



**C·O·E**

CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

# PROGRAM ENDORSEMENT BRIEF

## DRAFTING IN THE GREATER SACRAMENTO REGION

North/Far North  
Center of Excellence

**NOVEMBER 2021**

# TABLE OF CONTENTS

Summary .....	3
Introduction .....	4
Occupational Demand .....	5
Wages .....	6
Job Postings .....	6
Occupations and Job Titles .....	6
Employers .....	7
Certifications, Skills, and Experience .....	8
Education and Training .....	10
Educational Supply .....	10
Community College Supply .....	11
Other Postsecondary Supply .....	12
Findings .....	12
Recommendations .....	13
Appendix A. Methodology and Sources .....	14

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## SUMMARY

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The North/Far North Center of Excellence for Labor Market Research prepared this report to provide a labor market analysis of educational supply and occupational demand for middle-skilled career pathways in the Greater Sacramento subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers.

This report primarily focuses on training that leads to jobs in middle-skilled occupations - that is, occupations that typically require education beyond a high school diploma but less than a Bachelor's degree - but may include higher-skilled occupations for training pathways that lead to a bachelor's degree. Lowered skilled occupations are rarely considered in this type of analysis due to the lessened barriers for entry-level work, such as no formal education requirements and no requirements for on-the-job training.

Key findings include:

- The Greater Sacramento subregion held 1,035 drafting jobs in 2020. Drafting related jobs are projected to increase by 3% over the next five years, adding 27 new jobs to the subregion by 2025.
- Over the next five years, drafting occupations are projected to have 125 annual openings in the Greater Sacramento subregion.
- Actual historical job growth was negative in the North/Far North region between 2015 and 2020, declining nearly 17% during that period.
- Wage data shows that drafting occupations earn approximately \$6 to \$25, above the subregion's living wage of \$13.18 per hour.
- Awards data analysis shows that Greater Sacramento training providers conferred an average of 42 awards (certificates and associate degrees) in drafting training programs annually over the last three academic years.

Recommendations include:

- Based on a three-year average of annual awards in Greater Sacramento region drafting training programs and projected yearly openings, the supply gap analysis shows that the region seems to have room for additional training.
- While there appears to be demand for additional drafting professionals, the industry is experiencing slow growth. Historical trends indicate declining jobs throughout all parts of the state.

# INTRODUCTION

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The North/Far North Center of Excellence (COE) was asked to provide labor market information for a proposed program at a regional community college. This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

- Two middle-skill occupations requires more education and training beyond a high school diploma but less than a four-year degree:
  - Architectural and Civil Drafters (17-3011)
  - Mechanical Drafters (17-3013)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Architectural Drafting (0953.10)
- Mechanical Drafting (0953.40)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Architectural Drafting and Architectural CAD/CADD (15.1303)
- Mechanical Drafting and Mechanical Drafting CAD/CADD (15.1306)

# OCCUPATIONAL DEMAND

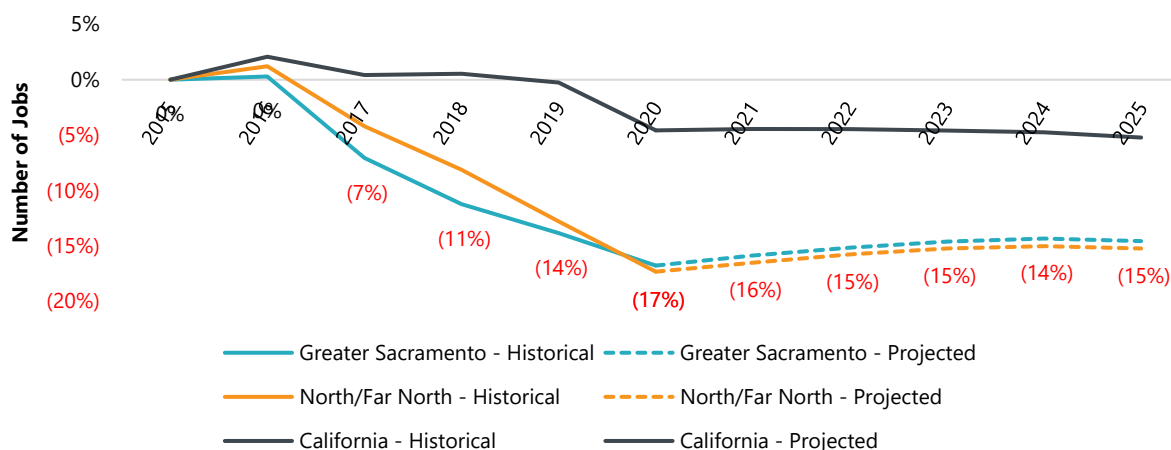
Exhibit 1 summarizes the five-year projected job growth for middle-skill and high-skill occupations in the Greater Sacramento selected occupations, North/Far North, and California.

**Exhibit 1. Employment and projected demand, 2020-2025**

Occupation	2020 Jobs	2025 Jobs	2020-2025 Jobs Change	2020-2025 Jobs % Change	2020-2025 Annual Openings
Architectural and Civil Drafting	796	816	20	3%	96
Mechanical Drafting	239	246	7	3%	29
<b>Greater Sacramento</b>	<b>1,035</b>	<b>1,062</b>	<b>27</b>	<b>3%</b>	<b>125</b>
Architectural and Civil Drafting	939	963	24	3%	117
Mechanical Drafting	283	290	7	2%	37
<b>North/Far North</b>	<b>1,222</b>	<b>1,253</b>	<b>31</b>	<b>3%</b>	<b>154</b>
Architectural and Civil Drafting	13,246	13,316	70	1%	1,438
Mechanical Drafting	5,634	5,435	(199)	(4%)	659
<b>California</b>	<b>18,880</b>	<b>18,751</b>	<b>(129)</b>	<b>(1%)</b>	<b>2,097</b>

Exhibit 2 compares the percent change in jobs between 2015 through 2020 and the projected changes through 2025. The rate of change is indexed to the total number of jobs in 2015.

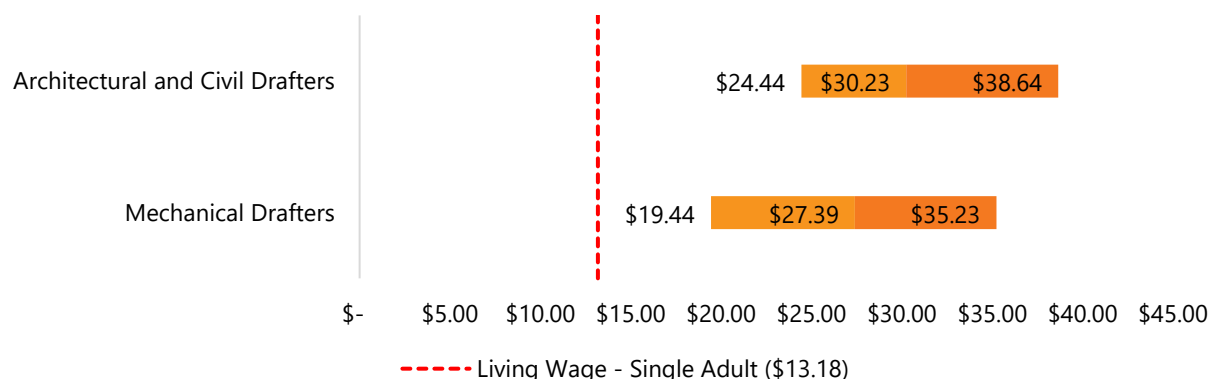
**Exhibit 2. Changes in employment, 2015-2025**



## WAGES

Exhibit 3 compares the entry-level, median, and experienced wages for the selected occupations to the Greater Sacramento living wage for a single adult - \$13.18 per hour.<sup>1</sup>

**Exhibit 3. Comparison of wages by occupation, 2020**



## JOB POSTINGS

This section of the report analyzes recent data from online job postings (real-time LMI). Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical trends.

The North/Far North COE identified 216 online job postings for the selected occupations in the Greater Sacramento subregion. Job postings data comes from Burning Glass Labor Insights and represents new listings posted online within the last year, from November 1, 2020, to October 31, 2021.

### Occupations and Job Titles

Exhibit 4 details the number of online job postings for the selected occupations.

**Exhibit 4. Number of job postings by occupation**

Occupation	Job Postings	Share of Job Postings
Architectural and Civil Drafting	104	48%
Mechanical Drafting	112	52%
<b>Total Job Postings</b>	<b>216</b>	<b>100%</b>

<sup>1</sup> Living wage is defined as the level of income a single adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. The 25th-percentile and 75th-percentile hourly wages are used as proxy for entry-level and experienced-level wages.

Exhibit 5 shows the top 10 job titles with the most job postings and the share of job postings. All job postings included a job title.

#### Exhibit 5. Top jobs titles

Job Title	Job Postings	Share of Job Postings
Civil Cad Drafter	17	8%
Mechanical Designer	16	7%
Drafter	13	6%
Truss Designer	11	5%
Civil Cad Drafter Civil 3D Or Autocad Proficient	10	5%
Detail	8	4%
Civil Designer	6	3%
Civil Engineer - Civil Cad Drafter - Land Surveyors - Land Planner	6	3%
Mechanical Drafter	5	2%
Drafter Esc	4	2%

#### Employers

Exhibit 6 shows the top 10 employers with the most job postings for the selected occupations. Thirty-eight percent (n = 83) of job postings did not include an employer.

#### Exhibit 6. Employers with the most job postings

Employer	Job Postings	Share of Job Postings
Teledyne Technologies	8	6%
Psomas & Associates	5	4%
Javelin Utility Services, Inc	4	3%
Victory Automotive	3	2%
Trinity Industries	3	2%

Employer	Job Postings	Share of Job Postings
Tetra Tech	3	2%
Stantec, Inc.	3	2%
Pacific Gas and Electric Company	3	2%
Engineering Solutions Incorporated	3	2%
Danny S Detail	3	2%

### Certifications, Skills, and Experience

Exhibit 7 shows the most relevant certifications requested by employers for the selected occupations. Seventy-five percent (n = 163) of job postings did not include certification information. As a result, the chart below may not be representative of the full sample.

#### Exhibit 7. Most in-demand certifications

Certification	Job Postings	Share of Job Postings
Driver's License	26	41%
Leadership in Energy and Environmental Design (LEED) Certified	12	19%
Engineer in Training Certification	6	10%
Occupational Safety and Health Administration Certification	3	5%
Licensed Professional Engineer	3	5%
AutoCAD Certification	3	5%

Exhibit 8 shows the specialized skills most requested by employers for the selected occupations. Seven percent (n = 16) of job postings did not include certification information.

#### Exhibit 8. Most in-demand specialized skills

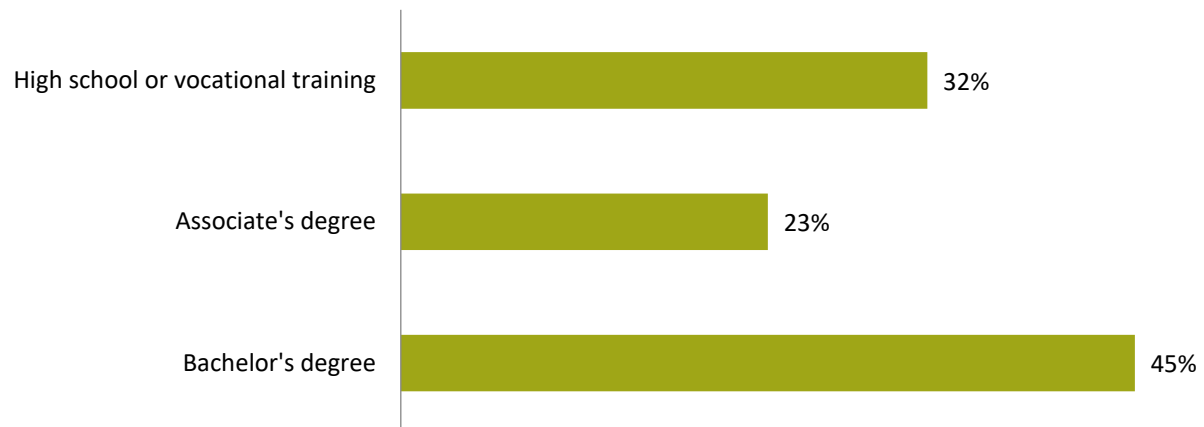
Specialized Skill	Skill Postings	Share of Skill Postings
AutoCAD	161	11%
Civil Engineering	59	4%



Specialized Skill	Skill Postings	Share of Skill Postings
Civil 3D	57	4%
Revit	46	3%
Land Development	37	2%
Mechanical Design	36	2%
Land Survey	30	2%
3D Modeling / Design	27	2%
Land Planning	27	2%
Shop Drawings	26	2%

Exhibit 9 shows the minimum level of education required by employers for job postings for the selected occupations. Fifty percent (n = 129) of job postings did not include a preferred education level.

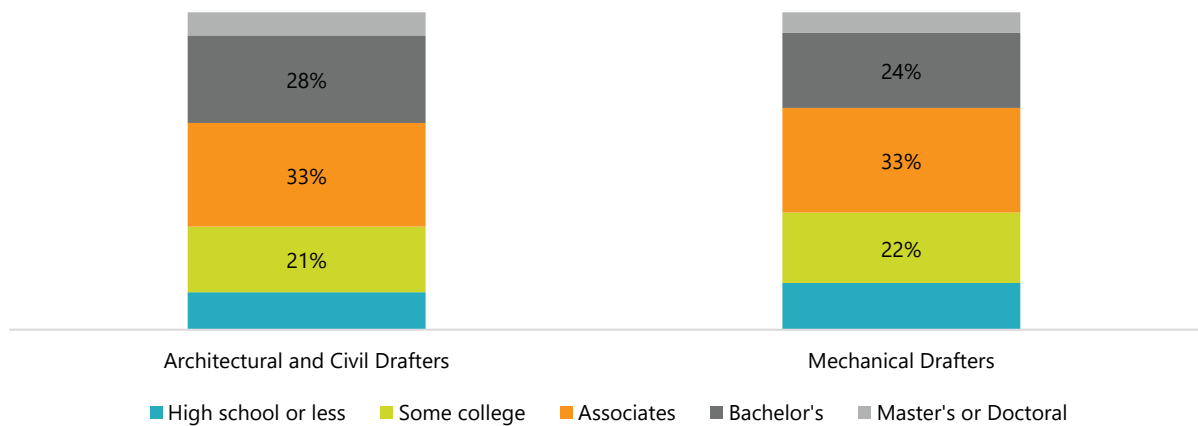
**Exhibit 9. Employer-preferred minimum education levels**



# EDUCATION AND TRAINING

The U.S. Census Bureau and Bureau of Labor Statistics collected data on education achieved by workers employed in occupations. Exhibit 10 shows the national-level educational attainment of the current workforce in the selected occupations.

**Exhibit 10. National worker educational attainment for selected occupations, 2019**



The Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which the BLS publishes projections data. Exhibit 11 shows the skill level and entry-level job requirements for the selected occupations.

**Exhibit 11. Typical education, work experience, and on-the-job training requirements**

Occupation	Typical Entry-level Education	Work Experience Required	On-the-job Training Required
Architectural and Civil Drafters	Associate's degree	None	None
Mechanical Drafters	Associate's degree	None	None

# EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. Exhibit 12 shows the TOP and CIP codes for educational programs related to the selected occupations.

**Exhibit 12. TOP and CIP codes for training programs related to the selected occupations**

TOP Programs and Codes	Aligned CIP Programs and Codes
Architectural Drafting (0953.10)	Architectural Drafting and Architectural CAD/CADD (15.1303)
Mechanical Drafting (0953.40)	Mechanical Drafting and Mechanical Drafting CAD/CADD (15.1306)

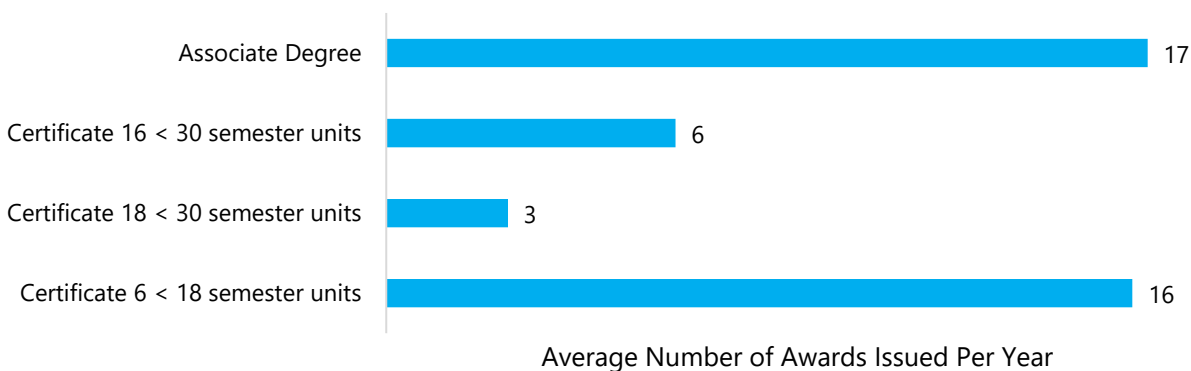
**Community College Supply**

Exhibits 13 and 14 compare the average number of certificates and degrees conferred in selected community college programs over the last three academic years.

**Exhibit 13. Annual average community college awards by program, 2017-18 through 2019-20**

Program - TOP Code	College	Annual Awards 2017-18	Annual Awards 2018-19	Annual Awards 2019-20	3-Yr Annual Awards Average
Architectural Drafting (0953.10)	Sacramento City	6	1	5	4
	Sierra	19	24	18	20
	<b>Subtotal</b>	<b>25</b>	<b>25</b>	<b>23</b>	<b>24</b>
Mechanical Drafting (0953.40)	Sacramento City	4	0	2	2
	Sierra	18	12	17	16
	<b>Subtotal</b>	<b>22</b>	<b>12</b>	<b>19</b>	<b>18</b>
	<b>Grand Total</b>	<b>47</b>	<b>37</b>	<b>42</b>	<b>42</b>

**Exhibit 14. Annual average community college awards by type, 2017-18 through 2019-20**



## Other Postsecondary Supply

There were no drafting related programs offered at other postsecondary institutions in the Greater Sacramento area during the past three years.

## FINDINGS

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This report focuses on two occupations with relevant career pathways in architectural and mechanical drafting.

- The Greater Sacramento subregion held 1,035 drafting jobs in 2020. Greater Sacramento drafting jobs are projected to increase by 3% over the next five years, adding 27 new jobs to the subregion by 2025.
- Jobs for drafting occupations are projected to grow faster in the North/Far North subregion than California, however overall growth is slow compared to other industry sectors. Actual historical job growth was negative in the North/Far North region between 2015 and 2020, declining nearly 17% during that period.
- Over the next five years, drafting occupations are projected to have 125 annual openings in the Greater Sacramento subregion.
- Wage data shows that drafting occupations earn approximately \$6 to \$25 above the subregion's living wage of \$13.18 per hour. Architectural and civil drafters tend to earn more at all experience levels than mechanical drafters.
- According to real-time labor market information, there were 216 online job postings for drafting occupations between November 1, 2020, and October 31, 2021. These positions were evenly split between architectural and civil drafters and mechanical drafters.
- Approximately one-half of incumbent workers in drafting occupations have education consistent with community college offerings (some college or associate degrees).
- Two Greater Sacramento community colleges offer degrees and certificates in programs related to drafting and treatment. Together, these programs conferred an average of 42 awards (certificates and associate degrees) annually in drafting over the last three academic years (2017-18 through 2019-20).

## RECOMMENDATIONS

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- Based on a three-year average of annual awards in Greater Sacramento region drafting training programs and projected yearly openings, the supply gap analysis shows that the region seems to have room for additional training.
  - Together, community colleges issued an average of 42 awards annually over the last three years.
  - There are 125 projected annual openings for drafting occupations.
- While there appears to be demand for additional drafting professionals, the industry is projected to experience slow growth in the broader region and negative growth at the state level. Actual historical job growth was negative in the North/Far North region between 2015 and 2020.
- The North/Far North Center of Excellence recommends moving forward with the program.

COE Recommendation		
Move forward with the program	Proceed with caution	Program is not recommended
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## APPENDIX A. METHODOLOGY AND SOURCES

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Occupations in this report were identified using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O\*Net OnLine. This report's findings were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

Cal-PASS Plus LaunchBoard. California Community Colleges Chancellor's Office.

<https://www.calpassplus.org/LaunchBoard/Home.aspx>.

Emsi. <https://www.economicmodeling.com/>. EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors).

Educational Attainment for Workers 25 Years and Older by Detailed Occupation, 2016-2017. Bureau of Labor Statistics. <https://www.bls.gov/emp/tables/educational-attainment.htm#>.

Integrated Postsecondary Education Data System (IPEDS). National Center for Education Statistics. U.S. Department of Education. <https://nces.ed.gov/ipeds/>.

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O\*NET OnLine. U.S. Department of Labor/Employment and Training Administration (DOL ETA). <https://www.onetonline.org/>.

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<http://www.selfsufficiencystandard.org/>

"Taxonomy of Programs." California Community Colleges Chancellor's Office. June 2012, 6<sup>th</sup> Edition. <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx>

"TOP-CIP-SOC Crosswalk." Centers of Excellence for Labor Market Research. November 2015 Edition. <http://coeccc.net/>

**COVID-19 Statement:** This report includes employment projection data by EMSI. EMSI's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

**Important Disclaimer:** All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

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