

Water and Sewer Line and Related Structures Construction: 2002

Issued December 2004

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2002 Economic Census

Construction

Industry Series



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

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-- Not applicable for this report.

Introduction to the Economic Census

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).

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) 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

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. 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.

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Construction

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.

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.

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.

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.

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.

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.

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

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 ¹	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
237110		Water and sewer line and related structures construction	12 357	204 085	7 380 999	32 501 442	26 837 637	16 021 682	11 004 146	1 200 565
	23491000	Water, sewer, and pipeline construction (pt) .	7 708	156 061	5 633 824	24 196 664	20 281 495	12 097 641	8 333 381	943 467
	23499000	All other heavy construction (pt)	620	24 115	973 391	5 416 103	3 781 121	2 095 150	1 701 217	69 092
	23581000	Water well drilling contractors	4 028	23 910	773 785	2 888 675	2 775 021	1 828 891	969 548	188 005

¹For 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 sampling errors and 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		
											A
237110, Water and sewer line and related structures construction											
United States	12 357	204 085	162 096	S	165 443	172 973	165 903	7 380 999	5 311 584	1	
Alabama	161	2 967	2 318	2 095	2 361	2 434	2 383	84 524	D	5	
Alaska	118	702	523	670	536	507	379	28 864	20 867	13	
Arizona	236	4 596	3 777	3 757	3 811	3 749	3 791	146 732	D	8	
Arkansas	186	1 949	1 633	1 202	1 811	1 785	1 734	45 429	32 201	9	
California	945	21 334	17 425	14 857	18 144	18 694	18 007	902 597	654 435	5	
Colorado	315	6 269	5 000	4 640	5 100	5 287	4 975	232 945	D	6	
Connecticut	95	1 451	D	D	1 185	1 261	1 173	68 122	D	5	
Delaware	29	896	733	719	742	742	729	37 266	28 228	7	
District of Columbia	—	—	—	—	—	—	—	—	—	—	
Florida	609	14 162	11 666	10 956	11 650	11 883	12 172	456 395	324 292	8	
Georgia	552	7 594	6 038	5 961	6 003	6 136	6 051	240 785	172 070	9	
Hawaii	26	695	D	D	533	576	583	D	24 214	9	
Idaho	107	1 101	D	D	820	931	862	37 514	D	8	
Illinois	420	5 383	D	D	4 184	4 494	4 741	237 977	D	9	
Indiana	167	4 205	3 243	2 676	2 874	3 809	3 613	155 393	113 580	4	
Iowa	127	1 547	1 173	952	1 219	1 287	1 234	59 348	41 594	11	
Kansas	163	2 349	1 842	1 734	1 835	1 875	1 923	88 276	62 957	7	
Kentucky	239	3 095	2 551	2 272	2 683	2 691	2 559	102 260	77 078	10	
Louisiana	151	3 131	2 517	2 227	2 617	2 660	2 564	99 617	D	9	
Maine	89	1 293	1 074	786	1 278	1 505	727	60 030	43 440	5	
Maryland	160	3 377	2 589	2 507	2 616	2 715	2 520	135 134	88 982	6	
Massachusetts	237	3 171	2 357	2 125	2 460	2 505	2 337	148 341	104 637	7	
Michigan	485	6 499	4 944	3 529	5 446	5 563	5 240	239 531	170 994	6	
Minnesota	313	4 914	3 911	2 427	4 238	4 666	4 312	212 183	161 556	6	
Mississippi	106	1 509	D	D	1 200	1 253	1 228	43 065	D	9	
Missouri	344	4 496	3 505	3 128	3 506	3 842	3 543	162 100	123 115	11	
Montana	111	813	623	473	628	724	669	25 093	19 021	9	
Nebraska	109	1 158	889	780	933	966	876	40 688	28 129	7	
Nevada	70	1 896	1 539	1 418	1 654	1 531	1 552	69 700	54 519	8	
New Hampshire	63	868	642	537	673	702	655	34 369	21 987	5	
New Jersey	295	3 613	2 684	2 450	2 737	2 857	2 692	161 733	116 805	9	
New Mexico	95	2 372	1 985	1 877	1 941	2 103	2 020	67 949	D	9	
New York	388	6 049	4 284	3 611	4 591	4 561	4 371	296 910	203 439	6	
North Carolina	496	6 819	5 344	5 278	5 372	5 453	5 271	214 399	151 961	8	
North Dakota	54	387	288	228	302	348	272	D	8 208	11	
Ohio	510	7 944	6 215	5 114	5 965	7 122	6 660	263 308	199 897	6	
Oklahoma	222	2 021	1 541	1 509	1 475	1 623	1 558	57 996	39 874	9	
Oregon	178	3 123	2 506	2 092	2 473	2 759	2 700	90 046	64 921	5	
Pennsylvania	424	6 927	5 453	4 824	5 756	5 663	5 570	248 322	175 514	16	
Rhode Island	39	439	322	230	317	403	340	17 709	12 388	13	
South Carolina	253	2 888	2 204	2 050	2 203	2 281	2 281	89 557	62 708	7	
South Dakota	78	677	534	451	542	595	546	17 869	12 181	14	
Tennessee	185	3 606	D	D	2 901	2 906	2 824	122 032	D	8	
Texas	902	22 582	18 868	17 518	19 214	19 635	19 103	697 732	513 308	6	
Utah	124	2 090	1 690	1 428	1 801	1 971	1 559	63 165	45 875	16	
Vermont	47	1 109	737	579	689	829	852	50 019	26 266	4	
Virginia	454	7 860	6 362	6 247	6 542	6 512	6 147	269 254	196 992	8	
Washington	326	4 626	3 476	3 130	3 531	3 821	3 420	200 627	147 333	7	
West Virginia	156	1 140	906	674	899	989	1 062	40 785	31 446	12	
Wisconsin	284	3 777	2 824	2 141	2 894	3 237	3 023	155 854	116 508	11	
Wyoming	117	614	D	D	555	532	499	16 753	D	11	

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 sampling errors and 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 ¹	Value of construction work ²	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—		
		A	B	C	D	E	F	G	H	I	C	H
237110, Water and sewer line and related structures construction												
United States	1	32 501 442	26 837 637	16 021 682	11 004 146	5 663 804	1 048 355	1 200 565	11 881 916	2	3	
Alabama	1	448 226	383 617	228 091	155 641	64 609	13 305	12 765	134 696	4	4	
Alaska	2	117 262	102 634	73 197	30 125	14 628	7 039	4 429	41 930	10	28	
Arizona	—	653 079	552 342	320 336	235 649	100 737	29 910	18 325	169 499	6	7	
Arkansas	2	240 688	207 404	114 289	99 183	33 284	11 500	11 516	93 746	7	16	
California	1	3 877 414	3 201 768	1 957 431	1 259 036	675 646	140 220	105 298	1 270 576	6	7	
Colorado	1	1 148 738	935 093	565 811	373 852	213 645	40 685	35 002	317 529	6	9	
Connecticut	—	267 753	232 882	158 242	75 271	34 871	6 786	9 382	94 767	4	14	
Delaware	—	136 290	107 937	66 294	41 759	28 353	4 524	5 412	60 287	7	—	
District of Columbia	—	—	—	—	—	—	—	—	—	—	—	
Florida	1	1 971 424	1 608 354	943 713	688 421	363 070	77 234	65 656	808 830	5	8	
Georgia	1	1 096 589	929 919	525 549	421 859	166 670	35 944	78 737	516 956	6	18	
Hawaii	—	134 480	113 796	70 120	45 157	20 685	3 500	3 893	38 082	9	8	
Idaho	1	163 523	135 120	73 101	62 158	28 402	7 830	6 893	64 811	8	8	
Illinois	1	903 201	784 677	442 361	344 194	118 524	25 297	25 114	304 478	7	9	
Indiana	—	637 268	542 806	342 774	201 185	94 462	26 821	21 054	205 839	3	3	
Iowa	—	241 186	215 076	152 085	68 206	26 110	5 827	14 776	122 938	7	8	
Kansas	1	376 047	317 672	178 350	140 371	58 375	13 455	11 283	136 938	5	5	
Kentucky	1	436 333	358 394	203 313	156 701	77 940	10 394	17 360	182 621	8	7	
Louisiana	—	402 201	338 753	215 898	125 593	63 448	13 115	13 149	217 731	6	12	
Maine	—	160 475	D	96 224	55 114	D	4 657	10 795	49 957	S	17	
Maryland	—	534 048	404 899	254 946	154 567	129 149	15 801	14 071	154 010	5	13	
Massachusetts	1	648 304	D	333 306	188 127	D	24 444	16 086	158 916	S	9	
Michigan	1	1 055 038	840 006	527 089	316 474	215 032	37 160	35 795	428 524	8	9	
Minnesota	—	1 097 763	777 632	441 816	343 282	320 132	31 265	35 256	311 208	5	5	
Mississippi	1	200 567	168 411	D	75 742	32 156	4 077	11 473	87 585	6	31	
Missouri	—	768 400	615 588	335 843	280 053	152 813	18 250	27 683	232 889	10	17	
Montana	1	115 892	99 802	61 060	40 553	16 089	4 554	6 066	61 867	8	20	
Nebraska	1	169 013	154 305	97 429	57 909	14 708	6 727	7 107	86 826	7	11	
Nevada	—	346 794	254 104	D	104 071	92 690	20 592	17 667	78 336	6	58	
New Hampshire	1	129 338	110 679	72 538	38 835	18 659	4 086	8 172	58 553	5	5	
New Jersey	—	697 873	532 466	372 349	167 076	165 408	14 902	24 443	225 944	8	8	
New Mexico	—	303 859	261 591	166 115	95 657	42 267	6 593	11 380	95 474	8	12	
New York	1	1 174 323	1 038 481	620 817	418 650	135 842	27 741	41 044	362 257	6	20	
North Carolina	1	859 674	732 686	401 494	342 409	126 988	21 129	46 039	415 095	7	14	
North Dakota	1	67 535	57 699	D	31 160	9 836	2 037	2 110	23 065	15	20	
Ohio	1	1 117 342	990 018	613 686	389 719	127 324	44 417	40 357	444 382	4	6	
Oklahoma	1	273 318	233 280	130 516	103 062	40 038	8 078	11 381	91 968	11	22	
Oregon	—	539 625	422 630	289 665	135 479	116 995	12 685	12 798	147 420	8	5	
Pennsylvania	1	1 173 944	974 479	577 302	399 362	199 465	40 617	44 555	427 865	22	17	
Rhode Island	—	D	D	39 532	D	15 170	2 857	2 353	28 609	S	14	
South Carolina	1	431 889	358 308	204 064	156 446	73 581	10 857	23 064	168 471	6	31	
South Dakota	1	105 957	83 399	42 814	40 646	22 557	3 789	4 031	45 457	14	22	
Tennessee	2	539 406	453 402	275 148	179 824	86 003	16 399	22 107	188 075	12	12	
Texas	1	3 270 518	2 690 078	1 427 752	1 266 662	580 440	97 895	110 240	1 244 502	6	7	
Utah	2	328 448	274 922	143 689	131 424	53 526	9 591	17 739	121 731	14	36	
Vermont	—	230 554	D	91 910	D	D	4 444	6 402	53 412	S	2	
Virginia	1	1 023 695	876 005	577 745	299 949	147 690	26 738	52 760	528 051	6	14	
Washington	1	863 750	688 370	411 181	301 703	175 380	26 590	26 521	314 304	5	6	
West Virginia	1	153 495	D	74 641	65 045	D	4 759	8 409	65 147	S	7	
Wisconsin	1	732 646	620 197	400 615	222 567	112 449	19 856	38 064	366 153	10	19	
Wyoming	1	D	D	39 783	20 612	D	1 402	4 563	43 610	S	10	

¹Construction receipts were obtained from census respondent forms. For establishments whose respondent forms were not received at the time data were tabulated, these data 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.

²For 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 sampling errors and 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)
237110, Water and sewer line and related structures construction		
All establishments number	12 357	3
All employees number	204 085	1
Construction workers in March number	S	S
Construction workers in May number	165 443	2
Construction workers in August number	172 973	2
Construction workers in November number	165 903	2
Average number of construction workers number	162 096	2
Other employees in March number	S	S
Other employees in May number	42 133	2
Other employees in August number	41 859	2
Other employees in November number	40 956	2
Average number of other employees number	41 990	2
Total payroll \$1,000	7 380 999	1
Construction workers \$1,000	5 311 584	1
Other employees \$1,000	2 069 415	2
First-quarter payroll, all employees \$1,000	1 646 351	1
Fringe benefits, all employees \$1,000	1 752 650	2
Legally required expenditures \$1,000	1 036 078	2
Voluntary expenditures \$1,000	716 572	2
Value of business done ¹ \$1,000	32 689 633	1
Value of construction work ¹ \$1,000	32 501 442	1
Value of construction work on government owned projects \$1,000	17 937 426	2
Value of construction work on federally owned projects \$1,000	1 420 883	3
Value of construction work on state and locally owned projects \$1,000	16 516 543	2
Value of construction work on privately owned projects \$1,000	14 564 016	2
Other business receipts \$1,000	188 191	11
Value of construction work subcontracted in from others \$1,000	8 801 724	2
Net value of construction work \$1,000	26 837 637	2
Value added \$1,000	16 021 682	2
Selected costs \$1,000	16 667 951	2
Materials, parts, and supplies \$1,000	10 335 571	2
Construction work subcontracted out to others \$1,000	5 663 804	2
Selected power, fuels, and lubricants \$1,000	668 576	2
Purchased electricity \$1,000	49 033	3
Natural gas and manufactured gas \$1,000	19 717	4
Gasoline and diesel fuel \$1,000	547 074	2
On-highway use of gasoline and diesel fuel \$1,000	266 629	2
Off-highway use of gasoline and diesel fuel \$1,000	280 445	3
All other fuels and lubricants \$1,000	52 752	3
Total rental costs \$1,000	1 048 355	2
Machinery and equipment \$1,000	884 683	2
Buildings \$1,000	163 672	3
Selected purchased services \$1,000	1 303 679	3
Communication services \$1,000	250 231	1
Repairs to buildings and other structures \$1,000	232 179	3
Repairs to machinery and equipment \$1,000	565 490	4
Legal services \$1,000	82 537	5
Accounting, auditing, and bookkeeping services \$1,000	110 083	11
Advertising and promotional services \$1,000	S	S
Beginning-of-year gross book value of depreciable assets \$1,000	11 131 835	2
Capital expenditures, other than land \$1,000	1 200 565	3
Retirements and disposition of depreciable assets \$1,000	450 484	2
End-of-year gross book value of depreciable assets \$1,000	11 881 916	2
Depreciation charges during year \$1,000	1 290 066	2
Establishments with inventories number	2 923	-
Value of construction work for establishments with inventories \$1,000	8 682 587	-
End-of-2002, inventories of materials and supplies \$1,000	200 987	4
End-of-2001, inventories of materials and supplies \$1,000	189 762	5
Establishments with no inventories number	8 320	-
Value of construction work for establishments with no inventories \$1,000	22 493 237	-
Establishments not reporting inventories number	1 113	-
Value of construction work for establishment not reporting inventores \$1,000	1 325 617	-

¹For the 2002 Economic Census, the definitions of value of business done and value of construction work has been modified from the 1997 Economic Census definition. 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 sampling errors and 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 ¹	Number of establishments	Total number of employees	Total payroll	Value of business done ²	Value of construction work ²	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	C
237110, Water and sewer line and related structures construction											
All establishments	1	12 357	204 085	7 380 999	32 689 633	32 501 442	26 837 637	16 021 682	11 004 146	5 663 804	1
Establishments with—											
1 to 4 employees	—	5 181	11 137	247 841	1 422 090	1 415 430	1 288 744	775 973	519 431	126 686	6
5 to 9 employees	—	2 767	18 002	545 116	2 192 356	2 179 863	1 973 094	1 248 484	737 104	206 769	6
10 to 19 employees	—	1 919	25 636	873 713	3 307 801	3 280 852	2 894 471	1 788 334	1 133 086	386 382	6
20 to 49 employees	—	1 671	50 993	1 962 063	8 164 180	8 104 441	6 843 236	4 099 177	2 803 798	1 261 205	4
50 to 99 employees	—	509	34 683	1 404 534	6 387 227	6 365 886	5 160 590	2 954 351	2 227 581	1 205 295	1
100 to 249 employees	—	249	36 974	1 515 412	7 119 239	7 071 525	5 545 873	3 317 976	2 275 611	1 525 652	3
250 to 499 employees	—	42	13 810	512 166	2 482 244	2 469 398	1 823 875	1 058 572	778 149	645 523	4
500 to 999 employees	—	17	D	D	D	D	D	D	D	D	S
1,000 employees or more	—	1	D	D	D	D	D	D	D	D	S

¹Construction receipts were obtained from census respondent forms. For establishments whose respondent forms were not received at the time data were tabulated, these data 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.

²For the 2002 Economic Census, the definitions of value of business done and value of construction work has been modified from the 1997 Economic Census definition. 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 sampling errors and 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 ¹	Number of establishments	Total number of employees	Total payroll	Value of business done ²	Value of construction work ²	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
237110, Water and sewer line and related structures construction											
All establishments	1	12 357	204 085	7 380 999	32 689 633	32 501 442	26 837 637	16 021 682	11 004 146	5 663 804	2
Establishments with value of business done—											
Less than \$25,000	5	73	S	S	S	S	S	S	S	S	S
\$25,000 to \$49,999	—	280	S	S	S	S	S	S	S	S	S
\$50,000 to \$99,999	—	632	900	12 532	47 199	47 013	43 399	26 812	16 773	3 614	16
\$100,000 to \$249,999	—	2 273	4 945	90 574	378 262	375 630	350 275	230 670	122 236	25 355	8
\$250,000 to \$499,999	—	2 272	8 984	199 068	807 108	802 645	754 129	492 608	265 984	48 516	8
\$500,000 to \$999,999	—	2 251	15 974	451 596	1 610 679	1 595 602	1 481 437	942 503	554 010	114 166	7
\$1,000,000 to \$2,499,999	—	2 053	27 997	912 284	3 243 184	3 231 187	2 912 263	1 821 137	1 103 124	318 923	6
\$2,500,000 to \$4,999,999	—	1 045	25 404	967 728	3 719 453	3 691 204	3 196 982	1 905 804	1 319 427	494 222	5
\$5,000,000 to \$9,999,999	—	733	28 557	1 168 410	5 076 668	5 036 940	4 234 396	2 470 482	1 803 641	802 545	4
\$10,000,000 or more	—	746	90 924	3 575 834	17 795 487	17 709 866	13 854 619	8 123 925	5 816 315	3 855 247	2

¹Construction receipts were obtained from census respondent forms. For establishments whose respondent forms were not received at the time data were tabulated, these data 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.

²For the 2002 Economic Census, the definitions of value of business done and value of construction work has been modified from the 1997 Economic Census definition. 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 sampling errors and 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 ¹				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
237110, Water and sewer line and related structures construction								
Total	32 501 442	22 408 523	6 480 952	3 611 967	1	1	2	2
Building construction, total	D	D	389 522	242 134	S	S	3	7
Other building construction	D	D	389 522	242 134	S	S	3	7
Nonbuilding construction, total	30 590 804	21 129 540	6 091 431	3 369 833	1	1	2	2
Sewers, water mains, and related facilities	22 890 974	16 244 003	3 781 786	2 865 185	1	2	3	2
Sewers, sewer lines, septic systems, and related facilities	12 334 008	8 678 644	2 085 475	1 569 889	2	2	4	3
Water mains, storage, and related facilities	10 556 966	7 565 359	1 696 311	1 295 296	2	2	4	3
Sewage and water treatment plants	4 593 460	2 731 620	1 605 872	255 968	1	1	2	4
Sewage treatment plants	2 480 306	1 405 693	952 888	121 725	1	2	2	5
Water treatment plants	2 113 154	1 325 927	652 984	134 243	2	2	2	6
Other nonbuilding construction	3 106 371	2 153 917	703 773	248 681	2	2	3	2
Construction work, nsk	D	D	—	—	S	S	—	—

¹For 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 sampling errors and 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 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 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
237110, Water and sewer line and related structures construction								
Total	12 357	204 085	7 380 999	X	26 837 637	16 021 682	5 663 804	2
Establishments specializing 51 percent or more...	10 162	137 717	4 893 198	16 665 365	17 759 788	10 770 174	3 413 777	2
Building construction, total								
Establishments specializing 51 percent or more...	1 260	6 647	207 187	685 952	770 589	511 580	23 003	19
Specialization 100 percent	522	2 409	73 418	264 938	257 099	173 398	7 839	18
Specialization 90 to 99 percent	396	2 106	64 717	241 148	253 911	160 610	4 267	15
Specialization 80 to 89 percent	53	431	16 860	43 008	51 728	37 307	352	50
Specialization 70 to 79 percent	75	660	23 339	56 868	77 270	51 330	2 565	40
Specialization 60 to 69 percent	130	693	17 835	48 188	74 032	50 556	2 171	41
Specialization 51 to 59 percent	84	349	11 017	31 802	56 548	38 380	5 809	67
Other building construction								
Establishments specializing 51 percent or more...	1 260	6 647	207 187	685 952	770 589	511 580	23 003	19
Specialization 100 percent	522	2 409	73 418	264 938	257 099	173 398	7 839	18
Specialization 90 to 99 percent	396	2 106	64 717	241 148	253 911	160 610	4 267	15
Specialization 80 to 89 percent	53	431	16 860	43 008	51 728	37 307	352	50
Specialization 70 to 79 percent	75	660	23 339	56 868	77 270	51 330	2 565	40
Specialization 60 to 69 percent	130	693	17 835	48 188	74 032	50 556	2 171	41
Specialization 51 to 59 percent	84	349	11 017	31 802	56 548	38 380	5 809	67
Nonbuilding construction, total								
Establishments specializing 51 percent or more...	8 899	D	D	D	D	D	D	S
Specialization 100 percent	5 480	D	D	D	D	D	D	S
Specialization 90 to 99 percent	366	6 599	271 190	967 753	861 720	540 198	170 557	13
Specialization 80 to 89 percent	543	9 181	326 063	1 333 682	1 289 027	776 408	332 122	3
Specialization 70 to 79 percent	814	18 544	698 955	2 086 403	2 365 022	1 374 097	504 541	4
Specialization 60 to 69 percent	935	D	D	D	D	D	D	S
Specialization 51 to 59 percent	761	19 798	787 620	1 842 941	2 887 637	1 694 407	581 460	8
Sewers, water mains, and related facilities								
Establishments specializing 51 percent or more...	8 389	117 540	4 140 252	13 735 468	14 814 575	9 058 989	2 481 358	3
Specialization 100 percent	5 255	49 619	1 572 921	6 544 096	5 765 230	3 786 390	778 866	5
Specialization 90 to 99 percent	354	5 976	234 424	831 199	755 067	476 189	133 827	17
Specialization 80 to 89 percent	499	7 306	265 942	925 657	942 592	561 322	187 570	4
Specialization 70 to 79 percent	775	16 853	636 066	1 833 468	2 103 156	1 221 815	426 995	5
Specialization 60 to 69 percent	835	21 157	779 535	2 156 518	2 886 842	1 583 839	594 942	7
Specialization 51 to 59 percent	671	16 628	651 364	1 444 530	2 361 688	1 429 434	359 158	13
Sewers, sewer lines, septic systems, and related facilities								
Establishments specializing 51 percent or more...	3 806	69 692	2 448 595	7 995 044	8 790 391	5 398 029	1 634 052	3
Specialization 100 percent	1 839	24 419	730 112	3 218 710	2 776 578	1 859 298	442 132	4
Specialization 90 to 99 percent	206	2 782	103 821	429 097	376 399	237 217	86 071	14
Specialization 80 to 89 percent	280	4 688	176 945	617 692	615 955	356 300	139 123	3
Specialization 70 to 79 percent	420	11 038	424 007	1 183 579	1 346 871	829 185	288 449	6
Specialization 60 to 69 percent	589	15 223	556 139	1 574 983	2 100 261	1 141 752	442 894	9
Specialization 51 to 59 percent	472	11 542	457 571	970 983	1 574 327	974 278	235 384	6
Water mains, storage, and related facilities								
Establishments specializing 51 percent or more...	4 583	47 848	1 691 657	5 740 424	6 024 184	3 660 960	847 306	7
Specialization 100 percent	3 416	25 199	842 809	3 325 386	2 988 652	1 927 092	336 734	10
Specialization 90 to 99 percent	147	3 195	130 603	402 102	378 668	238 973	47 757	40
Specialization 80 to 89 percent	219	2 618	88 997	307 965	326 637	205 022	48 447	11
Specialization 70 to 79 percent	355	5 815	212 059	649 889	756 285	392 630	138 546	9
Specialization 60 to 69 percent	246	5 934	223 396	581 536	786 580	442 087	152 049	3
Specialization 51 to 59 percent	199	5 086	193 793	473 546	787 361	455 156	123 774	35
Sewage and water treatment plants								
Establishments specializing 51 percent or more...	491	13 055	531 544	2 190 156	2 123 011	1 166 823	899 927	2
Specialization 100 percent	226	2 531	98 982	504 353	360 244	173 765	144 109	3
Specialization 90 to 99 percent	12	623	36 766	136 554	106 653	64 009	36 730	5
Specialization 80 to 89 percent	45	1 876	60 121	408 025	346 435	215 086	144 552	6
Specialization 70 to 79 percent	39	1 690	62 889	252 935	261 867	152 283	77 546	2
Specialization 60 to 69 percent	80	3 166	136 531	489 877	521 862	296 708	274 687	2
Specialization 51 to 59 percent	89	3 170	136 256	398 412	525 950	264 973	222 303	7
Sewage treatment plants								
Establishments specializing 51 percent or more...	210	7 716	314 779	1 308 669	1 277 026	672 436	555 263	2
Specialization 100 percent	43	1 112	45 732	215 089	156 946	72 408	58 143	3
Specialization 90 to 99 percent	9	579	34 162	123 934	99 350	58 968	30 221	5
Specialization 80 to 89 percent	32	1 340	39 981	276 656	222 012	113 918	111 732	5
Specialization 70 to 79 percent	17	721	24 863	104 849	110 034	51 288	29 221	5
Specialization 60 to 69 percent	44	2 266	101 734	381 841	399 321	220 308	226 323	2
Specialization 51 to 59 percent	65	1 697	68 309	206 300	289 363	155 546	99 623	8

See footnotes at end of table

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

[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 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 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
Water treatment plants								
Establishments specializing 51 percent or more...	281	5 339	216 765	881 487	845 984	494 387	344 664	4
Specialization 100 percent	183	1 419	53 250	289 264	203 298	101 357	85 966	5
Specialization 90 to 99 percent	4	44	2 604	12 620	7 302	5 041	6 509	14
Specialization 80 to 89 percent	12	536	20 140	131 370	124 423	101 168	32 820	20
Specialization 70 to 79 percent	22	969	38 027	148 086	151 833	100 994	48 325	2
Specialization 60 to 69 percent	35	899	34 797	108 036	122 542	76 400	48 364	4
Specialization 51 to 59 percent	24	1 472	67 947	192 112	236 586	109 428	122 680	11
Other nonbuilding construction								
Establishments specializing 51 percent or more...	20	D	D	D	D	D	D	S
Specialization 60 to 69 percent	20	D	D	D	D	D	D	S
Construction work, nsk								
Establishments specializing 51 percent or more...	3	D	D	D	D	D	D	S
Specialization 100 percent	3	D	D	D	D	D	D	S

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 sampling errors and 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 ¹	Relative standard error of estimate (percent)
237110, Water and sewer line and related structures construction		
Total	32 689 633	1
Heavy construction and civil engineering construction, total	24 435 509	2
Heavy construction contractor, such as bridges, tunnels, pipelines, and utility lines	24 435 509	2
Special trade contractors, total	2 855 983	4
Water well drilling contractor	2 855 983	3
All other construction activities	5 170 482	2
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

¹For 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 sampling errors and 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 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
237110, Water and sewer line and related structures construction								
Total	12 357	204 085	7 380 999	X	26 837 637	16 021 682	5 663 804	2
Establishments specializing 51 percent or more...	11 886	186 839	6 704 379	26 414 377	24 593 347	14 569 378	5 168 613	2
Heavy construction and civil engineering construction, total								
Establishments specializing 51 percent or more...	7 745	160 217	5 819 907	23 235 155	21 441 383	12 449 323	4 982 056	2
Specialization 100 percent	4 597	85 689	3 221 143	14 398 779	11 985 328	7 002 525	2 413 451	3
Specialization 90 to 99 percent	842	16 734	622 955	2 608 767	2 288 159	1 339 940	483 778	4
Specialization 80 to 89 percent	553	12 498	436 407	1 670 504	1 588 048	844 023	423 467	8
Specialization 70 to 79 percent	605	16 177	470 324	1 658 666	1 776 190	1 041 427	490 209	3
Specialization 60 to 69 percent	513	13 951	526 245	1 637 645	1 900 046	1 017 824	703 689	6
Specialization 51 to 59 percent	636	15 168	542 833	1 260 795	1 903 611	1 203 584	467 462	3
Heavy construction contractor, such as bridges, tunnels, pipelines, and utility lines								
Establishments specializing 51 percent or more...	7 745	160 217	5 819 907	23 235 155	21 441 383	12 449 323	4 982 056	2
Specialization 100 percent	4 597	85 689	3 221 143	14 398 779	11 985 328	7 002 525	2 413 451	3
Specialization 90 to 99 percent	842	16 734	622 955	2 608 767	2 288 159	1 339 940	483 778	4
Specialization 80 to 89 percent	553	12 498	436 407	1 670 504	1 588 048	844 023	423 467	8
Specialization 70 to 79 percent	605	16 177	470 324	1 658 666	1 776 190	1 041 427	490 209	3
Specialization 60 to 69 percent	513	13 951	526 245	1 637 645	1 900 046	1 017 824	703 689	6
Specialization 51 to 59 percent	636	15 168	542 833	1 260 795	1 903 611	1 203 584	467 462	3
Special trade contractors, total								
Establishments specializing 51 percent or more...	4 027	23 906	773 680	2 782 530	2 774 394	1 828 440	113 631	7
Specialization 100 percent	3 372	19 450	631 625	2 393 024	2 298 763	1 513 338	94 262	6
Specialization 90 to 99 percent	213	1 812	62 196	197 765	204 491	140 144	5 271	18
Specialization 80 to 89 percent	62	525	14 872	45 736	51 891	31 115	D	S
Specialization 70 to 79 percent	142	796	23 476	61 588	81 715	60 828	1 478	31
Specialization 60 to 69 percent	163	891	26 426	52 486	79 866	50 214	5 933	65
Specialization 51 to 59 percent	76	433	15 084	31 931	57 669	32 802	D	S
Water well drilling contractor								
Establishments specializing 51 percent or more...	4 027	23 906	773 680	2 782 530	2 774 394	1 828 440	113 631	6
Specialization 100 percent	3 372	19 450	631 625	2 393 024	2 298 763	1 513 338	94 262	6
Specialization 90 to 99 percent	213	1 812	62 196	197 765	204 491	140 144	5 271	18
Specialization 80 to 89 percent	62	525	14 872	45 736	51 891	31 115	D	S
Specialization 70 to 79 percent	142	796	23 476	61 588	81 715	60 828	1 478	28
Specialization 60 to 69 percent	163	891	26 426	52 486	79 866	50 214	5 933	65
Specialization 51 to 59 percent	76	433	15 084	31 931	57 669	32 802	D	S
All other construction activities								
Establishments specializing 51 percent or more...	111	D	D	D	D	D	D	S
Specialization 100 percent	46	D	D	D	D	D	D	S
Specialization 90 to 99 percent	17	18	195	552	473	425	85	58
Specialization 80 to 89 percent	5	203	D	D	D	2 252	D	S
Specialization 70 to 79 percent	10	263	7 455	53 952	70 961	69 057	1 488	12
Specialization 60 to 69 percent	24	193	11 509	27 972	28 306	24 486	D	S
Specialization 51 to 59 percent	10	219	9 401	12 171	18 047	16 291	5 549	23
Kind of business activity, nsk								
Establishments specializing 51 percent or more...	3	D	D	D	D	D	D	S
Specialization 100 percent	3	D	D	D	D	D	D	S

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 sampling errors and 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 ¹	Relative standard error of estimate (percent) for column—
237110, Water and sewer line and related structures construction		
United States	32 501 442	1
Construction work done in—		
Alabama	424 429	4
Alaska	122 681	9
Arizona	762 483	5
Arkansas	267 716	6
California	3 944 191	5
Colorado	1 035 086	7
Connecticut	268 992	3
Delaware	141 868	14
District of Columbia	68 289	3
Florida	2 126 553	5
Georgia	1 157 628	5
Hawaii	211 282	6
Idaho	166 576	8
Illinois	953 152	7
Indiana	599 189	3
Iowa	303 628	10
Kansas	357 378	7
Kentucky	434 344	8
Louisiana	383 126	7
Maine	116 636	6
Maryland	440 070	4
Massachusetts	679 528	8
Michigan	1 024 444	7
Minnesota	979 250	4
Mississippi	248 713	5
Missouri	563 374	9
Montana	110 715	7
Nebraska	158 658	7
Nevada	385 529	5
New Hampshire	106 818	5
New Jersey	559 009	9
New Mexico	284 013	7
New York	1 252 262	6
North Carolina	999 766	4
North Dakota	82 238	10
Ohio	944 801	5
Oklahoma	324 658	10
Oregon	501 607	6
Pennsylvania	1 159 242	23
Rhode Island	54 777	14
South Carolina	463 910	8
South Dakota	120 684	13
Tennessee	553 967	10
Texas	3 324 016	6
Utah	313 624	13
Vermont	85 953	5
Virginia	1 174 418	5
Washington	793 037	4
West Virginia	176 044	6
Wisconsin	711 828	10
Wyoming	79 260	4

¹For 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 sampling errors and 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

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'

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.

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.

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.

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.

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

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.

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

237110 WATER AND SEWER LINE AND RELATED STRUCTURES CONSTRUCTION

This U.S. industry comprises establishments primarily engaged in the construction of water and sewer lines, mains, pumping stations, treatment plants, and storage tanks. The work performed may include new work, reconstruction, rehabilitation, and repairs. Specialty trade contractors are included in this group if they are engaged in activities primarily related to water and sewer line and related structures construction. All structures (including buildings) that are integral parts of water and sewer networks (e.g., storage tanks, pumping stations, water treatment plants, and sewage treatment plants) are included in this industry.

Appendix C.

Methodology

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/.

A more detailed examination of census methodology is presented in the *History of the Economic Census* at 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 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.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan and Micropolitan Statistical Areas

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

