



**Training Proposal for:**

**Northern California Construction Inspectors Joint Apprenticeship Committee**

**Agreement Number: ET17-0907**

**Panel Meeting of:** September 23, 2016

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

**PROJECT PROFILE**

Contract Attributes:	Retrainee Priority Rate Apprenticeship Veterans Pre-Apprentice	Industry Sector:	Construction  Priority Industry: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Counties Served:	46 Northern California Counties	Repeat Contractor:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Union(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No International Union of Operating Engineers Local No. 3		
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>
\$263,600		\$18,220 8%		\$281,820

In-Kind Contribution:	50% of Total ETP Funding Required	Inherent
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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	Pre-Apprentice	Commercial Skills	40	8-200	0	\$3,764	\$22.75
				Weighted Avg: 160			
2	Apprentice	Commercial Skills	67	8-200	0	\$1,112	\$24.83
				Weighted Avg: 80			
3	Journeyman	Commercial Skills	65	8-200	0	\$564	\$41.60
				Weighted Avg: 24			
4	Apprentice Veteran	Commercial Skills	13	8-200	0	\$1,112	\$24.83
				Weighted Avg: 80			
5	Journeyman Veteran	Commercial Skills	10	8-200	0	\$564	\$41.60
				Weighted Avg: 24			

**Minimum Wage by County:** \$21.28 per hour Statewide (Priority Industry)

**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

Although health benefits are provided, they are not being used to meet the Post-Retention Wage.

**Wage Range by Occupation**

Occupation Titles	Wage Range	Estimated # of Trainees
Pre-Apprentice Construction Inspector		40
Apprentice Construction Inspector		67
Journeyman Construction Inspector		65
Veteran Apprentice Construction Inspector		13
Veteran Journeyman Construction Inspector		10

**INTRODUCTION**

The Northern California Construction Inspectors Joint Apprenticeship Committee (NCCIJAC) <http://teapprenticeship.org/inspector/> is a joint labor-management committee comprised of representatives from the inspection and testing industry through its trade association, the Council of Engineer and Laboratory Employers (CELE); and labor, which is represented on the JAC by the Operating Engineers (IUOE) Local 3. The JAC was established in 2005, and the current apprenticeship standards were enacted in 2012. Training will be conducted at the Operating Engineers’ Rancho Murieta training center in Sacramento County, and satellite classrooms as needed.

NCCIJAC provides training for construction inspectors employed by third party inspection and testing contractors (employers) in 46 Northern California Counties.

Construction Inspectors ensure the structural integrity of commercial and industrial buildings, roads, and bridges and perform four main tasks: (1) Monitor materials and workmanship on the job site; (2) Assure that relevant codes and approved plans are followed; (3) Perform tests and job related duties required to carry out quality inspections; and (4) Communicate and work closely with building contractors, engineers, and city and county building departments.

### **Employer Demand**

There is an increasing need for more skilled, experienced, and credentialed inspectors at all levels. Inspections must be thorough, fair, and cost effective. Well-trained inspectors are key to structural integrity and safety of construction projects. To win contracts and maintain employment levels, employers must have highly skilled and certificated workers.

NCCIJAC's goals are to:

- Provide employers with entry-level workers through its Pre-apprenticeship program;
- Train more Apprentices to be ready to work at a high skill level because of expanding work opportunities and to replace retiring journey-level workers. (The number of Apprentices has increased from 80 to 136 in the last two years.)
- Meet demand for a growing sector that are looking for journeymen with skills in emerging technologies that resulted from research/development of new building materials and processes.

This is the second ETP Agreement between ETP and NCCIJAC. However, this is the first time Veterans have been included as a discrete cohort of Apprentice and Journeyman trainees.

The JAC is requesting funding because all training has been delivered under its first Agreement. The additional funding is driven by the demand of employers for pre-apprentices, apprentices and journeymen Construction Inspectors in Northern California. The JAC needs to train more individuals to meet employer demand. Panel funding will assist the JAC to provide consistent, high-quality training to a growing population of construction inspectors.

### **Apprenticeship Pilot**

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 DAS. ETP funding is designed to supplement the cost of delivery for the Related and Supplemental Instruction (RSI) portion of DAS-approved apprenticeship training. Depending on the type of trade, apprenticeship programs vary in length. In this case, the program is five years.

Apprentice programs are typically sponsored by a Joint Apprenticeship Training Committee (JATC). A JATC or in this case, a JAC, is created through collective bargaining, with an equal number of members appointed by union and management with employer contributions to a training trust fund. The employers are not "participants" but are signatories to the Collective Bargaining Agreement.

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 (in this case, it is the San Joaquin County Office of Education/ROC).

The Apprenticeship Program allows reimbursement for up to 200 hours of RSI plus OSHA10, per-apprentice. (Pre-apprentices and Journeymen are capped at 200 hours.)

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 Pilot reimbursement is reduced by \$5.00, reducing the priority industry rate from \$18.00 to \$13.00 per hour. 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 contract ranging from large employers, to small (<100 employees). This is \$22 per hour, midway between the Priority Industry standard rate (\$18) and Small Business rate (\$26). [Note: This "blended rate" has been extended to Pre-Apprentices, for ease of administration.]

The ETP wage for Apprentices will be the SET Statewide rate as modified for priority industries (\$21.28 per hour). The actual wages paid are shown in the Training Plan Table and contract when they exceed \$21.28, for Pre-Apprentices, Apprentices and Journeymen. For Job Numbers 2 and 4, ETP funding will only apply to apprentices in Year 2+ to ensure commitment.

## **PROJECT DETAILS**

All trainers employed by the NCCIJAC are qualified construction inspectors with extensive work and training experience.

### **Pre-Apprentice – Job Number 1**

Completing the Pre-Apprentice program is a condition of entry into the Construction Inspector apprenticeship program. The Pre-Apprentice program is at least 160 hours of full-time class/lab training, scheduled twice a year. As a condition of ETP funding, Pre-apprentice trainees must be registered as Apprentices (Year 1) in order to meet retention.

**Commercial Skills (100%)** - Training will be provided in concrete field-testing and inspection, radiation safety and use of nuclear gauges, plan reading, and spray-applied fireproofing along with skills related to the reports, materials, and job site protocol for a construction inspector.

### **Apprentice – Job Numbers 2 and 4**

**Commercial Skills (100%)** - Training will be provided in structural steel and welding inspection, structural masonry inspection, soils and asphalt testing, and pre-stressed and reinforced concrete inspection. The Apprenticeship program for Construction Inspectors is five-years in length due to the critical skills required and the complexity of testing and inspection procedures, tools, equipment, and materials. Apprentices receive 80 hours of class/lab training every year.

### **Journeymen – Job Numbers 3 and 5**

#### **Commercial Skills (100%)**

The focus of journeymen training will be certification training in demand by area employers. For example, Construction Inspectors are often required to obtain more specialized certifications to

become “special” inspectors. Special inspection is the monitoring of the materials and workmanship critical to the integrity of building structures to ensure that plans and specifications are followed and codes and ordinances are observed. The special inspection process is in addition to inspections conducted by the municipal building inspector and by the design professionals responsible for a particular job. Special inspectors provide continuous or periodic inspection and testing, depending on specific job types and circumstances. Skills to be provided in this training program include applicable field applications, quality assurance and control, and techniques for roller compacted concrete, shotcrete, self-consolidating, and high-strength concrete.

### **Curriculum Development**

Industry needs are determined by the JAC and the employer association which provides feedback on industry trends and new and evolving certification requirements. NCCIJAC also works with employers to perform assessments of employer-specific job requirements and collect feedback from labor and management teams that administer the program.

The JAC conducts assessments at the conclusion of each class. Trainees then take the certification tests on which they have been trained, and their passing rate provides the JAC with training efficacy data. In addition, trainees provide feedback through their union representatives. Likewise, employers may provide feedback directly to the training center on skills needed in their business and the effectiveness of the JAC in meeting their needs.

### **Veteran Apprentice**

The Veteran training curriculum will be the same as the Apprentice and Journeymen training outlined above. These trainees are in separate Job Numbers to better track performance toward the goal of improved outreach for Veterans. Under the NCCIJAC, veterans get extra points in the rankings for admission into the apprentice program. The JAC works with Helmets to Hardhats and the veteran representatives in various One-Stop Centers to recruit veteran applicants.

### **Impact/Outcome**

Depending on areas of specialization, trainees may earn one or more of these certifications:

- American Concrete Institute Field Testing Technician
- International Code Council Spray Applied Fire Proofing Special Inspector
- American Concrete Institute Lab Technician
- American Concrete Institute Base Aggregate Technician
- International Code Council Special Inspector
- International Code Council Reinforced Concrete
- International Code Council Structural Steel Bolt and Weld
- International Code Council Reinforced Masonry
- International Code Council Pre-Stressed Concrete
- International Code Council Commercial Building Inspector
- International Code Council Soils Special Inspector
- Nuclear Gauge Safety

### **Commitment to Training**

The JAC represents that signatory employers will continue to pay into the Trust for Journeyman, Apprentice, and Pre-Apprentice training. In addition, employers must provide structured, on-the-job training for apprentices that meets DAS standards. Thus, ETP training funds supplement

and do not displace employer contributions to training. Safety training is provided by the participating employers in accordance with all requirements under state and federal law.

### **Marketing and Support Costs**

NCCIJAC requests 8% support costs to assist in Pre-Apprentice, Apprentice, and Journeymen trainee recruitment, employer outreach, and assessment of employer-specific job requirements. Assessments and recruitment will take place throughout the duration of the Agreement. Four staff members will assist with training coordination, including but not limited to marketing, recruitment, needs assessments, and scheduling.

All training programs are marketed through the union and employer association websites, in addition to mailings of newsletters, emails, personal contacts, telephone calls, and advertisements via various industry websites. The JAC will disseminate class information throughout the year to all members within its jurisdiction. ETP staff recommends the 8% in support costs.

### **RECOMMENDATION**

Staff recommends approval of this proposal.

### **ACTIVE PROJECTS**

The following table summarizes performance by NCCIJAC under an active ETP Agreement:

Agreement No.	Approved Amount	Term	No. Trainees (Estimated)	No. Completed Training	No. Retained
ET15-0900	\$239,520	07/07/2014-07/06/2016	120	144	57

Based on ETP Systems, 14,952 reimbursable hours had been tracked as of July 27, 2016 which is sufficient to support earnings of \$250,150 (over 100% of the approved amount). The Contractor projects final earnings of 100% based on training completed in July 2016. Final invoices have not been received.

### **DEVELOPMENT SERVICES**

Steve Duscha Advisories in Sacramento assisted with development for a flat fee of \$10,000.

### **ADMINISTRATIVE SERVICES**

Steve Duscha Advisories will also perform administration services for a fee not to exceed 12.2% of payment earned.

### **TRAINING VENDORS**

N/A

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

8-200 (Job Number 1) Trainees may receive any of the following:

**Pre-Apprentice****COMMERCIAL SKILLS****Introduction to Concrete Inspection**

- Fundamentals of concrete
- Fresh concrete
- Strength and durability of concrete
- Volume changes and other properties of concrete
- Cracks and blemishes in concrete
- Portland cement, aggregates, water and admixtures in concrete
- Batching and mixing concrete
- Hot and cold weather concreting
- Lightweight and heavyweight concrete

**Concrete field-testing**

- Temperature of freshly mixed concrete
- Sampling of freshly mixed concrete
- Slump of hydraulic cement concrete
- Unit weight, yield and air content of concrete
- Air content of freshly mixed concrete by pressure method
- Air content of freshly mixed concrete by volumetric method
- Making and curing concrete test specimens in the field

**Radiation safety and use of nuclear gauges**

- Principles of radiation safety and health physics
- Principles of nuclear physics related to moisture and density measurements
- Licensing and compliance with regulatory requirements
- Transportation and shipping
- Field service and maintenance
- Gauge operation and field practice

**Introduction to Plan Reading**

- Design-construction process
- Plana views, elevations and sections
- Isometric sketches
- Architects scale and plan scale
- Plane lines, symbols and reference marks for coordinating drawings
- Orienting sections, details and elevations to other plans
- Common structural steel shapes, reinforcing steel and their designations
- Indexes and keys on commercial construction drawings
- Grid systems to locate columns and piers
- Foundation plans, structural details and sections

**Spray Applied Fireproofing**

- Writing reports
- Interpreting plans
- Verifying materials used are type specified
- Preparation of substrates
- Identify structural elements to be fireproofed
- Minimum required coverage and thickness of fireproofing
- Sampling and testing
- Job site protocol

**Class/Lab Hours**

8-200 (Job Numbers 2 and 4) Trainees may receive any of the following:

**Apprentice****COMMERCIAL SKILLS****Structural steel and welding inspection**

- Code and duties of inspector
- Using code books
- Correlation of codes to plans and specifications
- Code as applied to structural steel and welding
- Plan reading skills applied to structural steel and welding inspection
- Sheet steel codes
- Material sampling, testing and verification
- Plan reading skills applied to rebar welding
- Job safety
- Welding qualification requirements
- Weld types and locations
- Weld joint preparation and fit up
- Welding procedures and processes
- Welding equipment calibration
- Inspect of weld repairs
- Weld quality and tolerances
- High strength bolting
- Report writing
- Job site protocol
- Conflict resolution on the job site

**Structural masonry inspection**

- Code and duties of an inspector
- Code as it applies to structural masonry
- Plan reading skills applied to structural masonry
- Reinforcement, quality, tolerances, clearances, placement, spacing and quantity of reinforcing steel
- Verification of fabrication details and lap splices
- Masonry placement, substrate condition, mortar joints
- Masonry unit placement, type, quality, size, spacing and location of embedded items
- Weldment inspection
- Location and preparation of construction joints and protection of masonry from temperature extremes and adverse weather conditions

- Masonry quality
- Verification of materials, mixing of mortar and grout, time limits for placement and storage
- Masonry unit prism strength
- Types and frequency of material strength tests
- Grout placement, inspection of grout spaces
- Provision of cleanouts, methods of conveying and depositing grout
- Prisms, grout and mortar samples
- Preconstruction meetings to review plans and specifications
- Report writing
- Job site protocol
- Conflict resolution on the job site

#### Soils and asphalt testing and inspection

- Code and duties of an inspector
- Field identification of soils
- Safety on the job site
- Insuring properly prepared and weighed samples
- Methods of moisture determination
- Maximum density tests
- Sand cone testing
- Nuclear density testing
- Sieve analysis/grading
- Caltrans concrete sampling and testing standards
- Report writing
- Job site protocol

#### Prestressed concrete inspection

- Code and duties of an inspector
- Code as it applies to pre-stressed concrete
- Concrete quality
- Mix designs, water added, consistency, workability
- Sampling and field-testing
- Storage, protection and transportation of specimens
- Concrete placement, protection and curing
- Concrete conveying, depositing, consolidation and temperature extremes
- Concrete reinforcement, type, grade, size and fabrication
- Conformity with plans
- Placement of reinforcement, tolerances, supports, laps and verification of welds
- Tendons: type, grade, size and fabrication
- Placement of tendons, tolerances, supports, laps, profile
- Supplemental reinforcement, mechanical connections, pre-stressed rock and soil anchors
- Formwork, joints and embeds
- Pre-stressing and post-tensioning
- Verification of proper concrete strength
- Equipment calibration, stressing/tensioning sequences
- Jacking forces and acceptable elongations
- Grouting, proper sealing and protection of tendons and anchorages

- Recordkeeping
- Pre-construction meetings
- Report writing
- Job site protocol
- Conflict resolutions on the job site

#### Reinforced Concrete Inspection

- Code and duties of an inspector
- Code as it applies to concrete inspection
- Reinforcing steel
- Correlation of codes to plans and specifications
- Verifying steel mill test reports for mill markings and test data
- Checking steel mill testing against project specifications
- Sampling reinforced materials
- Checking reinforced steel for grade, size, spacing, clearances and splices
- Purpose and location of reinforcing steel in structural concrete elements
- Shotcrete inspection, placement and sampling
- Checking mix designs
- Correlating testing requirements with project specifications
- Report writing
- Job site protocol
- Conflict resolution on the job site

#### Class/Lab Hours

8-200 (Job Numbers 3 and 5)

Trainees may receive any of the following:

#### Journeyman

#### COMMERCIAL SKILLS

- Administration of building obstruction codes and standards
- Building construction
- Customer service for an inspector
- Emerging technologies in concrete
- Field applications
- High strength concrete
- Identifying and differentiating new materials
- Inspection for the design professional
- Interpreting specifications for new materials
- Quality assurance
- Research and development in concrete materials
- Roller compacted concrete
- Self-consolidating concrete
- Shotcrete
- Specialty building products
- Technical content of building codes and standards

Note: Reimbursement for retraining is capped at 200 total hours per-trainee, regardless of method of delivery.