Division of Apprenticeship Standards (DAS)

Apprenticeship Program Summary Sheet

To: Adele Burnes, Chief
From: Miguel Silva
CC: Program Planning and Review
Date: July 16, 2025

Program Name: Rail Operations: Maintenance-of-Way Career Pathway
Industry: Transportation
DAS File No.: 101322
Grant Awardee: ☐ No ☒ Yes **CAI 2022**

Actions:

☒ 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 Organizations Representing Any of the Apprentices:

The Amalgamated Transit Union, Local 1277
1744 N. Main Street, Los Angeles, CA 90031

Request for Approval under Labor Code 3075:

Rail Operations: Maintenance-of-Way Career Pathway is not intended to train in the building and construction trades and is not eligible 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 not train or dispatch apprentices in the building and construction trades or firefighters occupations.

Comments:

The Rail Operations Maintenance of Way (MOW) Career Pathway is an apprenticeship program developed by Los Angeles County Metropolitan Transportation Authority (METRO) in partnership with Cerritos College, which serves as the Local Education Agency (LEA). This program offers individuals interested in the transportation industry the chance to gain hands-on experience with mechanical systems through field-based training and the use of advanced technologies. Classroom instruction and lab sessions complement the hands-on training,

enhancing participants' skills and abilities to perform essential job functions. The role requires physical effort to ensure a safe working environment.

The Track Inspector, Traction Power Inspector, and Signal Inspector programs include extensive field training, where apprentices work alongside experienced employees. Participants will learn basic and advanced track maintenance and safety principles, ensuring they are fully trained to meet industry safety codes and regulations.

Rail Operations: Maintenance-of-Way Career Pathway and The Amalgamated Transit Union, Local 1277 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:

- Track Inspector O*Net: 47-4061.00
  Professional Worker Wage: $55.04 per hour
  Proposed Apprentice Wage: $48.53 per hour
  Proposed No. of Apprentices: 12

- Traction Power Inspector O*Net: 53-4099.00
  Professional Worker Wage: $66.76 per hour
  Proposed Apprentice Wage: $47.87 per hour
  Proposed No. of Apprentices: 12

- Signal Inspector O*Net: 49-9097.00
  Professional Worker Wage: $59.34 per hour
  Proposed Apprentice Wage: $52.51 per hour
  Proposed No. of Apprentices: 12

Proposed Employers:

- Los Angeles County Metropolitan Transportation Authority (METRO) LACMTA/Mail Stop: 64-02-01590, 320 South Santa Fe Avenue, Los Angeles, CA 90013

DAS FILE # 101322

Rail Operations: Maintenance-of-Way Career Pathway Program Standards

Los Angeles County Metropolitan Transportation Authority
1 Gateway Plaza, Los Angeles, CA 90012
(213) 922-2260
ColstonM@metro.net / https://www.metro.net/

Table of Contents

Article I Jurisdiction

These standards shall apply to the employer signatory hereto and to all apprentice agreements hereunder.

Area Covered by Standards: All CA Counties

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

Occupation	O*Net Code	Attachment
Track Inspector	47-4061.00	B-1
Traction Power Inspector	53-4099.00	B-2
Signal Inspector	49-9097.00	B-3

Article IV Responsibilities of Program Sponsor

The responsibilities of the apprenticeship committee shall be to:

1) supervise the administration and enforcement of these standards;
2) adopt such rules and regulations as are necessary to govern the program provided that the rules and regulations do not conflict with these standards and provide a copy of said rules and regulations to each apprentice;
3) make periodic evaluations of each apprentices on-the-job training and related and supplemental instruction;
4) provide reasonably continuous employment to all apprentices in its employ;
5) ensure safe work site facilities, skilled workers as trainers at the work site, and safe equipment sufficient to train apprentices;
6) determine the qualifications of apprentice applicants and ensure fair and impartial treatment of applicants for apprenticeship selected through uniform selection procedures;
7) file a signed copy, written or electronic, of each apprentice agreement with the Division of Apprenticeship Standards, within 30 days of execution, with copies to all parties to the agreement;

8) 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;
9) establish and utilize a system for the periodic review and evaluation of the apprentice's progress in job performance and related instruction;
10) 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;
11) annually prepare and submit a Self-Assessment Review as well as a Program Improvement Plan to the Chief of the Division of Apprenticeship Standards;
12) 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;
13) ensure training in the recognition of illegal discrimination and sexual harassment;
14) 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;
15) 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;
16) ensure there is meaningful representation of the apprentice in the management of the program;
17) adopt changes to these standards, as necessary, subject to the approval of the parties hereto and the Chief of the Division of Apprenticeship Standards.
18) abide by any and all relevant California Labor Codes and California Code of Regulations regarding apprenticeship.

Article V Definition of an Apprentice

An apprentice is a person at least 18 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 VI 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 VII Apprentice Agreement

1) Each apprentice agreement shall conform to the State law governing apprentice agreements, shall be signed by the program sponsor and by the apprentice and shall remain in effect during a lay-off unless cancelled.

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.

Article VIII Termination

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) Disciplinary proceedings for apprentices shall be duly noticed in writing to such individuals. The Division of Apprenticeship Standards shall attend all such proceedings.

Article IX Controversies

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

Article X 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 program sponsor or 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 program sponsor, each apprentice will be issued a Certificate of Completion by the authority of the Chief of the Division of Apprenticeship Standards and the Interagency Advisory Committee on Apprenticeship.

Article XI Equal Opportunity in Apprenticeship

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation or veteran or military status.

Rail Operations: Maintenance-of-Way Career Pathway will create selection procedures that meet objective standards and maintain a fair and equitable selection process for all applicants.

Article XII Written Applications

Applications are available online and may be submitted via the following link: https://www.metro.net/about/careers/. Please note that applications will be publicly advertised only when there are vacancies available for consideration.

Article XIII Records

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

Rail Operations: Maintenance-of-Way Career Pathway
Los Angeles County Metropolitan Transportation Authority
1 Gateway Plaza, Los Angeles, CA 90012

Article XIV Annual Compliance

Rail Operations: Maintenance-of-Way Career Pathway will submit an annual compliance report to the Division of Apprenticeship Standards as requested by the Division.

Rail Operations: Maintenance-of-Way Career Pathway 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 Rail Operations: Maintenance-of-Way Career Pathway on October 7, 2024 (Committee approval date).

Employer Organization

Los Angeles County Metropolitan Transportation Authority (METRO)

LACMTA/Mail Stop: 64-02-01, 590 South Santa Fe Avenue, Los Angeles, CA 90013

_____ _____

Errol Taylor, Deputy Operations Officer Date

Maintenance and Engineering Administration

Employee Organization

The Amalgamated Transit Union, Local 1277

1744 N. Main Street, Los Angeles, CA 90031

_____ _____

Jeff Shaffer, President Date

The foregoing apprenticeship standards, being in conformity with the applicable California Labor Code, California Code of Regulations and Federal Regulations, are hereby approved

_____.

(DAS approval date)

_____ _____

Adele Burnes, Chief Date

Division of Apprenticeship Standards

DAS FILE # 101322

Attachment B-1

Training Schedule and Working Conditions

Rail Operations: Maintenance-of-Way Career Pathway

Occupation

Occupation: Track Inspector
O*Net Code: 47-4061.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 2,160 on-job-training (OJT) hours, 1,160 related and supplemental instruction (RSI) hours, and completed within 20 months.

A new employee shall serve a probationary period of one hundred twenty (120) days. However, in the Rail Divisions, if the standard orientation training for the employee's position includes four hundred hours (400) hours or more of formal instruction, the probationary period shall be one hundred eighty (180) days, or sixty (60) days after completion of the formal instruction, whichever is shorter.

Article II Wage Schedule

Professional Worker Wage:

$ 55.04 per hour effective 7/1/2025.

Apprentice Wage and Advancement Schedule:

In no case shall an Apprentice receive a starting wage that is less than the applicable federal, state or local entity (city or county) minimum wage, whichever is higher for the county or city where the apprentice is working. The applicable minimum wage law shall establish the effective date of the minimum wage.

To advance from one period to the next, the apprentice shall have met the following requirements:

1st period	0 - 6 Months	$ 48.53 /hour
2nd period	7 - 12 Months	$ 52.32 /hour
3rd period	13 - 16 Months	$ 52.62 /hour
4th period	17 - 20 Months	$ 52.77 /hour

Hours of Work and Working Conditions and Overtime Provision:

Eight (8) hours of labor constitutes a day's work. Employment beyond eight (8) hours in any workday or more than six (6) 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 (8) hours, up to and including 12 hours in any workday, and for the first eight (8) hours worked on the seventh (7) 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 (8) on the seventh (7) 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 professional worker.

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 professional worker 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 Process Schedule:

Orientation

- Class A Field Work (4 weeks) 120 hours

The Basic Track Structure

- TMB -1 Field Work 80 hours

Safety and the Use of Track

- TMB – 2 Field Work 80 hours

Basic Track Tools (10 subset items below) 40 hours

- Introduction
- Track Tool Design
- Spike Removal
- Resilient Rail Fastening Tools
- Striking tools
- Wrenches
- Crosstie and Rail Tools
- Track Jacks
- Ballast Tools
- Measuring Tools
- TMB-3 Field Work 80 hours

Roadbed

- TMB- 4 Field Work 80 hours

Crossties

- TMB- 5 Field Work 80 hours

Ballast

- TMB-6 Field Work 80 hours

Rail Maintenance

- TMB-7 Field Work 80 hours

Rail Joint Maintenance

- TMB- 8 Field Work 80 hours

Track Alignment and Gage

- TMB- 9 Field Work 80 hours

Track Surface

- TMB- 10 Field Work 80 hours

Turnouts

- TMB- 11 Field Work 80 hours

Roadway Maintenance

- TMB- 12 Field Work 80 hours

Rail Replacement

- TMA- 13 Field Work 80 hours

Cutting, Welding, and Grinding

- TMA- 14 Field Work 80 hours

Construction and Maintenance of Turnouts and Special Track Work

- TMA- 15 Field Work 80 hours

Track Construction

- TMA- 16 Field Work 80 hours

Railroad-Highway Grade Crossings

- TMA- 17 Field Work 80 hours

Track Material Management and Security

- TMA- 18 Field Work 80 hours

Maintaining and Operating Work Equipment

- TMA- 19 Field Work 80 hours

Vegetation Control

- TMA- 20 Field Work 80 hours

Rail Defects

- TMA- 21 Field Work 80 hours

Track Inspection

- TMA- 22 Field Work 80 hours

FRA Track Safety Standards

- TMA- 23 Field Work 80 hours

Derailment Work

- TMA- 24 Field Work 80 hours
- Hi-Rail Week 1 40 hours
- Hi-Rail week 2 40 hours

Total OJT Hours 2,160

ARTICLE IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 144 hours per year. Related and supplemental instruction will be provided by Cerritos College.

Time spent in related and supplemental instruction may be compensated.

Course Title	Hours
Orientation	
• OSHA / Metro Mandated Online Training	40 hours
• Class A	40 hours
Track Maintenance Basic Lesson 1 The Basic Track Structure	40 hours
Track Maintenance Basic Lesson 2 Safety and the Use of Track	40 hours
Track Maintenance Basic Lesson 3 Basic Track Tools	40 hours
Track Maintenance Basic Lesson 4 Roadbed	40 hours
Track Maintenance Basic Lesson 5 Crossties	40 hours
Track Maintenance Basic Lesson 6 Ballast	40 hours
Track Maintenance Basic Lesson 7 Rail Maintenance	40 hours
Track Maintenance Basic Lesson 8 Rail Joint Maintenance	40 hours
Track Maintenance Basic Lesson 9 Track Alignment and Gage	40 hours
Track Maintenance Basic Lesson 10 Track Surface	40 hours
Track Maintenance Basic Lesson 11 Turnouts	40 hours
Track Maintenance Basic Lesson 12 Roadway Maintenance	40 hours
Track Maintenance Basic Lesson 13 Rail Replacement	40 hours
Track Maintenance Advanced Lesson 14 Cutting, Welding, and Grinding	40 hours
Track Maintenance Advanced Lesson 15 Construction and Maintenance of Turnouts and Special Track Work	40 hours
Track Maintenance Advanced Lesson 16 Track Construction	40 hours
Track Maintenance Advanced Lesson 17 Railroad-Highway Grade Crossings	40 hours
Track Maintenance Advanced Lesson 18 Track Material Management and Security	40 hours
Track Maintenance Advanced Lesson 19 Maintaining and Operating Work Equipment	40 hours

Track Maintenance Advanced Lesson 20 Vegetation Control	40 hours
Track Maintenance Advanced Lesson 21 Rail Defects	40 hours
Track Maintenance Advanced Lesson 22 Track Inspection	40 hours
Track Maintenance Advanced Lesson 23 FRA Track Safety Standards	40 hours
Track Maintenance Advanced Lesson 24 Derailment Work	40 hours
Final Exam Preparation	40 hours
Final Exam Pre and Test	40 hours
Hi-Rail Week 1	40 hours
Total RSI Hours	**1,160 hours**

ARTICLE V Ratio

The ratio of apprentices to professional workers shall be:

1) Ratio #1: Each professional worker may supervise eight (8) apprentice(s)

DAS FILE # 101322

Attachment B-2

Training Schedule and Working Conditions

Rail Operations: Maintenance-of-Way Career Pathway

Occupation

Occupation: Traction Power Inspector
O*Net Code: 53-4099.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 2,080 on-job-training (OJT) hours, 1,386 related and supplemental instruction (RSI) hours, and completed within 22 months.

A new employee shall serve a probationary period of one hundred twenty (120) days. However, in the Rail Divisions, if the standard orientation training for the employee's position includes four hundred hours (400) hours or more of formal instruction, the probationary period shall be one hundred eighty (180) days, or sixty (60) days after completion of the formal instruction, whichever is shorter.

Article II Wage Schedule

Professional Worker Wage:

$ 66.76 per hour effective 2/25/2026.

Apprentice Wage and Advancement Schedule:

In no case shall an Apprentice receive a starting wage that is less than the applicable federal, state or local entity (city or county) minimum wage, whichever is higher for the county or city where the apprentice is working. The applicable minimum wage law shall establish the effective date of the minimum wage.

To advance from one period to the next, the apprentice shall have met the following requirements:

1st period	0 - 6 Months	$ 47.87 /hour
2nd period	7 - 12 Months	$ 53.02 /hour
3rd period	13 - 17 Months	$ 59.58 /hour
4th period	18 - 22 Months	$ 66.76 /hour

Hours of Work and Working Conditions and Overtime Provision:

Eight (8) hours of labor constitutes a day's work. Employment beyond eight (8) hours in any workday or more than six (6) 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 (8) hours, up to and including 12 hours in any workday, and for the first eight (8) hours worked on the seventh (7) 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 (8) on the seventh (7) 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 professional worker.

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 professional worker 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 Process Schedule:

Second Phase (A) Traction Power Systems LRTP Field A Line (North) & E Line (East)	160 hours
• Traction Power Systems LRTP Field C Line	160 hours
• Traction Power Systems LRTP Field A Line (South)	160 hours
• Traction Power Systems LRTP Field E Line (West)	160 hours
• Traction power Systems LRTP Field K Line	160 hours
• Traction Power Systems: LRTP Field Regional Connector	160 hours
Third Phase Overhead Catenary System (OCS)	160 hours
Second Phase (B) Traction Power Systems BD Heavy Rail Training	320 hours

Red Line / Purple Line AC Module

• DC Module	256 hours
• Third Rail and Distribution Module	64 hours
• Auxiliaries Module	320 hours
Total OJT Hours	**2,080 hours**

ARTICLE IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 144 hours per year. Related and supplemental instruction will be provided by Cerritos College.

Time spent in related and supplemental instruction may be compensated.

Course Title	Hours
First Phase - Introduction to Metro and Traction Power Systems	80 hours
Second Phase (A) - Traction Power Systems A line (North) and E Line (East)	160 hours
Second Phase (A)- Traction Power Systems C Line	80 hours
Second Phase (A) - Traction Power Systems A Line (South)	80 hours
Second Phase (A) - Traction Power Systems E Line (West)	80 hours
Second Phase (A) - Traction Power Systems K Line	120 hours
Second Phase (A) - Traction Power Systems: Regional Connector	40 hours
Third Phase - Overhead Catenary System (OCS) Training	80 hours
Fourth Phase (A) - Traction Power Electrical Test Equipment and Mobile Vehicle Equipment	90 hours
Second Phase (B) - Traction Power Systems – B D Heavy Rail Training Red Line/Purple Line AC Module	160 hours
Second Phase (B) - DC Module	128 hours
Second Phase (B) - Third Rail and Distribution Module	32 hours
Second Phase (B) - Auxiliaries Module	160 hours
Fourth Phase (B) - Class A Driver License (DMV Permit)	16 hours
Fourth Phase (B) - Hi-Rail Certification Training	16 hours
Fourth Phase (B) Company Mandated Computer Based Training	16 hours
Fourth Phase (B) Supplemental Required Training	48 hours

Total RSI Hours 1,386 hours

ARTICLE V Ratio

The ratio of apprentices to professional workers shall be:

1) Ratio #1: Each professional worker may supervise six (6) apprentice(s)

DAS FILE # 101322

Attachment B-3

Training Schedule and Working Conditions

Rail Operations: Maintenance-of-Way Career Pathway

Occupation

Occupation: Signal Inspector
O*Net Code: 49-9097.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be 2,000 on-job-training (OJT) hours, 732 related and supplemental instruction (RSI) hours, and completed within 18 months.

A new employee shall serve a probationary period of one hundred twenty (120) days. However, in the Rail Divisions, if the standard orientation training for the employee's position includes four hundred hours (400) hours or more of formal instruction, the probationary period shall be one hundred eighty (180) days, or sixty (60) days after completion of the formal instruction, whichever is shorter. After qualifying for the new position, such employee shall then be given Authority seniority as of date of employment.

Article II Wage Schedule

Professional Worker Wage:

$ 59.34 per hour effective 7/1/2025.

Apprentice Wage and Advancement Schedule:

In no case shall an Apprentice receive a starting wage that is less than the applicable federal, state or local entity (city or county) minimum wage, whichever is higher for the county or city where the apprentice is working. The applicable minimum wage law shall establish the effective date of the minimum wage.

To advance from one period to the next, the apprentice shall have met the following requirements:

1st period	0 - 6 Months	$ 52.51 /hour
2nd period	7 - 10 Months	$ 56.46 /hour
3rd period	11 - 14 Months	$ 56.76 /hour
4th period	15 - 18 Months	$ 56.91 /hour

Hours of Work and Working Conditions and Overtime Provision:

Eight (8) hours of labor constitutes a day's work. Employment beyond eight (8) hours in any workday or more than six (6) 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 (8) hours, up to and including 12 hours in any workday, and for the first eight (8) hours worked on the seventh (7) 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 (8) on the seventh (7) 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 professional worker.

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 professional worker 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 Process Schedule:

STM4 – Introduction to Commuter Railway Signal Systems

- A Line south equipment Introduction 4 hours
- IMP C&S / ROC Equipment Introduction 4 hours
- Contact Count Field Exercise 4 hours
- C Line Equipment Introduction 4 hours
- B/D Line Equipment Introduction 4 hours
- A Line North Equipment Introduction 4 hours
- E Line Equipment Introduction 4 hours

STM6 – Mainline Power Operated Switch Machines

- Alstom 5E / 5F Indication, Lock Rod Setup and Adjustment 28 hours
- Alstom 5E / 5F Clutch Adjustment 8 hours

- H&K HWE 61 Sw. Drive Rod & Detector Rod Setup and Adjustment — 24 hours
- Hitachi M3 / M23A Indication & Lock Rod Setup and Adjustment — 24 hours
- Hitachi M3 / M23A Clutch Adjustment — 8 hours

STM7 – Yard Power Operated Switch Machines

- Nortak HM-7F/7D Maintenance, Adjustment, and Troubleshooting — 4 hours
- GE 3000LP Hydra-Switch Maintenance, Adjustment, and Troubleshooting — 4 hours
- Alstom Speed-Frater Sw. Maintenance, Adjustment, and Troubleshooting — 4 hours
- Alstom 7K Circuit Controller Setup and Adjustment — 4 hours
- C Line Hibachi YM2000 Sw. Maintenance, Adjustment, and Troubleshooting — 4 hours
- OJT1 Switch Machine Reinforcement — 320 hours

STM8- Highway Grade Crossing Warning Systems

- Safetran S40 Ent. Gate Mech. Adjustment — 32 hours
- Safetran S40 Exit Gate Mech. Adjustment — 32 hours
- 30/90 Day Grade Crossing Inspection — 16 hours

STM9 – Grounds

- OJT2– Grade Crossing Reinforcement — 320 hours

STM10 – Power Frequency Track Circuit Fundamentals / Troubleshooting

- Track Circuit Trouble Simulator (DC) — 24 hours
- Track Circuit Trouble Simulator (AC) — 24 hours
- A Line South Single Rail TC Exercise — 4 hours
- C Line PF Track Circuit Exercise — 4 hours
- A Line North PF TC Exercise — 4 hours
- A Line South Double Rail PF TC Exercise — 4 hours
- A Line North PF TC Troubleshooting Evaluation — 40 hours

STM12 – Train Control System Logic Circuits

- Non-Vital Request Circuits Troubleshooting — 4 hours

STM13 – A Line South Cab Signaling

- Speed Code System Troubleshooting — 4 hours

STM14 – Interlocking Vital Locking Tests

- OJT3- Various Shifts / Assignments — 320 hours

STM15- A Line North Systems and Logic

- A Line North HAWK Event Recorders and Downloads — 4 hours
- EC5 Diagnostics Via PC — 4 hours

STM16- E line West System and Logic

- E Line West C&S Data Logger Events Download and Playback Via LCP Terminal — 4 hours

STM17- C Line / K Line System and Logic
- OKT4- Various Shifts / Assignments — 320 hours

STM-18 Signal Power Distribution
- A Line South System Power Field Exercise — 4 hours
- A Line North System Power Field Exercise — 4 hours
- C/K Line System Field Exercise — 4 hours
- B/D Line System Field Exercise — 4 hours

STM-19 Signal Cable Systems and Wiring
- Cable Splicing — 8 hours
- Cable Termination Techniques — 8 hours
- Cable Meggering (Resistance to ground) — 8 hours
- Signal Circuit Wiring Exercise — 8 hours

STM21- Track Bonding
- Track Wire and TP Negative Return Cable Bonding (Thermite / Mechanical) — 8 hours
- OJT5- Subject Matter Reinforcement — 320 hours

Total OJT Hours **2,000 hours**

ARTICLE IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 144 hours per year. Related and supplemental instruction will be provided by Cerritos College.

Time spent in related and supplemental instruction may be compensated.

Course Title	**Hours**
STM1 – Orientation	
• Instructor Student Orientation	6 hours
• Introduction to Railway Signaling	8 hours
• Basic Electronics Test	2 hours
• Rail System Safety / WWP	8 hours
STM2 – Wayside Train / Personnel Alert Systems	4 hours
STM3 – Federal Hours of Service Law	4 hours
STM4 – Introduction to Commuter Railway Signal Systems	
• Track Plan Layout Symbols	4 hours

- Electrical Symbols and Nomenclature 4 hours
- Contact Count Introduction 4 hours
- Naming Standards for Switches and Signals 4 hours
- Signal Aspect and Indication Introduction 4 hours
- Symbols and Nomenclature Review/Test 4 hours
- Train Control Terminology and Definitions 4 hours
- Terminology and Definitions Review/Test 8 hours

STM5 – Test Equipment Matter

- Meter Safety-Reading energy sources 4 hours
- Analog Meter usage (Triplett Signal Meter) 4 hours

STM6 – Mainline Power Operated Switch Machines

- Mainline Switch Machine Fundamentals 8 hours
- Alstom 5E / 5F Switch Machine Overview 8 hours
- A Line South, B, D Line, and E Line West Alstom 5E/5F Switch Machine Request & Operating Circuits 4 hours
- Alstom 5E / 5F Sw. Indication Circuits 8 hours
- Alstom 5E / 5F Circuit Controller Setup 4 hours
- Alstom 5E / 5F Switch Machine Power Distributing System for A Line South, B/D Line & E Line West 8 hours
- H&K HWE 61 Embedded Switch Machine Overview 4 hours
- A Line, and E Line H&K 61 Switch Machine Request & Operating circuits 4 hours
- H&K HWE 61 Sw. Indication Circuits 2 hours
- HWE 61 Machine Power Distribution System for A Line & E Line 2 hours
- Hitachi M3 / M23A Switch Machine Overview 4 hours
- A Line North and C/K Line Hitachi M3 / M23A Switch Machine Request & Operating circuits 2 hours
- Hitachi M3 / M23A Sw. Indication Circuits 1 hour
- Hitachi M3 / M23A Circuit Controller 1 hour
- Hitachi M3 / M23A Switch Machine Power Distribution System for A Line North C/K Line 1 hour
- A Line North Switch Power C-Can System 1 hour
- A Line North Harmon Switch Controller (HSC) 4 hours
- B/D Line System Print exercise 2 hours

STM7 – Yard Power Operated Switch Machines

- Yard Switch Machine Fundamentals 1 hour
- A Line South & C/K Line Yard Switch Power Distribution, Equipment & Logic 1 hour
- Nortrak HM-7F/7D Switch Machine and H-22 Switch Stand 1 hour

Overview
- Nortrak HM-7F/7D Switch Machine (ARS A Line South) Request and Operating Circuits — 3 hours
- Hitachi U5 Circuit Controller Setup and Adjustment — 1 hour
- A Line North GE 3000LP Hydra-Switch Overview — 1 hour
- Siemens Solar Electric GE 3000LP Switch Charging Panel — 1 hour
- GE3000LP Hydra-Switch Request & Operating Circuits — 2 hours
- Railcom 2.4 Ghz Data Radio and Yard Terminal Interface — 1 hour
- RAILCOMM Wheel Detector System — 2 hours
- B/D Line Yard Switch Power Distribution, Equipment & Logic — 1 hour
- B/D Line Alstom Speed-Frater Electric Switch Machine Overview — 2 hours
- B/D Line Alstom Speed-Frater Switch Machine Request & Operating Circuits — 2 hours
- B/D Line Yard Alstom IVPI Microprocessor and NX Panel Overview — 4 hours
- Alston Speed-Frater Clutch Adjustment — 4 hours
- C Line Hitachi YM2000 Electric Switch Machine Overview — 4 hours
- C Line Hitachi Ym2000 Switch Machine Request & Operating Circuits — 4 hours
- C Line Hitachi YM2000 Clutch Adjustment — 1 hour
- Mainline and Yard Switch Machine Final — 4 hours

STM8 – Highway Grade Crossing Warning Systems
- Grade Crossing Terms, Definitions and Regulations — 16 hours
- Grade Crossing Track Plans — 8 hours
- Grade Crossing Directional Stick Circuit — 8 hours
- Grade Crossing XR Circuit — 2 hours
- Taking a Grade Crossing out of service — 1 hour
- Pump Prevention Timer (PPTE) — 1 hour
- PED and Pre-emption Circuits — 4 hours
- Grade Crossing Line Circuits — 2 hours
- Gare Repeater Circuit (GPR) — 2 hours
- Crossing Warning System Lighting Circuits — 4 hours
- Grade Crossing Power Distribution / UPS — 4 hours
- Safetran S40 Gate Mechanism (Entrance) — 12 hours
- A Line North Crossing Logic Circuits Via VHLC — 4 hours
- Crossing Lighting Controller (XLC) — 4 hours
- Crossing Bell Cut Off Circuit / Software — 2 hours
- Grade Crossing Motorman Light Circuits — 2 hours
- Safetran S40 Gate Mechanism (Exit) — 4 hours
- Hitachi Model 95 Sidewalk Gate Mech. — 2 hours
- E Line I & II Grade Crossing System — 2 hours

- Siemens S60 Gate Mechanism Overview 1 hour
- Vehicle Detector units (VDU) 1 hour
- VDU Loops 1 hour
- E Line Grade Crossing Data Logger events download procedure (FTP Program) 1 hour

STM9 – Grounds

- Grounds Testing Procedure (S&C 360 Ground Finder) 16 hours
- Signal System Ground Detector Units (GDU) 8 hours

STM10 – Power Frequency Track Circuit Fundamentals/ Troubleshooting

- Introduction to Track Circuits 4 hours
- Track Circuits in Signal Logic Circuits 4 hours
- Introduction to PF Track Circuits 4 hours
- Phase Angle testing for PF Vane Relays 2 hours
- AC Track Circuit Transformers 2 hours
- Single Rail Track Circuits 2 hours
- Recording Track Circuit Values 2 hours
- Double Rail Track Circuits 4 hours
- A Line South Single Rail TC Introduction 4 hours
- C Line PF Track Circuit Introduction 4 hours
- A Line North PF TC Introduction 4 hours
- A Line South Double Rail PF TC Introduction 4 hours
- Loss of Shunt Timer (LOS) Exercise 8 hours

STM11 – Audio Frequency Overlay Track Circuits

- Audio Frequency Overlay (AFO) Circuit 8 hours
- Phase Shift Overlay (PSO II) TK Circuit 8 hours
- PSO II / 4000 Track Circuit Setup 8 hours
- Short Modulated Transceiver Island Overlay Track Circuit (SMTC / IPITC Setup) 4 hours
- Frequency Select Metter Application 4 hours
- Audio Frequency Train Activated Track Circuit (AFTAC) 8 hours
- AFTAC Couplers (Rail to line / Line to rail) 8 hours
- AFTAC Circuit Setup 8 hours

STM12 – Train Control System Logic Circuits

- Train Control Logic Circuits Overview 8 hours
- Non-Vital Request Circuits Introduction 4 hours
- Route Check Relay Logic (RCR Circuits) 4 hours
- Approach Stick Relay Logic (ASR Circuits) 4 hours
- Directional Stick Circuits 4 hours

- Lock Relay Logic (LR Circuits) 4 hours
- Home Relay Logic (HR Circuits) 4 hours
- Red Signal Repeater Relay Logic (RGPR Circuits) 2 hours
- Wayside Signal Lighting Circuits 2 hours
- A Line South Traffic Circuits Overview 8 hours
- Absolute Block Home Relay Logic (ABHR Circuits) 4 hours

STM13 – A Line South Cab Signaling

- Cab Signal Transmission (VSR Logic) 8 hours
- Cab Signal Transmission (Intermediate locations) FR's (C&S to C&S to track) VR's 4 hours
- Code Followers (CTPR) Electromechanical and Solid-state type 8 hours
- Speed Code System and Logic 4 hours
- Control Line Interpretation and Application 8 hours

STM14 – Interlocking Vital Locking Tests

- Interlocking Testing Procedure Review 8 hours

STM15 – A Line North System and Logic

- A Line North System Logic Overview 8 hours
- Vital Harmon Logic Processor (VHLC) Hardware Overview 8 hours
- Printed Circuit Board (PCB) Handling Techniques and IC Removal / Replacement 4 hours
- VHLC Control Display Unit (CDU) Navigation and Diagnostics 12 hours
- HHLC ACP Terminal Diagnostics Via PC 8 hours
- VHLC Modules: VLP, ACP, SSM, VGPIO, and CCI Profiling 16 hours
- VHLC Port A RS232 to HAWK Configuration 8 hours
- VHLC Rear Port Serial Modems 8 hours
- GE Electric Code 5 (EC5) Hardware Overview & Review 8 hours
- Electro Code System Pulse Code Intro 8 hours
- Electrified Electro Code (E2C) Track Circuit Setup 4 hours
- A Line North Block Code Troubleshooting (Simulator) 8 hours
- A Line North Signal System Equipment Familiarization 4 hours
- EC5 Cab Signal Logic 8 hours
- Cab-01 Cab Signaling Generator 4 hours
- H&K TWCHSC-R System Overview and System Plans (Train Wayside Comm.) 4 hours

STM16- E Line West System and Logic

- E Line West ElectroLogIXS System and Hardware Overview 8 hours
- ElectroLogIXS System GUI Via PC 4 hours
- ElectroLogIXS System Troubleshooting 4 hours

STM17- C Line / K Line System and Logic

- C/K Line Signal System Logic and Equipment Familiarization 4 hours
- C/K Line Hitachi MicroLok II hardware Overview 4 hours
- Introduction to ATP Subsystems 1 hour
- C/K Line Hitachi LATS Hardware Overview 2 hours
- C/K Line Hitachi Train to Wayside Comm. System (TWC) Hardware Overview 2 hours
- C/K Line AF904 FSK Track Circuit Modules Hardware Overview 5 hours
- C/K Line AF904 FSK Track Circuit Field Tune and Calibration Procedure 8 hours
- C/K Line MicroLok II System PCB Descriptions and Function 8 hours
- C/K Line Signal System Block Diagram Study 4 hours
- C/K Line Data Transmission System (DTS) Overview (TCCB-TCCB-ROC-SCADA) 6 hours
- C/K Line MicroLok II Failure & Error Code Logging Procedure (Development Tool) 8 hours

STM18 – Signal Power Distribution

- System Power Distribution Definitions 8 hours
- A Line South System Power Distribution 4 hours
- A Line North System Power Distribution 4 hours
- C/K Line System Power Distribution 4 hours
- B/D Line System Power Distribution 4 hours

STM19 – Signal Cable System and Wiring

- Signal Cable System Plans 8 hours

STM20 – Vital Relay Testing

- Vital relay Operating Characteristics 8 hours
- Vital Relay Testing / Documentation 8 hours

STM21- Track Bonding

- Track Wire and TP Negative Return Cable Bonding (Thermite / Mechanical) 8 hours

Total RSI Hours **732 hours**

ARTICLE V Ratio

The ratio of apprentices to professional workers shall be:

1) Ratio #1: Each professional worker may supervise six (6) apprentice(s)