



**Training Proposal for:**

**Alameda County Electrical Industry Apprenticeship  
and Training Trust  
Agreement Number: ET16-0908**

**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:	Alameda	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No International Brotherhood of Electrical Workers Local 595		
Turnover Rate:	≤20%		
Managers/Supervisors: (% of total trainees)	N/A		

**FUNDING DETAIL:**

<b>Program Costs</b>	+	<b>Support Costs</b>	=	<b>Total ETP Funding</b>
\$460,880		\$31,860 8%		\$492,740

<b>In-Kind Contribution:</b>	<b>50% of Total ETP Funding Required</b>	<b>Inherent</b>
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**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, Business Skills, Computer Skills, OSHA 10/30	85	8-200	0	\$564	\$50.40
				Weighted Avg: 24			
2	Retrainee Apprentice	Commercial Skills, OSHA 10	160	8-210	0	\$2,780	\$22.68
				Weighted Avg: 200			

**Minimum Wage by County:** SET Statewide Priority Industry of \$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

**Wage Range by Occupation**

Occupation Titles	Wage Range	Estimated # of Trainees
Journeyman Electrician/Inside Wireman		85
Apprentice Electrician/Inside Wireman		160

**INTRODUCTION**

Alameda County Electrical Industry Apprenticeship and Training Trust (Alameda Electrical Trust) ([www.595jatc.org](http://www.595jatc.org)), is a joint labor management organization, founded in 1946 to provide high quality and up-to-date training in electrical inside wiring for Apprentice, Pre-Apprentice and Journeyman members of IBEW Local 595. A Board of Trustees comprised of four labor representatives and four management representatives representing an estimated 346 employers governs the Trust.

In May of 2013, the Trust opened its Zero Net Energy Training Center in San Leandro. The training center is one of only a small number of U.S. Department of Energy–designated “zero net energy” buildings in the nation. This unique, state-of-art site will help electricians prepare for California’s new energy conservation and renewable energy efforts.

The Trust currently serves 192 apprentices and 2,000 journeymen. This is the Trust’s fifth ETP project, and the third within the last five years.

Electricians plan, install, test, repair and maintain electrical equipment that provide light, heat, communications, and power. It is the Trust’s mission to ensure workers have the most advanced technology skills training possible. In addition, the Trust provides training, which helps decrease the frequency of workplace accidents and injury. To be competitive in today’s green construction industry, Electricians require the skills to install green electrical systems as well as

meet Title 24 requirements. Title 24 mandates the use of automated lighting control devices and automatic plug load circuit controls.

Because of new regulations, many contractors in the construction industry are requiring multiple certifications for both Apprentices and Journeymen. The Trust has to ensure that additional instructors are certified to deliver more frequent and various types of certification classes. In addition, many of the certification classes require new classroom training equipment. Without support from ETP funding, these new costs would mean that the Trust would hold fewer classes and serve fewer workers. ETP funding will help expand its classes to meet employer demand for certified workers, and to train the growing number of newly registered Apprentices.

### **Employer Demand for Training**

As Journeyman electricians retire and new work develops in Alameda County, training will ensure that there are enough qualified Electricians to meet the needs of employers in Alameda County. The trust will supply Electricians to Oakland Army Base, several hospitals under construction (Kaiser Hospitals in San Leandro and Oakland, Alta Bates and Highland Hospital in Oakland), the BART connector to the Oakland Airport, the BART extension from Fremont to Warm Springs, school projects at the University of California Berkeley campus, and the Alameda Naval Station and Brooklyn Basin projects in Oakland. In addition, there are numerous commercial construction projects.

The Alameda Electrical Trust is requesting funding for Apprentice and Journeyman training. Apprentices will receive training on the Related and Supplemental Instruction (RSI) curriculum which is required to become journeymen electricians. Training for journeymen will expand green training topics that will meet new state energy efficiency goals and employer-driven certification classes.

### **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.

RSI is 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) (in this case Chabot College). The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10.

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.

To ensure ETP does not displace Montoya Funds, Apprenticeship reimbursement is reduced by \$5.00, reducing the priority industry rate from \$18 to \$13 per hour. ETP wage for Apprentices will be \$20.55 per hour. This is the Special Employment Training Statewide for 2015 as modified for priority industries, which is being used for all apprentice occupation, for ease of administration. However, the actual wages paid are shown in the Training Plan Table and contract when they exceed \$20.55.

## **DAS Completion Rates**

The completion rate for this DAS-approved program for 2009-2013 is 79.34% and exceeds the industry completion percentage of 66.13%. This meets ETP standards.

## **PROJECT DETAILS**

### **Training Plan**

All class/lab training is center-based and will be delivered at the Trust's training center in San Leandro.

### **Journeyman Training**

**Commercial Skills (80%)** –Journeyman training will bring skills and knowledge up-to-date. ETP funds will help to expand the Journeyman upgrade program, including the addition of new green training topics that will help the employers meet new state energy efficiency goals and employer-driven certification classes, such as passing Green audits, NFPA-70 E (National Fire Protection Association), Arc Flash and Building Automation Lighting and Plug Load Systems.

**Business Skills (5%)** - Training will enable Electricians to use more collaborative bidding and project development practices; meet budgets; interact with other types of construction workers and implement green solutions in traditional work environments. Further, training will give trainees the latest tools to plan, organize and manage their construction projects so that they can complete projects efficiently and on time.

**Computer Skills (5%)** - Training will include scheduling, planning and modeling software. AutoCAD and Job Tracking applications will provide trainees with the tools to modify blueprints, look up project requirements, build budgets and timelines, design virtual buildings, and adjust computerized control systems.

**OSHA 10/30 (10%)** - OSHA 10/30 training is typically delivered to workers in the building trades. 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. The vendor must also have a certified instructor present to confirm attendance.

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 or 30-hour course.

### **Apprenticeship Training**

**Commercial Skills (90%)** Apprentices will learn to install, maintain and repair various types of electrical and electronic equipment in commercial, industrial and residential establishments. Training will also include how to install, connect and test: electrical wiring systems for lighting, heating, air conditioning and communications in any building or structure. Wireman Apprentices complete a five-year training program.

**OSHA 10 (10%)** This training provides an overview of occupational safety and health so that apprentices are more knowledgeable about workplace hazards and stringent safety standards in the electrical industry.

## **Curriculum Development**

Alameda Electrical Trust uses the National Joint Apprenticeship and Training Committee's Curriculum for its apprenticeship program, which was developed for the exclusive use of IBEW-NECA JATC'S. The Journeymen curriculum meets the needs of the participating employers because it is employer-driven and based on feedback directly from employers. In addition, the curriculum is reviewed by union representatives of the JATC, and revisions and updates are made based on workplace performance, requests of customers, the needs of the local electrical industry, as well as course evaluations completed by all trainees.

## **Trainer Qualifications**

All trainers are former or current members of the trade and experts in their specific subject matter. In addition, all instructors meet standards set by the LEA.

## **Commitment to Training**

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

## **Marketing and Support Costs**

Alameda Electrical Trust requests and staff recommends 8% in support costs to fund its staff for recruiting and qualifying additional participating employers for this program. There are six staff people assisting with the marketing, recruitment and needs assessments.

The Trust's marketing efforts include direct mailings, informational flyers, personal contacts, telephone calls, public service announcements, emails, and the web. Application announcements are disseminated to local, state and federal agencies as well as to local high schools, community colleges, and community-based organizations. Staff also participate in local job fairs. While many participating employers have already been recruited, additional recruitment and assessment activities with employers must occur to support apprenticeship and journeymen training. The Trust agrees to cover any additional costs which exceed the ETP support costs funding.

## **Tuition Reimbursement**

In accordance with Title 22, CCR, Section 4412.1, Alameda Electrical Trust represents that students enrolled in the ETP-funded program will not be charged tuition, fees, or any other costs associated with training. The representation will be made a condition of the Agreement.

## **RECOMMENDATION**

Staff recommends approval of this proposal.

## **CURRENT CONTRACT PERFORMANCE**

The following table summarizes performance by Alameda Electrical Trust under its current ETP Agreement:

Agreement No.	Approved Amount	Term	No. Trainees Estimated	No. Completed Training	No. Retained
ET14-0912	\$358,107	3/3/14 – 3/2/16	Apprentice-107 Journeymen-61	Apprentice-91 Journeymen-73	0

Based on the ETP tracking system, 34,169 reimbursable hours have been tracked which equates to 71% of the Agreement amount. Contractor anticipates 100% of the hours will be entered by the date of the August Panel meeting. The Contractor projects 100% earnings when the closeout invoice is processed by ETP.

### **PRIOR PROJECTS**

The following table summarizes performance by the Alameda Electrical JATC under ETP Agreements completed within the last five years:

Agreement No.	Location (City)	Term	Approved Amount	Payment Earned \$ %
ET13-0914	Alameda	10/22/12 – 10/21/14	\$354,796	\$320,451 (90%)

### **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**

N/A

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

8-200 (Job Number 1)

**COMMERCIAL SKILLS**

- 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 Bounding
  - 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
  - Solar Panel Installation
  - Solar Photovoltaics
  - Building Automation Systems
  - Confined Space Entry
  - Specialized Tools
  - Conduit Bending
  - Rigging and Lifting
  - Firestop Installation
  - Blueprints and Schematics
  - Work Flow and Resources
  - Proper Installation and 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
  - 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)
  
- California Advanced Lighting Control Program (CALCP)
  - Advanced Lighting Control Systems

- Lighting Control Strategies
  - Line Voltage Switching Controls
  - Low Voltage Switching Control
  - Dimming Controls
  - Occupancy Sensors
  - Photosensors
- CALCTP Acceptance Testing
  - Electric Vehicle Infrastructure Training Program (EVITP)

### **BUSINESS SKILLS**

- Teambuilding Skills
- Green Awareness Training and Green Certifications
- Leadership Skills
- Customer Service Skills
- Conflict Resolution
- Problem Solving
- Decision Making Skills
- Inventory Checklist
- Advanced Time Management
- Filling Out Work Documents and Reports Accurately
- Project Management
- Creating Project Bids

### **COMPUTER SKILLS**

- Auto Computer-Aided Design (AutoCAD)
- Job Tracking System
- Scheduling & Planning Jobs

### **OSHA 10/30 (OSHA CERTIFIED INSTRUCTOR)**

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

## **APPRENTICE**

### **Class/Lab Hours**

8-210 (Job Number 2)

### **COMMERCIAL SKILLS**

- Safety
  - General Job-Site Safety Awareness
  - First Aid/CPR Certification
  - Emergency Procedures
  - Compliance with OSHA, NFPA and EPA Regulations
  - Substance Abuse Awareness
- Tools, Materials and Handling
  - Proper Care and Use of Hand and Power Tools
  - Proper Rigging Methods
  - Proper Digging Techniques
  - Proper Use of Motorized Equipment; Platform Lifts, Fork-Lifts and Bucket Trucks

- Proper Material Lifting and Handling
- Math
  - Appropriate Mathematical Calculations to Solve for Related Problems
- Electrical Theory
  - Basic Electro-Magnetic Principals
  - Ohm's Law
  - AC/DC Theory
  - Series, Parallel and Combination Circuits
  - Characteristics of Circuits; Voltage, Current, Power, Resistance, Impedance, Capacitance and Reactance
  - Theory of Superposition and Solving for Multiple Voltage-Sourced Circuits
  - Operation and Characteristics of Three-Wire Systems
  - Operation and Characteristics of Three-Phase Systems
  - Use of Electronics in the Electrical Industry
  - Code Requirements
  - National Electrical Code and Local Codes
- Conductors
  - General Characteristics
  - Conductor Installation Codes and Techniques
  - Methods for Selecting Proper Size and Type of Conductors
- Conduit and Raceways
  - Terms Associated with Conduits and Raceways
  - Procedures for Laying Out Various Types of Bends
  - Procedures for Making Proper Bends when Fabricating Conduits
  - Conduit Support Systems Recognized by Code
- First Aid/CPR
- Lighting Systems
  - Function, Operation and Characteristics of Various Lighting Systems
  - Lighting Distribution and Layout
- Installation and Connection of Fixtures
  - Over-Current Devices
  - Function, Operation and Characteristics of Over-Current Protection Devices
  - NEC Requirements for Over-Current Protection Devices
  - NEC Requirements for Ground-Fault and Arc-Fault Protection

- Grounding Systems
  - Functions, Operation and Characteristics of Grounding Systems
  - Sizing, Layout and Installation of Grounding Systems
  - Insulation and Isolation
  - Proper Grounding and Bonding techniques
  - Special Circumstances
- Services and Distribution Systems
  - Function, Operation and Requirements for Various Panel Boards and Switch Gear
  - Grounding Requirements
  - Code Requirements
- Prints and Specifications
  - Creation of Blueprints Plans and Specification
  - Use of Blueprints, Plans and Specification
  - Recognizing Information Contained within Blueprints
- Motors, Motor Controllers and Process Controllers
  - Function, Operation and Characteristics of Motors (AC, DC, Dual-Voltage)
  - Proper Motor Installations
  - Motor Controllers, Control Circuits and Control Devices
  - Control Transformers, Switches and Relays
  - Instrumentation, Process Control Systems and Devices
- Generation and Power Supplies
  - Principles of Generating Electricity
  - Principles of Alternative Energy Generating Systems
  - Installation and Maintenance of Uninterruptible Power Supplies
  - Installation and Maintenance of Emergency Battery Systems
- Transformers
  - Function, Operation and Characteristics of transformers
  - Selection and Installation of Transformer Types
  - Transformer Grounding Techniques
  - Harmonics and Power Quality
- Workplace Development
  - Orientation to Organization and Structures
  - Working Well with Others
  - Financial Skills
- Electrical Testing
  - Steps Used for Various Testing Processes
  - Proper Selection and Use of Test Meters
  - Utilizing the Results of Testing Procedures

- Specialty Systems
  - Fire Alarms
  - Security Systems
  
- CALCTP
  - Advanced Lighting Control Systems
  - Lighting Control Strategies
  - Line Voltage Switching Controls
  - Low Voltage Switching Control
  - Dimming Controls
  - Occupancy Sensors
  - Photosensors
  
- Electric Vehicle Infrastructure Training Program
  
- OSHA 10 (OSHA CERTIFIED INSTRUCTOR)**
- OSHA 10 (requires completion of 10 hours)

Safety training cannot exceed 10% of total training hours for any individual trainee.  
This 10% safety training cap does not apply to OSHA 10/30 training.

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 Number 2 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.