

CURRICULUM MAPPING TEMPLATE

Program: Drafting & Design Technology CIP 15.1301

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
1	Drawing Fundamentals				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>4. Evaluate and use information resources to accomplish specific occupational tasks.</p> <p>5. Use correct grammar, punctuation and terminology to write and edit documents.</p> <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>1. Identify whole numbers, decimals, and fractions.</p> <p>2. Demonstrate knowledge of basic arithmetic operations such as addition, subtraction, multiplication, and division.</p> <p>3. Demonstrate use of relational expressions such as equal to, not equal, greater than, less than, etc.</p>	<p>A 4</p> <p>B</p>	<p>Organization</p> <p>Creating, reading charts & graphs</p> <p>Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion (1/4"=1')</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).</p> <p>4. Conduct technical research to gather information necessary for decision-making.</p>	<p>A all</p>	<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion,</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			angles, geometry, Trig – solving right triangles, spatial relationships		
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <ol style="list-style-type: none"> 1. Use information technology tools to manage and perform work responsibilities. 2. Use email to share files and documents. 5. Access and navigate Internet (e.g., use a web browser). 7. Evaluate Internet resources for reliability and validity. 8. Prepare simple documents and other business communications. 12. Deliver presentations with supporting materials. 20. Facilitate group work through management of shared files and online information. 21. Facilitate group work through instant messaging or virtual meetings. 22. Manage computer operations. 23. Manage file storage. 24. Compress or alter files. 25. Operate computer driven equipment and machines. 26. Use installation and operation manuals. 27. Troubleshoot computer driven equipment and machines. 28. Access support as needed to maintain operation of computer driven equipment and machines. 	B 1,8,12	<p>Organization</p> <p>Create charts & graphs</p> <p>Customary measure, metric measure</p> <p>Locating information</p> <p>Logic flow/critical path</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p>		<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information,</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3;</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable.</p> <p>3. Explain written organizational policies, rules and procedures common in design and construction settings to help employees perform their jobs.</p>		cost analysis	7.SP.4; 8.SP.3; 8.SP.4	
	<p>X. TECHNICAL SKILLS</p> <p>C. Read, interpret, and use technical drawings, documents, and specifications to plan a project.</p> <p>3. Recognize how specifications and standards are arranged for proper access.</p> <p>D. Use and maintain appropriate tools, machinery, equipment, and resources to accomplish project goals.</p> <p>1. Select tools, machinery, equipment, and resources that match requirements of the job.</p> <p>3. Demonstrate use of tools, machinery, equipment and other resources commonly used in design and construction.</p> <p>E. Develop technical drawings drafted by hand and computer-generated plans to design structures.</p> <p>3. Draw and sketch by hand to communicate ideas effectively.</p> <p>4. Learn to read and produce technical drawings, understanding the significance of each line in a drawing.</p> <p>I. Preparing to Draw; Basic Drawing and Dimensioning Skills</p> <p>1. Identify drafting tools, materials, and equipment (including CAD)</p> <p>2. Differentiate and select drafting media</p> <p>3. Identify and select paper sizes and determine scale</p> <p>4. Identify various line types</p> <p>5. Draw and modify lines</p> <p>6. Measure lines and angles</p> <p>7. Use acceptable lettering techniques</p> <p>J. Geometric Construction</p>	<p>C, D,E,I, J</p> <p>J</p>	<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<ol style="list-style-type: none"> 1. Construct geometric elements 2. Divide geometric elements 3. Construct perpendicular lines 4. Construct tangent lines and arcs 5. Transfer an angle 				
2	Introduction to Architectural Drawing				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants. 4. Evaluate and use information resources to accomplish specific occupational tasks. <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 12. Convert scales 	<p>A 3</p> <p>B12</p>	<p>Organization</p> <p>Creating, reading charts & graphs</p> <p>Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>II. COMMUNICATIONS</p> <p>E. Use vocabulary and visual cues commonly used in design and construction to be successful in workplace/job site communications.</p> <ol style="list-style-type: none"> 1. Match vocabulary and visual cues to workplace/job site situations. 2. Utilize vocabulary and visual cues in context of design and construction situations. 	E	<p>Organization</p> <p>Creating, reading charts & graphs</p> <p>Locating information</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).</p>	A1	<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>		
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <p>12. Deliver presentations with supporting materials.</p>	B12	<p>Organization</p> <p>Create charts & graphs</p> <p>Customary measure, metric measure</p> <p>Locating information</p> <p>Logic flow/critical path</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>V. SYSTEMS</p> <p>A. Describe the nature and types of business organizations to build an understanding of the scope of organizations.</p> <p>1. Describe the types and functions of businesses.</p> <p>2. Explain the functions and interactions of common departments within a business.</p> <p>C. Comply with regulations and applicable codes to establish a legal and safe workplace/jobsite.</p> <p>3. Describe how relationships between trades/professions can facilitate smooth workflow and outcome to meet project goals.</p> <p>D. Examine all factors effecting the project</p>	D	<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Logic flow,</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>and the planning process.</p> <ol style="list-style-type: none"> 1. Understand social, environmental and political factors that affect the project. 		critical path		
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <ol style="list-style-type: none"> 1. Apply ethical reasoning to a variety of workplace situations in order to make ethical decisions. 2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations. 	A2	<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information</p>	<p>6.EE.2; 6.EE.3;</p> <p>6.SP.4; 6.SP.5;</p> <p>7.SP.2; 7.SP.3;</p> <p>7.SP.4; 8.SP.3;</p> <p>8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3;</p> <p>S.IC.4; S.IC.5; S.IC.6;</p> <p>S.ID.1</p>
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p> <ol style="list-style-type: none"> 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable. 3. Explain written organizational policies, rules and procedures common in design and construction settings to help employees perform their jobs. <p>B. Explore, plan, and effectively manage careers.</p> <ol style="list-style-type: none"> 1. Develop a personal career plan to meet career goals and objectives. 2. Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster. 4. Continue professional development to keep current on relevant trends and information within the industry. 5. Examine licensing, certification and credentialing requirements at the national, 	A	<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information,</p> <p>cost analysis</p>	<p>6.EE.2; 6.EE.3;</p> <p>6.SP.4; 6.SP.5;</p> <p>7.SP.2; 7.SP.3;</p> <p>7.SP.4; 8.SP.3;</p> <p>8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3;</p> <p>S.IC.4; S.IC.5; S.IC.6;</p> <p>S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	1. Identify pictorial drawings (i.e., isometric, oblique, perspective and presentation) M. Architectural Drawing Types 1. Identify architectural terms and symbols 5. Identify kitchen and bath arrangements				
3	Project Planning				
	I. ACADEMIC FOUNDATIONS A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities. 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 2. Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace. 4. Evaluate and use information resources to accomplish specific occupational tasks. 6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	A	Organization Creating, reading charts & graphs Locating information Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1	A.APR.1; A.APR.7; N.RN.3; N.Q.1
	II. COMMUNICATIONS B. Apply active listening skills to obtain and clarify information. 1. Interpret a given verbal message/information. 2. Respond with restatement and clarification techniques to clarify information.		Organization Creating, reading charts & graphs Locating information	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <ol style="list-style-type: none"> 1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate). 3. Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability. 4. Conduct technical research to gather information necessary for decision-making. 5. Create and implement project plans considering available resources and requirements of a project/problem to accomplish realistic planning in design and construction situations. 6. Evaluate and adjust design and construction project plans and schedules to respond to unexpected events and conditions. 	A	<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <ol style="list-style-type: none"> 6. Search for information and resources. 7. Evaluate Internet resources for reliability and validity. 	B	<p>Organization Create charts & graphs Customary measure, metric measure Locating information Logic flow/critical path</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>V. SYSTEMS</p> <p>D. Examine all factors effecting the project and the planning process.</p> <ol style="list-style-type: none"> 3. Explain the relationship of traditional project phases and the various roles within them to a current project. 	D	<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers,</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Logic flow, critical path		
	<p>VII. LEADERSHIP AND TEAMWORK B. Appreciate the diversity of needs, values and social patterns in project design to appropriately meet client needs. 1. Identify the geographic and cultural issues related to project design in a given situation.</p>	B	Reading charts & graphs Locating information	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT A. Know and understand the importance of employability skills. 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable. 2. Manage resources in relation to the position (i.e. budget, supplies, computer, etc).</p>	A	Organization Reading charts & graphs Locating information, cost analysis	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	<p>X. TECHNICAL SKILLS B. Employ planning and time management skills and tools to enhance results and complete work tasks. 3. Develop timelines using time management knowledge and skills. 4. Use project-management skills to improve workflow and minimize costs. C. Read, interpret, and use technical drawings, documents, and specifications to plan a project. 1. Interpret drawings used in project planning. E. Develop technical drawings drafted by hand and computer-generated plans to</p>	B,C, E, H, L	Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>design structures.</p> <p>1. Identify client requirements.</p> <p>H. Apply basic organizational, spatial, structural and constructional principles to the design of interior and exterior space so that design plans are effective.</p> <p>1. Develop design alternatives that address a given problem.</p> <p>L. Planning</p> <p>1. Examine space relationships</p> <p>3. Identify building styles</p> <p>4. Determine client needs</p>		triangles, spatial relationships		
4	Site Planning				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>13. Convert survey measurements to architectural measurements</p> <p>D. Employ basic methods of data collection and analysis to provide information for projects.</p> <p>1. Use available research methods when project planning and problem-solving.</p> <p>2. Provide appropriate precedents for development of a project.</p>	B	<p>Organization</p> <p>Creating, reading charts & graphs</p> <p>Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)</p>	<p>6.NS.1; 6.EE.2;</p> <p>7.NS.1; 7.NS.2;</p> <p>7.NS.3; 6.NS.2;</p> <p>6.NS.3; 6.NS.5;</p> <p>7.EE.3; 6.RP.3;</p> <p>7.RP.1</p>	<p>A.APR.1; A.APR.7;</p> <p>N.RN.3; N.Q.1</p>
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p> <p>1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable.</p>	A	<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information, cost analysis</p>	<p>6.EE.2; 6.EE.3;</p> <p>6.SP.4; 6.SP.5;</p> <p>7.SP.2; 7.SP.3;</p> <p>7.SP.4; 8.SP.3;</p> <p>8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3;</p> <p>S.IC.4; S.IC.5; S.IC.6;</p> <p>S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>X. TECHNICAL SKILLS</p> <p>L. Planning 2. Analyze site considerations</p> <p>N. Site Plans 1. Draw and dimension site and plot plans 2. Develop landscape plan 3. Interpret contours and topographical profiles 4. Identify setbacks 5. Identify utilities</p>	L, N	<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>
5	Structural Systems				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities. 3. Apply basic concepts of statics and loads to planning.</p>	C	<p>Organization Creating, reading charts & graphs Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion (1/4"=1')</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>X. TECHNICAL SKILLS</p> <p>O. Structural Drawings 1. Draw structural details 2. Draw framing plan 3. Analyze structural systems</p>		<p>Organization Create, Read charts & graphs</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8;</p>

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			Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships	6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	F.TF.3
6	Building Systems				
	V. SYSTEMS F. Integrate structural, environmental, safety, building envelopes and building service systems to design and construct buildings and structures. 1. Describe building systems and their interrelationships. 2. Develop design criteria for building systems in a given scenario.	F	Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Logic flow, critical path	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3
	X. TECHNICAL SKILLS K. Drawing Techniques; Supplementary Views 2. Demonstrate knowledge of schematic drawings P. Mechanical and Electrical Systems 1. Identify and apply electrical terms, symbols, and systems 2. Identify and apply plumbing terms, symbols, and systems	K, P	Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals,	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	3. Identify and apply HVAC terms, symbols, and systems		customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships		
7	Schedules and Documentation				
	I. ACADEMIC FOUNDATIONS A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities. 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 2. Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace. B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities. 6. Construct charts/tables/graphs from functions and data. 7. Analyze data when interpreting operational documents.	A, B	Organization Creating, reading charts & graphs Locating information Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1	A.APR.1; A.APR.7; N.RN.3; N.Q.1
	II. COMMUNICATIONS A. Develop and interpret tables, charts, and figures to support written and oral communications. 1. Create tables, charts, and figures to support written and oral communications. 2. Interpret tables, charts, and figures used to support written and oral communication.	A	Organization Creating, reading charts & graphs Locating information	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>4. Conduct technical research to gather information necessary for decision-making.</p>	A	<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Substituting data into formulas and developing formulas</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>A. Use Personal Information Management (PIM) applications to increase workplace efficiency.</p> <p>2. Create memos and notes.</p> <p>B. Employ technological tools to expedite workflow.</p> <p>2. Use email to share files and documents.</p> <p>3. Identify the functions and purpose of email systems.</p> <p>4. Use email to communicate within and across organizations.</p> <p>8. Prepare simple documents and other business communications.</p> <p>9. Prepare reports and other business communications by integrating graphics and other non-text elements.</p> <p>10. Prepare complex multi-media publications.</p> <p>13. Create a spreadsheet.</p>		<p>Organization, Create, read charts & graphs Customary measure, metric measure Locating information, Logic flow/critical path, Substituting data into formulas and developing formulas</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1; A.CED.4</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	14. Perform calculations and analyses on data using a spreadsheet. 15. Manipulate data elements. 16. Manage interrelated data elements. 17. Analyze interrelated data elements. 18. Generate reports showing interrelated data elements.				
	VIII. ETHICS AND LEGAL RESPONSIBILITIES A. Know and understand the importance of professional ethics and legal responsibilities. 2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations. 3. Read regulations and contracts to ensure ethical and safety elements are observed.	A	Organization Reading charts & graphs Locating information	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	IX. EMPLOYABILITY AND CAREER DEVELOPMENT A. Know and understand the importance of employability skills. 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable.		Organization Reading charts & graphs Locating information, cost analysis	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	X. TECHNICAL SKILLS K. Drawing Techniques; Supplementary Views 5. Indicate point of material installation Q. Supplemental Drafting Activities 1. Draw cover sheet and title block information 2. Develop schedules 6. Create a bill of materials R. Specifications 1. Assist in developing a project manual	K, Q, R	Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Logic flow, critical path		
	VI. SAFETY, HEALTH AND ENVIRONMENTAL A. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments. 4. Implement safety precautions to maintain a safe worksite.		Organization Reading charts & graphs Locating information	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	X. TECHNICAL SKILLS K. Drawing Techniques; Supplementary Views 3. Demonstrate knowledge of orthographic drawings 4. Draw and identify auxiliary views M. Architectural Drawing Types 2. Identify and develop roof styles 3. Identify and develop floor plans 4. Develop basement & foundation plans 6. Develop interior & exterior elevations 7. Develop a building section 8. Develop a wall section 9. Draw architectural details Q. Supplemental Drafting Activities 4. Arrange and coordinate drawings 5. Revise drawings	K, M, Q	Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships	6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5	A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3
9	Codes and Specifications				

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> 1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. 3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants. 5. Use correct grammar, punctuation and terminology to write and edit documents. <p>C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities.</p> <ol style="list-style-type: none"> 1. Evaluate scientific constructs including conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables. 2. Apply scientific methods in qualitative and quantitative analysis, data gathering, direct and indirect observation, predictions, and problem identification. 		<p>Organization Creating, reading charts & graphs Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>V. SYSTEMS</p> <p>B. Implement quality control systems and practices to ensure quality products and services.</p> <ol style="list-style-type: none"> 1. Describe quality control standards and practices common to the workplace. <p>C. Comply with regulations and applicable codes to establish a legal and safe workplace/jobsite.</p> <ol style="list-style-type: none"> 1. Identify governmental regulations and national, state and/or local building codes that apply to a given workplace/jobsite. 2. Identify workplace/jobsite environmental hazards of a given situation. 		<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			triangles, spatial relationships, Logic flow, critical path		
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL</p> <p>A. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.</p> <ol style="list-style-type: none"> 1. Assess workplace conditions with regard to safety and health. 2. Select appropriate personal protective equipment as needed for a safe workplace/jobsite. 3. Employ a safety hierarchy and communication system within the workplace/jobsite. 4. Implement safety precautions to maintain a safe worksite. <p>B. Complete work tasks in accordance with employee rights and responsibilities and employers obligations to maintain workplace safety and health.</p> <ol style="list-style-type: none"> 1. Identify rules and laws designed to promote safety and health in the workplace. 2. State the rationale of rules and laws designed to promote safety and health. <p>C. Employ emergency procedures as necessary to provide aid in workplace accidents.</p> <ol style="list-style-type: none"> 1. Use knowledge of First Aid procedures as necessary. 2. Use knowledge of CPR procedures as necessary. 3. Use safety equipment as necessary. <p>D. Employ knowledge of response techniques to create a disaster and/or emergency response plan.</p> <ol style="list-style-type: none"> 1. Complete an assessment of an 		<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>emergency and/or disaster situation.</p> <p>2. Create an emergency and/or disaster plan.</p> <p>F. Apply objective construction guidelines for the accommodation of people with varying physical abilities to meet accessibility requirements.</p> <p>1. Explain how the Americans with Disabilities Act influences the compliance requirements for project designs.</p> <p>2. Design project plans that comply with OSHA standards.</p>				
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <p>3. Read regulations and contracts to ensure ethical and safety elements are observed.</p>		<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information</p>	<p>6.EE.2; 6.EE.3;</p> <p>6.SP.4; 6.SP.5;</p> <p>7.SP.2; 7.SP.3;</p> <p>7.SP.4; 8.SP.3;</p> <p>8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3;</p> <p>S.IC.4; S.IC.5; S.IC.6;</p> <p>S.ID.1</p>
	<p>X. TECHNICAL SKILLS</p> <p>C. Read, interpret, and use technical drawings, documents, and specifications to plan a project.</p> <p>2. Describe written standards and that specifications that apply.</p> <p>L. Planning</p> <p>5. Incorporate building codes</p> <p>Q. Supplemental Drafting Activities</p> <p>3. Use reference sources</p>		<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>6.NS.1; 6.EE.2;</p> <p>7.NS.1; 7.NS.2;</p> <p>7.NS.3; 6.NS.2;</p> <p>6.NS.3; 6.NS.5;</p> <p>7.EE.3; 6.RP.3;</p> <p>7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7;</p> <p>N.RN.3; N.Q.1;</p> <p>G.SRT.6; G.SRT.8;</p> <p>F.TF.3</p>
10	Architectural Presentations				

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>2. Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.</p> <p>3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.</p> <p>4. Evaluate and use information resources to accomplish specific occupational tasks.</p> <p>5. Use correct grammar, punctuation and terminology to write and edit documents.</p> <p>6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.</p> <p>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <p>7. Analyze data when interpreting operational documents.</p>		<p>Organization Creating, reading charts & graphs Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion ($1/4''=1'$)</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>II. COMMUNICATIONS</p> <p>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</p> <p>1. Communicate effectively when developing positive customer/client relationships.</p> <p>2. Use correct grammar to communicate verbally.</p> <p>F. Use communication skills and strategies to work effectively with potential clients.</p> <p>1. Deliver a presentation that explains a concept of design or preconstruction.</p>		<p>Organization Creating, reading charts & graphs Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <p>4. Conduct technical research to gather information necessary for decision-making.</p>		<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>B. Employ technological tools to expedite workflow.</p> <p>10. Prepare complex multi-media publications.</p> <p>11. Prepare presentations for training, sales and information sharing.</p> <p>12. Deliver presentations with supporting materials.</p>		<p>Organization, Create, read charts & graphs Customary measure, metric measure Locating information, Logic flow/critical path</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>VII. LEADERSHIP AND TEAMWORK</p> <p>A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.</p> <p>5. Conduct and participate in meetings to accomplish work tasks.</p>		<p>Organization Reading charts & graphs Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>X. TECHNICAL SKILLS</p> <p>F. Employ appropriate representational media to communicate concepts & design.</p> <p>1. Convey graphic information using multi-dimensional drawings.</p> <p>2. Build models using referenced drawings and sketches.</p>		<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals,</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships		
11	Building Materials & Sustainability				
	<p>I. ACADEMIC FOUNDATIONS C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities. 4. Identify the physical properties present when using common construction materials in order to use the materials safely, effectively and efficiently.</p>		<p>Organization Creating, reading charts & graphs Locating information</p> <p>Whole numbers, fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion (1/4"=1')</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation. 5. Create and implement project plans considering available resources and requirements of a project/problem to accomplish realistic planning in design and construction situations.</p>		<p>Organization Create, Read charts & graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry,</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
			Trig – solving right triangles, spatial relationships		
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL</p> <p>E. Apply the suitable practices of environmental impact to enhance project acceptance and quality.</p> <ol style="list-style-type: none"> Evaluate the sustainable design elements of a given project. Align sustainable design elements of a given project. 		<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information, cost analysis</p>	<p>6.EE.2; 6.EE.3;</p> <p>6.SP.4; 6.SP.5;</p> <p>7.SP.2; 7.SP.3;</p> <p>7.SP.4; 8.SP.3;</p> <p>8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3;</p> <p>S.IC.4; S.IC.5; S.IC.6;</p> <p>S.ID.1</p>
	<p>X. TECHNICAL SKILLS</p> <p>G. Employ principles, conventions, standards, applications and restrictions pertaining to the manufacture and use of construction materials, components and assemblies to incorporate into project design.</p> <ol style="list-style-type: none"> Select building materials and assemblies upon evaluation that meet project specifications. Use appropriate combinations of building materials and components that satisfy the requirements of building programs. <p>L. Planning</p> <ol style="list-style-type: none"> Identify construction material properties and uses <p>R. Specifications</p> <ol style="list-style-type: none"> Identify component and material specifications 		<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>6.NS.1; 6.EE.2;</p> <p>7.NS.1; 7.NS.2;</p> <p>7.NS.3; 6.NS.2;</p> <p>6.NS.3; 6.NS.5;</p> <p>7.EE.3; 6.RP.3;</p> <p>7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7;</p> <p>N.RN.3; N.Q.1;</p> <p>G.SRT.6; G.SRT.8;</p> <p>F.TF.3</p>
12	Leadership				
	<p>I. ACADEMIC FOUNDATIONS</p> <p>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</p> <ol style="list-style-type: none"> Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to 		<p>Organization</p> <p>Creating, reading charts & graphs</p> <p>Locating information</p> <p>Whole numbers,</p>	<p>6.NS.1; 6.EE.2;</p> <p>7.NS.1; 7.NS.2;</p> <p>7.NS.3; 6.NS.2;</p> <p>6.NS.3; 6.NS.5;</p> <p>7.EE.3; 6.RP.3;</p> <p>7.RP.1</p>	<p>A.APR.1; A.APR.7;</p> <p>N.RN.3; N.Q.1</p>

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	<p>enhance communication in the workplace.</p> <p>4. Evaluate and use information resources to accomplish specific occupational tasks.</p> <p>7. Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.</p>		<p>fractions, decimals, customary measure – ruler, linear, metric measure – length, metric/eng. Conversion, eng/eng conversion, metric/metric conversion, fractional conversion (1/4"=1')</p>		
	<p>II. COMMUNICATIONS</p> <p>B. Apply active listening skills to obtain and clarify information.</p> <p>3. Model behaviors that demonstrate active listening.</p> <p>C. Listen to and speak with diverse individuals to enhance communication skills.</p> <p>1. Apply factors and strategies for communicating with a diverse workforce.</p> <p>2. Demonstrate ability to communicate and resolve conflicts within a diverse workforce.</p> <p>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</p> <p>1. Communicate effectively when developing positive customer/client relationships.</p> <p>3. Listen to a presentation and record important information. Report back identifying central themes and use key points to explain how the message applies to a similar situation.</p> <p>F. Use communication skills and strategies to work effectively with potential clients.</p> <p>2. Employ facilitation skills while leading meetings that involve a variety of clients and agencies.</p>		<p>Organization Creating, reading charts & graphs Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p>		<p>Organization Create, Read charts &</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1;</p>

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	<p>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</p> <ol style="list-style-type: none"> 1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate). 2. Employ critical thinking and interpersonal skills to resolve conflicts with staff and/or customers. 3. Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability. 6. Evaluate and adjust design and construction project plans and schedules to respond to unexpected events and conditions. 		<p>graphs Reading and Locating information Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>G.SRT.6; G.SRT.8; F.TF.3</p>
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p>A. Use Personal Information Management (PIM) applications to increase workplace efficiency.</p> <ol style="list-style-type: none"> 1. Manage personal schedules and contact information. <p>B. Employ technological tools to expedite workflow.</p> <ol style="list-style-type: none"> 1. Use information technology tools to manage and perform work responsibilities. 4. Use email to communicate within and across organizations. 6. Search for information and resources. 7. Evaluate Internet resources for reliability and validity. 19. Facilitate group work through management of shared schedule and contact information. <p>C. Demonstrate Digital Citizenship</p> <ol style="list-style-type: none"> 1. Identify legal and ethical issues related to the use of information and communication technologies (e.g., properly selecting and citing resources) 		<p>Organization, Create, read charts & graphs Customary measure, metric measure Locating information, Logic flow/critical path</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; S.CP.1; A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>

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	<p>2. Discuss possible long-range effects of unethical uses of technology (e.g., virus spreading, file pirating, hacking) on cultures and society</p> <p>3. Discuss and demonstrate proper netiquette in online communications</p> <p>4. Identify ways that individuals can protect their technology systems from unethical or unscrupulous users</p> <p>5. Create appropriate citations for resources when presenting research findings</p> <p>6. Discuss and adhere to fair use policies and copyright guidelines</p>				
	<p>V. SYSTEMS</p> <p>B. Implement quality control systems and practices to ensure quality products and services.</p> <p>2. Diagnose and make necessary corrections or improvements to a technical system in a business, industry, or simulated work place setting.</p> <p>E. Understand and manage union-management relationships and contracts to create a cooperative work environment.</p> <p>1. Analyze a proposed contract in terms of the company's position and union's position in labor contract negotiations.</p> <p>2. Assess a situation for compliance with terms of a contract.</p>		<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships, Logic flow, critical path</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>
	<p>VII. LEADERSHIP AND TEAMWORK</p> <p>A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.</p> <p>1. Employ leadership skills to accomplish organizational goals and objectives.</p> <p>2. Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals.</p> <p>3. Employ teamwork skills to achieve</p>		<p>Organization</p> <p>Reading charts & graphs</p> <p>Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

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	<p>collective goals and use team members' talents effectively.</p> <p>4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.</p> <p>6. Employ mentoring skills to inspire and teach others.</p> <p>B. Appreciate the diversity of needs, values and social patterns in project design to appropriately meet client needs.</p> <p>2. Participate in appropriate trade and professional associations.</p>				
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p>A. Know and understand the importance of professional ethics and legal responsibilities.</p> <p>2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.</p> <p>3. Read regulations and contracts to ensure ethical and safety elements are observed.</p> <p>4. Use ethical and legal standards to avoid conflicts of interest in a design and/or construction setting.</p>		<p>Organization Reading charts & graphs Locating information</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p> <p>1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable.</p> <p>B. Explore, plan, and effectively manage careers.</p> <p>2. Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.</p> <p>3. Recognize and act upon requirements</p>		<p>Organization Reading charts & graphs Locating information, cost analysis</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>

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	<p>for career advancement to plan for continuing education and training.</p> <p>4. Continue professional development to keep current on relevant trends and information within the industry.</p> <p>5. Examine licensing, certification and credentialing requirements at the national, state and local levels to maintain compliance with industry requirements.</p> <p>6. Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.</p> <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</p> <p>1. Use multiple resources to locate job opportunities.</p> <p>2. Prepare a résumé.</p> <p>3. Prepare a letter of application.</p> <p>4. Complete an employment application.</p> <p>5. Interview for employment.</p> <p>6. List the standards and qualifications that must be met in order to enter a given industry.</p> <p>7. Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer.</p> <p>8. Maintain a career portfolio to document knowledge, skills and experience in a career field.</p> <p>9. Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.</p> <p>10. Identify and exhibit traits for retaining employment to maintain employment once secured.</p>				
	<p>X. TECHNICAL SKILLS</p> <p>E. Develop technical drawings drafted by hand and computer-generated plans to design structures.</p> <p>2. Use communication skills and</p>		<p>Organization</p> <p>Create, Read charts & graphs</p> <p>Reading and Locating</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.SRT.6; G.SRT.8; F.TF.3</p>

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	<p>strategies to work effectively with people (including clients, team members, and others).</p> <p>R. Specifications</p> <p>2. Describe responsibilities of related parties (i.e., design professional, client, and contractor)</p>		<p>information</p> <p>Whole numbers, fractions, decimals, customary and metric measure, conversion, angles, geometry, Trig – solving right triangles, spatial relationships</p>	<p>7.EE.3; 6.RP.3; 7.RP.1; 7.G.5</p>	