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UNITED STATES DEPARTMENT OF COMMERCE

JESSE H. JONES, Secretary

BUREAU OF THE CENSUS

J. C. CAPT, Director (Appointed May 22, 1941)

WILLIAM LANE AUSTIN, Director (Retired January 31, 1941)

PHILIP M. HAUSER, Assistant Director



SIXTEENTH CENSUS OF THE UNITED STATES: 1940  
CENSUS OF BUSINESS: 1939

VOLUME IV  
CONSTRUCTION: 1939

*Bureau of the Census  
Library*

Prepared under the supervision of

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Chief Statistician for Business

(Resigned, April 16, 1942)

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## LETTER OF TRANSMITTAL

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DEPARTMENT OF COMMERCE,  
BUREAU OF THE CENSUS,  
*Washington, D. C., March 3, 1943.*

SIR: I transmit herewith volume IV of the Sixteenth Census reports on the Census of Business. This volume presents information on the construction activities of contractors, builders, and the erection or installation departments or subsidiaries of manufacturers or merchandisers that performed work at the sites of construction projects.

The Census of Business, taken in 1940 in conformity with the Act providing for the Sixteenth Decennial Census, approved June 18, 1929, covers operations during the calendar year 1939. The facts were collected in 1940 by a complete field canvass of all business establishments in the continental United States.

The statistics were compiled under the supervision of Fred A. Gosnell, Chief Statistician for Business (resigned April 16, 1942), John Albright, Chief Statistician, and William A. Ruff, Assistant Chief Statistician. This volume was prepared by Isaac Q. Lord, in charge of the Construction Census, with the technical assistance of Arthur B. Fridinger, Lee M. Cissna, and Leonard H. Mattingly, Jr.

Respectfully,

J. C. CAPT,  
*Director of the Census.*

HON. JESSE H. JONES,  
*Secretary of Commerce.*

## **REPORTS ON BUSINESS**

**CENSUS OF BUSINESS: 1939**

- Volume **I.** Retail Trade (in three parts).
- Volume **II.** Wholesale Trade.
- Volume **III.** Service Businesses.
- Volume **IV.** Construction.
- Volume **V.** Distribution of Manufacturers' Sales.  
Special Reports.

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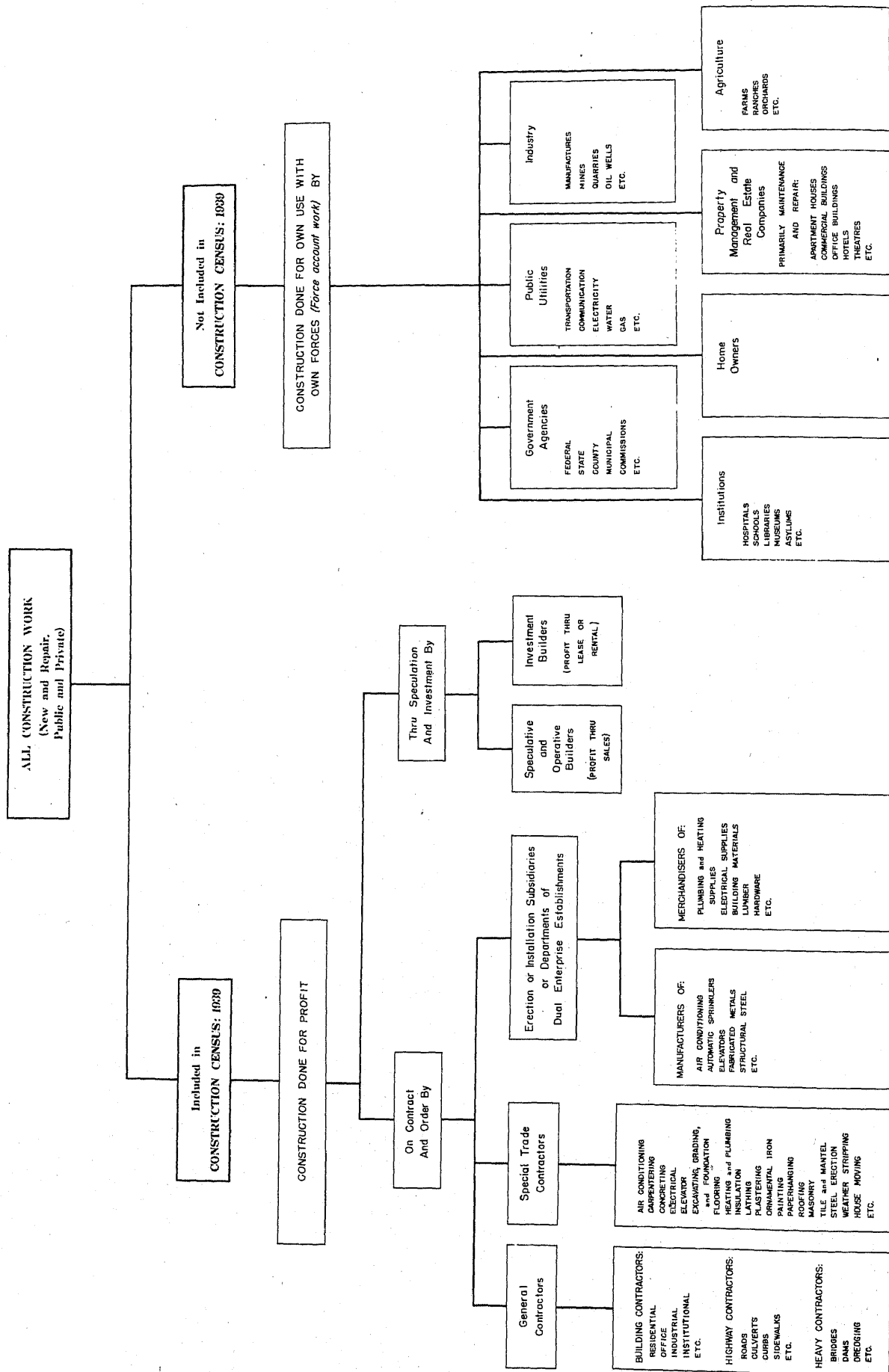
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CHART I.—DIAGRAM OF THE CONSTRUCTION INDUSTRY



# CONSTRUCTION: 1939

## INTRODUCTION

This volume presents the findings of the Census of Construction, which was one phase of the Census of Business for 1939. Additional fields covered by the Census of Business were retail trade, wholesale trade, the distribution of manufacturers' sales, service establishments, hotels, laundries, cleaning and dyeing plants, tourist courts and tourist camps, motion-picture theaters and other places of amusement, and sales finance companies.

A widely accepted conception of the industry includes all construction of, and repair work done on, immobile structures and facilities. The home owner repairing his porch floor, painting his kitchen, or screening his windows; the farmer building a fence, painting his barn, or graveling his driveway; the apartment house janitor doing odd jobs, replacing spigot washers, repairing a door lock; the telephone company erecting new lines, replacing old poles, installing new switchboards; the railroad adding new ballast, replacing worn rails, installing a siding; the factory adding a new wing, replacing an old boiler; CCC enrollees building trails and picnic areas in parks; WPA widening a road, digging drainage ditches, repairing public buildings; the United States Engineer Corps dredging channels, repairing levees; the State maintaining a highway and all of its appurtenances such as guard rails, culverts, road signs, painted lines; the county scraping a road, clearing out side drainage ditches; the city water department replacing a broken main or the street department resurfacing a street—all these and, of course, the work done by regular building, highway, heavy, and special trade contractors and operative or speculative builders are generally considered to make up the construction industry.

Examination of these examples of construction work reveals that they fall within one of two major categories—first, construction work done for profit by contractors and builders; and second, construction work done by owners on their own property either by themselves or by their own employees. This conception of the industry is diagrammed in chart 1, p. VIII, and indicates that part of the industry which is included in the census as against that part which is not included.

**Scope of the census.**—This census is limited to establishments engaged in doing construction work for others for the purpose of *direct profit* from those activities as such, and, in addition, includes builders who derive

their profit through sale or lease of the finished structure. Force account work, that is, construction work done by public agencies, establishments, or persons with their own forces on structures *for their own use or occupancy*, is not included in the Construction Census. This limitation of scope was imposed rather than elected. The records of government agencies, public utility companies, industrial concerns, and institutions are not kept in such a manner as would readily permit, at a nominal cost, the assembly of such information, nor was it practicable to canvass home owners, property management and real estate companies, and persons engaged in agriculture. Such an undertaking would have involved a personal call by the enumerator on the owner, manager, or agent of every house, store, hotel, apartment house, office building, and farm in the country.

*By definition, the 1939 Census of Construction includes all persons (other than employees) or establishments whose principal business in 1939 was the utilization of construction materials and labor in construction work for others, or for themselves for speculative or investment purposes. It also includes construction or installation departments of manufacturers of building specialties, such as steel products, elevators, resilient flooring, etc., and the construction done for profit by retailers and wholesalers when it was an important, but not necessarily the major portion of their business enterprise.*

The selling and servicing of domestic appliances such as electric refrigerators, oil burners, gas stoves, and electric ranges are included in the retail, wholesale, or service phases of the Business Census, while ship and boat building are included in the Census of Manufactures, rather than the Construction Census.

Foreign business of reporting establishments, that is, construction work done by them at sites located outside of the continental United States, is not included. Reports which showed volume of work performed of less than \$500 for the year were omitted from this census, it being considered that a volume of this amount constituted evidence that contract construction was neither the *principal* business nor an important part of the operations of the respondent. Demolition or wrecking was enumerated but not included in the tabulations since the value of work performed was generally reported in terms of the total sales in 1939 of salvaged materials rather than direct compensation for work done for others under contract or order.

**Previous construction censuses.**—The first Census of Construction was taken in 1930 and covered the operations of the calendar year 1929. The scope of that census was substantially the same as that for 1939 with one *major exception*, namely, that in 1929 only those persons or establishments which handled business of at least \$25,000 for the year (including work sublet to others) were required to report, whereas in 1939 all persons and establishments falling within the scope were required to file a return regardless of the size of their business.

The second Census of Construction was taken in 1936 covering the operations of 1935. As in this present Census, it covered establishments without regard to size of business. There were, however, two major factors which made the coverage for 1935 incomparable with that for 1939—first, in 1935 only those establishments which had a recognizable place of business were canvassed, no attempt being made to locate individuals who operated from their homes; and second, reporting in 1935 was on a voluntary basis while in 1939 reporting was required by law.

The 1929 census was quite complete in coverage of establishments over \$25,000, but this size limitation automatically eliminated comprehensive information for special trade contractors since a preponderant number of them have an annual volume of less than \$25,000. It was because of this fact that, in 1935, no size limitation was imposed. However, the purpose of broadening the coverage in this respect was only partially accomplished due to the limitation of funds, lack of time in which to develop field plans that would make it possible to include persons operating from their homes, and the absence of authority to require a person or establishment to report.

In 1939 then, for the first time, an effort was made to enumerate all persons or establishments falling within the scope, whether they had a recognizable place of business or conducted their business from their homes, and regardless of the volume or size of their business.

**Schedule forms used.**—In the preparation of questionnaires it was recognized that, if complete coverage and uniform reporting were to be achieved to a substantial degree, the character of information requested would necessarily be limited to a few basic facts about the industry. The experience of the 1929 and 1935 censuses had conclusively demonstrated this to be the case.

Review of a few characteristics of the industry also point to that fact. In the first place, organization of the industry is in its early stages, consequently there are only a few agencies which could render educational or promotional assistance over any broad area toward the planning and accomplishment of the census. Secondly, the varied practices of contracting and sub-

contracting; the many methods of purchasing materials, equipment, and supplies, and of paying for materials and services; and the different combinations of these practices, in the absence of any detailed records of such procedures, also recommended this restriction. Accounting methods, even among the larger contractors, are more often than not quite limited, particularly with regard to individual projects and work in progress, while the records of smaller contractors are apt to stop with those relating to employment and pay rolls as required by the Social Security Board, plus an incomplete miscellaneous assortment of job tickets, bills for materials, and canceled checks. In addition to these limitations within the industry were those of the enumerator, who, as a temporary employee, could not be thoroughly schooled in trade practices and methods and therefore would not be in a position to render material assistance to the respondent in his attempt to assemble and fit his records to anything other than a very simple questionnaire.

Such items of interest as number of employees and pay roll "at site of project"; value of equipment owned, purchased, and rented during the year; cost of individual kinds of material used; and types of wage earners employed were sacrificed and subordinated in the interests of a more complete coverage and greater uniformity of reporting.

To further these purposes two schedule forms were used—a very short questionnaire (Form 61) simplified for use by the smaller establishments (those who in 1939 performed work with their own forces of less than \$25,000) and a longer one (Form 60) for those who in that year performed work with their own forces or received contracts totaling \$25,000 or more. The only essential differences between the two forms which are reflected in the tables of this volume are that the longer form provided for the reporting of the value and source of contracts or orders received, the value of work sublet to others, a more detailed analysis of the type of structure upon which work was performed, and whether the project upon which the work was done was owned by a public or private agency. Both forms are reproduced in the appendixes to this volume, pp. 393 and 394.

**The canvass.**—Reports were secured by a field canvass in which every portion of the continental United States was assigned to an enumerator who was required to obtain, in person, a schedule from each contractor or builder in his enumeration district. Enumerators reported to the district supervisors who in turn were responsible to their respective area managers.

With special emphasis on the attempt at *complete* coverage, extensive preparations were made in Washington to assist the enumerators and supervisors in their difficult task of locating each contractor or builder. As an aid to the enumerator he was given a field card in advance of the canvass which bore the name and address of each known contracting establishment or

builder located in his district. These cards were prepared mainly from the following sources:

1. Establishments which reported in the Construction Census of 1935.
2. Employers reporting to the Social Security Board.
3. Lists which were prepared by local chambers of commerce in reply to over 1,400 letters requesting this specific assistance from them.
4. Licensee registers from each State which had a contractors' licensing law.
5. Licensee registers from cities which licensed plumbers, electricians, and other contractors.
6. Prequalified bidders from the various States requiring such prequalifications.
7. The Bureau of Labor Statistics of the United States Department of Labor, which furnished names of persons or firms other than owners operating in the cities and counties covered by the permit data prepared monthly by this agency, if such persons or firms in 1939 took out permits totaling \$500 or more for new construction of, or repairs to, buildings.
8. Mailing, contract award, and membership lists of numerous trade periodicals, services, and associations.

Approximately 640,000 cards were prepared, 284,000 of which were found to be duplicates, leaving 356,000 which were sent to the enumerators.

The enumerator was required to account for the disposition of every card either by securing a report or by explaining why a schedule was not obtained. He was instructed, with emphasis, that he was also responsible for securing reports from any additional establishments which might be located in his district for which he had no card.

Supervisors were furnished a list of licensing and permit agencies, building supply dealers, labor organizations and trade associations which had, through correspondence, indicated their ability and willingness to assist in identifying additional contractors and builders in their respective districts. They were instructed to exhaust the possibilities of these contacts.

These methods resulted in the enumeration of 215,050 establishments which are included in the tabulations, 18,770 which were not included because they reported work performed in 1939 of less than \$500, and approximately 12,500 additional establishments which were excluded for the reason that they did not fall within the scope of the census.

Despite these aids, the canvass of the construction business is reputed by experienced field men to be the most difficult enumeration job which they have been called upon to perform. This was due primarily to the problem, peculiar to this field, of ferreting out the smaller establishments which had no readily recognizable place of business and the individuals who operated from their homes.

Comparatively little trouble in this respect was encountered in rural areas and smaller communities, for the enumerator was generally a local man who knew the affairs of his neighbors or could at least find out about them with little effort. The local lumberyards or building supply houses and hardware stores could

give him direct and valuable assistance. Having located a builder or contractor, he met no resistance in securing a report, for the "little fellow" in the country was not reluctant to take enough "time-out" for its preparation. The experience in the more densely populated sections was quite a different story.

In fact, this problem was acute in the metropolitan districts where the enumerator had little personal knowledge of the source of livelihood of the residents of his district. In locating operators for whom he had no card, the enumerator was dependent largely upon developing leads through known contacts and following them through. These leads were not so readily available for the metropolitan dealer or agency is not prone to disclose his customer list to a stranger, whatever the purpose. Furthermore, customer lists, permits issued, and licensee records were on a city-wide basis and there was great duplication among them. This meant that the job had to be centralized in the supervisor's office in order that duplications might be eliminated, cards prepared, and each card transmitted to the enumerator in whose district the contractor resided. Quite often funds available for clerical help and time factors did not permit the thorough accomplishment of this task.

Having learned the identity and place of residence of a small contractor, the problem of "catching up with him" was at hand. In the evenings he was out submitting bids, looking up labor for the next morning, or collecting; in the day he was out on a job or somewhere between jobs, or arranging for materials for work in progress. His was a one-man business and the time required for the adaptation of his inadequate records to the items on the report form often involved the sacrifice of his personal time which he needed in his business. Procrastination was not infrequent and it was a common occurrence for the enumerator to make five or six calls in securing a report from one of these small operators.

**Measurement of coverage.**—Since this was the first attempt at complete coverage in this field, there is no direct comparison by which the completeness of canvass may be measured. A measurement by comparison between States, counties, or cities, on the basis of the number of reports received per thousand of population, was not conclusive due to the unmeasured influences of local factors such as W. P. A. programs, public construction projects, economic stringencies due to the depression, and differences of licensing laws between political entities. Measurement by comparisons of the volume of work performed was not feasible for the same reasons and, in addition, because of the distorting influence of the comparatively few establishments which performed a large volume of work.

The analyses which have been made indicate that there was an undercoverage of the very small establishments in some metropolitan districts. This shortage, however, has important bearing only on the number of

## CENSUS OF BUSINESS

establishments and number of proprietors. Due to the small volume of business which they did, the effect is not significant upon the United States and State totals for value of work performed, number of employees, pay roll, and cost of materials and equipment installed. This undercoverage occurs mostly among the special trade contractors, such as painters, paperhangers, electricians, etc., and to a much lesser degree, among builders.

Records of the canvass indicate very few known large establishments for which usable reports were not obtained. Those omitted were usually dual-enterprise establishments whose reporting was confused between the various phases of their activities for which separate schedules should have been obtained. A steel manufacturer is a case in point. All activities of this concern were reported to the Census of Manufactures, whereas the business of the erection department should have been reported to the Construction Census. Data for steel erection are understated as a result. The significant influence of this omission, however, as in the case of similar ones, does not extend beyond the State and seldom does it reach beyond the city in which it is located.

With these exceptions, it is considered that the canvass was complete and comprehensive and that the data published herein present the basic facts concerning that portion of the construction industry which falls within the scope of this census. (See Scope of the census, p. 1.)

## EXPLANATION OF TERMS

The meanings of the following terms as used in connection with this volume are explained in the interest of clarity.

**Construction work.**—For purposes of the census, *construction work* represents the use of labor, materials, and equipment in the fabrication, alteration, repair, or maintenance of immobile physical improvements. Thus, it embraces such work both new and repair, which was done on houses and other buildings, highways, bridges, tunnels, railroad trackage, streets, dams, reservoirs, harbors or channels, docks, airports, industrial plants, etc.

**Contract construction** is construction work performed for others by contractors, and the installation and erection departments or subdivisions of dual-enterprise establishments such as manufacturers, wholesalers, or retailers. The value of work performed by builders is also included in this term. It embraces work done on order or by agreement, written or oral, and therefore is not limited to that done under formal or written contracts. It excludes force account work and work done by journeymen or laborers employed directly by the owner on a wage basis.

**Force account work.**—Construction work done by concerns with their own forces, that is, by employees

on their own pay roll, on structures for their own use or occupancy (except that done by "builders") is *force account work*. Instances where it occurs in volume are: railroad right-of-way maintenance and alteration, telephone installation and maintenance, electrification maintenance, repair and extension, property management maintenance, street repair, home and farm improvements and repair on a wage basis, State and county road maintenance and repair, factory maintenance, alterations or additions, etc.

**Establishment.**—As used herein the term *establishment* includes corporations, partnerships, joint ventures, and receiverships as well as individuals operating as proprietorships or partnerships primarily engaged in contract construction as described above. It includes the individual so engaged whose office is "under his hat," as well as the large corporation or the building material dealer or manufacturer, who does an important volume of such work in connection with other phases of his business enterprise.

**Dual-enterprise establishment.**—An establishment which is engaged in two or more lines of business enterprise, one of which is the performance of contract construction, is termed a *dual-enterprise* establishment. Examples are: the steel manufacturer who erects steel at the site of construction; the sheet metal shop which installs fabricated ducts, flashings, gutters, etc.; the lumberyard or building supply dealer who contracts for erection of buildings, and the electrical supply house which contracts for electrical wiring at the site. A dual-enterprise establishment furnished a separate report for each activity and, therefore, only their construction activities are included in the Construction Census. Small shops, showrooms, or stores (such as plumbing shops, electrical shops, tin shops) operated in connection with a special trade which sold merchandise or repair services and did some small repairs or installations in connection therewith were reported only on one form as a construction, retail, or service establishment depending upon the activity from which the largest part of their receipts was derived.

**Larger establishments,** as the term is used here, are those which in 1939 received contracts and orders or performed work with their own forces in the total value of \$25,000 or more. The term also includes builders who in 1939 actually started construction or performed work on projects which upon completion would aggregate a value of \$25,000 or more exclusive of land value, mark-up, and sales commissions.

**Smaller establishments** are contractors who in 1939 neither performed work with their own forces nor received contracts and orders aggregating \$25,000 or more, and builders who had neither started projects in that year which upon completion would aggregate a value of \$25,000 nor performed work with their own forces in that or greater volume.

**Builder.**—Establishments or persons engaged in the construction of buildings for their own account for purposes of profit through sale, lease, or rental are termed *builders*. They should be distinguished from the building contractor who contracts to construct buildings for others. The promoter who merely invests in promotional developments involving the construction of buildings but who has no construction force and does none of the actual erection process is not considered a builder, nor is he included in any other classification of the Construction Census.

**Contractor.**—Business organizations or individuals (other than employees) who are engaged in construction work for others are termed *contractors*.

**Contractor (kind of).**—The term "*kind of contractor*" as used in the tables and text includes builders as well as general and special trade contractors.

**Contracts or orders received** is the sum of all awards for construction work received in 1939 by the contractor, whether written or oral, formal or informal, from any source whatsoever and embraces construction done on a fee or cost-plus basis. It also includes the estimated cost when finished of construction projects started but not completed in 1939 by builders. It does not include any part of contracts received in 1938 or earlier, or the cost of projects started by builders prior to January 1, 1939.

**Work sublet.**—An order or contract for construction given by one contractor or builder to another contractor or builder is termed *work sublet* provided that it covers a part of a project, the successful completion of which is the responsibility of the first contractor or builder. Work sublet is said to be on subcontract or subcontracted and is synonymous with "work let to others on subcontract."

Contracts for materials or equipment *only* which involved the delivery of goods, but no labor at the site of construction by the suppliers, were included as materials—not as work sublet.

**Subcontractor.**—This term has proved to be confusing and, therefore, is not used in this volume. In the past it has been widely and loosely used to denote special trade contractors because much of their volume has been work sublet to them by other contractors or builders. (See Special trade contractor, p. 6.)

**Work performed** represents the total value of construction actually performed by the contractors' or builders' *own forces*. It includes (1) work done in 1939 on jobs which were started prior to that year; (2) work started and completed in 1939; and (3) that portion of the work which was done in 1939 on projects which were incomplete at the end of the year.

*Contractors* in computing work performed reported in terms of *contract price* (not cost of labor and materials used) and, therefore, included profit. For example, if the contract price on a building was \$50,000 and the building was half completed on December 31, 1939,

the amount reported would be \$25,000, not the cost to date. *Builders* in making such computation, reported in terms of *actual cost* of improvements (exclusive of work sublet) and, therefore, excluded profit, land values, and sales commissions.

Work sublet to others by the builder or general contractor was not included as work performed in the report of the builder or general contractor but was reported as a part of the business of the special trade contractor who received the subcontract. Therefore, there is no duplication of reporting in any items shown in the tables of this volume.

**Materials used and equipment installed** is the cost, delivered at the site of construction, of the materials furnished and used by the establishment in construction (brick, cement, lumber, steel, etc.), and of equipment furnished and installed (plumbing, heating, elevators, escalators, metal partitions, stoves, etc.). Equipment is limited to nonrevenue types which become an integral part of the structure and, therefore, does not include such items as factory machinery, power generating equipment in powerhouses, etc.

Material and equipment furnished *directly* by the owner was not reported or included since it was not practical to contact owners for this information. General contractors or builders who sublet work to others did not include the materials or equipment furnished by the establishment which received the subcontract. Material and equipment furnished by dual-enterprise establishments, from their own stocks or factories, in their performance of construction work at the site was included by them just as though they had purchased such equipment or supplies from exterior sources.

**Employees (average number of).**—Average number of employees is the sum of all employees who appeared on the establishments' pay rolls in the pay period ended nearest the 15th of each month, divided by 12. It includes both full-time and part-time employees, whether employed at the sites of construction or elsewhere and whether paid on a wage or salary basis. Proprietors and firm members of unincorporated establishments are not included as employees.

**Pay roll** is the compensation by wages, salaries, bonuses, and commissions of all persons employed on either a full-time or part-time basis by the establishment during 1939. It does not include any form of compensation of proprietors and firm members of unincorporated establishments.

In the case of dual-enterprise establishments, only that part of the pay roll which was paid to employees engaged in the construction phase of the business was included.

**Proprietors and firm members (active).**—Active proprietors and firm members designates persons having a financial interest in the establishment who devote the major portion of their time to the construction business of the establishment. Such persons are

included whether or not they receive a regular salary or drawing account. (Corporate officers and executives are not included as proprietors or firm members, but are included as employees.)

### EXPLANATION OF CLASSIFICATIONS

**Kinds of builders and contractors (basis of classification).**—Each reporting establishment was classified according to the predominant type of work which it performed in 1939 as determined from inquiries 2 and 4 of the long form, and inquiries 2 and 3 of the short form (Forms 61 and 60, see Appendixes B and C, pp. 393 and 394).

**Builders.**—Establishments or persons engaged in the construction of buildings for their own account for purposes of profit through sale, lease, or rental were classified as *builders*. Due to the relatively small number of builders it was not feasible to further subdivide this group without disclosure of individual operations, though the schedule provided for three subclassifications, namely, "operative or speculative," "investment," and "occasional" builders.

**Contractors.**—Business organizations or individuals (other than employees) engaged in the performance of construction work for others were classified as *contractors*. Each contractor was classified as either a general contractor or a special trade contractor.

**General contractors.**—Establishments or persons who normally contract for the entire work in a given project directly with the owner (or his agent), who are responsible for the execution of the whole, and who usually do part of the actual work with their own forces, are *general contractors*. This classification also includes contractors engaged in specialized operations (as distinguished from "special trades"), which require mechanized equipment, where their portion of the job constitutes a considerable part of the entire project and even though they are doing the work for another contractor, rather than directly for the owner. Examples of these types of work are: highway grade preparation, highway paving, heavy foundations and excavations, dredging, and pile driving. The general contractor group is broken down into three subclassifications, based upon the nature of the structure or project on which the majority of his construction work of 1939 was performed. These subclassifications are:

**Building contractor.**—A general contractor who is primarily engaged in the construction of new buildings or general repair and alterations of existing buildings of any type is a *building contractor*. Building contractors should not be confused with builders as described under "Builder" (p. 5).

**Highway contractor.**—General contractors primarily engaged in construction work on roads, streets, alleys, highway structures (such as guard rails, culverts, light bridges), and light sewer and water improvements are termed highway contractors. A general contractor, most of whose work is in one line of highway work such as preparation of grades or paving, is classified as

a highway contractor rather than a special trade contractor. (For further details, see footnote 2 of Appendix C, p. 394.)

**Heavy contractor.**—General contractors primarily engaged in the construction of heavy bridges, large sewer and water mains, viaducts, tunnels, pipe lines, transmission lines, docks, etc.; or work on railroad, electrification, drainage, sanitation, water supply, hydroelectric, flood control, irrigation, reclamation, and dredging projects are termed *heavy contractors*. (For further details, see footnote 1 of Appendix C, p. 394.)

**Special trade contractor.**—A special trade contractor is one who contracts for and is primarily engaged in a specialized trade such as plumbing, painting, concreting, steel erection, carpentering, etc. He is classified on the basis of the processes of his trade regardless of the type of project or structure upon which he performs work and regardless of the source of his contracts. (See Subcontractor, p. 5.) There are 32 kinds of special trade contractors for which it has been possible to present data in the United States summary tables. In addition, there is a thirty-third classification designated "other"—a catch-all for recognizable types which did not appear in sufficient number for individual presentation.

**Work performed** is classified on three bases: First, on the basis of "type of construction" as determined by the physical nature of the finished structure or facility; second, as to "kind of work," that is, whether new construction and additions, or repairs and alterations; and finally, according to "ownership" of the structure or facility upon which the work was performed.

**Types of construction.**—Work performed, when classified on this basis, falls into two major categories: first, work performed "on buildings" and second, work performed "other than on buildings." Each of these categories is further reduced to sub-classifications.

**ON BUILDINGS.**—The term *on buildings* refers to any type of construction, new and additions, as well as repairs and alterations on any type of housing structure, whether for residential, commercial, industrial, or miscellaneous use, and regardless of public or private ownership. It includes work which is incidental to the construction of buildings, such as the erection of a private garage, a barn, or other out-building, the laying of a sidewalk from the street to the house, bringing in a service sewer or water line from the street to the building, and the fencing of the yard. It also includes the construction of a building even though it may be only a part of a larger project. For example, a hangar erected in connection with the construction of an airport would be classified as "on buildings" while the grading of the field and the construction of the runways would be classified as "other than on buildings." Construction work done in connection with buildings by heavy or highway contractors is classified as "on buildings." Examples are: grading, excavating, and heavy foundations for buildings.

This general classification is divided into three sub-

classifications, depending on the type of building erected, as follows:

*One- and two-family houses* includes detached, semidetached, and attached or row houses with separate entrances, designed for the occupancy of one or two families. It does not include the so-called duplex apartment with a common entrance for four apartments. The latter are included in "other residential buildings."

*Other residential buildings* denotes structures which provide for housing three or more families, such as apartment houses, hotels, flats, and dormitories. Dual-purpose structures such as an apartment house having stores or service shops on the ground floor are classified according to their predominant use.

*Buildings other than residential* represents all types of buildings not designed as living quarters. It includes commercial buildings (e. g. banks, public garages, service stations, stores, office buildings, theaters, and warehouses, etc.), educational buildings (e. g. gymnasiums, schools and libraries, etc.), institutional buildings (e. g. museums, hospitals, asylums, and churches, etc.), and industrial buildings (e. g. factories, foundries, distillation plants, etc.).

**OTHER THAN ON BUILDINGS.**—Work performed on any structure or facility which is not a building or a close appurtenance of a building such as fences, garages, private walks, etc. is classified as "*other than on buildings*." It includes such projects as are generally handled by heavy or highway contractors and is therefore broken down into two subclassifications, namely, heavy construction and highway construction.

*Heavy construction.*—This includes such projects as have been described under "heavy contractor" (p. 6), and in footnote 1 of schedule Form 60 (Appendix C, p. 394).

*Highway construction.*—This includes work regularly done by highway contractors as explained under that side heading (p. 6), and in footnote 2 of schedule Form 60 (Appendix C, p. 394). Work performed on buildings in connection with heavy or highway projects is included in the classification "on buildings."

**Kinds of work performed.**—This falls into two classifications—"new construction and additions" and "repairs and alterations."

**NEW CONSTRUCTION AND ADDITIONS.**—The original construction of new structures such as buildings, bridges, dams, etc., or of new facilities such as streets, sewers, roads, railroads, channels, irrigation ditches, etc., is termed *new construction*. Substantial *additions* to existing improvements such as adding a wing to an existent building, erecting an overpass on a highway, or extending an irrigation system are included as new work.

**REPAIRS AND ALTERATIONS.**—Repair, maintenance, and alteration, or remodeling of existing physical improvements is termed *repairs and alterations*. It includes such activities as painting, papering, or re-roofing a house, remodeling a kitchen or bathroom, adding a porch, or raising the height of a jetty, re-dredging a partially filled channel, replacing the rails of a railroad, straightening a highway, resurfacing a street, etc.

**Ownership.**—Work performed when classified on this basis is either "private" or "public" construction.

Ownership of the finished structure or facility is the determining factor rather than the source of financing, therefore projects owned by individuals or corporations are classified as private construction even though financed by funds made available through the offices of a public agency such as Federal Housing Authority, Home Owners Loan Corporation, or the Rural Electrification Administration.

**PRIVATE CONSTRUCTION.**—Construction work done by establishments on projects owned by individuals, corporations, and all other private agencies, including cooperatives, churches, colleges, and other institutions is termed *private construction*.

**PUBLIC CONSTRUCTION.**—Construction work done by establishments on projects owned by Federal, State, county, municipal, and other governmental agencies is termed *public construction*.

## DESCRIPTION OF TABLES

The findings of this census are presented in nine basic tables. The first seven tables contain data which were common to both the long and short form schedules (see Schedule forms used, p. 2), and therefore pertain to all of the 215,050 reporting establishments. Tables 8 and 9 present the additional information which was asked for on the longer schedule (Form 60), and therefore relate only to the 30,912 larger establishments which had a business in 1939 of \$25,000 or more (see Larger establishments, p. 4).

With the single exception of table 3, the inclusion of the report for any establishment in a given locality was determined by the location of the *office* of the respondent, therefore the data presented for any region, State, or city relate to the business of those establishments whose offices were situated therein, and not to the actual amount of construction work which was done in that area. On the other hand, table 3 shows the value of construction work actually performed within the boundaries of each State, since in this table geographic allocation is based on the location of the construction site without regard to the office address of the reporting concern.

Statistics are shown in the various tables for each kind of contractor. In order to prevent disclosure of individual operations data could not be shown for each kind of contractor in each table. In States where relatively few establishments reported for a given kind of contractor, the figures for related or similar kinds of contractors have been combined and so designated, or detailed figures have been omitted and an "x" substituted. The values represented by each "x" are included in the totals. Where neither of these treatments has been feasible, the figures for the kind of contractor so involved have been included in the classification "other."

In all tables other than tables 4 and 8 (which present the value of the individual types of construction per-

formed) the data relating to any "kind of contractor" include all of the work done by such contractors, most of which would be in their regular line but part of which may be a type that would more often be done by some other kind of contractor. By way of illustration, table 1A, p. 28, shows that building contractors of the United States performed work with their own forces valued at \$1,174,693,000. This does not mean that all of this work was performed "on buildings." A major portion of it necessarily fell in this category, for by definition a building contractor is a general contractor who is *primarily* engaged in the construction or general repair and alteration of buildings. However, he need not be and very often is not *exclusively* engaged in work on buildings. The volume of work performed by building contractors which was not "on buildings" is revealed in table 4A, p. 45, to be \$23,902,000.

The tables are presented in three sections as follows:

United States and geographic division data, p. 27.

State data, p. 97.

City data, p. 257.

**Table 1** shows, for each kind of contractor, number of establishments, value of work performed, number of active proprietors and firm members, number of employees, total pay roll, and the value of materials used and equipment installed. It relates to all of the 215,050 establishments which furnished usable reports of their construction activities. These data are presented for 2 "size by volume" classes allocated in accordance with the explanation of the terms "larger establishments" and "smaller establishments" as shown on p. 4. The information is shown for the United States and 9 geographic divisions, for each State, and for each city which had 100,000 or more inhabitants in 1940.

**Table 2** presents the dollar value and percentage of work performed by builders and contractors in their "home State," outside their home State, and in their home city, for all of the 215,050 reporting concerns. It should be noted that the values for "in home State" include those shown under the heading "in home city." This table was compiled from the answers to inquiry 5 of Form 60 and inquiry 3 of Form 61 (see Appendixes B and C) and is designed to show the volume of business done by each kind of contractor in his own community as against that for which he has gone afield. The information is shown for the United States and 9 geographic divisions, for each State, and for cities which had 100,000 or more inhabitants in 1940.

**Table 3** includes all of the 215,050 reporting establishments and shows, by kinds of contractors, the value of construction work which was performed on projects located within the boundaries of each State and the number of establishments which participated in that construction. Both the value of work performed and

the number of participating establishments are shown for builders and contractors which are resident of the State as against those which are nonresident. A contractor was classified "resident" of the State in which his office was situated. It should be noted that the number of establishments in this table is the number which actually did some construction work within the boundaries of the State, whereas, number of establishments in the other tables is the number which reported home offices located in the respective States. (See p. 7.) Since some establishments reported work performed in more than one State and, conversely, some performed no work within the State from which they reported, the figures in this table do not correspond to those on the other tables. The information is shown for each State by kinds of contractors. In addition, the totals for the separate States are summarized for 4 classes of contractors, namely, building, highway, heavy, and special trade contractors.

**Table 4** contains data relating to the type of construction work performed by all reporting establishments. It presents the value and percentage of work performed by them "on buildings" and on all types "other than on buildings." The value of work performed "on buildings" is shown separately for that portion which was on "new buildings and additions" as against "repairs and alterations" to existing buildings. The data are shown by kinds of contractors for the United States and 9 geographic divisions, for each State, and for cities which in 1940 had 100,000 or more inhabitants.

**Table 5** presents the number of establishments, value of work performed, amount of pay roll, and cost of materials used and equipment installed for building, highway, heavy, and special trade contractors, each by size-of-business groups based on the value of work performed. These data, which relate to all establishments, are given for the United States, for each State, and for cities which had 500,000 or more inhabitants in 1940. In addition, table 5B gives similar information for the United States by individual kinds of special trade contractors.

Lack of uniformity in class intervals is the result of consolidations made in order to avoid disclosure of individual operations.

"Size" in table 5 was determined by value of *work performed only*, while "size" in table 1 was determined by *either value of work performed or contracts and orders received*, for contractors, and value of work performed or estimated cost upon completion of projects started within the year, for builders. For this reason, data in tables 1 and 5 relating to establishments of \$25,000 or more do not always correspond.

**Table 6** shows the number of establishments, number of active proprietors and firm members, and the number of persons employed by contractors and build-

ers for the pay period ended nearest the 15th of each month. Average number of employees includes persons working on either a part-time or full-time basis. Data pertain to all of the 215,050 reporting concerns. This information is given by kinds of contractors for the United States and 9 geographic divisions, for each State, and for cities which had 500,000 or more inhabitants in 1940.

The average number of employees was obtained for any given kind of contractor by adding the number reported for all months by establishments within that kind-of-contractor classification and dividing the total by 12.

**Table 7** shows the number of establishments, value of work performed, number of active proprietors and firm members, average number of employees, and the total pay roll, for (1) corporate and (2) noncorporate construction establishments. Classification was determined by the answer to inquiry 1-f on Form 60 and inquiry 1-e on Form 61. This information is presented for the United States by 37 kinds of contractors, and for each State by general contractors and special trade contractors. These data pertain to all of the 215,050 establishments which reported.

**Table 8** contains data relating to the value of work performed by the 30,912 establishments reporting a business of \$25,000 or more in 1939, as described in the explanation of "larger establishments" (p. 4). It presents, by kinds of contractors, the value of work performed by these establishments on the following types of construction: (1) One- and two-family houses, (2) other residential buildings, (3) buildings other than residential, (4) highway construction, and (5) heavy construction.

Each type of construction is further broken down (1) by types of work, that is, new construction and additions as against repairs and alterations, and (2) by ownership, i. e., whether private or public. (See Work performed, p. 6.) New work and repair work are both further broken down to show how much was done on privately and publicly owned projects.

This information is given for the United States and 9 geographic divisions, for each State, and for cities which had 500,000 or more inhabitants in 1940.

**Table 9** presents the value and source of contracts and orders received and work let out to others on subcontracts by the 30,912 establishments reporting a business of \$25,000 or more as described in "Larger establishments" on p. 4. It shows, by kinds of contractors, the value of contracts and orders received in 1939, according to two sources: (1) Those received directly from owners or sources other than from contractors and (2) those received from other contractors. In addition, the value of work performed by the contractors' own forces and that which was let out to others on subcontract is given.

It might be expected that "contracts and orders received from other contractors" should equal "work let to others on subcontract." This is not the case since this table relates only to the larger contractors and much of the work let to others on subcontract by them was let to the smaller establishments not included in table 9 and also because an additional part was let to concerns which did not fall within the scope of the Construction Census.

The information is shown for the United States and nine geographic divisions.

### GENERAL SUMMARY OF CONTRACT CONSTRUCTION

Construction work performed in the United States by the forces of 215,050 contractors and builders who reported in this census amounted to slightly more than four and one-half billion dollars in the calendar year 1939. This activity furnished employment for an average of 1,073,655 workers and 226,784 active proprietors, or a total of 1,300,439 persons. Compensation of the paid employees (not including that of active proprietors or firm members) amounted to \$1,403,771,000, an average of \$1,307 per year for each person. The value of materials used and equipment installed by these establishments was in excess of two billion dollars.

**Distribution of contract construction by kinds of contractors.**—The general contractors accounted for 53.2 percent, or \$2,403,630,000 of the total work performed by all contractors and builders in 1939, though they numbered only 35,158 establishments, or 16.4 percent of the total number which reported. A preponderant number (29,641) of the general contractors were building contractors. These reported work performed valued at \$1,174,693,000 which is 26.0 percent of the total for the Nation. Heavy contractors, of which there were only 1,890, performed work valued at \$638,366,000, or 14.1 percent of the United States total. The 3,627 highway contractors, though nearly twice as numerous as heavy contractors, performed about \$48,000,000 less work than the latter, with \$590,571,000, or 13.1 percent of the United States total.

Special trade contractors as a group, including plumbing, electrical, carpentering, painting, and masonry contractors, etc., numbered 176,187, or 81.9 percent of all reporting establishments and performed work valued at \$2,007,906,000, or 44.4 percent of the national total. Their average volume was \$11,396 as against \$68,367 for general contractors and \$29,219 for operative and speculative builders.

Builders performed work with their own forces valued at \$108,258,000, or 2.4 percent of the total. They numbered 3,705 establishments, about the same as highway contractors (3,627) though they performed

CHART 2.-- DISTRIBUTION OF ESTABLISHMENTS AND WORK PERFORMED  
BY KINDS OF CONTRACTORS: 1939

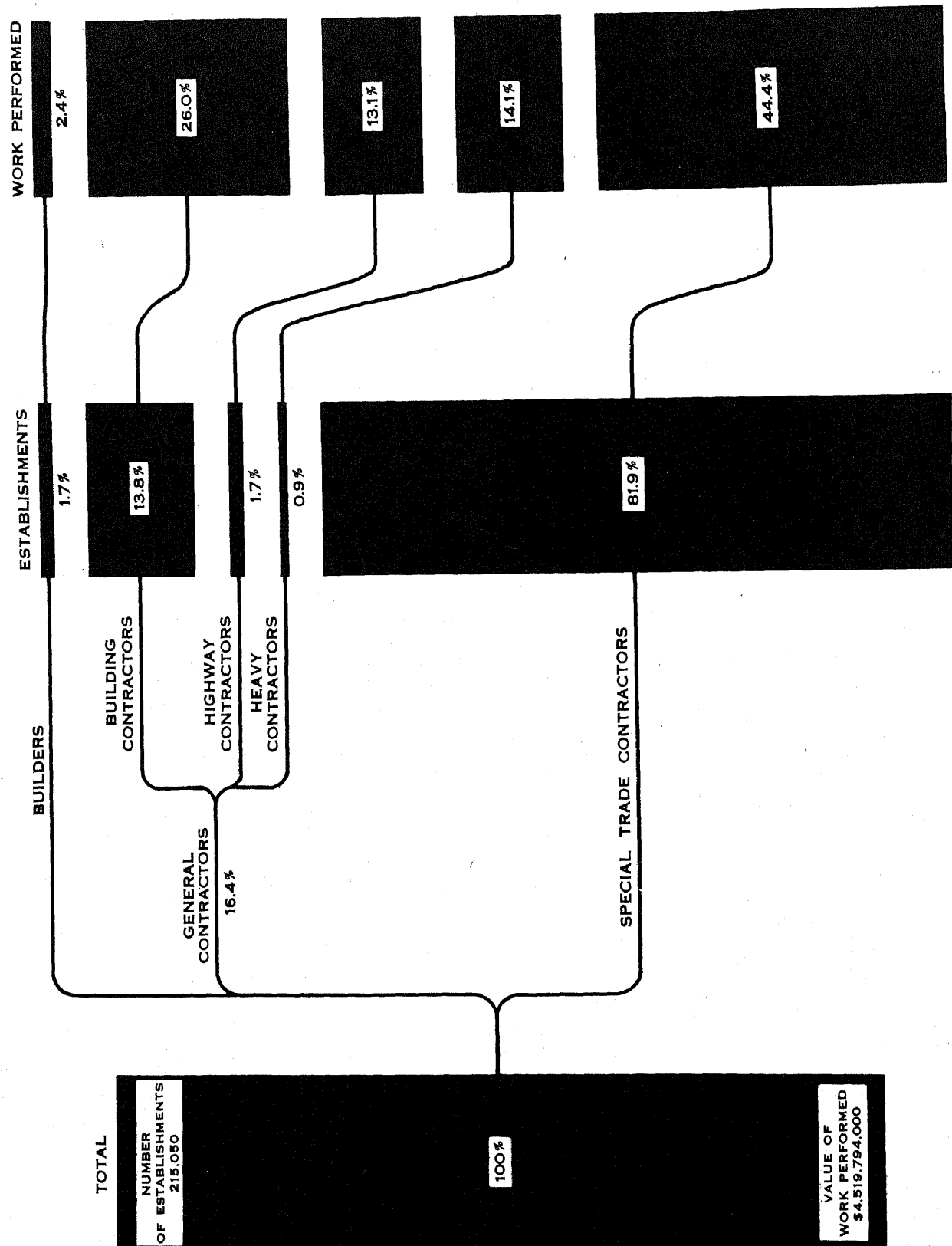
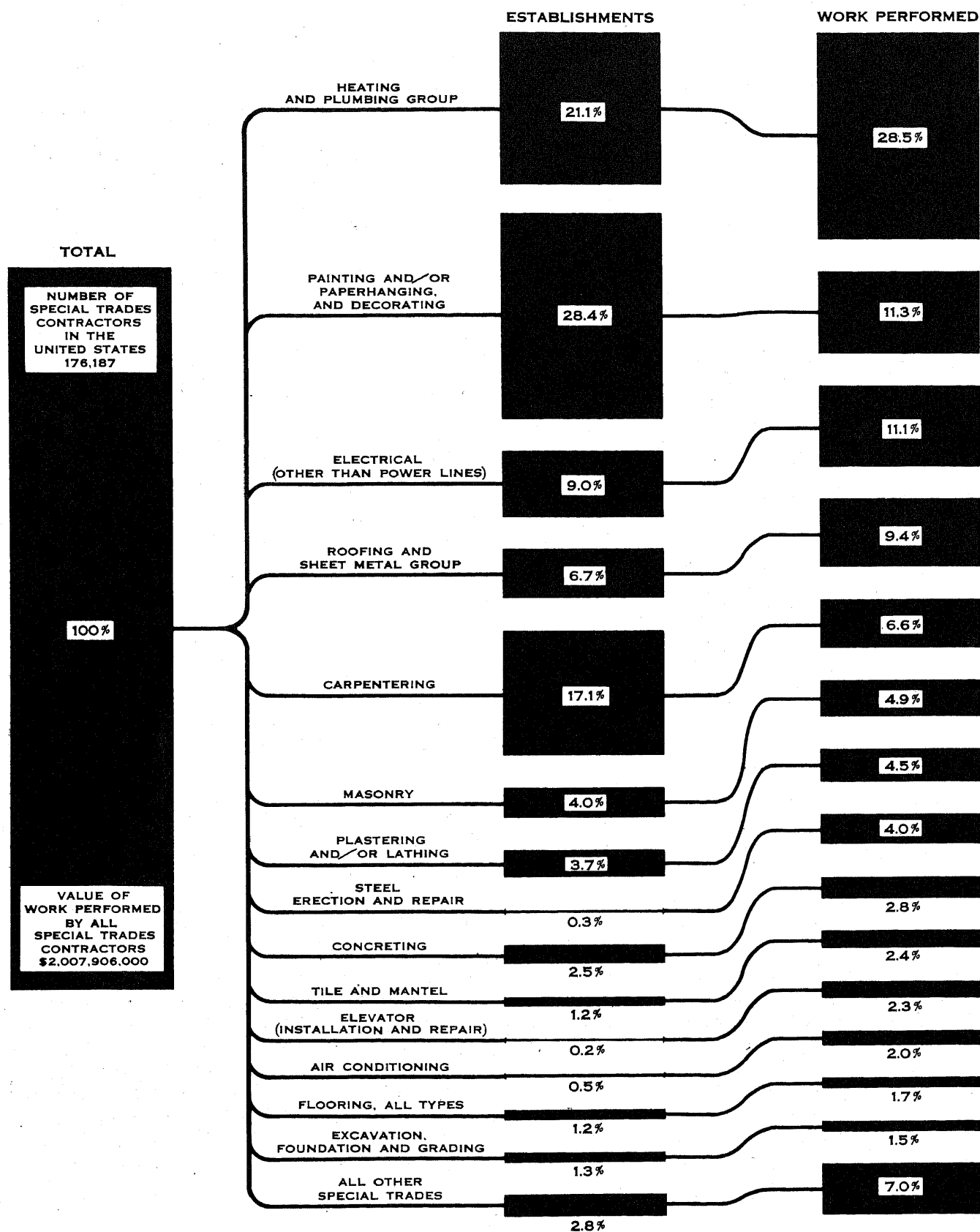


CHART 3.—DISTRIBUTION OF ESTABLISHMENTS AND WORK PERFORMED  
BY KINDS OF SPECIAL TRADE CONTRACTORS: 1939



## CENSUS OF BUSINESS

less than one-fifth the volume of work done by the latter. This relatively small volume for builders is in part due to their widely practiced method of subletting to other contractors much of the work on their building projects, leaving a comparatively small portion to be done by the builder's own forces. It is also influenced

by the fact that builders reported on a cost basis, while contractors reported on the basis of contract price and, therefore, included profit.

The following table summarizes these facts while chart 2, p. 10, and chart 3, p. 11, present these comparisons graphically.

TABLE I.—BASIC DATA FOR THE UNITED STATES BY PRINCIPAL KINDS OF CONTRACTORS

KIND OF CONTRACTOR	ESTABLISHMENTS		WORK PERFORMED		ACTIVE PROPRIETORS		AVERAGE NUMBER OF EMPLOYEES		PAY ROLL		MATERIALS USED AND EQUIPMENT INSTALLED	
	Number	Percent	Amount (add 000)	Percent	Number	Percent	Number	Percent	Amount (add 000)	Percent	Amount (add 000)	Percent
United States total.....	215,050	100.0	\$4,519,794	100.0	226,784	100.0	1,073,655	100.0	\$1,403,771	100.0	\$2,046,613	100.0
Builders.....	3,705	1.7	108,258	2.4	3,300	1.5	20,268	1.9	25,798	1.8	72,976	3.6
General contractors.....	35,153	16.4	2,403,630	53.2	36,111	15.9	600,974	55.9	770,766	54.9	1,085,735	53.0
Building contractors.....	29,641	13.8	1,174,693	26.0	31,336	13.8	304,274	28.3	339,151	27.8	588,832	28.8
Highway contractors.....	3,627	1.7	560,571	13.1	3,361	1.5	161,317	15.0	171,946	12.2	248,395	12.1
Heavy contractors.....	1,890	.9	638,366	14.1	1,414	.6	135,383	12.6	209,669	14.9	248,508	12.1
Special trade contractors.....	176,187	81.9	2,007,906	44.4	187,373	82.6	452,413	42.2	607,207	43.3	887,902	43.4

**Geographic distribution of contract construction.—**

Based on the office address of the reporting establishments, the Middle Atlantic Division, composed of the States of New York, Pennsylvania, and New Jersey, reported 23.7 percent of all establishments and 26.4 percent of all work performed in the Nation; and was closely followed by the East North Central Division (Wisconsin, Michigan, Illinois, Indiana, and Ohio) with 22.0 percent of establishments and 21.0 percent of work performed. Third in importance, as measured by volume of work performed, was the Pacific Division (Washington, Oregon, and California) with 13.5 percent

of establishments and 11.9 percent of work performed. Of interest is the fact that the States east of the Mississippi River accounted for nearly seven-tenths (69.0 percent) of all work performed in the United States, though this is not surprising since these same States contain 69.3 percent of the country's total population.

One-line totals for all kinds of contractors combined (including builders) are shown for each geographic division in the following summary table. The number of establishments, work performed, and population in each division are shown in percentage of United States totals.

TABLE II.—BASIC DATA FOR THE UNITED STATES AND GEOGRAPHIC DIVISIONS FOR ALL KINDS OF CONTRACTORS COMBINED

GEOGRAPHIC DIVISION	ESTABLISHMENTS		WORK PERFORMED		Active proprietors	Average number of employees	Pay roll (add 000)	Materials used and equipment installed (add 000)	Percent of total population
	Number	Percent	Amount (add 000)	Percent					
United States total.....	215,050	100.0	\$4,519,794	100.0	226,784	1,073,655	\$1,403,771	\$2,046,613	100.0
New England.....	18,910	8.8	323,471	7.2	19,118	76,089	106,757	138,669	6.4
Middle Atlantic.....	50,979	23.7	1,190,993	26.4	51,749	249,846	393,141	534,158	20.9
East North Central.....	47,263	22.0	946,952	21.0	49,705	204,097	302,899	431,194	20.2
West North Central.....	23,892	11.1	418,053	9.2	25,874	103,298	118,781	190,522	10.3
South Atlantic.....	17,634	8.2	497,683	11.0	18,023	151,486	149,088	241,943	13.5
East South Central.....	7,494	3.5	161,700	3.6	8,026	52,630	45,083	75,714	8.2
West South Central.....	13,034	6.1	303,988	6.7	13,893	87,280	82,330	144,780	9.9
Mountain.....	6,751	3.1	137,424	3.0	7,512	32,477	39,635	57,883	3.2
Pacific.....	29,093	13.5	539,530	11.9	32,884	116,452	166,057	231,750	7.4

The following percentage table provides a ready comparison of the relative importance (as measured by volume of work performed) of each of five kinds of contractors (including builders) within any one geographic division, as well as the importance of each classification between divisions, as related to the United States totals. For example, in the Middle

Atlantic Division special trade contractors accounted for 51.7 percent of all work performed by all kinds of contractors in that division. This was 30.6 percent of the work performed by all special trade contractors in the United States; while the special trade contractors of the Mountain Division reported only 2.2 percent of the United States total for this classification.

TABLE III.—WORK PERFORMED, EXPRESSED IN PERCENTAGES OF UNITED STATES AND GEOGRAPHIC DIVISION TOTALS, BY PRINCIPAL KINDS OF CONTRACTORS

GEOGRAPHIC DIVISION	WORK PERFORMED												Percent of total population 1940
	Total		Builders		General Contractors						Special trade contractors		
					Building contractors		Highway contractors		Heavy contractors				
	Percent of U. S. total	Percent of division total	Percent of U. S. total	Percent of division total	Percent of U. S. total	Percent of division total	Percent of U. S. total	Percent of division total	Percent of U. S. total	Percent of division total	Percent of U. S. total	Percent of division total	
United States total .....	100.0	100.0	100.0	2.4	100.0	26.0	100.0	13.1	100.0	14.1	100.0	44.4	100.0
New England.....	7.2	100.0	5.3	1.8	7.5	27.3	7.0	12.8	6.1	12.0	7.4	46.1	6.4
Middle Atlantic.....	26.4	100.0	26.9	2.4	20.2	19.9	18.8	9.3	31.2	16.7	30.6	51.7	20.9
East North Central.....	21.0	100.0	13.3	1.5	21.5	26.7	18.3	11.4	16.3	11.0	23.3	49.4	20.2
West North Central.....	9.2	100.0	6.5	1.7	9.2	25.9	13.2	18.6	10.0	15.3	8.0	38.5	10.3
South Atlantic.....	11.0	100.0	21.9	4.8	13.1	31.0	13.8	16.3	7.8	9.9	9.4	38.0	13.5
East South Central.....	3.6	100.0	2.5	1.7	4.4	31.9	5.5	20.1	3.3	13.0	2.7	33.3	8.2
West South Central.....	6.7	100.0	7.9	2.8	8.0	31.0	10.2	19.8	7.4	15.6	4.7	30.8	9.9
Mountain.....	3.0	100.0	2.4	1.9	3.3	27.9	5.3	22.7	3.4	16.0	2.2	31.5	3.2
Pacific.....	11.9	100.0	13.3	2.7	12.8	27.8	7.9	8.7	14.5	17.2	11.7	43.6	7.4

NOTE.—The dollar values which are represented by the percentages in the above table are available in table 1A.

More than two-thirds (67.7 percent) of all contract construction in the Nation was reported from the 12 States of New York, California, Pennsylvania, Illinois, Ohio, Texas, Michigan, Massachusetts, New Jersey, Missouri, Minnesota, and Wisconsin. These 12 States were the only ones which reported work performed of \$100,000,000 or more. New York, which reported the largest volume (\$675,167,000), exceeded the total reported by the 26 States and the District of Columbia which had the lowest volumes.

Chart 4, p. 14, gives a graphic presentation of the percentage of the United States total work performed which was reported by the establishments from each of the 48 States and the District of Columbia.

Nearly one-third (32.3 percent) of all work performed was reported from the 14 cities which in 1940 had 500,000 or more inhabitants. The 92 cities, including the above-mentioned, which had a population of 100,000 or more accounted for 37.1 percent of all establishments and more than one-half (54.7 percent) of all work performed in the Nation in 1939.

A summary of the number of establishments and work performed for three city-size groups and the percentage of the United States total within each group is given below.

TABLE IV.—ESTABLISHMENTS AND WORK PERFORMED, BY CITY-SIZE GROUPS (CITIES OF 100,000 POPULATION OR MORE)

CITY-SIZE GROUP	Number of cities	Percent of United States population	ESTABLISHMENTS		WORK PERFORMED	
			Number	Percent of United States total	Value (add 000)	Percent of United States total
Total—all cities (100,000 population or more).....	92	28.8	79,755	37.1	\$2,475,405	54.7
500,000 and over.....	14	17.0	44,425	20.7	1,460,366	32.3
250,000 to 499,999.....	23	5.9	17,175	8.0	547,735	12.1
100,000 to 249,999.....	55	5.9	18,155	8.4	467,304	10.3

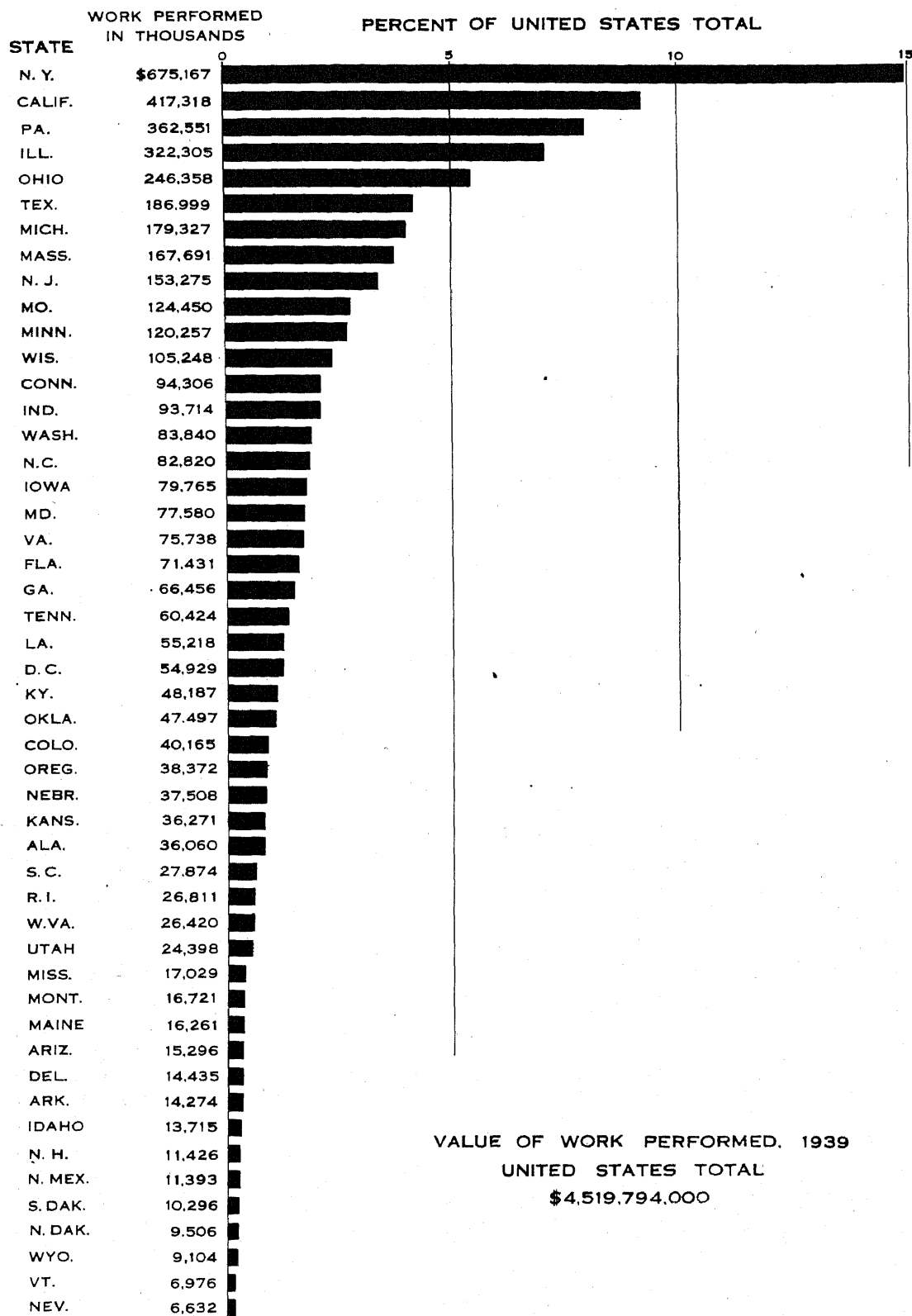
**Localization of activities.**—A comparatively small part of contract construction was done across State lines in 1939. The volume of work performed by all contractors outside of their respective "home States" was \$688,659,000, or only 15.2 percent of the national total. Nearly three-fourths (72.1 percent) of this out-of-State business was performed by general contractors and was distributed among them as follows: Heavy contractors, \$233,194,000; building contractors, \$146,115,000; and highway contractors, \$117,325,000. Special trade contractors performed over one-fourth of the out-of-State work (27.3 percent) done by all establishments. Steel erection, which is dominated by manufacturers of structural steel who operate nationally, accounted for \$47,583,000, or 25.3 percent of the special trade contractor total and were followed in descending order of volume by the heating and plumbing group, \$25,924,000; elevator contractors, \$19,824,000, who again are largely manufacturers' installation departments; electrical contractors, \$11,896,000; and masonry contractors, \$11,730,000. It appears that "out-of-State" business is only important in lines which require specialized heavy operational equipment, as in heavy and highway projects; or an extensive operating organization substantially capitalized, as in large building projects and in those which are dominated by installation departments or subsidiaries of manufacturers.

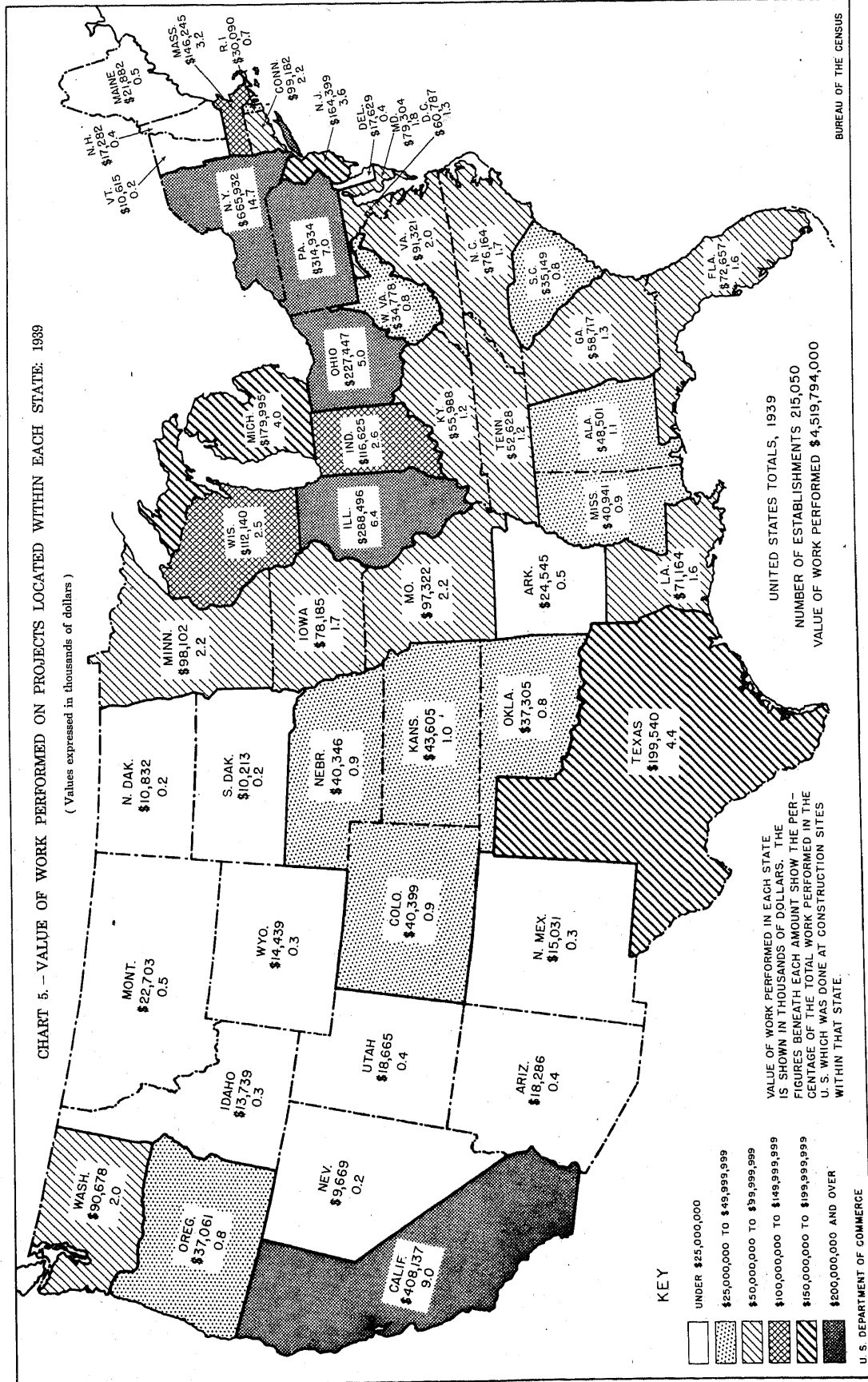
This characteristic of localized activities is further emphasized when it is considered that more than one-half (50.6 percent) of all work performed by all kinds of contractors was done in the home city of the contractor, and in the case of special trade contractors, two-thirds (66.4 percent) of their work was strictly local.

Table V, p. 16, shows the influence of interstate construction activities upon the volume of work done at construction sites located within each State. Similar

CHART 4. -VALUE OF WORK PERFORMED, BY STATES: 1939

( Based on the office address of the reporting establishment—  
not on the location of the construction project )







percent of all establishments had an annual volume of \$500,000 or more and accounted for more than one-fourth (27.4 percent) of the work performed by all contractors in 1939 (see chart 7, p. 19). In fact, this one-half of 1 percent of the reporting establishments performed more work than did all establishments which had a volume of less than \$25,000, though the latter embrace 87.2 percent of all reporting concerns. If the brackets for these larger establishments are expanded to include all firms which performed work of \$100,000 or more, it is found that only 3.3 percent of all establishments accounted for 54.3 percent of all work performed.

As would be expected, the establishments with a

volume of less than \$5,000 were very largely special trade contractors. In fact, of the 114,095 establishments in this size group, 107,620 were so classified. The small group which had a volume of \$500,000 or over is dominated by general contractors, though it includes 163 special trade contractors composed largely of installation and erection departments or subsidiaries of manufacturers.

The following table shows the percentage of establishments and work performed for principal kinds of contractors within each size-of-business group. The total number of contractors and the total work performed by all establishments within each size-group equal 100 percent.

TABLE VII.—RELATIVE IMPORTANCE OF PRINCIPAL KINDS OF CONTRACTORS WITHIN 11 SIZE-OF-BUSINESS GROUPS

SIZE OF BUSINESS	U. S. TOTAL, ALL KINDS OF CONTRACTORS		PERCENT OF TOTAL FOR EACH SIZE GROUP FOR—									
			Builders		Building contractors		Highway contractors		Heavy contractors		Special trade contractors	
	Percent of establishments	Percent of work performed	Percent of establishments	Percent of work performed	Percent of establishments	Percent of work performed	Percent of establishments	Percent of work performed	Percent of establishments	Percent of work performed	Percent of establishments	Percent of work performed
Less than \$5,000.....	53.1	5.6	0.7	0.9	4.7	6.6	0.2	0.1	0.1	0.1	94.3	92.3
\$5,000-\$9,999.....	17.0	5.7	2.3	2.3	17.2	17.6	.6	.6	.2	.2	79.7	79.3
\$10,000-\$14,999.....	8.2	4.7	2.9	2.9	23.4	23.5	1.1	1.1	.4	.4	72.2	72.1
\$15,000-\$19,999.....	5.1	4.1	3.2	3.2	27.7	27.7	1.6	1.6	.5	.5	67.0	67.0
\$20,000-\$24,999.....	3.8	4.0	3.3	3.2	30.7	30.7	2.0	2.0	.8	.8	63.2	63.3
\$25,000-\$29,999.....	1.8	2.3	4.2	4.2	30.4	30.4	3.1	3.1	1.8	1.8	60.5	60.5
\$30,000-\$34,999.....	4.2	7.7	3.6	3.6	30.0	30.0	4.9	5.0	2.2	2.3	59.3	59.1
\$35,000-\$39,999.....	3.5	11.6	3.8	3.8	30.6	30.6	8.0	8.3	4.3	4.5	53.3	52.8
\$40,000-\$44,999.....	2.4	18.9	3.0	2.8	29.9	29.8	18.3	19.5	9.4	9.8	39.4	38.1
\$45,000-\$49,999.....	.4	8.0	2.5	2.4	25.5	25.7	27.3	27.7	18.1	18.3	26.6	25.9
\$500,000 and over.....	.5	27.4	1.3	1.0	28.8	25.1	24.8	20.2	29.2	36.5	15.9	17.2

Nearly 19,000 reports were received from persons represented as contractors who performed work of less than \$500 in 1939. These persons were not considered as being *primarily* engaged in contracting, therefore their reports have not been included in the tabulated figures. Since some interests would prefer that reports of this character be included, the following summary presents data pertaining to them. Figures contained herein are not included in any other part of this volume.

TABLE VIII.—ESTABLISHMENTS REPORTING WORK PERFORMED IN 1939 OF LESS THAN \$500

	Number of establishments	Work performed (add 000)	Materials used and equipment installed (add 000)	Pay roll (add 000)
United States total.....	18,770	\$5,140	\$783	\$162
Carpentering.....	5,034	1,380	142	35
Electrical.....	1,079	280	84	5
Painting.....	8,143	2,221	309	47
Plumbing.....	1,322	374	85	8
Other.....	3,192	,885	163	67

**Monthly employment.**—The lowest point of national employment by all kinds of contractors and builders

combined in 1939 occurred in January, with only 74.2 percent of the average monthly employment for that year. The number of employees increased each succeeding month until it reached the peak in August, with 116.9 percent of the average monthly employment, although July and September closely approached the August level.

Periods of minimum and maximum employment and the degree of fluctuation vary for different kinds of contractors and between geographic regions, largely due to the effect of climatic conditions on the various types of construction. Chart 8, p. 22, shows employment trends for "building contractors and builders," highway, heavy, and special trade contractors separately, and for all kinds of contractors combined; and table IX, p. 20, shows employment for each month as a percentage of "average number of employees" for these classifications, for the United States and each of the nine geographic divisions. "Average number of employees" in this table is obtained by the method explained in the description of table 6, p. 8.

## CENSUS OF BUSINESS

CHART 6. — WORK PERFORMED, BY TYPES OF CONSTRUCTION AND KINDS OF WORK  
BY KINDS OF CONTRACTORS: 1939

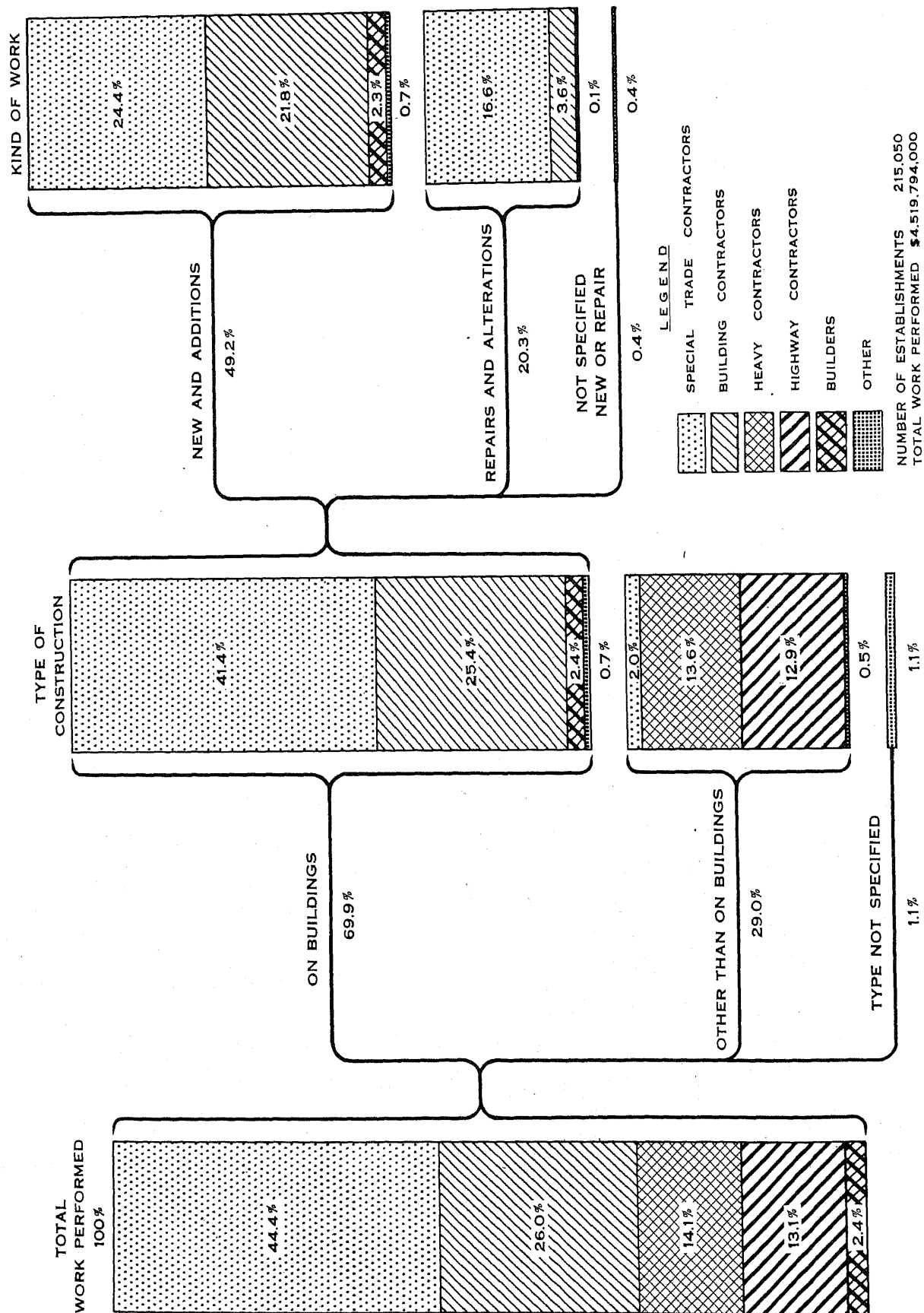


CHART 7.— ESTABLISHMENTS AND VALUE OF WORK PERFORMED  
FOR ALL CONTRACTORS BY SIZE OF BUSINESS BASED  
ON VOLUME OF WORK PERFORMED: 1939

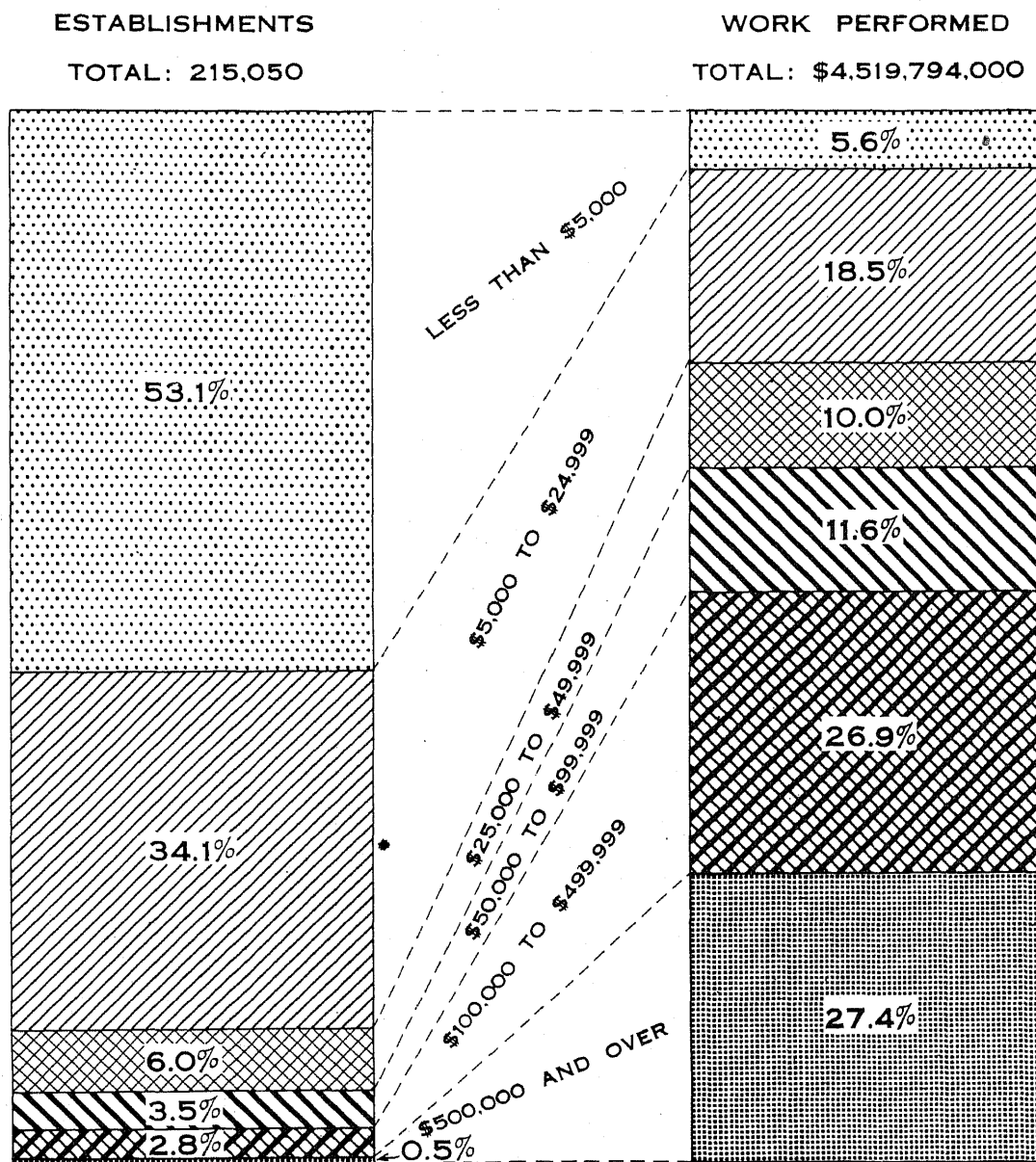




TABLE X.—BASIC DATA BY LEGAL FORMS OF ORGANIZATION, EXPRESSED AS PERCENTAGES OF UNITED STATES TOTALS

KIND OF CONTRACTOR	ESTABLISHMENTS			WORK PERFORMED			EMPLOYEES			PAY ROLL		
	Total	Corpo- rate	Noncor- porate	Total	Corpo- rate	Noncor- porate	Total	Corpo- rate	Noncor- porate	Total	Corpo- rate	Noncor- porate
United States total.....	100.0	7.6	92.4	100.0	46.4	53.6	100.0	44.1	55.9	100.0	52.6	47.4
Builders.....	1.7	.3	1.4	2.4	1.1	1.3	1.9	.9	1.0	1.8	.9	.9
Building contractors.....	13.8	1.6	12.2	26.0	10.7	15.3	28.4	11.6	16.8	27.7	13.6	14.1
Highway contractors.....	1.7	.6	1.1	13.1	7.4	5.7	15.0	8.0	7.0	12.2	7.2	5.0
Heavy contractors.....	.9	.4	.5	14.2	10.8	3.4	12.6	9.2	3.4	15.0	12.0	3.0
Special trade contractors.....	81.9	4.7	77.2	44.3	16.4	27.9	42.1	14.4	27.7	43.3	18.9	24.4

<sup>1</sup> United States totals: Establishments, 215,050; work performed, \$4,519,794,000; employees, 1,073,655; pay roll, \$1,403,771,000.

In comparing the number of employees and pay roll for corporate establishments with those for noncorporate ones, it should be noted that the pay roll for the former includes compensation of executives and salaried corporation officers, whereas the pay roll for noncorporate concerns does not include salaries, withdrawals, or profits of proprietors and partners who perform directional or supervisory activities similar to those of the corporation executive or official.

**Analysis of work performed, for larger establishments.**—The larger establishments, which reported on the longer schedule (Form 60), reported total work performed of \$3,479,671,000, or 77 percent of the total reported by both the larger and smaller establishments. These 30,912 concerns accounted for 68.1 percent of the work performed on buildings and 94.6 percent of the work performed other than on buildings by all of the 215,050 contractors who reported. These per-

centages would be slightly higher were it not for the fact that 2.5 percent of their volume was not reported by types of construction, and therefore it is not possible to distribute this additional \$88,643,000.

**Types of construction.**—Table XI presents, in summary form, the value of work performed by principal kinds of contractors on each type of construction. It also shows for the principal kinds of contractors the percentage of work performed on each type of construction. Perhaps the most striking facts which it reveals are the high percentage of work done by special trades contractors on buildings and the small percentage of work which was done by each kind of contractor outside his own line of work. Builders and building contractors crossed "kind-of-contractor" lines for only 2.1 percent of their volume; highway contractors, for only 5.7 percent; and heavy contractors found all but 7 percent of their business in their own line of work.

TABLE XI.—WORK PERFORMED BY LARGER ESTABLISHMENTS, BY TYPES OF CONSTRUCTION, FOR PRINCIPAL KINDS OF CONTRACTORS

TYPE OF CONSTRUCTION	TOTAL WORK PERFORMED		BUILDERS AND BUILDING CONTRACTORS		SPECIAL TRADE CONTRACTORS		HIGHWAY CONTRACTORS		HEAVY CONTRACTORS	
	Value (add 000)	Percent	Value (add 000)	Percent	Value (add 000)	Percent	Value (add 000)	Percent	Value (add 000)	Percent
Total—all types.....	\$3,479,671	100.0	\$1,083,548	100.0	\$1,181,672	100.0	\$579,704	100.0	\$834,747	100.0
On buildings.....	2,149,129	61.8	1,056,087	97.4	1,061,500	89.8	8,168	1.4	23,374	3.7
One- and two-family houses.....	633,497	18.2	338,305	31.2	293,083	24.8	825	.1	1,284	.2
Other residential buildings.....	241,384	6.9	78,639	7.2	160,496	13.6	563	.1	1,686	.3
Buildings other than residential.....	1,274,248	36.7	639,143	59.0	607,921	51.4	6,780	1.2	20,404	3.2
Other than on buildings.....	1,241,899	35.7	22,443	2.1	37,201	3.2	571,010	98.5	611,245	96.3
Highway.....	583,475	16.8	7,064	.7	9,174	.8	546,013	94.2	21,224	3.3
Heavy.....	658,424	18.9	15,379	1.4	28,027	2.4	24,997	4.3	590,021	93.0
Type not specified.....	88,643	2.5	5,018	.5	82,971	7.0	526	.1	128	(1)

<sup>1</sup> Less than one-tenth of 1 percent.

**Kinds of work.**—Approximately seven-eighths of the work performed by the larger establishments was on new construction and additions and one-eighth on repairs and alterations. In each of the "principal kind of contractor" classifications "new and additions" exceeded "repairs and alterations" by better than three to one. The repair and alteration business was largely one for special trade contractors and building contractors. Jointly they accounted for 87.9 percent, or better

than seven-eighths of this type of work, divided between them as follows: Special trade contractors 62.7 percent and building contractors 25.2 percent. Table XII shows for the larger establishments the type-of-work distribution for each principal kind of contractor.

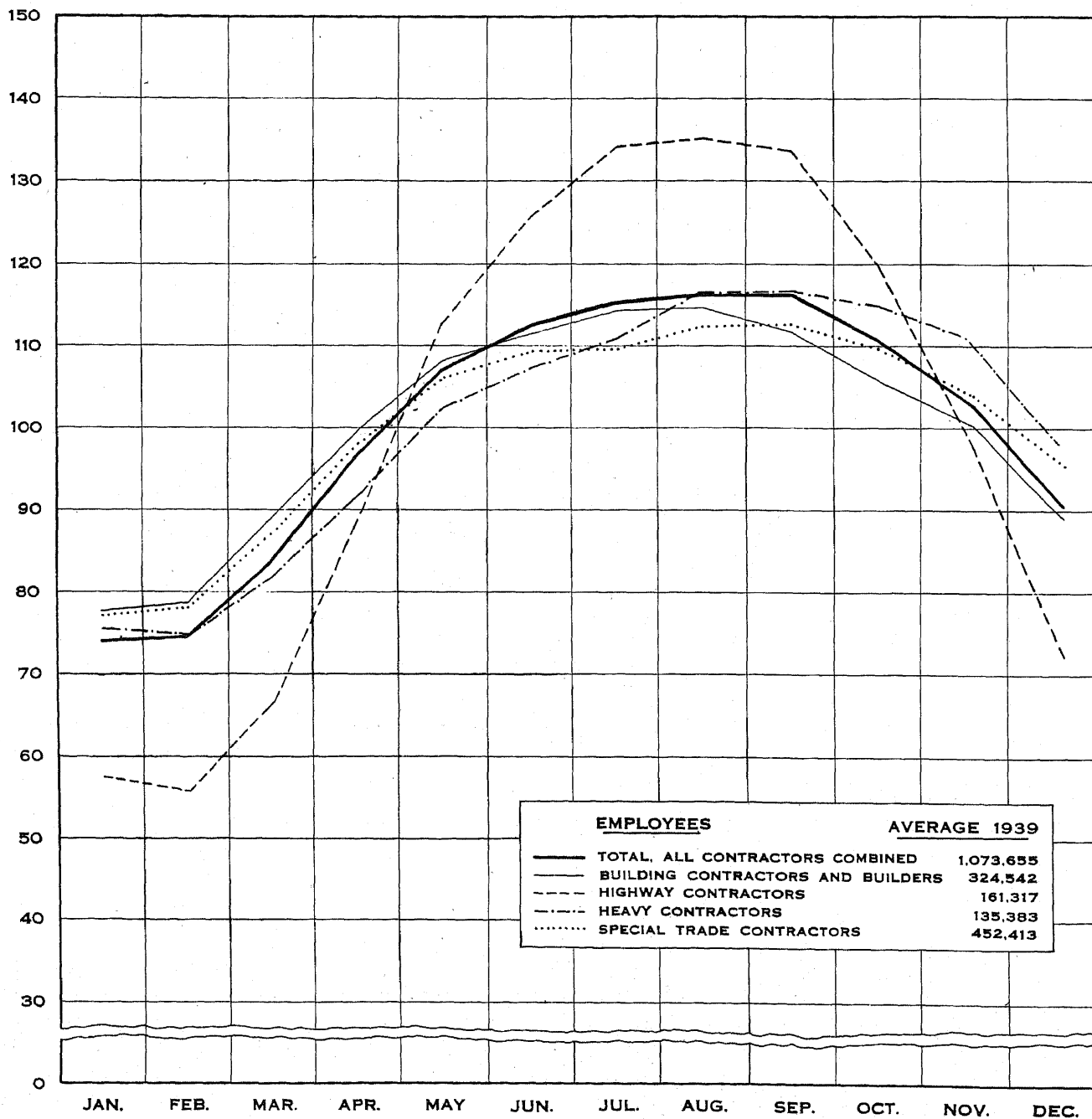
The relatively low volume of repairs and alterations for highway and heavy contractors is explainable by the fact that a very large part of such work is done by force account rather than by contractors.

## CENSUS OF BUSINESS

CHART 8.— NUMBER OF EMPLOYEES ON THE 15TH OF EACH MONTH, EXPRESSED AS PERCENTAGES OF AVERAGE FOR THE YEAR, FOR THE UNITED STATES. ALL CONTRACTORS COMBINED AND PRINCIPAL KINDS OF CONTRACTORS: 1939

(Includes full-time and part-time employees)

PERCENT OF AVERAGE  
NUMBER OF EMPLOYEES









## CENSUS OF BUSINESS

TABLE XVIII.—COMPARISON OF ESTABLISHMENTS, WORK PERFORMED, PAY ROLL, AND MATERIALS AND EQUIPMENT FOR ESTABLISHMENTS REPORTING A VOLUME OF \$25,000 OR MORE, FOR CITIES OF 500,000 POPULATION AND OVER: 1939 and 1929

CITY	NUMBER OF ESTABLISHMENTS		WORK PERFORMED			PAY ROLL <sup>1</sup>				MATERIALS USED AND EQUIPMENT INSTALLED			
			Amount (add 000)		Percent change 1939 vs. 1929	Amount (add 000)		Percent of work performed		Amount (add 000)		Percent of work performed	
	1939	1929	1939	1929		1939	1929	1939	1929	1939	1929	1939	1929
Baltimore, Md.....	328	298	\$43,040	\$65,208	-34.0	\$15,848	\$22,683	36.8	34.8	\$20,107	\$26,033	46.7	39.9
Boston, Mass.....	330	429	56,950	114,548	-50.3	20,040	48,660	35.2	42.5	26,212	40,293	46.0	35.2
Buffalo, N. Y.....	167	254	21,991	47,326	-53.5	8,563	18,585	38.9	39.3	8,609	19,389	39.1	41.0
Chicago, Ill.....	1,309	1,485	184,932	352,730	-47.6	70,314	143,787	38.0	40.8	77,330	143,441	41.8	40.7
Cleveland, Ohio.....	339	355	46,853	102,926	-54.5	17,162	38,562	36.6	37.5	21,398	48,553	45.7	47.2
Detroit, Mich.....	745	681	79,838	152,262	-47.6	24,245	56,536	30.4	37.1	43,071	67,583	53.9	44.4
Los Angeles, Calif. <sup>2</sup> .....	895	778	77,337	122,435	-36.8	26,362	39,284	34.1	32.0	37,419	56,862	48.4	46.4
Milwaukee, Wis.....	291	471	24,520	59,773	-59.0	9,191	20,733	37.5	34.7	10,686	27,901	43.4	46.7
New York, N. Y.....	2,415	2,325	396,433	672,851	-41.1	154,162	284,472	38.9	42.3	169,480	253,226	42.8	37.6
Philadelphia, Pa.....	608	922	90,896	196,072	-53.6	30,651	77,974	33.7	39.8	44,421	83,417	48.9	42.5
Pittsburgh, Pa.....	274	343	62,775	84,339	-25.6	18,164	33,477	28.9	39.7	34,810	34,578	55.5	41.0
St. Louis, Mo.....	391	375	39,181	67,182	-41.7	14,763	24,551	37.7	36.5	17,252	29,947	44.0	44.6
San Francisco, Calif.....	497	399	64,964	78,804	-17.6	23,974	27,026	36.9	34.3	25,939	33,888	39.9	43.0
Washington, D. C.....	437	253	49,430	39,846	24.1	17,847	16,327	36.1	41.0	23,289	15,501	47.1	38.9

<sup>1</sup> Pay roll includes compensation for paid executives of corporations but not for proprietors of unincorporated businesses.

<sup>2</sup> 1929 figures have been adjusted to exclude 28 establishments erroneously tabulated as within Los Angeles in that year.