ledger the appropriation or approved estimate is entered in the block at the top of the sheet. The unexpended balance of the appropriation is not shown on the ledger sheet. This unexpended balance is obtained, when desired, by deducting the net total of expenditures in column 7 from the amount of the appropriation in the upper portion of the sheet.

When an invoice is received and approved or the voucher prepared, enter the date in column 1, the name of vendor or explanation in column 2, and the voucher number or reference in column 3. In column 4 enter the amount of the voucher or invoice. Add this amount

to the previous totals in columns 6 and 7 to get the new totals. Column 6 shows the total net expenditures for the week or month while column 7 shows the total net expenditures on the project to date.

For proper administrative control the encumbrances for goods or services not yet invoiced or vouchered must be known. A method of obtaining this information is to file a copy of every purchase order by project and by class of expense. These orders remain in the file until a voucher is prepared or until the invoice is received and posted to the expenditure ledger. Filled or completed purchase orders are then removed from the live encumbrance file and filed elsewhere. The totals of the purchase orders in the file at any time constitute the appropriation encumbrances. Therefore, to get the encumbrance against a particular appropriation or estimate it is only necessary to add the orders in the proper section of the live file. The resulting total, plus the total expenditures in column 7 on Form 102-a is subtracted from the appropriation or estimate to get the unencumbered balance of such appropriation or estimate.

Item 25: Project Register, Form 102-b.—A project Register, Form 102-b, may be kept in place of the expenditure ledgers described in items 23 and 24 of this section. The project register has an advantage in that it is designed to show all 7 classes of project costs on 1 sheet, whereas these costs are recorded on separate sheets if either of the other expenditure ledgers is used. Some of the disadvantages of the Project Register, Form 102-b are its large size, the necessity of posting credits in red in the same column with charges, and the fact that columns 5, 6, and 9 to 12, will probably contain relatively few entries in comparison with the number of entries in the Construction Cost columns.

The spaces provided at the top of the register should be completely filled in on the first page. Only the project title and symbol number need be repeated on subsequent pages. The amount of the original appropriation is shown in the blocked space.

The unexpended balance of the appropriation is obtained by deducting the total in column 4 from the amount shown in the blocked space. Encumbrances may be obtained by filing purchase orders in the manner described in item 24.

The date of each entry is noted in column 1. The voucher or invoice number, or the journal reference, is shown in column 2 and the description or explanation in column 3. The amount of the charge is entered in column 4. The amount will also be entered in one or more of columns 5 to 12 according to the class of project cost affected. That is, an amount to be charged for construction costs performed by force account would be entered in column 7; an amount for engineering charges would be entered in column 9; the amount of a contractor's invoice for work done would be entered in column 8; et cetera. The total of the amounts entered in columns 5 to 12 will

always be equal to the amount in column 4. Credits for refunds or other purposes will be entered in red and must be deducted when the amounts in the columns are added.

Form 102

PROJECT REGISTER

Project title _____ Project Symbol No. _____
 Estimated Cost of Project _____ Date Approved by P.W.A. _____ 19____ Project Docket No. _____

Contractor _____		Original Appropriation \$ _____	
Date of Contract _____		Additional Work Permitted - Ed _____	
Time to Complete _____		Reference Amount _____	
Contractor _____		Period Total _____	
Date of Contract _____			
Time to Complete _____			
Date of Contract _____			
Time to Complete _____			

Date Voucher Number or Reference	Description	Total	Distribution				Interest during Construction	Total			
			Practical Rights of Way, and Easements	Construction Commissioner	Administrative and other	Legal					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

Item 26. Accounts must be up to date.—Not only must expenditure accounts be operated on an accrual basis, but also they must be kept posted up to date. Otherwise reports cannot be prepared promptly for the Federal P.W.A., thus delaying payment of grants. This may necessitate temporary financing or the stopping of work on a project. Furthermore, if the central accounting office of the public body does not keep its records up to date and on an accrual basis, the department supervising the project will be forced to maintain duplicating accounting records in order to prepare properly P.W.C.A. Forms 45, 29, 57, and 21, all of which are mandatory. The detailed

construction-cost records for force account work (described in sec. IV) will in most cases be kept in the public works or other supervising department of the public body, but such records should be controlled by the accounts in the central accounting office. Since such cost accounts necessarily record costs on an accrual basis, this control cannot be obtained unless the general accounts are also on an accrual basis.

SOURCES OF ENTRIES FOR THE SEVEN CLASSES OF PROJECT COSTS

Item 27. Source of expenditure entries.—The entries to the seven classes of project costs which must be maintained on either Form 102, 102-a, or 102-b are obtained from several sources. Charges may be posted from paid vouchers or invoices, journal vouchers or general journal, pay-roll distribution sheets, and under some accounting systems from a number of other sources. Credits will be posted in instances, from credit memorandums, cash receipts register, journal voucher, or general journal. In the case of Form 102, purchase orders, contracts, and similar documents establishing an obligation to the project will be employed in posting encumbrances. If Form 102-a or 102-b is employed, these documents are used in connection therewith on a filing and memorandum basis as described under item 24.

The method of obtaining the entries will vary with the class of project costs, and often within a class. These various methods are described below according to the class of project costs.

Item 28. Preliminary expenses.—Since these expenses are all incurred prior to the signing of the grant and/or loan agreement by the P.W.A. and public body, they necessarily must have been charged to other funds of the public body than those appropriated for the project set forth in the loan and/or grant agreement. If allowed by the P.W.A. the amount of such preliminary expenses should be determined, and cash should be transferred from the P.W.A. project account to the fund from which these expenses were paid. The entries to transfer the cash should charge the preliminary expense account in the expenditure ledger and the work-in-progress account in the general ledger.

Item 29. Cost of lands, rights-of-way, and easements.—When cash is paid for lands, rights-of-way, and easements, charges are made to the work in progress account in the general ledger and to the cost of lands, rights-of-way, and easements account in the expenditure ledger. If a liability is incurred for such land, rights-of-way, and easements, a general journal entry should be prepared charging these same accounts and crediting a liability account in the general ledger.

Item 30. Construction costs, under contract method.—The entries in the expenditure account for construction costs when work is done under contract are derived from two sources. The first source is the

bills submitted by the contractor. The accounting for such bills is described below under item 37.

The second source of entries consists of pay-roll distributions, stores distributions, vouchers, invoices, or other documents covering expense of inspection and supervision in the field.

Item 31. Construction costs, under force account method.—Under construction by force account the entries to the expenditure accounts are obtained in the following manner:

Labor.—The labor charges to the expenditure accounts for construction costs will be obtained from pay-roll sheets or from a pay-roll distribution. These distributions are prepared in the cost accounting office and form the basis for the entries in the cost accounts as well as in the expenditure accounts in the general accounting office.

Material.—Where a stores system is operated for the P.W.A. project only, purchases for stores are not charged to the several expenditure accounts, but rather to a stores inventory account. Charges are made to the expenditure accounts for construction costs only when materials and supplies are taken from the storehouse and used on the job. As in the case of the distribution of labor, the cost accounting office will furnish the general accounting office of the public body with a distribution of stores issued at the end of the period. From this distribution the general accounting office will prepare a general journal entry charging the work in progress account in the general ledger and the account for construction costs in the expenditure ledger, and at the same time crediting the stores inventory account in the general ledger.

If the stores system is financed by the resources of a fund of the public body other than the P.W.A. project fund, such other fund must be reimbursed for materials used. The work in progress account in the general ledger and the construction cost account in the expenditure ledger may be charged from a payment voucher transferring cash to such other fund, or a journal entry may be prepared from the stores distribution charging these accounts and crediting the liability account due to other funds in the general ledger. Under the latter method, the liability account is charged when the cash is actually transferred.

When materials and supplies are purchased for immediate use on the job and are not charged into a stores account, the charges to the expenditure account will be made directly from the invoice or from a payment voucher prepared from the invoice. The person ordering the materials and supplies must designate the project for which the goods were purchased so that the proper expenditure account for construction costs may be charged.

Plant and equipment.—When equipment belonging to the public body is used on a P.W.A. project as well as on other classes of projects

it should be charged to the P.W.A. project on a predetermined rental basis (per hour, mile, or other unit) as explained in items 9 and 15 of section IV. The cost accounting office will prepare a distribution of the charges to each feature of work and work operation of the project on which such equipment was used. From a summary of this distribution, the work in progress account in the general ledger and the account for construction costs in the expenditure ledger will be charged and the department or fund that furnished the equipment will be credited in the general ledger. This latter department will, thereafter, be charged and construction fund cash credited with the amount of cash paid to said department for the use of its equipment on the P.W.A. project.

If equipment is rented from a private contractor, the charges therefor will be distributed to the operation cost accounts in the same manner as that described above for equipment owned by the public body, and the summary distribution will be the basis for a charge in the general ledger to the account work in progress and in the expenditure ledger to construction costs and for a credit to a liability account with such private contractor. When the latter is paid, his account will be charged and the construction fund cash account credited.

Overhead expenses.—The correct handling of overhead expense is important. The direct overhead charges which become a part of the construction costs can in many cases be charged directly to the project expenditure accounts from invoices or pay rolls. Where such charges are to be distributed over several projects or departments, the distribution should be shown on the invoices or pay rolls. Other charges will come from pay-roll distributions and from stores distributions.

Inspection and supervision in the field.—The charges for inspection and supervision in the field will, for the most part, be obtained from pay-roll distributions. Other charges may come from invoices, stores distributions, and interfund bills from other departments which performed some of the work.

Item 32. Construction costs, combination of contract and force account methods.—Separate construction cost accounts must be kept for the work done by the contract method and the work done by the force account method in cases where both methods are employed on the same project. The entries for work done under the contract method will be obtained as described in items 30 and 37. For force account work, the method of obtaining the entries is described in item 31.

Item 33. Engineering charges.—Entries to the account, Engineering Charges, are obtained from the invoices or bills, if the work is done by private engineering firms. If done by the engineering department of the public body, such department must keep a record of time spent

and costs incurred in connection with the P.W.A. project. The engineering department should report such amounts to the central accounting office. From such reports, the accounting office should prepare a general journal entry to charge the work in progress account in the general ledger and to charge the engineering charges account in the expenditure ledger. The corresponding credit in the general ledger for this charge will be to a liability account payable to the engineering department that furnished this service. Thereafter, the latter account will be debited and construction fund cash account credited with the amount reimbursed by the project for these engineering services.

Item 34. Legal, administrative, and other overhead charges.—This class of project costs, as defined in section II, item 9 in this manual, will, when the amount thereof has been determined, be charged to the Work in Progress account in the general ledger and to the Legal, Administrative, and Other Overhead Charges account in the expenditure ledger. The credit will be to construction fund cash, stores account, or to a liability account payable to the department or fund of the public body or other vendor rendering the service. Thereafter, the latter account will be debited and construction fund cash account credited when the liability is paid.

Item 35. Interest during construction.—The entries for this class of project costs are shown under item 12 in this section of the manual.

Item 36. Miscellaneous costs.—The account, Miscellaneous costs, may include several different types of project costs. The charges may be obtained from invoices, pay rolls, or other expense distribution documents. The entries will be made in the same manner as for other classes of expense.

CONTRACT ACCOUNTING

Item 37. Accounting for expenditures under contract methods.—Public bodies will encounter less work in accounting for expenditures for a P.W.A. project constructed under contract than if constructed by the force account method. The detailed construction cost records under the contract method are kept by the contractor, so that the public body is relieved of the task of maintaining such records. The contractors, however, are required under the terms of the grant and/or loan agreements to maintain an accounting system which will furnish the information that may be required by the Federal P.W.A. in Washington or by its auditors in the field. No specific accounting system for contractors is outlined in this manual. Manuals describing a system of accounts for use by contractors may be obtained from the Associated General Contractors of America, Washington, D.C., or an illustrative classification of construction accounts may be obtained from George H. Parker, chief accountant, Public Works Administration, Washington, D.C.

The public body, however, must keep sufficient records of construction costs in connection with contract work in order that it may prepare P.W.C.A. Form 29 for reporting to the Federal P.W.A. the amount of work done and billed by the contractor. The reports should carry the same feature of work and work operation classification as is shown in the contract. Records such as are described in this item are required by public bodies in preparing Form 29 and for their own use in controlling contracts.

The charges to the construction cost account in the expenditure ledger under the contract method are obtained from the bills submitted by the contractor covering completed work. The following journal entry to record the invoice should be made when the bill is received and approved (it is assumed that 15 percent is held back as a guarantee):

Accounts	Expenditure ledger, debit	General ledger	
		Debit	Credit
Dr. Work in progress.....		\$25,000	
Construction costs.....	\$25,000		
Cr. Contracts payable, completed work.....			\$21,250
Contracts payable, retained percentage.....			3,750

When payment is made to cover the 85 percent of the amount payable for completed work, the entry to record the payment on the contract would be as follows:

Dr. Contracts payable, completed work.....	\$21,250
Cr. Bank account, construction fund.....	21,250

When payment of the 15-percent hold-back is made, the entry would be—

Dr. Contracts payable, retained percentage.....	\$3,750
Cr. Bank account, construction funds.....	3,750

In addition to the expenditure and general ledger accounts, a Record of Quantities and Costs of Contract Work Invoiced, Form 105, should be kept for all work done under the contract method. This form is designed to show the quantity and cost of contract work completed on each feature of work, as invoiced by the contractor.

A separate sheet of this Form 105 will be used for each P.W.A. project. Additional sheets will be needed for each project for which the contract provides for a larger number of features of work than the number of columns provided in printing the form. A standard columnar sheet may suffice for this form. The entries to be made on Form 105 will come from the invoices submitted by the contractor. All work units reported on such invoices should be verified by measurements of inspectors of the public body. The data called for at the top of the form (except the date that work is started and completed) as well as the work operations provisions of the contract

for which space is provided in headings, should be filled in as soon as the contract is let. These latter provisions are the titles of the features of work and work operations specified in the contract, the total number of units specified in the contract for each feature, the unit bid price on each feature, and the total contract price on each feature of work.

Form 105

RECORD OF QUANTITIES AND COSTS OF CONTRACT WORK INVOICED

Project _____ Project Symbol No. _____
 Contractor _____ Project Docket No. _____
 Contractor's Address _____ Contract Let _____ Contract No. _____
 Project Approved _____ 19__ Work Completed _____ 19__
 Work Started _____ 19__

Voucher Number	Invoice Number	Period Covered by Invoice	Amount of Invoice	Distribution of Invoice by Work Features of Contract.						
				Feature	Feature	Feature	Feature	Feature	Etc.	
(1)	(2)	(3)	(4)	Total Contract	Total Contract	Total Contract	Total Contract	Total Contract	Total Contract	Total Contract
				Work Units Completed	Work Units Completed	Work Units Completed	Work Units Completed	Work Units Completed	Work Units Completed	
				Unit Price \$	Unit Price \$	Unit Price \$	Unit Price \$	Unit Price \$	Unit Price \$	
				Contract Price \$	Contract Price \$	Contract Price \$	Contract Price \$	Contract Price \$	Contract Price \$	
				Work Units Completed (5)	Cost (6)	Work Units Completed (7)	Cost (8)	Work Units Completed (9)	Cost (10)	

Each invoice should be entered as soon as it is received, properly certified and approved by the engineer or other officer of the public body qualified to certify and approve such invoices. In the four columns under the caption Invoice Charges will be entered the data called for as indicated by the titles of these columns. Provision is made in columns 2 and 3 for a voucher number and an invoice num-

ber for each invoice. The use of both series of numbers is a matter which is optional with the public body using this form. The period which the invoice covers will be noted in column 3, while the amount of the invoice which will be the contract cost of work completed during the period covered by the invoice will be entered in column 4. Columns 5 to 16 inclusive are provided to distribute this cost according to the features of work under which the contract costs are divisible. From this Form 105 will be obtained the figures of quantities and costs of contract work completed to be reported in columns 5, 12, and 13 of P.W.C.A. Form 29.

SOURCE OF INFORMATION FOR REPORT FORMS

Item 38. Sources of Data for Preparing P.W.C.A. Forms 29 and 45.—The entries for P.W.C.A. Forms 29 and 45, which are mandatory reports required by the Federal P.W.A., are obtained in the following manner from the accounting records described in this manual.

P.W.C.A. Form 29.—Where the work is done by force account, the quantities and costs will be obtained from the cost accounts described in section IV; where the work is done by contract, the quantities and costs will be obtained from Form 105 described under item 37 of section III.

P.W.C.A. Form 45.—For both force account and contract projects, the sources of the financial data necessary to prepare this form will be as follows (the Roman numerals refer to the block of P.W.C.A. Form 45 and the Arabic numerals refer to the line in the block):

Block I:

Line 1: All columns—According to previous reports.

Line 2:

Column—

3—General ledger account—Bonded debt.

4—General ledger account—P.W.A. grant received.

5—Column 3 plus column 4.

6—General ledger account—Funds received from other sources.

7—Column 5 plus column 6.

8—General ledger account—Accrued bond interest—Sold (balance of account).

Block II:

Lines 1 to 7, column 7—Expenditure ledger accounts or projects register.

Line 8, column 7—Sum of amounts in II, 1 to 7, or from general ledger account—Work in progress.

Block III:

Line 1, column 7—General ledger accounts—Total of liability. Accounts except "accrued bond interest sold" and "bonded debt." (This figure must be supported by Form P.W.C.A. 57, Statement of unpaid project costs.)

Block IV: Line 1, column 7—Amount on line II (8) minus III (1).

Block V:

Column 7—General ledger accounts—Construction fund—Bank accounts. The total must equal the amount on line I-3 minus the amount on line IV-1. (To arrive at this reconciliation, any amounts spent but not yet charged to the expenditure accounts, such as the balance in the stores account, must be added to funds expended on the project.)

Column 8—General ledger account—Bond and interest fund—Bank account.
The total must equal the amount on line I-3. Any amount in this account which was not received on account of bond interest sold should be shown in column 7.

Block VI:

Column 7—Obtained by comparing the checks returned paid by the bank with the checks issued.

Column 8—Same as column 7.

Block VII:

Column 7—Balances shown on statement from banks—Must be equal to the total in V plus the total in VI.

Column 8—Same as above column 7.

SECTION IV

COST ACCOUNTING UNDER FORCE ACCOUNT WORK

Item 1. Need of cost accounting.—The method whereby a public body carries on a construction, repair, or improvement project with its own forces, is commonly known as the force account or day labor method. Under this method the public body through its administrative departments hires the labor and purchases the materials. It may own, or rent from others, all or part of the plant and equipment used on the project. The cost of this labor, materials, plant, and equipment together with certain administrative, supervisory, and other related expenses constitute the construction cost of the project. These costs are usually assembled and distributed to different work features and work operations of the project through detailed cost accounts. These accounts and the information they provide are essential as a basis for intelligent administrative judgment as to the efficient application of the funds employed on the project. They are also valuable for furnishing comparable cost data where like projects are under construction or are to be undertaken. Such a system of cost accounting is indispensable in preparing the required P.W.A. reports when a P.W.A. project is undertaken by force account. The cost system described in this section, although designed for public bodies, is applicable also to contractors' accounting needs.

Item 2. Principles of cost accounting.—The estimates prepared by the engineers or other public works officials for P.W.A. projects handled under force account must follow the classification of costs as shown in section II, items 4 to 11, inclusive. This same classification is also followed in setting up the cost-accounting system. A cost ledger is provided for recording the amount of work done and from which will be obtained a distribution of construction costs subdivided to show first the cost of materials in place which includes labor, materials, plant, and equipment, and construction overhead, and second inspection and supervision in the field, consumed in each feature of work or work operation of the construction. Accurate field reports of these operations are essential if the data to be recorded in and assembled from this ledger is to be relied upon.

The feature of work and the work operations covered in the estimate of the public body are illustrated in the chart of cost accounts in item 5 of this section. For the purpose of furnishing needed information and cost control over work in progress, the four basic

classes of construction costs must be distributed to each of these work operations. These four basic classes of costs, are as follows:

1. Field labor
2. Materials and supplies
3. Plant and equipment
4. Overhead (miscellaneous)

Each of these classes is defined in section II under item 7.

ESTABLISHING THE COST ACCOUNTS

Item 3. Construction cost ledger.—A construction cost ledger, Form 110, is suggested for all public bodies employing the force account method in a construction, repair, or improvement project. This ledger provides for accumulating the costs of the work subdivided according to work operations of the project and separated into the four classes of cost referred to above. It also provides for accumulating the quantities of work done for each operation of the project. This ledger sheet is posted weekly from the sheets described in items 8, 9, and 10 of this section.

This construction cost ledger provides for accumulating only the construction costs of each project. Other classes of project costs (preliminary expense; land, rights-of-way, and easements; engineering charges; legal, administrative, and other overhead charges; interest during construction; and miscellaneous) are obtained from the expenditure ledger or project register such as Form 102, 102-a, or 102-b, described in section III in this manual. If the general accounting department does not keep these expenditure records, then the operating department of the public body will need to do so. The costs recorded on the construction cost ledger provide the information required on P.W.C.A. Form 29 (see cols. 7 to 10 on this form), while the information recorded on the expenditure ledger or project register supplies the information for P.W.C.A. Form 45.

Public bodies reporting costs to P.W.A. should set up a separate sheet of Form 110 for each feature of work and/or each work operation as illustrated below under item 5. A control sheet showing the total cost for the entire project should also be provided. Some public bodies may desire to combine work operations and only set up a ledger sheet for each feature of work, as for example: Grading, base, or top, on a street project. Job costs may also be required and in this case subsidiary ledger sheets should be used for each job.

The Construction Cost Ledger, Form 110, provides at the top for listing data to identify each project and the subdivisions of the projects by jobs and operations. The totals from the summary sheets, Forms 112, 113, and 114, will be entered in columns 2, 3, and 4 of the cost ledger sheet. In column 5 will be entered the amount of hand tools and other overhead chargeable to the particular operation covered

Exhibit C. SCHEDULE OF THE IMPORTANT ENTRIES TO GENERAL LEDGER, EXPENDITURE LEDGER, AND COST ACCOUNTS

Item of Expenditures or Distribution	Construction Cost Ledger		Expenditure Ledger Form 102, 102a or 102b	General Ledger (Form not Shown)
	F.W.A. Form 110	Suspense Accounts		
Salaries and Wages.	Dr. Cost Accounts. Entry from weekly summary of construction labor and work done.	Dr. Clearing Accts. (Direct Overhead)	Dr. Construction Costs Entry from summary of payroll distribution prepared by cost accountant.	Dr. Work in Progress. Cr. Construction Fund Cash. Entry from payroll or from voucher or check register.
(2) Materials and supplies purchased for stores from F.W.A. project funds.		Dr. Stores Records.	No entry in project expenditure accounts.	Dr. Stores Account. Dr. Accounts Payable or Cr. Construction Fund Cash. Entry from invoice register or voucher register.
(3) Stores issued - If stores system is operated and financed from F.W.A. project funds.		Dr. Materials Delivered to Job - Not Used. Cr. Stores Records. Entry from summary of stores requisitions.	Dr. Construction Costs. Entry from summary of stores requisitions.	Dr. Work in Progress. Cr. Stores Account. General Journal entry prepared from summary of stores requisitions.
(4) Materials and supplies delivered direct to jobs by the vendor not handed through stores.		Dr. Materials Delivered to Job - Not Used. Entry from summary of invoices or vouchers.	Dr. Construction Costs. Entry from invoices or vouchers.	Dr. Work in Progress. Cr. Accounts Payable or Cr. Construction Fund Cash. Entry from invoice register or voucher register.
(5) Stores issued - If stores system is operated and financed by the public body out of funds other than FWA project funds.		Dr. Materials delivered to job-not used. Entry from distribution of stores requisition.	Dr. Construction Costs. Entry from distribution of stores requisitions.	Dr. Work in Progress. Cr. Due to Other Funds or Cr. Construction Fund Cash. Journal entry prepared from distribution of stores requisitions.
(6) Materials and supplies used on job.	Dr. Cost Accounts. Entry from weekly summary of materials expense.	Cr. Materials delivered to job-not used.	Expenditure accounts not affected.	General ledger accounts not affected.
(7) Charges for equipment rentals.	Dr. Cost Accounts. Entry from weekly summary of equipment used.		Dr. Construction Costs. Entry from summary furnished by cost accountant.	Dr. Work in Progress. Cr. Due to Other Funds or Cr. Construction Fund Cash. Journal entry prepared from summary furnished by cost accountant or from interdepartment bills.
(8) Services performed by other departments of funds of the public body but chargeable to the FWA project.	Dr. Cost Accounts. Entry from interdepartment bills.		Dr. Construction Costs. Entry from interdepartment bills.	Dr. Work in Progress. Cr. Due to Other Funds or Cr. Construction Fund Cash. Journal entry prepared from interdepartment bills.
(9) Other Expenditures not shown on payrolls or purchase orders. For example, telephone bills, light bills, etc.	Dr. Cost Accounts and/or Entry from summary of invoices or vouchers.	Dr. Clearing Accounts (Overhead).	Dr. Construction Costs. Entry from invoices or vouchers.	Dr. Work in Progress. Cr. Accounts Payable or Cr. Construction Fund Cash. Entry from invoice register or voucher register.
Distribution of Overhead.	Dr. Cost Accounts.	Cr. Clearing Accounts. (Overhead).	The expenditure accounts are not affected by this distribution.	The general ledger accounts are not affected by this distribution.

by the sheet as shown by the overhead clearing accounts explained later under items 26 and 27. The total of columns 1 to 5, entered in column 6, shows the cost of "material in place." The cost of inspection and supervision is shown in column 7 and the total construction cost in column 8. The work units for column 9 are transferred from summary Form 112. The unit cost for column 10 is obtained by

Form 110

CONSTRUCTION COST LEDGER

Project _____ Controlling Acc No _____
 Job _____ Project Symbol No _____
 Work Operation _____ Opr. No _____ Work Unit _____ Date Completed _____

Date	Materials in Place		Materials & Supplies	Direct overhead	Total	Inspection & Supervision	Total Cost	No of Work Units	Units per Man Hour	Units per Equip Hour
	Field Labor (2)	Equip. Expense (3)								
(1)	Hours Amount	Hours Amount	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) (12)

(Suggested size 6 1/2" x 11")

dividing the total construction cost in column 8 by the number of work units in column 9. The units per labor hour are derived by dividing the number of work units by the number of labor hours in column 2. The units per equipment hour are similarly calculated using the number of equipment hours in column 3. Preferably all entries to the cost ledger should be made on a weekly basis in order to provide the figures for a weekly work and cost statement for controlling work

in progress, such as Form 140. For monthly totals it will be necessary usually to cut off summaries in the midst of the last week in the month.

Item 4. Classification of work operations needed.—A public body in deciding upon the particular cost accounts required should prepare a chart showing the features of work subdivided by work operations for which cost information will have value. This chart of accounts will be at least as detailed as the cost estimate for the project upon which the contract therefor was signed with the P.W.A. It is not within the scope of this manual to furnish a complete classification of the accounts which may be required, or which may be desirable, for every type of a construction, repair, and improvement project. However, an illustrative classification for three types of public-works projects is given below. The classification of construction accounts referred to under item 37 of section III may also be helpful in setting the feature of work and work operation accounts.

Item 5. Chart of construction cost accounts.—The following chart illustrates some of the work operation cost accounts grouped by feature of work, commonly employed in street, sewer, and building construction of public-works projects.

	Standard Unit For Measuring Work
100. Street Construction (total costs measured by square yards):	
110. GRADING (total cost measured by square yard top).	
111. Machine excavation.....	Cubic yards
112. Hand excavation.....	Cubic yards
113. Moving.....	Cubic yards
120. INLETS, CATCH BASINS, AND DRAINS (total cost by square yard top).	
121. Excavation.....	Cubic yards
122. Laying pipe.....	Lineal feet
123. Building catch basins.....	Number of
124. Moving.....	Square yard top
130. CURB AND GUTTER (total cost by square yard top).	
131. Setting forms.....	Lineal feet
132. Pouring concrete.....	Lineal feet
133. Finishing.....	Lineal feet
134. Moving.....	Lineal feet
140. BASE CONSTRUCTION (total cost by square yard top).	
141. Unloading materials.....	Cubic yards
142. Pouring and raking.....	Cubic yards
143. Curing.....	Cubic yards
144. Moving.....	Cubic yards
150. SURFACE OR TOP (total cost by square yard top).	
151. Hauling materials.....	Square yards
152. Spreading and raking.....	Square yards
153. Rolling.....	Square yards
154. Moving.....	Square yards
160. CLEAN UP (total cost by square yard top).	
161. Grading curb to walk.....	Square yards
162. Grade adjustments, driveways, walks, etc.....	Square yards

180. CONSTRUCTION OVERHEAD.

181. Salaries of timekeepers, material men, watchmen, and other field employees not engaged in inspection and supervision.
182. Field office expense.
183. Temporary buildings (not plant).
184. Workmen's compensation.
185. Telephone, telegraph, etc.
186. Damages.

Etc.

189. Construction hand tools.

190. INSPECTION AND SUPERVISION.

191. Inspectors' salaries.
192. Inspectors' transportation.
193. Inspectors' supplies.
194. General superintendents' salaries, transportation, and supplies.

NOTE.—If more than one project is in progress at the same time a separate group of construction overhead and inspection and supervision accounts similar to those shown above must be kept for each project.

200. Sewer Construction (total cost measured by lineal feet).**210. EXCAVATION (total cost measured by cubic yards).**

211. Machine excavation..... Cubic yards
212. Hand excavation..... Cubic yards

220. SHEETING AND BRACING (total cost measured by lineal feet).

221. Machine driving..... Lineal feet
222. Hand driving..... Lineal feet

230. BACKFILL (total cost measured by cubic yards).

231. Machine backfilling..... Cubic yards
232. Hand backfilling..... Cubic yards

240. LAYING PIPE..... Lineal feet**250. MANHOLES..... Number of****260. MOVING..... (No unit)****300. Building Construction****310. EXCAVATION (total cost measured by cubic yards).****311. Rock**

3111. Hand..... Cubic yards
3112. Machine..... Cubic yards

312. Gravel

3121. Hand..... Cubic yards
3122. Machine..... Cubic yards

313. Clay

3131. Hand..... Cubic yards
3132. Machine..... Cubic yards

314. Sand

3141. Hand..... Cubic yards
3142. Machine..... Cubic yards

320. FORMS (total cost measured by square feet).

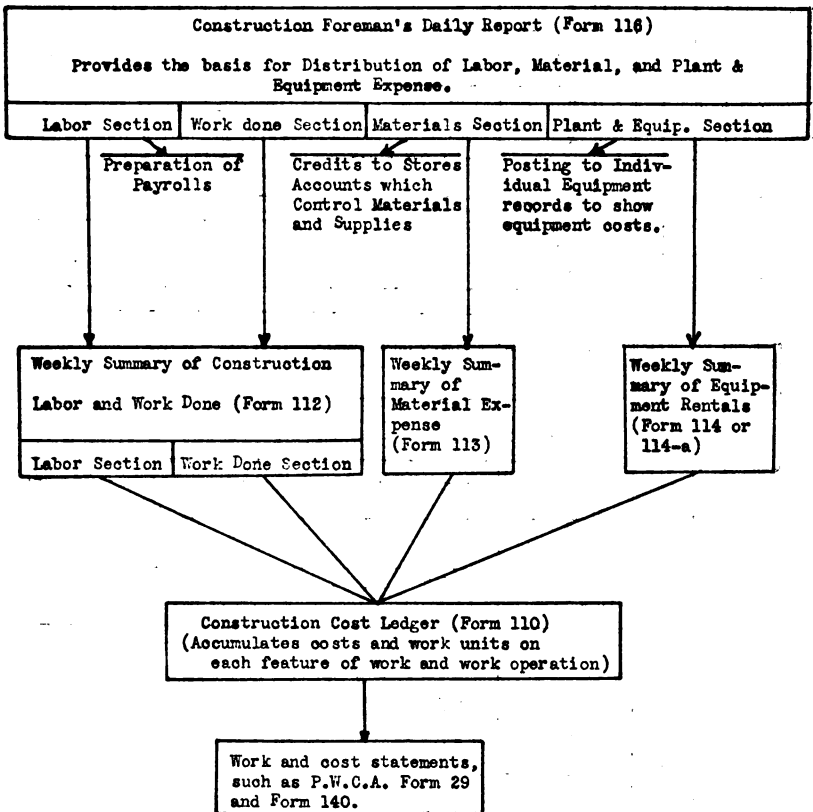
321. Column and footing..... Square feet
322. Wall..... Square feet
323. Beam and Slab..... Square feet
- Etc.

It will be noted that this chart also carries the standard work units for measuring work done under each feature of work and each work

operation. These units are known to construction engineers, and they should be provided in the estimates so that when actual costs are compiled they may be readily compared with estimates. The construction costs are reported by these features of the work on P.W.C.A. Form 29 in support of requests for grant payments, the entries for which form are provided by the accounts described above.

Item 6. Flow chart showing the reports used.—After the chart of accounts has been determined and the cost ledger set up, forms should be designed to obtain the necessary field data. These forms

EXHIBIT B.
CHART SHOWING THE FLOW OF COST DATA FROM THE FIELD REPORTS
TO THE CONSTRUCTION COST LEDGER



consist of daily time reports, equipment records, and material-used reports. Exhibit B illustrates graphically the steps required in a cost accounting system for force account work. This chart shows how the reports prepared in the field ultimately find their way into the Construction Cost Ledger, Form 110. In studying this chart, it should also be borne in mind that the reports illustrated relate to the distribution of expenses to the work operation accounts specified in the above chart of cost accounts.

WEEKLY SUMMARY FORMS FOR OFFICE USE

Item 7. Pay roll and labor distribution procedure.—The field reports for labor are used for two purposes: (1) To accumulate the earnings for each individual on the pay roll for the purpose of making wage payments; (2) to furnish distributions of labor expense to the work features, work operations, and other accounts. Alternative

Form 112

WEEKLY SUMMARY OF CONSTRUCTION LABOR AND WORK DONE

Public Body _____ Week _____ to _____ incl
 Project Location _____ Project Symbol No. _____
 Job Location _____ Job No. _____

(To be filled in if project costs are reported by jobs)

Work Operation	Work Units	Sunday (3)		Monday (4)		Saturday (9)		Total (10)	
		Hours Amount	Units Completed	Hours Amount	Units Completed	Hours Amount	Units Completed	Hours Amount	Units Completed
(1)	(2)								
Crediting	Sq Yds.								
Mechanical Excavation	Sq Yds.								
Hand Excavation	Cu Yds.								
Moving	Cu Yds.								
Base	Sq Yd.								
Inloading Materials	Cu Yd.								
Paving and Raking	Sq Yd.								
Curbing	Sq Yd.								
Moving	Sq Yd.								
Etc									

field report forms are suggested in some cases. All forms presented here are now being used in a large number of public works departments. Weekly summaries are suggested here, but public bodies may use monthly summaries if they prefer. No regular pay roll form is illustrated because the regular pay roll form of the public body will ordinarily be used for this purpose. Although separate

pay rolls must be prepared for each project, a separate pay roll need not be prepared for each job or subdivision of a project. If more than one job is covered by the pay roll the distribution should be placed on the pay roll showing the amounts to be charged to each job.

Item 8. Weekly Summary of Construction Labor and Work Done, Form 112.—A weekly summary of construction labor and work done,

Form 112

WEEKLY SUMMARY OF EQUIPMENT USED

Public Body _____ Week _____ to _____ Incl. _____

Project Location _____ Project Symbol No. _____

Job Location _____ Job No. _____

(To be filled in if project costs are reported by jobs).

Week Oper- tion (1)	Sunday (2)		Monday (3)		Tuesday (4)		Wednesday (5)		Thursday (6)		Friday (7)		Saturday (8)		Total (9)	
	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount	Hrs.	Amount
Grading																
Machine Excavation																
Hand Excavation																
Moving																
Base																
Unloading Materials																
Forming and Backing																
Curing																
Moving																
Etc. Etc																

such as Form 112, should be used in the cost-accounting office of the public body to accumulate a distribution of all labor employed and work units completed on a job or other portion of a project. The entries for this form are obtained from the Construction Foreman's Daily Report, Form 116, which is described in item 13. This foreman's report furnishes a distribution according to the work features

and work operations on which a particular crew is engaged. For example, on a street construction project, one crew may be responsible to one foreman for the grading feature of the work, another crew to another foreman for the base, and a third crew to another foreman for the curb and gutter, etc. Therefore, it will be necessary for the cost-accounting office to post the weekly summaries from each of the crew foreman's daily reports. Likewise, the number of work units completed each day as shown on the foreman's report are accumulated for the week on Form 112. The labor totals for the week are posted to column 2 of the Construction Cost Ledger, Form 110, and the totals for work units completed to column 9. These work-unit figures should be checked against inspectors' measurements.

Item 9. Weekly Summary of Equipment Expense, Form 113.—When equipment is charged at rental rates, it is reported in the same manner as labor. Rental rates are based on actual costs as shown by the equipment records. The method of establishing these rental rates is described later in item 15. The Construction Foreman's Daily Report, Form 116, or the Equipment Operator's Daily Report, Form 118, provides the information for the entries to this weekly equipment summary form. The postings are made in the same manner in the cost-accounting office as described above for the weekly summary of construction labor. At the close of the week, the totals at the bottom of this form are posted to column 3 of the Construction Cost Ledger, Form 110. This summary will also aid in preparing the entries for equipment rentals to the expenditure ledger forms described in section III.

Item 10. Weekly Summary of Materials Expense, Form 114.—The materials used on a job or portion of a project will also be reported by the construction foreman on his daily report, Form 116, and summarized in the office on the Weekly Summary of Materials Expense, Form 114. This materials-used summary provides for charging the work feature only for the expense of material used. In some cases, such as building construction, it may be desirable to distribute material expense to work operations as well and in this case it will only be necessary to expand the classification in column 1 of this form to fit the needs. At the close of the week, the totals on this form are posted in column 4 of the Construction Cost Ledger, Form 110.

An alternative form for accumulating material expense is illustrated by Form 114-a. This form may be prepared, if desired, in the office or by the foreman in the field. That is, it may be used by the foreman in conjunction with a weekly report of labor and equipment in cases where only weekly reports such as Form 115 are sent to the cost accounting office in place of daily reports. (See item 11 below.) Whether used in the office or in the field the quan-

tities only are accumulated daily for each commodity, and at the close of the week the total quantities are priced and extended. By this method as soon as the totals are checked, they can be posted directly to the Construction Cost Ledger, Form 110. Form 114-a

Form 114
WEEKLY SUMMARY OF MATERIAL EXPENSE

Public Body _____ Week _____ to _____ last _____
 Project Location _____ Project Symbol No. _____
 Job Location _____ Job No. _____

(To be filled in if project costs are reported by jobs).

Work Operation (1)	Sunday (2)	Monday (3)	Tuesday (4)	Wednesday (5)	Thursday (6)	Friday (7)	Saturday (8)	Total (9)
Base Pouring Concrete								
Top Spreadink								
etc.								

Form 114a
WEEKLY SUMMARY OF MATERIAL EXPENSE

Public Body _____ Date _____
 Project Location _____ Foreman _____ Project Symbol No. _____
 Job Location _____ Job No. _____

(To be filled in if project costs are reported by jobs).

Material & Unit (1)	Base Pouring Concrete (2)					Top (6)					Total (7)									
	Quantity Used S M T W T F S	Unit Price	Total Amount	Quantity Used S M T W T F S	Unit Price	Total Amount	Quantity Used S M T W T F S	Unit Price	Total Amount	Quantity Used S M T W T F S	Unit Price	Total Amount								

has an additional value of accumulating materials according to type for statistical uses.

Item 11. Weekly Work Report for Labor or Equipment Expenses, Form 115.—Form 115 is an alternative report to Forms 112 and 113 for obtaining the distribution of labor and equipment for those public bodies which desire weekly rather than daily reports. In using this weekly type of distribution the foreman will set up one sheet for each employee in his crew and for each piece of major equipment charged

at rental rates. These equipment rental rates are based on actual costs of operation as shown by the equipment records which are explained in item 15. The work features and the work operations for the particular type of project should be printed in column 2. Seven subcolumns are provided to show the hours worked each day by either the employee or the piece of equipment. Form 115 may be printed in different colors, i.e. white for labor, and buff for equipment.

The work of summarizing labor and equipment charges is materially reduced by the use of Form 115. The summary Forms 112 and 113 will not be required at all. Two suggested methods for this summary or distribution work of Form 115 in the office are as follows:

WEEKLY REPORT FOR LABOR OR EQUIPMENT Form 115

Project _____ Project Symbol No. _____

Job Location _____ Job No. _____
(To be filled in if projects costs are reported by jobs).

Name _____ No. _____ Class _____ Rate of Pay _____ hr.

Foreman _____ Week _____ to _____ incl.

Work Feature and Work Operation (1)	Hours Worked each day (2)							Total Hours Worked (3)	Total Expense (4)
	S	M	T	W	T	F	S		
Grading									
Machine Excavation									
Hand Excavation									
Moving									
Base									
Unloading Materials									
Pouring and Raking									
Curing									
Moving									
Etc.									
Etc.									

(1) By using a columnar sheet with a column for each of the work features and operations on the project. The labor and equipment totals of all Form 115 sheets for the week are posted to the proper columns, and the amounts in the columns are added to get the total labor and equipment charges for each feature and operation. The entries in the Construction Cost Ledger, Form 110, are posted from these columnar sheets.

(2) By sorting the Form 115 sheets according to features of the work such as grading, base, and top, and adding the amounts and hours on an adding machine to obtain the total to be charged to each feature and operation. The entries in the Construction Cost Ledger, Form 110, are posted directly from the adding-machine tapes.

Under either method, caution must be exercised to make certain that the total of all entries so posted comprise the total of the weekly

pay roll for the project. Materials can also be summarized and accounted for in the same manner by providing the foreman with a weekly materials used report quite similar to this Weekly Work Report, Form 115.

DAILY FIELD REPORTS

Item 12. General practices.—The general practice in most cities and counties is to obtain daily reports from each crew or each workman. Under one method, these daily reports are designed as “gang distributions”, meaning that all members of a crew are reported by their foreman and their time distribution made on one form. Another method is to use daily time cards prepared by each workman and approved by the foreman. The principle of daily reporting is of great importance in the control of work in progress. If the officials of the public body want detailed information daily concerning costs of projects, it is essential to have such reports prepared in the field. This does not mean that the compiling of costs on a daily basis is suggested; rather the regular reports from the field serve as a type of administrative report and have psychological as well as informative value.

Public bodies should consider the use of timekeepers for relieving foremen in the preparation of field reports. It is a common practice, particularly on large construction works, to employ timekeepers who make a frequent check of the men working on each crew and not only report the time of such men at the close of the day but also prepare the distribution of such time to the features of work and work operations upon which employed. In such instance the foreman will only need to maintain a time book for his own information and protection. Such timekeepers should be made responsible for reporting the use of equipment and units of work completed.

Similarly the burden of reporting materials used can be transferred from the foremen to materials receiving clerks charged with the responsibility of checking all materials delivered on the job and incorporated in the construction. Such clerks if properly organized and distributed will be in a position to report to the cost-accounting office, the nature and amount of materials entering into each feature of work and work operation.

Regardless of the system employed for reporting information concerning construction operations, arrangements must be made for reporting to the office, the necessary facts concerning labor, equipment, materials, and work units, required to operate the cost system as set forth in this section of the manual.

Item 13. Construction Foreman's Daily Report, Form 116.—If the foreman in charge of a crew is given the responsibility of reporting the time of the crew, the hours equipment is used, the materials consumed, and the units of accomplished work, it is recommended that a construction foreman's daily report, such as Form 116, be employed. The pay-roll number and the name of employee may be entered in the

CONSTRUCTION FOREMAN'S DAILY REPORT

Page of Form 116 _____
 Project Symbol No. _____
 Project Location _____
 Job No. _____

(To be filled in if project costs are reported by jobs)

Payroll Number (1)	Name (2)	Total rate per hour (4)	Total Amount (5)	Grading (6)		Moving Materials & Raking etc. Hr. Amt. Hr. Amt.	Base (7) etc. Hr. Amt. Hr. Amt.	Date		Inspection and Sup- er- vision (11) (12) Hr. Amt. Hr. Amt.	Over- head Hr. Amt.
				Mach. Excav. Hr. Amt.	Road Excess Hr. Amt.			19	Month		
Total Labor											
Work Units Completed during day											
Unit of Work											
Number of Units											
Cu. Yd.											
Sq. Yd.											

(See Reverse of Form)

office before submission of the forms to the foreman. In cases where employees are working continuously, it may not be necessary to supply the name so long as the pay-roll numbers are well controlled. In columns 6, 7, etc., the foreman makes a distribution of the total hours of each employee to the work features and work operations upon which labor was employed. In column 5 and all other columns,

either on the face or reverse of this form, provision is made to extend the "amount." These extensions need not be calculated by the foreman as this work can be done by clerical help in the office where adding machines are available.

At the bottom on the face of Form 116 provision is made for showing the number of units of work completed during the day. This

Report of Equipment and Material Used
(Construction Foreman's Daily Report—Reverse of Form 116)

Equipment No.	Name & Type of Equipment	Total Rate per Hour (office)	Total Hours	(3)	(4)	(5)	Grading (6)			Base (7)			etc.	Inspection & Supervision	Overhead		
							Mach. Excav.	Hand Excav.	Moving	Unload.	Pouring	Baking				Q.	Ant.
Total Equipment																	
Material		Unit	Quan.	Price	Amount	Q.	Ant.	Q.	Ant.	Q.	Ant.	Q.	Ant.	Q.	Ant.	Q.	Ant.
Cement		Sacks															
Sand		Cu. Yd.															
Gravel		Cu. Yd.															
etc.		-----															
Totals																	

requires that certain measurements and calculations be made to determine the number of such units completed. Standard work units are given in the chart of construction cost accounts, item 5, in this section. It is very important that arrangement be made to obtain these measurements of the units of work completed because without these yardsticks, effective administrative control of work in

progress on a daily basis is impossible. All such units reported should be checked independently by periodic measurements of the inspectors.

On the reverse of Form 116, the foreman will report the equipment used and the materials consumed. The foreman will distribute the hours each piece of equipment is used as listed in column 3 to the work operations listed in the other columns. These work operations are, of course, the same as those for labor on the face of this report.

To report materials, the foreman will need to keep an accurate record of the amount used on each work feature and work operation which consumes material so that correct charges can be made to the operation cost accounts. From this record the foreman will post the total quantities for the day in column 3 of Form 116. Only the quantity used and *not* the quantity received will be posted on this form. If the foreman wishes to keep an inventory record which will show the amount received, issued, and on hand, he can thus control the materials handled by his crew. A form for this inventory is given under item 27 of this section. A materials receiving clerk is often charged with this responsibility. In any event, rigid material controls must be kept in the cost-accounting office to check the amounts reported used by the foreman or material clerk.

After the foreman has prepared Form 116 and checked the hours distributed for labor against his time book and made certain that the other entries on the form are correct, he should sign the report and forward it to the cost accounting office. In the office, postings will be made to the master time book which accumulates the earnings for each employee for pay roll purposes. A distribution of labor, equipment, and materials is also made on Forms 112, 113, and 114, which channel these charges to the Construction Cost Ledger, Form 110.

Item 14. Daily Time Card, Form 117.—Many public bodies employ to advantage, a daily time card, such as Form 117, for reporting public works labor. If a public body uses such form to obtain the distribution of all employees' time, on P.W.A. projects, it will be necessary to have the individual workmen account for their own time. This card provides for showing the pay roll number and rate per hour for workmen. The location of the job and its number is also given and space is provided for the foreman's signature of approval. In the body of the card will be printed all of the operations of the particular project so that the workman can indicate the time in even hours and half hours he spends on each item of work. On some projects it may be desirable to install a time clock and provide for a place at the bottom of Form 117 for the employee to punch the time in and out.

Form 117

DAILY TIME CARD

Name _____ Pay No. _____
 Rate _____ per hour
 Job. No. _____ Location _____
 Foreman _____

Work Feature and Work Operation	Hrs.
GRADING	
Machine excavation _____	
Hand excavation _____	
Moving _____	
INLETS, CATCH BASINS, AND DRAINS	
Excavation _____	
Laying pipe _____	
Building catch basins _____	
Moving _____	
CURB AND GUTTER	
Setting forms _____	
Pouring concrete _____	
Finishing _____	
Moving _____	
BASE CONSTRUCTION	
Unloading Materials _____	
Pouring and Raking _____	
Curing _____	
Moving _____	
SURFACE OR TOP	
Hauling Materials _____	
Spreading and Raking _____	
Rolling _____	
Moving _____	
CLEAN UP	
Grading curb to walk _____	
Grade adjustments, driveways, walks _____	

PLANT AND EQUIPMENT ACCOUNTING FORMS

Item 15. Management of plant and equipment.—The management of plant and equipment owned by any public body presents a complex problem. Records are needed to compile the cost of operating and maintaining each piece of plant and equipment and to control the use of fuel consumed, repair labor, and other types of expense incidental thereto. Provision must also be made for charging both the operation cost accounts and the general appropriation accounts for the expense of using plant and equipment.

Another problem deals with organization and supervision of plant and equipment. Shall each operating department of a public body own and repair its own plant and equipment, or shall a central repair shop or equipment division be established? Many public bodies operate under one or the other of these plans, but regardless of plan, the expense of equipment repairs and operation must be absorbed by the using departments or divisions.

The text in the following items up to and inclusive of item 20, is placed in this manual in order that public bodies may have a plan for calculating the costs of using equipment and thus to be able to charge P.W.A. projects for its use on the basis of actual recorded costs or preferably through the use of proper hourly, daily, weekly, mileage, or other rental rates. Not all of the detailed records needed for control or management of equipment are exhibited here.¹ Gasoline and oil requisitions, time cards for garage or shop mechanics, tire and accessory records, and other necessary forms and procedures required by garages and shops handling publicly owned equipment, should be employed.

The forms described below include the more important forms and procedures essential to an effective system of accounting for plant and equipment operations.

The establishing of rental rates for plant and equipment used on P.W.A. projects requires the assembly of actual costs of operation, maintenance, depreciation (wear and tear), and shop or garage overhead consumed by each piece of plant and equipment. Rental rates should be set up for groups of equipment of the same size, type, and capacity; i. e., the rate should be the same for all 5-ton trucks, for all 5-ton rollers, for all 10-ton tractors, etc. The test of the correctness of a rental rate is not whether the rate on a particular piece of equipment is too high or too low in comparison with the cost of operating that piece of equipment, but whether the total rentals earned on all pieces of equipment of the same size, type, and capacity approximate

¹ Public works records and accounting manuals describing such procedures as well as methods of organizing and financing equipment may be obtained from Public Administration Service, 850 E. Fifty-eighth Street, Chicago, Ill.

the total costs for the group. Hourly rates for rolling equipment are generally the most satisfactory.

The records and procedures described in items 16 to 20 for obtaining the costs of equipment and plant operation will not ordinarily constitute a part of the construction cost accounting or of the P.W.A. project accounting systems. These records will be kept by the departments or divisions of the public body owning and operating the equipment or by the central equipment bureau, depending on the method of financing the equipment. The equipment and plant records are of interest to the Federal P.W.A. primarily because in such records are found the facts for determining plant rental in accord with the principles prescribed by the Administrator for determining

EQUIPMENT OPERATORS' DAILY REPORT

Form 118

Project _____		Date _____			
Equipment No. _____	Name and Type _____	Rate _____			
Operator _____	Hrs. _____	Rate _____	Miles at finish _____		
Opr. or Hlpr. _____	No. _____	Hrs. _____	Rate _____		
Helper _____	No. _____	Hrs. _____	Rate _____		
Helper _____	No. _____	Hrs. _____	Rate _____		
Oil _____	Qts _____	Weather _____			
Location	Kind and amount of Work done	Work Oper. Chargeable	Time (4)	Hours (5)	(Of- fice Oper. No. (6))
(1)	(2)	(3)	Out In	(5)	(6)

the actual cost of operation to be charged to the project accounts for use of equipment. Consequently, the public body must keep records subject to audit by the P.W.A., which are adequate to support the reasonableness and accuracy of the rates or amounts charged.

Item 16. Equipment Operator's Daily Report, Form 118.—Each operator of a piece of plant or major equipment charged at rental rates should report his own time and the time the equipment is used on an Equipment Operator's Daily Report, such as Form 118. One of the purposes of this report is to accumulate the labor and equipment hours for charging the project, if other field reports are not designed for this purpose. Thus Form 118 may supplement and in other cases

replace the Construction Foreman's Daily Report, Form 116. If a daily time card, as Form 117, is used, Form 118 is needed for every equipment operator.

In some cases the rental rate established for the particular piece of equipment or plant may include the operator's time. If this is the case, the operator's time must be charged to an equipment expense account. On the other hand, when the operator's time is charged as direct labor on a project it will be distributed along with the time of all other workmen employed upon the project.

While Form 118 may be used for the purpose mentioned above in place of the Construction Foreman's Daily Report, Form 116, its main purpose is to put equipment, so often abused, under better control and to accumulate the hours the equipment works and other information for posting to the Individual Equipment Record, Form 122, in order that accurate rental rates may be determined.

MONTH'S SUMMARY OF EQUIPMENT EXPENSES															Form 121
Public Body _____															For Month Ending _____
Date	Equipment No.					Equipment No.					Equipment No.				
	Gals	Qts.	Shon	Labor	Repair	Gals	Qts.	Shon	Labor	Repair	Gals	Qts.	Shon	Labor	Repair
	Gas	Oil	Hrs.	Amt.	Parts	Gas	Oil	Hrs.	Amt.	Parts	Gas	Oil	Hrs.	Amt.	Parts.
1															
2															
3															
4															
5															
etc.															

The design of Form 118, provides at the top for identifying the project and for showing the date, the equipment number, make and type of equipment, and the equipment rental rate. The operator in many cases is responsible for helpers or loaders and in view of the fact that they are continually with the equipment, spaces have been provided at the top for the operator to list his crew. Guard must be made against duplicating labor reports on Form 118 and on foreman's reports. Provision is made also on Form 118 for showing the mileage at the beginning and end of the day, the miles traveled during the day, gasoline and oil received, and the kind of weather.

In column 1 the operator lists the location of the work; in case materials are being hauled he will specify the location to which they were taken. Column 2 is provided for giving a description of the work done. For example, the entry in this column by the operator

of a concrete mixer would be "pouring and raking." If materials were hauled, the entry would describe the load, such as "a load of cement", etc. In column 3 will be entered the work feature or

INDIVIDUAL EQUIPMENT RECORD

Form 122

- 1. Equipment No. _____ 6. Date Purchased _____ For Year Ending _____ 19__
- 2. Motor No. _____ Serial No. _____ 7. Original Cost \$ _____
- 3. Make _____ 8. Value Start of this Year \$ _____ 11. Estimated Depreciation this Year. \$ _____
- 4. Type _____ 9. Estimated Salvage Value. \$ _____ 12. Estimated Hours or Miles This Year _____
- 5. Capacity _____ 10. Remaining Depreciation. \$ _____ 13. Depreciation Rate per Hour _____ \$ _____

Month	Gasoline (2)	Oil (3)	Tires and Other Sup- plies	Repair Labor (5)	Repair Parts Re- pairs	Over- head Ex- pense	Total Direct- ion Cost	Mileage First of Month	Miles Run	Cost per Mile	Hours Run	Cost per Hour	Miles per Hour	Cost per Mile Cal.	Miles per Hour Cal.	Rentals per Earned Gross (Cre- dite)	
																	(1)
Jan.																	
Feb.																	
Mar.																	
Apr.																	
May.																	
June																	
July																	
Aug.																	
Sept.																	

operation to be charged. These are the features of work and work operations as shown in the chart of cost accounts in item 5 of this section. The operator will note the starting and ending time in the

two subdivisions of column 4. The operation number for column 6 is entered in the office.

After Form 118 has been prepared by the operator, it should be approved by the foreman and sent to the cost accounting office.

Item 17. Summary of Equipment Expense, Form 121.—A number of satisfactory methods are available for summarizing equipment expense either weekly or monthly. Form 121, illustrated here, provides a convenient means of summarizing these expenses for posting to the Individual Equipment Record, Form 122, explained in the next item. This summary Form 121 is posted daily, thereby eliminating a peak load at the end of the month. The entries for this form will be taken from mechanics' time cards, gas and oil tickets, repair-parts requisitions, and invoices from outside vendors. This form may be made large enough to carry columns for 5, 6, 7, or more pieces of equipment on one sheet.

The quantities of gas and oil used by each piece of equipment are posted in the two first subcolumns. In the next two subcolumns the hours and amount of shop labor are entered, and in the final subcolumn the cost of all repair parts are shown. The totals at the bottom of the two first subcolumns in each block are priced at the end of the period when the entries are posted to the individual equipment record.

Item 18. Individual Equipment Record, Form 122.—An individual Equipment Record, Form 122, is recommended to public bodies for recording the costs and use of each piece of plant and equipment. This same type of form is now used by hundreds of public bodies throughout this country. The purpose of this record is to accumulate the cost of operating, maintaining, and caring for each piece of equipment, by months, for the period of 1 year. The information for the top portion of this form is obtained from an Inventory and Depreciation Schedule, Form 123.

The entries in the several columns of Form 122 are posted from the monthly summary, Form 121, described above. The depreciation each month, for column 10, is obtained by multiplying the hours the equipment runs, column 15 (or the miles run in column 13) by the established rate per hour or per mile as shown at the top of the form. The overhead entries for column 8 are obtained by setting up an equipment overhead account which carries such expense items as cleaning shop, repairs to shop tools, general service (which is mechanics' time of less than 15 minutes) on a piece of plant and equipment, heat, light, power, and other overhead charges. This account, providing an analysis of these expenditures for each month, is cleared at the close of the month by making a distribution and charging each piece of plant and equipment, which required shop service during the

month, on some appropriate basis such as the number of shop-labor hours used in the repairs. This overhead account operates exactly in the same manner as the Construction Overhead account described in item 27 of this section.

Item 19. Inventory and Depreciation Schedule, Form 123.—The problem of handling depreciation on plant and equipment owned by public bodies is always a perplexing one. There are two well-known methods of distributing depreciation: (1) The straight-line method, which provides for an equal amount to be charged for each cycle of the life of the equipment, and (2) the diminishing plan, which provides

INVENTORY AND DEPRECIATION OF PLANT AND EQUIPMENT.												Form 123	
Public Body _____										For year ending _____ 19__			
Equip. No.	Make	Description			Date Purchased	Original Cost	Appraised Value; Date 19	Est. Salvage or Sale Value	Net Amt Subject to Dep.	Rem. Life in Yrs.	Ann. Depreciation	Est. Hrs. of operation this Yr.	Deprec. rate per hr. or mile
		Body or Type	Capacity	Tons Cu. Yd.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Suggested size 8-1/2" x 13".													

for heavy charges the first year and gradually diminishing charges for each subsequent year of the equipment life. This manual favors the first plan, and it is suggested that public bodies employ a form similar to the Inventory and Depreciation Schedule of Plant and Equipment, Form 123, illustrated here for arriving at the rate per hour or mile for depreciation. This schedule should be prepared at least once each year, preferably at the start, to obtain the inventory of plant and equipment on hand.

Depreciation on major pieces of plant, such as stone crushers, asphalt plants, etc., may require the charging of annual depreciation into costs on the basis of cubic yards, tons, etc., produced.

Item 20. Plant accounting.—Many public bodies operate asphalt plants, stone crushers, and other manufacturing processes, the product of which may enter into the construction of a P.W.A. project. In such cases, plant records and cost accounts need be established which

furnish the cost of producing a unit of product in order that a correct price may be established for charging the construction for the units used. Such records and accounts must be so kept as to show clearly at any time the accuracy and reasonableness of the charges.

ASPHALT PLANT DAILY REPORT

Form 124

Public Body of _____

Plant Foreman _____ Date _____ 19__

Payroll Number	Name	Occupation	Total Amount		Unloading & Heating		Plant Operation		Maintenance	
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	
										Hrs.
(1)	(2)	(3)								

LARGE COST

MATERIALS	Quantity	Cost
Sand		
Asphalt		
Stone		
Filler Dust		
TOTAL MATERIALS		
Fuel Oil		
Fuel - Coal		
Electric Power		
TOTAL SUPPLIES		

TOTAL DAILY COST

Tons or Boxes Produced

Cost per Ton or Box

Dist. Daily Output	Foreman	Foreman	Foreman	Foreman	Job. No.	Job. No.	Job. No.	Job. No.	Total
Sheet Asphalt									
Binder									

For purposes of illustrating one type of plant record, an Asphalt Plant Daily Report, Form 124, has been included in this manual. This form of report is employed successfully by several public bodies for obtaining the labor, material, and supply expense of operating the plant. Form 124 also provides for computing the unit cost of the product which furnishes the basis, together with depreciation, for setting the selling price per ton or batch.

STORES ACCOUNTING

Item 21. Use of stores system.—Many public bodies now operate central stores systems with centralized purchasing control. These stores operations are financed through revolving funds, tax levy funds, or special appropriations adjusted at the close of each fiscal year. Regardless of the method of financing and organizing stores, the several accounting procedures employed are essentially the same in principle. In every case, inventory values are used to open the stores account at the beginning of each year and to this account are charged all purchases to establish the total of stores to be accounted for. The stores account is credited with the issues therefrom each

Quantity	Serial or Part No.	Description	Price	Amount

STORES REQUISITION Form 126

Date _____

For _____

Account No. _____ Equipment No. _____ Job No. _____

Storekeeper Received by Authorized by

month and with the closing inventory value to balance the account at the end of the year. Such stores procedure makes possible accurate and complete cost accounting for materials used; among other advantages is the control such procedures furnish over materials in stock and over costs of material distributed to jobs. The forms shown herewith serve to illustrate two of the basic records used in a stores system.

Item 22. Stores Requisition, Form 126.—A stores requisition, such as Form 126, is illustrated because of its importance in the withdrawals of materials and supplies from stores. No commodity should be taken from the central storehouse unless the storekeeper is given a requisition properly signed by some authorized person responsible for the use of materials and supplies.

Item 23. Perpetual Inventory Record, Form 127.—For the purpose of maintaining control over the movements of stock in the storehouse, a perpetual inventory card such as Form 127 should be used. This form provides for showing the maximum and minimum amount of stock to be carried for each particular item. In the body of the report provision is made for listing the receipts, issues, and balances for the item. The reverse of the form should be ruled identical to the issues and balance portion on the face of the form.

Many satisfactory types of inventory cards are obtainable without special printing. Where a large number of items are stocked, a visible index type of card is recommended. Although Form 127 is described here more in connection with the operation of a stores sys-

PERPETUAL INVENTORY RECORD					Form 127	
Item _____						
Maximum _____		Minimum _____		Unit Cost _____		
RECEIPTS						
Date	Order No.	From	Quantity	Cost		
Issues				Balances		
Date	Req. No.	Quantity	Value	Quantity	Value	

tem, this same kind of form can be used very satisfactorily on the construction projects by the foremen or material men to control the receipts and amount of materials used on the job.

Item 24. Distribution of stocks issued.—In stores accounting systems it is necessary for the storekeeper or the cost accounting office to furnish a weekly or monthly distribution of stock issued. An ordinary stock columnar sheet can be used for this purpose, so no form is illustrated here. In making this distribution, sufficient columns are required to show the jobs and foremen to whom such materials are delivered. On certain types of jobs it will be possible to charge work feature and operation accounts from distributions of these stores requisitions. Ordinarily the work features and operations will be charged from weekly or monthly summaries of materials used as described under item 10 of this section IV.

TOOLS AND CONSTRUCTION OVERHEAD ACCOUNTING

Item 25. Tools and overhead a part of construction expense.—The accounting for hand tools and construction overhead presents many complex problems. There are probably as many methods of accounting for such elements of cost as there are engineers and accountants who consider these problems. There is a general agreement, however, that both of these elements of costs should be distributed to the construction costs of a project; tools, because they are as much a part of construction costs as are labor and materials and equipment; and construction overhead, because there is usually a portion or the whole of the time of superintendents, foremen, timekeepers, material men, etc., which is not readily distributable to specific features of work and work operations. In view of this general unanimity respecting these two elements of costs, it is possible to outline below forms and procedure for distributing the cost of tools and overhead.

HAND TOOL CLEARING ACCOUNT			Form 134			
For week ending March 31, 1934						
Date	Tool Expense	Amount	Acct. No.	Distribution by work feature and operation	Direct costs	Tool Charge
3/31	Percentage charge	\$	111	Hand Excavation	\$120.00	\$120.00
	from Hand Tool Account		112	Machine Exp.	40.00	40.00
	for depletion	100.00	110	Total Grading		
	Tool Repair Expense	60.00				
	Totals	160.00			160.00	160.00

Note: The amount used for charging work operations for each dollar of direct cost in the above illustration is $\frac{\$160}{160} = \1.00

Item 26. Hand-tool clearing account.—Two alternative plans are recommended for charging work features and operations of a project for the expense of those hand tools too small or short lived to be charged as equipment on a rental basis; namely, (1) charging the work features and operations of a project periodically on a percentage basis, so controlled that the total amount charged shall be no greater than the original cost or inventory value, less the salvage value, and (2) charging the work features and operations in a lump sum upon completion of work with the original cost or inventory value of hand tools less their salvage value. (See classification of hand tools, sec. II, item 7, under miscellaneous.)

Under either plan a hand tool "clearing" or suspense account is needed. This account should begin with the inventory value of the tools on hand and be charged thereafter with the purchased amount of tools. The account is credited weekly, monthly, or at the end of the job with the tool cost chargeable to construction work features and operations. In the case of plan (1) these charges are made

periodically on a prorated percentage basis, Under plan (2) they are made in a lump sum at the close of the job. To balance the account it should also be credited with the closing inventory value of the tools on hand at the end of the year or accounting period.

Form 134 illustrates the hand tool clearing account from which is distributed as a part of "direct overhead" the cost of hand tools used on the various work features and operations of a project. Thus, the tool expense is entered under column 5 of the Construction Cost Ledger, Form 110.

On many kinds of jobs the best method of charging hand tools expense is to make a single distribution at the completion of the project to the several work features and work operations. This distribution may be made through a hand tool "clearing" or "suspense" account, such as Form 134. The only difference in this plan (2) is that all expense is distributed at one time rather than periodically on a percentage basis during the course of the project.

Form 135						
CONSTRUCTION OVERHEAD CLEARING ACCOUNT OTHER THAN HAND TOOLS						
For Week Ending March 31, 1934.						
Date	Expense Item	Amount	Acct. No.	Distribution by Work Feature and Operation	Direct Labor Hours	Overhead Charges
3/31	Field office salaries	\$400.00	111	Machine excavation	330	\$ 38.60
	Material clerks and timekeepers	825.00	112	Hand excavation	3200	384.00
	Field office supplies	150.00	113	Moving	100	12.00
	Auto Expense	180.00				
	Light and Telephone	40.00	110	Total Grading		
	Workmen's Compensation	1000.00				

Item 27. Construction Overhead Clearing Account, Form 135.—Construction overhead, under force account, is defined in section II, item 7 under miscellaneous. This class of expense should be distributed weekly or monthly to the features of work and work operation cost accounts. This is done by setting up an overhead clearing account such as Form 135.

The amount of overhead may be divided by the total labor hours, and the figure obtained is multiplied by the labor hours in each operation which gives the overhead charge for each work operation. Direct labor hours consumed on the construction work of the job are used as the basis for distributing this overhead. Labor expense rather than the labor hours may be used if preferred. The main object in distributing this overhead is to provide some factor or basis upon which every feature of work and work operation may be charged with its proper share of such construction costs. A separate account for inspection and supervision in the field on the project will also be required.

Item 28. Inspection and supervision.—This element of cost will be charged to one of the several inspection and supervision accounts listed under account no. 190 of the chart of cost accounts included under item 5 in this section IV. The cost of this service will be ob-

Form 140

STREET CONSTRUCTION COST STATEMENT

Type of Work _____ Date _____ 19__

Street _____ Job No. _____ Project No. _____

From _____ 19__ To _____ 19__

Operation	19__		19__		19__		Estimated Unit Cost (8)
	Date Started	Date Finished	Material	Equipment	Days	Unit Cost (7)	
	Work Units (2)	Total Cost (3)	Labor (4)	Material (5)	Equipment (6)	Unit Cost (7)	Estimated Unit Cost (8)
GRADING							
Machine excavation							
Hand excavation							
Mowing							
Total - Grading Cost							
MANHOLE, C.B.'S, DRAINS							
Excavation							
Laying pipe							
Building catch basins							
Total - Manholes, C.B.'s, Drains							
CURB & GUTTER							
Setting forms							
Pouring concrete							
Finishing							
Total - Curb and Gutter							
BASE CONSTRUCTION							
Unloading materials							
Pouring and raking							
Curing							
Total - Base Construction							
SURFACE ON TOP							
Spreading materials							
Spreading and raking							
Rolling							
Total - Surface on Top							
CLEAN-UP							
Grading curb to walk							
Grade adjustments, etc.							
Total - Clean-up							
Engineering & Overhead							
Total Job Cost							

tained from pay roll or other documents on which a record is maintained of the personnel engaged in inspection and supervision. This cost is to be reported separately in P.W.C.A. Form 29, described in section II of this manual.

WORK AND COST STATEMENTS FOR CONTROL OF WORK

Item 29. Need of reports for administrative control.—The cost records described in this section IV are indispensable to the administrator of a P.W.A. project constructed under force account if he is to have information available for the purpose of controlling work in progress. Weekly, and/or monthly, this system will supply statements of work done, of unit costs compared with estimated costs, of man-hour and plant- and equipment-hour production, and of other significant facts concerning project construction. Each public body administrator should study the workings of the cost records system from time to time to familiarize himself with the many varieties of valuable information it will produce. Many perplexing questions will be answered with little or no extra work if the system is correctly operated and if its possibilities are understood. It is not appropriate to describe here the several statements and reports which an administrator may require for his guidance. However, one statement is described in the next item for illustrative purposes, using a street construction project for illustration.

Item 30. Street Construction Cost Statement, Form 140.—Form 140, using street construction for illustrative purposes, is an example of a cost statement which should be prepared upon completion of the project or job and weekly and/or monthly while the project is in progress. Copies of these statements may profitably be furnished to interested foremen in charge of field work in addition to the administrator and engineers. From such statements officials can analyze progress and tell how actual unit costs compare with the predetermined estimates. Statements given to foremen showing the production of crews in terms of units of work per man-hour and equipment-hour as well as unit costs generally increase their interest in the work and stimulate rivalry among crews.

RELATION BETWEEN GENERAL AND COST ACCOUNTING

Item 31. Distinction between cost and expenditure accounts.—Cost accounting is often confused with expenditure accounting. Under cost accounting, expense is related to a specific number of units of work accomplished on a job. Under a cost system only that portion of the services and purchases (expenditures) are considered which are consumed in performing a certain amount of work in a definite period of time. It is at this point that cost accounting differs from the general accounting work. The latter is interested primarily in accounting for income and expenditures and analyzing purchases by functions, activities, and objects of expenditure, rather than with the work accomplished by such expenditures.

For example, under the general accounting system certain personal services may be charged to salaries and wages (a current expenditure

account in the general accounts), whereas the services may have been employed to construct a piece of equipment which in the cost accounts is capitalized and carried for many years in inventory accounts. Likewise, purchases of new equipment are usually charged as current expense for a fiscal period under general accounting systems whereas in cost accounting only depreciation (wear and tear) is charged as consumed expense during the same period.

Item 32. Need for control over cost accounts.—There is a close relation, however, between the expenditure and the cost accounts. The expenditure accounts of the public body should control the cost accounts, for the extent of such control will necessarily determine the reliance which may be placed on the cost figures. If the detailed items of expense which go into the cost accounts are not controlled through some type of independent record such as the general expenditure accounts which show in summary form the total of these items, there is no assurance that the details are accurate. Without adequate control, one account may be favored at the expense of another. Cost statements prepared from accounts improperly controlled, may give false information which in turn may lead to incorrect decisions as to policy in carrying out the work. Conversely, if the general accounts control the cost accounts they will be strengthened by accurate and complete supporting details.

It is of equal importance that stores, plant and equipment, and other suspense or clearing accounts be properly controlled. Such control will furnish assurance that the amounts charged the cost records are accurate and complete, that depreciation is adequately distributed, and that losses or wastes in the stores system will be discovered and accounted for in a satisfactory manner.

Section III of this manual describes a method of handling expenditure accounts so that they will serve as a medium of control over cost records. If the general accounting office of a public body does not set up the expenditure accounts in such a manner that they can be used for controlling the cost records, then the administrative or operating department charged with the responsibility of P.W.A. projects will have to set up sufficient expenditure accounts to bring about the needed close relationship between these two kinds of accounts.

Item 33. Schedule of accounting entries.—As an aid to public bodies in setting up general and cost accounting records, exhibit C has been prepared which lists the more important entries to the general ledger, expenditure ledger, and cost accounts. This schedule shows the interrelationship between the general accounts and the cost accounts, required in the execution of a P.W.A. project constructed by the force account method.



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