



**CONSTRUCTORS  
ASSOCIATION  
OF WESTERN PENNSYLVANIA**

An aerial photograph of a large bridge under construction, spanning a deep valley. The bridge deck is covered in green safety netting. A tall yellow crane stands on the left side of the bridge. The surrounding area is densely forested with green trees. The text 'THE VOICE OF THE HEAVY/HIGHWAY INDUSTRY' is overlaid in white and black on the left side of the image.

# THE VOICE OF THE HEAVY/HIGHWAY INDUSTRY

**2024 CAWP ANNUAL REPORT >**

# Future Road Builders

**FUTURE ROAD BUILDERS™**

APPRENTICESHIP READINESS COURSE CAREER PATH OPPORTUNITIES SKILL ARCADE RESOURCES & MEDIA

did you know...  
**YOU could earn**  
**\$65k**  
a year!

Get your career moving with the  
**Highway Construction Apprenticeship Readiness Course**

**START THE COURSE TODAY! >>**

**WHAT IS FUTURE ROAD BUILDERS?**

Future Road Builders is a career awareness tool created by **Constructors Association of Western Pennsylvania**. Through games, videos, imagery and assessment tools, this free app explores a virtual highway construction project and uncovers the skills needed to be a heavy and highway construction apprentice. Get real insight into just what it means to be a construction professional.

[futeroroadbuilders.com](http://futeroroadbuilders.com)

# What We Build



## PHASE 1: TRENCHING & DRAINAGE

The most important element needed to maintain a highway is a highway drainage system. The purpose of a highway drainage system is to convey water as quickly as possible to prevent erosion of the road surface. Standing water or ice on the roadway can be dangerous. A trencher is used to dig trenches and then pipe and gravel are placed in the trench.

### CAREERS IN THIS PHASE:

HEAVY EQUIPMENT OPERATORS

LABORERS



## PHASE 2: EARTHWORK

Earthwork includes the excavation and placement of fill material required for the bridge. Heavy equipment such as excavators and graders are used. In addition, large trucks are used to transport material.



## PHASE 3: SUBSTRUCTURE

The substructure of a bridge is the part of the structure that is below the bridge deck. Parts of the substructure include piers, abutments, and wingwalls. The substructure is built on foundations installed in the ground. Bridge piers are built using large metal forms that are put in place and then filled with concrete.

### CAREERS IN THIS PHASE:

OPERATING ENGINEERS

LABORERS

CARPENTERS



## PHASE 4: SETTING BEAMS

Concrete bridge beams can now be lifted by cranes and set in place on the finished piers and abutments. The beams are then bolted into place. Once this is accomplished, it is time to start building the bridge deck, which will provide the base for the bridge roadway. Watch Concrete Bridge Setting in Action!

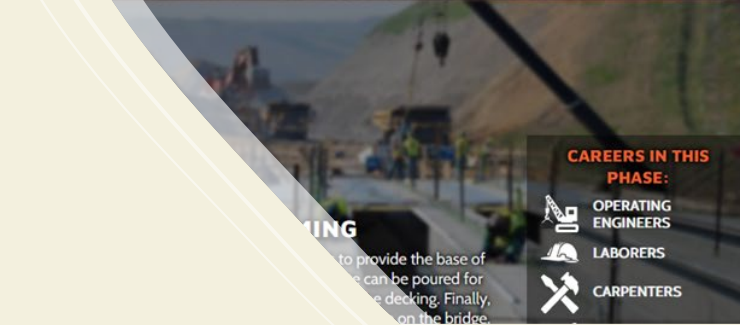
[WATCH BEAM SETTING IN ACTION](#)

### CAREERS IN THIS PHASE:

OPERATING ENGINEERS

LABORERS

CARPENTERS



## PHASE 5: DECKING

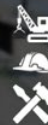
Concrete is poured to provide the base of the bridge deck. The concrete can be poured for the bridge deck. Finally, the concrete is finished on the bridge deck.

### CAREERS IN THIS PHASE:

OPERATING ENGINEERS

LABORERS

CARPENTERS



## PHASE 6: ASPHALT PAVING

Asphalt paving operations begin on the roadways leading up to the bridge. Asphalt pavement material is loaded into trucks for transport to the paving site. Once at the site, the trucks dump the pavement material into hoppers located at the front of paving machines. After the asphalt is placed, it is then compacted using a heavy roller, which

### CAREERS IN THIS PHASE:

OPERATING ENGINEERS

LABORERS



# Career Opportunities

## APPRENTICESHIP & CAREER OPPORTUNITIES



### CARPENTERS

Carpenters assemble and construct forms for concrete structures including bridges, retaining walls, tunnels, subways, drainage structures, hydroelectric developments, locks, and dams.

[LEARN MORE >](#)



### MASONS

Concrete is everywhere in the heavy/highway construction industry. A cement mason places, finishes, smooths, protects, and repairs exposed concrete surfaces such as sidewalks, driveways, roads, and dams.

[LEARN MORE >](#)



### LABORERS

Laborers are used for various projects in heavy/highway construction, working with hand, power, and air tools, rebar, traffic control, soil compaction, trenching/shoring projects, and more.

[LEARN MORE >](#)



### OPERATING ENGINEERS

Operating engineers oversee the operation, maintenance, and repair of heavy construction equipment including cranes, backhoes, loaders, scrapers, and bulldozers, which is essential for creating roads, dams, bridges, and airports.

[LEARN MORE >](#)



### CRAFT PROFESSIONALS

Skilled workers, heavy equipment operators, carpenters, concrete finishers, and laborers are needed! Learn about the benefits of union membership and career opportunities in western PA.

[LEARN MORE >](#)



### INSPECTORS

Construction Inspectors ensure projects follow plans and specifications and are responsible for projects being completed on time and within budget.

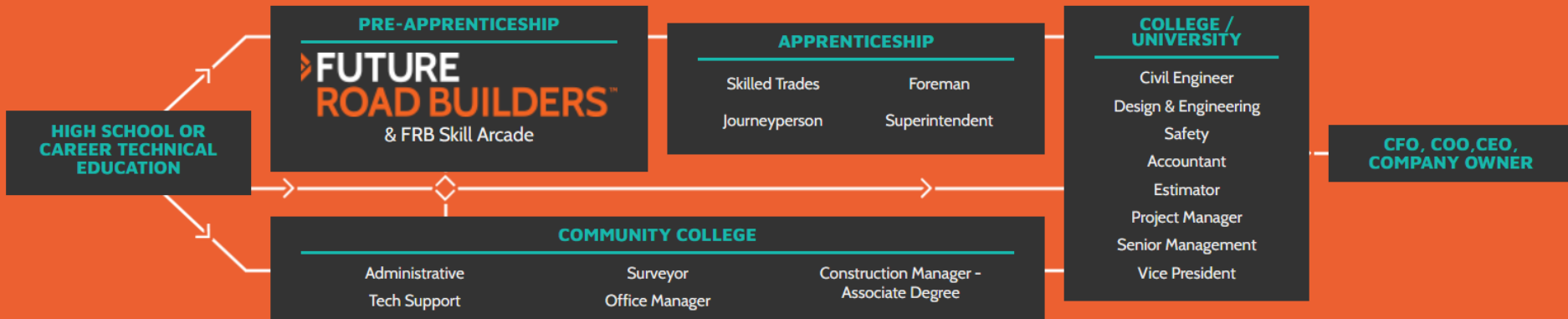
[LEARN MORE >](#)

FUTURE ROAD  
**BUILDERS**

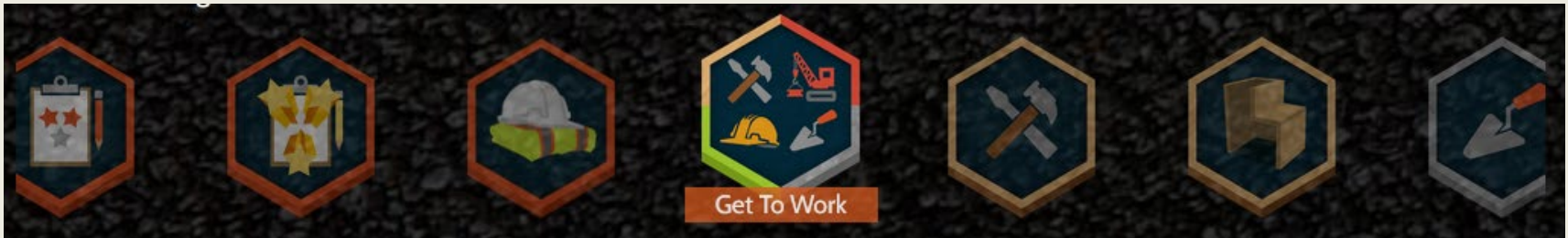
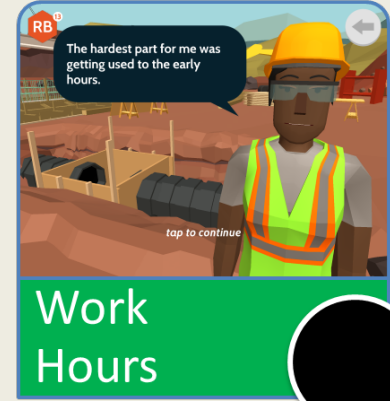
# Career Path

## CAREER PATH

Ready to build YOUR career in the highway construction industry?



# Future Road Builders The Game



Download the free app and explore a virtual world of highway construction



Download on the  
App Store



GET IT ON  
Google Play



Available on  
amazon.com

# FRB Skill Arcade



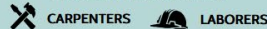
## CONSTRUCTION CRANE RIGGING

### CONSTRUCTION CRANE RIGGING

Test your knowledge of load rigging and inspection with this interactive quiz.



#### HIGHLIGHTED CAREERS



## CONSTRUCTION CRANE SIGNALS

### CONSTRUCTION CRANE SIGNALS

A tool for all construction trades to practice their understanding of mobile crane hand signals.



#### HIGHLIGHTED CAREERS



## ROAD BUILDER BLITZ

A FUTURE ROAD BUILDERS GAME

### ROAD BUILDER BLITZ

Middle school aged children will love these fun mini-games that highlight various construction jobs and career paths.



#### HIGHLIGHTED CAREERS



## JobPro Get Hired! CONSTRUCTION

### JOB PRO: GET HIRED CONSTRUCTION

Get Hired Construction puts you in the hot seat of an interview for a construction job.



#### HIGHLIGHTED CAREERS

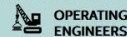


### DIG IN: AN EXCAVATING GAME

As a heavy equipment operator, you're a key member of the construction site.



#### HIGHLIGHTED CAREERS

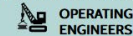


### DIG IN: A DOZER GAME

Experience the earth-shaking power of dozer operation once you drop your blade and push mountains of dirt.



#### HIGHLIGHTED CAREERS



# Highway Construction Apprenticeship Readiness Course



[Apprenticeship Readiness Course Video](#)

BROUGHT TO YOU BY



# Workforce Development



# Questions & Contact Info

- **Websites**
- Cawp.org
- Futureroadbuilders.com
  
- **Contact Info**
- Rich Barcaskey
- [richb@cawp.org](mailto:richb@cawp.org)
- (412) 343-8000