Division of Apprenticeship Standards (DAS)

Apprenticeship Program Summary Sheet

To: Adele Burnes, Chief
From: Cristen Harrington
CC: DAS Program Quality Review Unit
Date: August 14, 2026

Program Name: Southern California Sheet Metal JA&TC
Industry: Building & Construction
DAS File No.: 20
Grant Awardee: ☐ No ☒ Yes Training Funds, ERiCA

Action(s):

- ☐ Proposed new apprentice program
- ☒ Existing apprenticeship program adding new occupations
- ☐ Existing apprenticeship program expanding area of operations
- ☐ Existing apprenticeship program changing work processes on approved occupations

Labor Organization(s) Representing Apprentices:

SMART Local 105

Request for Approval under Labor Code 3075:

Southern California Sheet Metal JA&TC intends to train in the building and construction trades and intends to dispatch apprentices to projects with public works, prevailing wage or skilled and trained workforce requirements within the meaning of Labor Code sections 1720 and 3075 and will train or dispatch apprentices in the building and construction trades or firefighters occupations.

Comments:

To conform to pre-existing Public Works determinations and re-establish existing occupations.

Southern California Sheet Metal JA&TC will oversee the apprenticeship program herein and seeks approval from the Department of Industrial Relations, Division of Apprenticeship Standards for the following:

Proposed Occupation, Wage Rate & O*Net Code:

- **Testing, Adjusting and Balancing (TAB) Technician** **O*Net: 49-9021.00**
  Journeyperson Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed Apprentice Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed No. of Apprentices: 50

- **Sheet Metal Service Technician** **O*Net: 49-9021.00**
  Journeyperson Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed Apprentice Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed No. of Apprentices: 50

- **Residential Sheet Metal Worker** **O*Net: 49-9031.00**
  Journeyperson Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed Apprentice Wage: Wages pursuant to Public Works and/or most applicable requirement(s) of CA Labor Code §1720-1785; 8 CCR § 208 & §16000
  Proposed No. of Apprentices: 15

Currently Approved Occupations with No Changes to Jurisdiction or Work Processes:

- **Sheet Metal Worker** **O*Net: 47-2211.00**

Proposed Employers:

Occupation(s): **Testing, Adjusting and Balancing (TAB) Technician**

- ACCO Engineered Systems 888 E Walnut St. Pasadena, CA 91101
- Penn Air 5941 Lakeshore Dr. Cypress, CA 90630
- Inland Air Balance Inc 465 Borrego Ct. Ste C, San Dimas, CA 91773
- Precision Air Balance Co 1240 N Jefferson St. Ste H, Anaheim, CA 92807

Occupation(s): **Sheet Metal Service Technician**

- Control Air Enterprises, LLC 5200 E La Palma Ave. Anaheim, CA 92807
- ACH Mechanical Contractors, Inc 1740 Howard Place, Redlands, CA 92373
- AireMasters Air Conditioning Corp 12556 McCann Dr. Santa Fe Springs, CA 90670

- Hawaiian Air Conditioning Corp 600 E Walnut Ave. Fullerton, CA 92831

Occupation(s): **Residential Sheet Metal Worker**

- Trifecta Mechanical Contractor Corp 12961 Ramona Blvd. Ste H, Irwindale, CA 91706
- Mission Sheet Metal 5380 E Hunter Ave. Anaheim, CA 92807

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Southern California Sheet Metal JA&TC Program Standards

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Article I Purpose and Policy

The parties hereto declare it to be their purpose and policy to establish an organized, planned system of apprenticeship, conducted as an education sponsored, employer-based undertaking.

These standards have, therefore, been adopted and agreed upon under the Shelley-Maloney Apprentice Labor Standards Act of 1939, as amended, to govern the employment and training of apprentices in the trade, craft or occupation defined herein, to become effective upon their approval.

Article II Craft, Trade or Occupation, Related and Supplemental Instruction, Term of Apprenticeship, Ratio, Wage Schedule and Work Training

Occupation	O*Net Code	Attachments
Sheet Metal Worker	47-2211.00	B-1
Testing, Adjusting, and Balancing (TAB) Technician	49-9021.00	B-2
Sheet Metal Service Technician	49-9021.00	B-3
Residential Sheet Metal Worker	49-9031.00	B-4

Article III Organization

There is hereby established the above-named master apprenticeship committee. The committee shall consist of fourteen (14) members, seven (7) of whom shall be selected by and represent the employer organization(s) signatory hereto and seven (7) of whom shall be selected by and represent the employee organization signatory hereto, and one (1) apprenticeship consultant representing the Division of Apprenticeship Standards. In addition, thereto, there shall be two (2) advisors from the Local Education Agency and such other advisors as the committee shall determine. Such advisors and the apprenticeship consultant shall act without vote.

Article IV Jurisdiction

These standards shall apply to the employer and employee organizations signatory hereto; their members, to other employers who subscribe hereto or who are party to a collective bargaining agreement with an employee organization(s) signatory hereto, and to all apprentice agreements hereunder.

Area Covered by Standards: Inyo, Mono, San Bernardino, Riverside, Orange and Los Angeles Counties, excluding the portion of Los Angeles County north of a straight line drawn through Gorman and Big Pines.

Article V Functions

The functions of the apprenticeship committee shall be to:

1) develop an efficient program of apprenticeship through systematic on-the-job training with related and supplemental instruction and periodic evaluation of each apprentice;
2) serve in an advisory capacity with employers and employees in matters pertaining to these standards;
3) ensure the program's ability, including financial ability, and commitment to meet and carry out its responsibilities under federal and state law and regulations applicable to the apprenticeable occupation and for the welfare of the apprentice;
4) aid in the adjustment of apprenticeship disputes;
5) develop fair and impartial selection procedures and an affirmative action plan in accordance with existing laws and regulations and apply them uniformly in the selection of applicants for apprenticeship.

Article VI Responsibilities

The responsibilities of the apprenticeship committee shall be to:

1) maintain suitable and adequate facilities to train apprentices;
2) supervise the administration and enforcement of these standards;
3) adopt such rules and regulations as are necessary to govern the program provided that the rules and regulations do not conflict with these standards;
4) conduct orientations, workshops or other educational sessions for employers to explain the apprenticeship program's standards and the operation of the apprenticeship program;
5) pass upon the qualification of employers and, when appropriate, to suspend or withdraw approval;
6) conduct on-going evaluation of the interest and capacity of employers to participate in the apprenticeship program and to train apprentices on the job;
7) make periodic evaluations of each apprentice's on-the-job training and related and supplemental instruction;
8) ensure safe work site facilities, skilled workers as trainers at the work site, and safe equipment sufficient to train apprentices;
9) determine the qualifications of apprentice applicants and ensure fair and impartial treatment of applicants for apprenticeship selected through uniform selection procedures;
10) ensure apprentice agreements are sent to DAS for registration within thirty (30) days of the execution by the apprentice. For programs in the building and construction trades industry, the agreement shall be submitted to DAS in an acceptable electronic format, and a signed original of the agreement shall be retained by the program for at least five

years following the completion or cancellation of the agreement.

11) establish and utilize a procedure to record and maintain all records of the apprentice's worksite job progress and progress in related and supplemental instruction;
12) establish and utilize a system for the periodic review and evaluation of the apprentice's progress in job performance and related instruction;
13) provide to each apprentice, on at least a semiannual basis, a statement showing the number of hours of on-the-job training and related and supplemental instruction that the apprentice has acquired toward graduation, the total number of hours of on-the-job training and related and supplemental instruction that are necessary for graduation, and the apprentice’s expected graduation date;
14) discipline apprentices, up to and including termination, for failure to fulfill their obligations on-the-job or in related instruction, including provisions for fair hearings;
15) annually prepare and submit a Self-Assessment Review as well as a Program Improvement Plan to the Chief of the Division of Apprenticeship Standards;
16) ensure training and supervision, both on the job and in related instruction, in first aid, safe working practices and the recognition of occupational health and safety hazards;
17) ensure training in the recognition of illegal discrimination and sexual harassment, including the anti-harassment and anti-discrimination training required under Labor Code section 3073.9, subdivision (c)(4)(A);
18) procedures to ensure that its apprentices are not harassed or discriminated against on any of the bases protected by the Fair Employment and Housing Act, and to ensure that its apprenticeship program is free from intimidation and retaliation;
19) establishment and implementation of procedures for handling and resolving internal complaints about harassment or discrimination as required under Labor Code section 3073.9, subdivision (c)(4)(C).
20) establish an adequate mechanism to be used for the rotation of the apprentice from work process to work process to assure the apprentice of complete training in the apprenticeable occupation including mobility between employers when essential to provide exposure and training in various work processes in the apprenticeable occupation;
21) establish an adequate mechanism that will be used to provide apprentices with reasonably continuous employment in the event of a lay-off or the inability of one employer to provide training in all work processes as outlined in the standards;
22) comply with meaningful representation requirements for the interests of apprentices in the management of the program where apprentices are at least equally represented on an advisory panel established by the apprenticeship committee responsible for the operation of the program;
23) shall submit apprentice registration, change of address, graduation, and termination data to the Division of Apprenticeship Standards on a monthly basis in an electronic format acceptable to the division;
24) adopt changes to these standards, as necessary, subject to the approval of the parties hereto and the Chief of the Division of Apprenticeship Standards;

25) abide by any and all relevant California Labor Codes and California Code of Regulations regarding apprenticeship.

Article VII Definition of an Apprentice

An apprentice is a person at least 17 years of age, who has met the requirements for selection under the selection procedures of participating employer, who is engaged in learning a designated craft or trade and who has entered into a written apprentice agreement under the provisions of these standards.

Article VIII Duties of an Apprentice

Each apprentice shall satisfactorily perform all work and learning assignments both on the job and in related instruction and shall comply with the rules, regulations and decisions of the apprenticeship committee.

Article IX Apprentice Agreement

1) Each apprentice agreement shall conform to the State law governing apprentice agreements, and shall be signed by the employer, by the program sponsor, and by the apprentice and must be approved by the apprenticeship committee.
2) Each apprentice shall be furnished a copy of or be given an opportunity to study these standards before registration. These standards shall be considered a part of the apprentice agreement as though expressly written therein.
3) If the apprentice is under 18 years of age, the agreement must be signed by the apprentice's parent or guardian. When the period of training extends beyond 18, the apprentice agreement shall likewise be binding to such a period as may be covered.

Article X Termination and Transfer of Agreements

1) During the probationary period, an apprentice agreement shall be terminated by the apprenticeship committee at the request in writing of either party. After such probationary period, an apprentice agreement may be terminated by the Administrator by mutual agreement of all the parties thereto or cancelled by the Administrator for good and sufficient reason.
2) If an employer is unable to fulfill his/her obligations to train under any apprentice agreement or in the event of a layoff, the apprenticeship committee may, with the approval of the Administrator, transfer such agreement to any other employer if the apprentice consents, and such other employer agrees to assume the obligation of said apprentice agreement.

Article XI Lay-off

1) If for any reason the lay-off of an apprentice occurs, the apprentice agreement shall remain in effect unless cancelled by the Administrator. However, credit for related instruction shall be given when the apprentice continues such instruction during the lay-off.
2) There shall be no liability on the part of the employer, the program, or the committee for an injury sustained by an apprentice engaged in schoolwork at a time when the apprentice is unemployed.

Article XII Controversies

All controversies or differences concerning apprentice agreements that cannot be adjusted locally by the apprenticeship committee or otherwise shall be submitted to the Administrator for determination.

Article XIII Certificate of Completion

1) In addition to previous on-the-job training and related school instruction, which is of an approved nature, the Apprentice shall have completed not less than an additional six (6) months as an apprentice under the laws of the State of California and demonstrated mastery of the skills and knowledge of the prescribed program.
2) In recognition of unusual ability and progress, the apprenticeship committee may decrease the term of apprenticeship for an individual apprentice not more than twelve and one-half percent (12½%).
3) Upon evidence of satisfactory completion of apprenticeship, and upon the recommendation of the apprenticeship committee, each apprentice will be issued a Certificate of Completion by the authority of the Chief of the Division of Apprenticeship Standards and the California Apprenticeship Council.

Article XIV Equal Opportunity in Apprenticeship Pledge

Southern California Sheet Metal JA&TC will not discriminate against apprenticeship applicants or apprentices based on race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age for individuals over forty years of age, military or veteran status, or sexual orientation.

Southern California Sheet Metal JA&TC will take affirmative steps to provide equal opportunity in apprenticeship.

Article XV Selection of Apprentice Applicant

Apprenticeship programs may utilize any method or combination of methods for the selection of apprentices, provided that the selection method(s) used meets the following requirements:

See Attachment X - Plan for Equal Opportunity in Apprenticeship, for application and selection procedures.

Article XVI Records

All records will be maintained, in written or electronic form, for five (5) years and kept at:

Southern California Sheet Metal JA&TC
633 N Baldwin Park Blvd.,
City of Industry, CA 91746

Article XVII Annual Compliance

Southern California Sheet Metal JA&TC will submit an annual compliance report to the Division of Apprenticeship Standards as requested by the Division.

Southern California Sheet Metal JA&TC agrees to accept electronic signatures for these Division of Apprenticeship Standards and all related Division of Apprenticeship Standards documents.

The foregoing standards are hereby agreed to and adopted by Southern California Sheet Metal JA&TC on March 18, 2026 (Committee approval date).

Employer Organization

SMACNA Southern California

12070 Telegraph Rd. Suite #350, Santa Fe Springs, CA 90670

_____ _____

Michael Dean, JATC Co-Chair Date

Employee Organization

SMART Local 105

2120 Auto Centre Dr., Glendora, CA 91740

_____ _____

Albert Hernandez, JATC Co-Chair Date

The foregoing apprenticeship standards, being in conformity with the rules and regulations of the California Apprenticeship Council, the California Code of Regulations and applicable Federal Regulations are hereby approved _____.

(DAS approval date)

_____ _____

Adele Burnes, Chief Date
Division of Apprenticeship Standards

DAS FILE # 00020

Attachment B-2
Training Schedule and Working Conditions

Southern California Sheet Metal JA&TC

Occupation

Occupation: Testing, Adjusting, and Balancing (TAB) Technician
O*Net Code: 49-9021.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 8000 on-job-training (OJT) hours, 800 related and supplemental instruction (RSI) hours, and completed within 60 months.

The period of probation shall be reasonable in relation to the full apprenticeship term, with full credit given for such period toward completion of the apprenticeship, and in no event shall exceed the shorter of 25 percent of the length of the program or one year. The period of probation shall be 12 months.

Article II Wage Schedule

Public Works Projects:

Wage Schedule for Apprentices in the Building and Construction Industry Employed on Public Works Projects:

For apprentices participating in approved apprenticeship programs in the building and construction industry, the wages and employer payments for employee benefits as defined in 8 C.C.R. 16000 for regular and overtime work while employed on public works projects within the meaning of Labor Code 1720 et seq. shall be the per diem wage rates for apprentices in the apprenticeable occupation as determined by the Director of Industrial Relations in the geographic area of the project.

The program and employers are responsible to verify, update, and pay the apprentice the current or proper prevailing wage rate as posted on the prevailing wage website for the Office of the Director - Research for the occupations listed in the standards for the geographic area of the public works project.

Private Work:

For apprentices in the building and construction industry employed on projects not covered by California Code of Regulations, Title 8, Division 1, Chapter 2, Subchapter 1, Section §208, Subsection (b), the minimum hourly wage package for apprentices while employed on projects not covered by Subsection (b) (Public Works) shall be as set forth below in (1)-(5) or, in the

alternative, as set forth in subsection (6):

1) A starting hourly wage package for first period apprentices of not less than 40 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director of Industrial Relations for purposes of Labor Code §1720 et seq., using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
2) If there is no prevailing hourly wage package and wage package progression determined by the Director for journeyperson(s) for the apprenticeable occupation and geographic area, a starting wage rate decided by the sponsoring program in consultation with and subject to the approval of the Chief DAS based on consideration of the minimum starting hourly wage package and wage package progression for apprentices in the most analogous occupations and geographic areas;
3) Where an employer elects to satisfy a portion of the hourly wage package by employer payments for employee benefits as defined in 8 C.C.R. §16000, the payment of such contributions must be verifiable and the cost of the benefit(s) must be reasonably related to the amount of the contribution(s). The employer shall submit its books and records to an audit by the DAS staff, upon request, to verify such payments;
4) Where an employer elects not to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits as defined in 8 CCR §16000, the employer shall pay the entire hourly wage package to the apprentice on the apprentice's paycheck. Where an employer elects to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits, the employer shall pay the remainder of the apprentice's hourly wage package to the apprentice in the apprentice's paycheck;
5) The minimum hourly wage package shall increase for each successfully completed period of apprenticeship to a higher percentage of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project. These periodic increases in percentage shall be equal (e.g., 40 percent, 50 percent, 60 percent, etc.) and shall be such that the minimum hourly wage package in the final period of apprenticeship is not less than 80 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director, using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
6) In the alternative, a contractor will be in compliance with this entire subsection (c) if the contractor provides the same total hourly wage package and wage package progression to apprentices employed on private projects as the contractor provides to apprentices employed on public works projects in the same geographic area, and that total hourly wage package is not less than the prevailing per diem apprentice wage package for the apprenticeable occupation and the geographic area of the project.

The apprenticeship program and contractors are responsible to verify, update, and pay the apprentice the current or proper wage rate as calculated from the posted prevailing wage rates on the website for the Office of the Director - Research for the occupations listed in these standards for the geographic area of the private-work project.

Wage Increases or Upgrade:

Additionally, the apprentice shall have satisfactorily completed 80 hours of related and supplemental instruction for each wage period.

Hours of Work and Working Conditions and Overtime Provision:

Eight hours of labor constitute a day's work. Employment beyond eight hours in any workday or more than six days in any workweek requires the employee to be compensated for the overtime at not less than one and one-half times the employee's regular rate of pay for all hours worked in excess of eight hours, up to and including 12 hours in any workday, and for the first eight hours worked on the seventh consecutive day of work in a workweek; and double the employee's regular rate of pay for all hours worked in excess of 12 hours in any workday and for all hours worked in excess of eight on the seventh consecutive day of work in a workweek. If employers utilize an alternative workweek schedule in accordance with the California Industrial Welfare Commission Orders, the overtime will be determined and paid in accordance with the applicable alternative workweek provisions.

The workday and workweek and all other conditions of employment for apprentices shall conform to all applicable laws and regulations and shall not be greater than for those of a journeyperson.

Overtime shall not be allowed if it will interfere with or impair the training or be detrimental to the health and safety of the apprentice.

Article III Work-Training

1) The employer shall see that all apprentices are under the supervision of a qualified journeyperson or instructor and shall provide the necessary diversified experience and training in order to develop the apprentice into a proficiently skilled worker, as outlined herein.
2) Each apprentice shall be trained in the use of new equipment, materials and processes as they come into use in the occupation.
3) The major categories in which apprentices will be trained (although not necessarily in the order listed) are as follows:

Work Processes	Approximate Hours
Testing, Adjusting, and Balancing (TAB)	
1. HVAC air systems balancing	2500

2.	HVAC hydronic systems balancing	1000
3.	HVAC control systems – testing and calibration	1000
4.	HVAC equipment – testing and adjusting	1000
5.	TAB specialty areas	150
6.	TAB job documentation and reports	1000
7.	Code, blueprint, and specification reading	300
8.	Jobsite safety	50
9.	Indoor air quality and ventilation	500
10.	Life safety control systems	500
	Total number of Work Process hours required for graduation	8000

Article IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 160 hours per year. Related and supplemental instruction will be provided by Southern California J.A.&T.C and overseen by Los Angeles Unified School District and North Orange County Regional Occupational Program

Time spent in related and supplemental instruction may not be compensated.

Related Instruction Subject/Title	Instructional Hours
Sheet Metal Core	300

1. Trade Overview
2. Trade Materials
3. Properties of Metal
4. Architectural Principles
5. Fabrication
6. Sheet Metal Hand Tools
7. Seams, Locks, and Edges
8. Shop Procedures
9. Shop Equipment
10. Drafting
11. Computers and CAD
12. Pictorial Drawings and Sketches
13. Plans and Specifications
14. Layout Duct fittings
15. Layout Construction
16. Principles of Layout
17. Parallel-Line Layout
18. Radial-Line Layout
19. Triangulation
20. Trade Math

21. Safety: OSHA 10
22. Fire & Smoke Dampers Certification
23. Fall Protection
24. Scaffold Safety
25. Welding Safety
26. Field Installation
27. Field Installation by Specialty
28. Soldering and Brazing

Blueprint Reading (Plans and Specifications) 80

1. Overview
2. Construction Documents
3. Plans & Specifications
4. Specifications & Shop Drawings
5. Introduction to Procore™ Construction Software
6. Introduction to Bluebeam Revu™ Software
7. Schedules
8. Detail Drawings
9. Scaled Drawings
10. Using Specification in the Shop and Field
11. Documents for Changing Plans and Specifications
12. Auto CAD™ Software
13. Revit® Design Software

HVAC 80

1. Introduction to HVAC
2. Systems and Components
3. HVAC Systems
4. Heating Systems
5. Cooling Systems
6. Heat Pumps
7. Chillers
8. Installation and Service
9. Field Installation
10. Field Management
11. Ventilation
12. Installation and Startup
13. Refrigerant
14. How Refrigerants Work
15. Installing Ductwork
16. Installing HVAC Systems
17. Retrofitting HVAC Systems

18. Unit Size and Duct
19. Duct Design
20. Duct Leakage testing

Testing, Adjusting, and Balancing & Title 24 300

1. A Future in Testing, Adjusting and balancing
2. General Care of Instruments
3. Basics of a HVAC System
4. Airflow
5. Psychometrics
6. Heat and Heat transfer
7. Fundamentals of Electricity
8. Electrical Measurements
9. Motors and Starters
10. Rotational Speed Measurements
11. Temperature Measurements
12. Air pressure and Air Flow Measurements
13. Methods of Air Flow Measurement
14. Duct Systems
15. Automatic Controls
16. Fans
17. Fan Laws and V-Belt Drives
18. Preparation for Balancing and TAB Forms
19. Methods of Balancing: Proportional and Sequential
20. Hydronic Systems
21. Hydronic Pressure
22. Air Flow Measurements
23. Pumps and Pump Laws
24. Principles of the Cooling Tower
25. Hydronic Balancing: Flow Meter Method
26. Hydronic Balancing: Thermal Method
27. TAB Related Disciplines

Project Management 40

1. The Project Manager
2. Construction Documents
3. Controlling Costs
4. Preparing for a Project
5. Schedules and Meetings
6. Quality Control and Productivity
7. Legal Considerations
8. Completing the Project

Total number of RSI hours required for graduation 800

Article V Ratio

The ratio of apprentices to journeypersons shall be:

Ratio #1: Each journeyperson may supervise one (1) apprentice.

2 apprentices to 2 journeypersons

3 apprentices to 3 journeypersons

1 apprentice to 2 journeypersons thereafter

DAS FILE # 00020

Attachment B-3
Training Schedule and Working Conditions

Southern California Sheet Metal JA&TC

Occupation

Occupation: Sheet Metal Service Technician
O*Net Code: 49-9021.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 8000 on-job-training (OJT) hours, 800 related and supplemental instruction (RSI) hours, and completed within 60 months.

The period of probation shall be reasonable in relation to the full apprenticeship term, with full credit given for such period toward completion of the apprenticeship, and in no event shall exceed the shorter of 25 percent of the length of the program or one year. The period of probation shall be 12 months.

Article II Wage Schedule

Public Works Projects:

Wage Schedule for Apprentices in the Building and Construction Industry Employed on Public Works Projects:

For apprentices participating in approved apprenticeship programs in the building and construction industry, the wages and employer payments for employee benefits as defined in 8 C.C.R. 16000 for regular and overtime work while employed on public works projects within the meaning of Labor Code 1720 et seq. shall be the per diem wage rates for apprentices in the apprenticeable occupation as determined by the Director of Industrial Relations in the geographic area of the project.

The program and employers are responsible to verify, update, and pay the apprentice the current or proper prevailing wage rate as posted on the prevailing wage website for the Office of the Director - Research for the occupations listed in the standards for the geographic area of the public works project.

Private Work:

For apprentices in the building and construction industry employed on projects not covered by California Code of Regulations, Title 8, Division 1, Chapter 2, Subchapter 1, Section §208, Subsection (b), the minimum hourly wage package for apprentices while employed on projects not covered by Subsection (b) (Public Works) shall be as set forth below in (1)-(5) or, in the alternative, as set forth in subsection (6):

1) A starting hourly wage package for first period apprentices of not less than 40 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director of Industrial Relations for purposes of Labor Code §1720 et seq., using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
2) If there is no prevailing hourly wage package and wage package progression determined by the Director for journeyperson(s) for the apprenticeable occupation and geographic area, a starting wage rate decided by the sponsoring program in consultation with and subject to the approval of the Chief DAS based on consideration of the minimum starting hourly wage package and wage package progression for apprentices in the most analogous occupations and geographic areas;
3) Where an employer elects to satisfy a portion of the hourly wage package by employer payments for employee benefits as defined in 8 C.C.R. §16000, the payment of such contributions must be verifiable and the cost of the benefit(s) must be reasonably related to the amount of the contribution(s). The employer shall submit its books and records to an audit by the DAS staff, upon request, to verify such payments;
4) Where an employer elects not to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits as defined in 8 CCR §16000, the employer shall pay the entire hourly wage package to the apprentice on the apprentice's paycheck. Where an employer elects to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits, the employer shall pay the remainder of the apprentice's hourly wage package to the apprentice in the apprentice's paycheck;
5) The minimum hourly wage package shall increase for each successfully completed period of apprenticeship to a higher percentage of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project. These periodic increases in percentage shall be equal (e.g., 40 percent, 50 percent, 60 percent, etc.) and shall be such that the minimum hourly wage package in the final period of apprenticeship is not less than 80 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director, using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
6) In the alternative, a contractor will be in compliance with this entire subsection (c) if the contractor provides the same total hourly wage package and wage package progression to apprentices employed on private projects as the contractor provides to apprentices employed on public works projects in the same geographic area, and that total hourly wage package is not less than the prevailing per diem apprentice wage package for the apprenticeable occupation and the geographic area of the project.

The apprenticeship program and contractors are responsible to verify, update, and pay the apprentice the current or proper wage rate as calculated from the posted prevailing wage rates

on the website for the Office of the Director - Research for the occupations listed in these standards for the geographic area of the private-work project.

Wage Increases or Upgrade:

Additionally, the apprentice shall have satisfactorily completed 80 hours of related and supplemental instruction for each wage period.

Hours of Work and Working Conditions and Overtime Provision:

Eight hours of labor constitute a day's work. Employment beyond eight hours in any workday or more than six days in any workweek requires the employee to be compensated for the overtime at not less than one and one-half times the employee's regular rate of pay for all hours worked in excess of eight hours, up to and including 12 hours in any workday, and for the first eight hours worked on the seventh consecutive day of work in a workweek; and double the employee's regular rate of pay for all hours worked in excess of 12 hours in any workday and for all hours worked in excess of eight on the seventh consecutive day of work in a workweek. If employers utilize an alternative workweek schedule in accordance with the California Industrial Welfare Commission Orders, the overtime will be determined and paid in accordance with the applicable alternative workweek provisions.

The workday and workweek and all other conditions of employment for apprentices shall conform to all applicable laws and regulations and shall not be greater than for those of a journeyperson.

Overtime shall not be allowed if it will interfere with or impair the training or be detrimental to the health and safety of the apprentice.

Article III Work-Training

1) The employer shall see that all apprentices are under the supervision of a qualified journeyperson or instructor and shall provide the necessary diversified experience and training in order to develop the apprentice into a proficiently skilled worker, as outlined herein.
2) Each apprentice shall be trained in the use of new equipment, materials and processes as they come into use in the occupation.
3) The major categories in which apprentices will be trained (although not necessarily in the order listed) are as follows:

Work Processes	Approximate Hours
Sheet Metal Service Technician	
1. HVAC system start-up	1500
2. HVAC equipment installation	1500
3. HVAC control systems – installation, adjustment, or calibration	750

4. HVAC system troubleshooting	1350
5. HVAC system preventive maintenance	1500
6. Evaporative cool arid hydronic equipment installation	300
7. Compressor change-outs	100
8. Refrigeration charging and evacuation	150
9. Leak testing and piping repair	150
10. Pipe brazing and soldering	200
11. Job documentation, reporting, and invoicing	200
12. Code, blueprint, specification reading	250
13. Jobsite safety	50
Total number of Work Process hours required for graduation	8000

Article IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 160 hours per year. Related and supplemental instruction will be provided by Southern California J.A.&T.C and overseen by Los Angeles Unified School District and North Orange County Regional Occupational Program

Time spent in related and supplemental instruction may not be compensated.

Related Instruction Subject/Title	Instructional Hours
Sheet Metal Core	300

1. Trade Overview
2. Trade materials
3. Properties of Metal
4. Architectural Principles
5. Fabrication
6. Sheet Metal Hand Tools
7. Seams, Locks and Edges
8. Shop Procedures
9. Shop Equipment
10. Drafting
11. Computers and CAD
12. Pictorial Drawings and Sketches
13. Plans and Specifications
14. Layout Duct Fittings
15. Layout Construction
16. Principles of Layout
17. Parallel-Line Layout
18. Radial-Line Layout
19. Triangulation

20. Trade Math
21. Safety: OSHA 10
22. Fire & Smoke Dampers Certification
23. Fall Protection
24. Scaffold Safety
25. Welding Safety
26. Field Installation
27. Field Installation by Specialty
28. Soldering and Brazing

Blueprint Reading 80

1. Overview
2. Construction Documents
3. Plans & Specifications
4. Specifications & Shop Drawings
5. Introduction to Procore™ Construction Software
6. Introduction to Bluebeam Revu™ Software
7. Schedules
8. Detail Drawings
9. Scaled Drawings
10. Using Specification in the Shop and Field
11. Documents for Changing Plans and Specifications
12. Auto CAD™ Software
13. Revit® Design Software

Testing, Adjusting, and Balancing & Title 24 40

1. A Future in Testing, Adjusting and Balancing
2. General Care of Instruments
3. Basics of a HVAC System
4. Airflow
5. Psychometrics
6. Heat and Heat transfer
7. Fundamentals of Electricity
8. Electrical Measurements
9. Motors and Starters
10. Rotational Speed Measurements
11. Temperature Measurements
12. Air pressure and Air Flow Measurements
13. Methods of Air Flow Measurement
14. Duct Systems
15. Automatic Controls

16. Fans
17. Fan Laws and V-Belt Drives
18. Preparation for Balancing and TAB Forms
19. Methods of Balancing: Proportional and Sequential
20. Hydronic Systems
21. Hydronic Pressure
22. Air Flow Measurements
23. Pumps and Pump Laws
24. Principles of the Cooling Tower
25. Hydronic Balancing: Flow Meter Method
26. Hydronic Balancing: Thermal Method
27. TAB Related Disciplines

Service Work 340

1. Tools, Instruments, Tubing and Torch Equipment
2. Refrigeration Tubing and Pipe
3. Oxy-Acetylene Torch Equipment
4. Preparing Joint-Solder or Braze
5. Introduction to Refrigeration Principles
6. Pressure and Pressure Measurements
7. Methods of Heat Transfer
8. Heat Transfer Capacity
9. Pressure/Temperature Relationships
10. Refrigeration Cycle Operation
11. Major Components-Performance Factors
12. Psychometric Properties of Air
13. Basics of Air Flow and Duct Systems
14. Air Moving Devices
15. Recovering-Recycling-Reclaiming
16. Diagnostics and Refrigeration Cycle Operation
17. Condensing Units Versus Piping Losses
18. System Analysis
19. Basic Concepts of Electricity
20. Circuit Operating Characteristics
21. Alternating Current Circuit Principles
22. Capacitators and Capacitator Testing
23. Single Phose Transformers
24. Three Phase Transformers
25. Voltage Imbalance and Phase Loss on Three Phase Systems
26. Single Phase Induction Motors
27. Three Phase Induction Motors
28. Servicing Electric Motors

29. Motor Circuits (Protection)
30. Hermetic Compressor Motors and Start Relays
31. Electrical Schematics and Diagrams
32. Circuits
33. Introduction to HVAC Systems and Ventilation
34. Air and its Properties
35. Fans and Air Flow in Duct
36. Duct Systems
37. Duct Design
38. Balancing the System
39. Instruments and Air Cleaning
40. Hydronic Heating
41. Oil Furnaces
42. Air Conditioning Systems Concepts
43. Systems Using Air Cooled Condensers
44. Systems Using Water Cooled Condensers
45. Compressor and Condensing Unit Capacities
46. Refrigerant Line Components
47. Refrigerant Lines and Capacities
48. Heat Loads for Cooling
49. Heat Pump
50. Heat Pump Operating Cycles and Efficiency Ratings
51. Heat Pump Compressors, Motors and Motor Control
52. Heat Pump Refrigerant Controls
53. Heat Pump Installation
54. Heat Pump Electrical Controls
55. Heat Pump Startup and Servicing
56. Commercial Systems Application
57. Commercial Systems Evaporators
58. Evaporator Installation and Capacities
59. Additional Commercial System Components
60. Installing Commercial Systems
61. Staring, Charging and Testing Commercial Systems
62. Servicing Commercial Systems and Components
63. Servicing Refrigerant Controls, Electric Motors, Hermetic Compressors, Condenser Controls and Refrigerant Lines
64. Constant Volume Air Conditioning Systems
65. Constant Volume/Variable Temperature
66. Multi-Zone Units
67. Pneumatic Control Systems
68. Pneumatic Dampers and Valve Control
69. Electronic Control Systems

70. Computerized Building Management
71. Variable Air Volume System
72. Direct Digital Control Systems (DDC)
73. Variable Air Volume (VAV) Terminal Control (DDC)
74. Energy Management
75. Energy Management-Economizers

Foreman Training 40

1. Introduction to Fireman Work
2. Self-Evaluation
3. Successful Foreman Attributes
4. Managing and Leading Others
5. Project Management
6. Safety Culture
7. Human Relations
8. Professional Development

Total number of RSI hours required for graduation 800

Article V Ratio

The ratio of apprentices to journeypersons shall be:

Ratio #1: Each journeyperson may supervise one (1) apprentice.

2 apprentices to 2 journeypersons

3 apprentices to 3 journeypersons

1 apprentice to 2 journeypersons thereafter

DAS FILE # 00020

Attachment B-4
Training Schedule and Working Conditions

Southern California Sheet Metal JA&TC

Occupation

Occupation: Residential Sheet Metal Worker
O*Net Code: 49-9031.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 4800 on-job-training (OJT) hours, 480 related and supplemental instruction (RSI) hours, and completed within 36 months.

The period of probation shall be reasonable in relation to the full apprenticeship term, with full credit given for such period toward completion of the apprenticeship, and in no event shall exceed the shorter of 25 percent of the length of the program or one year. The period of probation shall be nine (9) months.

Article II Wage Schedule

Public Works Projects:

Wage Schedule for Apprentices in the Building and Construction Industry Employed on Public Works Projects:

For apprentices participating in approved apprenticeship programs in the building and construction industry, the wages and employer payments for employee benefits as defined in 8 C.C.R. 16000 for regular and overtime work while employed on public works projects within the meaning of Labor Code 1720 et seq. shall be the per diem wage rates for apprentices in the apprenticeable occupation as determined by the Director of Industrial Relations in the geographic area of the project.

The program and employers are responsible to verify, update, and pay the apprentice the current or proper prevailing wage rate as posted on the prevailing wage website for the Office of the Director - Research for the occupations listed in the standards for the geographic area of the public works project.

Private Work:

For apprentices in the building and construction industry employed on projects not covered by California Code of Regulations, Title 8, Division 1, Chapter 2, Subchapter 1, Section §208, Subsection (b), the minimum hourly wage package for apprentices while employed on projects not covered by Subsection (b) (Public Works) shall be as set forth below in (1)-(5) or, in the alternative, as set forth in subsection (6):

1) A starting hourly wage package for first period apprentices of not less than 40 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director of Industrial Relations for purposes of Labor Code §1720 et seq., using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
2) If there is no prevailing hourly wage package and wage package progression determined by the Director for journeyperson(s) for the apprenticeable occupation and geographic area, a starting wage rate decided by the sponsoring program in consultation with and subject to the approval of the Chief DAS based on consideration of the minimum starting hourly wage package and wage package progression for apprentices in the most analogous occupations and geographic areas;
3) Where an employer elects to satisfy a portion of the hourly wage package by employer payments for employee benefits as defined in 8 C.C.R. §16000, the payment of such contributions must be verifiable and the cost of the benefit(s) must be reasonably related to the amount of the contribution(s). The employer shall submit its books and records to an audit by the DAS staff, upon request, to verify such payments;
4) Where an employer elects not to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits as defined in 8 CCR §16000, the employer shall pay the entire hourly wage package to the apprentice on the apprentice's paycheck. Where an employer elects to satisfy a portion of the apprentice's hourly wage package by employer payments for employee benefits, the employer shall pay the remainder of the apprentice's hourly wage package to the apprentice in the apprentice's paycheck;
5) The minimum hourly wage package shall increase for each successfully completed period of apprenticeship to a higher percentage of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project. These periodic increases in percentage shall be equal (e.g., 40 percent, 50 percent, 60 percent, etc.) and shall be such that the minimum hourly wage package in the final period of apprenticeship is not less than 80 percent of the prevailing per diem wage package for journeyperson(s) in the apprenticeable occupation and geographic area of the project, as determined by the Director, using the rate effective on the immediately preceding March 1. At least 65 percent of this minimum hourly wage package must be paid to the apprentice as taxable wages;
6) In the alternative, a contractor will be in compliance with this entire subsection (c) if the contractor provides the same total hourly wage package and wage package progression to apprentices employed on private projects as the contractor provides to apprentices employed on public works projects in the same geographic area, and that total hourly wage package is not less than the prevailing per diem apprentice wage package for the apprenticeable occupation and the geographic area of the project.

The apprenticeship program and contractors are responsible to verify, update, and pay the apprentice the current or proper wage rate as calculated from the posted prevailing wage rates on the website for the Office of the Director - Research for the occupations listed in these

standards for the geographic area of the private-work project.

Wage Increases or Upgrade:

Additionally, the apprentice shall have satisfactorily completed 80 hours of related and supplemental instruction for each wage period.

Hours of Work and Working Conditions and Overtime Provision:

Eight hours of labor constitute a day's work. Employment beyond eight hours in any workday or more than six days in any workweek requires the employee to be compensated for the overtime at not less than one and one-half times the employee's regular rate of pay for all hours worked in excess of eight hours, up to and including 12 hours in any workday, and for the first eight hours worked on the seventh consecutive day of work in a workweek; and double the employee's regular rate of pay for all hours worked in excess of 12 hours in any workday and for all hours worked in excess of eight on the seventh consecutive day of work in a workweek. If employers utilize an alternative workweek schedule in accordance with the California Industrial Welfare Commission Orders, the overtime will be determined and paid in accordance with the applicable alternative workweek provisions.

The workday and workweek and all other conditions of employment for apprentices shall conform to all applicable laws and regulations and shall not be greater than for those of a journeyperson.

Overtime shall not be allowed if it will interfere with or impair the training or be detrimental to the health and safety of the apprentice.

Article III Work-Training

1) The employer shall see that all apprentices are under the supervision of a qualified journeyperson or instructor and shall provide the necessary diversified experience and training in order to develop the apprentice into a proficiently skilled worker, as outlined herein.
2) Each apprentice shall be trained in the use of new equipment, materials and processes as they come into use in the occupation.
3) The major categories in which apprentices will be trained (although not necessarily in the order listed) are as follows:

Work Processes	Approximate Hours
A. Fabrication	2800
1. Roof and wall penetration flashings, jacks, and curbs	
2. Architectural – continuous rain gutter, coping, gravel stop, ridge, valley, hip, counter flashing	
3. Scuppers	
4. Welding – air conditioning stands and service platforms	
5. Duct work – plenums and round fittings	

B. Installation 2000

1. Roof and wall penetration flashings, jacks, crickets, and curbs
2. Low voltage thermostat wiring
3. Equipment setting and installing – central heating and air conditioning package, split, hydronic and evaporative cooling systems
4. Exhaust venting – bathroom, kitchen hoods, and dryers
5. Chimney top and roof jack flashings
6. Heating and air conditioning ductwork – sheet metal and flexible
7. Welding, soldering and brazing of refrigerant lines, rain gutter, and downspouts

Total number of Work Process hours required for graduation 4800

Article IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 160 hours per year. Related and supplemental instruction will be provided by Southern California J.A.&T.C and overseen by Los Angeles Unified School District and North Orange County Regional Occupational Program

Time spent in related and supplemental instruction may not be compensated.

Related Instruction Subject/Title	Instructional Hours
Residential/Service	400

1. Qualities of Residential HVAC Installers
2. Residential Safety
3. OSHA and Safety Standards
4. Safety Equipment
5. Soldering, Brazing, Math & Materials
6. Gutter, Leaders, Vents & Flutes
7. HVAC Systems Theory
8. HVAC System Breakdown
9. Goals and Components of an HVAC
10. Air Conditioning Units
11. Heat Pumps
12. Thermostats
13. Heat and Energy Recovery Ventilators
14. Zone Controls
15. High Velocity Systems
16. Design and Installation
17. Types and Efficiencies of Duct Systems
18. Cutting Penetrations
19. Installing Ductwork

Blueprint Reading (Plans and Specifications)	80
Total number of RSI hours required for graduation	480

Article V Ratio

The ratio of apprentices to journeypersons shall be:

Ratio #1: Each journeyperson may supervise one (1) apprentice.

2 apprentices to 2 journeypersons

3 apprentices to 3 journeypersons

1 apprentice to 2 journeypersons thereafter