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Summary of Job Duties

Civil Drafters <u>Video</u> - Prepare drawings and topographical and relief maps used in civil engineering projects, such as highways, bridges, pipelines, flood control projects, and water and sewerage control systems.

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Detailed Job Description

Civil Drafters Drafters prepare technical drawings and plans.

Drafters use software to convert the designs of architects and engineers into technical drawings. Most workers specialize in architectural, civil, electrical, or mechanical drafting and use technical drawings to help design everything from microchips to skyscrapers.

Duties

Drafters typically do the following:

- Design plans using computer-aided design (CAD) software
- Work from rough sketches and specifications created by engineers and architects
- Design products with engineering and manufacturing techniques
- Add details to architectural plans from their knowledge of building techniques
- Specify dimensions, materials, and procedures for new products
- Work under the supervision of engineers or architects

Many drafters are referred to as CAD operators. Using CAD systems, drafters create and store technical drawings digitally. These drawings contain information on how to build a structure or machine, the dimensions of the project, and what materials are needed to complete the project.

Drafters work with CAD so they can create schematics that can be viewed, printed, or programmed directly into building information modeling (BIM) systems. These systems allow drafters, architects, construction managers, and engineers to create and collaborate on digital models of physical

buildings and machines. Through three-dimensional rendering, BIM software allows designers and engineers to see how different elements in their projects work together.

The following are examples of types of drafters:

Architectural drafters draw architectural and structural features of buildings for construction projects. These workers may specialize in a type of building, such as residential or commercial. They may also specialize by the materials used, such as steel, wood, or reinforced concrete.

Civil drafters prepare topographical maps used in construction and civil engineering projects, such as highways, bridges, and flood-control projects.

Electrical drafters prepare wiring diagrams that construction workers use to install and repair electrical equipment and wiring in power plants, electrical distribution systems, and residential and commercial buildings.

Electronics drafters produce wiring diagrams, assembly diagrams for circuit boards, and layout drawings used in manufacturing and in installing and repairing electronic devices and components.

Mechanical drafters prepare layouts that show the details for a wide variety of machinery and mechanical tools and devices, such as medical equipment. These layouts indicate dimensions, fastening methods, and other requirements needed for assembly. Mechanical drafters sometimes create production molds.

Source: <u>U.S. Department of Labor Bureau of Labor Statistics</u>

Job Zone

The section below shows the job zone information for Civil Drafters. Job Zone Three: Medium Preparation Needed.

Education	Experience	Training
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Jobs Available

This section shows the number of job openings advertised online in Louisiana for Civil Drafters and for the related occupational group of Architecture and Engineering Occupations on November 23, 2020 (Jobs De-duplication Level <u>2</u>).

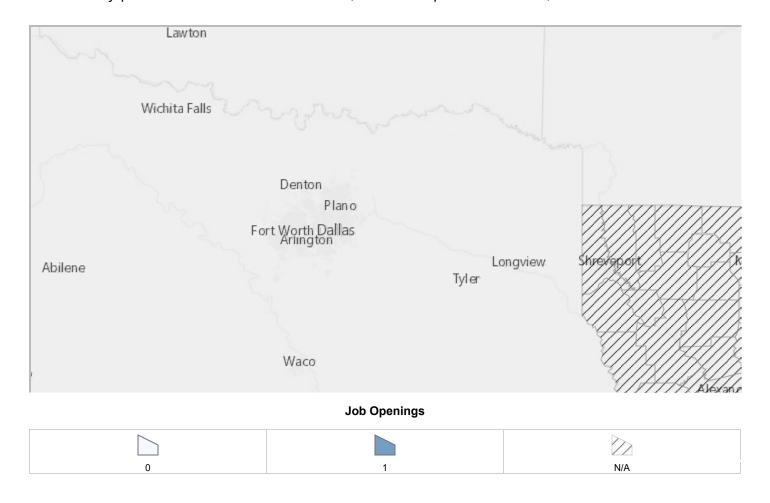
Occupation	Job Openings
Civil Drafters	<u>1</u>
Architecture and Engineering Occupations	<u>726</u>

Source: Online advertised jobs data

There is no data available for Civil Drafters in Louisiana.

Jobs Area Distribution

This section shows the distribution of number of job openings advertised online for Civil Drafters in Louisiana by parishes on November 23, 2020 (Jobs De-duplication Level <u>2</u>).



Job Source: Online advertised jobs data

Wage Source: Labor Market Statistics, Occupational Employment Statistics Program
The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Data is from a 2019 survey.

Jobs in Related Occupations

This section shows the number of job openings advertised online in Louisiana for occupations related to Civil Drafters on November 23, 2020 (Jobs De-duplication Level <u>2</u>).

Rank	Occupation	Median Wage	Job Openings	*Related By
1	Computer Systems Engineers/Architects >	N/A	<u>49</u>	O*NET
2	Database Administrators >	N/A	<u>29</u>	O*NET
3	Electronics Engineering Technicians •	\$57,589	<u>19</u>	SOC4
4	Electrical Engineering Technicians •	\$57,589	<u>17</u>	O*NET
5	Architectural Drafters •	\$50,965	<u>13</u>	O*NET
6	Surveying Technicians	\$37,697	<u>12</u>	O*NET
7	Industrial Engineering Technicians •	\$83,502	<u>10</u>	SOC4
8	<u>Drafters, All Other</u>	\$53,560	<u>8</u>	SOC4
9	Broadcast Technicians	Confidential	<u>6</u>	O*NET
10	Mechanical Engineering Technicians	\$75,598	<u>5</u>	SOC4

Rank	Occupation	Median Wage	Job Openings	*Related By
11	Electro-Mechanical Technicians •	\$65,257	<u>4</u>	SOC4
12	Electrical Drafters	\$64,801	<u>3</u>	O*NET
13	Mechanical Drafters	\$58,355	<u>3</u>	O*NET
14	Environmental Engineering Technicians •	\$44,182	<u>3</u>	SOC4
15	Non-Destructive Testing Specialists	N/A	<u>3</u>	SOC4
16	Manufacturing Production Technicians	N/A	<u>3</u>	O*NET
17	Commercial and Industrial Designers •	\$89,185	<u>3</u>	O*NET
18	Electronic Drafters	\$64,801	<u>2</u>	O*NET
19	Civil Engineering Technicians	\$53,863	<u>2</u>	O*NET
20	Engineering Technicians, Except Drafters, All Other	N/A	<u>2</u>	SOC4
21	Geophysical Data Technicians • •	N/A	<u>2</u>	O*NET
22	<u>Traffic Technicians</u>	\$38,606	<u>2</u>	O*NET
23	Civil Drafters	\$50,965	<u>1</u>	N/A
24	Robotics Technicians •	\$65,257	<u>1</u>	SOC4
25	Food Science Technicians	N/A	<u>1</u>	O*NET

☼ BRIGHT OUTLOOK NATIONALLY

■ GREEN OCCUPATIONS

Job Source: Online advertised jobs data

Candidates Available

This section shows potential candidates in the workforce system in Louisiana for Civil Drafters and for the related occupational group of Architecture and Engineering Occupations on November 23, 2020.

Occupation	Candidates
Civil Drafters	67
Architecture and Engineering Occupations	3,460

Source: Individuals with active résumés in the workforce system.

Candidate Area Distribution

This section shows the distribution of potential candidates in the workforce system for Civil Drafters in Louisiana by parishes on November 23, 2020.

Rank	Area Name	Median Wage	Candidates
1	<u>Jefferson Parish</u>	\$50,965 state level wages	35
2	<u>Orleans Parish</u>	\$50,965 state level wages	33

^{*}Related By: O*NET™ - The <u>Occupational Information Network</u>. O*NET is a registered trademark of the <u>US Department of Labor/Employment and Training Administration</u>.

SOC4 - Occupational grouping based on 1st 4 digits of the <u>Standard Occupational Classification</u> system.

Rank	Area Name	Median Wage	Candidates
3	East Baton Rouge Parish	\$50,965 state level wages	32
4	St. Charles Parish	\$50,965 state level wages	31
5	<u>Livingston Parish</u>	\$50,965 state level wages	30
6	Ascension Parish	\$50,965 state level wages	29
7	St. James Parish	\$50,965 state level wages	29
8	St. John the Baptist Parish	\$50,965 state level wages	29
9	West Baton Rouge Parish	\$50,965 state level wages	29
10	Assumption Parish	\$50,965 state level wages	27
Abilene	Wichita Falls Denton Plano Fort Worth Dallas Arlington		port
	C	Candidates	Alexand

Candidate Source: Individuals with active résumés in the workforce system.

Wage Source: Labor Market Statistics, Occupational Employment Statistics Program

The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Data is from a 2019 survey.

Candidates in Related Occupations

This section shows how many potential candidates in the workforce system were looking for work in Louisiana in occupations related to Civil Drafters on November 23, 2020.

Rank	Occupation	Median Wage	Candidates	*Related By
1	Manufacturing Production Technicians •	N/A	380	O*NET
2	Electronics Engineering Technicians •	\$57,589	172	SOC4
3	<u>Drafters, All Other</u>	\$53,560	169	SOC4
4	Non-Destructive Testing Specialists	N/A	133	SOC4
5	Mechanical Drafters	\$58,355	130	O*NET
6	Industrial Engineering Technicians •	\$83,502	111	SOC4
7	Architectural Drafters •	\$50,965	102	O*NET
8	Electrical Engineering Technicians •	\$57,589	96	O*NET
9	Commercial and Industrial Designers	\$89,185	89	O*NET
10	Database Administrators	N/A	88	O*NET
11	Surveying Technicians	\$37,697	81	O*NET
12	<u>Aerospace Engineering and Operations</u> <u>Technicians</u>	N/A	76	SOC4
13	Civil Drafters	\$50,965	67	N/A
14	<u>Civil Engineering Technicians</u>	\$53,863	62	O*NET
15	Engineering Technicians, Except Drafters, All Other	N/A	56	SOC4
16	Electrical Drafters	\$64,801	55	O*NET
17	Electro-Mechanical Technicians	\$65,257	52	SOC4
18	Mechanical Engineering Technicians	\$75,598	51	SOC4
19	Industrial Engineering Technologists •	N/A	47	SOC4
20	Environmental Engineering Technicians •	\$44,182	44	SOC4
21	Automotive Engineering Technicians •	\$75,598	42	SOC4
22	Broadcast Technicians	Confidential	38	O*NET
23	Electronic Drafters	\$64,801	23	O*NET
24	Robotics Technicians •	\$65,257	19	SOC4
25	Electronics Engineering Technologists •	N/A	19	SOC4
26	Computer Systems Engineers/Architects •	N/A	18	O*NET
27	Electrical Engineering Technologists	N/A	17	SOC4
28	Geographic Information Systems Technicians • •	N/A	16	O*NET
29	Food Science Technicians	N/A	15	O*NET
30	Cartographers and Photogrammetrists	\$55,539	12	O*NET
31	Fabric and Apparel Patternmakers	N/A	12	O*NET
32	Mechanical Engineering Technologists •	N/A	11	SOC4
33	Geophysical Data Technicians > =	N/A	9	O*NET

Rank	Occupation	Median Wage	Candidates	*Related By
34	Radio Operators	N/A	9	O*NET
35	Electromechanical Engineering Technologists	N/A	6	SOC4
36	Fuel Cell Technicians •	N/A	5	SOC4
37	<u>Traffic Technicians</u>	\$38,606	5	O*NET
38	Manufacturing Engineering Technologists •	N/A	4	SOC4
39	Mapping Technicians	\$37,697	4	O*NET
40	<u>Desktop Publishers</u>	\$24,193	3	O*NET
41	Electrical and Electronic Engineering Technicians	\$57,589	2	SOC4
42	Photonics Technicians •	N/A	2	SOC4
43	Electrical and Electronics Drafters	\$64,801	1	SOC4
44	Nanotechnology Engineering Technicians	N/A	1	SOC4

BRIGHT OUTLOOK NATIONALLY | GREEN OCCUPATIONS

Candidate Source: Individuals with active résumés in the workforce system.

Jobs and Candidates Available

This section shows the number of job openings advertised online, as well as potential candidates in the workforce system in Louisiana for Civil Drafters and for the related occupational group of Architecture and Engineering Occupations on November 23, 2020 (Jobs De-duplication Level <u>2</u>).

Occupation	Job Openings	Candidates	Candidates per Job
Civil Drafters	<u>1</u>	67	67.00
Architecture and Engineering Occupations	<u>726</u>	3,460	4.77

Job Source: Online advertised jobs data

Candidate Source: Individuals with active résumés in the workforce system.

Jobs and Candidates Area Distribution

This section shows the distribution of number of job openings advertised online, as well as potential candidates in the workforce system for Civil Drafters in Louisiana by parishes on November 23, 2020 (Jobs De-duplication Level <u>2</u>).

Rank	Area Name	Median Wage	Job Openings	Candidates	Candidates per Job
1	Ascension Parish	\$50,965 state level wages	1	29	29.00
2	<u>Acadia Parish</u>	\$50,965 state level wages	0	19	N/A

^{*}Related By: O*NET™ - The <u>Occupational Information Network</u>. O*NET is a registered trademark of the <u>US Department of Labor/Employment and Training Administration</u>.

SOC4 - Occupational grouping based on 1st 4 digits of the <u>Standard Occupational Classification</u> system.

Rank	Area Name		Median Wage	Job Openings	Candidates	Candidates per Job
3	Assumption Parish		\$50,965 state level wages	0	27	N/A
4	Avoyelles Parish		\$50,965 state level wages	0	22	N/A
5	Beauregard Parish		\$50,965 state level wages	0	20	N/A
6	Bienville Parish		\$50,965 state level wages	0	20	N/A
7	Bossier Parish		\$50,965 state level wages	0	20	N/A
8	<u>Caddo Parish</u>		\$50,965 state level wages	0	21	N/A
9	<u>Calcasieu Parish</u>		\$50,965 state level wages	0	22	N/A
10	Caldwell Parish		\$50,965 state level wages	0	19	N/A
Abilene	Lawton Wichita Falls	Denton Plan o Fort Worth Dallas Arlington	Ту	Longview	Skyevopost	
		Candidate	es per Job		9//	///ts/Aldsdakie
	29.00 N/A					

N/A

29.00

The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Data is from a 2019 survey.

National Supply and Demand Summary

Civil Drafters Overall employment of drafters is projected to grow 7 percent from 2016 to 2026. Employment growth will vary by specialty. (See table below.)

Growth in the engineering services and construction industries is expected to account for most new jobs for drafters. However, computer-aided design (CAD) and building information modeling (BIM) technologies allow engineers and architects to perform many tasks that used to be done by drafters, which is expected to temper demand for all drafters.

Job Prospects

Overall competition for jobs is expected to be strong.

Specifically, architectural and civil drafters may experience more competition for jobs than mechanical or electrical drafters because of the relatively high number of students graduating in those drafting specialties. Typically, the number of graduates in architectural and civil programs greatly exceeds the number of available positions.

Demand for particular drafting specialties varies across the country because jobs depend on the needs of local industries. Job prospects for mechanical drafters should be best in large manufacturing hubs.

Because many drafting jobs are in construction and manufacturing, job opportunities for drafters will be sensitive to fluctuations in the overall economy.

Candidates proficient in CAD and BIM are likely to have better job opportunities.

Source: <u>U.S. Department of Labor Bureau of Labor Statistics</u>

Employers by Number of Job Openings

This section shows the employers with the highest number of job openings advertised online for Civil Drafters in Louisiana on November 23, 2020 (Jobs De-duplication Level $\underline{2}$).

Rank	Employer Name	Job Openings
1	T Baker Smith LLC	<u>1</u>

Source: Online advertised jobs data

Advertised Job Skills

There is no data available for Civil Drafters in Louisiana.

Advertised Tools and Technology

There is no data available for Civil Drafters in Louisiana.

Typical Job Skills

This section shows the job skills that are related to Civil Drafters.

Rank	Typical Job Skills	Typical Skill Category
1	Create graphical representations of civil structures	Mental Processes

Rank	Typical Job Skills	Typical Skill Category
2	Evaluate designs or specifications to ensure quality	Mental Processes
3	Create maps	Mental Processes
4	Supervise engineering or other technical personnel	Interacting With Others
5	Prepare detailed work plans	Mental Processes
6	Analyze operational data to evaluate operations, processes or products	Mental Processes
7	Survey land or bodies of water to measure or determine features	Information Input
8	Explain engineering drawings, specifications, or other technical information	Interacting With Others
9	Estimate technical or resource requirements for development or production projects	Mental Processes
10	Prepare procedural documents	Work Output
11	Estimate operational costs	Information Input
12	Review technical documents to plan work	Information Input
13	Analyze costs and benefits of proposed designs or projects	Mental Processes
14	Create graphical representations of energy production systems	Mental Processes

Personal Skills

This section shows the personal skills that are most useful for Civil Drafters. Click on a link in the Personal Skills column to view more detailed information.

Personal Skill	Skill Description	Rank by Importance (Out of 100)
Reading Comprehension	Understanding written sentences and paragraphs in work related documents.	66
Active Listening	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.	66
Critical Thinking	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	56
Complex Problem Solving	Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.	53
<u>Writing</u>	Communicating effectively in writing as appropriate for the needs of the audience.	53
<u>Speaking</u>	Talking to others to convey information effectively.	53
<u>Mathematics</u>	Using mathematics to solve problems.	50
Monitoring	Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.	50

Personal Skill	Skill Description	Rank by Importance (Out of 100)
<u>Operations</u> <u>Analysis</u>	Analyzing needs and product requirements to create a design.	50
Active Learning	Understanding the implications of new information for both current and future problem-solving and decision-making.	50
Judgment and Decision Making	Considering the relative costs and benefits of potential actions to choose the most appropriate one.	50
<u>Systems</u> <u>Analysis</u>	Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.	50
<u>Time</u> <u>Management</u>	Managing one's own time and the time of others.	50
Social Perceptiveness	Being aware of others' reactions and understanding why they react as they do.	47
Coordination	Adjusting actions in relation to others' actions.	44
<u>Systems</u> <u>Evaluation</u>	Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.	44
Management of Personnel Resources	Motivating, developing, and directing people as they work, identifying the best people for the job.	41
<u>Persuasion</u>	Persuading others to change their minds or behavior.	41
<u>Instructing</u>	Teaching others how to do something.	41
Service Orientation	Actively looking for ways to help people.	41
<u>Learning</u> <u>Strategies</u>	Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.	35
Negotiation	Bringing others together and trying to reconcile differences.	35
Quality Control Analysis	Conducting tests and inspections of products, services, or processes to evaluate quality or performance.	35
<u>Science</u>	Using scientific rules and methods to solve problems.	28
Programming	Writing computer programs for various purposes.	25
Operation Monitoring	Watching gauges, dials, or other indicators to make sure a machine is working properly.	25
Management of Financial Resources	Determining how money will be spent to get the work done, and accounting for these expenditures.	22
Management of Material Resources	Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.	22

Personal Skill	Skill Description	Rank by Importance (Out of 100)
<u>Technology</u> <u>Design</u>	Generating or adapting equipment and technology to serve user needs.	22
Troubleshooting	Determining causes of operating errors and deciding what to do about it.	13
Equipment Selection	Determining the kind of tools and equipment needed to do a job.	3
Installation	Installing equipment, machines, wiring, or programs to meet specifications.	0
<u>Repairing</u>	Repairing machines or systems using the needed tools.	0
Operation and Control	Controlling operations of equipment or systems.	0
Equipment Maintenance	Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.	0

Typical Education Requirements

Civil Drafters Civil Drafters usually require at least an Associate's degree. However, not all employers may make this a hiring requirement.

Source: This information is based on the BLS Occupational Outlook Handbook (OOH).

Required Level of Education

This section shows the results of a national survey listing the most common required level of education for Civil Drafters.

Rank	Required Level of Education	Percentage of Respondents
1	Associate's Degree (or other 2-year degree)	47.62%
2	Bachelor's Degree	19.05%
3	Some College Courses	19.05%
4	Post-Secondary Certificate - awarded for training completed after high school (for example, in agriculture or natural resources, computer services, personal or culinary services, engineering technologies, healthcare, construction trades, mechanic and repair technologies, or precision production)	14.29%

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

On The Job Training

This section shows the results of a national survey listing the most common lengths of on the job training for Civil Drafters.

Rank On the Job Training	Percentage of Respondents
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Rank	On The Job Training	Percentage of Respondents
1	Over 6 months, up to and including 1 year	28.57%
2	Over 1 year, up to and including 2 years	23.81%
3	Over 2 years, up to and including 4 years	14.29%
4	None or short demonstration	9.52%
5	Over 1 month, up to and including 3 months	9.52%
6	Over 3 months, up to and including 6 months	9.52%
7	Anything beyond short demonstration, up to and including 1 month	4.76%

On-Site or In-Plant Training

This section shows the results of a national survey listing the most common lengths of on-site or inplant training for Civil Drafters.

Rank	On-Site or In-Plant Training	Percentage of Respondents
1	None	38.10%
2	Over 6 months, up to and including 1 year	19.05%
3	Over 1 year, up to and including 2 years	19.05%
4	Up to and including 1 month	9.52%
5	Over 3 months, up to and including 6 months	9.52%
6	Over 1 month, up to and including 3 months	4.76%

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Education Level of Jobs and Candidates

This section shows the minimum level of education requested by employers on job openings advertised online, as well as the educational attainment of potential candidates in the workforce system that are looking for jobs as Civil Drafters in Louisiana on November 23, 2020 (Jobs Deduplication Level <u>2</u>).

Rank	Education Level	Job Openings	Percentage of Job Openings	Potential Candidates	Percentage of Potential Candidates
1	High School Diploma or Equivalent	0	N/A	2	2.99%
2	1 Year of College or a Technical or Vocational School	0	N/A	3	4.48%
3	2 Years of College or a Technical or Vocational School	0	N/A	8	11.94%
4	3 Years of College or a Technical or Vocational School	0	N/A	3	4.48%
5	Vocational School Certificate	0	N/A	12	17.91%
6	Associate's Degree	<u>1</u>	100.00%	28	41.79%

Rank	Education Level	Job Openings	Percentage of Job Openings	Potential Candidates	Percentage of Potential Candidates
7	Bachelor's Degree	0	N/A	11	16.42%

Job Source: Online advertised jobs data Candidate Source: Individuals with active résumés in the workforce system.

Education Training Programs

This section shows the Education Training Programs for Civil Drafters in Louisiana.

Provider Name	Program Name	Location	Tuition	Length	WIOA Eligible
Baton Rouge Community College	<u>Drafting & Design</u> <u>Technology</u> An associate degree	Baton Rouge, LA	\$10,585	5 Semesters	•
Bossier Parish Community College	Computer Drafting and Design - Technical Competency Area	Bossier City, LA	\$1,647	1 Semesters	
Central Louisiana Technical Community College	<u>Drafting and Design</u> <u>Technology</u> An associate degree	Alexandria, LA	\$10,248	5 Semesters	
Fletcher Technical Community College	<u>Drafting and Design</u> <u>Technology Degree</u> An associate degree	Schriever, LA	\$10,240	5 Semesters	•
ITI Technical College	<u>Drafting & Design</u> <u>Technology</u> An associate degree	Baton Rouge, LA	\$29,500	24 Months	•
Louisiana Delta Community College	Drafting and Design Technology An associate degree, Employment, A measurable skills gain leading to a credential, A measurable skills gain leading to employment	West Monroe, LA	\$8,948	104 Weeks	•
Northshore Technical Community College	<u>Drafting & Design</u> <u>Technology (AAS)</u> An associate degree	Lacombe, LA	\$10,258	5 Semesters	•
Northshore Technical Community College	<u>Drafting&Design</u> <u>Technology - CTS</u> An industry- recognized certificate or certification	Lacombe, LA	\$4,503	2 Semesters	•

Provider Name	Program Name	Location	Tuition	Length	WIOA Eligible
River Parishes Community College - Gonzales Campus	Drafting & Design Technology An associate degree, A baccalaureate degree, A community college certificate of completion, Employment, A measurable skills gain leading to employment	Gonzales, LA	\$8,611	4 Semesters	•
River Parishes Community College - Gonzales Campus	Drafting & Design Technology An associate degree, A baccalaureate degree, A community college certificate of completion, Employment, A measurable skills gain leading to employment	Reserve, LA	\$8,611	4 Semesters	⊘

Source: U.S. Department of Commerce, Bureau of the Census, Midyear Estimates

Advertised Job Certifications

There is no data available for Civil Drafters in Louisiana.

Training Program Completers

There is no data available for Civil Drafters in Louisiana.

National Education, Training, Licensing and Qualifications

Civil Drafters Education

Drafters generally need to complete postsecondary education in drafting. This is typically done through a 2-year associate's degree from a technical institute or community college.

Technical institutes offer instruction in design fundamentals, sketching, and computer-aided design (CAD) software and award certificates or diplomas upon completion. Programs vary in length but are generally 2 years of full-time education. The types of courses offered will also vary by institution. Some institutions may specialize in only one type of drafting, such as mechanical or architectural drafting.

Community colleges offer programs similar to those in technical institutes that lead to an associate of applied science in drafting or related degree. After completing an associate's degree program, graduates may get jobs as drafters or continue their education in a related field at a 4-year college. Most 4-year colleges do not offer training in drafting, but they do offer classes in engineering, architecture, and mathematics.

To prepare for postsecondary education, high school students may find it useful to take courses in mathematics, science, computer technology, design, computer graphics, and where available, drafting.

Licenses, Certifications, and Registrations

The American Design Drafting Association (ADDA) offers certification for drafters. Although not mandatory, certification demonstrates competence and knowledge of nationally recognized practices. Certifications are offered for several specialties, including architectural, civil, and mechanical drafting.

Important Qualities

Creativity. Drafters must be able to turn plans and ideas into technical drawings that will guide the creation of real buildings, tools, and systems.

Detail oriented. Drafters must pay close attention to details so that the plans they convert are technically accurate according to the outlined specifications.

Interpersonal skills. Drafters work closely with architects, engineers, and other designers to make sure that final plans are accurate. This requires the ability to communicate effectively and work well with others.

Math skills. Drafters work on technical drawings. They may be required to solve mathematical calculations involving factors such as angles, weights, and costs.

Technical skills. Drafters in all specialties must be able to use computer software, such as CAD, and work with database tools, such as building information modeling (BIM).

Time-management skills. Drafters often work under strict deadlines. As a result, they must work efficiently to produce the required output according to set schedules.

Source: <u>U.S. Department of Labor Bureau of Labor Statistics</u>

Typical Work Experience Requirements

Civil Drafters Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Related Work Experience

This section shows the results of a national survey listing the most common related work experience for Civil Drafters.

Rank	Related Work Experience	Percentage of Respondents
1	Over 1 year, up to and including 2 years	47.62%
2	Over 2 years, up to and including 4 years	14.29%
3	Over 4 years, up to and including 6 years	14.29%
4	None	9.52%
5	Over 3 months, up to and including 6 months	4.76%
6	Over 6 months, up to and including 1 year	4.76%
7	Over 6 years, up to and including 8 years	4.76%

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Work Experience of Jobs and Candidates

This section shows the minimum required work experience requested by employers on job openings advertised online, as well as the experience level of potential candidates in the workforce system that are looking for jobs as Civil Drafters in Louisiana on November 23, 2020 (Jobs De-duplication Level 2).

Rank	Experience	Job Openings	Percentage of Job Openings	Potential Candidates	Percentage of Potential Candidates
1	Less than 1 year	0	N/A	1	1.49%
2	1 Year to 2 Years	1	100.00%	1	1.49%
3	2 Years to 5 Years	0	N/A	2	2.99%
4	5 Years to 10 Years	0	N/A	11	16.42%
5	More than 10 Years	0	N/A	52	77.61%

Job Source: Online advertised jobs data

Candidate Source: Individuals with active résumés in the workforce system.

Current Job Order Wage Information

The employer has NOT indicated a salary range for this job. The information below shows statistics on typical salaries in the local labor market for Civil Drafters. This data is NOT an indication of what this employer is willing to pay for this job.

Employment Wage Statistics

This section shows the estimated employment wage statistics for individuals in Louisiana employed for Architectural and Civil Drafters (no data available for Civil Drafters) in 2019.

Rate Type / Statistical Type	Entry level	Median	Experienced
Annual wage or salary	\$33,986	\$50,965	\$71,646
Hourly wage	\$16.34	\$24.50	\$34.45

Source: Labor Market Statistics, Occupational Employment Statistics Program
The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

Wage Rates on Advertised Jobs

This section shows a statistical breakdown of available wage data on the <u>1</u> job openings advertised online for Civil Drafters in Louisiana that posted a salary on November 23, 2020.

Rate Type / Statistical Type	Entry Level	Median	Experienced
Annual wage or salary	N/A	N/A	N/A
Hourly Wage	N/A	N/A	N/A

Source: Online advertised jobs data

Note: This information is based on actual job orders and is not based on a statistically valid labor market survey. Hourly wage rate calculations in this section assume a 40 hour work week.

Desired Salary of Available Candidates

This section shows the desired salary of potential candidates in the workforce system that are looking for jobs as Civil Drafters in Louisiana on November 23, 2020.

Rank	Desired Salary	Potential Candidates	Percentage of Potential Candidates
1	Not Specified	12	18.18%
2	\$5,000 - \$19,999	1	1.52%
3	\$20,000 - \$34,999	7	10.61%
4	\$35,000 - \$49,999	18	27.27%
5	\$50,000 - \$64,999	11	16.67%
6	\$65,000 - \$79,999	8	12.12%
7	\$80,000 - \$94,999	1	1.52%
8	\$95,000 or more	8	12.12%

Source: Individuals with active résumés in the workforce system.

Wage Rates Area Distribution

There is no data available for Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana.

Wage Rates in Related Occupations

This section shows a comparison of 2019 median annual rates for occupations that are in the same occupational family as Civil Drafters for Louisiana.

Rank	Occupation	Median	*Related By
1	Commercial and Industrial Designers •	\$89,185	O*NET
2	Industrial Engineering Technicians •	\$83,502	SOC4
3	Mechanical Engineering Technicians	\$75,598	SOC4
4	Automotive Engineering Technicians •	\$75,598	SOC4
5	Electro-Mechanical Technicians •	\$65,257	SOC4
6	Robotics Technicians •	\$65,257	SOC4
7	Electrical and Electronics Drafters	\$64,801	SOC4
8	Electronic Drafters	\$64,801	O*NET
9	Electrical Drafters	\$64,801	O*NET
10	Mechanical Drafters	\$58,355	O*NET
11	Electrical and Electronic Engineering Technicians	\$57,589	SOC4
12	Electronics Engineering Technicians	\$57,589	SOC4
13	Electrical Engineering Technicians •	\$57,589	O*NET
14	Cartographers and Photogrammetrists >	\$55,539	O*NET
15	<u>Civil Engineering Technicians</u>	\$53,863	O*NET
16	<u>Drafters, All Other</u>	\$53,560	SOC4
17	Architectural and Civil Drafters	\$50,965	SOC4
18	Architectural Drafters •	\$50,965	O*NET
19	Civil Drafters	\$50,965	N/A

Rank	Occupation	Median	*Related By
20	Environmental Engineering Technicians • •	\$44,182	SOC4
21	<u>Traffic Technicians</u>	\$38,606	O*NET
22	Surveying and Mapping Technicians	\$37,697	SOC4
23	Surveying Technicians	\$37,697	O*NET
24	Mapping Technicians	\$37,697	O*NET
25	<u>Desktop Publishers</u>	\$24,193	O*NET
*	Broadcast Technicians	Confidential	O*NET

Source: Labor Market Statistics, Occupational Employment Statistics Program
The median wage is the estimated 50th percentile; 50 percent of workers in an occupation earn less than the median wage, and 50 percent earn more than the median wage. Entry level and Experienced wage rates represent the means of the lower 1/3 and upper 2/3 of the wage distribution, respectively. Data is from an annual survey.

*Related By: O*NET™ - The <u>Occupational Information Network</u>. O*NET is a registered trademark of the <u>US Department of Labor/Employment and Training Administration</u>.

SOC4 - Occupational grouping based on 1st 4 digits of the <u>Standard Occupational Classification</u> system.

Wage Rates by Industry

There is no data available for Civil Drafters in Louisiana.

National Earnings Data Summary

Civil Drafters The median annual wage for drafters was \$53,480 in May 2016. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$33,910, and the highest 10 percent earned more than \$83,300.

Median annual wages for drafters in May 2016 were as follows:

Electrical and electronics drafters \$59,970 Mechanical drafters 54,480 Architectural and civil drafters 51,640 Drafters, all other 50,470

In May 2016, the median annual wages for drafters in the top industries in which they worked were as follows:

Administrative and support and waste management and remediation services \$57,080 Construction 53,730 Manufacturing 53,010 Wholesale trade 52,890 Architectural, engineering, and related services 52,850

Most drafters worked full time in 2016.

Source: <u>U.S. Department of Labor Bureau of Labor Statistics</u>

Occupational Employment & Future Employment Outlook

This section shows the long term employment projections for Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana from 2016-2026.

^{*} Rank is suppressed for confidential data.

Occupation	2016 Estimated Employment	2026 Projected Employment	Total 2016- 2026 Employment Change	2016-2026 Annual Avg. Percent Change
Architectural and Civil Drafters	1,134	1,245	111	0.94%
Total All	2,034,986	2,203,144	168,158	0.80%

Source: Occupational Employment Projections

Employment Data Area Distribution

This section shows the distribution of the 2016 estimated employment for Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana by regional labor market area.

Rank	Area	2016 Estimated Employment
1	1st Regional Labor Market Area, New Orleans	359
2	<u>2nd Regional Labor</u> <u>Market Area, Baton</u> <u>Rouge</u>	258
3	7th Regional Labor Market Area, Shreveport	133
4	5th Regional Labor Market Area, Lake Charles	122
5	8th Regional Labor Market Area, Monroe	117
6	<u>4th Regional Labor</u> <u>Market Area, Lafayette</u>	92
7	<u>3rd Regional Labor</u> <u>Market Area, Houma</u>	46
*	6th Regional Labor Market Area, Alexandria	Confidential



^{*} Rank is suppressed for confidential data.

Source: Labor Market Statistics, Occupational Employment Projections Program

Employment Data in Related Occupations

This section shows the 2016 Estimated Employment in Louisiana for occupations related to Civil Drafters.

Rank	Occupation	2016 Estimated Employment	*Related By
1	Computer Systems Engineers/Architects >	2,873	O*NET
2	Geographic Information Systems Technicians	2,873	O*NET
3	Electrical Engineering Technologists	1,566	SOC4
4	Electromechanical Engineering Technologists •	1,566	SOC4

Rank	Occupation	2016 Estimated Employment	*Related By
5	Electronics Engineering Technologists •	1,566	SOC4
6	Engineering Technicians, Except Drafters, All Other	1,566	SOC4
7	Fuel Cell Technicians •	1,566	SOC4
8	Industrial Engineering Technologists •	1,566	SOC4
9	Manufacturing Engineering Technologists •	1,566	SOC4
10	Manufacturing Production Technicians •	1,566	O*NET
11	Mechanical Engineering Technologists •	1,566	SOC4
12	Nanotechnology Engineering Technicians •	1,566	SOC4
13	Nanotechnology Engineering Technologists •	1,566	SOC4
14	Non-Destructive Testing Specialists	1,566	SOC4
15	Photonics Technicians •	1,566	SOC4
16	<u>Civil Engineering Technicians</u>	1,551	O*NET
17	Electrical and Electronic Engineering Technicians	1,471	SOC4
18	Electrical Engineering Technicians •	1,471	O*NET
19	Electronics Engineering Technicians	1,471	SOC4
20	Mapping Technicians	1,272	O*NET
21	Surveying and Mapping Technicians	1,272	SOC4
22	Surveying Technicians	1,272	O*NET
23	<u>Drafters, All Other</u>	1,154	SOC4
24	Architectural and Civil Drafters	1,134	SOC4
25	Architectural Drafters •	1,134	O*NET
26	Civil Drafters	1,134	SOC4
27	Mechanical Drafters	978	O*NET
28	Geophysical Data Technicians • •	707	O*NET
29	Database Administrators •	508	O*NET
30	Automotive Engineering Technicians •	444	SOC4
31	Mechanical Engineering Technicians	444	SOC4
32	Commercial and Industrial Designers	423	O*NET
33	Industrial Engineering Technicians •	404	SOC4
34	Environmental Engineering Technicians • •	374	SOC4
35	<u>Desktop Publishers</u>	247	O*NET
36	Electrical and Electronics Drafters	229	SOC4
37	Electrical Drafters	229	O*NET
38	Electronic Drafters	229	O*NET
39	Broadcast Technicians	200	O*NET
40	Food Science Technicians	187	O*NET
41	Radio Operators	49	O*NET
*	<u>Aerospace Engineering and Operations</u> <u>Technicians</u>	Confidential	SOC4

Rank	Occupation	2016 Estimated Employment	*Related By
*	Cartographers and Photogrammetrists >	Confidential	O*NET
*	Electro-Mechanical Technicians •	Confidential	SOC4
*	Robotics Technicians •	Confidential	SOC4
*	<u>Traffic Technicians</u>	Confidential	O*NET

Source: Occupational Employment Projections

*Related By: O*NET™ - The <u>Occupational Information Network</u>. O*NET is a registered trademark of the <u>US Department of Labor/Employment and Training Administration</u>.

SOC4 - Occupational grouping based on 1st 4 digits of the <u>Standard Occupational Classification</u> system.

Projected Annual Openings

This section shows the long term projected annual openings for Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana from 2016 to 2026.

Occupation	Total Annual Average Openings	Annual Average Openings Due to Growth	Annual Average Openings Due to Replacement
Architectural and Civil Drafters	N/A	N/A	N/A
Architecture and Engineering	N/A	N/A	N/A

Source: Labor Market Statistics, Occupational Employment Projections Program

Projected Annual Openings Area Distribution

This section shows the distribution of the total annual average openings for Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana by regional labor market area from 2016 to 2026.

^{*} Rank is suppressed for confidential data.

Rank	Area	Total Annual Average Openings
1	1st Regional Labor Market Area, New Orleans	N/A
2	<u>2nd Regional Labor</u> <u>Market Area, Baton</u> <u>Rouge</u>	N/A
3	<u>3rd Regional Labor</u> <u>Market Area, Houma</u>	N/A
4	4th Regional Labor Market Area, Lafayette	N/A
5	5th Regional Labor Market Area, Lake Charles	N/A
6	7th Regional Labor Market Area, Shreveport	N/A
7	8th Regional Labor Market Area, Monroe	N/A
*	6th Regional Labor Market Area, Alexandria	Confidential

There is no total annual average openings data available for Civil Drafters in Louisiana.

Source: Labor Market Statistics, Occupational Employment Projections Program

Projected Annual Openings in Related Occupations

This section shows the projected total annual average openings in Louisiana for occupations related to Civil Drafters from 2016 to 2026.

Rank	Occupation	Total Annual Average Openings	*Related By
1	Architectural and Civil Drafters	N/A	SOC4
2	Architectural Drafters •	N/A	O*NET
3	Automotive Engineering Technicians •	N/A	SOC4
4	Broadcast Technicians	N/A	O*NET
5	Civil Drafters	N/A	SOC4
6	Civil Engineering Technicians	N/A	O*NET
7	Commercial and Industrial Designers	N/A	O*NET
8	Computer Systems Engineers/Architects >	N/A	O*NET
9	Database Administrators	N/A	O*NET
10	<u>Desktop Publishers</u>	N/A	O*NET
11	<u>Drafters, All Other</u>	N/A	SOC4
12	Electrical and Electronic Engineering Technicians	N/A	SOC4
13	Electrical and Electronics Drafters	N/A	SOC4
14	Electrical Drafters	N/A	O*NET

^{*} Rank is suppressed for confidential data.

Rank	Occupation	Total Annual Average Openings	*Related By
15	Electrical Engineering Technicians •	N/A	O*NET
16	Electrical Engineering Technologists •	N/A	SOC4
17	Electromechanical Engineering Technologists •	N/A	SOC4
18	Electronic Drafters	N/A	O*NET
19	Electronics Engineering Technicians	N/A	SOC4
20	Electronics Engineering Technologists •	N/A	SOC4
21	Engineering Technicians, Except Drafters, All Other	N/A	SOC4
22	Environmental Engineering Technicians • •	N/A	SOC4
23	Food Science Technicians	N/A	O*NET
24	Fuel Cell Technicians •	N/A	SOC4
25	Geographic Information Systems Technicians	N/A	O*NET
26	Geophysical Data Technicians • 🕫	N/A	O*NET
27	Industrial Engineering Technicians •	N/A	SOC4
28	Industrial Engineering Technologists •	N/A	SOC4
29	Manufacturing Engineering Technologists •	N/A	SOC4
30	Manufacturing Production Technicians •	N/A	O*NET
31	Mapping Technicians	N/A	O*NET
32	Mechanical Drafters	N/A	O*NET
33	Mechanical Engineering Technicians	N/A	SOC4
34	Mechanical Engineering Technologists •	N/A	SOC4
35	Nanotechnology Engineering Technicians •	N/A	SOC4
36	Nanotechnology Engineering Technologists •	N/A	SOC4
37	Non-Destructive Testing Specialists	N/A	SOC4
38	Photonics Technicians •	N/A	SOC4
39	Radio Operators	N/A	O*NET
40	Surveying and Mapping Technicians	N/A	SOC4
41	Surveying Technicians	N/A	O*NET
*	Aerospace Engineering and Operations <u>Technicians</u>	Confidential	SOC4
*	Cartographers and Photogrammetrists.	Confidential	O*NET
*	Electro-Mechanical Technicians	Confidential	SOC4
*	Robotics Technicians •	Confidential	SOC4
*	<u>Traffic Technicians</u>	Confidential	O*NET

BRIGHT OUTLOOK NATIONALLY FREEN OCCUPATIONS

Source: Occupational Employment Projections

Industries by Employment

This section shows the industries that employed the highest number of Architectural and Civil Drafters (no data available for Civil Drafters) in Louisiana in 2016.

^{*} Rank is suppressed for confidential data.

Rank	Industry Title	Estimated Employment	Percent of Total Employment
1	Professional, Scientific, and Technical Services	883	77.87%
2	Construction of Buildings	69	6.08%
3	Fabricated Metal Product Manufacturing	60	5.29%
*	<u>Self-Employed and Unpaid Family Workers, Primary</u> <u>Job</u>	Confidential	Confidential
*	<u>Utilities</u>	Confidential	Confidential
*	Heavy and Civil Engineering Construction	Confidential	Confidential
*	Specialty Trade Contractors	Confidential	Confidential
*	Wood Product Manufacturing	Confidential	Confidential
*	Nonmetallic Mineral Product Manufacturing	Confidential	Confidential
*	Primary Metal Manufacturing	Confidential	Confidential

^{*} Rank is suppressed for confidential data.

Source: Louisiana Workforce Commission, Occupational Projections Program

Work Activities

This section shows the most common work activities required by Civil Drafters in order of importance. Click on a link in the Work Activity column to view more detailed information.

Work Activity	Work Activity Description	Rank by Importance (Out of 100)
Interacting With Computers	Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.	91
Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Providing documentation, detailed instructions, drawings, or specifications to tell others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used.	89
Getting Information	Observing, receiving, and otherwise obtaining information from all relevant sources.	83
Communicating with Supervisors, Peers, or Subordinates	Providing information to supervisors, co- workers, and subordinates by telephone, in written form, e-mail, or in person.	80
<u>Updating and Using</u> <u>Relevant Knowledge</u>	Keeping up-to-date technically and applying new knowledge to your job.	74
Organizing, Planning, and Prioritizing Work	Developing specific goals and plans to prioritize, organize, and accomplish your work.	74
Evaluating Information to Determine Compliance with Standards	Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.	72

Work Activity	Work Activity Description	Rank by Importance (Out of 100)
Making Decisions and Solving Problems	Analyzing information and evaluating results to choose the best solution and solve problems.	72
Documenting/Recording Information	Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.	67
Processing Information	Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.	64
Identifying Objects, Actions, and Events	Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.	63
Establishing and Maintaining Interpersonal Relationships	Developing constructive and cooperative working relationships with others, and maintaining them over time.	63
Thinking Creatively	Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.	62
Estimating the Quantifiable Characteristics of Products, Events, or Information	Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.	58
Coordinating the Work and Activities of Others	Getting members of a group to work together to accomplish tasks.	56
Scheduling Work and Activities	Scheduling events, programs, and activities, as well as the work of others.	51
Monitor Processes, Materials, or Surroundings	Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.	50
<u>Developing and Building</u> <u>Teams</u>	Encouraging and building mutual trust, respect, and cooperation among team members.	50
Guiding, Directing, and Motivating Subordinates	Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.	50
Analyzing Data or Information	Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.	49
<u>Developing Objectives</u> <u>and Strategies</u>	Establishing long-range objectives and specifying the strategies and actions to achieve them.	49
Interpreting the Meaning of Information for Others	Translating or explaining what information means and how it can be used.	49

Work Activity	Work Activity Description	Rank by Importance (Out of 100)
Communicating with Persons Outside Organization	Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or email.	49
<u>Training and Teaching</u> <u>Others</u>	Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.	49
Coaching and Developing Others	Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills.	44
Provide Consultation and Advice to Others	Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.	44
Performing Administrative Activities	Performing day-to-day administrative tasks such as maintaining information files and processing paperwork.	33
Judging the Qualities of Things, Services, or People	Assessing the value, importance, or quality of things or people.	32
Inspecting Equipment, Structures, or Material	Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.	28
Resolving Conflicts and Negotiating with Others	Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.	28
Monitoring and Controlling Resources	Monitoring and controlling resources and overseeing the spending of money.	26
Performing General Physical Activities	Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.	20
Performing for or Working Directly with the Public	Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.	20
Staffing Organizational Units	Recruiting, interviewing, selecting, hiring, and promoting employees in an organization.	20

Tasks

This section shows the most common tasks required by Civil Drafters in order of importance. Click on a link in the Task column to view more detailed information.

Tasks	Task Description	Rank by Importance (Out of 100)
Produce drawings, using computer-assisted drafting systems (CAD) or drafting machines, or by hand, using compasses, dividers, protractors, triangles, and other drafting devices.	Core	97
Draft plans and detailed drawings for structures, installations, and construction projects, such as highways, sewage disposal systems, and dikes, working from sketches or notes.	Core	90
Review rough sketches, drawings, specifications, and other engineering data received from civil engineers to ensure that they conform to design concepts.	Core	85
<u>Draw maps, diagrams, and profiles, using cross-</u> <u>sections and surveys, to represent elevations,</u> <u>topographical contours, subsurface formations, and</u> <u>structures.</u>	Core	80
Supervise and train other technologists, technicians, and drafters.	Core	78
Determine the order of work and method of presentation, such as orthographic or isometric drawing.	Core	77
Finish and duplicate drawings and documentation packages according to required mediums and specifications for reproduction, using blueprinting, photography, or other duplicating methods.	Core	75
Correlate, interpret, and modify data obtained from topographical surveys, well logs, and geophysical prospecting reports.	Core	74
Supervise or conduct field surveys, inspections, or technical investigations to obtain data required to revise construction drawings.	Core	68
Explain drawings to production or construction teams and provide adjustments as necessary.	Core	64
Determine quality, cost, strength, and quantity of required materials, and enter figures on materials lists.	Core	63
Locate and identify symbols on topographical surveys to denote geological and geophysical formations or oil field installations.	Core	63
Calculate excavation tonnage and prepare graphs and fill-hauling diagrams for use in earth-moving operations.	Core	57
Calculate weights, volumes, and stress factors and their implications for technical aspects of designs.	Core	53
Plot characteristics of boreholes for oil and gas wells from photographic subsurface survey recordings and other data, representing depth, degree, and direction of inclination.	Supplemental	53

National Working Conditions

Civil Drafters Drafters spend much of their time working on computers using specialized software in an office.

Drafters held about 207,700 jobs in 2016. Employment in the detailed occupations that make up drafters was distributed as follows:

Architectural and civil drafters 99,600 Mechanical drafters 64,800 Electrical and electronics drafters 27,400 Drafters, all other 15,900

The largest employers of drafters were as follows:

Architectural, engineering, and related services 49%
Manufacturing 25
Construction 9
Administrative and support and waste management and remediation services 4
Wholesale trade 2

Although drafters spend much of their time working on computers in an office, some may visit jobsites to collaborate with architects and engineers.

Work Schedules

Most drafters worked full time in 2016.

Source: <u>U.S. Department of Labor Bureau of Labor Statistics</u>

Typical Work Conditions

This section shows the most common work conditions required by Civil Drafters in order of importance.

Work Condition	Work Condition Description	Rank by Importance (Out of 100)
Electronic Mail	How often do you use electronic mail in this job?	98
Face-to-Face Discussions	How often do you have to have face-to-face discussions with individuals or teams in this job?	94
Indoors, Environmentally Controlled	How often does this job require working indoors in environmentally controlled conditions?	92
Spend Time Sitting	How much does this job require sitting?	89
Telephone	How often do you have telephone conversations in this job?	88
Work With Work Group or Team	How important is it to work with others in a group or team in this job?	87
Importance of Being Exact or Accurate	How important is being very exact or highly accurate in performing this job?	87
Time Pressure	How often does this job require the worker to meet strict deadlines?	85

Work Condition	Work Condition Description	Rank by Importance (Out of 100)
Contact With Others	How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?	81
Importance of Repeating Same Tasks	How important is repeating the same physical activities (e.g., key entry) or mental activities (e.g., checking entries in a ledger) over and over, without stopping, to performing this job?	76
Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls	How much does this job require using your hands to handle, control, or feel objects, tools or controls?	73
Structured versus Unstructured Work	To what extent is this job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals?	70
Freedom to Make Decisions	How much decision making freedom, without supervision, does the job offer?	66
Spend Time Making Repetitive Motions	How much does this job require making repetitive motions?	64
Coordinate or Lead Others	How important is it to coordinate or lead others in accomplishing work activities in this job?	62
Level of Competition	To what extent does this job require the worker to compete or to be aware of competitive pressures?	61
Letters and Memos	How often does the job require written letters and memos?	58
Frequency of Decision Making	How frequently is the worker required to make decisions that affect other people, the financial resources, and/or the image and reputation of the organization?	50
Responsibility for Outcomes and Results	How responsible is the worker for work outcomes and results of other workers?	49
Physical Proximity	To what extent does this job require the worker to perform job tasks in close physical proximity to other people?	49
Impact of Decisions on Co-workers or Company Results	What results do your decisions usually have on other people or the image or reputation or financial resources of your employer?	49
Deal With External Customers	How important is it to work with external customers or the public in this job?	38
Sounds, Noise Levels Are Distracting or Uncomfortable	How often does this job require working exposed to sounds and noise levels that are distracting or uncomfortable?	35
Deal With Unpleasant or Angry People	How frequently does the worker have to deal with unpleasant, angry, or discourteous individuals as part of the job requirements?	31

Work Condition	Work Condition Description	Rank by Importance (Out of 100)
Frequency of Conflict Situations	How often are there conflict situations the employee has to face in this job?	31
Consequence of Error	How serious would the result usually be if the worker made a mistake that was not readily correctable?	31
Degree of Automation	How automated is the job?	31
Outdoors, Exposed to Weather	How often does this job require working outdoors, exposed to all weather conditions?	29
Public Speaking	How often do you have to perform public speaking in this job?	28
In an Enclosed Vehicle or Equipment	How often does this job require working in a closed vehicle or equipment (e.g., car)?	28
Spend Time Standing	How much does this job require standing?	26
Responsible for Others' Health and Safety	How much responsibility is there for the health and safety of others in this job?	25
Indoors, Not Environmentally Controlled	How often does this job require working indoors in non-controlled environmental conditions (e.g., warehouse without heat)?	20
Extremely Bright or Inadequate Lighting	How often does this job require working in extremely bright or inadequate lighting conditions?	20
Very Hot or Cold Temperatures	How often does this job require working in very hot (above 90 F degrees) or very cold (below 32 F degrees) temperatures?	19

Work Values and Needs

This section shows the information on the current work values for your selected occupation.

Work Value	Work Value Description	Rank By Extent (Out of 100)
Support	Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical.	56
Working Conditions	Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions.	45

Work Value	Work Value Description	Rank By Extent (Out of 100)
Recognition	Occupations that satisfy this work value offer advancement, potential for leadership, and are often considered prestigious. Corresponding needs are Advancement, Authority, Recognition and Social Status.	45
Independence	Occupations that satisfy this work value allow employees to work on their own and make decisions. Corresponding needs are Creativity, Responsibility and Autonomy.	45
Achievement	Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are Ability Utilization and Achievement.	39
Relationships	Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service.	28

Typical Tools

This section shows common tools used by Civil Drafters.

Detailed Tool	Tool Group
Compasses	Compasses
Flexible curves	Curves
French curves	Curves
Desktop computers	Desktop computers
Computer aided design CAD multi-unit display graphics cards	Graphics or video accelerator cards
Notebook computers	Notebook computers
Plotters	Plotter printers
Handheld calculators	Pocket calculator
Print servers	Print servers
Protractors	Protractors
Architects' scales	Scales
Electronic scales	Scales
Backlit digitizers	Scanners
Large-format digitizers	Scanners
Sonic digitizers	Scanners
Three-dimensional laser digitizers	Scanners
Wide-format document scanners	Scanners
T-squares	T squares
Graphics tablets	Tablet computers

Detailed Tool	Tool Group
Estimating keypads	Touch pads
Triangles	Triangles

Typical Technology

This section shows common technology used by Civil Drafters.

Detailed Technology	Technology Group
Autodesk AutoCAD	Computer aided design CAD software
Autodesk AutoCAD Civil 3D	Computer aided design CAD software
Autodesk Land Desktop	Computer aided design CAD software
Autodesk Revit	Computer aided design CAD software
Autodesk Softdesk	Computer aided design CAD software
Bentley Microstation	Computer aided design CAD software
Bentley WaterCAD	Computer aided design CAD software
Computer aided design and drafting software CADD	Computer aided design CAD software
ENERCALC FastFrame	Computer aided design CAD software
Piping and instrumentation design PID software	Computer aided design CAD software
PTC Creo Parametric	Computer aided design CAD software
Three-dimensional modeling software	Computer aided design CAD software
ARCOM Masterspec	Data base user interface and query software
Microsoft Access	Data base user interface and query software
Adobe Systems Adobe Acrobat	Document management software
Extensible markup language XML	Enterprise application integration software
Adobe Systems Adobe After Effects	Graphics or photo imaging software
Adobe Systems Adobe LiveMotion	Graphics or photo imaging software
Adobe Systems Adobe Photoshop	Graphics or photo imaging software
Animation software	Graphics or photo imaging software
Bentley GeoPak Bridge	Graphics or photo imaging software
Graphic presentation software	Graphics or photo imaging software
Intergraph Image Analyst	Graphics or photo imaging software
Landscape modeling software	Graphics or photo imaging software
McNeel Rhino software	Graphics or photo imaging software
Microsoft Visio	Graphics or photo imaging software
Motion graphics software	Graphics or photo imaging software
Non uniform rational b-splines NURBS software	Graphics or photo imaging software
Bentley Systems InRoads Suite	Map creation software
Boundary survey software	Map creation software

Detailed reciliology	recimology Group
ESRI ArcGIS software	Map creation software
ESRI ArcView	Map creation software
Geomechanical design analysis GDA software	Map creation software
Topographic map software	Map creation software
Bill of materials software	Materials requirements planning logistics and supply chain software
Microsoft Office	Office suite software
Scanning software	Optical character reader OCR or scanning software
Microsoft PowerPoint	Presentation software
Microsoft Project	Project management software
SpecsInTact	Project management software
Microsoft Excel	Spreadsheet software
Microsoft Word	Word processing software
Specification software	Word processing software

Technology Group

Source: This information is based on O*NET™ data. O*NET is a trademark registered to the U.S. Department of Labor, Employment and Training Administration.

Licensing Information

Detailed Technology

There is no data available for Civil Drafters in Louisiana.

Typical Knowledge Categories

This section shows the most common knowledge categories required by Civil Drafters in order of importance. Click on a link in the Knowledge Category column to view more detailed information.

Knowledge Category	Knowledge Category Description	Rank by Importance (Out of 100)
<u>Design</u>	Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.	88
Engineering and Technology	Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.	83
English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.	75
<u>Mathematics</u>	Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.	73
Building and Construction	Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.	72

Knowledge Category	Knowledge Category Description	Rank by Importance (Out of 100)
Computers and Electronics	Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.	65
<u>Geography</u>	Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.	63
<u>Customer and</u> <u>Personal Service</u>	Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.	45
<u>Physics</u>	Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub- atomic structures and processes.	42
Administration and Management	Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.	38
<u>Clerical</u>	Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.	38
<u>Public Safety and</u> <u>Security</u>	Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.	36
<u>Mechanical</u>	Knowledge of machines and tools, including their designs, uses, repair, and maintenance.	35
Production and Processing	Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.	29
Communications and Media	Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.	23
<u>Law and</u> <u>Government</u>	Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.	22

Knowledge Category	Knowledge Category Description	Rank by Importance (Out of 100)
<u>Telecommunications</u>	Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.	21
<u>Chemistry</u>	Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.	20
Economics and Accounting	Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.	20

Typical Work Abilities Required

This section shows the results of a national survey listing the most common work abilities required by Civil Drafters in order of importance. Click on a link in the Work Ability column to view more detailed information.

Work Ability	Work Ability Description	Rank by Importance (Out of 100)
Written Comprehension	The ability to read and understand information and ideas presented in writing.	72
Oral Comprehension	The ability to listen to and understand information and ideas presented through spoken words and sentences.	69
Near Vision	The ability to see details at close range (within a few feet of the observer).	66
Oral Expression	The ability to communicate information and ideas in speaking so others will understand.	66
Written Expression	The ability to communicate information and ideas in writing so others will understand.	66
Information Ordering	The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).	63
Problem Sensitivity	The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	60
<u>Deductive</u> <u>Reasoning</u>	The ability to apply general rules to specific problems to produce answers that make sense.	53
Flexibility of Closure	The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.	53
Inductive Reasoning	The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).	53

Work Ability	Work Ability Description	Rank by Importance (Out of 100)
Mathematical Reasoning	The ability to choose the right mathematical methods or formulas to solve a problem.	53
Speech Clarity	The ability to speak clearly so others can understand you.	53
Speech Recognition	The ability to identify and understand the speech of another person.	53
Visualization	The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	53
<u>Category</u> <u>Flexibility</u>	The ability to generate or use different sets of rules for combining or grouping things in different ways.	50
Fluency of Ideas	The ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).	50
Number Facility	The ability to add, subtract, multiply, or divide quickly and correctly.	50
<u>Originality</u>	The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.	50
Selective Attention	The ability to concentrate on a task over a period of time without being distracted.	50
Far Vision	The ability to see details at a distance.	47
Finger Dexterity	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.	44
Perceptual Speed	The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.	44
Time Sharing	The ability to shift back and forth between two or more activities or sources of information (such as speech, sounds, touch, or other sources).	38
Memorization	The ability to remember information such as words, numbers, pictures, and procedures.	35
Visual Color Discrimination	The ability to match or detect differences between colors, including shades of color and brightness.	31
Speed of Closure	The ability to quickly make sense of, combine, and organize information into meaningful patterns.	28
Arm-Hand Steadiness	The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.	25
Auditory Attention	The ability to focus on a single source of sound in the presence of other distracting sounds.	25

Work Ability	Work Ability Description	Rank by Importance (Out of 100)
Control Precision	The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.	25
<u>Hearing</u> <u>Sensitivity</u>	The ability to detect or tell the differences between sounds that vary in pitch and loudness.	25
Manual Dexterity	The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.	25
<u>Depth</u> <u>Perception</u>	The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.	22
Trunk Strength	The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	13
<u>Dynamic</u> <u>Strength</u>	The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	6
Spatial Orientation	The ability to know your location in relation to the environment or to know where other objects are in relation to you.	3

Typical Work Interests

This section shows the results of a national survey listing the most common work interests for Civil Drafters in order of importance.

Work Interest	Work Interest Description	Rank by Importance (Out of 100)
Realistic	Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.	89
Conventional	Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.	83
Investigative	Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.	50
Artistic	Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.	45

Typical Work Styles

This section shows the most common work styles required by Civil Drafters in order of importance. Click on a link in the Work Style column to view more detailed information.

Work Style	Work Style Description	Rank by Importance (Out of 100)
Attention to Detail	Job requires being careful about detail and thorough in completing work tasks.	89
<u>Dependability</u>	Job requires being reliable, responsible, and dependable, and fulfilling obligations.	83
<u>Integrity</u>	Job requires being honest and ethical.	82
Cooperation	Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.	78
<u>Initiative</u>	Job requires a willingness to take on responsibilities and challenges.	74
Stress Tolerance	Job requires accepting criticism and dealing calmly and effectively with high stress situations.	74
Adaptability/Flexibility	Job requires being open to change (positive or negative) and to considerable variety in the workplace.	74
Analytical Thinking	Job requires analyzing information and using logic to address work-related issues and problems.	73
<u>Independence</u>	Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.	70
Achievement/Effort	Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	68
<u>Persistence</u>	Job requires persistence in the face of obstacles.	66
Self Control	Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.	63
Innovation	Job requires creativity and alternative thinking to develop new ideas for and answers to work-related problems.	61
<u>Leadership</u>	Job requires a willingness to lead, take charge, and offer opinions and direction.	60
Concern for Others	Job requires being sensitive to others' needs and feelings and being understanding and helpful on the job.	48

Work Style	Work Style Description	Rank by Importance (Out of 100)
Social Orientation	Job requires preferring to work with others rather than alone, and being personally connected with others on the job.	39

Related Occupations

This section shows a list of occupations related to Civil Drafters. Click an occupation title to see more information about that occupation.

Rank	Related Occupations	Duties	*Related By
1	Architectural and Civil Drafters	Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.	SOC4
2	Surveying and Mapping Technicians	Perform surveying and mapping duties, usually under the direction of an engineer, surveyor, cartographer, or photogrammetrist to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps.	SOC4
3	Aerospace Engineering and Operations Technicians	Operate, install, calibrate, and maintain integrated computer/communications systems, consoles, simulators, and other data acquisition, test, and measurement instruments and equipment, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.	SOC4
4	Automotive Engineering Technicians	Assist engineers in determining the practicality of proposed product design changes and plan and carry out tests on experimental test devices or equipment for performance, durability, or efficiency.	SOC4
5	Drafters, All Other	All drafters not listed separately.	SOC4
6	Electrical and Electronic Engineering Technicians	Apply electrical and electronic theory and related knowledge, usually under the direction of engineering staff, to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions.	SOC4
7	Electrical and Electronics Drafters	Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.	SOC4

Rank	Related Occupations	Duties	*Related By
8	Electrical Engineering Technologists	Assist electrical engineers in such activities as process control, electrical power distribution, or instrumentation design. May prepare layouts of electrical transmission or distribution systems, supervise the flow of work, estimate project costs, or participate in research studies.	SOC4
9	Electromechanical Engineering Technologists	Assist electromechanical engineers in such activities as computer-based process control, instrumentation, or machine design. May prepare layouts of machinery or equipment, plan the flow of work, conduct statistical studies, or analyze production costs.	SOC4
10	Electro-Mechanical Technicians	Operate, test, maintain, or calibrate unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.	SOC4
11	Electronics Engineering Technicians	Lay out, build, test, troubleshoot, repair, and modify developmental and production electronic components, parts, equipment, and systems, such as computer equipment, missile control instrumentation, electron tubes, test equipment, and machine tool numerical controls, applying principles and theories of electronics, electrical circuitry, engineering mathematics, electronic and electrical testing, and physics. Usually work under direction of engineering staff.	SOC4
12	Electronics Engineering Technologists	Assist electronics engineers in such activities as electronics systems and instrumentation design or digital signal processing.	SOC4
13	Engineering Technicians, Except Drafters, All Other	All engineering technicians, except drafters, not listed separately.	SOC4
14	Environmental Engineering Technicians	Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation, under the direction of engineering staff or scientist. May assist in the development of environmental remediation devices.	SOC4
15	Fuel Cell Technicians	Install, operate, or maintain integrated fuel cell systems in transportation, stationary, or portable applications.	SOC4
16	Industrial Engineering Technicians	Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.	SOC4
17	Industrial Engineering Technologists	Assist industrial engineers in such activities as quality control, inventory control, or material flow methods. May conduct statistical studies or analyze production costs.	SOC4

Rank	Related Occupations	Duties	*Related By
18	Manufacturing Engineering Technologists	Develop tools, implement designs, or integrate machinery, equipment, or computer technologies to ensure effective manufacturing processes.	SOC4
19	Mechanical Engineering Technicians	Apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.	SOC4
20	Mechanical Engineering Technologists ►	Assist mechanical engineers in such activities as generation, transmission, or use of mechanical or fluid energy. Prepare layouts of machinery or equipment or plan the flow of work. May conduct statistical studies or analyze production costs.	SOC4
21	Nanotechnology Engineering Technicians	Operate commercial-scale production equipment to produce, test, or modify materials, devices, or systems of molecular or macromolecular composition. Work under the supervision of engineering staff.	SOC4
22	Nanotechnology Engineering Technologists	Implement production processes for nanoscale designs to produce or modify materials, devices, or systems of unique molecular or macromolecular composition. Operate advanced microscopy equipment to manipulate nanoscale objects. Work under the supervision of nanoengineering staff.	SOC4
23	Non-Destructive Testing Specialists	Test the safety of structures, vehicles, or vessels using x-ray, ultrasound, fiber optic or related equipment.	SOC4
24	Photonics Technicians •	Build, install, test, or maintain optical or fiber optic equipment, such as lasers, lenses, or mirrors, using spectrometers, interferometers, or related equipment.	SOC4
25	Robotics Technicians	Build, install, test, or maintain robotic equipment or related automated production systems.	SOC4
26	Architectural Drafters •	Prepare detailed drawings of architectural designs and plans for buildings and structures according to specifications provided by architect.	O*NET
27	<u>Civil Engineering</u> <u>Technicians</u>	Apply theory and principles of civil engineering in planning, designing, and overseeing construction and maintenance of structures and facilities under the direction of engineering staff or physical scientists.	O*NET
28	<u>Mapping</u> <u>Technicians</u>	Calculate mapmaking information from field notes, and draw and verify accuracy of topographical maps.	O*NET
29	<u>Surveying</u> <u>Technicians</u>	Adjust and operate surveying instruments, such as the theodolite and electronic distance-measuring equipment, and compile notes, make sketches and enter data into computers.	O*NET
30	Broadcast Technicians	Set up, operate, and maintain the electronic equipment used to transmit radio and television programs. Control audio equipment to regulate volume level and quality of sound during radio and television broadcasts. Operate transmitter to broadcast radio or television programs.	O*NET

Rank	Related Occupations	Duties	*Related By
31	Cartographers and Photogrammetrists	Collect, analyze, and interpret geographic information provided by geodetic surveys, aerial photographs, and satellite data. Research, study, and prepare maps and other spatial data in digital or graphic form for legal, social, political, educational, and design purposes. May work with Geographic Information Systems (GIS). May design and evaluate algorithms, data structures, and user interfaces for GIS and mapping systems.	O*NET
32	Commercial and Industrial Designers	Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.	O*NET
33	Computer Systems Engineers/Architects	Design and develop solutions to complex applications problems, system administration issues, or network concerns. Perform systems management and integration functions.	O*NET
34	<u>Database</u> <u>Administrators</u> ◆	Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.	O*NET
35	<u>Desktop Publishers</u>	Format typescript and graphic elements using computer software to produce publication-ready material.	O*NET
36	Electrical Drafters	Develop specifications and instructions for installation of voltage transformers, overhead or underground cables, and related electrical equipment used to conduct electrical energy from transmission lines or high-voltage distribution lines to consumers.	O*NET
37	Electrical Engineering Technicians	Test or modify developmental or operational electrical machinery or electrical control equipment and circuitry in industrial or commercial plants or laboratories. Usually work under direction of engineers or technologists.	O*NET
38	Electronic Drafters	Draw wiring diagrams, circuit board assembly diagrams, schematics, and layout drawings used for manufacture, installation, and repair of electronic equipment.	O*NET
39	Fabric and Apparel Patternmakers	Draw and construct sets of precision master fabric patterns or layouts. May also mark and cut fabrics and apparel.	O*NET
40	Food Science Technicians	Perform standardized qualitative and quantitative tests to determine physical or chemical properties of food or beverage products.	O*NET
41	Geographic Information Systems Technicians ◆ ₱	Assist scientists, technologists, or related professionals in building, maintaining, modifying, or using geographic information systems (GIS) databases. May also perform some custom application development or provide user support.	O*NET
42	<u>Geophysical Data</u> <u>Technicians</u> ◆ <i>₱</i>	Measure, record, or evaluate geological data, using sonic, electronic, electrical, seismic, or gravity-measuring instruments to prospect for oil or gas. May collect or evaluate core samples or cuttings.	O*NET

Rank	Related Occupations	Duties	*Related By
43	Manufacturing Production Technicians	Set up, test, and adjust manufacturing machinery or equipment, using any combination of electrical, electronic, mechanical, hydraulic, pneumatic, or computer technologies.	O*NET
44	Mechanical Drafters	Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.	O*NET
45	Radio Operators	Receive and transmit communications using radiotelephone equipment in accordance with government regulations. May repair equipment.	O*NET
46	Traffic Technicians	Conduct field studies to determine traffic volume, speed, effectiveness of signals, adequacy of lighting, and other factors influencing traffic conditions, under direction of traffic engineer.	O*NET

BRIGHT OUTLOOK NATIONALLY FREEN OCCUPATIONS

Source: **Related By: O*NET™ - The <u>Occupational Information Network</u>. O*NET is a registered trademark of the <u>US Department of Labor/Employment and Training Administration</u>.

SOC4 - Occupational grouping based on 1st 4 digits of the <u>Standard Occupational Classification</u> system.

Career Ladder

This section shows the top 10 occupations and the corresponding individuals in the workforce system who were previously Civil Drafters and have changed their occupation over the last 5 years.

Occupation Title	Number of Individuals that Moved	Percentage of Individuals that Moved
<u>Drafters, All Other</u>	16	25.40%
<u>Designers, All Other</u>	8	12.70%
Architectural Drafters •	7	11.11%
Mechanical Drafters	7	11.11%
Stock Clerks- Stockroom, Warehouse, or Storage Yard	6	9.52%
<u>Civil Engineering Technicians</u>	5	7.94%
Construction Carpenters • •	4	6.35%
Maintenance and Repair Workers, General	4	6.35%
Civil Engineers •	3	4.76%
Electronic Drafters	3	4.76%

BRIGHT OUTLOOK NATIONALLY FREEN OCCUPATIONS

Source: Individuals with active résumés in the workforce system.

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