

# Highway and Street Construction

1997

Issued October 1999

EC97C-2341A

## 1997 Economic Census

*Construction*

Industry Series



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

*Helping You Make Informed Decisions*

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



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Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Patricia L. Horning**, Chief, Construction and Minerals Branch, assisted by **Susan L. Hostetter**, Section Chief, performed the planning and implementation. **Carla M. Bailey, Michael A. Blake, Tamara A. Cole, Nina S. Heggs, Donald G. Powers, Linda M. Taylor, and Robert A. Wright** provided primary staff assistance.

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**U.S. Department of Commerce**

**William M. Daley,**

Secretary

**Robert L. Mallett,**

Deputy Secretary

**Economics**

**and Statistics**

**Administration**

**Robert J. Shapiro,**

Under Secretary for

Economic Affairs

**U.S. CENSUS BUREAU**

**Kenneth Prewitt,**

Director



**Economics  
and Statistics  
Administration**

**Robert J. Shapiro,**  
Under Secretary  
for Economic Affairs



**U.S. CENSUS BUREAU**

**Kenneth Prewitt,**  
Director

**William G. Barron,**  
Deputy Director

**Paula J. Schneider,**  
Principal Associate Director  
for Programs

**Frederick T. Knickerbocker,**  
Associate Director  
for Economic Programs

**Thomas L. Mesenbourg,**  
Assistant Director  
for Economic Programs

**William G. Bostic Jr.,**  
Chief, Manufacturing  
and Construction Division

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-- Not applicable for this report.

# Introduction to the Economic Census

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## PURPOSES AND USES OF THE ECONOMIC CENSUS

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

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

- Policymaking agencies of the Federal Government use the data to monitor economic activity and 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.

## ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of 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 Foodservices
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), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## RELATIONSHIP TO SIC

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 industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

## GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

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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 Internal Revenue Service tax forms is used as a basis for coding.

## **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.

## **DOLLAR VALUES**

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 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.

## **AVAILABILITY OF ADDITIONAL DATA**

### **Reports in Print and Electronic Media**

All results of the 1997 Economic Census are available on the Census Bureau Internet site ([www.census.gov](http://www.census.gov)) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

### **Special Tabulations**

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673  
Service Sector Statistics Division 301-457-2668

## **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 covering service trades in 1933. Censuses of construction, manufacturing, and the other business service 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, 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 questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. 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.

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. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

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## SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at [www.census.gov/econguide](http://www.census.gov/econguide). More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at [www.census.gov/econ/www/history.html](http://www.census.gov/econ/www/history.html).

## ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census 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.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
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.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.



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# Construction

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## SCOPE

Construction, sector 23, includes establishments primarily engaged in construction work that have one or more paid employees. Construction work includes new construction work, additions, alterations, and repairs. Establishments identified as construction management firms are also included. The construction sector is divided into three types of activity or subsectors.

The Building, Developing, and General Contracting subsector includes establishments responsible for the construction of building projects. Builders, developers, and general contractors, as well as land subdividers and land developers are included in the subsector. The construction work may be done for others and performed by custom builders, general contractors, design builders, or turnkey contractors. This construction activity may be for sale as performed by speculative or operative builders.

The Heavy Construction subsector includes establishments engaged in the construction of heavy engineering and industrial projects (except buildings) such as highways, power plants, and pipelines. Establishments in this subsector usually assume responsibility for entire non-building projects, but may subcontract some or all of the actual construction work. Special trade contractors are included in this group if they are engaged in activities primarily related to heavy construction such as grading for highways. Kinds of establishments include heavy construction general contractors, and design builders.

The Special Trade Contractors subsector includes establishments engaged in specialized construction activities such as plumbing, painting, and electrical work. The activities in this subsector may be subcontracted from builders or general contractors, or the work may be performed directly for project owners. Special trade contractors usually perform most of their work at the job site, although they may have shops where they perform prefabrication and other work.

## GENERAL

A list of publications that provide statistics on construction, sector 23, follows.

**Industry reports.** There are 28 separate industry reports. They present data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in

Appendix B. These reports include statistics such as number of establishments, employment, payroll, value added, cost of materials, value of business done, and capital expenditures. Explanations of these and other terms may be found in Appendix A. The industry reports also include selected statistics for states.

**Geographic area reports.** There is a separate report for each state, the District of Columbia, and the United States. They present statistics similar to the industry reports for each state. They also present selected six-digit NAICS level data.

**Subject reports.** The Industry series, U.S. Summary, and Geographic Area series, U.S. Summary, reports present selected statistics from the individual industry and geographic area reports, as well as higher level aggregations.

## GEOGRAPHIC AREAS COVERED

The area reports for the construction industries contain state and regional level data. No substate data are available.

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 regions are made up of groups of states as follows:

### NORTHEAST

Connecticut  
Maine  
Massachusetts  
New Hampshire  
New Jersey  
New York  
Pennsylvania  
Rhode Island  
Vermont

### MIDWEST

Illinois  
Indiana  
Iowa  
Kansas  
Michigan  
Minnesota  
Missouri  
Nebraska

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North Dakota  
Ohio  
South Dakota  
Wisconsin

#### SOUTH

Alabama  
Arkansas  
Delaware  
District of Columbia  
Florida  
Georgia  
Kentucky  
Louisiana  
Maryland  
Mississippi  
North Carolina  
Oklahoma  
South Carolina  
Tennessee  
Texas  
Virginia  
West Virginia

#### WEST

Alaska  
Arizona  
California  
Colorado  
Hawaii  
Idaho  
Montana  
Nevada  
New Mexico  
Oregon  
Utah  
Washington  
Wyoming

### COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) had a major impact on the comparability of data between the 1992 and 1997 censuses. Less than half of the industries in the construction sector of NAICS have comparable industries in the Standard Industrial Classification (SIC) system that was used for past censuses. Because of the lack of comparable data, historic data are not shown for this sector.

Lead paint removal and asbestos abatement left the construction sector with the introduction of NAICS. Many changes took place within the sector, or from business

activity coming into the sector. Much of the change came from adding management services to each of the construction industries in the building, developing, and general contracting subsector and the heavy construction subsector. Also, land subdividers and developers, and rental of construction equipment with an operator were added to the sector.

Another change is that data for establishments with no employees are no longer included in the construction reports, but are available in other report series.

### 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 classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld. Suppressed data are included in higher-level totals.

### AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The County Business Patterns program of the U.S. Census Bureau offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county and state.

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 which are normally not reflected in construction sector census data.

Data contained in the 1997 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.

**Table 1. 1997 Data Showing the Derivation of the NAICS Classification Based on the SIC Classification**

[NAICS codes appear in bold type. Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A. For a more detailed title for each SIC code shown, see Appendix F]

NAICS and SIC code	Industry	Number of establishments	Total number of employees	Payroll, all employees	Value of construction work	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
<b>234110</b>	<b>Highway &amp; street construction</b>	<b>11 270</b>	<b>277 979</b>	<b>9 527 626</b>	<b>48 472 284</b>	<b>39 102 084</b>	<b>22 983 910</b>	<b>17 699 646</b>	<b>2 189 057</b>
161100	Highway & street construction contractors, exc	11 162	277 073	9 472 264	48 347 180	39 026 188	22 923 202	17 676 596	2 184 441
874131	elevated highways Management services (pt)	108	906	55 362	125 104	75 896	60 708	23 049	4 616

**Table 2. Employment Statistics for Establishments With Payroll by State: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. \* Indicates geographic change, but not applicable to this sector. 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—
		All	Construction workers	January to March	April to June	July to September	October to December	All employees	Construction workers	
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>										
<b>United States</b>	<b>11 270</b>	<b>277 979</b>	<b>227 066</b>	<b>168 468</b>	<b>242 136</b>	<b>266 449</b>	<b>231 211</b>	<b>9 527 626</b>	<b>7 095 139</b>	<b>1</b>
Alabama	308	6 577	5 503	4 888	5 699	5 816	5 610	156 124	119 682	11
Alaska	124	1 785	1 515	869	1 864	2 290	1 038	98 507	84 013	7
Arizona	184	5 345	4 461	3 880	4 563	4 825	4 576	164 259	127 427	7
Arkansas	97	1 751	1 415	1 087	1 461	1 769	1 344	42 015	30 067	32
California	827	19 540	15 153	13 095	15 423	17 091	15 005	863 093	628 763	3
Colorado	228	5 476	4 365	3 051	4 713	5 514	4 183	179 456	127 810	9
Connecticut	232	2 171	2 171	1 268	2 430	2 670	2 316	110 111	81 960	8
Delaware	44	1 028	826	545	900	978	880	30 485	22 611	12
District of Columbia	8	764	580	530	589	625	577	28 176	21 648	2
Florida	380	15 288	12 254	12 188	12 415	12 349	12 064	455 510	323 774	5
Georgia	316	7 103	5 888	5 530	5 959	6 205	5 856	221 511	152 424	10
Hawaii*	50	996	682	675	642	702	708	46 223	29 616	6
Idaho	140	2 368	2 025	1 437	2 061	2 505	2 099	70 131	54 449	11
Illinois	475	11 999	9 744	4 769	11 209	12 886	10 113	499 238	383 402	5
Indiana	173	5 041	3 652	2 055	4 128	4 507	3 919	208 481	158 844	5
Iowa	165	5 197	4 541	1 786	5 866	5 817	4 696	178 613	137 840	11
Kansas	134	5 505	4 533	3 706	5 064	5 252	4 110	178 948	123 960	7
Kentucky	155	3 969	3 227	2 527	3 300	3 631	3 451	130 315	98 543	14
Louisiana	144	5 467	4 376	4 107	4 424	4 657	4 315	142 386	96 544	8
Maine	47	954	772	389	871	982	844	28 126	20 287	17
Maryland	204	7 716	6 385	5 217	6 781	6 985	6 556	236 072	171 053	5
Massachusetts	245	4 016	3 073	1 387	3 280	3 736	3 887	171 705	119 260	9
Michigan	352	5 789	4 771	1 906	5 518	6 362	5 298	257 943	194 590	7
Minnesota	262	5 839	4 929	1 755	5 192	7 849	4 920	249 988	194 680	8
Mississippi	141	4 140	3 572	3 178	3 771	3 798	3 541	105 023	77 140	11
Missouri	221	5 952	4 872	3 367	5 361	6 057	4 701	219 862	166 412	8
Montana	109	2 168	1 874	1 257	2 154	2 411	1 674	59 747	45 761	9
Nebraska	116	2 954	2 512	1 740	2 877	3 019	2 410	86 162	67 458	11
Nevada	46	2 523	2 194	1 963	2 285	2 415	2 112	103 875	88 479	3
New Hampshire	96	1 208	938	484	1 093	1 133	1 042	42 846	29 654	14
New Jersey	406	5 677	4 403	2 843	4 821	5 112	4 835	232 643	162 307	8
New Mexico	75	3 512	2 740	2 440	2 795	2 975	2 751	100 137	73 772	10
New York	622	11 037	8 872	4 736	9 508	11 020	10 222	450 734	344 118	6
North Carolina	381	11 964	9 746	8 738	10 187	10 359	9 698	334 837	247 308	4
North Dakota	109	1 732	1 526	574	1 654	2 321	1 555	57 323	46 518	10
Ohio	397	10 433	8 316	3 993	9 152	11 077	9 041	423 751	330 029	6
Oklahoma	114	3 099	2 568	2 350	2 459	2 766	2 695	84 951	60 476	8
Oregon	300	3 641	2 927	2 257	3 105	3 494	2 851	131 200	99 269	7
Pennsylvania	507	11 590	9 298	5 905	10 270	11 158	9 859	416 437	304 183	4
Rhode Island	42	619	467	293	549	532	493	25 581	18 367	11
South Carolina	211	4 290	3 619	3 477	3 852	3 747	3 400	108 598	79 369	8
South Dakota	110	1 415	1 120	560	1 331	1 478	1 110	37 245	28 735	22
Tennessee	216	7 680	6 713	5 731	7 164	7 375	6 583	215 563	162 206	6
Texas	556	20 748	17 627	16 835	17 641	18 683	17 349	517 822	383 125	5
Utah	97	2 796	2 253	1 497	2 257	2 784	2 474	93 558	68 628	7
Vermont	30	360	301	138	331	397	340	10 001	7 649	8
Virginia	420	11 309	9 591	8 401	9 988	10 328	9 645	302 773	225 350	7
Washington	364	6 975	5 561	3 583	5 464	7 181	6 017	295 881	216 964	6
West Virginia	77	1 816	1 375	1 117	1 527	1 638	1 217	57 450	35 381	19
Wisconsin	182	4 739	4 049	1 644	4 763	5 521	4 270	224 641	187 267	9
Wyoming	33	1 338	1 194	721	1 423	1 668	963	41 573	35 970	6

**Table 3. General Statistics for Establishments With Payroll by State: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. \* Indicates geographic change, but not applicable to this sector. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Location of establishment	Value of construction work	Net value of construction work	Value added	Cost of materials, components, supplies, and fuels	Cost of construction work subcontracted out to others	Rental cost of machinery, equipment, and buildings	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	B	G
<b>234110. HIGHWAY &amp; STREET CONSTRUCTION</b>										
<b>United States .....</b>	<b>48 472 284</b>	<b>39 102 084</b>	<b>22 983 910</b>	<b>17 699 646</b>	<b>9 370 199</b>	<b>1 546 990</b>	<b>2 189 057</b>	<b>19 603 764</b>	<b>1</b>	<b>2</b>
Alabama .....	866 441	696 739	423 023	338 286	169 702	31 430	49 538	438 761	9	10
Alaska .....	401 311	335 624	249 429	93 296	65 687	8 936	19 608	185 996	4	9
Arizona .....	938 022	743 348	395 841	355 048	194 674	31 950	36 102	227 007	9	6
Arkansas .....	199 028	162 506	97 632	D	36 522	56 449	9 348	102 838	23	31
California .....	4 252 688	3 412 756	2 184 087	1 339 619	839 931	193 021	135 632	1 063 391	4	9
Colorado .....	1 023 799	806 943	466 707	363 912	216 856	31 075	43 820	339 130	6	13
Connecticut .....	528 940	424 552	261 133	165 652	104 387	12 601	22 115	209 949	7	10
Delaware .....	154 621	129 024	61 660	67 581	25 597	9 052	6 925	50 882	6	8
District of Columbia .....	114 234	87 376	51 459	D	26 858	4 161	5 154	32 553	Z	Z
Florida .....	2 461 423	1 918 343	1 143 377	825 505	543 079	86 450	115 471	1 058 580	5	7
Georgia .....	1 328 680	1 063 983	524 801	590 469	264 697	24 194	79 225	615 769	9	8
Hawaii * .....	193 905	151 144	99 496	D	42 761	6 365	5 390	106 111	3	4
Idaho .....	451 339	341 634	237 370	109 115	109 705	S	S	210 812	14	S
Illinois .....	2 278 840	1 803 900	1 121 053	790 085	474 940	92 036	90 176	992 152	4	11
Indiana .....	1 116 213	897 885	393 451	543 391	218 327	20 899	47 055	352 886	4	5
Iowa .....	980 105	820 856	342 081	492 695	159 249	12 912	60 174	585 813	9	19
Kansas .....	1 016 892	761 569	468 946	339 189	255 323	18 133	57 464	558 216	10	4
Kentucky .....	699 980	563 163	337 615	267 554	136 818	16 200	37 028	420 383	8	13
Louisiana .....	776 358	666 945	340 397	352 261	109 413	35 745	33 403	323 988	7	10
Maine .....	108 824	92 475	57 635	42 708	S	2 934	5 780	78 750	12	21
Maryland .....	1 059 283	851 438	526 993	360 176	207 844	23 186	50 973	489 090	5	11
Massachusetts .....	932 511	728 621	398 448	348 252	203 890	46 778	26 312	199 655	11	30
Michigan .....	1 412 698	1 100 151	673 003	481 223	312 548	69 060	64 005	446 585	8	8
Minnesota .....	1 233 287	950 334	605 641	382 622	282 953	42 622	58 130	625 708	8	10
Mississippi .....	679 551	561 578	311 569	265 461	117 973	21 679	24 511	208 519	16	12
Missouri .....	1 134 431	954 013	514 636	494 638	180 418	36 498	51 327	584 832	10	9
Montana .....	296 286	243 095	145 849	106 104	53 191	10 299	25 159	149 949	14	21
Nebraska .....	479 202	368 554	193 909	189 085	110 649	12 836	23 571	242 876	12	22
Nevada .....	504 804	445 594	303 247	149 489	59 210	19 706	20 714	225 305	4	10
New Hampshire .....	224 913	171 409	86 017	85 923	53 504	6 279	29 161	148 062	15	36
New Jersey .....	1 102 931	915 867	568 224	369 163	187 065	26 636	37 473	439 393	7	10
New Mexico .....	439 549	366 894	225 821	149 886	72 655	13 749	19 436	245 890	10	13
New York .....	2 135 106	1 703 184	1 025 126	708 790	431 922	71 391	64 808	519 919	5	4
North Carolina .....	1 640 923	1 269 119	753 497	615 698	371 804	56 269	85 149	722 337	4	7
North Dakota .....	270 439	215 513	143 413	80 678	54 927	17 845	13 785	144 056	6	8
Ohio .....	2 229 944	1 803 392	997 514	817 514	426 552	52 014	60 554	727 841	4	7
Oklahoma .....	483 302	415 609	231 181	199 207	67 693	10 086	19 255	186 192	9	10
Oregon .....	589 590	495 222	296 487	226 138	94 367	18 893	29 986	264 053	5	12
Pennsylvania .....	1 852 631	1 542 036	1 000 056	674 509	310 595	54 616	89 340	814 312	4	6
Rhode Island .....	123 996	98 560	44 550	D	25 436	3 910	S	35 928	7	S
South Carolina .....	654 497	546 470	286 690	286 016	108 027	16 790	30 440	275 108	9	12
South Dakota .....	177 033	157 901	100 624	67 030	19 133	3 679	11 143	121 070	20	23
Tennessee .....	1 273 466	1 056 314	655 358	439 509	217 153	31 563	67 341	488 738	5	7
Texas .....	2 712 203	2 243 295	1 141 386	1 155 750	468 908	79 981	131 867	1 035 032	5	9
Utah .....	555 960	436 551	299 657	169 342	119 409	14 786	25 043	211 029	7	11
Vermont .....	44 408	40 733	24 859	D	3 674	1 935	2 261	27 186	8	17
Virginia .....	1 511 678	1 225 951	653 010	609 087	285 727	30 280	63 481	647 458	6	8
Washington .....	1 350 856	1 099 850	753 760	410 769	251 006	49 759	79 958	623 648	5	15
West Virginia .....	269 510	235 834	192 974	63 436	33 676	58 913	22 641	167 815	13	2
Wisconsin .....	1 031 893	833 230	468 860	404 146	198 663	30 200	56 896	483 502	6	10
Wyoming .....	173 763	145 010	104 358	63 258	28 753	5 993	17 537	148 708	6	7

**Table 4. Detailed Statistics for Establishments With Payroll: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Item	Value	Relative standard error of estimate (percent)	Item	Value	Relative standard error of estimate (percent)
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>			<b>234110, HIGHWAY &amp; STREET CONSTRUCTION— Con.</b>		
Number of establishments in business during year .....	11 270	2	Selected costs—Con.		
Number of proprietors and working partners .....	3 144	7	Cost of selected power, fuels, and lubricants .....	1 416 449	1
Total number of employees .....	277 979	1	Cost of electricity .....	139 433	4
Number of construction workers in March .....	168 468	1	Cost of natural gas and manufactured gas .....	122 079	4
Number of construction workers in May .....	242 136	1	Cost of gasoline and diesel fuel .....	1 036 543	1
Number of construction workers in August .....	266 449	1	Cost of on-highway use of gasoline and diesel fuel .....	515 101	2
Number of construction workers in November .....	231 211	1	Cost of off-highway use of gasoline and diesel fuel .....	521 441	2
Average number of construction workers .....	227 066	1	Cost of all other fuels and lubricants .....	118 395	3
Number of other employees in March .....	48 663	1	Rental cost for machinery, equipment, and buildings .....	1 546 990	2
Number of other employees in May .....	51 241	1	Rental cost for machinery and equipment .....	1 418 402	2
Number of other employees in August .....	51 963	1	Rental cost for buildings .....	128 589	4
Number of other employees in November .....	51 785	2	Selected purchased services .....	1 698 256	2
Average number of other employees .....	50 913	1	Purchased communication services .....	204 707	2
Payroll, all employees .....	9 527 626	1	Cost of repairs to buildings and other structures .....	82 281	2
Payroll, construction workers .....	7 095 139	1	Cost of repairs to machinery and equipment .....	1 411 268	2
Payroll, other employees .....	2 432 488	1	Value of construction work .....	48 472 284	1
First-quarter payroll, all employees .....	1 568 886	1	Value of construction work on government owned projects ..	34 373 148	1
Fringe benefits, all employees .....	2 616 641	1	Value of construction work on federally owned projects ..	4 013 480	3
Legally required expenditures .....	1 507 465	1	Value of construction work on state and locally owned projects .....	30 359 670	1
Voluntary expenditures .....	1 109 177	1	Value of construction work on privately owned projects .....	14 099 133	2
Value of business done .....	50 053 756	1	Beginning-of-year gross book value of depreciable assets .....	18 134 326	1
Value of construction work .....	48 472 284	1	Capital expenditures, other than land .....	2 189 057	2
Value of construction work subcontracted in from others ...	12 246 944	2	Retirements and disposition of depreciable assets .....	719 618	2
Other business receipts .....	1 581 472	2	End-of-year gross book value of depreciable assets .....	19 603 764	1
Net value of construction .....	39 102 084	1	Depreciation charges during year .....	1 767 571	2
Value added .....	22 983 910	1	Number of establishments with inventories .....	2 857	4
Selected costs .....	27 069 844	1	Value of construction work for establishments with inventories ..	23 883 526	2
Cost of materials, components, and supplies .....	16 283 196	1	End of 1997, inventories of materials and supplies .....	507 182	4
Cost of construction work subcontracted out to others .....	9 370 199	1	End of 1996, inventories of materials and supplies .....	453 142	4
			Number of establishments with no inventories .....	4 627	4
			Value of construction work for establishments with no inventories .....	17 465 016	2
			Number of establishments not reporting inventories .....	3 787	5
			Value of construction work for establishments not reporting inventories .....	7 123 740	4

**Table 5. Selected Statistics for Establishments With Payroll by Employment Size Class: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Employment size class	Number of establishments	Total number of employees	Total payroll	Dollar value of business done	Value of construction work	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	B	F
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>											
<b>Total .....</b>	<b>11 270</b>	<b>277 979</b>	<b>9 527 626</b>	<b>50 053 756</b>	<b>48 472 284</b>	<b>39 102 084</b>	<b>22 983 910</b>	<b>17 699 646</b>	<b>9 370 199</b>	<b>1</b>	<b>1</b>
Establishments with 1 to 4 employees .....	S	8 683	200 674	1 187 735	1 167 415	1 040 382	681 916	378 786	S	6	7
Establishments with 5 to 9 employees .....	1 987	13 032	368 485	1 880 009	1 865 338	1 631 841	1 060 228	586 284	233 497	7	9
Establishments with 10 to 19 employees .....	1 876	25 173	782 947	3 820 465	3 748 307	3 228 932	2 002 396	1 298 694	519 375	6	7
Establishments with 20 to 49 employees .....	1 843	55 763	1 878 608	9 323 218	9 172 724	7 599 126	4 374 884	3 374 736	1 573 598	4	4
Establishments with 50 to 99 employees .....	840	56 836	1 992 475	10 295 342	9 941 854	8 101 300	4 656 030	3 798 757	1 840 555	4	3
Establishments with 100 to 249 employees .....	439	65 587	2 390 645	13 091 075	12 605 088	9 804 496	5 527 766	4 762 717	2 800 592	1	1
Establishments with 250 to 499 employees .....	105	34 934	1 251 776	7 179 780	6 882 508	5 256 812	3 093 477	2 460 607	1 625 696	Z	Z
Establishments with 500 to 999 employees .....	25	D	D	D	D	D	D	D	D	D	D
Establishments with 1,000 employees or more .....	1	D	D	D	D	D	D	D	D	D	D

**Table 6. Selected Statistics for Establishments With Payroll by Dollar Value of Business Done Size Class: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Dollar value size class	Number of establishments	Total number of employees	Total payroll	Dollar value of business done	Value of construction work	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	B	F
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>											
<b>Total .....</b>	<b>11 270</b>	<b>277 979</b>	<b>9 527 626</b>	<b>50 053 756</b>	<b>48 472 284</b>	<b>39 102 084</b>	<b>22 983 910</b>	<b>17 699 646</b>	<b>9 370 199</b>	<b>1</b>	<b>1</b>
Establishments with value of business done less than \$25,000 .....	S	S	S	S	S	S	S	S	S	S	S
Establishments with value of business done \$25,000 to \$49,999 .....	S	173	S	S	S	S	S	S	S	34	S
Establishments with value of business done \$50,000 to \$99,999 .....	S	672	8 817	S	S	S	S	S	S	22	S
Establishments with value of business done \$100,000 to \$249,999 .....	1 678	4 080	69 924	292 690	288 886	264 458	186 399	81 863	S	11	9
Establishments with value of business done \$250,000 to \$499,999 .....	S	6 555	134 793	S	S	S	S	S	S	10	S
Establishments with value of business done \$500,000 to \$999,999 .....	1 719	12 385	297 193	1 192 610	1 179 268	1 066 012	722 538	356 815	113 257	8	7
Establishments with value of business done \$1,000,000 to \$2,499,999 .....	1 953	26 575	722 966	3 058 211	3 001 973	2 702 535	1 725 766	1 033 007	299 438	6	6
Establishments with value of business done \$2,500,000 to \$4,999,999 .....	1 182	29 752	917 849	4 096 028	4 030 833	3 501 422	2 244 748	1 321 869	529 410	7	6
Establishments with value of business done \$5,000,000 to \$9,999,999 .....	975	41 560	1 446 099	6 898 431	6 759 806	5 646 965	3 157 646	2 627 943	1 112 841	5	5
Establishments with value of business done \$10,000,000 or more .....	1 208	156 169	5 927 962	33 884 816	32 588 730	25 344 240	14 551 703	12 088 624	7 244 489	1	1

Table 7. **Value of Construction Work for Establishments With Payroll by Type of Construction: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Type of construction	Value of construction work				Relative standard error of estimate (percent) for column—			
	Total	New construction	Additions, alterations, or reconstruction	Maintenance and repair	A	B	C	D
	A	B	C	D	A	B	C	D
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>								
<b>Total</b> .....	<b>48 472 284</b>	<b>24 670 762</b>	<b>16 107 240</b>	<b>7 694 156</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>Building construction, total</b> .....	<b>893 645</b>	<b>696 026</b>	<b>143 508</b>	<b>54 111</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>12</b>
<b>Nonbuilding construction, total</b> .....	<b>47 578 513</b>	<b>23 974 736</b>	<b>15 963 732</b>	<b>7 640 045</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>
Highways, streets, and related work .....	38 171 125	18 421 334	13 133 072	6 616 719	1	2	2	3
Airport runways and related work .....	1 434 231	676 329	577 283	180 619	5	8	6	8
Private driveways and parking areas .....	2 651 738	1 475 751	682 680	493 307	3	3	6	8
Bridges, tunnels, and elevated highways .....	1 872 787	1 020 112	710 928	141 747	3	3	6	9
Sewers, water mains, and related facilities .....	1 958 700	1 428 162	432 238	98 301	3	4	5	8
Sewers, sewer lines, septic systems, and related facilities .....	1 210 093	893 190	262 542	54 361	3	4	5	9
Water mains and related facilities .....	748 607	534 972	169 696	43 939	5	6	6	9
Sewage and water treatment plants .....	227 504	125 435	88 510	13 559	3	5	1	1
Conservation and development construction .....	245 311	176 536	40 423	28 352	9	10	16	36
Recreational facilities .....	159 864	129 394	25 556	4 914	10	9	36	24
Other nonbuilding construction, nec .....	857 252	521 682	273 041	62 529	4	5	7	12



**Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1997**

[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. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A.]

Item	Number of establishments	Total number of employees	Payroll, all employees	Value of construction work		Net value of construction work	Value added	Cost of construction work subcontracted out to others	Relative standard error of estimate (percent) for column—			
				For all types	For specialized type				B	D	H	
				A	B							C
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>												
<b>Total .....</b>	<b>11 270</b>	<b>277 979</b>	<b>9 527 626</b>	<b>48 472 284</b>	<b>X</b>	<b>39 102 084</b>	<b>22 983 910</b>	<b>9 370 199</b>	<b>1</b>	<b>1</b>	<b>1</b>	
Establishments not specializing ..	570	26 016	924 087	4 392 343	X	3 513 571	2 198 322	878 772	4	4	4	
Establishments specializing 51 percent or more .....	10 700	251 963	8 603 540	44 079 942	36 748 212	35 588 515	20 785 590	8 491 427	1	1	2	
<b>Highways, streets, and related work</b>												
<b>All establishments specializing .....</b>	<b>10 505</b>	<b>249 136</b>	<b>8 491 984</b>	<b>43 439 086</b>	<b>36 249 783</b>	<b>35 156 235</b>	<b>20 573 215</b>	<b>8 282 851</b>	<b>1</b>	<b>1</b>	<b>2</b>	
Specialization 100 percent .....	5 862	86 054	2 801 655	15 061 825	15 061 825	12 398 805	7 354 269	2 663 021	3	3	4	
Specialization 90 to 99 percent ...	1 070	33 081	1 110 649	5 949 644	5 556 319	4 798 752	2 764 826	1 150 892	4	4	4	
Specialization 80 to 89 percent ...	900	34 093	1 151 462	5 659 718	4 713 298	4 450 134	2 539 757	1 209 585	5	4	4	
Specialization 70 to 79 percent ...	956	39 044	1 388 311	6 827 389	4 997 313	5 453 447	3 222 995	1 373 942	4	3	3	
Specialization 60 to 69 percent ...	1 009	32 872	1 136 820	5 700 890	3 600 485	4 631 513	2 758 686	1 069 377	4	4	5	
Specialization 51 to 59 percent ...	709	23 992	903 087	4 239 620	2 320 542	3 423 585	1 932 682	816 035	4	3	3	
<b>Airport runways and related work</b>												
<b>All establishments specializing .....</b>	<b>180</b>	<b>2 294</b>	<b>90 468</b>	<b>476 352</b>	<b>388 160</b>	<b>344 724</b>	<b>190 419</b>	<b>131 628</b>	<b>17</b>	<b>16</b>	<b>19</b>	
Specialization 100 percent .....	120	1 145	42 580	206 565	206 565	152 206	99 904	54 359	27	30	38	
Specialization 70 to 79 percent ...	*25	611	29 456	164 989	119 411	117 394	47 845	47 594	32	25	31	
Specialization 60 to 69 percent ...	S	457	15 212	87 063	52 430	60 265	38 416	26 798	26	14	5	
Specialization 51 to 59 percent ...	*11	*81	*3 220	*17 736	*9 755	*14 859	S	*2 876	63	50	50	

Table 9. **Dollar Value of Business Done for Establishments With Payroll by Kind-of-Business Activity: 1997**

[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. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A.]

Primary and other kinds of business activities	Dollar value of business done	Relative standard error of estimate (percent)
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>		
<b>Total</b> .....	<b>50 053 756</b>	<b>1</b>
<b>Building, developing, and general contracting, total</b> .....	<b>297 503</b>	<b>8</b>
Building construction on land owned by others—general contractor or design-builder .....	297 503	8
<b>Heavy construction, total</b> .....	<b>46 161 760</b>	<b>1</b>
Excavation work, earthmoving or land clearing contractor, not connected with buildings .....	2 711 973	3
Heavy construction contractor .....	3 046 166	2
Highway and street general contractor .....	26 005 525	2
Paving contractor—asphalt or concrete for highways, streets, or airport runways .....	14 398 096	2
<b>Special trade contractors, total</b> .....	<b>1 090 854</b>	<b>4</b>
Asphalt contractor, private driveways and parking areas .....	750 188	5
Excavation work: earthmoving or land clearing contractor, connected with buildings .....	340 666	8
Other construction activities, nec .....	923 092	3
<b>Other business activities secondary to construction activities, total</b> .....	<b>1 580 421</b>	<b>2</b>
Manufacturing—products manufactured and sold to others, secondary to construction activities .....	751 270	3
Mining—minerals produced and sold to others, secondary to construction activities .....	249 828	1
Other business activities, secondary to construction activities, nec .....	579 323	3

**Table 10. Selected Statistics for Establishments With Payroll by Specialization in Kind-of-Business Activity: 1997**

[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 dollar value of business done 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 dollar value of business done by kind of business activity was not provided in Table 9. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Item	Number of establishments	Total number of employees	Payroll, all employees	Value of construction work		Net value of construction work	Value added	Cost of construction work subcontracted out to others	Relative standard error of estimate (percent) for column—		
				For all kinds of business	For specialized kinds of business				B	D	H
				A	B				C	D	E
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>											
Total .....	11 270	277 979	9 527 626	48 472 284	X	39 102 084	22 983 910	9 370 199	1	1	1
Establishments not specializing .....	966	55 770	1 992 344	9 282 551	X	7 461 434	4 671 595	1 821 117	3	2	2
Establishments specializing 51 percent or more .....	10 304	222 209	7 535 283	39 189 734		31 640 652	18 312 316	7 549 082	1	1	2
<b>Highway and street general contractor</b>											
All establishments specializing .....	7 664	158 017	5 162 342	26 335 583	21 602 045	20 971 312	12 536 675	5 364 271	2	2	2
Specialization 100 percent .....	4 146	55 334	1 765 983	9 424 331	9 424 331	7 779 195	4 562 882	1 645 137	3	3	4
Specialization 90 to 99 percent .....	812	17 907	583 817	2 975 259	2 800 339	2 337 609	1 300 544	637 651	6	6	7
Specialization 80 to 89 percent .....	529	16 397	528 225	2 691 832	2 243 277	2 073 966	1 333 807	617 866	6	5	5
Specialization 70 to 79 percent .....	600	21 467	700 870	3 595 513	2 634 063	2 799 879	1 715 910	795 635	6	6	6
Specialization 60 to 69 percent .....	896	27 092	903 718	4 416 939	2 759 273	3 436 012	2 152 203	980 926	6	5	4
Specialization 51 to 59 percent .....	682	19 820	679 728	3 231 709	1 740 762	2 544 652	1 471 330	687 057	6	4	4
<b>Paving contractor—asphalt or concrete for highways, streets, or airport runways</b>											
All establishments specializing .....	2 531	63 286	2 317 579	12 729 047	10 378 840	10 593 443	5 714 933	2 135 604	3	3	5
Specialization 100 percent .....	1 145	18 005	650 707	3 898 595	3 898 595	3 221 960	1 644 186	676 635	7	7	13
Specialization 90 to 99 percent .....	245	7 986	281 196	1 567 797	1 477 382	1 334 043	740 087	233 755	6	6	8
Specialization 80 to 89 percent .....	361	11 608	398 780	2 079 868	1 736 459	1 760 029	1 056 682	319 839	8	5	4
Specialization 70 to 79 percent .....	290	7 440	269 274	1 437 605	1 064 218	1 239 051	668 968	198 554	10	8	6
Specialization 60 to 69 percent .....	243	9 159	360 005	1 889 486	1 188 955	1 514 346	767 453	375 140	6	5	6
Specialization 51 to 59 percent .....	247	9 089	357 618	1 855 695	1 013 231	1 524 014	837 556	331 680	8	9	8

**Table 11. Value of Construction Work for Establishments With Payroll by Location of Construction Work: 1997**

[Thousand dollars unless otherwise noted. Detail may not add to total because of rounding. \* Indicates geographic change, but not applicable to this sector. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see Appendix A]

Location of construction work	Construction work done by establishments located in this state		Construction work done by establishments not located in this state		Construction work done by establishments not reporting		Relative standard error of estimate (percent) for column—			
	Value of construction work done in this state	Number	Value of construction work	Number	Value of construction work	Number	Value of construction work	A	C	E
	A	B	C	D	E	F	G			
<b>234110, HIGHWAY &amp; STREET CONSTRUCTION</b>										
<b>United States .....</b>	<b>48 472 284</b>	<b>7 358</b>	<b>37 604 719</b>	<b>1 902</b>	<b>3 571 928</b>	<b>3 863</b>	<b>7 295 638</b>	<b>1</b>	<b>1</b>	<b>3</b>
Alabama .....	851 585	242	723 314	<sup>s48</sup>	30 936	66	97 334	9	10	21
Alaska .....	405 925	90	337 850	7	4 853	34	63 223	4	7	Z
Arizona .....	847 500	93	680 944	38	<sup>s49</sup> 284	90	117 272	10	12	41
Arkansas .....	313 914	63	169 251	23	128 348	<sup>s32</sup>	16 315	15	29	Z
California .....	4 240 845	453	3 136 764	18	49 135	372	1 054 946	4	3	1
Colorado .....	1 002 563	161	699 449	43	96 581	67	206 533	7	8	4
Connecticut .....	450 611	171	387 988	<sup>s22</sup>	16 163	59	46 460	7	8	8
Delaware .....	158 247	35	138 722	44	16 653	<sup>s9</sup>	2 872	5	5	12
District of Columbia.....	84 542	6	D	14	D	2	D	Z	D	D
Florida .....	2 463 592	210	1 872 784	48	25 291	170	565 517	4	5	9
Georgia .....	1 343 537	226	1 028 956	83	89 162	90	225 419	9	12	29
Hawaii * .....	D	28	174 232	3	D	<sup>s22</sup>	D	D	4	D
Idaho .....	393 645	96	230 363	20	42 765	<sup>s43</sup>	120 517	13	19	1
Illinois .....	2 232 096	295	1 875 750	23	51 398	179	304 949	6	4	9
Indiana .....	1 032 312	106	938 271	37	41 866	<sup>s47</sup>	52 175	5	5	4
Iowa .....	923 592	131	726 100	49	64 955	<sup>s34</sup>	<sup>s132</sup> 537	9	11	38
Kansas .....	1 029 152	124	687 186	45	211 688	10	130 278	5	8	1
Kentucky .....	718 999	118	565 995	65	67 446	<sup>s36</sup>	85 559	7	9	12
Louisiana .....	718 914	98	472 246	19	74 148	<sup>s46</sup>	172 520	7	7	14
Maine .....	108 667	38	88 099	<sup>s7</sup>	<sup>s1</sup> 946	9	<sup>s18</sup> 622	14	12	72
Maryland .....	1 039 743	140	830 849	51	68 500	63	140 394	4	8	3
Massachusetts .....	910 006	147	672 073	42	35 734	98	202 199	10	13	4
Michigan .....	1 376 955	251	1 154 132	29	58 657	100	164 166	9	11	6
Minnesota .....	1 065 413	197	991 255	8	18 007	65	56 150	8	8	3
Mississippi .....	814 019	83	561 410	55	157 962	58	94 648	14	20	20
Missouri .....	1 094 289	157	835 488	58	106 681	63	152 120	11	14	10
Montana .....	292 318	<sup>s48</sup>	215 119	17	33 130	61	44 070	14	18	1
Nebraska .....	430 821	68	287 766	31	69 589	44	73 466	8	11	2
Nevada .....	586 291	30	424 571	24	98 574	16	<sup>s63</sup> 147	3	3	1
New Hampshire .....	245 022	68	185 127	44	47 538	<sup>s28</sup>	<sup>s12</sup> 356	19	23	39
New Jersey .....	1 151 910	245	843 287	47	75 520	160	233 103	7	9	3
New Mexico .....	496 166	62	365 639	22	67 710	13	<sup>s62</sup> 817	9	11	25
New York .....	2 049 848	423	1 693 538	48	45 352	198	310 958	5	6	2
North Carolina .....	1 647 677	195	1 282 149	69	147 350	186	218 177	3	4	10
North Dakota .....	301 554	71	209 794	20	51 839	38	39 922	7	14	14
Ohio .....	2 085 147	257	1 736 978	25	50 097	137	298 071	6	7	2
Oklahoma .....	592 086	71	399 866	40	<sup>s127</sup> 952	<sup>s43</sup>	64 268	12	10	43
Oregon .....	659 100	223	512 821	32	77 711	77	68 568	5	7	9
Pennsylvania .....	1 840 446	302	1 405 372	66	121 422	198	313 652	4	5	14
Rhode Island .....	D	32	D	4	D	<sup>s10</sup>	D	D	D	D
South Carolina .....	746 359	81	387 082	74	123 469	130	235 808	7	15	2
South Dakota .....	266 548	57	126 395	37	95 998	53	<sup>s44</sup> 155	14	22	14
Tennessee .....	1 191 103	133	976 471	46	89 423	82	125 208	5	6	2
Texas .....	2 875 403	347	2 311 503	35	206 079	209	357 821	5	5	20
Utah .....	591 884	76	469 144	<sup>s36</sup>	44 920	21	77 819	5	8	14
Vermont .....	62 674	<sup>s26</sup>	23 809	12	27 561	<sup>s5</sup>	<sup>s11</sup> 304	8	20	11
Virginia .....	1 616 946	330	1 250 150	79	192 141	89	174 655	5	6	11
Washington .....	1 256 867	239	1 134 893	60	31 253	125	90 721	5	5	3
West Virginia .....	378 915	66	232 775	74	124 471	11	21 669	9	13	14
Wisconsin .....	931 338	124	847 314	<sup>s18</sup>	14 852	<sup>s58</sup>	69 172	6	7	33
Wyoming .....	241 598	24	157 533	42	69 239	10	<sup>s14</sup> 827	10	3	33

# Appendix A.

## Explanation of Terms

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### **ALL EMPLOYEES**

Comprise all full-time and part-time employees on the payroll of construction establishments, who worked or received pay for any part of the pay period including the 12th of March, May, August, and November. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included, but proprietors and partners of unincorporated firms are not. Number of employees is the sum of all employees during the pay periods including the 12th of March, May, August, and November, divided by 4.

### **BEGINNING-OF-YEAR GROSS BOOK VALUE OF DEPRECIABLE ASSETS (\$1,000)**

Gross value of depreciable assets, usually original costs of the assets, at the beginning of the year. Depreciable assets are the fixed tangible property of the establishment for which depreciation accounts are ordinarily maintained.

### **BEGINNING-OF-YEAR INVENTORIES OF MATERIALS AND SUPPLIES (\$1,000)**

The inventories of materials and supplies owned at the beginning 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 multi-establishment 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.

### **CAPITAL EXPENDITURES, OTHER THAN LAND (\$1,000)**

Capital expenditures are those that were or 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 it 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.

### **CONSTRUCTION WORK DONE BY ESTABLISHMENTS LOCATED IN THIS STATE: NUMBER**

Includes the number of establishments physically located and doing construction work in the same state.

### **CONSTRUCTION WORK DONE BY ESTABLISHMENTS LOCATED IN THIS STATE: VALUE OF CONSTRUCTION WORK (\$1,000)**

Includes the value of construction work done by establishments physically located and doing construction work in the same state.

### **CONSTRUCTION WORK DONE BY ESTABLISHMENTS NOT LOCATED IN THIS STATE: NUMBER**

Includes the number of establishments not located in the state where the construction work is done. Establishment location 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 is expected to be maintained on a continuing basis.

### **CONSTRUCTION WORK DONE BY ESTABLISHMENT NOT LOCATED IN THIS STATE: VALUE OF CONSTRUCTION WORK (\$1,000)**

Includes the value of construction work done by establishments not located in the state where the construction work is done. Establishment location 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

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office is one that has been established for the management of more than one project or job and is expected to be maintained on a continuing basis.

#### **CONSTRUCTION WORK DONE BY ESTABLISHMENTS NOT REPORTING: NUMBER (\$1,000)**

Includes the number of establishments that did not report the state location of construction work on their census forms and establishments that did not complete a construction census form. Data were estimated for establishments that did not complete a census form.

#### **CONSTRUCTION WORK DONE BY ESTABLISHMENTS NOT REPORTING: VALUE OF CONSTRUCTION WORK (\$1,000)**

Includes the value of construction work done by establishments that did not report the state location of construction work on their census forms and establishments that did not complete a construction census form. Data were estimated for establishments that did not complete a census form.

#### **CONSTRUCTION WORKERS**

Includes all payroll workers up through the working supervisor 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, and 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.

#### **COST OF ALL OTHER FUELS AND LUBRICANTS (\$1,000)**

Costs for fuels and lubricants purchased during the year from other companies or received from other establishments of the company and not included as costs in any of these categories: natural gas; manufactured gas; gasoline; and diesel fuel.

#### **COST OF CONSTRUCTION WORK SUBCONTRACTED OUT TO OTHERS (\$1,000)**

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, such costs are reported under costs for materials, components, and supplies. Also excluded are costs for the rental of machinery or equipment.

#### **COST OF ELECTRICITY (\$1,000)**

Costs for electric energy purchased during the year from other companies or received from other establishments of the company.

#### **COST OF GASOLINE AND DIESEL FUEL (\$1,000)**

Costs for gasoline and diesel fuel purchased during the year from other companies or received from other establishments of the company.

#### **COST OF OFF-HIGHWAY USE OF GASOLINE AND DIESEL FUEL (\$1,000)**

Includes the costs for 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.

#### **COST OF ON-HIGHWAY USE OF GASOLINE AND DIESEL FUEL (\$1,000)**

Costs for 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 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.

#### **COSTS OF MATERIALS, COMPONENTS, AND SUPPLIES (\$1,000)**

Includes the costs for materials, components, and supplies used by establishments in the construction or reconstruction of buildings, structures, or other facilities and costs for materials bought and resold to others. Also includes costs made for direct purchases of materials, components, and supplies even though 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. Excluded from this item are the cost of fuels, lubricants, electric energy, industrial and other specialized machinery

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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 MATERIALS, COMPONENTS, SUPPLIES, AND FUELS (\$1,000)**

Includes the costs for materials, components, supplies used by establishments in the construction or reconstruction of buildings, structures, or other facilities and costs for materials bought and resold to others. Also includes the costs for fuels that include gasoline, diesel fuel, and lubricants, and 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, 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; materials furnished to contractors by the owners of projects.

**COST OF NATURAL GAS AND MANUFACTURED GAS (\$1,000)**

Costs for natural gas and manufactured gas purchased during the year from other companies or received from other establishments of the company.

**COST OF REPAIRS TO BUILDING AND OTHER STRUCTURES (\$1,000)**

Includes the cost of all repairs made to structures by outside companies or from other establishments of the same company. It includes only the cost of repairs necessary to maintain property. It excludes the cost of improvements that increase the value of property or the cost of adapting it for another use. Such costs are included in capital expenditures.

**COST OF REPAIRS TO MACHINERY AND EQUIPMENT (\$1,000)**

Includes the cost of all repairs made to machinery and equipment by outside companies or from other establishments of the same company. It includes only the cost of repairs necessary to maintain the machinery.

**COST OF SELECTED POWER, FUELS, AND LUBRICANTS (\$1,000)**

Included are 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, coal and coke products.

**DEPRECIATION CHARGES DURING YEAR (\$1,000)**

The depreciation expenses of the establishment in 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.

**DOLLAR VALUE SIZE CLASS**

Displays data for establishments with payroll that fall within each range of value of business done.

**END-OF-YEAR GROSS BOOK VALUE OF DEPRECIABLE ASSETS (\$1,000)**

The gross value of depreciable assets, plus any capital expenditures for new and use depreciable assets in the reporting year, minus the gross value of depreciable assets sold, retired, scrapped, destroyed, etc. in the reporting year.

**END-OF-YEAR INVENTORIES OF MATERIALS AND SUPPLIES (\$1,000)**

The inventories of materials and supplies owned at the 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 which are owned by others but held by the reporting establishment. Builders who build 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.

**FIRST-QUARTER PAYROLL (\$1,000)**

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 January through March. Includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Includes salaries of officers of these establishments, if a corporation, but excludes payments to the proprietor or partners, if unincorporated.

**FRINGE BENEFITS (\$1,000)**

Includes expenditures made by the employer for legally required and voluntary fringe benefit programs for employees.

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**LEGALLY REQUIRED EXPENDITURES (\$1,000)**

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

**NET VALUE OF CONSTRUCTION WORK (\$1,000)**

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

**NUMBER OF CONSTRUCTION WORKERS: QUARTERLY PAY PERIOD**

Refers to the number of construction workers employed during a quarterly pay period. January to March includes the reported number of construction workers employed during the pay period including March 12. April to June includes the reported number of construction workers employed during the pay period including May 12. July to September includes the reported number of construction workers employed during the pay period including August 12. October to December includes the reported number of construction workers employed during the pay period including November 12.

**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 that were inactive or idle for the entire year were not included.

**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 year were not included.

**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 year. It covers all full-year and part-year operations. Construction establishments that were inactive or idle for the entire year were not included.

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

**NUMBER OF OTHER EMPLOYEES: QUARTERLY PAY PERIOD**

Refers to the number of other employees employed during a quarterly pay period. January to March includes the reported number of other workers employed during the pay period including March 12. April to June includes the reported number of other workers employed during the pay period including May 12. July to September includes the reported number of other workers employed during the pay period including August 12. October to December includes the reported number of other workers employed during the pay period including November 12.

**NUMBER OF PROPRIETORS AND WORKING PARTNERS**

These data were not collected on the census report forms. The data shown are based on crediting each sole proprietorship establishment with one active proprietor and each partnership establishment with two working partners.

**OTHER BUSINESS RECEIPTS (\$1,000)**

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 receipts from other business operations in foreign countries, and nonoperating income such as interest and dividends.

**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.

**PAYROLL (\$1,000)**

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, 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.



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**PAYROLL: CONSTRUCTION WORKERS (\$1,000)**

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, vacation and sick leave pay, prior to deductions such as employees' Social security contributions, withholding taxes, group insurance, union dues, and savings bonds.

**PAYROLL: OTHER EMPLOYEES (\$1,000)**

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, 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.

**PRIMARY AND OTHER KINDS OF BUSINESS ACTIVITIES**

Displays dollar value of business done by primary construction business activity. Primary construction activity is construction activity that generates fifty-one percent or more of an establishment's dollar value of business done. Also displayed 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.

**PURCHASED COMMUNICATION SERVICES (\$1,000)**

Includes all costs for communication services purchased from other companies or from other establishments of the company.

**RENTAL COSTS FOR BUILDINGS (\$1,000)**

Includes all costs for renting or leasing space and buildings. It excludes costs under agreements that are in effect conditional sales contracts such as capital leases. Such costs are included in capital expenditures.

**RENTAL COSTS FOR MACHINERY AND EQUIPMENT (\$1,000)**

Includes all costs for renting or leasing construction machinery and equipment, transportation equipment, production equipment, office equipment, furniture and fixtures, and scaffolding. 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.

**RENTAL COSTS FOR MACHINERY, EQUIPMENT, AND BUILDINGS (\$1,000)**

Includes all costs for renting 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.

**RETIREMENTS AND DISPOSITION OF DEPRECIABLE ASSETS (\$1,000)**

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.

**SELECTED COSTS (\$1,000)**

Includes the costs for materials, components, and supplies; costs for 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 shown elsewhere.

**SELECTED PURCHASED SERVICES (\$1,000)**

Includes all costs for communication and repair to buildings and other structure services purchased from other companies or from other establishments of the company. It also includes the cost of all repairs made to structures and equipment by outside companies or from other establishments of the same company. It includes only the cost of repairs necessary to maintain property and equipment. It excludes the cost of improvements that increase the value of property or the cost of adapting it for another use. Such costs are included in capital expenditures.

**SPECIALIZATION PERCENT**

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

**TYPE 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 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.

### Building Construction

- **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 other than attached single-family houses.
- **All other residential buildings.** Includes dormitories, fraternity and sorority houses, and other nonhousekeeping residential structures.
- **Manufacturing and light industrial buildings.** Includes all manufacturing and light 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 light 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 commercial buildings, nec (not elsewhere classified) such as stores, restaurants, and automobile service stations.** Includes all buildings that are intended for use primarily in the retail and service trades. For example, 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.** Included 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, skating rinks, fitness centers, bowling alleys, and indoor swimming pools.
- **All other nonresidential buildings.** Includes nonresidential buildings that are not classified elsewhere such as fire stations, post offices, bus and air passenger terminals and hangars, and prisons.

### Nonbuilding Construction

- **Highways, streets, and related work such as installation of guardrails, highway signs, and lighting.** Includes streets, roads, alleys, sidewalks,

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curbs and gutters, culverts, right-of-way drainage, erosion control, and lighting. Also includes earthwork protective structures when used in connection with road improvements.

- **Airport runways and related work.** Includes 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.
- **Pipeline construction other than sewer or water-lines.** 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, petroleum refineries, chemical complexes, etc.** Includes coke ovens and mining appurtenances such as tipples and washeries.
- **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 systems other than 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/Solid waste disposal.** Includes all dry/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.
- **Outdoor swimming pools.** Includes wading pools and reflecting pools.
- **Water storage facilities.** Includes aqueducts, water towers, and water tanks.
- **Tank storage facilities other than water.** Includes gasoline and oil storage tanks.
- **Fencing.** Includes all types of fencing.
- **Recreational facilities.** Includes athletic fields, golf courses, outdoor tennis courts, trails, and camps.
- **Billboards.** Includes all type of billboards.
- **Heavy military construction.** Includes all military nonbuilding such as missile sites and testing facilities, launch sites and underground command centers.
- **Ships.** Includes special trade contractors working on ships and boats such as painters, carpenters, joiners, electricians, etc.
- **Oilfields.** The majority of construction work occurring in oil fields is classified in Sector 21, Mining. For example, pipeline construction on oil and gas leases are classified in mining only up to the point where the distribution company takes over. At that point, pipeline construction activity is classified in Sector 23, Construction. Some secondary mining construction activities are classified in the construction sector. Examples of this include: road construction; land clearing contracting; land drainage contracting; and land leveling contracting.
- **Other nonbuilding construction, nec.** Includes all types of nonbuilding construction not elsewhere classified.

#### VALUE ADDED (\$1,000)

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

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### **VALUE OF BUSINESS DONE (\$1,000)**

Value of business done is the sum of value of construction work and other business receipts.

### **VALUE OF CONSTRUCTION WORK (\$1,000)**

Includes the value of construction work done by general contractors, heavy construction contractors, and special trades contractors. Included are new construction, additions, alterations or reconstruction, and maintenance and repair construction work. Also includes the value of any construction work done by the reporting establishments for themselves. Speculative builders were instructed to include the value of buildings and other structures built or being built for sale in the reporting year, but not sold. They were to include the costs of such construction plus normal profit. Also included is the cost of construction work done on buildings for rent or lease. 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 the 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 value of work done from business operations in foreign countries.

### **VALUE OF CONSTRUCTION WORK: ADDITIONS, ALTERATIONS, OR RECONSTRUCTION (\$1,000)**

Includes construction work which adds to the value or useful life of an existing building or structure or that 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 that would be classified as maintenance and repair.

### **VALUE OF CONSTRUCTION WORK DONE IN THIS STATE (\$1,000)**

Includes the value of construction work done in a state by general contractors, heavy construction contractors, and special trades contractors.

### **VALUE OF CONSTRUCTION WORK FOR ESTABLISHMENTS WITH INVENTORIES (\$1,000)**

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

### **VALUE OF CONSTRUCTION WORK FOR ESTABLISHMENTS WITH NO INVENTORIES (\$1,000)**

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

### **VALUE OF CONSTRUCTION WORK: FOR SPECIALIZED TYPE (\$1,000)**

Includes value of construction work for one of two specialized categories: 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. The following are examples of kind-of-business activity: 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.

### **VALUE OF CONSTRUCTION WORK: MAINTENANCE AND REPAIR (\$1,000)**

Includes incidental construction work that keeps a property in ordinary working condition. Excluded are trash and snow removal, lawn maintenance and landscaping, cleaning and janitorial services.

### **VALUE OF CONSTRUCTION WORK: NEW CONSTRUCTION (\$1,000)**

Includes the complete, original building of structures and essential service facilities and the initial installation of integral equipment such as elevators and plumbing, heating, and air-conditioning supplies and equipment.

### **VALUE OF CONSTRUCTION WORK ON FEDERALLY OWNED PROJECTS (\$1,000)**

The value of construction work for projects owned by the Federal government.

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**VALUE OF CONSTRUCTION WORK ON GOVERNMENT OWNED PROJECTS (\$1,000)**

The value of construction work for the sum total of all projects owned by Federal, state, and local governments.

**VALUE OF CONSTRUCTION WORK ON PRIVATELY OWNED PROJECTS (\$1,000)**

The value of construction work for construction projects other than government owned projects.

**VALUE OF CONSTRUCTION WORK ON STATE AND LOCALLY OWNED PROJECTS (\$1,000)**

The value of construction work for the sum total of all projects owned by state and local governments.

**VALUE OF CONSTRUCTION WORK SUBCONTRACTED IN FROM OTHERS (\$1,000)**

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 value for this item.

**VALUE OF CONSTRUCTION WORK FOR ESTABLISHMENTS NOT REPORTING INVENTORIES (\$1,000)**

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.

**VOLUNTARY EXPENDITURES (\$1,000)**

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.

# Appendix B.

## NAICS Codes, Titles, and Descriptions

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### 23 CONSTRUCTION

The Construction sector comprises establishments primarily engaged in the construction of buildings and other structures, heavy construction (except buildings), additions, alterations, reconstruction, installation, and maintenance and repairs. Establishments engaged in demolition or wrecking of buildings and other structures, clearing of building sites, and sale of materials from demolished structures are also included. This sector also includes those establishments engaged in blasting, test drilling, landfill, leveling, earthmoving, excavating, land drainage, and other land preparation. The industries within this sector have been defined on the basis of their unique production processes. As with all industries, the production processes are distinguished by their use of specialized human resources and specialized physical capital. Construction activities are generally administered or managed at a relatively fixed place of business, but the actual construction work is performed at one or more different project sites.

This sector is divided into three subsectors of construction activities: (1) building construction and land subdivision and land development; (2) heavy construction (except buildings), such as highways, power plants, and pipelines; and (3) construction activity by special trade contractors.

Establishments classified in Subsector 233, Building, Developing, and General Contracting and Subsector 234, Heavy Construction, usually assume responsibility for an entire construction project, and may subcontract some or all of the actual construction work. Operative builders who build on their own account for sale, and land subdividers and land developers, who engage in subdividing real property into lots for sale, are included in Subsector 233, Building, Developing, and General Contracting. (Special trade contractors are included in Subsector 234, Heavy Construction, if they are engaged in activities primarily relating to heavy construction, such as grading for highways.) Establishments included in these subsectors operate as general contractors, design-builders, engineer-constructors, joint-venture contractors, and turnkey construction contractors. Establishments identified as construction management firms are also included.

Establishments classified in Subsector 235, Special Trade Contractors, are primarily engaged in specialized construction activities, such as plumbing, painting, and electrical work, and work for builders and general contractors under subcontract or directly for project owners. Establishments engaged in demolition or wrecking of

buildings and other structures, dismantling of machinery, excavating, shoring and underpinning, anchored earth retention activities, foundation drilling, and grading for buildings are also included in this subsector.

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

The installation of prefabricated building equipment and materials, such as elevators and revolving doors, is classified in the Construction sector. Installation work incidental to sales by employees of a manufacturing or retail establishment is classified as an activity of those establishments.

### 233 Building, Developing, and General Contracting

Industries in the Building, Developing, and General Contracting subsector comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repair) of building projects. Builders, developers, and general contractors, as well as land subdividers and land developers are included in this subsector. Establishments identified as construction management firms for building projects are also included. The construction work may be for others and performed by custom builders, general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors, or may be on their own account for sale and performed by speculative or operative builders.

### 2331 Land Subdivision and Land Development

This NAICS Industry Group includes establishments classified in NAICS Industry 23311, Land Subdivision and Land Development.

### 23311 Land Subdivision and Land Development

This industry comprises establishments primarily engaged in subdividing real property into lots and/or developing building lots for sale.

### 233110 Land Subdivision and Land Development

This U.S. industry comprises establishments primarily engaged in subdividing real property into lots and/or developing building lots for sale.

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The data published with NAICS code 233110 include the following SIC industries:

6552 Land subdividers and developers, except cemeteries

### **2332 Residential Building Construction**

This NAICS Industry Group includes establishments classified in the following NAICS Industries: 23321, Single-Family Housing Construction; and 23322, Multifamily Housing Construction.

#### **23321 Single-Family Housing Construction**

This industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of single family residential housing units (e.g., single family detached houses, town houses, or row houses where each housing unit is separated by a ground-to-roof wall and where no housing units are constructed above or below). This industry includes establishments responsible for additions and alterations to mobile homes and on-site assembly of modular and prefabricated houses. Establishments identified as single family construction management firms are also included in this industry. Establishments in this industry may perform work for others or on their own account for sale as speculative or operative builders. Kinds of establishments include single family housing custom builders, general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

#### **233210 Single-Family Housing Construction**

This U.S. industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of single family residential housing units (e.g., single family detached houses, town houses, or row houses where each housing unit is separated by a ground-to-roof wall and where no housing units are constructed above or below). This industry includes establishments responsible for additions and alterations to mobile homes and on-site assembly of modular and prefabricated houses. Establishments identified as single family construction management firms are also included in this industry. Establishments in this industry may perform work for others or on their own account for sale as speculative or operative builders. Kinds of establishments include single family housing custom builders, general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

The data published with NAICS code 233210 include the following SIC industries:

1521 General contractors—single-family houses  
1531 Operative builders (pt)  
8741 Management services (pt)

#### **23322 Multifamily Housing Construction**

This industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of multifamily residential housing units (e.g., highrise, garden, and town house apartments where each unit is not separated by a ground-to-roof wall). The units may be constructed for sale as condominiums or cooperatives, or for rental as apartments. Establishments identified as multifamily construction management firms are also included in this industry. Establishments in this industry may perform work for others or on their own account for sale as speculative or operative builders. Kinds of establishments include multifamily housing general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

#### **233220 Multifamily Housing Construction**

This U.S. industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of multifamily residential housing units (e.g., highrise, garden, and town house apartments where each unit is not separated by a ground-to-roof wall). The units may be constructed for sale as condominiums or cooperatives, or for rental as apartments. Establishments identified as multifamily construction management firms are also included in this industry. Establishments in this industry may perform work for others or on their own account for sale as speculative or operative builders. Kinds of establishments include multifamily housing general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

The data published with NAICS code 233220 include the following SIC industries:

1522 General contractors—residential buildings, other than single-family (pt)  
1531 Operative builders (pt)  
8741 Management services (pt)

### **2333 Nonresidential Building Construction**

This NAICS Industry Group includes establishments classified in the following NAICS Industries: 23331, Manufacturing and Industrial Building Construction; and 23332, Commercial and Institutional Building Construction.

#### **23331 Manufacturing and Industrial Building Construction**

This industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of manufacturing and industrial buildings (e.g., plants, mills, factories). Establishments identified as manufacturing and industrial building construction management firms are also included in

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this industry. Kinds of establishments include manufacturing and industrial building general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

### **233310 Manufacturing and Industrial Building Construction**

This U.S. industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of manufacturing and industrial buildings (e.g., plants, mills, factories). Establishments identified as manufacturing and industrial building construction management firms are also included in this industry. Kinds of establishments include manufacturing and industrial building general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

The data published with NAICS code 233310 include the following SIC industries:

- 1531 Operative builders (pt)
- 1541 General contractors—industrial buildings and warehouses (pt)
- 8741 Management services (pt)

### **23332 Commercial and Institutional Building Construction**

This industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of commercial and institutional buildings (e.g., stores, schools, hospitals office buildings, public warehouses). Establishments identified as commercial and institutional building construction management firms are also included in this industry. Kinds of establishments include commercial and institutional building general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

### **233320 Commercial and Institutional Building Construction**

This U.S. industry comprises establishments primarily responsible for the entire construction (i.e., new work, additions, alterations, and repairs) of commercial and institutional buildings (e.g., stores, schools, hospitals office buildings, public warehouses). Establishments identified as commercial and institutional building construction management firms are also included in this industry. Kinds of establishments include commercial and institutional building general contractors, design builders, engineer-constructors, joint-venture contractors, and turnkey contractors.

The data published with NAICS code 233320 include the following SIC industries:

- 1522 General contractors—residential buildings, other than single-family (pt)
- 1531 Operative builders (pt)
- 1541 General contractors—industrial buildings and warehouses (pt)
- 1542 General contractors—nonresidential buildings, except industrial buildings and warehouses
- 8741 Management services (pt)

### **234 Heavy Construction**

Industries in the Heavy Construction subsector group establishments that engage in the construction of heavy engineering and industrial projects (except buildings), for example, highways, power plants, and pipelines. The construction work performed may include new work, reconstruction, or repairs. Establishments identified as heavy construction management firms are also included. Establishments in this subsector usually assume responsibility for entire nonbuilding projects but may subcontract some or all of the actual construction work. Special trade contractors are included in this group if they are engaged in activities primarily related to heavy construction, for example, grading for highways. Kinds of establishments include heavy construction general contractors, design builders, engineer-constructors, and joint-venture contractors.

### **2341 Highway, Street, Bridge, and Tunnel Construction**

This NAICS Industry Group includes establishments classified in the following NAICS industries: 23411, Highway and Street Construction; and 23412, Bridge and Tunnel Construction.

#### **23411 Highway and Street Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of highways (except elevated), streets, roads, or airport runways; (2) establishments identified as highway and street construction management firms; and (3) establishments identified as special trade contractors engaged in performing subcontract work primarily related to highway and street construction (e.g., grading for highways, installing guardrails, public sidewalk construction). Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include highway and street general contractors, design builders, engineer-constructors, and joint-venture contractors.

#### **234110 Highway and Street Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of highways (except elevated),



streets, roads, or airport runways; (2) establishments identified as highway and street construction management firms; and (3) establishments identified as special trade contractors engaged in performing subcontract work primarily related to highway and street construction (e.g., grading for highways, installing guardrails, public sidewalk construction). Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include highway and street general contractors, design builders, engineer-constructors, and joint-venture contractors.

The data published with NAICS code 234110 include the following SIC industries:

- 1611 Highway and street construction contractors, except elevated highways
- 8741 Management services (pt)

### **23412 Bridge and Tunnel Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of bridges, viaducts, elevated highways, and tunnels; (2) establishments identified as bridge and tunnel construction management firms; and (3) establishments identified as special trade contractors primarily engaged in performing subcontract work related to bridge and tunnel construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include bridge and tunnel general contractors, design builders, engineer-constructors, and joint-venture contractors.

### **234120 Bridge and Tunnel Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of bridges, viaducts, elevated highways, and tunnels; (2) establishments identified as bridge and tunnel construction management firms; and (3) establishments identified as special trade contractors primarily engaged in performing subcontract work related to bridge and tunnel construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include bridge and tunnel general contractors, design builders, engineer-constructors, and joint-venture contractors.

The data published with NAICS code 234120 include the following SIC industries:

- 1622 Bridge, tunnel, and elevated highway construction contractors
- 8741 Management services (pt)

### **2349 Other Heavy Construction**

This industry group comprises establishments primarily engaged in heavy nonbuilding construction (except highway, street, bridge, and tunnel construction).

### **23491 Water, Sewer, and Pipeline Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, rehabilitation, or repairs) of water mains, sewers, drains, gas mains, natural gas pumping stations, and gas and oil pipelines; (2) establishments identified as water, sewer, and pipeline construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to water, sewer, and pipeline construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include water, sewer, and pipeline general contractors, design builders, engineer-constructors, and joint-venture contractors.

### **234910 Water, Sewer, and Pipeline Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, rehabilitation, or repairs) of water mains, sewers, drains, gas mains, natural gas pumping stations, and gas and oil pipelines; (2) establishments identified as water, sewer, and pipeline construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to water, sewer, and pipeline construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include water, sewer, and pipeline general contractors, design builders, engineer-constructors, and joint-venture contractors.

The data published with NAICS code 234910 include the following SIC industries:

- 1623 Water, sewer, pipeline, and communications and power line construction (pt)
- 8741 Management services (pt)

### **23492 Power and Communication Transmission Line Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of electric power and communication transmission lines and towers, radio and television transmitting/receiving towers, cable laying, and cable television lines; (2) establishments identified as power and communication transmission line construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to power and communication transmission line construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include power and communication transmission line general contractors, design builders, engineer-constructors, and joint-venture contractors.

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### **234920 Power and Communication Transmission Line Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of electric power and communication transmission lines and towers, radio and television transmitting/receiving towers, cable laying, and cable television lines; (2) establishments identified as power and communication transmission line construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to power and communication transmission line construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include power and communication transmission line general contractors, design builders, engineer-constructors, and joint-venture contractors.

The data published with NAICS code 234920 include the following SIC industries:

- 1623 Water, sewer, pipeline, and communications and power line construction (pt)
- 8741 Management services (pt)

### **23493 Industrial Nonbuilding Structure Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of heavy industrial nonbuilding structures, such as chemical complexes or facilities, cement plants, petroleum refineries, industrial incinerators, ovens, kilns, power plants (except hydroelectric plants), and nuclear reactor containment structures; (2) establishments identified as industrial nonbuilding construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to industrial nonbuilding construction. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include industrial nonbuilding general contractors, design builders, engineer-constructors, and joint-venture contractors.

### **234930 Industrial Nonbuilding Structure Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of heavy industrial nonbuilding structures, such as chemical complexes or facilities, cement plants, petroleum refineries, industrial incinerators, ovens, kilns, power plants (except hydroelectric plants), and nuclear reactor containment structures; (2) establishments identified as industrial nonbuilding construction management firms; and (3) establishments identified as special trade contractors engaged in activities primarily related to industrial nonbuilding construction.

Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include industrial nonbuilding general contractors, design builders, engineer-constructors, and joint-venture contractors.

The data published with NAICS code 234930 include the following SIC industries:

- 1629 Heavy construction, n.e.c. (pt)
- 8741 Management services (pt)

### **23499 All Other Heavy Construction**

This industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of heavy nonbuilding construction projects (except highway, street, bridge, tunnel, water lines, sewer lines, pipelines, power and communication transmission lines, and industrial nonbuilding structures); (2) establishments identified as all other heavy construction management firms; (3) establishments primarily engaged in construction equipment rental with an operator; and (4) establishments identified as special trade contractors engaged in activities related primarily to all other heavy construction. Typical projects constructed by establishments in this industry include athletic fields, dams, dikes, docks, drainage projects, golf courses, harbors, parks, reservoirs, canals, sewage treatment plants, water treatment plants, hydroelectric plants, subways, and other mass transit projects. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include heavy construction general contractors, design builders, engineer-constructors, and joint-venture contractors.

### **234990 All Other Heavy Construction**

This U.S. industry comprises: (1) establishments primarily responsible for the entire construction (i.e., new work, reconstruction, or repairs) of heavy nonbuilding construction projects (except highway, street, bridge, tunnel, water lines, sewer lines, pipelines, power and communication transmission lines, and industrial nonbuilding structures); (2) establishments identified as all other heavy construction management firms; (3) establishments primarily engaged in construction equipment rental with an operator; and (4) establishments identified as special trade contractors engaged in activities related primarily to all other heavy construction. Typical projects constructed by establishments in this industry include athletic fields, dams, dikes, docks, drainage projects, golf courses, harbors, parks, reservoirs, canals, sewage treatment plants, water treatment plants, hydroelectric plants, subways, and other mass transit projects. Establishments in this industry may subcontract some or all of the actual construction work. Kinds of establishments include heavy construction general contractors, design builders, engineer-constructors, and joint-venture contractors.

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The data published with NAICS code 234990 include the following SIC industries:

- 1629 Heavy construction, n.e.c. (pt)
- 7353 Heavy construction equipment, rental and leasing (pt)
- 8741 Management services (pt)

### **235 Special Trade Contractors**

Industries in the Special Trade Contractors subsector engage in specialized construction activities, such as plumbing, painting, and electrical work. Those establishments that engage in activities primarily related to heavy construction, such as grading for highways, are classified in Subsector 234, Heavy Construction. The activities of this subsector may be subcontracted from builders or general contractors or it may be performed directly for project owners. The construction work performed may include new work, additions, alterations, or maintenance and repairs. Special trade contractors usually perform most of their work at the job site, although they may have shops where they perform prefabrication and other work.

#### **2351 Plumbing, Heating, and Air-Conditioning Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23511, Plumbing, Heating, and Air-Conditioning Contractors.

##### **23511 Plumbing, Heating, and Air-Conditioning Contractors**

This industry comprises establishments primarily engaged in one or more of the following: (1) installing plumbing, heating, and air-conditioning equipment; (2) servicing plumbing, heating, and air-conditioning equipment; and (3) the combined activity of selling and installing plumbing, heating, and air-conditioning equipment. The plumbing, heating, and air-conditioning work performed includes new work, additions, alterations, and maintenance and repairs. The activities performed by these establishments range from duct fabrication and installation at the site to installation of refrigeration equipment, installation of sprinkler systems, and installation of environmental controls.

##### **235110 Plumbing, Heating, and Air-Conditioning Contractors**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) installing plumbing, heating, and air-conditioning equipment; (2) servicing plumbing, heating, and air-conditioning equipment; and (3) the combined activity of selling and installing plumbing, heating, and air-conditioning equipment. The plumbing, heating, and air-conditioning work performed includes new work, additions, alterations, and

maintenance and repairs. The activities performed by these establishments range from duct fabrication and installation at the site to installation of refrigeration equipment, installation of sprinkler systems, and installation of environmental controls.

The data published with NAICS code 235110 include the following SIC industry:

- 1711 Plumbing, heating, and air-conditioning special trade contractors

This definition comes from the 1997 NAICS manual. However, for this industry, the 1997 Economic Census--Construction did not fully implement the conversion to NAICS. Data for NAICS industry 235110 do not include establishments whose primary activity is boiler cleaning. The NAICS definitions will be fully implemented with the 2002 Economic Census.

#### **2352 Painting and Wall Covering Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23521, Painting and Wall Covering Contractors.

##### **23521 Painting and Wall Covering Contractors**

This industry comprises establishments primarily engaged in interior or exterior painting and interior wall covering. The painting and wall covering work performed includes new work, additions, alterations, and maintenance and repairs. Activities performed by these establishments range from bridge, ship, and traffic lane painting to paint and wall covering removal.

##### **235210 Painting and Wall Covering Contractors**

This U.S. industry comprises establishments primarily engaged in interior or exterior painting and interior wall covering. The painting and wall covering work performed includes new work, additions, alterations, and maintenance and repairs. Activities performed by these establishments range from bridge, ship, and traffic lane painting to paint and wall covering removal.

The data published with NAICS code 235210 include the following SIC industries:

- 1721 Painting and paper hanging special trade contractors
- 1799 Special trade contractors, n.e.c. (pt)

#### **2353 Electrical Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23531, Electrical Contractors.

##### **23531 Electrical Contractors**

This industry comprises establishments primarily engaged in one or more of the following: (1) performing electrical work at the site (e.g., installing wiring); (2) servicing electrical equipment at the site; and (3) the combined activity of selling and installing electrical equipment. The electrical work performed includes new work, additions, alterations, and maintenance and repairs.

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### **235310 Electrical Contractors**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) performing electrical work at the site (e.g., installing wiring); (2) servicing electrical equipment at the site; and (3) the combined activity of selling and installing electrical equipment. The electrical work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235310 include the following SIC industry:

1731 Electrical work special trade contractors

### **2354 Masonry, Drywall, Insulation, and Tile Contractors**

This NAICS Industry Group includes establishments classified in the following NAICS Industries: 23541, Masonry and Stone Contractors; 23542, Drywall, Plastering, Acoustical, and Insulation Contractors; and 23543, Tile, Marble, Terrazzo, and Mosaic Contractors.

#### **23541 Masonry and Stone Contractors**

This industry comprises establishments primarily engaged in masonry work, stone setting, and other stone work. The masonry work, stone setting, and other stone work performed includes new work, additions, alterations, and maintenance and repairs. Activities performed by establishments in this industry range from the construction of foundations made of block, stone, or brick to glass block laying; exterior marble, granite and slate work; and tuck pointing.

#### **235410 Masonry and Stone Contractors**

This U.S. industry comprises establishments primarily engaged in masonry work, stone setting, and other stone work. The masonry work, stone setting, and other stone work performed includes new work, additions, alterations, and maintenance and repairs. Activities performed by establishments in this industry range from the construction of foundations made of block, stone, or brick to glass block laying; exterior marble, granite and slate work; and tuck pointing.

The data published with NAICS code 235410 include the following SIC industry:

1741 Masonry, stone setting, and other stone work special trade contractors

#### **23542 Drywall, Plastering, Acoustical, and Insulation Contractors**

This industry comprises establishments primarily engaged in drywall, plaster work, acoustical, and building insulation work. The drywall, plaster work, acoustical, and insulation work performed includes new work, additions,

alterations, and maintenance and repairs. Plaster work includes applying plain or ornamental plaster, including installation of lathing to receive plaster.

#### **235420 Drywall, Plastering, Acoustical, and Insulation Contractors**

This U.S. industry comprises establishments primarily engaged in drywall, plaster work, acoustical, and building insulation work. The drywall, plaster work, acoustical, and insulation work performed includes new work, additions, alterations, and maintenance and repairs. Plaster work includes applying plain or ornamental plaster, including installation of lathing to receive plaster.

The data published with NAICS code 235420 include the following SIC industries:

1742 Plastering, drywall, acoustical, and insulation work special trade contractors

1743 Terrazzo, tile, marble, and mosaic work special trade contractors (pt)

1771 Concrete work special trade contractors (pt)

#### **23543 Tile, Marble, Terrazzo, and Mosaic Contractors**

This industry comprises establishments primarily engaged in (1) setting and installing ceramic tile, marble (interior only), terrazzo, and mosaic and/or (2) mixing marble particles and cement to make terrazzo at the job site. The tile, marble, terrazzo, and mosaic work performed includes new work, additions, alterations, and maintenance and repairs.

#### **235430 Tile, Marble, Terrazzo, and Mosaic Contractors**

This U.S. industry comprises establishments primarily engaged in (1) setting and installing ceramic tile, marble (interior only), terrazzo, and mosaic and/or (2) mixing marble particles and cement to make terrazzo at the job site. The tile, marble, terrazzo, and mosaic work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235430 include the following SIC industry:

1743 Terrazzo, tile, marble, and mosaic work special trade contractors (pt)

#### **2355 Carpentry and Floor Contractors**

This NAICS Industry Group includes establishments classified in the following NAICS Industries: 23551, Carpentry Contractors; and 23552, Floor Laying and Other Floor Contractors.

#### **23551 Carpentry Contractors**

This industry comprises establishments primarily engaged in framing, carpentry, and finishing work. The carpentry work performed includes new work, additions,

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alterations, and maintenance and repairs. Activities performed by establishments in this industry range from the installation of doors and windows to paneling, steel framing work, and ship joinery.

### **235510 Carpentry Contractors**

This U.S. industry comprises establishments primarily engaged in framing, carpentry, and finishing work. The carpentry work performed includes new work, additions, alterations, and maintenance and repairs. Activities performed by establishments in this industry range from the installation of doors and windows to paneling, steel framing work, and ship joinery.

The data published with NAICS code 235510 include the following SIC industry:

1751 Carpentry work special trade contractors

### **23552 Floor Laying and Other Floor Contractors**

This industry comprises establishments primarily engaged in the installation of resilient floor tile, carpeting, linoleum, and wood or resilient flooring. The floor laying and other floor work performed includes new work, additions, alterations, and maintenance and repairs.

### **235520 Floor Laying and Other Floor Contractors**

This U.S. industry comprises establishments primarily engaged in the installation of resilient floor tile, carpeting, linoleum, and wood or resilient flooring. The floor laying and other floor work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235520 include the following SIC industry:

1752 Floor laying and other floor work special trade contractors, n.e.c.

### **2356 Roofing, Siding, and Sheet Metal Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23561, Roofing, Siding, and Sheet Metal Contractors.

#### **23561 Roofing, Siding, and Sheet Metal Contractors**

This industry comprises establishments primarily engaged in the installation of roofing, siding, sheet metal work, and roof drainage-related work, such as downspouts and gutters. Activities performed by these establishments also include treating roofs (i.e., by spraying, painting, or coating), copper smithing, tin smithing, installing skylights, installing metal ceilings, flashing, duct work, and capping. The roofing, siding, and sheet metal work performed includes new work, additions, alterations, and maintenance and repairs.

#### **235610 Roofing, Siding, and Sheet Metal Contractors**

This U.S. industry comprises establishments primarily engaged in the installation of roofing, siding, sheet metal work, and roof drainage-related work, such as downspouts and gutters. Activities performed by these establishments also include treating roofs (i.e., by spraying, painting, or coating), copper smithing, tin smithing, installing skylights, installing metal ceilings, flashing, duct work, and capping. The roofing, siding, and sheet metal work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235610 include the following SIC industry:

1761 Roofing, siding, and sheet metal work special trade contractors

#### **2357 Concrete Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23571, Concrete Contractors.

#### **23571 Concrete Contractors**

This industry comprises establishments primarily engaged in the use of concrete and asphalt to produce parking areas, building foundations, structures, and retaining walls, and in the use of all materials to produce patios, private driveways, and private walks. Activities performed by these establishments include grout and shotcrete work. The concrete work performed includes new work, additions, alterations, and maintenance and repairs.

#### **235710 Concrete Contractors**

This U.S. industry comprises establishments primarily engaged in the use of concrete and asphalt to produce parking areas, building foundations, structures, and retaining walls, and in the use of all materials to produce patios, private driveways, and private walks. Activities performed by these establishments include grout and shotcrete work. The concrete work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235710 include the following SIC industry:

1771 Concrete work special trade contractors (pt)

#### **2358 Water Well Drilling Contractors**

This NAICS Industry Group includes establishments classified in NAICS Industry 23581, Water Well Drilling Contractors.

#### **23581 Water Well Drilling Contractors**

This industry comprises establishments primarily engaged in drilling, tapping, and capping of water wells, and geothermal drilling. The water well drilling work performed includes new work, servicing, and maintenance and repairs.

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### **235810 Water Well Drilling Contractors**

This U.S. industry comprises establishments primarily engaged in drilling, tapping, and capping of water wells, and geothermal drilling. The water well drilling work performed includes new work, servicing, and maintenance and repairs.

The data published with NAICS code 235810 include the following SIC industry:

1781 Water well drilling special trade contractors

### **2359 Other Special Trade Contractors**

This industry group comprises establishments primarily engaged in specialized construction activities (except plumbing, painting, electrical, masonry, drywall, insulation, tile, carpentry, flooring work, roofing, siding, sheet metal, concrete, and water well drilling).

#### **23591 Structural Steel Erection Contractors**

This industry comprises establishments primarily engaged in one or more of the following: (1) erecting metal, structural steel, and similar products of prestressed or precast concrete to produce structural elements, building exteriors, and elevator fronts; (2) setting rods, bars, rebar, mesh, and cages, to reinforce poured-in-place concrete; and (3) erecting cooling towers and metal storage tanks. The structural steel erection work performed includes new work, additions, alterations, reconstruction, and maintenance and repairs.

#### **235910 Structural Steel Erection Contractors**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) erecting metal, structural steel, and similar products of prestressed or precast concrete to produce structural elements, building exteriors, and elevator fronts; (2) setting rods, bars, rebar, mesh, and cages, to reinforce poured-in-place concrete; and (3) erecting cooling towers and metal storage tanks. The structural steel erection work performed includes new work, additions, alterations, reconstruction, and maintenance and repairs.

The data published with NAICS code 235910 include the following SIC industry:

1791 Structural steel erection special trade contractors

#### **23592 Glass and Glazing Contractors**

This industry comprises establishments primarily engaged in installing glass (i.e., glazing work) and/or tinting glass. The glass work performed includes new work, additions, alterations, and maintenance and repairs. 235920 Glass and Glazing Contractors This U.S. industry comprises establishments primarily engaged in installing

glass (i.e., glazing work) and/or tinting glass. The glass work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235920 include the following SIC industries:

1793 Glass and glazing work special trade contractors

1799 Special trade contractors, n.e.c. (pt)

#### **23593 Excavation Contractors**

This industry comprises establishments primarily engaged in preparing land for building construction. Activities performed by these establishments are drilling shafts, foundation digging, foundation drilling, and grading. The excavation work performed includes new work, additions, alterations, and repairs.

#### **235930 Excavation Contractors**

This U.S. industry comprises establishments primarily engaged in preparing land for building construction. Activities performed by these establishments are drilling shafts, foundation digging, foundation drilling, and grading. The excavation work performed includes new work, additions, alterations, and repairs.

The data published with NAICS code 235930 include the following SIC industry:

1794 Excavation work special trade contractors

#### **23594 Wrecking and Demolition Contractors**

This industry comprises establishments primarily engaged in the wrecking and demolition of buildings and other structures, including underground tank removal and the dismantling of steel oil tanks, except those for hazardous materials. The establishments engaged in wrecking and demolition work may or may not sell materials derived from demolishing operations.

#### **235940 Wrecking and Demolition Contractors**

This U.S. industry comprises establishments primarily engaged in the wrecking and demolition of buildings and other structures, including underground tank removal and the dismantling of steel oil tanks, except those for hazardous materials. The establishments engaged in wrecking and demolition work may or may not sell materials derived from demolishing operations.

The data published with NAICS code 235940 include the following SIC industry:

1795 Wrecking and demolition work special trade contractors

#### **23595 Building Equipment and Other Machinery Installation Contractors**

This industry comprises establishments primarily engaged in one or more of the following: (1) the installation or dismantling of building equipment, machinery or

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other industrial equipment (except plumbing, heating, air conditioning or electrical equipment); (2) machine rigging; and (3) millwrighting. Types of equipment installed include automated and revolving doors, conveyor systems, dumbwaiters, dust collecting equipment, elevators, small incinerators, pneumatic tubes systems, and built-in vacuum cleaning systems. The building equipment and other machinery installation work performed includes new work, additions, alterations, and maintenance and repairs.

### **235950 Building Equipment and Other Machinery Installation Contractors**

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) the installation or dismantling of building equipment, machinery or other industrial equipment (except plumbing, heating, air conditioning or electrical equipment); (2) machine rigging; and (3) millwrighting. Types of equipment installed include automated and revolving doors, conveyor systems, dumbwaiters, dust collecting equipment, elevators, small incinerators, pneumatic tubes systems, and built-in vacuum cleaning systems. The building equipment and other machinery installation work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235950 include the following SIC industry:

1796 Installation or erection of building equipment, special trade contractors, n.e.c.

### **23599 All Other Special Trade Contractors**

This industry comprises establishments primarily engaged in specialized construction work, (except plumbing, painting, electrical, masonry, drywall, insulation, tile, carpentry, flooring, roofing, siding, sheet metal work, concrete work, glass and glazing, structural steel erection, excavation, wrecking and demolition, and building equipment installation work). Activities undertaken by these

establishments include constructing swimming pools and fences, house moving, waterproofing, dewatering, damp-proofing, fireproofing, and sandblasting; installing antennas, artificial turf, awnings, countertops, fire escapes, forms for poured concrete, gasoline pumps, lightning conductors, ornamental metal, shoring systems, and signs (on buildings); and specialized activities, such as bathtub refinishing, coating and glazing of concrete surfaces, gas leakage detection, insulation of pipes and boilers, mobile home site setup and tie-down, posthole digging, radon remediation, scaffolding work, and on-site welding. The other special trade work performed includes new work, additions, alterations, and maintenance and repairs.

### **235990 All Other Special Trade Contractors**

This U.S. industry comprises establishments primarily engaged in specialized construction work, (except plumbing, painting, electrical, masonry, drywall, insulation, tile, carpentry, flooring, roofing, siding, sheet metal work, concrete work, glass and glazing, structural steel erection, excavation, wrecking and demolition, and building equipment installation work). Activities undertaken by these establishments include constructing swimming pools and fences, house moving, waterproofing, dewatering, damp-proofing, fireproofing, and sandblasting; installing antennas, artificial turf, awnings, countertops, fire escapes, forms for poured concrete, gasoline pumps, lightning conductors, ornamental metal, shoring systems, and signs (on buildings); and specialized activities, such as bathtub refinishing, coating and glazing of concrete surfaces, gas leakage detection, insulation of pipes and boilers, mobile home site setup and tie-down, posthole digging, radon remediation, scaffolding work, and on-site welding. The other special trade work performed includes new work, additions, alterations, and maintenance and repairs.

The data published with NAICS code 235990 include the following SIC industry:

1799 Special trade contractors, n.e.c. (pt)

# Appendix C.

## Coverage and Methodology

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### THE SAMPLE FRAME

The universe for the construction sector includes approximately 650,000 establishments. This includes only those construction establishments with at least one paid employee in 1997. Census reports were mailed to a sample of approximately 130,000 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) which 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.

While the IRS-SSA list usually provided sufficient classification information to assign a company to the proper economic sector, there were cases for which the information was incomplete or missing. A classification form was mailed to companies with insufficient information to be assigned to an industry. This form requested information on the nature of the company's activities. Companies determined to be in scope of the construction sector subsequent to the census mailout were treated as a supplement to the universe rather than part of the sample frame.

### SAMPLE SELECTION

The major objective of the sample design was to provide a sample that would provide reliable estimates for each state and construction industry. A stratified random sample was designed. Within each state by industry cell, six strata were defined.

- Stratum 1 was comprised of approximately 12,000 establishments of companies that had operations of any type at more than one location. These establishments of multiunit companies were included in the construction sample with certainty.
- Strata 2-6 were comprised of single-location companies. For each industry, payroll cut-offs were determined at the U.S. level and used to define the payroll ranges for each of the strata 2-6 across all states.

All establishments in stratum 2 were included in the construction sample with certainty. These consisted of the largest single-location construction companies.

For strata 3-6, a random sample of establishments was selected. The general strategy was to sample the strata containing larger establishments at a higher rate than those containing small establishments. The minimum sample rate was 1 in 20.

For five industries, the U.S. population in the sample frame was quite small. For these industries, all establishments in the sample frame were included in the sample with certainty. These industries were as follows:

- SIC 1622: Bridge, Tunnel, and Elevated Highway Construction Contractors
- SIC 1795: Wrecking and Demolition Work
- SIC 1796: Installation or Erection of Building Equipment, Not Elsewhere Classified
- SIC 7353: Equipment Rental with Operators
- SIC 8741: Construction Management

### ESTIMATION AND VARIANCES

Based on the response data, establishments were assigned to the appropriate NAICS 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.

Variations of the estimated items were derived at the state level, industry, and by stratum using standard stratified random sample formulas. Variations were then aggregated to the publication levels for the computation of the relative standard errors.

### RELIABILITY OF THE ESTIMATES

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 which 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:

- 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.

## **INDUSTRY CLASSIFICATION OF ESTABLISHMENTS**

Each establishment covered in the construction sector was classified in one of twenty eight industries in accordance with the industry definitions in the 1997 NAICS (North American Industry Classification System) manual. The U.S. Census Bureau first used NAICS to classify industries for 1997 economic census data. Prior to this the U.S. Census Bureau used SIC (Standard Industrial Classification) for industry classification. The differences between NAICS and SIC are outlined in Appendix A of the 1997 NAICS manual.

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, value of business, 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 1997, there are 3 subsectors (three-digit NAICS), 14 industry groups (four-digit NAICS), and 28 NAICS industries (five- and six-digit NAICS). The five-digit NAICS is supposed to be the level at which there is comparability with the Canadian and Mexican classification systems. However, agreement had not been reached with these countries at the time of the 1997 Economic Census regarding the classification of construction industries. The 28 five- and six-digit NAICS construction industries are the result of an expansion and a restructuring of the 26 four-digit SIC industries of 1987.

## **ESTABLISHMENT BASIS OF REPORTING**

The construction sector 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

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are conducted. With some exceptions, 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. 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.

#### **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.

# Appendix D. Geographic Notes

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Not applicable for this report.

# Appendix E. Metropolitan Areas

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Not applicable for this report.

# Appendix F.

## Detailed SIC Code Titles: 1997

[The SIC code title shown in Table 1 is a standard SIC title from the Standard Industrial Classification Manual. A more detailed title description for the SIC code shown in Table 1 is included in this appendix]

SIC code	Detailed industry title description	SIC code	Detailed industry title description
<b>15</b>	<b>GENERAL BUILDING CONTRACTORS</b>	<b>17</b>	<b>SPECIAL TRADE CONTRACTORS (EXCLUDING LEAD PAINT REMOVAL AND ASBESTOS ABATEMENT)—Con.</b>
152100	General contractors—single-family houses	175100	Carpentry work
152210	General contractors—hotel and motel construction	175200	Floor laying and other floor work, n.e.c
152220	General contractors—residential buildings, other than single-family, except hotel and motel construction	176100	Roofing, siding, and sheet metal work
153110	Operative builders, single-family housing construction	177110	Stucco construction
153120	Operative builders, multifamily housing construction	177120	Concrete work, except stucco construction
153130	Operative builders, manufacturing and light industrial building construction	178100	Water well drilling
153140	Operative builders, commercial and institutional building construction	179100	Structural steel erection
154110	General contractors—commercial warehouse construction	179300	Glass and glazing work
154120	General contractors—industrial buildings and warehouse construction	179400	Excavation work
154200	General contractors—nonresidential buildings, other than industrial buildings and warehouses	179500	Wrecking and demolition work
		179600	Installation or erection of building equipment, n.e.c
		179910	Paint and wallpaper stripping and wallpaper removal contractors
		179920	Tinting glass contractors
		179940	All other special trade contractors
<b>16</b>	<b>HEAVY CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION</b>	<b>65</b>	<b>REAL ESTATE—CONSTRUCTION LAND SUBDIVIDERS AND DEVELOPERS</b>
161100	Highway and street construction, except elevated highways	655200	Land subdividers and developers, except cemeteries
162200	Bridge, tunnel, and elevated highway construction	<b>73</b>	<b>BUSINESS SERVICES—CONSTRUCTION EQUIPMENT RENTAL AND LEASING, WITH OPERATOR</b>
162310	Water, sewer, and pipeline construction	735320	Heavy construction equipment rental and leasing, with operator
162320	Power and communication transmission line construction	<b>87</b>	<b>ENGINEERING AND MANAGEMENT SERVICES—CONSTRUCTION MANAGEMENT FOR BUILDINGS AND HEAVY CONSTRUCTION</b>
162910	Industrial nonbuilding construction	874121	Construction management—single-family housing construction
162920	Other heavy construction	874122	Construction management—multifamily housing construction
<b>17</b>	<b>SPECIAL TRADE CONTRACTORS (EXCLUDING LEAD PAINT REMOVAL AND ASBESTOS ABATEMENT)</b>	874123	Construction management—manufacturing and industrial building construction
171100	Plumbing, heating, and air-conditioning	874124	Construction management—commercial and institutional building construction
172100	Painting and paper hanging	874131	Construction management—highway and street construction
173100	Electrical work	874132	Construction management—bridge and tunnel construction
174100	Masonry, stone setting, and other stone work	874133	Construction management—water, sewer, and pipeline construction
174200	Plastering, drywall, acoustical, and insulation work	874134	Construction management—power and communication transmission line construction
174310	Fresco work	874135	Construction management—industrial nonbuilding construction
174320	Terrazzo, tile, marble, and mosaic work, except fresco work	874136	Construction management—all other heavy construction

