

# New Single-Family Housing Construction (Except Operative Builders): 2002

Issued July 2005

EC02-231-236115 (RV)

## 2002 Economic Census

*Construction*

Industry Series



U S C E N S U S B U R E A U

*Helping You Make Informed Decisions*

U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU



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-- Not applicable for this report.

# Introduction to the Economic Census

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## **PURPOSES AND USES OF THE ECONOMIC CENSUS**

The economic census is the major source of facts about the structure and functioning of the nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in "2" and "7."

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the federal government use the data to monitor economic activity and to assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

## **INDUSTRY CLASSIFICATIONS**

Data from the 2002 Economic Census are published primarily according to the 2002 North American Industry Classification System (NAICS). NAICS was first adopted in the United States, Canada, and Mexico in 1997. The 2002 Economic Census covers the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information
52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), largely covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 100 subsectors (three-digit codes), 317 industry groups (four-digit codes), and, as implemented in the United States, 1,179 industries (six-digit codes).



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## **RELATIONSHIP TO HISTORICAL INDUSTRY CLASSIFICATIONS**

Prior to the 1997 Economic Census, data were published according to the Standard Industrial Classification (SIC) system. While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The 1997 Economic Census *Bridge Between NAICS and SIC* demonstrates the relationships between NAICS and SIC industries. Where changes are significant, it may not be possible to construct time series that include data for points both before and after 1997.

Most industry classifications remained unchanged between 1997 and 2002, but NAICS 2002 includes substantial revisions within the construction and wholesale trade sectors, and a number of revisions for the retail trade and information sectors. These changes are noted in industry definitions and will be demonstrated in the *Bridge Between NAICS 2002 and NAICS 1997*.

For 2002, data for enterprise support establishments (those functioning primarily to support the activities of their company's operating establishments, such as a warehouse or a research and development laboratory) are included in the industry that reflects their activities (such as warehousing). For 1997, such establishments were termed auxiliaries and were excluded from industry totals.

## **BASIS OF REPORTING**

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company. (For selected industries, only payroll, employment, and classification are collected for individual establishments, while other data are collected on a consolidated basis.)

## **GEOGRAPHIC AREA CODING**

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for states, metropolitan and micropolitan statistical areas, counties, and corporate municipalities (places) including cities, towns, townships, villages, and boroughs. Respondents were required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from administrative sources is used as a basis for coding.

## **AVAILABILITY OF ADDITIONAL DATA**

All results of the 2002 Economic Census are available on the Census Bureau Internet site ([www.census.gov](http://www.census.gov)) and on digital versatile discs (DVD-ROMs) for sale by the Census Bureau. The American FactFinder system at the Internet site allows selective retrieval and downloading of the data. For more information, including a description of reports being issued, see the Internet site, write to the U.S. Census Bureau, Washington, DC 20233-6100, or call Customer Services at 301-763-4100.

## **HISTORICAL INFORMATION**

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart

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from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some service trades in 1933. Censuses of construction, manufacturing, and the other business censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated, providing comparable census data across economic sectors and using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census report forms.

The range of industries covered in the economic census expanded between 1967 and 2002. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity. New for 2002 is coverage of four industries classified in the agriculture, forestry, and fishing sector under the SIC system: landscape architectural services, landscaping services, veterinary services, and pet care services.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. Reports for 1997 were published primarily on the Internet and copies of 1992 reports are also available there. CD-ROMs issued from the 1987, 1992, and 1997 Economic Censuses contain databases that include all or nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

#### **SOURCES FOR MORE INFORMATION**

More information about the scope, coverage, classification system, data items, and publications for the 2002 Economic Census and related surveys is published in the *Guide to the 2002 Economic Census* at [www.census.gov/econ/census02/guide](http://www.census.gov/econ/census02/guide). More information on the methodology, procedures, and history of the census will be published in the *History of the 2002 Economic Census* at [www.census.gov/econ/www/history.html](http://www.census.gov/econ/www/history.html).



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# Construction

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## SCOPE

The Construction sector (sector 23) comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale, as building sites also are included in this sector.

Construction work done may include new work, additions, alterations, or maintenance and repairs. Activities of these establishments generally are managed at a fixed place of business, but they usually perform construction activities at multiple project sites. Production responsibilities for establishments in this sector are usually specified in (1) contracts with the owners of construction projects (prime contracts) or (2) contracts with other construction establishments (subcontracts).

Establishments primarily engaged in contracts that include responsibility for all aspects of individual construction projects are commonly known as general contractors, but also may be known as design-builders, construction managers, turnkey contractors, or (in cases where two or more establishments jointly secure a general contract) joint-venture contractors. Construction managers that provide oversight and scheduling only (i.e., agency) as well as construction managers that are responsible for the entire project (i.e., at risk) are included as general contractor type establishments. Establishments of the "general contractor type" frequently arrange construction of separate parts of their projects through subcontracts with other construction establishments.

Establishments primarily engaged in activities to produce a specific component (e.g., masonry, painting, and electrical work) of a construction project are commonly known as specialty trade contractors. Activities of specialty trade contractors are usually subcontracted from other construction establishments but, especially in remodeling and repair construction, the work may be done directly for the owner of the property.

Establishments primarily engaged in activities to construct buildings to be sold on sites that they own are known as operative builders, but also may be known as speculative builders or merchant builders. Operative builders produce buildings in a manner similar to general contractors, but their production processes also include site acquisition and securing of financial backing. Operative builders are most often associated with the construction of residential buildings. Like general contractors, they may subcontract all or part of the actual construction work on their buildings.

There are substantial differences in the types of equipment, work force skills, and other inputs required by establishments in this sector. To highlight these differences and variations in the underlying production functions, this sector is divided into three subsectors.

Subsector 236, Construction of Buildings, comprises establishments of the general contractor type and operative builders involved in the construction of buildings. Subsector 237, Heavy and Civil Engineering Construction, comprises establishments involved in the construction of engineering projects. Subsector 238, Specialty Trade Contractors, comprises establishments engaged in specialty trade activities generally needed in the construction of all types of buildings.

**Exclusions.** Force account construction is construction work performed by an enterprise primarily engaged in some business other than construction for its own account and use, using employees of the enterprise. This activity is not included in the construction sector unless the construction work performed is the primary activity of a separate establishment of the enterprise.

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The installation and the ongoing repair and maintenance of telecommunications and utility networks is excluded from construction when the establishments performing the work are not independent contractors. Although a growing proportion of this work is subcontracted to independent contractors in the Construction Sector, the operating units of telecommunications and utility companies performing this work are included with the telecommunications or utility activities.

The tabulations for this sector do not include central administrative offices, warehouses, or other establishments that serve construction establishments within the same organization. Data for such establishments are classified according to the nature of the service they provide. For example, separate headquarters establishments are reported in NAICS Sector 55, Management of Companies and Enterprises.

The reports described below exclude establishments of firms with no paid employees. These “nonemployers,” typically self-employed individuals or partnerships operating businesses that they have not chosen to incorporate, are reported separately in *Nonemployer Statistics*. The contribution of nonemployers, relatively large for this sector, may be examined at [www.census.gov/nonemployerimpact](http://www.census.gov/nonemployerimpact).

**Definitions.** Industry categories are defined in Appendix B, NAICS Codes, Titles, and Descriptions. Other terms are defined in Appendix A, Explanation of Terms.

## REPORTS

The following reports provide statistics on this sector.

**Industry Series.** There are 31 reports, each covering a single NAICS industry (six-digit code). These reports include such statistics as number of establishments, employment, payroll, value added by construction, cost of materials, value of construction work, value of business done, capital expenditures, etc. The industry reports also include selected statistics for states. While most of the state data in the industry series reports are by physical location of the establishment, some data are available by reported location of the construction work. The data in industry reports are preliminary and subject to change in the following reports.

**Geographic Area Series.** There are 51 separate reports, one for each state and the District of Columbia. Each state report present similar statistics at the “all construction” level for each state.

### Subject Series:

- **Industry General Summary.** This report contains industry statistics summarized in one report. It includes higher levels of aggregation than the industry reports, as well as revisions to the data made after the release of the industry reports.
- **Industry Kind Of Business and Type of Construction Summary.** This report contains industry kind of business and types of construction statistics summarized in one report. It includes higher levels of aggregation than the industry reports, as well as revisions to the data made after the release of the industry reports.
- **Geographic Area Summary.** This report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

**Other reports.** Data for this sector are also included in reports with multisector coverage, including *Nonemployer Statistics*, *Comparative Statistics*, *Bridge Between 2002 NAICS and 1997 NAICS*, *Business Expenses*, and the Survey of Business Owners reports.

## GEOGRAPHIC AREAS COVERED

1. The United States as a whole.
2. States and the District of Columbia.

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3. Census regions. The regions are made up of groups of states as follows:

- a. Northeast region: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
- b. Midwest region: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
- c. South region: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
- d. West region: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

### **DOLLAR VALUES**

All dollar values presented are expressed in current dollars; i.e., 2002 data are expressed in 2002 dollars, and 1997 data, in 1997 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

### **COMPARABILITY OF THE 1997 AND 2002 ECONOMIC CENSUSES**

Both the 2002 Economic Census and the 1997 Economic Census present data based on the North American Industry Classification System (NAICS). There were substantial revisions made to the entire construction sector, for 2002. These changes are:

1. Each subsector has been reclassified in 2002 to:
  - 236—Construction of Buildings
  - 237—Heavy and Civil Engineering Construction
  - 238—Specialty Trade Contractors
2. Adopted several mining industries:
  - oil and gas pipeline and related structures construction, now in Industry 237120
  - site preparation and related construction activities on a contract or fee basis, now in Industry 238910.

More detailed information of NAICS changes from 1997 to 2002, may be examined at <http://www.census.gov/epcd/naics02/n02ton97.htm>.

In addition, there have been several additional data tables added, which did not exist in 1997. These tables for 2002 include e-commerce value of business done and leased and nonleased detail employment statistics by subsectors. Also included is housing starts by single NAICS industry (six-digit code).

### **RELIABILITY OF DATA**

All data compiled for this sector are subject to nonsampling errors. Nonsampling errors can be attributed to many sources: inability to identify all cases in the actual universe; definition and classification difficulties; differences in the interpretation of questions; errors in recording or coding the data obtained; and other errors of collection, response, coverage, processing, and estimation for missing or misreported data.

No direct measurement of these effects has been obtained except for estimation for missing or misreported data, as by the percentages shown in the tables. Precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize the effects of nonsampling errors. More information on the reliability of the data is included in Appendix C, Methodology.

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## DISCLOSURE

In accordance with federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments in a specific industry or geographic area is not considered a disclosure; therefore, this information may be released even though other information is withheld. Techniques employed to limit disclosure are discussed at [www.census.gov/epcd/ec02/disclosure.htm](http://www.census.gov/epcd/ec02/disclosure.htm).

## AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The U.S. Census Bureau's monthly Construction Reports, Series C30, Value of New Construction Put in Place contain data related to construction sector census data. The main difference is that the C30 series covers all new construction put in place without regard to who is performing the construction activity. The construction sector census data covers both new construction and maintenance and repair work done by establishments classified in the construction industries. Significant amounts of construction are done by establishments classified outside of construction (real estate, manufacturing, utilities, and communications, for example), as both "force account" construction and construction done for others. In addition, the C30 series includes construction-related expenses such as architectural and engineering costs and the costs of materials supplied by owners that are normally not reflected in construction sector census data.

Data contained in the 2002 construction sector may also differ from industry data in Employment and Earnings Statistics, published by the Bureau of Labor Statistics and Statistics of Income, published by the Internal Revenue Service. These differences arise from varying definitions of scope, coverage, timing, classification, and methodology.

In addition, the County Business Patterns program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county, and Statistics of U.S. Businesses provides annual statistics classified by the employment size of the enterprise, further classified by industry for the United States, and by broader categories for states and metropolitan areas.

## CONTACTS FOR DATA USERS

Questions about these data may be directed to the U.S. Census Bureau, Manufacturing & Construction Division, Information Services Center, 301-763-4673 or [ask.census.gov](http://ask.census.gov).

## ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with these data:

A	Standard error of 100 percent or more
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue
N	Not available or not comparable
S	Withheld because estimates did not meet publication standards
X	Not applicable
Z	Less than half the unit shown
a	0 to 19 employees
b	20 to 99 employees
c	100 to 249 employees
e	250 to 499 employees
f	500 to 999 employees
g	1,000 to 2,499 employees
h	2,500 to 4,999 employees
i	5,000 to 9,999 employees
j	10,000 to 24,999 employees
k	25,000 to 49,999 employees
l	50,000 to 99,999 employees
m	100,000 employees or more

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p 10 to 19 percent estimated  
q 20 to 29 percent estimated  
r Revised  
s Sampling error exceeds 40 percent  
nsk Not specified by kind  
– Represents zero (page image/print only)  
(CC) Consolidated city  
(IC) Independent city



**Table 1. Industry Statistics on 2002 NAICS Basis Distributed Among 1997 NAICS-Based Industries for the United States: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A. For detailed title descriptions, see Appendix F]

2002 NAICS code	1997 bridge code	Industry or bridge	Number of establishments	Total number of employees	Total payroll	Value of construction work <sup>1</sup>	Net value of construction work	Value added	Cost of materials, components, supplies, and fuels	Capital expenditures, other than land
			A	B	C	D	E	F	G	H
236115		New single-family housing construction (except operative builders) .....	'58 472	'273 055	'8 262 607	'61 781 469	'38 573 155	'19 677 808	'19 285 162	'621 473
	23321000	Single family housing construction (pt) .....	'58 472	'273 055	'8 262 607	'61 781 469	'38 573 155	'19 677 808	'19 285 162	'621 473

<sup>1</sup>For the 2002 Economic Census, the definition of value of construction work has been modified from the 1997 Economic Census definition. See Appendix A for the modified definition.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 2. Employment Statistics for Establishments by State: 2002**

[Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, nonsampling error, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A.]

Location of establishment	Number of establishments	Number of employees		Number of construction workers				Payroll (thousand dollars)		Relative standard error of estimate (percent) for column—
		Total	Construction workers	January to March	April to June	July to September	October to December	Total	Construction workers	
<b>236115, New single-family housing construction (except operative builders)</b>										
United States .....	'58 472	'273 055	'179 390	S	'182 629	'185 583	'175 079	'8 262 607	'4 482 403	1
Alabama .....	'625	'2 732	D	'1 721	'1 814	'1 832	D	'67 696	D	'12
Alaska .....	'266	'1 002	'667	'509	'673	'808	'680	'29 610	'15 871	'17
Arizona .....	'1 020	'5 678	'3 780	'3 569	'3 757	'3 749	'3 968	'188 305	'93 903	'7
Arkansas .....	'449	'1 305	'842	'845	'882	'845	'795	'31 204	'16 427	'15
California .....	'5 524	'34 757	'22 865	'22 630	'22 999	'23 315	'22 517	'1 219 998	'660 997	'5
Colorado .....	'1 683	'7 230	'4 713	'4 647	'4 737	'4 865	'4 603	'227 832	'127 205	'7
Connecticut .....	'595	'2 717	D	'1 557	'1 753	'1 691	D	'111 098	'56 164	'11
Delaware .....	'282	'1 356	'918	'914	'899	'919	'941	'36 259	'19 884	'13
District of Columbia .....	S	'200	D	D	'131	'156	D	'9 551	D	'19
Florida .....	'3 336	'18 670	'10 276	'10 394	'10 216	'10 545	'9 949	'619 449	'254 114	'7
Georgia .....	'1 402	'5 813	'3 730	'3 703	'3 830	'3 821	'3 565	'158 663	'80 051	'10
Hawaii .....	'264	'2 399	D	'1 605	'1 792	'1 779	D	'105 601	'69 177	6
Idaho .....	'563	'2 279	'1 621	'1 579	'1 709	'1 621	'1 575	'54 338	'32 657	'8
Illinois .....	'2 306	'9 858	'6 309	'5 996	'6 555	'6 638	'6 049	'295 064	'170 913	'8
Indiana .....	'1 283	'5 637	'3 641	'3 613	'3 602	'3 804	'3 544	'155 256	'85 045	'7
Iowa .....	'738	'2 873	'1 991	'1 759	'2 156	'2 106	'1 944	'61 430	'34 702	'12
Kansas .....	'603	'2 592	'1 800	'1 810	'1 810	'1 875	'1 726	'63 950	'37 696	'12
Kentucky .....	'586	'2 531	'1 701	'1 806	'1 686	'1 746	'1 565	'56 437	'29 973	'14
Louisiana .....	'456	'1 799	'1 139	'1 122	'1 221	'1 146	'1 069	'50 230	'27 770	'15
Maine .....	'588	'2 603	'1 818	'1 772	'1 851	'1 840	'1 809	'65 911	'41 420	'7
Maryland .....	'1 192	'6 218	'4 106	'3 839	'4 175	'4 292	'4 117	'197 182	'107 393	'10
Massachusetts .....	'963	'5 227	'3 424	'3 326	'3 458	'3 589	'3 322	'192 993	'104 444	'8
Michigan .....	'2 580	'11 165	'7 868	'7 204	'8 165	'8 258	'7 847	'320 792	'184 591	'7
Minnesota .....	'1 409	'5 730	'3 686	'3 618	'3 646	'3 940	'3 542	'185 551	'97 220	'10
Mississippi .....	'364	'1 480	'1 006	'982	'1 006	'1 056	'979	'28 626	'17 015	'18
Missouri .....	'1 456	'6 084	'4 330	'4 282	'4 374	'4 349	'4 315	'156 450	'96 790	'8
Montana .....	'571	'2 758	'2 026	'2 010	'2 105	'2 103	'1 888	'69 712	'45 767	6
Nebraska .....	'427	'1 524	D	'1 045	'1 072	'1 075	D	'34 358	D	'9
Nevada .....	'347	'2 240	'1 525	'1 436	'1 523	'1 552	'1 589	'67 381	'35 758	'15
New Hampshire .....	'337	'1 616	'1 087	'1 139	'1 108	'1 079	'1 023	'45 912	'25 981	'10
New Jersey .....	'1 530	'8 179	'5 492	'5 315	'5 691	'5 686	'5 276	'333 040	'189 670	8
New Mexico .....	'591	'2 879	'2 125	'1 940	'2 118	'2 277	'2 165	'67 489	'41 657	'9
New York .....	'2 812	'10 187	'6 948	'6 600	'7 264	'7 269	'6 660	'293 373	'165 474	'7
North Carolina .....	'2 488	'11 079	'7 247	'7 216	'7 421	'7 229	'7 120	'296 428	'160 435	'6
North Dakota .....	'115	'702	'539	'518	'540	'624	'472	'16 878	'9 223	'12
Ohio .....	'2 176	'8 252	'5 261	'5 183	'5 368	'5 431	'5 064	'229 460	'124 602	'7
Oklahoma .....	'567	'2 631	'1 652	'1 538	'1 728	'1 619	'1 724	'59 300	'33 573	'20
Oregon .....	'1 112	'3 411	'2 186	'2 049	'2 306	'2 261	'2 127	'88 722	'47 012	'8
Pennsylvania .....	'2 316	'11 157	'7 335	'6 851	'7 658	'7 579	'7 250	'331 279	'175 321	'7
Rhode Island .....	'260	'1 093	D	D	'762	'784	D	'28 530	D	'16
South Carolina .....	'994	'4 417	'2 913	'2 899	'2 972	'2 926	'2 854	'129 876	'69 041	'8
South Dakota .....	'278	'1 143	'753	'730	'804	'767	'710	'24 206	'13 150	'11
Tennessee .....	'823	'3 968	'2 715	'2 772	'2 781	'2 701	'2 604	'109 705	'69 934	'11
Texas .....	'2 409	'11 462	'6 885	'6 967	'6 641	'7 397	'6 534	'377 845	'182 122	'7
Utah .....	'735	'3 286	'2 185	'2 093	'2 314	'2 272	'2 060	'82 954	'48 009	'9
Vermont .....	'348	'1 600	'1 130	'1 054	'1 191	'1 199	'1 077	'45 659	'28 690	8
Virginia .....	'1 774	'8 910	'6 047	'5 882	'6 120	'6 335	'5 852	'275 340	'157 808	'6
Washington .....	'2 180	'7 769	'5 150	'5 012	'5 372	'5 302	'4 913	'210 877	'111 803	'7
West Virginia .....	'527	'2 182	'1 567	'1 510	'1 558	'1 642	'1 557	'42 710	'25 920	'10
Wisconsin .....	'1 916	'9 136	'6 182	'5 769	'6 158	'6 692	'6 110	'263 725	'150 226	'6
Wyoming .....	'278	'1 539	'1 129	D	'1 156	'1 202	D	'48 372	'31 477	'9

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 3. General Statistics for Establishments by State: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, nonsampling error, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Location of establishment	E <sup>1</sup>	Value of construction work <sup>2</sup>	Net value of construction work	Value added	Cost of materials, components, supplies, and fuels	Cost of construction work subcontracted out to others	Total rental costs	Capital expenditures, other than land	End-of-year gross book value of depreciable assets	Relative standard error of estimate (percent) for column—	
										C	H
	A	B	C	D	E	F	G	H	I	C	H
236115, New single-family housing construction (except operative builders)											
United States .....	'2	'61 781 469	'38 573 155	'19 677 808	'19 285 162	'23 208 314	'400 154	'621 473	'3 977 897	2	'3
Alabama .....	'2	'621 596	'382 939	'170 235	'219 447	'238 657	'3 389	'4 438	'39 116	'13	12
Alaska .....	4	'158 495	'105 429	'63 442	'48 956	'53 066	'1 634	'3 421	'16 055	'20	'21
Arizona .....	'1	'1 621 355	'759 012	'412 407	'354 547	'862 344	'6 887	'10 260	'70 502	'8	'12
Arkansas .....	'4	'252 772	'175 539	'74 145	'105 796	'77 233	'1 690	'2 615	'15 726	'21	'31
California .....	'3	'6 687 563	'4 049 587	'2 564 980	'1 516 936	'2 637 976	'59 979	'63 227	'357 227	6	'8
Colorado .....	'1	'1 694 526	'1 031 525	'464 194	'574 850	'663 001	'12 101	'10 883	'90 366	'10	'12
Connecticut .....	'2	'852 612	'533 426	'221 424	'313 424	'319 185	'4 981	'8 269	'55 699	'12	'28
Delaware .....	'1	'321 797	'209 082	'129 587	'80 878	'112 716	'1 689	'2 247	'23 130	'11	'19
District of Columbia .....	'1	'56 183	'36 105	'30 140	'5 965	'20 078	S	S	'1 136	'9	S
Florida .....	'1	'6 650 472	'3 971 422	'2 094 207	'1 906 519	'2 679 050	'33 551	'69 914	'327 972	'15	'23
Georgia .....	'4	'1 665 422	'1 045 576	'445 267	'608 070	'619 846	'8 862	'10 589	'78 180	'14	'14
Hawaii .....	—	'707 731	'413 191	'230 439	'183 672	'294 540	'6 416	'4 674	'32 051	5	'9
Idaho .....	'1	'521 501	'347 714	'140 007	'209 354	'173 787	'2 473	'8 859	'39 963	'13	'36
Illinois .....	'3	'1 952 884	'1 233 583	'694 764	'546 704	'719 301	'12 501	'19 148	'160 798	'9	'11
Indiana .....	'2	'1 302 913	'874 570	'320 602	'559 830	'428 344	'6 463	'14 036	'77 648	'8	'11
Iowa .....	'2	'369 825	'264 751	'121 858	'146 386	'105 074	'2 904	'5 851	'41 756	'11	'16
Kansas .....	'3	'468 596	'300 324	'151 262	'150 681	'168 272	'2 531	'6 424	'45 538	'12	'29
Kentucky .....	6	'547 314	'381 588	'196 539	'186 311	'165 726	'3 322	S	S	'21	S
Louisiana .....	'2	'367 627	'247 911	'110 992	'142 457	'119 715	'2 549	'3 339	'15 931	'18	'30
Maine .....	'1	'433 835	'284 022	'146 192	'139 087	'149 814	'2 927	'9 904	'45 523	7	'28
Maryland .....	'3	'1 450 773	'837 699	'323 855	'518 490	'613 074	'8 129	'12 468	'77 112	'13	14
Massachusetts .....	'4	'1 350 052	'847 944	'459 405	'396 834	'502 107	'11 693	'13 465	'99 751	'10	10
Michigan .....	'2	'2 008 409	'1 336 295	'608 636	'737 948	'672 114	'12 007	'25 389	'149 541	7	'13
Minnesota .....	'2	'1 384 067	'905 483	'499 352	'411 900	'478 584	'7 831	'17 947	'96 589	'14	'14
Mississippi .....	'3	'202 437	'141 634	'77 836	'66 176	'60 804	'1 115	S	'15 220	20	S
Missouri .....	'3	'769 926	'557 694	'345 230	'219 250	'212 231	'4 761	'11 163	'68 498	'8	'15
Montana .....	'1	'490 475	'303 568	'138 293	'168 316	'186 907	'4 615	'6 793	'43 017	'5	9
Nebraska .....	'3	'272 811	'167 331	'76 516	'91 958	'105 480	'1 522	'4 824	'23 922	'8	'14
Nevada .....	'1	'417 428	'238 699	'114 342	'124 872	'178 729	'2 489	'2 097	'20 248	'15	'10
New Hampshire .....	'1	'356 830	'225 584	'112 748	'115 120	'131 246	'2 466	'3 901	'19 186	'14	'22
New Jersey .....	'3	'2 242 274	'1 404 656	'807 112	'600 881	'837 618	'15 404	'20 972	'130 354	'13	'8
New Mexico .....	'2	'440 864	'285 212	'160 612	'126 967	'155 652	'2 721	'3 813	'26 138	9	'16
New York .....	'4	'2 265 480	'1 394 003	'697 436	'703 889	'871 477	'11 644	'37 273	'195 048	'8	'8
North Carolina .....	'3	'2 386 858	'1 548 675	'752 020	'831 415	'838 182	'19 021	'20 609	'163 375	'6	'10
North Dakota .....	'2	'70 417	'54 600	'27 752	'27 293	'15 817	'440	'540	'10 874	16	'10
Ohio .....	'2	'2 123 600	'1 406 143	'716 300	'695 612	'717 457	'10 799	'17 042	'137 565	'10	10
Oklahoma .....	'4	'433 807	'299 238	'144 448	'157 674	'134 569	'4 035	'4 680	'42 000	'14	'19
Oregon .....	'3	'706 038	'458 498	'222 094	'237 685	'247 540	'4 504	'6 461	'45 922	'10	'22
Pennsylvania .....	'2	'2 701 233	'1 692 171	'814 682	'886 125	'1 009 063	'13 817	'24 055	'189 584	'9	'11
Rhode Island .....	'2	'219 953	'136 606	'34 235	'83 347	'83 347	'1 842	'847	'12 126	'20	'16
South Carolina .....	'2	'1 020 532	'640 300	'248 008	'395 786	'380 231	'5 527	'8 239	'60 083	'7	'13
South Dakota .....	'1	'185 576	'127 862	'47 468	'83 969	'57 714	'1 103	'2 035	'18 874	'13	14
Tennessee .....	'3	'686 823	'477 769	'246 353	'234 449	'209 053	'5 520	'7 493	'51 534	'10	'10
Texas .....	'1	'3 338 048	'1 924 665	'888 433	'1 120 014	'1 413 384	'19 833	'20 498	'180 275	'10	'12
Utah .....	'3	'654 146	'393 230	'189 406	'207 171	'260 917	'4 059	'4 451	'37 904	'12	'13
Vermont .....	'1	'317 156	'234 162	'151 993	'84 640	'82 994	'1 472	'3 802	'21 842	'19	'9
Virginia .....	'2	'2 030 808	'1 372 021	'786 352	'596 727	'658 787	'21 983	'26 986	'150 426	5	7
Washington .....	'3	'1 518 492	'928 939	'489 834	'443 597	'589 553	'9 159	'11 357	'105 459	'10	'13
West Virginia .....	'2	'239 153	'172 611	'93 443	'79 762	'66 543	'1 229	'2 725	'22 599	'11	'12
Wisconsin .....	'1	'2 003 070	'1 260 462	'539 720	'745 314	'742 608	'11 542	'26 476	'160 493	'7	'11
Wyoming .....	'1	'238 912	'152 105	'81 208	'71 910	'86 807	'1 842	'3 981	'23 502	8	'17

<sup>1</sup>Construction receipts were obtained from census respondent forms. Data for establishments whose respondent forms were not received at the time data were tabulated were calculated using industry averages and imputation for nonresponse. The following symbols are shown where estimated imputation-based data on construction receipts account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

<sup>2</sup>For the 2002 Economic Census, the definition of value of construction work has been modified from the 1997 Economic Census definition. See Appendix A for the modified definition.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American Factfinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 4. Detailed Statistics for Establishments: 2002**

[Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Item	Value	Relative standard error of estimate (percent)
<b>236115, New single-family housing construction (except operative builders)</b>		
All establishments . . . . . number . . . . .	'58 472	'2
All employees . . . . . number . . . . .	'273 055	1
Construction workers in March . . . . . number . . . . .	S	S
Construction workers in May . . . . . number . . . . .	'182 629	1
Construction workers in August . . . . . number . . . . .	'185 583	'2
Construction workers in November . . . . . number . . . . .	'175 079	'2
Average number of construction workers . . . . . number . . . . .	'179 390	1
Other employees in March . . . . . number . . . . .	S	S
Other employees in May . . . . . number . . . . .	'89 221	'2
Other employees in August . . . . . number . . . . .	'92 205	'2
Other employees in November . . . . . number . . . . .	'97 439	'2
Average number of other employees . . . . . number . . . . .	'93 666	'2
Total payroll . . . . . \$1,000 . . . . .	'8 262 607	1
Construction workers . . . . . \$1,000 . . . . .	'4 482 403	1
Other employees . . . . . \$1,000 . . . . .	'3 780 204	'2
First-quarter payroll, all employees . . . . . \$1,000 . . . . .	'1 957 482	1
Fringe benefits, all employees . . . . . \$1,000 . . . . .	'1 332 525	'2
Legally required expenditures . . . . . \$1,000 . . . . .	'1 020 034	2
Voluntary expenditures . . . . . \$1,000 . . . . .	'312 491	'2
Value of business done <sup>1</sup> . . . . . \$1,000 . . . . .	'62 171 283	2
Value of construction work <sup>1</sup> . . . . . \$1,000 . . . . .	'61 781 469	2
Value of construction work on government owned projects . . . . . \$1,000 . . . . .	'9 607 498	'3
Value of construction work on federally owned projects . . . . . \$1,000 . . . . .	'4 353 852	'3
Value of construction work on state and locally owned projects . . . . . \$1,000 . . . . .	'5 253 646	'3
Value of construction work on privately owned projects . . . . . \$1,000 . . . . .	'52 173 971	2
Other business receipts . . . . . \$1,000 . . . . .	'389 814	5
Value of construction work subcontracted in from others . . . . . \$1,000 . . . . .	'12 621 958	2
Net value of construction work . . . . . \$1,000 . . . . .	'38 573 155	2
Value added . . . . . \$1,000 . . . . .	'19 677 808	3
Selected costs . . . . . \$1,000 . . . . .	'42 493 475	2
Materials, parts, and supplies . . . . . \$1,000 . . . . .	'18 611 769	2
Construction work subcontracted out to others . . . . . \$1,000 . . . . .	'23 208 314	2
Selected power, fuels, and lubricants . . . . . \$1,000 . . . . .	'673 393	2
Purchased electricity . . . . . \$1,000 . . . . .	'170 735	'3
Natural gas and manufactured gas . . . . . \$1,000 . . . . .	'74 983	'3
Gasoline and diesel fuel . . . . . \$1,000 . . . . .	'400 549	2
On-highway use of gasoline and diesel fuel . . . . . \$1,000 . . . . .	'337 263	2
Off-highway use of gasoline and diesel fuel . . . . . \$1,000 . . . . .	'63 286	2
All other fuels and lubricants . . . . . \$1,000 . . . . .	'27 127	'3
Total rental costs . . . . . \$1,000 . . . . .	'400 154	2
Machinery and equipment . . . . . \$1,000 . . . . .	'175 916	'4
Buildings . . . . . \$1,000 . . . . .	'224 238	2
Selected purchased services . . . . . \$1,000 . . . . .	'1 162 685	4
Communication services . . . . . \$1,000 . . . . .	'469 085	2
Repairs to buildings and other structures . . . . . \$1,000 . . . . .	'136 302	'2
Repairs to machinery and equipment . . . . . \$1,000 . . . . .	'160 092	'3
Legal services . . . . . \$1,000 . . . . .	'65 687	'6
Accounting, auditing, and bookkeeping services . . . . . \$1,000 . . . . .	'173 847	'23
Advertising and promotional services . . . . . \$1,000 . . . . .	S	S
Beginning-of-year gross book value of depreciable assets . . . . . \$1,000 . . . . .	'3 529 612	2
Capital expenditures, other than land . . . . . \$1,000 . . . . .	'621 473	'3
Retirements and disposition of depreciable assets . . . . . \$1,000 . . . . .	'173 188	'5
End-of-year gross book value of depreciable assets . . . . . \$1,000 . . . . .	'3 977 897	2
Depreciation charges during year . . . . . \$1,000 . . . . .	'416 001	2
Establishments with inventories . . . . . number . . . . .	'4 527	-
Value of construction work for establishments with inventories . . . . . \$1,000 . . . . .	'8 341 263	-
End-of-2002, inventories of materials and supplies . . . . . \$1,000 . . . . .	'754 386	'10
End-of-2001, inventories of materials and supplies . . . . . \$1,000 . . . . .	'734 954	'15
Establishments with no inventories . . . . . number . . . . .	'53 428	-
Value of construction work for establishments with no inventories . . . . . \$1,000 . . . . .	S	-
Establishments not reporting inventories . . . . . number . . . . .	'517	-
Value of construction work for establishment not reporting inventores . . . . . \$1,000 . . . . .	S	-

<sup>1</sup>For the 2002 Economic Census, the definitions of value of business done and value of construction work have been modified from the 1997 Economic Census definitions. See Appendix A for the modified definitions.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 5. Selected Statistics for Establishments by Employment Size Class: 2002**

[Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Employment size class	E <sup>1</sup>	Number of establishments	Total number of employees	Total payroll	Value of business done <sup>2</sup>	Value of construction work <sup>2</sup>	Net value of construction work	Value added	Cost of materials, components, supplies, and fuels	Cost of construction work sub-contracted out to others	Relative standard error of estimate (percent) for column—
	A	B	C	D	E	F	G	H	I	J	C
236115, New single-family housing construction (except operative builders)											
All establishments .....	'2	'58 472	'273 055	'8 262 607	'62 171 283	'61 781 469	'38 573 155	'19 677 808	'19 285 162	'23 208 314	1
Establishments with—											
1 to 4 employees .....	—	'41 602	'86 849	'2 031 200	'21 859 293	'21 793 366	'13 827 717	'6 457 733	'7 435 910	'7 965 649	2
5 to 9 employees .....	—	'11 569	'72 037	'1 991 633	'14 748 809	'14 685 558	'9 258 330	'4 662 184	'4 659 397	'5 427 228	3
10 to 19 employees .....	—	'3 726	'47 875	'1 529 327	'10 203 174	'10 137 343	'6 309 304	'3 150 408	'3 224 728	'3 828 038	3
20 to 49 employees .....	—	'1 314	'36 569	'1 356 856	'8 085 346	'8 008 891	'5 005 316	'2 917 808	'2 163 962	'3 003 575	5
50 to 99 employees .....	—	'176	'11 701	'536 823	'3 179 276	'3 163 473	'1 699 508	'906 820	'808 492	'1 463 965	1
100 to 249 employees .....	—	'70	'10 116	'432 230	'2 147 742	'2 122 575	'1 153 101	'722 640	'455 628	'969 474	2
250 to 499 employees .....	—	11	'3 541	'161 031	D	D	'553 488	'428 929	'201 303	D	—
500 to 999 employees .....	—	2	D	D	D	D	D	D	D	D	S
1,000 employees or more .....	—	'2	D	D	D	D	D	D	D	D	S

<sup>1</sup>Construction receipts were obtained from census respondent forms. Data for establishments whose respondent forms were not received at the time data were tabulated were calculated using industry averages and imputation for nonresponse. The following symbols are shown where estimated imputation-based data on construction receipts account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>For the 2002 Economic Census, the definitions of value of business done and value of construction work have been modified from the 1997 Economic Census definitions. See Appendix A for the modified definitions.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 6. Selected Statistics for Establishments by Value of Business Done Size Class: 2002**

[Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Dollar value size class	E <sup>1</sup>	Number of establishments	Total number of employees	Total payroll	Value of business done <sup>2</sup>	Value of construction work <sup>2</sup>	Net value of construction work	Value added	Cost of materials, components, supplies, and fuels	Cost of construction work subcontracted out to others	Relative standard error of estimate (percent) for column—
	A	B	C	D	E	F	G	H	I	J	G
236115, New single-family housing construction (except operative builders)											
All establishments .....	'2	'58 472	'273 055	'8 262 607	'62 171 283	'61 781 469	'38 573 155	'19 677 808	'19 285 162	'23 208 314	2
Establishments with value of business done—											
Less than \$25,000 .....	'9	S	S	S	S	S	S	S	S	S	S
\$25,000 to \$49,999 .....	—	'1 653	S	S	S	S	S	S	S	S	S
\$50,000 to \$99,999 .....	—	'4 806	'7 187	'96 602	'361 114	'360 475	'265 509	'166 914	'99 235	'94 966	'6
\$100,000 to \$249,999 .....	—	'14 345	'33 900	'553 542	'2 353 320	'2 347 901	'1 721 563	'1 052 415	'674 567	'626 339	'4
\$250,000 to \$499,999 .....	—	'12 720	'41 192	'872 718	'4 560 668	'4 549 111	'3 212 906	'1 799 521	'1 424 942	'1 336 205	'4
\$500,000 to \$999,999 .....	—	'11 057	'48 527	'1 243 660	'7 757 766	'7 723 267	'5 196 481	'2 661 229	'2 569 751	'2 526 785	'4
\$1,000,000 to \$2,499,999 .....	—	'8 954	'58 102	'1 812 681	'13 931 048	'13 849 853	'8 886 694	'4 189 613	'4 778 276	'4 963 159	'3
\$2,500,000 to \$4,999,999 .....	—	'2 985	'30 037	'1 154 409	'10 254 364	'10 201 128	'6 321 626	'2 947 804	'3 427 058	'3 879 502	'5
\$5,000,000 to \$9,999,999 .....	—	'1 239	'20 705	'883 802	'8 253 327	'8 204 793	'4 738 605	'2 168 805	'2 618 334	'3 466 188	'6
\$10,000,000 or more .....	—	'646	'31 742	'1 624 330	'14 633 908	'14 479 450	'8 178 361	'4 654 253	'3 678 566	'6 301 089	'7

<sup>1</sup>Construction receipts were obtained from census respondent forms. Data for establishments whose respondent forms were not received at the time data were tabulated were calculated using industry averages and imputation for nonresponse. The following symbols are shown where estimated imputation-based data on construction receipts account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>For the 2002 Economic Census, the definitions of value of business done and value of construction work have been modified from the 1997 Economic Census definitions. See Appendix A for the modified definitions.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.



**Table 7. Value of Construction Work for Establishments by Type of Construction: 2002**

[Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Type of construction	Value of construction work <sup>1</sup>				Relative standard error of estimate (percent) for column—			
	Total	New construction	Additions, alterations, or reconstruction	Maintenance and repair	A	B	C	D
	A	B	C	D	A	B	C	D
<b>236115, New single-family housing construction (except operative builders)</b>								
Total .....	'61 781 469	'58 059 875	'3 269 496	'452 098	2	2	3	'4
Building construction, total .....	'45 812 714	'42 112 364	'3 256 783	'443 566	2	2	3	'4
Single-family houses, detached and attached .....	'44 074 350	'40 846 368	'2 852 923	'375 060	2	2	'4	4
Single-family houses, detached .....	'40 686 874	'37 670 562	'2 674 807	'341 504	'3	'3	'4	'5
Single-family houses, attached .....	'3 387 476	'3 175 806	'178 115	'33 556	'6	'6	'9	'13
Apartment buildings (2 or more units), such as rentals, apartment type condominiums and cooperatives .....	'423 668	'329 448	'72 700	'21 519	'4	'4	'14	'8
Other building construction .....	'1 314 695	'936 548	'331 161	'46 987	'5	'6	'6	'7
Nonbuilding construction, total .....	D	D	'12 713	'8 532	S	S	'16	'14
Other nonbuilding construction .....	D	D	'12 713	'8 532	S	S	'16	'14
Construction work, nsk .....	D	D	—	—	—	—	—	—

<sup>1</sup>For the 2002 Economic Census, the definition of value of construction work has been modified from the 1997 Economic Census definition. See Appendix A for the modified definition.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 8. Selected Statistics for Establishments by Specialization in Types of Construction: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in Table 7. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at the end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A.]

Item	Number of establishments	Total number of employees	Total payroll	Value of construction work for specialized type	Net value of construction work	Value added	Cost of construction work subcontracted out to others	Relative standard error of estimate (percent) for column—
	A	B	C	D	E	F	G	G
<b>236115, New single-family housing construction (except operative builders)</b>								
Total .....	'58 472	'273 055	'8 262 607	X	'38 573 155	'19 677 808	'23 208 314	2
Establishments specializing 51 percent or more...	'57 997	'269 094	'8 120 442	'58 608 565	'38 143 033	'19 437 987	'22 932 988	2
<b>Building construction, total</b>								
Establishments specializing 51 percent or more...	'34 384	D	D	D	D	D	D	S
Specialization 100 percent .....	'25 786	'126 885	'4 154 258	'32 328 204	'20 123 880	'9 373 247	'12 204 325	'3
Specialization 90 to 99 percent .....	'3 096	'23 234	'724 400	'5 209 836	'3 275 220	'1 627 101	'2 294 539	'6
Specialization 80 to 89 percent .....	'1 665	'13 007	'447 091	'2 491 805	'2 009 621	'1 243 139	'1 000 212	'14
Specialization 70 to 79 percent .....	'1 560	'9 698	'309 095	'1 305 863	'1 187 651	'603 599	'589 273	'14
Specialization 60 to 69 percent .....	'1 166	'7 430	'251 035	'956 205	'885 556	'512 701	'620 600	'6
Specialization 51 to 59 percent .....	'1 110	D	D	D	D	D	D	S
<b>Single-family houses, detached and attached</b>								
Establishments specializing 51 percent or more...	'34 383	D	D	D	D	D	D	S
Specialization 100 percent .....	'25 786	'126 885	'4 154 258	'32 328 204	'20 123 880	'9 373 247	'12 204 325	'3
Specialization 90 to 99 percent .....	'3 096	'23 234	'724 400	'5 209 836	'3 275 220	'1 627 101	'2 294 539	'6
Specialization 80 to 89 percent .....	'1 664	'12 955	'444 179	'2 436 411	'1 998 317	'1 234 449	'943 963	'15
Specialization 70 to 79 percent .....	'1 560	'9 698	'309 095	'1 305 863	'1 187 651	'603 599	'589 273	'14
Specialization 60 to 69 percent .....	'1 166	'7 430	'251 035	'956 205	'885 556	'512 701	'620 600	'6
Specialization 51 to 59 percent .....	'1 110	D	D	D	D	D	D	S
<b>Single-family houses, detached</b>								
Establishments specializing 51 percent or more...	'32 030	'173 562	'5 643 829	'40 276 024	'26 472 584	'12 825 628	'15 843 021	'3
Specialization 100 percent .....	'24 422	'121 624	'3 984 107	'31 035 332	'19 307 592	'8 986 466	'11 727 740	'3
Specialization 90 to 99 percent .....	'2 855	'20 787	'665 880	'4 784 778	'3 027 310	'1 505 027	'2 092 347	'7
Specialization 80 to 89 percent .....	'1 446	'11 362	'385 397	'2 210 063	'1 789 920	'1 130 244	'877 494	'16
Specialization 70 to 79 percent .....	'1 365	'8 580	'265 843	'1 047 172	'984 411	'486 287	'444 275	'9
Specialization 60 to 69 percent .....	'994	'6 156	'197 766	'691 044	'743 676	'370 266	'354 134	'5
Specialization 51 to 59 percent .....	'949	'5 052	'144 835	'507 635	'619 674	'347 338	'347 030	'6
<b>Single-family houses, attached</b>								
Establishments specializing 51 percent or more...	'2 352	D	D	D	D	D	D	S
Specialization 100 percent .....	'1 365	'5 261	'170 151	'1 292 872	'816 288	'386 781	'476 584	'11
Specialization 90 to 99 percent .....	'241	'2 447	'58 520	'425 058	'247 910	'122 075	'202 192	'14
Specialization 80 to 89 percent .....	'218	'1 594	'58 782	'226 348	'208 397	'104 205	'66 468	'19
Specialization 70 to 79 percent .....	'195	'1 118	'43 252	'258 691	S	'117 312	S	S
Specialization 60 to 69 percent .....	'172	'1 273	'53 270	'265 161	'141 879	'142 434	'266 466	'13
Specialization 51 to 59 percent .....	'161	D	D	D	D	D	D	S
<b>Construction work, nsk</b>								
Establishments specializing 51 percent or more...	'23 610	D	D	D	D	D	D	—
Specialization 100 percent .....	'23 610	D	D	D	D	D	D	—
Specialization 90 to 99 percent .....	—	—	—	—	—	—	—	—
Specialization 80 to 89 percent .....	—	—	—	—	—	—	—	—
Specialization 70 to 79 percent .....	—	—	—	—	—	—	—	—
Specialization 60 to 69 percent .....	—	—	—	—	—	—	—	—
Specialization 51 to 59 percent .....	—	—	—	—	—	—	—	—

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 9. Value of Business Done for Establishments by Kind-of-Business Activity: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. Based on their primary business activity or combination of activities, establishments were classified into this specific industry. These establishments, however, may also be engaged in other kinds of business activities. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Primary and other kind of business activities	Value of business done <sup>1</sup>	Relative standard error of estimate (percent)
<b>236115, New single-family housing construction (except operative builders)</b>		
Total .....	'62 171 283	'2
Building construction, total .....	'44 883 599	'2
Building construction on land owned by you, for sale .....	'2 418 933	'8
Building construction on land owned by others .....	'38 802 647	2
Remodeling contractor .....	'1 835 242	'4
Construction management, at risk (for building construction) .....	'591 555	'10
Construction management, agency or fee only (for building construction) .....	'1 235 222	'11
All other construction activities .....	'1 253 706	'9
Other business activities secondary to construction activities, total .....	D	S
All other business activities secondary to construction activities .....	D	S
Kind of business activity, nsk .....	D	S

<sup>1</sup>For the 2002 Economic Census, the definition of value of business done has been modified from the 1997 Economic Census definition. See Appendix A for the modified definition.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 10. Selected Statistics for Establishments by Specialization in Kind-of-Business Activity: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. This table presents selected statistics for establishments according to degree of specialization by major activity of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of business done by kind of business activity was not provided in Table 9. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, and nonsampling error, see note at end of table. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A.]

Item	Number of establishments	Total number of employees	Total payroll	Value of construction work for specialized kind of business	Net value of construction work	Value added	Cost of construction work subcontracted out to others	Relative standard error of estimate (percent) for column—
	A	B	C	D	E	F	G	G
<b>236115, New single-family housing construction (except operative builders)</b>								
Total .....	'58 472	'273 055	'8 262 607	X	'38 573 155	'19 677 808	'23 208 314	2
Establishments specializing 51 percent or more...	'58 471	'273 047	'8 262 591	'55 801 162	'38 573 156	'19 677 810	'23 208 313	2
<b>Building construction, total</b>								
Establishments specializing 51 percent or more...	'34 861	D	D	D	D	D	D	S
Specialization 100 percent .....	'18 743	D	D	D	D	D	D	S
Specialization 90 to 99 percent .....	'3 403	'21 842	'757 519	'6 129 055	'3 826 823	'1 482 241	'2 707 150	'5
Specialization 80 to 89 percent .....	'2 591	'14 909	'474 639	'3 660 147	'2 770 792	'1 372 956	'1 678 613	'10
Specialization 70 to 79 percent .....	'3 103	'17 750	'595 544	'3 524 594	'3 111 189	'1 787 362	'1 702 393	'10
Specialization 60 to 69 percent .....	'2 445	'14 185	'457 881	'2 418 463	'2 048 223	'1 030 716	'1 798 242	'13
Specialization 51 to 59 percent .....	'4 576	'24 277	'711 988	'2 236 138	'2 839 976	'1 485 269	'1 465 302	6
<b>Building construction on land owned by others</b>								
Establishments specializing 51 percent or more...	'33 221	'180 373	'5 738 645	'38 526 963	'27 320 545	'12 865 544	'16 979 556	'3
Specialization 100 percent .....	'17 586	'90 656	'2 871 972	'21 050 379	'13 146 520	'6 062 302	'7 903 859	'3
Specialization 90 to 99 percent .....	'3 291	'21 013	'715 979	'6 022 891	'3 739 086	'1 412 047	'2 683 870	'5
Specialization 80 to 89 percent .....	'2 511	'14 467	'454 426	'3 609 485	'2 713 007	'1 320 282	'1 674 584	'10
Specialization 70 to 79 percent .....	'3 020	'17 019	'568 499	'3 445 847	'3 039 939	'1 728 588	'1 666 619	'10
Specialization 60 to 69 percent .....	'2 366	'13 642	'442 247	'2 235 151	'1 942 083	'924 581	'1 626 261	'14
Specialization 51 to 59 percent .....	'4 446	'23 576	'685 521	'2 163 211	'2 739 909	'1 417 743	'1 424 364	'7
<b>Construction management, at risk (for building construction)</b>								
Establishments specializing 51 percent or more...	'474	D	D	D	D	D	D	S
Specialization 100 percent .....	'282	D	D	D	D	D	D	S
Specialization 90 to 99 percent .....	'11	126	6 221	19 216	17 242	8 226	2 711	8
Specialization 80 to 89 percent .....	S	'143	'3 091	'14 482	'15 903	'8 586	S	S
Specialization 70 to 79 percent .....	S	'232	S	'43 764	S	'30 229	S	S
Specialization 60 to 69 percent .....	S	'269	'6 058	'18 289	S	'17 522	S	S
Specialization 51 to 59 percent .....	'75	'484	'18 722	'52 569	'76 159	'52 970	'25 134	'14
<b>Construction management, agency or fee only (for building construction)</b>								
Establishments specializing 51 percent or more...	'1 159	'7 229	'360 403	'1 103 014	'940 897	'856 771	'287 982	4
Specialization 100 percent .....	'873	'5 257	'272 083	'760 529	'690 783	'619 910	'69 746	'10
Specialization 90 to 99 percent .....	'101	'703	'35 319	'86 949	'70 495	'61 968	'20 569	10
Specialization 80 to 89 percent .....	S	'300	'17 122	'36 180	'41 881	'44 089	'2 072	'16
Specialization 70 to 79 percent .....	S	'499	'18 850	'34 983	'31 216	'28 544	'16 459	'18
Specialization 60 to 69 percent .....	S	'274	'9 575	'165 024	'84 076	'88 612	'163 846	'3
Specialization 51 to 59 percent .....	S	197	7 454	19 350	22 446	13 647	15 290	38
<b>Kind of business activity, nsk</b>								
Establishments specializing 51 percent or more...	'23 600	D	D	D	D	D	D	S
Specialization 100 percent .....	'23 600	D	D	D	D	D	D	S
Specialization 90 to 99 percent .....	—	—	—	—	—	—	—	—
Specialization 80 to 89 percent .....	—	—	—	—	—	—	—	—
Specialization 70 to 79 percent .....	—	—	—	—	—	—	—	—
Specialization 60 to 69 percent .....	—	—	—	—	—	—	—	—
Specialization 51 to 59 percent .....	—	—	—	—	—	—	—	—

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 11. Value of Construction Work for Establishments by Location of Construction Work: 2002**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. Data based on the 2002 Economic Census. For information on confidentiality protection, sampling error, nonsampling error, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Location of construction work	Value of construction work <sup>1</sup>	Relative standard error of estimate (percent) for column—
<b>236115, New single-family housing construction (except operative builders)</b>		
Total .....	'61 781 469	2
Construction work done in—		
Alabama .....	'543 995	'13
Alaska .....	'158 495	'22
Arizona .....	'1 641 612	6
Arkansas .....	'258 036	'19
California .....	'6 617 907	'6
Colorado .....	'1 712 336	'9
Connecticut .....	'836 900	10
Delaware .....	'332 533	'12
District of Columbia .....	S	S
Florida .....	'6 366 086	'12
Georgia .....	'1 692 099	'13
Hawaii .....	'768 220	4
Idaho .....	'520 135	'13
Illinois .....	'1 966 719	'11
Indiana .....	'1 244 980	'8
Iowa .....	'373 967	'11
Kansas .....	'471 928	'12
Kentucky .....	'561 526	'23
Louisiana .....	'373 978	'16
Maine .....	'425 190	'7
Maryland .....	'1 357 235	'15
Massachusetts .....	'1 368 342	'10
Michigan .....	'2 037 695	7
Minnesota .....	'1 363 168	'14
Mississippi .....	'239 054	17
Missouri .....	'768 954	'8
Montana .....	'490 019	6
Nebraska .....	'279 009	'9
Nevada .....	'410 298	'14
New Hampshire .....	'376 377	'13
New Jersey .....	'2 258 291	14
New Mexico .....	'444 035	'9
New York .....	'2 292 750	'9
North Carolina .....	'2 416 767	'7
North Dakota .....	'81 533	'22
Ohio .....	'2 135 946	'12
Oklahoma .....	'486 528	'13
Oregon .....	'708 626	'9
Pennsylvania .....	'2 696 626	'9
Rhode Island .....	'219 456	'21
South Carolina .....	'1 062 285	'7
South Dakota .....	'195 996	'14
Tennessee .....	'696 007	'11
Texas .....	'3 354 041	'9
Utah .....	'621 760	'11
Vermont .....	'302 882	'15
Virginia .....	'2 088 521	'6
Washington .....	'1 542 916	'10
West Virginia .....	'300 077	'21
Wisconsin .....	'2 002 041	6
Wyoming .....	'248 961	7

<sup>1</sup>For the 2002 Economic Census, the definition of value of construction work has been modified from the 1997 Economic Census definition. See Appendix A for the modified definition.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

# Appendix A.

## Explanation of Terms

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### **ESTABLISHMENT**

A relatively permanent office, or other place of business, where the usual business activities related to construction are conducted. Generally, a relatively permanent office is one which has been established for the management of more than one project or job and which is expected to be maintained on a continuing basis.

Number of establishments includes all establishments that were in business at any time during the year. It covers all full-year and part-year operations. Construction establishments which were inactive or idle for the entire year were not included.

### **NUMBER OF EMPLOYEES**

Includes all full-time and part-time individuals on the payrolls of construction establishments during any part of the pay period which included the 12th of March, May, August, and November. Included are individuals on paid sick leave, paid holidays, paid vacations, and salaried officers and executives of a corporation. Excluded are subcontractors and their employees; full- or part-time leased employees whose payroll was filed under an employee leasing company's Employer Identification Number; temporary staffing obtained from a staffing service; and proprietors and partners of unincorporated businesses.

Includes all permanent full-time and part-time employees who are on the payrolls of establishments who worked or received pay for any part of the pay period including the 12th of March, May, August, and November.

The all employees or total number of employees number is the sum of construction workers plus other employees who were on the payroll during the pay periods including the 12th of March, May, August, and November, divided by four.

### **Construction workers**

Includes all payroll workers (up through the working supervisory level) directly engaged in construction operations, such as painters, carpenters, plumbers, and electricians. Included are journeymen, mechanics, apprentices, laborers, truck drivers and helpers, equipment operators, on-site record keepers, and security guards. Supervisory employees above the working foreman level are excluded from this category and are included in the other employees category.

The average number of construction workers is the sum of construction workers who were on the payroll during the pay periods including the 12th of March, May, August, and November, divided by four.

### **Other employees**

Includes payroll employees in executive, purchasing, accounting, personnel, professional, technical activities, and routine office functions. Also included are supervisory employees above the working foreman level.

The average number of other employees is the sum of other employees who were on the payroll during the pay periods including the 12th of March, May, August, and November, divided by four.

### **PAYROLL**

Includes the gross earnings paid in the reporting year to all employees on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to deductions such as employees'



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Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation, but excludes payments to the proprietor or partners, if unincorporated.

### **Payroll for Construction Workers**

Includes the gross earnings paid in the reporting year to all construction workers on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to deductions such as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds.

### **Payroll for Other Employees**

Includes the gross earnings paid in the reporting year to all other employees on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacations and sick leave pay, prior to deductions such as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Payroll of other employees excludes salaries of the proprietor or partners, if unincorporated.

### **FIRST-QUARTER PAYROLL FOR ALL EMPLOYEES**

Includes the gross earnings paid in the first quarter of the reporting year to all employees on the payroll of construction establishments. The first-quarter payroll period is the first quarterly pay period which includes March 12. Included are all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. It also includes salaries of officers of these establishments, if a corporation, but excludes payments to the proprietor or partners, if unincorporated.

### **FRINGE BENEFITS FOR ALL EMPLOYEES**

Includes the total sum of fringe benefits of all full-time and part-time employees on the payrolls of construction establishments during any part of the pay period which included the 12th of the months specified on the report form. Includes expenditures made by the employer for legally required and voluntary fringe benefit programs for employees.

### **Legally Required Expenditures**

Includes expenditures made by the employer for Social Security and Medicare contributions, unemployment compensation, worker's compensation, and state temporary disability payments.

### **Voluntary Expenditures**

Includes expenditures made by the employer for life insurance premiums, pension plans, insurance premiums on hospital and medical plans, welfare plans, and union negotiated benefits.

### **VALUE OF BUSINESS DONE**

Includes the sum of value of construction work and other business receipts. Value of business done is the sum of receipts, billings, or sales from establishments of construction business activities plus receipts from other business activities.

### **Value of Construction Work**

In the 1987-1997 censuses, the value of construction work was collected to measure actual construction activity done during the year. Studies have shown that respondents were not able to accurately report these data. In 2002, receipts, billings, or sales for construction work was collected.

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This item includes the receipts, billings, or sales for construction work done by building contractors, heavy and civil engineering construction contractors, and specialty trade contractors. Included are new construction, additions, alterations or reconstruction, and maintenance and repair construction work. Establishments engaged in the sale and installation of construction components such as plumbing, heating, and central air-conditioning supplies and equipment; lumber and building materials; paint, glass, and wallpaper; and electrical and wiring supplies, elevators, or escalators were instructed to include both the value for the installation and receipts covering the price of the items installed. Excluded are the cost of industrial and other special machinery and equipment that are not an integral part of a structure and receipts from business operations in foreign countries.

The value of construction work consists of several components that are summed up individually to get the total value of construction work. These components are:

1. Value of construction work on government owned projects. This is the total of all projects owned by federal, state, and local governments:
  - a. Value of construction work on federally owned projects. This is the value of construction work for projects owned by the federal government.
  - b. Value of construction work on state and locally owned projects. This is the summed total value of construction work for all projects owned by state and local governments.
2. Value of construction work on privately owned projects. This is the value of construction work for projects owned privately (excluding government owned projects).

### **Other Business Receipts**

Includes the receipts for all other business activities done by an establishment in the current year. Includes business receipts not reported as value of construction work. This includes business receipts from retail and wholesale trade, rental of equipment without operator, manufacturing, transportation, legal services, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also included here. Excluded are nonoperating income such as interest, dividends, the sale of fixed assets, or receipts from other business operations in foreign countries.

### **NET VALUE OF CONSTRUCTION WORK**

Includes the value of construction work less the cost of construction work subcontracted out to others.

### **VALUE ADDED**

This measure of construction activity is equal to value of business done, less costs for construction work subcontracted out to others and costs for materials, components, supplies, and fuels.

### **VALUE OF CONSTRUCTION WORK SUBCONTRACTED IN FROM OTHERS**

Includes the value of construction work done by reporting establishments as subcontractors to other contractors or builders. Establishments were asked to report the approximate percent of total value of construction work accounted for by such work, and the percentages reported were applied to the reported value of construction work to develop a dollar value.

### **CONSTRUCTION RECEIPTS PERCENT ESTIMATED**

Construction receipts were obtained from census respondent forms. For establishments whose respondent forms were not received at the time data were tabulated, the data were calculated using industry averages and imputation for nonresponse.

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## **SELECTED COSTS**

Includes the direct charges actually paid or payable for costs incurred for purchases of materials, components, and supplies; costs of construction work subcontracted out to others; and costs for selected power, fuels, and lubricants. Capital expenditures and rental costs for machinery, equipment, and structures are not included.

### **Cost of Materials, Components, and Supplies**

Includes the costs for materials, components, and supplies used by establishments in the construction or reconstruction of buildings, structures, or other facilities plus costs for materials bought and resold to others. Also included are costs made for direct purchases of materials, components, and supplies although the purchases were subsequently provided to subcontractors for their use. Supplies include expendable tools which are charged to current accounts. Freight and other direct charges representing only that amount paid after discounts and the value of materials, components, and supplies obtained from other establishments of the respondent's company are also included. Excluded from this item are the cost of fuels, lubricants, electric energy, and industrial and other specialized machinery and equipment such as printing presses; computer systems that are not an integral part of a structure; and materials furnished to contractors by the owners of projects.

### **Cost of Construction Work Subcontracted Out to Others**

Includes all costs for construction work subcontracted out to other construction contractors during the reporting year. Excluded from this item are costs to the reporting establishment for its purchases of materials, components, and supplies provided to a subcontractor for use. These costs are reported under costs for materials, components, and supplies. Also excluded are costs for the rental of machinery or equipment.

### **Cost of Selected Power, Fuels, and Lubricants**

Includes costs for fuels including gasoline, diesel fuel and lubricants, and electric energy purchased during the year from other companies or received from other establishments of the company. Also included are costs for natural gas, manufactured gas, fuel oil, and coal and coke products.

The components of selected power, fuels, and lubricants are:

1. Purchased electricity. This is the cost of electric energy purchased during the year from other companies or received from other establishments of the company.
2. Natural gas and manufactured gas. This is the cost of natural gas and manufactured gas purchased during the year from other companies or received from other establishments of the company.
3. Gasoline and diesel fuel. This is the cost of gasoline and diesel fuel purchased during the year from other companies or received from other establishments of the company. This cost is broken down into two different uses of gasoline and diesel fuel. They are:
  - a. On-highway use of gasoline and diesel fuel. This is the cost of gasoline and diesel fuel purchased during the year to fuel highway vehicles. A highway vehicle is any self-propelled vehicle designed to carry a load over public highways, whether or not the vehicle was also designed to perform other functions. Examples of vehicles designed to carry a load over public highways are passenger automobiles, trucks, and truck tractors. If a vehicle can be used for a combination of on-highway and off-highway uses and has one fuel tank, the fuel use is not considered off-highway. An example of this is a concrete-mixer truck where the truck engine operates both the engine and the mixing unit by a power take-off and is fueled by a single tank. None of the fuel used in this vehicle is off-highway because of the on-highway use. If the vehicle has separate fuel tanks and engines, the fuel in a tank used for non-highway use may be considered off-highway use.

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- b. Off-highway use of gasoline and diesel fuel. This is the cost of gasoline and diesel fuel purchased during the reporting year for off-highway use. Off-highway fuel use is the use of fuel for trade, business, or income producing activity. In most cases, off-highway fuel use does not include use in a highway vehicle registered or required to be registered for use on public highways.
  4. All other fuels and lubricants. This is the cost of fuels and lubricants purchased during the year from other companies or received from other establishments of the company that are not included as costs in any of these categories: natural gas; manufactured gas; gasoline; and diesel fuel.

### **COSTS OF MATERIALS, COMPONENTS, SUPPLIES, AND FUELS**

Includes the costs for materials, components, and supplies used by establishments in the construction or reconstruction of buildings, structures, or other facilities plus costs for materials bought and resold to others. Also included is the costs for fuels. These include gasoline, diesel fuel, lubricants, electric energy purchased during the year from other companies or received from other establishments of the company, and costs for natural and manufactured gas, fuel oil, and coal and coke products. Excluded from this item are industrial and other specialized machinery and equipment, such as printing presses; computer systems that are not an integral part of a structure; and materials furnished to contractors by the owners of projects.

### **RENTAL PAYMENTS**

Includes the total rental costs for renting and/or leasing construction machinery and equipment, transportation equipment, production equipment, office equipment, furniture and fixtures, scaffolding, office space, and buildings. It excludes costs for the rental of land. It also excludes costs under agreements that in effect are conditional sales contracts such as capital leases. Such costs are included in capital expenditures.

### **SELECTED PURCHASED SERVICES**

Includes the costs for services purchased from other companies that are paid directly by an establishment that are normally considered as overhead or non-job-related costs. Included are only the cost of repairs necessary to maintain property and equipment. Excluded are the cost of improvements that increase the value of property or the cost of adapting the property for another use. Such costs are included in capital expenditures. Also excluded are the salaries paid to employees and cost of construction activities subcontracted to others already reported within the selected costs of an establishment.

Included in the cost of selected purchased services for communication services is the actual expense incurred or payable during the year for any type of communication. Such types of communication include telephone, data transmission, telegraph, Internet, connectivity, FAX, telex, photo transmission, paging, cellular telephone, on-line access and related services, etc.

Included in the cost of selected purchased services for repairs to buildings and other structures is the actual expense incurred or payable during the year for any type of repair to buildings and other structures. Such types of repair include maintenance and repair of buildings, job-site trailers, and other structures. Excluded are janitorial services.

The cost of selected purchased services for repairs to machinery and equipment is the actual expense incurred or payable during the year for any type of repairs made to structures and equipment by outside companies or from other establishments of the same company. Such types of repairs to machinery and equipment include maintenance and repair of construction equipment and tools; machinery; and office equipment, furniture, and vehicles, including related service contracts.

Included in the cost of selected purchased services for legal services is the actual expense incurred or payable during the year for any type of legal services. Excluded are the salaries paid to employees of the establishment for these services.

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Included in the cost of selected purchased services for accounting, auditing, and bookkeeping services is the actual expense incurred or payable during the year for these services. Excluded are the salaries paid to employees of the establishment for these services.

Included in the cost of selected purchased services for advertising and promotional services is the actual expense incurred or payable during the year for these services. Such types of advertising and promotional services include advertising, marketing, promotional, or public relations services.

### **GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)**

Includes the value of depreciable assets for the beginning of year (BOY) and end of year (EOY). Gross value of depreciable assets are usually the original costs of the assets at the beginning of the year. The gross value of depreciable assets (BOY), plus any capital expenditures for new and used depreciable assets in the reporting year, minus the gross value of depreciable assets sold, retired, scrapped, destroyed, etc. in the reporting year, comprise gross book value of depreciable assets (EOY). Depreciable assets are the fixed tangible property of the establishment for which depreciation accounts are ordinarily maintained.

### **CAPITAL EXPENDITURES, OTHER THAN LAND**

Includes capital expenditures that will be charged to the fixed assets accounts and for which depreciation accounts are ordinarily maintained. Includes the cost of capital improvements that were made during the year that increased the value of property or adapted the property for another use. Capital expenditures for leasehold improvements made to property leased from others are also included. Land expenditures are not included as capital expenditures. If any building or equipment had been acquired under a capital leasing arrangement that meet the criteria set down by the Financial Accounting Standards Board (FASB), respondents were instructed to report the original cost or market value as a fixed asset and as a capital expenditure, if acquired in the reporting year. If the lease qualified as an operating lease, respondents were instructed not to include the value of the building and equipment as a fixed asset or capital expenditure. If capital expenditures were not recorded directly at the establishment level but handled centrally at a company or division level, respondents were requested to report appropriate estimates for the individual establishments.

### **RETIREMENTS AND DISPOSITION OF DEPRECIABLE ASSETS**

Includes the gross value of depreciable assets sold, retired, scrapped, destroyed, abandoned, etc., during the year. The values shown are the acquisition costs of the retired assets. This item also includes the value of assets (at acquisition cost rather than current market value) transferred to other establishments of the same company.

### **DEPRECIATION CHARGES DURING YEAR**

Includes the depreciation expenses of the establishment during the reporting year. These expenses are charged against depreciable assets which are the fixed tangible property of the establishment for which depreciation accounts are ordinarily maintained.

### **NUMBER OF ESTABLISHMENTS WITH INVENTORIES**

Includes all establishments with payroll that reported a dollar amount of inventory. Includes the number of establishments that were in business at any time during the reporting year. It covers all full-year and part-year operations. Construction establishments that were inactive or idle for the entire year were not included.

### **Value of Construction Work for Establishments With Inventories**

Includes the value of construction work for establishments with payroll that reported a dollar amount of inventory in the reporting year.

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## **BEGINNING- AND END-OF-YEAR INVENTORIES OF MATERIALS AND SUPPLIES**

Includes the inventories of materials and supplies owned at the beginning and end of the reporting year by establishments with payroll. Includes all of the materials and supplies that are owned regardless of where they are held. Excludes materials that are owned by others but held by the reporting establishment. Builders who built on their own account for sale were requested to exclude work in progress and finished units not sold from inventories. Inventories of multiestablishment companies were instructed to be reported by the establishment that is responsible for the inventories, even if these inventories were held at a separate location.

## **NUMBER OF ESTABLISHMENTS WITH NO INVENTORIES**

Includes all establishments with payroll that reported having no inventories of materials and supplies during the reporting year. Includes the number of establishments that were in business at any time during the reporting year. It covers all full-year and part-year operations. Construction establishments that were inactive or idle for the entire reporting year were not included.

## **Value of Construction Work for Establishments With No Inventories**

Includes the value of construction work for establishments with payroll that reported having no dollar amount of inventory in the reporting year.

## **NUMBER OF ESTABLISHMENTS NOT REPORTING INVENTORIES**

Includes all establishments with payroll that did not report a dollar amount for inventories of materials and supplies during the reporting year. It covers all full-year and part-year operations. Construction establishments that were inactive or idle for the entire reporting year were not included.

## **Value of Construction Work for Establishments Not Reporting Inventories**

Includes the value of construction work for establishments that did not report a dollar amount for inventories of materials and supplies, and the value of construction work for establishments that did not complete a census form.

## **VALUE OF CONSTRUCTION WORK BY TYPE OF CONSTRUCTION**

Includes the dollar value of construction work according to the specified types of construction. There are three categories of construction. They are:

1. New construction. The original construction work done on a project including all finishing work on the original building or structure. Land development work on the site and demolition of existing structures are also included.
2. Additions, alterations, or reconstruction. The construction work which adds to the value or useful life of an existing building or structure or which adapts a building or structure to a new or different use. Included are "major replacements" of building systems such as the installation of a new roof or heating system and the resurfacing of streets or highways. This contrasts to the repair of a hole in a roof or the routine patching of highways and streets, which would be classified as maintenance and repair.
3. Maintenance and repair. The incidental construction work which keeps a property in ordinary working condition. Excluded are trash and snow removal, lawn maintenance and landscaping, cleaning, and janitorial services.

## **Types of Construction**

Provides data by the types of buildings, structures, or other facilities being constructed or worked on by construction establishments in the reporting year. Respondents were instructed that each building, structure, or other facility should be classified in terms of its function. For example, a restaurant building was to be classified in the restaurant category whether it was designed as a commercial restaurant building or an auxiliary unit of an educational institution. If respondents



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worked on more than one type of building or structure in a multibuilding complex, they were instructed to report separately for each building or type of structure. If they worked on a building that had more than one purpose; i.e., office and residential, or commercial, they were to classify the building by its major purpose. In addition, all respondents were requested to report the percentage of the value of construction work done for new construction, additions, alterations, or reconstruction, and maintenance and repair work for each of these types. There are two types of construction:

1. Building Construction. The details for this type of construction are defined as:

- Single-family houses, detached. Includes all fully detached residential buildings constructed for one family use.
- Single-family houses, attached, including townhouses and townhouse-type condominiums. Includes all residential buildings with two or more living quarters side by side, completely independent of one another, and separated by an unbroken party or lot line wall from ground to roof.
- Apartment buildings, apartment-type condominiums, and cooperatives. Includes apartment rentals, high-rise, low-rise, or any structures containing two or more housing units, excluding attached single-family houses.
- Dormitories and barracks. Includes school dormitories and military or nonmilitary barracks that are nonhousekeeping structures.
- Other manufacturing and industrial buildings. Includes all manufacturing and industrial buildings and plants that are used to house production and assembly activities. Note that industrial parks should be classified under its primary usage such as warehouses, office space, commercial, or industrial type buildings. Heavy industrial facilities such as blast furnaces, petroleum refineries, and chemical complexes are not included in this category but are reported under nonbuilding construction.
- Manufacturing and industrial warehouses. Includes all warehouses which are intended for industrial activities.
- Hotels and motels. Includes hotels, motels, bed-and-breakfast inns, and tourist cabins intended for transient accommodations. Also included are hotel and motel conference centers.
- Office buildings. Includes all buildings that are used primarily for office space or for government administrative offices. Also included are banks or financial buildings that are three stories or more. Medical office buildings are reported under hospitals and institutional buildings.
- All other miscellaneous commercial buildings. Includes all buildings that are intended for use primarily in the retail and service trades, i.e., shopping centers, department stores, drug stores, restaurants, public garages, auto service stations, and one or two story bank or financial institutions.
- Commercial warehouses. Includes distribution buildings and mini-storage units intended for commercial use. Also included are storage warehouses.
- Religious buildings. Includes all buildings that are intended for religious services or functions such as churches, synagogues, convents, monasteries, and seminaries.
- Educational buildings. Includes all buildings that are used directly in administrative and instructional activities such as colleges, universities, elementary and secondary schools, correspondence, commercial, and trade schools. Libraries, museums, and art galleries, as well as laboratories that are not a part of a manufacturing or commercial establishment, are also included.

- Health care and institutional buildings. Includes hospitals, medical office buildings, and all other buildings that are intended to provide health and institutional care such as clinics, infirmaries, sanitariums, nursing homes, homes for the aged, and orphanages.
- Public safety buildings. Includes detention centers, prisons, fire stations, and rescue squad buildings.
- Farm buildings, nonresidential. Includes nonresidential farm buildings such as barns, poultry houses, implement sheds, and farm silos.
- Amusement, social, and recreational buildings. Includes buildings that are used primarily for entertainment, social, and recreational activities such as sports arenas, convention centers, theaters, music halls, golf and country club buildings, fitness centers, and bowling alleys.
- Indoor swimming pools. Includes pools that are inside a building.
- Indoor ice rinks. Includes ice rinks that are inside a building.
- Grain elevators and dry cleaning plants. Includes grain and storage elevators and dry cleaning plants.
- Waste disposal plants. Includes recycling centers, garbage disposal plants, incinerator disposed facilities, and material recovery facilities.
- Miscellaneous building construction. Includes all other nonresidential buildings such as fire stations, post offices, and bus and air passenger terminals and hangars.

2. Nonbuilding Construction. The details for this type of construction are defined as:

- Highways, streets, and related work. Includes streets, roads, alleys, sidewalks, curbs and gutters, culverts, erosion control, installation of guard rails, highway signs, and lighting. Also includes earthwork protective structures when used in connection with road improvements.
- Airport runways and related work. Includes airport runways, taxiways, aprons, and related work.
- Private driveways and parking areas. Includes all nonstructural parking areas and private driveways of all surface types.
- Bridges and elevated highways. Includes viaducts and overpasses, roads, highways, railroads, and causeways built on structural supports.
- Tunnels. Includes highway, pedestrian, railroad, and water distribution tunnels.
- Sewers, sewer lines, septic tanks, and related facilities. Includes sanitary and storm sewers, pumping stations, septic systems, and related facilities.
- Water mains and related facilities. Includes water supply systems, pumping stations, and related facilities.
- Oil and gas pipeline construction. Includes pipelines for the transmission of gas, petroleum products, and liquefied gases.
- Power and communication transmission lines, towers, and related facilities. Includes electric power lines, telephone and telegraph lines, fiber optic cables, cable television lines, television and radio towers, and electric light and power facilities.
- Power plants and cogeneration plants, except hydroelectric. Includes electric and steam generating plants, cogenerating plants, and nuclear plants.
- Power plant, hydroelectric. Includes all types of hydroelectric power generating plants.
- Blast furnaces, chemical complexes, etc. Includes coke ovens and mining appurtenances such as tipples and washeries.

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- Sewage treatment plants. Includes sewage treatment and waste disposal plants.
  - Water treatment plants. Includes water filtration and water softening plants.
  - Urban mass transit. Includes subways, street cars, and light rail systems.
  - Railroad construction. Includes the construction of railroad beds, tracks, freight yards, and signal towers for railroad systems, excluding urban mass transit.
  - Conservation and development construction. Includes land reclamation, irrigation projects, drainage canals, levees, jetties, breakwaters, and flood control projects.
  - Dam and reservoir construction. Includes hydroelectric, water supply, and flood control dams and reservoirs.
  - Dry and Solid waste disposal. Includes all dry and solid waste disposal sites where non-hazardous waste is buried.
  - Harbor and port facilities. Includes docks, piers, and wharves.
  - Marine construction. Includes dredging, underwater rock removal, breakwaters, navigational channels, and locks.
  - Petrochemical plants and petroleum refineries. Includes petroleum related facilities.
  - Outdoor swimming pools. Includes wading pools and reflecting pools.
  - Fencing. Includes all types of fencing, except electronic containment fencing for pets.
  - Electronic containment fencing. Includes all types of electronic containment fencing for pets.
  - Recreational facilities. Includes athletic fields, golf courses, outdoor tennis courts, trails, and camps.
  - Ships. Includes special trade contractors working on ships and boats such as painters, carpenters, joiners, electricians, etc.
  - Oil and gas fields. Includes road construction, land clearing contracting, land moving contracting, and land leveling contracting in oil and gas fields.
  - Oil and gas field gathering lines. Includes land clearing contracting, land moving contracting, and land leveling contracting.
  - Coal mines. Includes land clearing contracting, land moving contracting, and land leveling contracting.
  - Metal mines. Includes land clearing contracting, land moving contracting, and land leveling contracting.
  - Nonmetallic mines. Includes land clearing contracting, land moving contracting, and land leveling contracting.
  - All other miscellaneous nonbuilding construction. Includes all other types of nonbuilding construction.

### **KINDS OF BUSINESS ACTIVITIES**

Includes dollar value of business done by business activity. Primary activities are construction activities that generate fifty-one percent or more of an establishment's dollar value of business done. Also included are other kinds of business activities. Other kinds of business activities include business receipts not reported as value of construction work. This item includes business receipts from retail and wholesale trade, rental of equipment without an operator, manufacturing, transportation, legal services, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also included in other kinds of business activities.

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## **VALUE OF CONSTRUCTION WORK FOR SPECIALIZED TYPE AND KIND OF BUSINESS**

Includes value of construction work for one of two specialized categories. These categories include types of construction and kind-of-business activity. A construction establishment specializes in a type of construction when fifty-one percent or more of the construction work done is in one construction industry. The construction establishment reports each type of construction it performs as a percent of value of construction work. Types of construction refers to the types of buildings, structures, or facilities constructed or worked on by construction establishments in the reporting year. Specialization in types of construction displays data for establishments with payroll that falls within each percent range of specialization. A construction establishment specializes in a kind-of-business activity when fifty-one percent or more of the construction work done by the establishment is performed in one type of business activity. The construction establishment reports each kind-of-business activity engaged in as a percent of value of construction work. Kind-of-business activity refers to the kinds of business activities construction establishments perform throughout the reporting year. Examples of kind-of-business activity include highway and street construction, electrical contracting, carpentry contracting, and concrete contracting. Specialization in kind-of-business activity displays data for establishments with payroll that fall within each percent range of specialization.

### **SPECIALIZATION PERCENT**

Includes data for establishments with payroll that fall within each percent range of specialization.

## **VALUE OF CONSTRUCTION WORK FOR ESTABLISHMENTS BY LOCATION OF WORK**

This is the value of construction done in particular states by establishment. An establishment can do construction in one or more states.

## Appendix B. NAICS Codes, Titles, and Descriptions

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### **236115 NEW SINGLE-FAMILY HOUSING CONSTRUCTION (EXCEPT OPERATIVE BUILDERS)**

This U.S. industry comprises general contractor establishments primarily responsible for the entire construction of new single-family housing, such as single-family detached houses and town houses or row houses where each housing unit pertains to one or more of the following:

1. is separated from its neighbors by a ground-to-roof wall and
2. has no housing units constructed above or below.

This industry includes general contractors responsible for the on-site assembly of modular and prefabricated houses. Single-family housing design-build firms and single-family construction management firms acting as general contractors are included in this industry.

# Appendix C.

## Methodology

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### SOURCES OF THE DATA

The construction sector includes approximately 650,000 establishments that were determined to be in-scope of the 2002 Economic Census — Construction. This number includes those industries in the North American Industry Classification System (NAICS) definition of construction with at least one paid employee in 2002.

Establishments in the 2002 Economic Census are divided into those sent report forms and those not sent report forms. The coverage of and the method of obtaining census information from each are described below:

1. Establishments sent a report form:

Sample frame establishments. The sample frame consisted of the entire construction universe; there were no subpopulations that were explicitly removed from the sample frame. The sample frame was compiled from a list of all construction companies in the active records of the Internal Revenue Service (IRS) and the Social Security Administration (SSA) that are subject to the payment of Federal Insurance Contributions Act taxes. Under special arrangements, to safeguard their confidentiality, the U.S. Census Bureau obtains information on the location and classification of the companies, as well as their payroll and receipts data from these sources. Unfortunately, these sources do not provide establishment level information for companies with multiple locations. For multilocation companies, the establishment level information is directly obtained from the U.S. Census Bureau's Company Organization Survey. For single-location companies, the IRS-SSA information is generally sufficient for assigning the company to a specific six-digit NAICS industry code.

The 2002 NAICS structure for the construction sector was significantly revised from the 1997 NAICS structure. Initially, only a small proportion of the establishments in the sample frame could be directly assigned a 2002 NAICS industry code with a high degree of confidence. Therefore, a special classification card was mailed to 150,000 construction establishments in early 2002. The goal of this classification card was to obtain the current NAICS industry code prior to assembly of the sample frame for the economic census — construction sample.

2. Establishments not sent a report form:

a. Nonsample frame establishments. There were a limited number of establishments included in the business register who were completely unclassified at the time of the economic census — construction sampling operation. These establishments were mailed a general classification card in early 2003. A portion of these were ultimately determined to be in-scope of the economic census — construction. Since this determination was not made until after the sample selection operation had been completed; these establishments were treated as a supplement to the original universe and were sampled independently for inclusion in the derived estimates.

b. All nonemployers, i.e., all firms subject to federal income tax, with no paid employees, were also excluded from the 2002 sample frame, as in previous censuses. Nonemployers with significant levels of receipts data were identified and included in the census mailout under the presumption that the nonemployer status may have been incorrect. Those determined to have employees are included in this report. Data for nonemployers are not included in this report, but are released in the annual *Nonemployer Statistics* series.

The report forms used to collect information for establishments in this sector are available at [help.econ.census.gov/econhelp/resources/](http://help.econ.census.gov/econhelp/resources/).

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A more detailed examination of census methodology is presented in the *History of the Economic Census* at [www.census.gov/econ/www/history.html](http://www.census.gov/econ/www/history.html).

## **INDUSTRY CLASSIFICATION OF ESTABLISHMENTS**

The classifications for all establishments covered in the 2002 Economic Census — Construction are classified in 1 of 31 industries in accordance with the industry definitions in the *North American Industry Classification System (NAICS), United States, 2002* manual. Changes between 1997 and 2002 affecting this sector are discussed in the text at the beginning of this report. Tables at [www.census.gov/epcd/naics02/n02ton97.htm](http://www.census.gov/epcd/naics02/n02ton97.htm) identify those industries that changed between the 1997 North American Industry Classification System (NAICS) and 2002 NAICS.

In the NAICS system, an industry is generally defined as a group of establishments that use similar processes or have similar business activities. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by construction, value of business done, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the construction sector for 2002, there are 3 subsectors (three-digit NAICS), 10 industry groups (four-digit NAICS), 28 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 31 U.S. industries (six-digit NAICS).

## **ESTABLISHMENT BASIS OF REPORTING**

The 2002 Economic Census — Construction is conducted on an establishment basis. A construction establishment is defined as a relatively permanent office or other place of business where the usual business activities related to construction are conducted. With some exceptions, a relatively permanent office is one that has been established for the management of more than one project or job and that is expected to be maintained on a continuing basis. Such establishment activities include, but are not limited to, estimating, bidding, purchasing, supervising, and operation of the actual construction work being conducted at one or more construction sites. Separate construction reports were not required for each project or construction site.

Companies with more than one construction establishment were required to submit a separate report for each establishment operated during any part of the census year. The construction sector figures represent a tabulation of records for individual establishments, rather than for companies.

If an establishment was engaged in construction and one or more distinctly different lines of economic activity at the same place of business, it was requested to file a separate report for each activity, provided that the activity was of substantial size and separate records were maintained. If a separate establishment report could not be prepared for each activity, then a construction report was requested covering all activities of that establishment providing that the value of construction work exceeded the gross receipts from each of its other activities.

The 2002 Economic Census — Construction excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service construction establishments of the same company. These data are published in a separate report series.

## **DESCRIPTION OF THE SAMPLE FRAME**

The major objective of the sample design was to provide a sample that would provide reliable estimates at the state by industry level. For sample efficiency considerations, the establishments in the initial 2002 construction frame were partitioned into two components for developing estimates within the sample frame. The details of each are described below:

1. Probability-proportionate-to-size (pps) sample. There were three non-overlapping strata for sample selection. An independent sample was selected within each state by industry cell. The details of each stratum were defined as:

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- Stratum 1. This stratum was comprised of approximately 12,000 establishments associated with multilocation companies. The establishments of these multiunit companies were included in the construction sample with certainty.
  - Stratum 2. This stratum was comprised of approximately 145,000 single-location companies that could be classified into a valid 2002 NAICS industry. These cases accounted for approximately 75 percent of the payroll associated with single-location companies in construction. The industry code for most of these establishments was determined from the special classification card that was mailed in early 2002. This group was partitioned into state by NAICS (six-digit) cells and an independent sample selected from each cell. Within each cell, a probability-proportionate-to-size (pps) sampling strategy was used. Under this approach, the probability of selection for the sample for larger establishments is higher than for smaller establishments. There were approximately 80,000 establishments selected from this group.
  - Stratum 3. This stratum was comprised of the remaining single-location companies. For these companies, we did not have an updated 2002 NAICS industry code. The most recent classification information available for these companies was their 1997 NAICS. Using this 1997 NAICS industry code, this stratum was partitioned into state by NAICS (four-digit) cells; and an independent sample selected from each cell. Again, probability-proportionate-to-size sampling methodology was utilized. There were approximately 30,000 establishments selected from this group.

Subsequent to the initial census mail-out, companies that initiated operations in 2002 were identified via administrative sources. To assure proper representation of the entire in-scope population, simple random samples of these new operations were selected and mailed separately.

2. Estimation and variances. Based on the response data, establishments were assigned to the appropriate NAICS (six-digit) industry. At each level of tabulation, unbiased estimates were derived by summing the weighted establishment data where the establishment sample weight was equal to the inverse of its probability of selection for the construction sample.

The resulting estimates were generated from one of many possible samples and are subject to sampling variability. Estimates of this sample variability were independently derived at all levels of aggregation. These sampling variances were then aggregated to the publication levels for the computation of the relative standard errors.

### **RELIABILITY OF DATA**

The estimates developed from the sample can differ somewhat from the results of a survey covering all companies in the sample lists, but are otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the construction sector is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data. They are presented in the form of relative standard errors that are the standard errors divided by the estimated values to which they refer.

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals, or ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples.

The complete-coverage value would be included in the range:



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- From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
  - From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.
  - From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference is that the comparable complete-survey result would fall within the indicated ranges and the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection; reporting; coding; transcription; imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the U.S. Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables of this publication having an associated standard error exceeding 75 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

### **DUPLICATION IN VALUE OF CONSTRUCTION WORK**

The aggregate of value of construction work reported by all construction establishments in each of the industry, geographic area, or other groupings contains varying amounts of duplication. This is because the construction work of one firm may be subcontracted to other construction firms and may also be included in the subcontractors' value of construction work. Also, part of the value of construction results from the use of products of nonconstruction industries as input materials. These products are counted in the nonconstruction industry, as well as part of the value of construction. Value added avoids this duplication and is, for most purposes, the best measure for comparing the relative economic importance of industries or geographic areas. Value added for construction industries is defined as the dollar value of business done less costs for construction work subcontracted to others and payments for materials, components, supplies, and fuels.

### **DISCLOSURE**

In accordance with federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments in a specific industry or geographic area is not considered a disclosure; therefore, this information may be released even though other information is withheld. Techniques employed to limit disclosure are discussed at [www.census.gov/epcd/ec02/disclosure.htm](http://www.census.gov/epcd/ec02/disclosure.htm).

# Appendix D. Geographic Notes

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Not applicable for this report.

# Appendix E. Metropolitan and Micropolitan Statistical Areas

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Not applicable for this report.

# Appendix F.

## Detailed NAICS and Bridge Code Titles: 2002

[The NAICS code title shown in Table 1 is a standard NAICS title from the North American Industry Classification System Manual. A more detailed title description for the NAICS code shown in Table 1 is included in this appendix]

2002 NAICS code	1997 bridge code	Detailed 2002 NAICS and 1997 bridge code title description
236115	23321000	New single family housing construction (except operative builders) Single family housing construction, general contractors
236116	23322000	New multifamily housing construction (except operative builders) Multifamily housing construction, general contractors
236117	23321000 23322000	New housing operative builders Single family housing construction, operative builders Multifamily housing construction, operative builders
236118	23321000 23322000	Residential remodelers Remodeling contractors, single family housing Remodeling contractors, multifamily housing
236210	23331000 23493000 23499000	Industrial building construction Other manufacturing and industrial building construction Other industrial nonbuilding construction Waste disposal plant construction
236220	23322000 23331000 23332000 23599000	Commercial and institutional building construction Barrack and dormitory construction Grain elevators, dry cleaning plants, and manufacturing and industrial warehouses construction Commercial and institutional building construction Indoor swimming pool contractors
237110	23491000 23499000 23581000	Water and sewer line and related structures construction Water and sewer line, mains, and related structures (including pumping stations, etc.) construction Sewage and water treatment plants and irrigation systems construction Water well drilling contractors
237120	21311200 23491000 23493000	Oil and gas pipeline and related structures construction Construction of oil and gas field gathering lines Oil and gas pipelines, mains, and related and related structures ( including oil storage tanks, etc) construction Petrochemical plants and refineries construction
237130	23492000 23493000	Power and communication line and related structures construction Power and communication transmission line construction Power generation plants and transformer stations construction, except hydroelectric
237210	23311000	Land subdivision Land subdivision and land development
237310	23411000 23412000 23521000	Highway, street, and bridge construction Highway and street construction Bridge construction Highway and traffic line painting contractors
237990	22412000 23499000 23599000	Other heavy and civil engineering construction Tunnel construction All other heavy and civil engineering construction Anchored earth retention contractors
238110	23571000	Poured concrete foundation and structure contractors Concrete (except paving) contractors
238120	23591000	Structural steel and precast concrete contractors Other structural steel erection contractors
238130	23551000	Framing contractors Framing carpentry contractors
238140	23541000 23542000	Masonry contractors Masonry and stone contractors Stucco contractors
238150	23592000	Glass and glazing contractors Glass and glazing contractors
238160	23561000	Roofing contractors Roofing contractors
238170	23561000	Siding contractors Siding (including gutters and downspouts) contractors
238190	23591000 23599000	Other foundation, structure, and building exterior contractors Metal curtain walls and metal furring installation contractors Forming, ornamental metal work installation, and foundation, structure, and building exterior contractors
238210	23511000 23531000	Electrical contractors Environmental controls installation contractors Electrical contractors
238220	23511000 23595000	Plumbing, heating, and air-conditioning contractors Other plumbing, heating, and air-conditioning contractors Scrubber, dust collection, and other industrial ventilation installation contractors
238290	23595000 23599000	Other building equipment contractors Other building equipment and machinery installation contractors Boiler, duct, and pipe insulation and service station equipment, lightning rod, bowling alley, church bell, and tower clock installation contractors
238310	23542000	Drywall and insulation contractors Other drywall, plastering, acoustical, and insulation contractors
238320	23521000	Painting and wall covering contractors Other painting and wall covering contractors

[The NAICS code title shown in Table 1 is a standard NAICS title from the North American Industry Classification System Manual. A more detailed title description for the NAICS code shown in Table 1 is included in this appendix]

2002 NAICS code	1997 bridge code	Detailed 2002 NAICS and 1997 bridge code title description
238330	23552000	Flooring contractors Floor laying and other floor contractors
238340	23543000	Tile and terrazzo contractors Tile, marble, terrazzo, and mosaic contractors
238350	23551000	Finish carpentry contractors Finish carpentry contractors
238390	23561000 23599000	Other building finishing contractors Sheet metal, except roofing and siding contractors Trade show exhibits installation and dismantling, spectator seating, modular furniture, window covering fixture installation, and other building finishing contractors
238910	21311200 21311300 21311400 21311500 23499000 23593000 23594000 23599000	Site preparation contractors Site preparation and related construction activities for oil and gas operations Site preparation and related construction activities for coal mining Site preparation and related construction activities for metal mining Site preparation and related construction activities for nonmetallic mining, except fuels Construction equipment (except cranes) rental with operator and right-of-way clearing and line slashing, blasting, and trenching contractors Excavation contractors Wrecking and demolition contractors Dewatering and core drilling and test boring for construction contractors
238990	23499000 23571000 23599000 56172000	All other specialty trade contractors Crane rental with operator Residential and commercial asphalt, brick, and concrete paving contractors All other special trade contractors Cleaning building exteriors, except sand blasting

