CARPENTER (PILE DRIVER/ DOCKBUILDER)

APPENDIX A

O*NET 47-2031.02

This training outline contains minimum standards for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

Approximate Hours

A. Demonstrating General Knowledge and Skills **325 – 500**

1. Care, cleaning, and safe use of tools
   a. hand tools
   b. power tools
   c. engine driven tools
2. Identifying materials of the trade
3. Blueprint and plan reading
4. Layout
5. Using trade math accurately
6. Identification and proper use of fasteners

B. Concrete and Formwork **1,300 – 2,000**

1. Building piers, piers and pile caps
2. Building columns
3. Building wall forms
4. Building gang forms
5. Building slab and deck forms
6. Working with precast materials
7. Building footing forms
8. Form systems

C. Pile Installation **975 – 1,500**

1. Pile preparation
2. Crane and rig identification
3. Setup/crane

4. Safely operating pile driving hammers and accessories
5. Installing wood piling
6. Installing concrete piling
7. Installing steel piling
8. Installing composite piling
9. Installing cast-in-place piling
10. Installing plastic piling

D. Metal and Heavy Timber Construction **975 – 1,500**

1. Cutting and burning
   a. SMAW welding
   b. FCAW welding
   c. Plasma cutting
   d. Air arc gouging
   e. Field cutting
   f. Field welding
   g. Fit-up and fabrication
2. Timber construction
3. Trestles/pile bents
4. Mats and cribbing
5. Bulk heads
6. Structural bracing

E. Foundation, Shoring, and Underpinning Systems **975 – 1,500**

1. Correctly identifying and building various types of foundation systems
2. Correctly identifying and building various types of shoring
3. Correctly identifying and building various types of underpinning, including:
   a. cofferdams, cells
   b. caissons and drilled shafts
   c. shoring, lagging, tiebacks
   d. pin piles, earth nails, geotextiles
4. Operating de-watering equipment
5. Horizontal boring (shoring)
6. Slurry system operation

7. Performing tremie pours
8. Structural retrofitting

F. Demonstrating Supplemental Skills **650 – 1,000**

1. Demonstrating safe work techniques in all phases of the trade
2. Demonstrating proper rigging techniques for pile drivers
3. Properly using and caring for layout instruments
4. Safe and proper use of powder actuated tools
5. Working effectively with concrete, grout, epoxy
6. Demonstrating awareness of, and safety in working around, hazardous materials likely to be encountered in the trade
7. Hazardous waste remediation (optional)
8. Erecting, using, dismantling scaffolding
9. Building and structure relocation
10. Demolition
11. Demonstrating awareness of diver/tender skills
12. Building walkways

Approximate Total Hours **5,200 – 8,000**

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to https://dol.ny.gov/public-work-and-prevailing-wage

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APPENDIX B

RELATED INSTRUCTION

Safety

1. General safety (including identification of safety hazards, state and federal safety codes and regulations, accident prevention)
2. Safety training as required by the Occupational Safety and Health Administration
3. Drug and alcohol awareness
4. Ergonomics
5. Fall arrest and protection
6. OSHA 10-Hour Construction Course – if required for Public Work
7. Awareness of hazardous materials likely to be encountered in the trade
8. Lead Safety
9. Confined space safety
10. MSDS
11. Scaffolding qualification
12. Diver/tender skills awareness
13. Hazardous waste worker – 40-hour course (if Work Process “F7” on Appendix A is selected)
14. First aid/CPR – minimum 6.5 hours every 3 years
15. Sexual Harassment Prevention Training – must comply with Section 201-g of the Labor Law

Math

1. Review and application of basic mathematics
2. Estimating for the trade

Blueprints

1. Elementary blueprint reading
2. Advanced blueprint reading
3. Freehand sketching and layouts

Trade Theory and Science

1. Piledrivers
    a. Floating of water drivers
    b. Construction
    c. Rigging – anchors, lines, buoys, hammer line, pile line, jet rigging, lead rigging, deck winches, rigger leads
2. Hammers and leads (drop, steam, pneumatic, diesel)
    a. Hammer rigging
    b. Lead construction (stationary, swinging, pendulum, false, pile extractors)
3. Tools – drilling and setting with long augers
4. Piling materials – wood, treated wood, steels, tube and sheet, concrete, cutoffs
5. Driving of material – driving to bearing, jetting
6. Rigging – building sections, stressed beams, knots, hitches and splices (manilla and wire), stiff legs, gin pole, shear legs, mobile cranes, righting capsized drivers
7. Excavations and shoring excavations
8. Form building
9. Construction of cofferdams – steel, sheet piling, wood construction; sealing of cofferdams, removal
10. Construction of wood trestles – truss type, heavy framing
11. Construction of bridges – overpasses, abutments, sills, column, vertical curves and supers, beams (cast-in-place, precast, prestressed and poststressed)
12. Dockbuilding – wood and concrete
13. Float and pontoon
14. Welding and burning
15. Construction of engines, jets and jet pumps

Interpersonal Workplace Skills

1. Industrial and labor relations (20 hours)
2. History and background (6 hours, 1st year)
3. Current laws and practices (14 hours, 2nd year)
4. Foreperson training (optional)
5. Superintendent training (optional)

Other Related Courses as Necessary

A Minimum of 144 Hours of Related Instruction is Required for Each Apprentice for Each Year.

Appendix B topics are approved by New York State Education Department.