



Training Proposal for:
State Building & Construction Trades Council of California
Agreement Number: ET16-0906

Panel Meeting of: August 28, 2015

ETP Regional Office: San Francisco Bay Area **Analyst:** D. Woodside

PROJECT PROFILE

Contract Attributes:	Retrainee Apprenticeship Priority Rate	Industry Sector(s):	Construction Green Technology Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
County Served:	Statewide	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Various unions.		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	N/A		

FUNDING DETAIL:

Program Costs	+	Support Costs	=	Total ETP Funding
\$598,320		\$41,400 8%		\$639,720

TRAINING PLAN TABLE

Job No.	Job Description	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Retrainee Journeyman Priority Rate	Commercial Skills, Computer Skills, Business Skills, OSHA 10/30	40	8-200	0	\$564	\$23.78
				Weighted Avg: 24			
2	Retrainee Apprentice Sheet Metal Worker- Local 273	Commercial Skills, OSHA 10	39	8-210	0	\$2,780	\$22.28
				Weighted Avg: 200			
3	Retrainee Apprentice Bricklayer and Allied Crafts Worker-Local 18	Commercial Skills, OSHA 10	50	8-210	0	\$2,780	\$20.55
				Weighted Avg: 200			
4	Retrainee Apprentice Electricians-Local 639	Commercial Skills, OSHA 10	33	8-210	0	\$2,780	\$21.62
				Weighted Avg: 200			
5	Retrainee Apprentice Electricians-Local 180	Commercial Skills, OSHA 10	50	8-210	0	\$2,780	\$21.62
				Weighted Avg: 200			
6	Retrainee Apprentice Electricians-Local 551	Commercial Skills, OSHA 10	50	8-210	0	\$2,780	\$21.62
				Weighted Avg: 200			

Minimum Wage by County: SET/Priority Industry: \$20.55 per hour

Health Benefits: Yes No This is employer share of cost for healthcare premiums – medical, dental, vision.

Used to meet the Post-Retention Wage?: Yes No Maybe

Up to \$0.34 may be used to meet the post-retention wage for Apprentices in Job Number 3.

Wage Range by Occupation

Occupation Titles	Wage Range	Estimated # of Trainees
Journeyman Electrician/Inside Wireman		27
Journeyman Sheet Metal Worker		3
Journeyman Bricklayer and Allied Crafts Worker (Tile Finisher, Marble Finisher, Terrazzo Finisher, Terrazzo Worker, Tile Setter)		10
Apprentice Electrician/Wireman		133
Apprentice Sheet Metal Worker		39
Apprentice Bricklayer and Allied Crafts Worker (Tile Finisher, Marble Finisher, Terrazzo Finisher, Terrazzo Worker, Tile Setter)		50

*Wages vary by union local.

**This is the lowest base wage among the various Journeyman occupations.

***Apprentice wages vary by occupation.

INTRODUCTION

The State Building & Construction Trades Council of California (SBCTC) www.sbctc.org proposes to retrain journeyman and apprentice construction trades workers to support California's energy efficiency goals and Project Labor Agreement (PLA) initiatives.

SBCTC reports that it represents more than 400,000 unionized construction workers in California. It has 175 affiliated local unions from 13 crafts and 22 county and multi-county Building Trades Councils. The SBCTC works closely with the California Apprenticeship Coordinators Association which is the network of joint union-employer training programs or JATCs operating across the state. SBCTC also consults with a wide range of employer organizations representing small businesses, and major construction industry employers based in California. The construction industry to be served under this Agreement is designated as a Priority Industry by the Panel. SBCTC meets ETP eligibility requirements as a trade association.

This will be SBCTC's second ETP Agreement. This project acts as an incubator for smaller apprenticeship programs that do not have the staff capacity to hold an ETP contract. (For example, many of the JATCs listed in this project have just a part-time administrative assistant or none at all.) The eventual goal will be to "graduate" JATCs into individual ETP contracts (graduating includes an evaluation of ETP performance and improvements in the DAS completion rate). Only one JATC from the previous Agreement has graduated.

Seven JATCs participated in SBCTC's previous contract; four successfully completed training and retention. These four programs (San Luis Obispo County JATT; Napa-Solano Counties Electrical Industry ATT; Joint Electrical Industry Training Program Fund for Marin, Sonoma, Lake, and Mendocino Counties; and Tile, Marble and Terrazzo Employees JATC) have requested to participate again in this new proposal along with a new fifth program, Tri-Counties Sheet Metal Workers JAC.

SBCTC targets trades that are influential in helping California's green economy develop, such as electricians who set up solar power systems, sheet metal workers who service more fuel-efficient air systems and bricklayers and allied craft workers who build and retrofit buildings with safe and energy efficient products. Apprentices and journeymen in this project will build, service, and retrofit geothermal power plants, hospitals, residences, public K-12 schools, universities, community colleges, court houses, police stations, power generators, prisons, refineries, wind generation projects, wineries, office buildings and casinos. These workers plan, install, build, repair, monitor and maintain equipment that provides light, heat, communications, water and power.

Participating JATCs, LEAs, and DAS Completion Rates by JATC

Job Number 1 will fund Journeymen training. Job Numbers 2-6 will fund Apprentice training. The geographic area, affiliated union, occupation(s), LEA, and DAS Completion Rate for each of the five JATCs (respectively) are as follows:

Job No. 2:

- Tri-Counties Sheet Metal Workers JAC
- Ventura, Santa Barbara, and San Luis Obispo Counties
- Sheet Metal Workers International Association Local Union No. 273
 - Sheet Metal Worker (Five-year Program)
- Ventura County Office of Education, Regional Occupational Program
- 56.48% (Industry Standard of 68.10%)

Job No. 3:

- Tile, Marble, and Terrazzo Employees JATC
- Los Angeles, Orange, Ventura, Santa Barbara, San Luis Obispo, San Bernardino, Riverside, Inyo, Mono, San Diego, and Imperial Counties
- International Union of Bricklayers & Allied Craftworkers Local No. 18
 - Tile Finisher (Two-year Program)
 - Marble Finisher (Two-year Program)
 - Terrazzo Finisher (Four-year Program)
 - Terrazzo Worker (Three-year Program)
 - Tile Setter (Four-year Program)
 - Bricklayer (Four-year Program)
- Sweetwater Union High School District Division of Adult Education-Montgomery Adult School
- 50.73% (Industry Average of 38.58%)

Job No. 4:

- San Luis Obispo County JATT
- San Luis Obispo County
- IBEW Local No. 639
 - Electrician/Inside Wireman (Five-year Program)
- Los Angeles Unified School District, Division of Adult and Career Education
- 62.86% (Industry Average of 66.31%)

Job No. 5:

- Napa-Solano Counties Electrical Industry ATT
- Napa and Solano Counties
- IBEW Local No. 180
 - Electrician/Inside Wireman (Five-year Program)
- Napa Valley Unified School District, Napa Valley Adult Education
- 74.10% (Industry Average of 66.31%)

Job No. 6:

- Redwood Empire JATC
- Marin, Sonoma, Lake and Mendocino Counties
- IBEW Local No. 551
 - Electrician/Inside Wireman (Five-year Program)
- Santa Rosa Junior College
- 54.33% (Industry Average of 66.31%)

Up to 250 signatory employers will participate in this project; approximately 70% are Small Business. The vast majority of training hours will be dedicated to Apprenticeship (approximately 97% of total funding).

Employer Demand for Training

Participating employers have identified the need for more training so that they can reduce costs and meet complex and stringent quality and safety standards. In addition, in order to successfully bid on public works construction projects, employers must meet the requirement of local governments affected by Project Labor Agreements that require all new public works projects with state funding to use union construction workers. Recently, there have been significant levels of new construction projects planned including:

Southern California

- \$1.6 billion: Port of Los Angeles
- \$125 million: Martin Luther King Medical Center
- \$40 billion: Los Angeles County Metropolitan Transportation Authority
- \$255 million: Southern California International Gateway Project
- \$350 million: Pasadena Unified School District

San Luis Obispo County

- \$356 million: Cal Poly San Luis Obispo
- \$52.5 million: Dalido Ranch
- \$15.5 million: Juvenile Hall expansion

Solano County

- \$34.8 million: Fairfield-Vacaville Train Station Project
- \$348 million: Solano Community College District
- \$100 million: Solano Fairgrounds Redevelopment

Sonoma County

- \$560 million: Pio Pico Energy Center, Wild Horse Geothermal Project, and the Buckeye Geothermal Facility
- \$240 million: Santa Rosa Courthouse
- \$120 million: North Point Corporate Center
- \$250 million: Graton Rancheria parking structures
- \$252 million: Sonoma State
- \$120 million: Westside District Mixed Use Development

Ventura County

- \$194 million: California State Channel Islands
- \$37 million: Las Posas desalting brackish groundwater
- \$500 million: Sakioka Farms Business Park
- \$60 million: Multi-modal Transportation Center

Additionally, statewide, the Governor's Bay Delta Conservation Plan (BDCP), designed to ensure a reliable supply of water during periods of drought, is generating demand for high-skilled construction workers. This project is expected to create more than 155,000 full-time jobs in California.

Apprenticeship Program

The Panel is authorized to fund Apprentice training that does not displace any other source of government funds, or replace an existing apprenticeship program approved by the Division of Apprenticeship Standards (DAS). The Panel adopted the Apprenticeship Training Program as a pilot in March 2012. It is designed to supplement cost of delivery for the Related and Supplemental Instruction (RSI) portion of DAS-approved apprenticeship training.

Apprenticeships are a multi-year training program that results in DAS certification. They are authorized in California under the Shelly-Maloney Apprenticeship Labor Standards Act of 1939. Apprentices commit to training under contract with an apprenticeship program sponsor. They advance through a series of apprenticeship levels as they complete modules of RSI and on-the-job training. Wages are paid for hours worked on the job, in progression with a series of advancements up to the Journeyman level.

Apprentice programs are typically sponsored by a Joint Apprenticeship Training Committee (JATC). A JATC is created through collective bargaining, with an equal number of members appointed by union and management with employer contributions to a training trust fund.

Depending on the type of trade, apprenticeship programs vary in length, as shown in the outline on pages 3-4 of this proposal. They also vary in size, ranging from less than 10 to several hundred apprentices at any given point in time. Several types of trainees are eligible under the Apprenticeship Program: Apprentices (second-year), Journeymen and Pre-Apprentices. First-year Apprentices are not eligible due to the higher drop-out rates.

ETP funding flows through a Multiple Employer Contract (MEC). In this proposal, it will be held by a trade association which serves as an umbrella for multiple JATCs. The employers are not "participants" but are signatories to the various Collective Bargaining Agreements.

RSI is traditionally delivered as class/lab, and ETP does not reimburse CBT delivery for apprenticeship training. The curriculum is developed with input from DAS and a designated Local Educational Agency (LEA) which varies by JATC. Again, the affiliated LEAs are outlined on pages 3-4. The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10, per-apprentice.

For the building trades, it is not customary for workers to be employed for a standard retention period of 90 consecutive days with one employer. In that instance, the Panel may substitute non-consecutive hours worked for retention. This modified retention period must be no less than 500 hours within 272 days with more than one employer. Both the standard and modified retention periods will apply to this proposal.

Because ETP funding cannot displace another source of government funds, the fixed fee rate is reduced by \$5.00 to account for adult education funding appropriated each year for Apprentice training through the California Community College Chancellor's Office and Department of Education. This changes the ETP Priority Industry Rate from \$18.00 to \$13.00 per hour for all Apprentice Job Numbers.

In addition, the Panel adopted a "blended rate" for Journeymen, reflecting the fact that they may be employed by a variety of contractors over the two-year term of an ETP Agreement ranging from large employers to small (≤ 100 employees). This blended rate is \$22 per hour, midway between the Priority Industry standard rate (\$18) and Small Business rate (\$26).

Under the Apprenticeship Training Program, the post-retention wage has been standardized to \$20.55 per hour reflecting the Special Employment Training (SET) wage for Priority Industry. This wage was chosen for ease of administration, recognizing that most Apprentices and all Journeymen exceed the highest ETP wage requirements. However, the actual wages paid are shown in the Training Plan table and contract when they exceed \$20.55.

PROJECT DETAILS

All training outlined in this proposal will be center-based and delivered by JATC instructors who are experienced journeymen. Training will take place at various participating JATC training centers.

Commercial Skills for Journeyman and Apprentices

Training is customized for each trade and will focus on how to install and maintain new kinds of equipment, work with new materials, and comply with complex and rapidly changing energy efficiency standards. Commercial skills training will provide trainees with skills to retrofit current buildings to meet LEED certifications, build secure exterior and interior building components, design virtual buildings, and adjust computerized control systems. Training will cover energy-efficient technologies and products such as green building materials, solar photovoltaic panels,

wind turbine systems, new motor controls, advanced welding skills including Tungsten Inert Gas, Metal Inert Gas and/or Stick Welding, climate energy efficiency and consumption greenhouse gas abatement, solar hot water and water efficiency installation and retrofitting, wastewater treatment systems, green materials testing and audit equipment. This training will help workers hone the skills and knowledge necessary to work in green construction.

All apprenticeship training will reflect the RSI coursework for each specific trade.

Computer Skills - Training for journeymen will include 3-D modeling and other virtual applications used in construction; scheduling and planning software; and AutoCAD applications. Trainees will receive skills to modify blueprints; look up project requirements, build budgets and timelines; design virtual buildings; and adjust computerized control systems.

Business Skills - Training will allow journeymen to coordinate and work in project teams which are becoming more common in large construction and public works projects. Trainees will gain tools to plan, organize and manage projects so that they can complete them efficiently and on time. Training may also include customer service, team-building, problem-solving, decision-making and conflict management skills.

OSHA 10/30 Skills: Training is a series of courses “bundled” by industry sector and occupation. Typically, it is delivered to workers in the building trades. Under this proposal, OSHA 10 will be funded for Apprentices and OSHA 10/30 will be funded for Journeymen. This training is not required as a condition of doing business in California. However, the coursework must be approved by, and the instructors must be certified by Cal-OSHA. Completion of the training results in a certificate that expands employment opportunities. To ensure that each trainee receives certification, ETP will only consider payment earned upon completion of the full 10-hour or 30-hour course. OSHA 10/30 is not included in the 10% limitation on safety training.

Percentage of Training by Type of Training

Journeyman:

- Commercial Skills: 80%
- OSHA 10/30: 10%
- Computer Skills: 5%
- Business Skills: 5%

Apprentice:

- Commercial Skills: 93%
- OSHA 10: 7%

Curriculum Development

All of the participating JATC's are formed pursuant to a collective bargaining agreement and are administered by trustees designated by the participating employers and union locals. Thus, employer representatives who comprise the joint labor-management committees oversee curriculum, the number of trainees, training methods and the day-to-day improvements required for a training program. Examples of data considered when planning course content include:

- 1) Requirements to meet local construction planning/trends
- 2) New requirements for emerging green technologies and practices
- 3) Input from national labor-management apprenticeship committees
- 4) Hiring needs and feedback reported by local union halls and labor representatives

Marketing and Support Costs

SBCTC is requesting 8% in support costs to fund marketing to employers, recruitment of journeymen and apprentices; and to conduct ongoing assessments of employer-specific job requirements. SBCTC will work with the five participating JATCs to ensure that training meets employer and trainee needs throughout the term of the contract. SBCTC staff will promote the training program at its Building Trades Council meetings, statewide WIB meetings, and labor-industry meetings. In addition, email and face-to-face marketing to employers, contractors associations, and local unions will be ongoing.

SBCTC reports that it has produced award-winning videos about apprenticeship training, green construction and general training programs that JATCs can show to their employers, union representatives, and current and potential construction workers. For journeyman training programs, individual JATCs will advertise through direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and websites. Staff recommends the 8% support costs.

Commitment to Training

Employers will continue to make contributions to the participating JATC training trusts for every hour worked by Apprentices and Journeymen. General safety training is provided by the signatory employers in accordance with all pertinent requirements under state and federal law.

RECOMMENDATION

Staff recommends approval of this proposal.

PRIOR PROJECTS

The following table summarizes performance by the SBCTC under an ETP Agreement completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned	
				\$	%
ET13-0906	Statewide	10/01/12– 09/30/14	\$689,246	\$574,872	(83%)

DEVELOPMENT SERVICES

California Labor Federation in Sacramento and Strategy Workplace in Oakland assisted with the development of this proposal at no cost.

ADMINISTRATIVE SERVICES

Strategy Workplace will also perform administrative services in connection with this proposal for a fee not to exceed 13% of payment earned.

TRAINING VENDORS

Each participating JATC will be reimbursed for training costs based on ETP funds earned for the number of trainees, class/lab hours, and employment retention completed by individual trainees.

Exhibit B: Menu Curriculum**Class/Lab Hours**

8-200 Job Number 1

8-210 Job Numbers 2-6

Trainees may receive any of the following:

JOURNEYMAN**COMMERCIAL SKILLS**

Electricians:

Solar Panel Installation

Codeology

- National Electrical Code
- Other Recognized Standards (Installation Changes)
- Plan, Build, and Use
- Related Standards (Mandatory and Permissive Rules)
- Special Occupancies and Equipment
- Arc Flash

Analog/Digital Circuit (AC/DC) Principles

- Math for Electricians
- Ohm's Law
- Generators
- Inductance/Reactance
- Series/Parallel Circuits

Grounding

- Grounding and Bonding
- National Electrical Code Article 100-Definitions and Provisions
- National Electrical Code Article 110-Requirements
- National Electrical Code Article 90-Introduction
- National Electrical Code Article Chapters 1-4
- Significant Changes to National Electric Code

Fire Alarm Systems and Installations

- Definitions and Systems
- Initiating Devices and Notification Systems
- National Electrical Code and Installation Requirements
- Start Up and Check Out Procedures
- National Fire Protection Act, 1972 (NFPA 72)

Fire Life Safety

- National Electrical Code (Relating to Fire Alarms)
- National Electrical Code Article 725
- National Electrical Code Article 760
- NFPA 72

Principles of Electronics

Industrial Motor Control

- Control Relays and Timers

- Jogging and Plugging Controls
- Manual Starters and Magnetic Coils
- Push Buttons, Selector Switches, and Mechanical Devices
- Solid State Electronic Devices
- Variable Frequency Drives

Programmable Logic Control (PLC)

- Developing Ladder Programming
- Introduction to Programmable Equipment
- Programming Programmable Logic Controllers
- Using Timers and Counters in Logic Programs
- Writing a Program

Electrical Design

- 3 and 4-Way Switching
- Design of Electrical Circuits
- Magnetic Motor Control and the Code
- LonWorks and Building Automation
- Transformers and the Code

Voice, Data, and Video

- Audio Distribution
- CCTV Security Surveillance
- Computer Networking
- Fiber Optics
- Telephonic Interconnect

Industry Specific Skills

- Confined Space Entry
- Specialized Tools
- Conduit Bending
- Rigging
- Firestop Installation
- Blueprints and Schematics
- Work Flow and Resources
- Advanced Lighting Controls

Sheet Metal Workers:

- HERS (California Home Energy Rating System Program)
- Energy Auditing: Total Building (Green Training)
- Energy Auditing: Total Heating Ventilation and Air Conditioning (HVAC) Systems (Green Training)
- Ducts Maintenance
- Working with Building Materials
- Upgrading Lead Handling and Asbestos Removal Skills
- Proper Machine and Equipment Set-Up
- Advanced Welding Skills
- Architecture Designs
- Management and Monitoring of Materials

- Testing Materials and Equipment–Proper Set-Up and Use
- Materials and Equipment Testing for Industrial Use
- Understanding Changes to Industry Standards
- Safe Working Practices
- Rigging and Signal
- Lean Construction
- Construction Job Coordination
- Fire/Life HVAC System Building Inspection Training
- California Green Building Code Training

All Trades:

- Energy Audits
- Welding and Burning
- Proper Installation, Use of Testing and Auditing Materials and Equipment (Green Training)
- Understanding New Technologies and Changes to Industry Standards (Green Training)
- Proper Equipment Set-Up (Green Training)
- Safe Working Practices
- Advanced Instrumentation and Motor Controls
- Programmable Logic Controllers
- Advanced Welding
- Architecture Designs and Advanced Plan Reading
- Management and Monitoring of Materials
- Testing Materials and Equipment–Proper Set-Up and Use (Green Training)
- Understanding Changes to Industry Standards (Green Training)

OSHA 10/30 (OSHA CERTIFIED INSTRUCTOR)

- OSHA 10 (requires completion of 10 hours)
- OSHA 30 (requires completion of 30 hours)

COMPUTER SKILLS

- Auto Computer-Aided Design (AutoCAD)
- Scheduling and Planning Jobs
- Automated Systems Applications Scheduling & Planning
- 3-D Modeling - Virtual Construction
- Benchmark Software – Lean Construction

BUSINESS SKILLS

- Teambuilding Skills
- Green Awareness Training and Green Certifications
- Leadership Skills
- Customer Service Skills
- Conflict Resolution
- Problem Solving
- Decision Making Skills

- Inventory Checklist
- Creating Master Plan for Future Improvements
- Advanced Time Management
- Filling Out Work Documents and Reports Accurately
- Project Management
- Creating Project Bids

Class/Lab Hours

8-210 Job Numbers 2-6

APPRENTICE**COMMERCIAL SKILLS**

Electricians:

- AC Refrigeration
- AC Theory
- Blueprints
- Building Automation and Controls
- Codeology: Code and Practices
- Conduits
- Control Diagrams and Drawings
- Circuits
- Digital Electronics, DC Theory and DC/AC Theory
- Distributed Generation
- Electrical Theory and Electrical Code
- Electrical Grounding
- Electrical Motors
- Electrical Safe Work Practices
- Electric Vehicle Infrastructure
- Estimating
- Fire Alarm Systems
- Generators and Transformer Theory
- Grounding and Bonding
- Hazardous Location
- Health Care Systems
- Industrial Blueprints
- Installer/Technician
- Closed Circuit Television
- Local Area Network
- Nurse Call System
- Paging System
- Radio Frequency Communications
- Sound Reinforcement
- Telephony
- Instrumentation
- Lighting Essentials and Protection
- Low Voltage Systems and High Voltage Systems
- Materials, Tools and Wire Methods
- Mechanical and Electric Benders

- Mathematics
- Motor Control
- National Electrical Code
- National Electric Code Grounding
- Over-Current Protection
- Photovoltaic Systems
- Pipe Bending
- Power Quality
- Programmable Logic Controllers
- Rigging
- Security System
- Semiconductor Electronics
- Structured Cabling
- System Sec/Solar or Theory CD/B
- Test Instruments and Applications Manual
- Torque
- Transformers and Transformer Connections
- Arc Flash Protection
- Energy Efficiency
- Fiber Optics
- Lightning Protection
- First Aid/ CPR

Sheet Metal Workers:

Building Trades Service

- Basic Electricity for Sheet Metal Air Conditioning Service
- Advanced Electricity for Sheet Metal Air Conditioning Service
- Air Conditioning, Commercial Systems, Heating
- Commercial Systems, Heat Loads, Piping
- Refrigeration for Sheet Metal Air Conditioning Service
- Properties of Air Distribution for Sheet Metal Air Conditioning Service
- Refrigeration Theory for Sheet Metal Air Conditioning Service
- Sheet Metal Control Systems

Energy Management Test and Balance

- Air Balance Test Equipment Instruments
- Temperature Measurement Instruments & Duct Systems
- Electrical Systems Operation, Controls & Devices
- HVAC Testing & Balancing Procedures
- Air Distribution & Manufacturing Systems
- Systems Installation & Troubleshooting
- Control Systems
- Hazardous Material Recognition for the Test & Air Balance Industry

Building Trades Sheet Metal

- Parallel Line Fittings
- Triangulation Fittings
- Radial Line Layout and Ogee Offsets

- Basics of Architectural Sheet Metal
- Architectural Sheet Metal
- Field Installation
- Welding I: Process and Safety Overview, GMAW
- Welding II: GMAW & FCAW
- HVAC Energy Conservation
- Plans and Specifications
- Submittals and Shop Drawings
- Industrial and Stainless Steel Introduction
- HVAC Air Systems and Duct Design
- Measuring and Sketching
- Fabrication and Shortcuts
- Codes and Standards
- Metal Roofing
- Advanced Welding
- CAD Detailing
- Intermediate CAD
- Advanced Architectural
- Advanced Layout and Fabrication
- Project Management, Takeoffs, Estimates
- Service Basics for Sheet Metal Workers
- Final HVAC Project
- Final Architectural/Industrial Project

Residential HVAC

- Residential Structure and Sheet Metal Work
- Residential Duct Systems
- Residential AC Units
- Piping
- Filters and Filter Housings
- Common Furnace Features
- Furnace Installation
- Installing Thermostats, Flues and Vents

Bricklayers and Allied Craftworkers:

Marble Finisher

- Slurrying & Roughing-in Large Floors
- Grouting with a Grout Bag
- Holding String Lines and Chalk Lines
- Cleaning, Polishing and Sealing
- Waterproofing
- Caulking
- Bull Nosing
- Grouting with Epoxy
- Shower Pans
- Lath & Scratch
- Types of Tile

- Square Footages & Room Setup
- Trim Shapes
- Polishing
- Detail cut & Color Theory
- Repair & Restoration
- Drilling & Anchoring
- Edge Detail
- Use of Tools-Hand & Power
- Material Handling
- Cutting & Grinding
- Fabrication
- Squaring & Straightening
- First Aid/ CPR

Terrazzo Worker

- Blueprint Reading
- Epoxy fill & Repair
- Epoxy Resin & Catalyst
- Filling & Grouting Cement Terrazzo Walls & Floors
- Float Walls for Terrazzo Installation
- General Layout
- Grinding Cement Terrazzo Walls & Base Wet & Dry
- Grinding Epoxy Terrazzo Floors and Walls
- Identification of Sizes & Types of Chips and Strips
- Installation of Strips in Cement Terrazzo and Epoxy Terrazzo
- Journeyman Project
- Lath & Scratch
- Maintenance of Floor & Base Grinder
- Materials/Products and Procedures
- Mixing of Chips for Cement and Epoxy Installation
- NTMA Specifications
- Palladiana
- Polishing & Sealing Cement and Epoxy Terrazzo
- Preparation of Wood Sub floors
- Quality Control
- Skills/Techniques/Procedures
- Slurrying & Roughing in Floors
- Special Epoxy Design
- Square Footages & Material Setup
- Steps- Dry Pack Installation
- Steps- Orientation
- Steps-Cement Terrazzo Installation
- Steps-Epoxy Terrazzo Installation
- Venetian Design Work
- Water Level, Transit and Laser
- First Aid/ CPR

Tile Finisher and Setter

- Blueprint Reading
- Bull Nosing
- Caulking
- Cleaning, Polishing and Sealing
- Commercial Room Layout #1 and #2
- Wet & Dry Grinding Cement Terrazzo Floors, Walls & Base
- Float and Tile a Shower Floor, Cased Window, Ceiling, Circular Column, Dome, Gothic Arch, Semi-Circular Arch, Serpentine Wall, Radius Stairs, Straight Stairs, Straight Kitchen and Backsplash, Tub Splash, Tub/Shower Combination, Elliptical Arch, Buttress Walls and Jamb, Nitch, Oval Bowl Pullman (HORSETOOTH), Radius Countertop and “L” and “U” Shaped Kitchen
- Float Large Walls – Using String lines to Set Strips
- Grouting with a Grout Bag and Epoxy
- Holding String Lines and Chalk Lines
- Laser and Transit Use
- Lath & Scratch
- Set screeds on Large Floor and Float
- Shower Pans
- Slurrying & Roughing-in Large Floors
- Square Footages & Room Setup
- Square Shower Walls and Curb
- String lines and Screeds for Slope
- Technical Aspects of Tile Installations
- Trim Shapes
- Types of Tile
- Use of a Tile Rack
- Water level Rooms for Wall Layout and Floor Elevations
- Waterproofing
- First Aid/ CPR

Bricklayer

- Blueprint Reading
- Building Arches
- Building Codes
- Building Radius Walls
- Construction Sequence
- Cutting and Welding Steel
- Drawing and Sketching Techniques
- Green Construction, Design, Materials, Methods and Techniques, LEED Certification
- Hand Tool and Equipment, Proper Use and Safety
- History of Masonry
- Insulated Concrete Forms
- Interlocking Paving
- Laying Corner Leads

- Laying Headers, Soldiers, and Roloks
- Laying Piers
- Laying Pilasters
- Laying to the Line
- Lintel Beam Construction
- Materials, Identification, Characteristics, and Estimating
- Metrics
- Mixing Mortar
- Pattern Bonds
- Paving
- Proto II Walls
- Read a Rule
- Rebar Identification and Installation
- Scaffold Safety Training
- Segmental Retaining Walls
- Trade Math
- Transit Familiarization
- Waterproofing
- First Aid/ CPR

Marble Finisher

- Basic Bricklaying Fundamentals
- Blueprint Reading
- Building Codes
- Caulking
- Cleaning and Polishing Marble
- Cleaning Masonry
- Construction Sequence
- Cutting and Welding Steel
- Deck Coatings
- Drawing and Sketching Techniques
- Drilling and Cutting Marble to Specific Dimensions
- Epoxy Injection
- Fundamentals of Marble Setting
- Green Construction, Design, Materials, Methods and Techniques, LEED Certification
- Grouting and Caulking Slabs
- Hand Tool and Equipment
- Hand-Set Techniques
- Laying and Cutting Building Units
- Laying and Setting on Footings and Foundations
- Materials, Identification, Characteristics, and Estimating
- Mechanical Anchoring
- Metrics
- Mixing Mortar and Epoxy
- Move and Store, Rig and Hoist Materials
- Patching Marble and Related Materials

- Pinning
- Pointing, Caulking, and cleaning
- Prepare Marble for Setting, Including Anchoring and Plugging
- Rigging
- Scaffold Erection and Safety Training
- Substructure Preparation
- Trade Math
- Tuckpointing
- Waterproofing
- First Aid/ CPR

OSHA 10 (OSHA CERTIFIED INSTRUCTOR)

- OSHA 10 (requires completion of 10 hours)

Note: Reimbursement for Job Number 1 Journeymen retraining is capped at 200 total training hours per trainee regardless of the method of training delivery. Reimbursement for Job Numbers 2-6 Apprenticeship training is capped at 200 total training hours per trainee in Commercial Skills and 10 hours of OSHA10 for a total of 210 hours regardless of the method of training delivery. Safety training cannot exceed 10% of total training hours for any individual trainee. This 10% safety training cap does not apply to Hazardous Materials or OSHA 10/30 training.