

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

**PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION**

**Career Cluster: Architecture & Construction**

**Program Name: Construction Trades, General CIP: 460000**

**Effective: 9/2017\***

**National Organizations: NCCER; ABC; NAHB**

<b>Competency</b> (statement that provides the overview and defines the instructional area)  Learner can:	<b>Performance Indicators</b> (examples of what educators may see in performance tasks when learners demonstrate their increasing understanding and use of the competencies)  Learner can:	<b>Rating Scale:</b> (1) No Exposure (2) Novice (3) Proficient (4) Mastery			
1. Demonstrate understanding and apply personal and jobsite safety rules and regulations to maintain safe and healthy working conditions and environments. ELA: M:	<ul style="list-style-type: none"> <li>• Demonstrate situational awareness to ensure job site safety.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Identify and demonstrate the safe and correct use of hand and power tools by applying proper:                             <ul style="list-style-type: none"> <li>○ <i>Handling</i></li> <li>○ <i>Use</i></li> <li>○ <i>Storage Techniques</i></li> <li>○ <i>Maintenance</i></li> </ul> </li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Select and use the proper personal protective equipment (PPE) according to the requirements of the job.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Demonstrate safety on the job site, including proper use of ladders, scaffolding, harnessing, and other equipment.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Follow safety precautions with operations and materials, according to federal, state, and local regulations and codes.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Demonstrate legal, ethical, and safety behaviors consistent with industry standards.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>• Effectively identify, locate, and use codes resources and apply applicable codes to projects ((NEC, OSHA, UPC, NH, DOL, ANSI, etc.)</li> </ul>	1	2	3	4
2. Demonstrate understanding and apply effective speaking, listening, reading, writing, and mathematical skills as it relates to the construction trades industry and/or related fields. ELA: M:	<ul style="list-style-type: none"> <li>• Use effective written and spoken communication by:                             <ul style="list-style-type: none"> <li>○ <i>Obtaining and clarifying information, including verbal and written instructions</i></li> <li>○ <i>Accurately using terms, phrases and methods unique to the industry</i></li> </ul> </li> <li>• <i>Reading and interpreting technical and workplace documents, including: contracts, regulations, manuals, reports, memos, forms, graphs, charts, tables, calendars, schedules, signs, and notices</i></li> </ul>	1	2	3	4

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\*Effective at the conclusion of the pilot year

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	<ul style="list-style-type: none"> <li>Identify, explain, and apply the essential components of construction drawing terms and symbols (plot/site plan, floor plan, elevation plan, etc.)</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Apply the appropriate mathematical calculations and measurement techniques used in the construction trades. (use of a tape measure, ratio, proportion, scale, basic geometry, basic algebra, estimating, Ohm's Law).</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
3. Demonstrate understanding of framing, envelope, and job site preparation in construction as indicated by construction drawings, specifications, and government codes.  ELA: M:	<ul style="list-style-type: none"> <li>Demonstrate floor, wall, ceiling, and roof framing methods and techniques.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Demonstrate installation of windows, exterior, and interior doors.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Demonstrate drywall installation and finishing.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Demonstrate interior and exterior finishing.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>List the materials and procedures used to install exterior building protection systems and interior building finish systems.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Describe and demonstrate basic rigging skills.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Recognize and apply proper hand and sign signals.</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> </tr> </table>	1	2	2	3	3	4	4
1	2	2	3	3	4	4			
	<ul style="list-style-type: none"> <li>Demonstrate techniques for proper job site preparation (demolition, materials staging, waste management, power, debris screening).</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
1	2	3	4						
	<ul style="list-style-type: none"> <li>Demonstrate proper techniques for thermal and moisture management (insulation systems and types, vapor barriers, air and filtration, wall and roof venting).</li> </ul>	<table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4			
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	<ul style="list-style-type: none"> <li>Explain the concept of concurrent and coordinated work of the various trades on a construction project.</li> </ul>	1	2	3	4
4. Demonstrate understanding of the basic electrical systems in residential and commercial buildings as indicated by construction drawings, specifications, and government codes. ELA: M:	<ul style="list-style-type: none"> <li>Determine whether or not an electrical circuit is “live” and demonstrate how to de-energize circuits.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify and explain the components of electrical systems in a building (meter, entrance panel, circuit breakers, etc.)</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Define the units of measurement that are used to measure the properties of electricity.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify and demonstrate the use of the meters used to measure voltage, current, and resistance.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Define voltage and amperage and explain their impact on the specifications of electrical system components.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify the appropriate box type and size for a given application.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify the various gauges and types of wire and match the appropriate wire type and gauge to the application.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify and select various types and sizes of raceways, fittings, and fasteners for a given application and demonstrate how to install and terminate these components.</li> </ul>	1	2	3	4
5. Demonstrate understanding of the plumbing systems, including water supply, waste, and venting systems in residential and commercial buildings as indicated by construction drawings, specifications, and government codes	<ul style="list-style-type: none"> <li>Make 90-degree bends, back-to-back bends, offsets, kicks, and saddle bends using a hand bender.</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Identify and select the appropriate size and schedule for piping and fittings used in plumbing systems, (including copper, pvc, pex, cast iron, carbon steel).</li> </ul>	1	2	3	4
	<ul style="list-style-type: none"> <li>Explain the characteristics of municipal and rural water supply and waste systems and the implications of each for building projects.</li> </ul>	1	2	3	4

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ELA: M:	<ul style="list-style-type: none"> <li>Measure, cut, join, and hang piping including the installation of traps and vents using techniques standard to the industry.</li> </ul>	1	2	3	4
6. Demonstrate understanding of basic masonry, including foundation layout techniques: setting forms, placing reinforcements, and placing concrete according to construction drawings, specifications, and building codes. ELA: M:	<ul style="list-style-type: none"> <li>Identify the major components of a drainage system and describe their functions.</li> <li>Identify the major components of residential foundations, including: foundation types, footings, wall and anchor bolts, beam pockets and block outs, and rebar reinforcement systems.</li> <li>Identify various types of concrete forms and their components.</li> <li>Mix and pour concrete, lay brick and block, and install mortar joints.</li> <li>Erect, plumb, and brace a simple concrete form with reinforcement.</li> </ul>	1	2	3	4
7. Demonstrate understanding of the necessary employability and career readiness skills in order to achieve success in today's workplace. AAI:1-9 CRP: 1-13 <a href="http://www.education.nh.gov/career/career/documents/aa1_crp_emp.pdf">http://www.education.nh.gov/career/career/documents/aa1_crp_emp.pdf</a>	<ul style="list-style-type: none"> <li>Identify and explain all aspects of the construction industry (employer expectations, occupational information, current and projected employment, job options, roles and work conditions, etc.).</li> </ul>	1	2	3	4

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