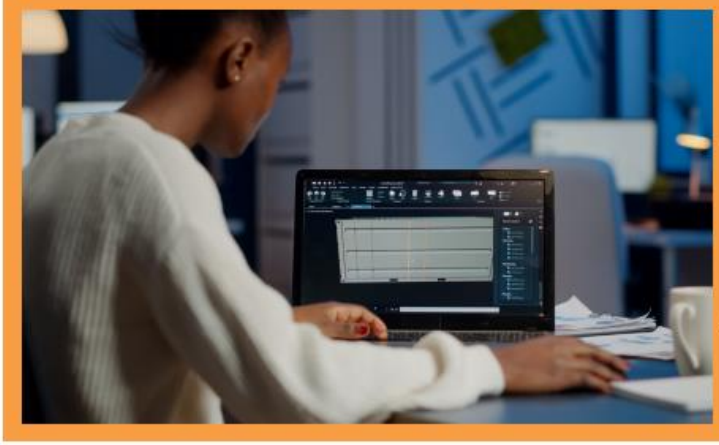
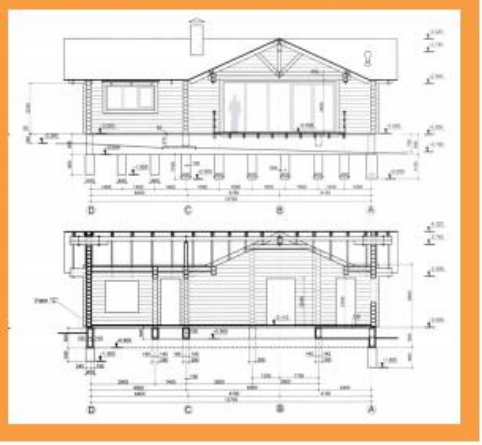
Drafting II - Architectural

TRADE, TECHNOLOGY, ENGINEERING, AND INDUSTRIAL EDUCATION | Career and Technical Education

IC62





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Introduction

This curriculum guide for IC62 Drafting II - Architectural, was developed to assist teachers in preparing students to meet the North Carolina State Board of Education's guiding vision Every public school student in North Carolina will be empowered to accept academic challenges, prepared to pursue their chosen path after graduating high school, and encouraged to become lifelong learners with the capacity to engage in a globally-collaborative society." This course is based on state and national content standards and it is rigorous and relevant. Business and industry representatives reviewed the standards and provided input on the content for this course as one that helps to prepare students for high-skill, high-wage, or in demand occupational opportunities. It also infuses technology and active learning tools throughout the curriculum to teach today's generation of students. Images included are from previous production of the drafting series of curriculum guides and are still relevant to current standards. The CTE Course Management System includes the course blueprint and information, career pathway, and equipment list. As presented in the course essential standards 1.00-6.00, an understanding of Architectural Drafting Concepts is covered including the following topics.

1.00 Understand Architectural Styles and Industry Terms.

2.00 Apply procedures to create Floor Plans.

3.00 Apply procedures to create Foundation plans and Levels of a Building.

4.00 Apply procedures to create Simple Roof and Floor System Designs.

5.00 Apply procedures for drawing View types.

6.00 Apply Procedures to Complete a Residential Construction Documents (CD) Set.

Aligned to the course standards and each indicator, this guide contains a culminating question, essential question(s), unpacked content, resources, instructional activities and additional online resources as needed. It incorporates and enhances appropriate content outlined in the North Carolina Standard Course of Study. The proof-of-learning will be either a 100-item multiple choice post-assessment at the standard level and administered through the NC Instructional Management System or an obtained Industry Credential (Autodesk Certified User- Revit).

Culminating Question

This question is central to the purpose of the standard. It requires students to think about the knowledge that will be learned.

Essential Questions

Essential questions are used to guide students' learning and are geared toward uncovering a topic. All essential questions for this course are derived directly from the unpacked content.

Unpacked Content & Resources

The unpacked content comes from the objectives listed on the course blueprint. Autodesk provides online resources used to develop the unpacked content specific to the software provided by each PSU.

Instructional Activities

Individual and group activities will be listed in the Instructional Activities section. Instructional activities reflect "best practice" as determined by highly qualified and

successful teachers. The activities follow the unpacked content that is designed to build understanding of the indicator.

Vocabulary/Content Literacy Terminology

There are a variety of research-based activities that effectively introduce and reinforce vocabulary for any subject. This course provides instructional flexibility to utilize any tool that achieves the intended result which is to understand and recall key terms necessary for further development of objectives. When learning a new vocabulary, it is critical that students know how to recognize/read a word, spell the word, define it and obtain a visual clue for context. Sample activities are provided in the file below. Also provided in this guide are the Content Literacy Terminology for each objective.

Vocabulary Activity Options.docx

Guest Speakers, Virtual Field Trips & Field Experiences

Industry involvement is critical for a deeper student understanding of content/concepts. Educators can help participants receive the most from these visits by preparing for the visit, having participants take notes during the visit, and then reflecting on the visit. These types of activities are not limited to just one standard/objective.

Additional Resources

Textbook & Online

Autodesk provides content. Previous Curriculum Guides for course and Architectural Codes (international, national and state) also provided content. Additional textbooks can be selected by individual PSUs for content; however, no specific textbook was

referenced for this Guide. Referenced websites are functional as of the publication date of this curriculum guide. No guarantee can be made as to the continued functionality, but a generic internet search may yield additional resources and websites.

Curriculum Projects

Teachers should incorporate hands-on projects that become the instructional method through which students acquire understanding of the content. Students may address these learning outcomes simultaneously, rather than in the sequential manner occurring in traditional courses. The learning outcomes are not outlined for coverage during a specific time in the course framework but are tied to projects which can be acquired at any point. This guide references one overarching project for multiple objectives. Adjustments can be made to project specifications for class/learning needs at Teacher discretion (sample Rubrics/Instructions which could be used/adapted given in table below). Students should cover the curriculum as they move through the project when appropriate to scope. Supplemental software tutorials and/or instruction is recommended to take place throughout projects.

Recommended Project Pacing	Sample Rubrics/Instructions
Project Introduction	 Project Based Learning- Custom H
Space Planning	 Project Based Learning- Custom H
	 Project Based Learning- Custom H

	Project Based Learning- Custom H Project Based Learning- Custom H
Floor Plans	Project Based Learning- Custom H
Foundation Plans	Project Based Learning- Custom H
	Project Based Learning- Custom H
Roof Plans	Project Based Learning- Custom H
Elevations	Project Based Learning- Custom H
Sections	Project Based Learning- Custom H
	Project Based Learning- Custom H
Schedules	Project Based Learning- Custom H

For more information on successful projects visit Autodesk Revit and/or the shared Moodle for the course.

CTSO

This course emphasizes Career and Technical Student Organization (CTSO) competitive events for SkillsUSA; however, these were not directly written into the Curriculum Guide. For more information on SkillsUSA visit: https://www.skillsusa.org/.

Acknowledgements

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Course	**IC62 Drafting II - Architectural**			
Essential Standard	1.00	B2	5%	Understand Architectural Styles and Industry Terms.
Indicator	1.01	N/A	N/A	Understand various architectural styles.
Culminating Question	**What are the various architectural styles used in residential architecture?**			

UNPACKED CONTENT

a. Content Literacy Terminology
b. Understand various architectural styles.

INSTRUCTIONAL ACTIVITIES-1.01	
A. Content Literacy Terminology	
Resource(s)	**(See 1.01.1)**
B. Understand various architectural styles. *Note: Activity combines with part of indicator 1.02.*	
Activity	Authentic Research- Residential Architectural Styles
Teacher Instructions	● Facilitate whole-class or small-group discussion on residential styles to link prior knowledge. Student(s) can pull-up examples of ones they may already know or list them on the board. To assist in access to prior knowledge, show examples of some major landmarks (global, national, state, or local) and link those (starting with easier to recognize styles such as log cabin or modern). ● Provide a copy of *Authentic Research- Residential Architectural Styles* and explain directions for completing Part One of the project. ● Facilitate student research using the internet and creation of a presentation. ● Explain Part Two as the student(s) complete the presentation. Students should be given adequate time to compile their real-world examples (i.e. walking or driving around town, taking trips with family or field experiences as a class, from an online reality site for your area). ● Facilitate students sharing examples with the class once they have completed the project.
Student Instructions	● Discuss styles you already may know and find examples online and/or list on board as a class. ● Create a presentation on the given residential architectural styles with at least three "style" points & 2 image examples for each. ● Collect and compile real world examples of each style and add them to your presentation. ● Share your presentation to identify common types of residential architectural styles and discuss characteristics.
Resource(s)	 Authentic Research- Residenti

Content Literacy Terminology-1.01.1	
Art Deco	Architectural style characterized by flat roofs, smooth stucco walls with rounded corners and bold exterior decorations.
Cape Cod	Architectural style characterized by low, broad, single-story frame building with a moderately steep pitched gabled roof, a large central chimney, and very little ornamentation.
Contemporary	Architectural style characterized by whatever today's building styles are, which can vary in design and appearance; tend to emphasize energy efficiency, sustainable materials, lots of natural light and the use of recycled non-toxic materials.
Craftsman	Architectural style characterized by an emphasis on natural materials such as wood, stone and brick. Wide front porches and low-pitched roofs.
Dutch Colonial	Architectural style characterized by symmetry and proportion based on the classical architecture with easily recognizable gambrel roof.
Federal Colonial	Architectural style characterized by symmetry and proportion based on the classical architecture with addition of wings off to each side of the original box shape and tends to have more decorative embellishments than other Colonial styles.
French Colonial	Architectural style characterized by symmetry and proportion based on the classical architecture inspired by estates of the French countryside, the provincial style has decorative appeal, steep roofs and romantic touches.
Georgian Colonial	Architectural style characterized by symmetry and proportion based on the classical architecture; ornament is restrained or absent.
Greek Revival	Architectural style characterized by tall columns and pediments, painted plaster exterior, horizontal transoms, symmetrical shape, bold moldings and embellishments.
Log Cabin	Architectural style characterized by being constructed of logs considered to look less finished or less architecturally refined.
Modern	Architectural style characterized by open living spaces, clean, geometric lines and function-over-form are key elements of the style inspired by the historical art movement of modernism.
Prairie	Architectural style characterized by long flat roofs, rows of windows, horizontal lines and organic patterns developed originally by Frank Lloyd Wright.
Queen Anne	Architectural style characterized by using “ginger bread” (decorative moldings), Steep cross-gabled roofs, turret/towers, vertical windows; Inventive, multi story floor plans often include projecting wings, several porches and balconies, and multiple chimneys.
Ranch	Architectural style characterized by being single level with low pitched roof.

Salt Box	Architectural style characterized by long, pitched roof that slopes down to the back, generally a wooden frame house.
Southern Colonial	Architectural style characterized by symmetry and proportion based on the classical architecture with large sometimes two-story porches and columns.
Spanish	Architectural style characterized by stucco as common exterior material with clay roof tiles, arcaded porches, arched corridors, square pillars and bell towers.
Victorian	Architectural style characterized by being constructed more for beauty than functionality, homes tend to be more complex in design with ornate trim, bright colors, large porches, asymmetrical shape and multi-faceted rooflines.

Course	**IC62 Drafting II - Architectural**			
Essential Standard	1.00	B2	5%	Understand Architectural Styles and Industry Terms.
Indicator	1.02	N/A	N/A	Understand terms related to selected styles of residential architecture and create a collection of illustrations or a presentation that demonstrates the various elements of residential styles.
Culminating Question **Essential Questions**	**What are the terms related to selected styles of residential architecture and how is a collection of illustrations or a presentation that demonstrates the various elements of residential styles created?** ● What are the terms related to a selected style of residential architecture? ● How is a presentation that demonstrates the various elements of residential styles created?			

UNPACKED CONTENT

a. Content Literacy Terminology
b. Understand terms related to selected styles of residential architecture.
c. Create a collection of illustrations or a presentation that demonstrates the various elements of residential styles.

INSTRUCTIONAL ACTIVITIES-1.02	
A. Content Literacy Terminology	
Resource(s)	**(See 1.02.1)**
B. Understand terms related to selected styles of residential architecture. *Note: Activity designed to take place after Authentic Research-Residential Architectural Styles*	
Activity	Peer Teaching- Residential Style Types
Teacher Instructions	● Assign or allow students to pick a residential architectural style. Having a variety of styles across class will ensure Unpacked Content is better covered. Provide a copy of *Peer Teaching-Residential Style Types*. Facilitate student research and creation of presentation. ● Facilitate practice and revisions of recorded presentation. ● Facilitate students listening/watching peer presentations. Peer reviews are encouraged. Students should keep a list of new terms they come across during presentations. ● Facilitate class discussion of terms at conclusion.
Student Instructions	● Research and create a presentation on your residential architectural style to include, but not limited to. History/Origin, Specific Style elements (Include terms that are related specifically to your style), Popular Icon/Famous Structures, and Famous Designers/Architects associated with style can be included. ● Practice and revise as needed your recorded presentation. ● Listen and watch peer presentations. Keep a list of new terms you learn to discuss as a class later. ● Discuss new terms as a class.
Resource(s)	 Peer Teaching- Residential Style Typ
C. Create a collection of illustrations or a presentation that demonstrates the various elements of residential styles. *Note: Activity combines with part of indicator 1.01.*	
Activity	Authentic Research- Residential Architectural Styles
Teacher Instructions	● Facilitate whole-class or small-group discussion on residential styles to link prior knowledge. Student(s) can pull-up examples of ones they may already know or list them on the board. To access prior knowledge, show examples of some major landmarks (global,

	national, state, or local) and link those (starting with easier to recognize styles such as log cabin or modern). ● Provide a copy of *Authentic Research- Residential Architectural Styles* and explain directions for completing Part One of the project. Facilitate student research using the internet and creation of a presentation. ● Explain Part Two as the student(s) complete the presentation. Students should be given adequate time to compile their real-world examples (i.e. walking or driving around town, taking trips with family or field experiences as a class, from an online reality site for your area). Students can share examples with the class once they have completed the project.
Student Instructions	● Discuss styles you already may know and find examples online and/or list on board as a class. ● Create a presentation on the given residential architectural styles with at least three "style" points & two image examples for each. ● Collect and compile real world examples of each style and add them to your presentation. Share your presentation to identify common types of residential architectural styles and discuss characteristics.
Resource(s)	 Authentic Research- Residenti

Content Literacy Terminology-1.02.1	
Art Deco	Architectural style characterized by flat roofs, smooth stucco walls with rounded corners and bold exterior decorations.
Cape Cod	Architectural style characterized by low, broad, single-story frame building with a moderately steep pitched gabled roof, a large central chimney, and very little ornamentation.
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Course	**IC62 Drafting II - Architectural**			
Essential Standard	1.00	B2	5%	Understand Architectural Styles and Industry Terms.
Indicator	1.03	N/A	N/A	Understand architectural industry terms.
Culminating Question **Essential Questions**	**What are some important architectural industry terms?** ● What terms are related to typical residential home layouts? ● What terms are related to sustainable design? ● What terms are related to the software?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand architectural industry terms related to typical residential home layouts.
c. Understand architectural industry terms related to sustainable design.
d. Understand architectural industry terms related to software.

INSTRUCTIONAL ACTIVITIES-1.03	
A. Content Literacy Terminology	
Resource(s)	**(See 1.03.1)**
B. Understand architectural industry terms related to typical residential home layouts.	
Activity	Similarities and Differences- Typical Residential Home Layouts
Teacher Instructions	● Overview basic definitions of one-story, one-and-a-half story, two-story and split-level homes with class as a whole. Provide definitions on board, screens, or project for next activity. ● Break students into three, small heterogeneous groups. Randomly distribute two (2) Venn diagrams to each group or display/draw them on large paper/boards. Facilitate groups writing as many similarities (in center part) and differences (on corresponding ends) between the two types on sheet as they can. It is recommended to set a time limit to work on sheets. Formatively prompt students for ideas as needed (such as "think about bathrooms", "where is square footage", "where are the living/service/sleeping areas usually found?" or "what about the exterior?") ● Facilitate groups sharing their work when completed. Review with whole-class similarities between all types and differences specific to each.
Student Instructions	● Participate in overview of definitions: one-story, one-and-a-half story, two-story and split-level homes ● Write as many similarities (in center part) and differences (on corresponding ends) between the two types of homes you were given on the sheet. ● Share your outline of similarities and differences for typical residential home layouts with the class.
Resource(s)	 Similartities and Differences- Typical
C. Understand architectural industry terms related to sustainable design. **D. Understand architectural industry terms related to software.** *Note: Activity covers all Unpacked Content for C & D.*	
Activity	Vocabulary Focus- Architectural Industry Terminology
Teacher Instructions	● Provide students hard copy of *Vocabulary Focus- Architectural Industry Terminology*. Facilitate students finding definitions using the internet for Part One. Students should then select and sketch a drawing/icon related to the term.

	● Facilitate students completing the word search in Part Two. ● Facilitate students selecting and watching/listening to a podcast or TED talk on Sustainable Design. Students will write a review of what they learned to share with peers. ● Facilitate class whole- class discussion of reviews.
Student Instructions	● Find definitions using the internet for Part One of *Vocabulary Focus-Architectural Industry Terminology.* Select and sketch an icon for each. ● Complete the word search on Part Two *Vocabulary Focus-Architectural Industry Terminology*. ● Select and watch/listen to a podcast or TED talk on Sustainable Design. Write a review of what you learned. ● Share your review.
Resource(s)	 Vocabulary Focus- Architectural Industı

Content Literacy Terminology-1.03.1	
BIM	The process for electronically managing all of the information included in a building project before, during, and after construction.
FROG	A finished room or space over a garage.
LEED	(Leadership in Energy and Environmental Design) a type of green building certification that can be obtained for a project.
Level	Defines a vertical height or story within a building.
One-and-a-half story	A floor area that is partially or wholly built into the framing of the roof where the upper level is less than 70% of the lower and frequently contains dormers; Attic space used as living space.
One-Story Home	A house in which all square footage is located on a single story.
Residential	Designed for people to live in.
Revit	BIM software from Autodesk capable with tools to plan and track various stages in the building's life cycle, from concept to construction and later maintenance and/or demolition.
Split-level	A house in which various sections of the floor plan have different floor and ceiling heights.
Square footage	Area measurement between the boundaries of a space (1'-0" x 1'-0").
Story	Portion of a residence included between the upper surface of a floor and the upper surface of the floor or roof next above.
Sustainable Design	The philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability.
Two-Story Home	A house in which the second story hosts as much, or close to as much, square footage as the first.

Course	IC62 Drafting II - Architectural			
Essential Standard	2.00	C3	40%	Apply procedures to create Floor Plans.
Indicator	2.01	N/A	N/A	Apply terms and definitions and accepted principles related to single-level residential space planning.
Culminating Question **Essential Questions**	**What are terms and definitions and accepted principles related to single-level residential space planning?** ● What are the terms and definitions related to single-level residential space planning? ● How are terms and definitions related to single-level residential space planning applied? ● What are the accepted principles related to general single-level residential space planning? ● How are the accepted principles related to general single-level residential space planning applied? ● What are the accepted principles related to single-level residential space planning in sleeping areas? ● How are accepted principles related to single-level residential space planning in sleeping areas applied? ● What are the accepted principles related to single-level residential space planning in kitchens? ● How are accepted principles related to single-level residential space planning in kitchens applied? ● What are the accepted principles related to single-level residential space planning in bathrooms? ● How are accepted principles related to single-level residential space planning in bathrooms applied? ● What are the accepted principles related to single-level residential space planning in additional service areas? ● How are accepted principles related to single-level residential space planning in additional service areas applied?			
UNPACKED CONTENT				

a. Content Literacy Terminology.
b. Understand terms and definitions related to single-level residential space planning.
c. Apply terms and definitions related to single-level residential space planning.
d. Understand accepted principles related to general single-level residential space planning.
e. Apply accepted principles related to general single-level residential space planning.
f. Understand accepted principles related to single-level residential space planning in sleeping areas.
g. Apply accepted principles related to single-level residential space planning in sleeping areas.
h. Understand accepted principles related to single-level residential space planning in kitchens.
i. Apply accepted principles related to single-level residential space planning in kitchens.
j. Understand accepted principles related to single-level residential space planning in bathrooms.
k. Apply accepted principles related to single-level residential space planning in bathrooms.
l. Understand accepted principles related to single-level residential space planning in additional service areas.
m. Apply accepted principles related to single-level residential space planning in additional service areas.

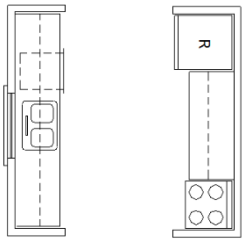
INSTRUCTIONAL ACTIVITIES-2.01	
A. Content Literacy Terminology	
Resource(s)	**(See 2.01.1)**
B. Understand terms and definitions related to single-level residential space planning. *Note: Activity combines with Indicator 2.03.*	
Activity	Connect Prior Knowledge- Floor Plans
Teacher Instructions	● Facilitate students listing as many words related to "home design" on board as they can in 3 minutes as a whole class. Students can call out words to recorders or write their own. ● Break students into heterogeneous small groups. Provide a copy of *Connect Prior Knowledge-Floor Plans-Word List*. Facilitate students cutting out words and sorting into related categories (piles) of terms as a group. Students will determine the number of categories and main label for each category as a group. They should leave one category for terms they do not know. ● Provide each group with *Connect Prior Knowledge-Floor Plans- Definitions*. Facilitate groups reading aloud definitions for each term, locating the term, and deciding if it is in the correct labeled category or if it needs to be moved.
Student Instructions	● List as many words related to "home design" on the board as you can as a whole class. ● Cut-out words from provided handout *Connect Prior Knowledge-Floor Plans-Word List*. As a group, sort the words into categories (piles) of like terms/concepts. There are no set number of categories but leave one category for terms your group does not know and determine a label for the others. ● Take turns reading aloud definitions for each term, locating the term, and deciding if it is in the correctly labeled category or if it needs to be moved.
Resource(s)	Connect Prior Knowledge- Floor P Connect Prior Knowledge- Floor P
C. Apply terms and definitions related to single-level residential space planning. *Note: Activity combines with Indicator 2.03.*	
Activity	Project Based-Learning-ARC II-Custom Home Project

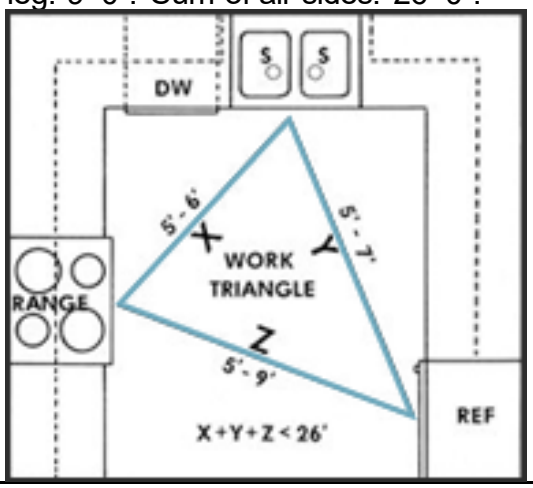
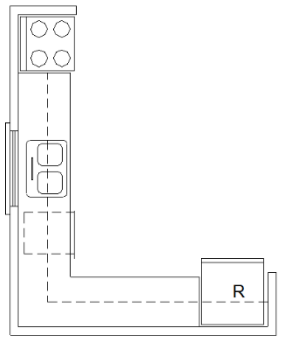
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
D. Understand accepted principles related to general single-level residential space planning.	
Activity	Leading Questions and Answer-Introduction to Space Planning
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Introduction to Space Planning-Presentation* and *Leading Questions and Answer-Introduction to Space Planning-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. • Facilitate students working in pairs to review answers. • Facilitate whole-class review of questions.
Student Instructions	• Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and links. • In pairs, review your answers to the *Activity* and gathered examples. • Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Introd  Leading Questions and Answer- Introdı
E. Apply accepted principles related to general single-level residential space planning.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
F. Understand accepted principles related to single-level residential space planning in sleeping areas.	
Activity	Leading Questions and Answer-Sleeping Areas
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer- Sleeping Areas-Presentation* and *Leading Questions and Answer-Sleeping Areas-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated

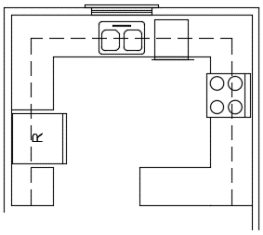
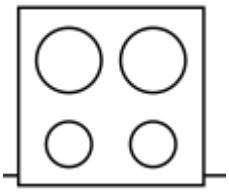
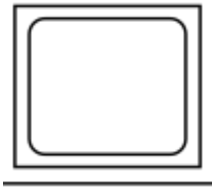
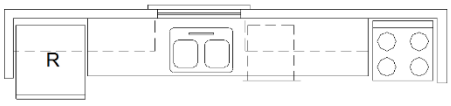
	PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. ● Facilitate students working in pairs to review answers and share bedroom drawings. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint presentation and links. ● In pairs, review your answers to the *Activity* and bedroom drawings. ● Participate in whole-class discussion of questions.
Resource(s)	  Leading Questions and Answer- Introd Leading Questions and Answer- Introd
G. Apply accepted principles related to single-level residential space planning in sleeping areas.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
H. Understand accepted principles related to single-level residential space planning in kitchens.	
Activity	Leading Questions and Answer-Kitchens
Teacher Instructions	● Provide digital copies of *Leading Questions and Answer-Kitchens-Presentation* and *Leading Questions and Answer-Kitchens-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note: Numbers in brackets coincide with slide numbers if needed.* ● Facilitate students working in pairs to review answers and share kitchen drawings. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint presentation and links. ● In pairs, review your answers to the *Activity* and kitchen drawings. ● Participate in whole-class discussion of questions.
Resource(s)	  Leading Questions and Answer- Kitcher Leading Questions and Answer- Kitcher

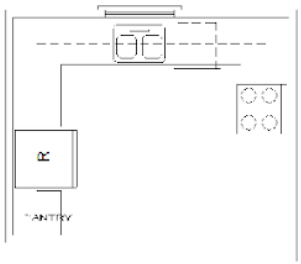
I. Apply accepted principles related to single-level residential space planning in bathrooms.	
Activity	Project Based-Learning-ARC II-Custom Home Project Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
J. Understand accepted principles related to single-level residential space planning in bathrooms.	
Activity	Leading Questions and Answer-Bathrooms
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Bathrooms-Presentation* and *Leading Questions and Answer-Bathrooms-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. • Facilitate students working in pairs to review answers and give review of selected video. • Facilitate whole-class review of questions.
Student Instructions	• Answer questions independently in the *Activity* document provided using the associated PowerPoint presentation and links. • In pairs, review your answers to the *Activity* and share a short verbal review of the video you selected/watched. • Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Kitcher  Leading Questions and Answer- Kitcher
K. Apply accepted principles related to single-level residential space planning in bathrooms.	
Activity	Project Based-Learning-ARC II-Custom Home Project Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
L. Understand accepted principles related to single-level residential space planning in other service areas.	
Activity	Leading Questions and Answer-Other Service Areas
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Bathrooms-Presentation* and *Leading Questions and Answer-Other Service Areas-Activity*.

	Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. ● Facilitate students working in pairs to review answers and collect image examples. ● Facilitate whole class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint presentation and links. ● In pairs, review your answers to the *Activity* and share your selected image examples. ● Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Kitcher  Leading Questions and Answer- Kitcher
M. Apply accepted principles related to single-level residential space planning in other service areas.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.01.1	
Alcove	A small room adjoining a larger room often separated by an archway or cased opening.
Aligned Dimension	Most likely use to create dimension on a wall or line, between two or more parallel references, or between two or more points.
Base Cabinet	Cabinetry that is affixed to the wall that sits directly on the floor of a kitchen and is specified with “B”; standard height 34 1/2”; Standard depth 24”.
Breezeway	A covered walkway with open sides between two different parts of a structure.
Closed floor plan	Type of design where rooms in cubicles, with little opportunity for overflow into other rooms.
Compartmented Bath	Bathroom layout in which the water closet is partitioned off from the bathroom by walls and a door.
Deck	An exterior floor supported on at least two opposing sides by adjoining structures, piers, or posts.
Dishwasher	Appliance used for washing and dryer dishes; marked with hidden lines to show where it is located under the counter. 
Egress	Term used in building codes to describe access.
Foyer	Entry hall that typically includes a closet.
Galley Kitchen	Kitchen layout in which cabinets run along on two opposite walls (also referred to as a “corridor” kitchen); ideal for small to medium sized kitchens; not for heavy traffic areas. Minimum distance across 4’-0”. 
Garage	An enclosed area designed to protect an automobile; One car minimum: 10’-0” x 20’-0”; Two car minimum: 20’-0” x 20’-0”.
Half Bath	Includes a water closet and lavatory.
Kitchen Work Triangle	A concept used to determine efficient kitchen layouts between the three main work points (cook top/range, sink, and refrigerator).

	Minimum distance of each leg: 3'-0". Maximum distance of each leg: 9'-0". Sum of all sides: 26'-0". 
Laundry Room	A room designed specifically for washing, drying, folding, and ironing clothes.
Lavatory	Bathroom fixture designed for washing one's hands and face.
Linen Closet	Closet used specifically for only shelved items; Conventionally accepted depth: 1'-6" or 18".
L-Shaped Kitchen	Kitchen layout in which cabinets run along on two adjacent walls: ideal for small to medium sized kitchens. 
Microwave (Countertop)	Appliance which uses electromagnetic waves to heat food. 
Modular Part	Building parts or casement that have been pre-assembled either in a plant or on-site.
Open floor plan	Type of overall home design where rooms have little division between next room to allow opportunity for overflow into other rooms.

Patio	A ground-level exterior entertaining area that is made of concrete, stone, brick, or treated wood.
Peninsula Kitchen	Kitchen layout in which cabinets run along at least one wall and additional connected cabinets into space (think connected island); ideal for medium to large sized kitchens. 
Plumbing Walls	Walls located behind plumbing fixtures that require extra space for piping (also referred to as “water walls”); At least 6” thick.
Porch	A covered area leading into a building.
Range	Single kitchen appliance that houses oven and cooktop. 
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sink	Vessel which holds water. 
Square Footage	Area measurement between the boundaries of a space (1’-0” x 1’-0”).
Story	Portion of a residence included between the upper surface of a floor and the upper surface of the floor or roof next above.
Straight Line Kitchen	Kitchen layout in which cabinets run along one wall: ideal for small spaces. 

Threshold	Beveled members directly under a door that is slightly raised to keep water from flowing in and often is fitted with a piece of weather stripping to help insulate the area underneath your door. It sits above the door sill.
U-Shaped Kitchen	Kitchen layout in which cabinets run along on three adjacent walls, considered high efficiency; ideal for medium to large sized kitchens; Minimum distance across: 6'-0". 
Utility Room	A room that includes space for laundry as well as long-term storage of food and/or electrical equipment for residence.
Vanity Cabinet	Bathroom cabinetry; Standard height: 30".
Wall Cabinet	Cabinetry that is affixed to the wall and is specified with "W" (also referred to as "upper" cabinets); standard height 34 1/2"; Standard Depth 12"-18"; Standard elevation 54" (unless increased for specific tasks like over sink or range).
Wardrobe Closet	Closet used for hanging clothes; Minimum depth: 24".
Water Closet	Water-flushing plumbing fixture designed to receive and discharge human waste.
Zoning (Space Planning)	Grouping areas of the home.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

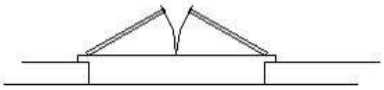
Course	**IC62 Drafting II - Architectural**			
Essential Standard	2.00	C3	40%	Apply procedures to create Floor Plans.
Indicator	2.02	N/A	N/A	Apply residential door and window types, symbols for doors, windows, and room identification.
Culminating Question **Essential Questions**	**How are residential door and window types, symbols for doors, windows and room identification applied?** ● What are common door symbols used on a floor plan? ● What are common window symbols used on a floor plan? ● How are rooms identified on a floor plan? ● How are common door symbols applied on a floor plan? ● How are common window symbols applied on a floor plan? ● How is room identification applied on a floor plan?			

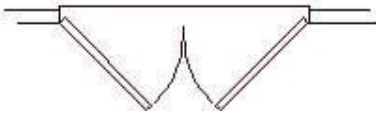
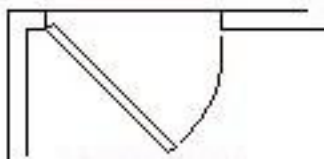
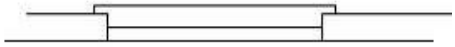
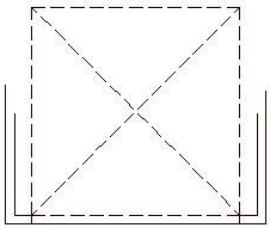
UNPACKED CONTENT

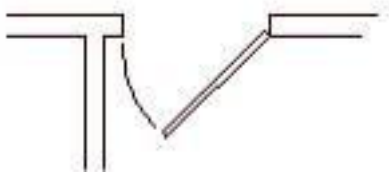
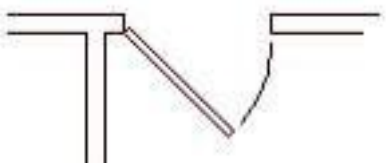
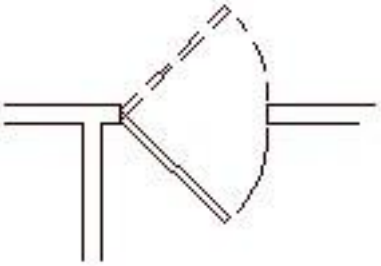
a. Content Literacy Terminology.
b. Identify common door symbols used on a floor plan.
c. Identify common window symbols used on a floor plan.
d. Understand how rooms are identified on a floor plan.
e. Apply door symbols on a floor plan.
f. Apply window symbols on a floor plan.
g. Apply room identification techniques on a floor plan.

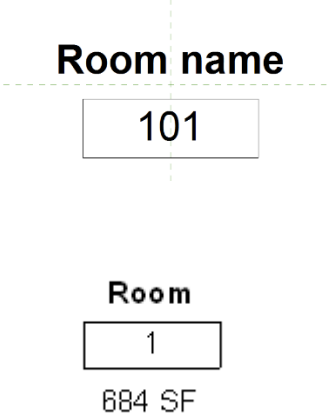
INSTRUCTIONAL ACTIVITIES-2.02	
A. Content Literacy Terminology	
Resource(s)	**(See 2.02.1)**
B. Identify common door symbols used on a floor plan. **C. Identify common window symbols used on a floor plan.** *Note: Activity covers all Unpacked Content for B & C.*	
Activity	Symbol Classification- Doors & Windows
Teacher Instructions	● Provide a copy of *Symbol Classification-Doors & Windows-Activity*. Facilitate students using the internet to determine the information requested in table for Part One. ● Facilitate creation of presentations to include each style of door and window with at least two real world picture examples using the internet for Part Two. Presentations should also include Title Page & Subtitles for Windows/Door Sections.
Student Instructions	● Determine the information requested in table for Part One using the internet. ● Create a presentation to include each style of door and window with at least two real world picture examples using the internet for Part Two. Presentations should also include Title Page & Subtitles for Windows/Door Sections.
Resource(s)	Symbol Classification- Door
D. Understand how rooms are identified on a floor plan.	
Activity	Industry Examples- Room Identification
Teacher Instructions	● Provide students with digital or hard copies of Construction Document sets which includes at least a Floor Plan. ● Facilitate students identifying information for specific rooms according to the Construction Documents provided (i.e. Title/Abbreviation, Sq. Ft.). Note: This activity can be set-up in stations with different sets of drawings and/or identifying information for each station.
Student Instructions	● Identify information for specific rooms according to the Construction Documents provided (i.e. Title/Abbreviation, Sq. Ft.).
Resource(s)	Teacher provided/selected
E. Apply appropriate door symbols on a floor plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project

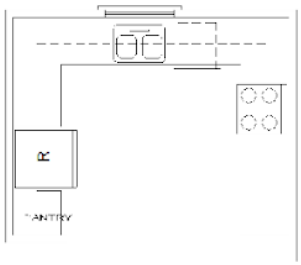
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
F. Apply appropriate window symbols on a floor plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
G. Apply room identification techniques on a floor plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.02.1	
Angled Bay Window	Window space projecting outward from the main walls of a building and forming a bay in a room. 
Awning Window	Window hinged on the top and swings out. 
Cased Opening or Archway	Opening in the wall which is trimmed out; an archway has an arch at the top. 
Casement Windows	Window hinged on the side and swings out. 
Casing	Decorative trim that covers the space between the jamb and a rough opening of a window.
Curtain Wall	An exterior wall usually constructed with aluminum-framed walls containing in-fills of glass, metal panels, or thin stone that is attached to the building structure, but which does not carry the floor or roof loads of the building. 
Door Jamb	Vertical portion of the door frame onto which a door is secured.
Door Sill	The portion of the door frame that runs along the bottom and sits directly on the foundation of your floor and sits under the threshold.
Dormer	A window that projects vertically from a sloping roof.
Double Hung Window	Window which slides up and down. 
Egress	Term used in building codes to describe access.

Exterior French Door with Threshold	Double swinging doors which include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Exterior Single Door with Threshold	One swinging doors which include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Exterior Sliding Doors with Threshold	Doors which slide past or over on another and include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Fixed Window	Window that does not open. 
Garage Door	Standard height: 7’-0”. 
Hopper Window	Hinged on the top and swings in. 
Interior Accordion Door or Partition	Door which has a series of alternating folds with panels of similar size. 

Interior Door with Backwards Swing	Door which swings opposite the standard direction. 
Interior Door with Standard Swing	Door which swings towards the corner of the room it serves. 
Interior Double Action Door	Door which swings into both rooms. 
Interior Double Bi-fold Doors	Double doors that slide open, made from a series of common sized panels that fold up against each other. 
Interior French Doors	Double swinging doors. 
Interior Single Bi-fold Door	Door that slides open, made from a series of common sized panels that fold up against each other. 
Interior Sliding Doors	Doors which slide past or over on another. 

Modular Part	Building parts or casement that have been pre-assembled either in a plant or on-site.
Mullion	Vertical and horizontal members between window and door units.
Muntin	Divides window glass into smaller panes (commonly referred to in the industry interchangeably with “mullion”, but they are different).
Pocket Door	Door which slides into a compartment in the wall. 
Revolving Door	Door which rotates around center point/support. 
Room Tag	Annotation elements that can be added and displayed in plan views and section views and can display values for related parameters, such as room number, room name, computed area, and volume. 
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sliding Windows	Windows which slide past or over on another. 
Square Footage	Area measurement between the boundaries of a space (1’-0” x 1’-0”).
Threshold	Beveled member directly under a door that is slightly raised to keep water from flowing in and often is fitted with a piece of weather stripping to help insulate the area underneath your door; It sits above the door sill.
U-Shaped Kitchen	Kitchen layout in which cabinets run along on three adjacent walls, considered high efficiency; ideal for medium to large sized kitchens; Minimum distance across: 6’-0”.

	
Window Sill	A ledge or sill forming the bottom part of a window.
Zoning (Space Planning)	Grouping areas of the home.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

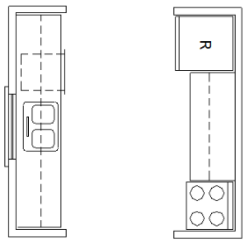
Course	IC62 Drafting II - Architectural			
Essential Standard	2.00	C3	40%	Apply procedures to create Floor Plans.
Indicator	2.03	N/A	N/A	Apply terms and definitions related to single-level residential space planning.
Culminating Question **Essential Questions**	**What are terms and definitions and accepted principles related to single-level residential space planning?** ● What terms and definitions are related to single-level residential space planning? ● How are terms and definitions related to single-level residential space planning applied?			

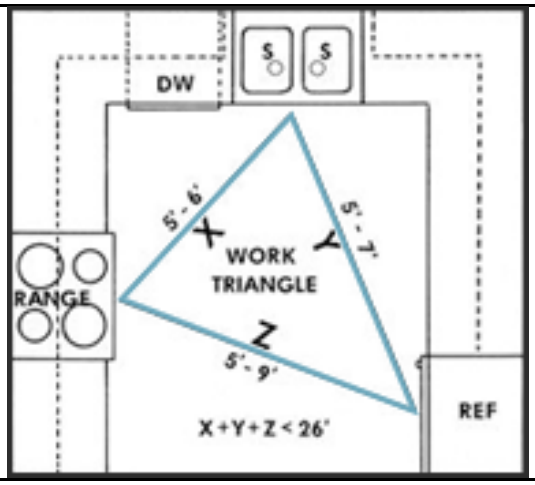
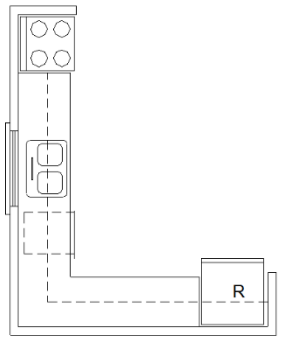
UNPACKED CONTENT

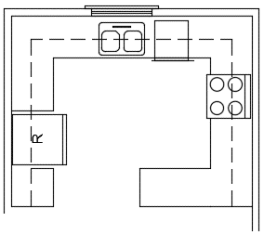
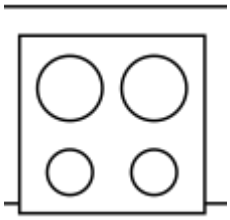
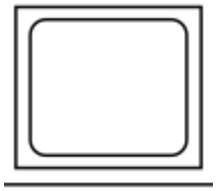
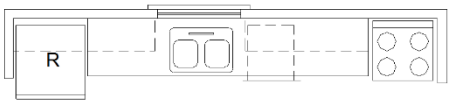
a. Content Literacy Terminology.
b. Understand terms and definitions related to single-level residential space planning.
c. Apply terms and definitions related to single-level residential space planning.

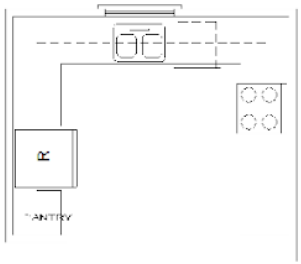
INSTRUCTIONAL ACTIVITIES-2.03 *Note: All activities combine with part of Indicator 2.01*	
A. Content Literacy Terminology	
Resource(s)	**(See 2.03.1)**
B. Understand terms and definitions related to single-level residential space planning.	
Activity	Connect Prior Knowledge- Floor Plans
Teacher Instructions	● Facilitate students listing as many words related to "home design" on board as they can in 3 minutes as a whole class. Students can call out words to recorders or write their own. ● Break students into heterogeneous small groups. Provide a copy of *Connect Prior Knowledge-Floor Plans-Word List*. Facilitate students cutting out words and sorting into related categories (piles) of terms as a group. Students will determine the number of categories and main label for each category as a group. They should leave one category for terms they do not know. ● Provide each group with *Connect Prior Knowledge-Floor Plans- Definitions*. Facilitate groups reading aloud definitions for each term, locating the term, and deciding if it is in the correct labeled category or if it needs to be moved.
Student Instructions	● List as many words related to "home design" on the board as you can as a whole class. ● Cut-out words from provided handout *Connect Prior Knowledge-Floor Plans-Word List*. As a group, sort the words into categories (piles) of like terms/concepts. There are no set number of categories but leave one category for terms your group does not know and determine a label for the others. ● Take turns reading aloud definitions for each term, locating the term, and deciding if it is in the correctly labeled category or if it needs to be moved.
Resource(s)	Connect Prior Knowledge- Floor P Connect Prior Knowledge- Floor P
C. Apply terms and definitions related to single-level residential space planning.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources

This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.

Content Literacy Terminology- 2.03.1	
Alcove	A small room adjoining a larger room often separated by an archway or cased opening.
Aligned Dimension	Most likely use to create dimension on a wall or line, between two or more parallel references, or between two or more points.
Base Cabinet	Cabinetry that is affixed to the wall that sits directly on the floor of a kitchen and is specified with “B”; standard height 34 1/2”; Standard depth 24”.
Breezeway	A covered walkway with open sides between two different parts of a structure.
Closed floor plan	Type of design where rooms are in cubicles, with little opportunity for overflow into other rooms.
Compartmented Bath	Bathroom layout in which the water closet is partitioned off from the bathroom by walls and a door.
Deck	An exterior floor supported on at least two opposing sides by adjoining structures, piers, or posts.
Dishwasher	Appliance used for washing and dryer dishes; marked with hidden lines to show where it is located under the counter. 
Egress	Term used in building codes to describe access.
Foyer	Entry hall that typically includes a closet.
Galley Kitchen	Kitchen layout in which cabinets run along on two opposite walls (also referred to as a “corridor” kitchen); Ideal for small to medium sized kitchens not for heavy traffic areas. Minimum distance across 4’-0”. 
Garage	An enclosed area designed to protect an automobile; One car minimum: 10’-0” x 20’-0”; Two car minimum: 20’-0” x 20’-0”.
Half Bath	Includes a water closet and lavatory.
Kitchen Work Triangle	A concept used to determine efficient kitchen layouts between the three main work points (cook top/range, sink, and refrigerator); Minimum distance of each leg: 3’-0”; Maximum distance of each leg: 9’-0”; Sum of all sides: 26’-0”.

	
Laundry Room	A room designed specifically for washing, drying, folding, and ironing clothes.
Lavatory	Bathroom fixture designed for washing one's hands and face.
Linen Closet	Closet used specifically for only shelved items; Conventionally accepted depth: 1'-6" or 18".
L-Shaped Kitchen	Kitchen layout in which cabinets run along on two adjacent walls: ideal for small to medium sized kitchens. 
Microwave (Countertop)	Appliance which uses electromagnetic waves to heat food. 
Modular Part	Building parts or casement that have been pre-assembled either in a plant or on-site.
Open floor plan	Type of overall home design where rooms have little division between next room to allow opportunity for overflow into other rooms.
Patio	A ground-level exterior entertaining area that is made of concrete, stone, brick, or treated wood.

Peninsula Kitchen	Kitchen layout in which cabinets run along at least one wall and additional connected cabinets into space (think connected island); ideal for medium to large sized kitchens. 
Plumbing Walls	Walls located behind plumbing fixtures that require extra space for piping (also referred to as “water walls”); At least 6” thick.
Porch	A covered area leading into a building.
Range	Single kitchen appliance that houses oven and cooktop. 
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sink	Vessel which holds water. 
Square Footage	Area measurement between the boundaries of a space (1’-0” x 1’-0”).
Story	Portion of a residence included between the upper surface of a floor and the upper surface of the floor or roof next above.
Straight Line Kitchen	Kitchen layout in which cabinets run along one wall: ideal for small spaces. 
Threshold	Beveled members directly under a door that is slightly raised to keep water from flowing in and often is fitted with a piece of weather stripping to help insulate the area underneath your door; It sits above the door sill.

U-Shaped Kitchen	Kitchen layout in which cabinets run along on three adjacent walls, considered high efficiency; ideal for medium to large sized kitchens; Minimum distance across: 6'-0". 
Utility Room	A room that includes space for laundry as well as long-term storage of food and/or electrical equipment for residence.
Vanity Cabinet	Bathroom cabinetry; Standard height: 30".
Wall Cabinet	Cabinetry that is affixed to the wall and is specified with "W" (also referred to as "upper" cabinets); standard height 34 1/2"; Standard Depth 12"-18"; Standard elevation 54" (unless increased for specific tasks like over sink or range).
Wardrobe Closet	Closet used for hanging clothes; Minimum depth: 24".
Water Closet	Water-flushing plumbing fixture designed to receive and discharge human waste.
Zoning (Space Planning)	Grouping areas of the home.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

<table>
<tr><td>Course</td><td colspan="4">IC62 Drafting II - Architectural</td></tr>
<tr><td>Essential Standard</td><td>2.00</td><td>C3</td><td>40 %</td><td>Apply procedures to create Floor Plans.</td></tr>
<tr><td>Indicator</td><td>2.04</td><td>N/A</td><td>N/A</td><td>Apply accepted principles of single-view residential space planning.</td></tr>
<tr><td>Culminating Question

Essential Questions</td><td colspan="4">How are accepted principles of single-view residential space planning applied?

● What are accepted principles related to general single-level residential space planning?
● How are accepted principles related to general single-level residential space planning applied?
● What are accepted principles related to single-level residential space planning in sleeping areas?
● How are accepted principles related to single-level residential space planning in sleeping areas applied?
● What are accepted principles related to single-level residential space planning in kitchens?
● How are accepted principles related to single-level residential space planning in kitchens applied?
● What are accepted principles related to single-level residential space planning in bathrooms?
● How are accepted principles related to single-level residential space planning in bathrooms applied?
● What are accepted principles related to single-level residential space planning in additional service areas?
● How are accepted principles related to single-level residential space planning in additional service areas applied?</td></tr>
<tr><td colspan="5">UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand accepted principles related to general single-level residential space planning.
c. Apply accepted principles related to general single-level residential space planning.</td></tr>
</table>

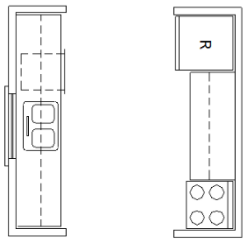
d. Understand accepted principles related to single-level residential space planning in sleeping areas.
e. Apply accepted principles related to single-level residential space planning in sleeping areas.
f. Understand accepted principles related to single-level residential space planning in kitchens.
g. Apply accepted principles related to single-level residential space planning in kitchens.
h. Understand accepted principles related to single-level residential space planning in bathrooms.
i. Apply accepted principles related to single-level residential space planning in bathrooms.
j. Understand accepted principles related to single-level residential space planning in additional service areas.
k. Apply accepted principles related to single-level residential space planning in additional service areas.

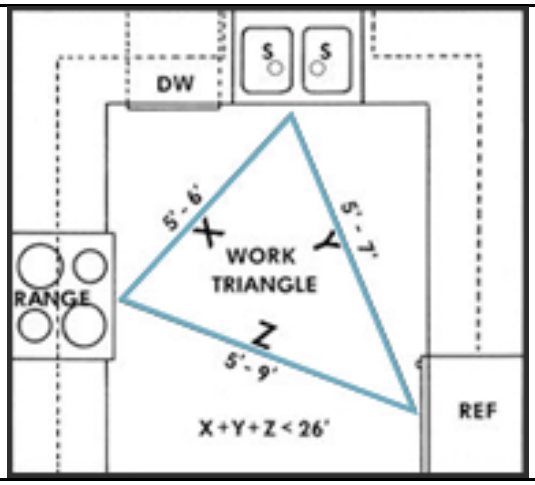
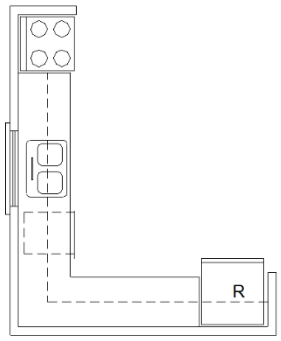
INSTRUCTIONAL ACTIVITIES-2.04 *Note: All activities combine with part of Indicator 2.01.*	
A. Content Literacy Terminology	
Resource(s)	**(See 2.04.1)**
B. Understand accepted principles related to general single-level residential space planning.	
Activity	Leading Questions and Answer-Introduction to Space Planning
Teacher Instructions	● Provide digital copies of *Leading Questions and Answer-Introduction to Space Planning-Presentation* and *Leading Questions and Answer-Introduction to Space Planning-Activity*. Facilitate students answering questions independently in the activity document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers tif needed. ● Facilitate students working in pairs to review answers. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and links. ● In pairs, review your answers to the activity and gathered examples. ● Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Introdı  Leading Questions and Answer- Introdı
C. Apply accepted principles related to general single-level residential space planning.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
D. Understand accepted principles related to single-level residential space planning in sleeping areas.	
Activity	Leading Questions and Answer-Sleeping Areas
Teacher Instructions	● Provide digital copies of *Leading Questions and Answer- Sleeping Areas-Presentation* and *Leading Questions and Answer-Sleeping Areas-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated

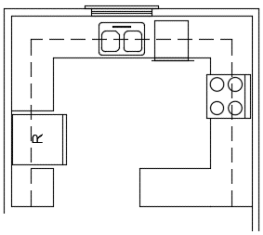
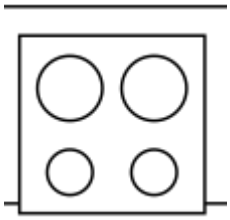
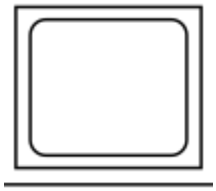
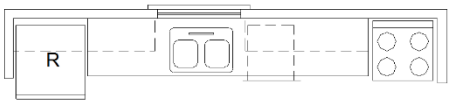
	PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. ● Facilitate students working in pairs to review answers and share bedroom drawings. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and links. ● In pairs, review your answers to the *Activity* and bedroom drawings. ● Participate in whole-class discussion of questions.
Resource(s)	  Leading Questions and Answer- Introd Leading Questions and Answer- Introd
E. Apply accepted principles related to single-level residential space planning in sleeping areas.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
F. Understand accepted principles related to single-level residential space planning in kitchens.	
Activity	Leading Questions and Answer-Kitchens
Teacher Instructions	● Provide digital copies of *Leading Questions and Answer-Kitchens-Presentation* and *Leading Questions and Answer-Kitchens-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. ● Facilitate students working in pairs to review answers and share kitchen drawings. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and links. ● In pairs, review your answers to the *Activity* and kitchen drawings. ● Participate in whole-class discussion of questions.
Resource(s)	  Leading Questions and Answer- Kitcher Leading Questions and Answer- Kitcher

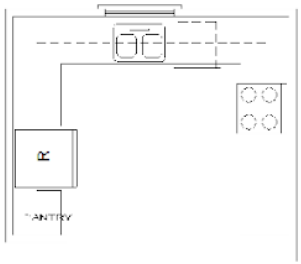
G. Apply accepted principles related to single-level residential space planning in bathrooms.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
H. Understand accepted principles related to single-level residential space planning in bathrooms.	
Activity	Leading Questions and Answer-Bathrooms
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Bathrooms-Presentation* and *Leading Questions and Answer-Bathrooms-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. • Facilitate students working in pairs to review answers and give review of selected video. • Facilitate whole-class review of questions.
Student Instructions	• Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and links. • In pairs, review your answers to the *Activity* and share a short verbal review of the video you selected/watched. • Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Kitcher  Leading Questions and Answer- Kitcher
I. Apply accepted principles related to single-level residential space planning in bathrooms.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
J. Understand accepted principles related to single-level residential space planning in other service areas.	
Activity	Leading Questions and Answer-Other Service Areas
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Other Service Areas-Presentation* and *Leading Questions and Answer-Other Service Areas-Activity*.

	Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and links. *Note:* Numbers in brackets coincide with slide numbers if needed. ● Facilitate students working in pairs to review answers and collect image examples. ● Facilitate whole-class review of questions.
Student Instructions	● Answer questions independently in the *Activity* document provided using the associated PowerPoint presentation and links. ● In pairs, review your answers to the *Activity* and share your selected image examples. ● Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Answer- Kitcher  Leading Questions and Answer- Kitcher
K. Apply accepted principles related to single-level residential space planning in other service areas.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.04.1	
Alcove	A small room adjoining a larger room often separated by an archway or cased opening.
Aligned Dimension	Most likely use to create dimension on a wall or line, between two or more parallel references, or between two or more points.
Base Cabinet	Cabinetry that is affixed to the wall that sits directly on the floor of a kitchen and is specified with “B”; standard height 34 1/2”; Standard depth 24”.
Breezeway	A covered walkway with open sides between two different parts of a structure.
Closed floor plan	Type of design where rooms are in cubicles, with little opportunity for overflow into other rooms.
Compartmented Bath	Bathroom layout in which the water closet is partitioned off from the bathroom by walls and a door.
Deck	An exterior floor supported on at least two opposing sides by adjoining structures, piers, or posts.
Dishwasher	Appliance used for washing and dryer dishes; marked with hidden lines to show where it is located under the counter. 
Egress	Term used in building codes to describe access.
Foyer	Entry hall that typically includes a closet.
Galley Kitchen	Kitchen layout in which cabinets run along on two opposite walls (also referred to as a “corridor” kitchen); ideal for small to medium sized kitchens; not for heavy traffic areas; Minimum distance across 4’-0”. 
Garage	An enclosed area designed to protect an automobile; One car minimum: 10’-0” x 20’-0”; Two car minimum: 20’-0” x 20’-0”.
Half Bath	Includes a water closet and lavatory.
Kitchen Work Triangle	A concept used to determine efficient kitchen layouts between the three main work points (cook top/range, sink, and refrigerator); Minimum distance of each leg: 3’-0”; Maximum distance of each leg: 9’-0”; Sum of all sides: 26’-0”.

	
Laundry Room	A room designed specifically for washing, drying, folding, and ironing clothes.
Lavatory	Bathroom fixture designed for washing one's hands and face.
Linen Closet	Closet used specifically for only shelved items; Conventionally accepted depth: 1'-6" or 18".
L-Shaped Kitchen	Kitchen layout in which cabinets run along on two adjacent walls: ideal for small to medium sized kitchens. 
Microwave (Countertop)	Appliance which uses electromagnetic waves to heat food. 
Modular Part	Building parts or casement that have been pre-assembled either in a plant or on-site.
Open floor plan	Type of overall home design where rooms have little division between next room to allow opportunity for overflow into other rooms.
Patio	A ground-level exterior entertaining area that is made of concrete, stone, brick, or treated wood.

Peninsula Kitchen	Kitchen layout in which cabinets run along at least one wall and additional connected cabinets into space (think connected island); ideal for medium to large sized kitchens. 
Plumbing Walls	Walls located behind plumbing fixtures that require extra space for piping (also referred to as “water walls”); At least 6” thick.
Porch	A covered area leading into a building.
Range	Single kitchen appliance that houses oven and cooktop. 
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sink	Vessel which holds water. 
Square Footage	Area measurement between the boundaries of a space (1’-0” x 1’-0”).
Story	Portion of a residence included between the upper surface of a floor and the upper surface of the floor or roof next above.
Straight Line Kitchen	Kitchen layout in which cabinets run along one wall: ideal for small spaces. 
Threshold	Beveled members directly under a door that is slightly raised to keep water from flowing in and often is fitted with a piece of weather stripping to help insulate the area underneath your door; It sits above the door sill.

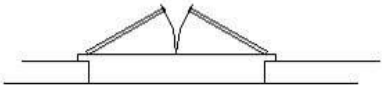
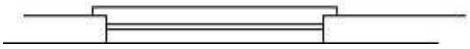
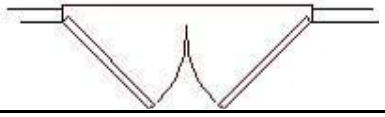
U-Shaped Kitchen	Kitchen layout in which cabinets run along on three adjacent walls, considered high efficiency; ideal for medium to large sized kitchens; Minimum distance across: 6'-0". 
Utility Room	A room that includes space for laundry as well as long-term storage of food and/or electrical equipment for residence.
Vanity Cabinet	Bathroom cabinetry; Standard height: 30".
Wall Cabinet	Cabinetry that is affixed to the wall and is specified with "W" (also referred to as "upper" cabinets); standard height 34 1/2"; Standard Depth 12"-18"; Standard elevation 54" (unless increased for specific tasks like over sink or range).
Wardrobe Closet	Closet used for hanging clothes; Minimum depth: 24".
Water Closet	Water-flushing plumbing fixture designed to receive and discharge human waste.
Zoning (Space Planning)	Grouping areas of the home.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

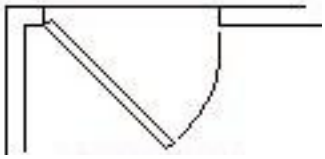
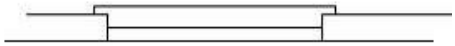
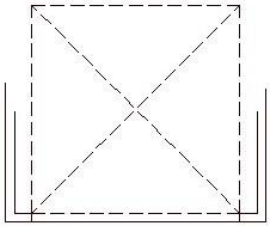
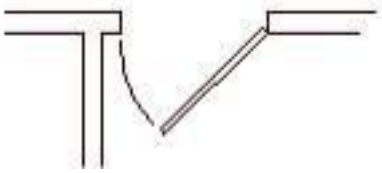
Course	**IC62 Drafting II - Architectural**			
Essential Standard	2.00	C3	40%	Apply procedures to create Floor Plans.
Indicator	2.05	N/A	N/A	Apply door and window types.
Culminating Question **Essential Questions**	**How are door and window types applied?** • How are common door symbols applied on a floor plan in the software? • How are common window symbols applied on a floor plan in the software?			

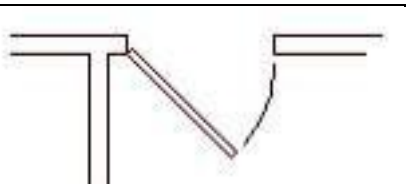
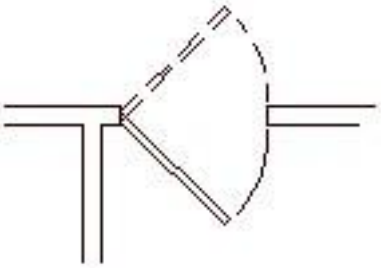
UNPACKED CONTENT

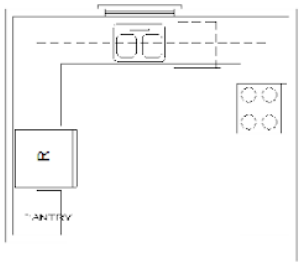
a. Content Literacy Terminology.
b. Apply appropriate door symbols on a floor plan.
c. Apply appropriate window symbols on a floor plan.

INSTRUCTIONAL ACTIVITIES-2.05 *Note: All activities combine with part of Indicator 2.01*	
A. Content Literacy Terminology	
Resource(s)	**(See 2.05.1)**
B. Apply appropriate door symbols on a floor plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
C. Apply appropriate window symbols on a floor plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.05.1	
Angled Bay Window	Window space projecting outward from the main walls of a building and forming a bay in a room. 
Awning Window	Window hinged on the top and swings out. 
Cased Opening or Archway	Opening in the wall which is trimmed out; an archway has an arch at the top. 
Casement Windows	Hinged on the side and swings out. 
Casing	Decorative trim that covers the space between the jamb and a rough opening of a window.
Curtain Wall	An exterior wall usually constructed with aluminum-framed walls containing in-fills of glass, metal panels, or thin stone that is attached to the building structure, but which does not carry the floor or roof loads of the building. 
Door Jamb	Vertical portion of the door frame onto which a door is secured.
Door Sill	The portion of the door frame that runs along the bottom and sits directly on the foundation of your floor and sits under the threshold.
Door Tag	Symbol which marks a door to corresponding information contained in schedule. 
Dormer	A window that projects vertically from a sloping roof.
Double Hung Window	Type of window slides up and down. 
Egress	Term used in building codes to describe access.
Exterior French Door with Threshold	Double swinging doors which include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 

Exterior Single Door with Threshold	One swinging door which includes a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Exterior Sliding Doors with Threshold	Doors which slide past or over on another and include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Fixed Window	Window that does not open. 
Garage Door	Standard height: 7’-0”. 
Hopper Window	Hinged on the top and swings in. 
Interior Accordion Door or Partition	Door which has a series of alternating folds with panels of similar size. 
Interior Door with Backwards Swing	Door which swings opposite the standard direction. 
Interior Door with Standard Swing	Door which swings towards the corner of the room it serves.

	
Interior Double Action Door	Door which swings into both rooms. 
Interior Double Bi-fold Doors	Double doors that slide open, made from a series of common sized panels that fold up against each other. 
Interior French Doors	Double swinging doors. 
Interior Single Bi-fold Door	Door that slides open, made from a series of common sized panels that fold up against each other. 
Interior Sliding Doors	Doors which slide past or over on another. 
Modular Part	Building parts or casement that have been pre-assembled either in a plant or on-site.
Mullion	Vertical and horizontal members between window and door units .
Muntin	Divides window glass into smaller panes (commonly referred to in the industry interchangeably with “mullion”, but they are different).
Pocket Door	Door which slides into a compartment in the wall. 

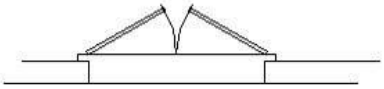
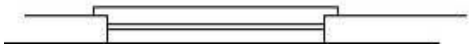
Revolving Door	Door which rotates around center point/support. 
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sliding Windows	Windows which slide past or over on another. 
Square Footage	Area measurement between the boundaries of a space (1'-0" x 1'-0").
Threshold	Beveled member directly under a door that is slightly raised to keep water from flowing in and often is fitted with a piece of weather stripping to help insulate the area underneath your door; It sits above the door sill.
U-Shaped Kitchen	Kitchen layout in which cabinets run along on three adjacent walls, considered high efficiency; ideal for medium to large sized kitchens; Minimum distance across: 6'-0". 
Window Sill	A ledge or sill forming the bottom part of a window.
Window Tag	Symbol which marks a window to corresponding information contained in schedule. 
Zoning (Space Planning)	Grouping areas of the home.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

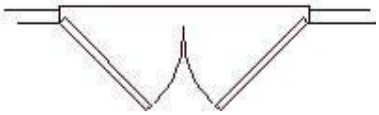
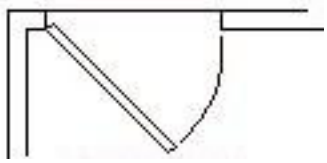
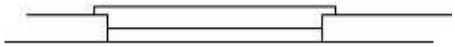
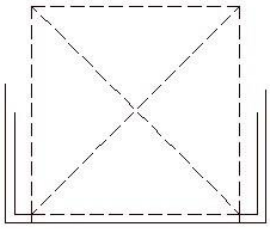
Course	**IC62 Drafting II - Architectural**			
Essential Standard	2.00	C3	40%	Apply procedures to create Floor Plans.
Indicator	2.06	N/A	N/A	Apply floor plan symbols.
Culminating Question	**How are floor plan symbols applied?**			
Essential Question	What are common floor plan symbols?			

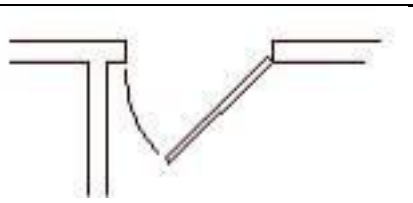
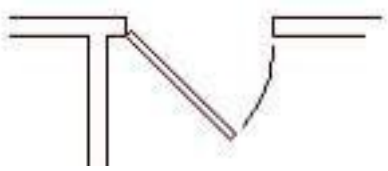
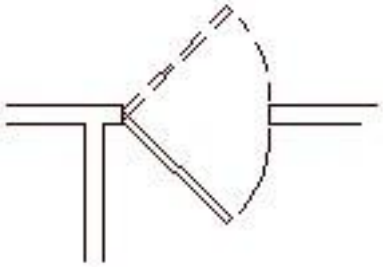
UNPACKED CONTENT

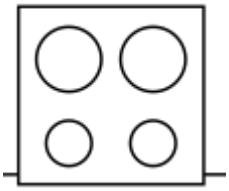
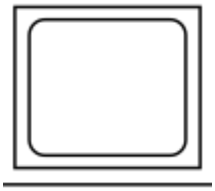
a. Content Literacy Terminology.
b. Identify floor plan symbols.
c. Apply floor plan symbols.

INSTRUCTIONAL ACTIVITIES-2.06	
A. Content Literacy Terminology	
Resource(s)	**(See 2.06.1)**
B. Identify floor plan symbols.	
Activity	Diagram Labeling- Floor Plan Symbols
Teacher Instructions	● Provide a copy of Diag*ram Labeling- Floor Plan Symbols- Activity*. Facilitate students labeling the numbered symbols. ● Review answers (provided in *Diagram Labeling- Floor Plan Symbols- Key*) with whole-class. ● Break students into small groups or pairs. Provide students with a list of Content Literacy Terminology (see 2.06.1). Provide students with real examples of floor plans. Facilitate students highlighting or number keying symbols from a list of provided examples. Facilitate a class discussion on additional symbols on real examples which were not determined to be on the Content Literacy Terminology List.
Student Instructions	● Label the numbered symbols on the provided diagram. ● Participate in class review of answers and make corrections on your own diagram. ● In your small groups or pairs, highlight or number key symbols from Content Terminology List and provide real examples of floor plans. Participate in class discussion on additional symbols which were not determined to be on the Content Literacy Terminology List.
Resource(s)	 Diagram Labeling- Floor Plan Symbols-  Diagram Labeling- Floor Plan Symbols-
C. Apply floor plan symbols.	
Activity	Project Based-Learning-ARC II-Custom Home Project Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.06.1	
Angled Bay Window	Window space projecting outward from the main walls of a building and forming a bay in a room. 
Awning Window	Window hinged on the top and swings out. 
Cased Opening or Archway	Opening in the wall which is trimmed out; an archway has an arch at the top. 
Casement Windows	Hinged on the side and swings out. 
Curtain Wall	An exterior wall usually constructed with aluminum-framed walls containing in-fills of glass, metal panels, or thin stone that is attached to the building structure, but which does not carry the floor or roof loads of the building. 
Door Tag	Symbol which marks a door to corresponding information contained in schedule. 
Double Hung Window	Type of window slides up and down. 
Dishwasher	Appliance used for washing and dryer dishes; marked with hidden lines to show where it is located under the counter. 

Exterior French Door with Threshold	Double swinging doors which include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Exterior Single Door with Threshold	One swinging door which includes a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Exterior Sliding Doors with Threshold	Doors which slide past or over on another and include a strip across the bottom as a seal to prevent air, water, and other elements from crossing. 
Fixed Window	Window that does not open. 
Garage Door	Standard height: 7’-0”. 
Hopper Window	Hinged on the top and swings in. 
Interior Accordion Door or Partition	Door which has a series of alternating folds with panels of similar size. 
Interior Door with Backwards Swing	Door which swings opposite the standard direction.

	
Interior Door with Standard Swing	Door which swings towards the corner of the room it serves . 
Interior Double Action Door	Door which swings into both rooms. 
Interior Double Bi-fold Doors	Double doors that slide open, made from a series of common sized panels that fold up against each other. 
Interior French Doors	Double swinging doors. 
Interior Single Bi-fold Door	Door that slides open, made from a series of common sized panels that fold up against each other. 
Interior Sliding Doors	Doors which slide past or over on another. 

Microwave (Countertop)	Appliance which uses electromagnetic waves to heat food. 
Pocket Door	Door which slides into a compartment in the wall. 
Range	Single kitchen appliance that houses oven and cooktop. 
Revolving Door	Door which rotates around center point/support. 
Sink	Vessel which holds water. 
Sliding Windows	Windows which slide past or over on another. 
Window Tag	Symbol which marks a window to corresponding information contained in schedule. 
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	2.00	C3	40 %	Apply procedures to create Floor Plans.
Indicator	2.07	N/A	N/A	Apply procedures to draw a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.
Culminating Question	**How are procedures applied to draw a single-level residential floor plan using 3D CAD, BIM software?**			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Apply procedures to draw a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.

INSTRUCTIONAL ACTIVITIES-2.07	
A. Content Literacy Terminology	
Resource(s)	**(See 2.07.1)**
B. Apply procedures to draw a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.07.1
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**

Course	**IC62 Drafting II - Architectural**			
Essential Standard	2.00	C3	40 %	Apply procedures to create Floor Plans.
Indicator	2.08	N/A	N/A	Apply procedures to annotate a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.
Culminating Question **Essential Question**	**How are procedures applied to annotate a single-level residential floor plan using 3D CAD, BIM software?** What is the accepted ANSI Architectural Standards for annotating a floor plan?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand ANSI architectural dimensioning standards for floor plans.
c. Apply procedures to annotate a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.

INSTRUCTIONAL ACTIVITIES-2.08	
A. Content Literacy Terminology	
Resource(s)	**(See 2.08.1)**
B. Understand ANSI architectural dimensioning standards for floor plans.	
Activity	Direct Instruction- ANSI Architectural Dimensioning Standards
Teacher Instructions	Facilitate whole-class, direct instruction using *Direct Instruction-ANSI Architectural Dimensioning Standards-Presentation*. Pose included questions to whole- class.
Student Instructions	Participate in whole-class direct instruction and answer questions included in the presentation.
Resource(s)	 Direct Instruction-ANSI Architectural D
C. Apply procedures to annotate a single-level residential floor plan using 3D CAD, BIM software, for example: Revit Architecture.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-2.08.1	
Aligned Dimension	Dimension style in which the text runs in the same direction as the dimension line.
Architectural Tic	Small dash that serves as a termination point of a dimension line in an Architectural drawing.
Door Tag	Symbol which marks a door to corresponding information contained in schedule. 
Window Tag	Symbol which marks a window to corresponding information contained in schedule. 
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	3.00	C3	15%	Apply procedures to create Foundation plans and Levels of a Building.
Indicator	3.01	N/A	N/A	Apply terminology related to common foundation plans.
Culminating Question **Essential Question**	**How are terms related to foundation plans applied?** ● What terms and definitions are related to common foundation plans?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand terminology related to common foundation plans.
c. Apply terminology related to common foundation plans.

INSTRUCTIONAL ACTIVITIES-3.01	
A. Content Literacy Terminology	
Resource(s)	**(See 3.01.1)**
B. Understand terminology related to common foundation plans.	
Activity	Content Terminology Orientation- Foundation Construction
Teacher Instructions	Provide copy of *Content Terminology Orientation-Foundation Construction-Activity*. Facilitate students collecting image examples from the internet of all terms.
Student Instructions	Collect image examples for each term using the internet and paste them into the third column of *Content Terminology Orientation- Foundation Construction-Activity*.
Resource(s)	 Content Terminology Orienta
C. Apply terminology related to common foundation plans.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-3.01.1	
Anchor Bolt	A threaded rod inserted in masonry construction to secure the sill plate to the foundation.
Architect's Scale	A specialized ruler designed to facilitate the drafting and measuring of architectural drawings, such as floor plans and orthographic projections.
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen the floor system and reduce deflection.
Brick	A common type of block made of clay used to build walls, pavements and other elements in masonry construction; Bricks are sized nominally to account for mortar joints.
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Concrete	Composite material composed of fine and coarse aggregate bonded together with cement and water that hardens over time.
Continuous Foundation Wall Footing	Continuous strip of concrete that serves to spread the weight of a load-bearing wall across an area of soil. Represented by dashed lines drawn parallel to both sides of a foundation wall and placed below the frost line.
Crawl space	An area of limited height under a floor giving access to wiring and plumbing with a constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Finished Floor	Ultimate top layer of flooring.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.

Foundation Access Door	Door located in foundation wall for access to crawl space.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Foundation Vent	Perforated opening in foundation wall for the process of supplying conditioned or unconditioned air to, or removing such air from, any space.
Foundation Wall	Vertical wall that extends from the top of the footing up to the first-floor level represented by parallel lines.
Foundation Wall Drain Pipe or Tile	4" perforated drain pipe used to remove excess groundwater from around the footing.
Frost Line	The maximum depth of ground below which the soil does not freeze in winter.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Header Joist	Horizontal framing member that caps or encloses the end of floor joists by running perpendicular to them at their ends.
Joist Hanger	Metal angle or strap used to support the ends of the horizontal framing members.
Ledger Strip or Plate	A narrow strip of lumber nailed to the side of a girder and flush with its bottom edge to help support floor or ceiling joists notched to accommodate it.
Level	Vertical distance or marker.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field; Example: 2x4 nominal measures closer to 1 1/2” x 3 1/2”.
Pier	Vertical foundations support commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
Pier or Column Footing	Concrete pad used to support a single point of contact, such as under a pier or post (Also referred to as “Spot Footing”); Drawing note example: 2'-0" × 2'-0" × 10" CONC PIER.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for

	a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4”-6” thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24”) in order to allow for extra strength around the perimeter. (also referred to as “slab-on-grade” foundation).
Sole or Bottom Plate	Lowest horizontal member of the wall frame. Generally, sits on top of the subfloor.
Span	Horizontal distance between two supporting members.
Subfloor	Floor layer that rests directly on the floor joists.
T-Foundation	Foundation construction commonly used in areas that freeze that consists of a foundation footing and foundation wall which resembles an inverted “T”.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Unbalanced Fill	The difference in height between the exterior and interior finish ground levels.
Unexcavated	Location where the earth has not been dug out.
Vapor Barrier	A thin layer of impermeable material, typically polyethylene sheeting, included in building construction to prevent moisture from damaging the fabric of the building. It is applied to the heated side of insulation.
Welded Wire Mesh	Grid consisting of a series of perpendicular longitudinal and transverse rebar placed inside concrete for added support.
Wood Sill	A large pressure-treated, horizontal framing member to which vertical members of the foundation and wall are attached.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	3.00	C3	15 %	Apply procedures to create Foundation plans and Levels of a Building.
Indicator	3.02	N/A	N/A	Apply footing and foundation wall construction types.
Culminating Question **Essential Questions**	**How are footing and foundation wall construction types applied?** ● What various types of foundation systems are used in residential construction? ● What components are included in a foundation system? ● How are basic foundation design calculations determined?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand various types of foundation systems used in Residential construction.
c. Understand components/parts of a T-foundation system.
d. Understand how basic foundation design calculations are determined.
e. Determine basic foundation design calculations.
f. Apply footing and foundation wall construction types.

INSTRUCTIONAL ACTIVITIES-3.02	
A. Content Literacy Terminology	
Resource(s)	**(See 3.02.1)**
B. Understand various types of foundation systems used in residential construction. *Note: Activity combines with part of Indicator 3.03.*	
Activity	Teacher-Led Discussions and Example Gathering-Foundation Systems
Teacher Instructions	● Facilitate whole-class, direct instruction following *Teacher-Led Discussions and Example Gathering-Foundation Systems-Presentation*. Pose Discussion Questions or example gathering/exploration on gray slides to whole-class or small groups as they appear. ● Facilitate student time to further investigate careers related to foundation design at the end of presentation.
Student Instructions	● Participate in whole-class, direct instruction following *Teacher-Led Discussions and Example Gathering-Foundation Systems-Presentation*. Answer Discussion Questions and gather/explore as asked on gray slides as they appear. ● Investigate careers related to foundation design at the end of presentation
Resource(s)	 Teacher-Led Discussions and Exa
C. Understand components/parts of a T-foundation system. *Note: Activity combines with part of Indicator 3.04 Guided Instruction and Diagrams-Floor Construction Diagrams (continues with same diagrams)*	
Activity	Guided Instruction and Diagrams-Raised T-Foundation
Teacher Instructions	● Provide students a hardcopy of *Guided Instruction and Diagrams-Raised T-Foundation and Floor Construction-Handout*. Facilitate whole-class or small group progression through *Guided Instruction and Diagrams-Raised T-Foundation-Presentation* and labeling of diagram components as the # symbol appears in red next to the term (note: term may appear on multiple diagrams provided). ● Facilitate students checking answers with *Guided Instruction and Diagrams-Raised T-Foundation-Key* and discussion on additional components not highlighted in the PowerPoint Presentation.
Student Instructions	● Label given diagram components as the # symbol appears in red next to the term (note: term may appear

	on multiple diagrams provided) while following the presentation. • Check your answers using the provided key and label additional components not highlighted in the PowerPoint Presentation.
Resource(s)	Guided Instruction and Diagrams- Raise  Guided Instruction and Diagrams- Answ  Guided Instruction and Diagrams- Raise 
D. Understand how basic foundation design calculations are determined. **E. Determine basic foundation design calculations.** *Note: Activity includes Unpacked Content for D & E and combines with Indicator 3.04.*	
Activity	Authentic Code Research- Foundations
Teacher Instructions	Provide digital copy of *Authentic Code Research- Foundations* and access to copy of NC Residential Building Code. Facilitate students answering questions and locating information using the code for teacher-selected floor plans or their Custom Home Project.
Student Instructions	Answer questions and locate information in *Authentic Code Research- Foundations* using the NC Residential Building Code for your Custom Home Project.
Resource(s)	Authentic Code Research- Foundati 
F. Apply terminology related to common foundation plans.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-3.02.1	
Anchor Bolt	A threaded rod inserted in masonry construction to secure the sill plate to the foundation.
Architect's Scale	A specialized ruler designed to facilitate the drafting and measuring of architectural drawings, such as floor plans and orthographic projections.
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen the floor system and reduce deflection.
Brick	A common type of block made of clay used to build walls, pavements and other elements in masonry construction; Bricks are sized nominally to account for mortar joints.
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Concrete	Composite material composed of fine and coarse aggregate bonded together with cement and water that hardens over time.
Continuous Foundation Wall Footing	Continuous strip of concrete that serves to spread the weight of a load-bearing wall across an area of soil. Represented by dashed lines drawn parallel to both sides of a foundation wall and placed below the frost line.
Crawl space	An area of limited height under a floor giving access to wiring and plumbing with a constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Foundation Access Door	Door located in foundation wall for access to crawl space.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Foundation Vent	Perforated opening in foundation wall for the process of supplying conditioned or unconditioned air to, or removing such air from, any space.
Foundation Wall	Vertical wall that extends from the top of the footing up to the first-floor level represented by parallel lines.

Foundation Wall Drain Pipe or Tile	4" perforated drain pipe used to remove excess groundwater from around the footing.
Frost Line	The maximum depth of ground below which the soil does not freeze in winter.
Girder	support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Level	Vertical distance or marker.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field; Example: 2x4 nominal measures closer to 1 1/2” x 3 1/2”.
Pier	Vertical foundations supports commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
Pier or Column Footing	Concrete pad used to support a single point of contact, such as under a pier or post (Also referred to as “Spot Footing”); Drawing note example: 2'-0" × 2'-0" × 10" CONC PIER.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4”-6” thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24”) to allow for extra strength around the perimeter. (Also referred to as “slab-on-grade” foundation).
T-Foundation	Foundation construction commonly used in areas that freeze that consists of a foundation footing and foundation wall which resembles an inverted “T”.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Unbalanced Fill	The difference in height between the exterior and interior finish ground levels.
Unexcavated	Location where the earth has not been dug out.
Vapor Barrier	A thin layer of impermeable material, typically polyethylene sheeting, included in building construction to prevent moisture from

	damaging the fabric of the building. It is applied to the heated side of insulation.
Welded Wire Mesh	Grid consisting of a series of perpendicular longitudinal and transverse rebar placed inside concrete for added support.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	IC62 Drafting II - Architectural			
Essential Standard	3.00	C3	15%	Apply procedures to create Foundation plans and Levels of a Building.
Indicator	3.03	N/A	N/A	Apply the purpose of a foundation plan and describe its features.
Culminating Question **Essential Questions**	**How are features applied to a foundation plan to serve its intended purpose?** ● What is the purpose of including a foundation plan in a set of construction documents? ● What features are included on a foundation plan? ● How are foundation plans applied by view and purpose? ● How are features applied on a foundation plan?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand the purpose of a foundation plan.
c. Understand features present on a foundation plan.
d. Apply foundation plan views and purpose.
e. Apply appropriate features on a foundation plan.

INSTRUCTIONAL ACTIVITIES-3.03	
A. Content Literacy Terminology	
Resource(s)	**(See 3.03.1)**
B. Understand the purpose of a foundation plan. **C. Understand features present on a foundation plan.** *Note: Activity includes Unpacked Content for B & C and combines with part of Indicator 3.02.*	
Activity	Teacher-Led Discussions and Example Gathering-Foundation Systems
Teacher Instructions	● Facilitate whole-class, direct instruction following *Teacher-Led Discussions and Example Gathering-Foundation Systems-Presentation*. Pose Discussion Questions or example gathering/exploration on gray slides to whole-class or small groups as they appear. ● Facilitate student time to further investigate careers related to foundation design at the end of presentation.
Student Instructions	● Participate in whole-class, direct instruction following *Teacher-Led Discussions and Example Gathering-Foundation Systems-Presentation*. Answer Discussion Questions and gather/explore as asked on gray slides as they appear. ● Investigate careers related to foundation design at the end of presentation
Resource(s)	 Teacher-Led Discussions and Exa
D. Apply foundation plan views and purpose.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
E. Apply appropriate features on a foundation plan.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-3.03.1	
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Concrete	Composite material composed of fine and coarse aggregate bonded together with cement and water that hardens over time.
Continuous Foundation Wall Footing	Continuous strip of concrete that serves to spread the weight of a load-bearing wall across an area of soil. Represented by dashed lines drawn parallel to both sides of a foundation wall and placed below the frost line.
Crawl space	An area of limited height under a floor giving access to wiring and plumbing with a constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.
Foundation Access Door	Door located in foundation wall for access to crawl space.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Foundation Vent	Perforated opening in foundation wall for the process of supplying conditioned or unconditioned air to, or removing such air from, any space.
Foundation Wall	Vertical wall that extends from the top of the footing up to the first-floor level represented by parallel lines.
Foundation Wall Drain Pipe or Tile	4" perforated drainpipe used to remove excess groundwater from around the footing.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Level	Vertical distance or marker.

Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field; Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Pier	Vertical foundations support commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
Pier or Column Footing	Concrete pad used to support a single point of contact, such as under a pier or post (Also referred to as "Spot Footing"); Drawing note example: 2'-0" × 2'-0" × 10" CONC PIER.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4"-6" thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24") in order to allow for extra strength around the perimeter. (Also referred to as a "slab-on-grade" foundation).
Span	Horizontal distance between two supporting members.
T-Foundation	Foundation construction commonly used in areas that freeze that consists of a foundation footing and foundation wall which resembles an inverted "T".
Unexcavated	Location where the earth has not been dug out.
Welded Wire Mesh	Grid consisting of a series of perpendicular longitudinal and transverse rebar placed inside concrete for added support.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	IC62 Drafting II - Architectural			
Essential Standard	3.00	C3	15%	Apply procedures to create Foundation plans and Levels of a Building.
Indicator	3.04	N/A	N/A	Apply concepts of wood sill and floor construction.
Culminating Question **Essential Questions**	**How are concepts of wood sill and floor construction applied?** ● What is a wood sill? ● What components are included in floor construction? ● How are basic floor calculations determined according to code? ● How are wood sills applied in construction? ● How is floor construction applied?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand wood sill in construction.
c. Understand floor construction and components.
d. Understand how basic floor design calculations are determined.
e. Apply wood sill construction.
f. Apply floor construction.

INSTRUCTIONAL ACTIVITIES-3.04 *Note: All activities combine with part of Essential Standard 4.00*	
A. Content Literacy Terminology	
Resource(s)	**(See 3.04.1)**
B. Understand wood sill in construction. **C. Understand floor construction and components.** *Note: Includes Unpacked Content for B & C and combines with part of Indicator 3.02 Guided Instruction and Diagrams-Raised T-Foundation (continues with same diagrams)*	
Activity	Guided Instruction and Diagrams- Floor Construction
Special Instructions	• Provide students a hardcopy of *Guided Instruction and Diagrams-Raised T-Foundation and Floor Construction-Handout*. Facilitate whole-class or small group progression through *Guided Instruction and Diagrams-Floor Construction-Presentation* and labeling of diagram components as the # symbol appears in red next to the term (Note: term may appear on multiple diagrams provided). • Facilitate students checking answers with *Guided Instruction and Diagrams- Floor Construction-Key* and discussion on additional components not highlighted in PowerPoint Presentation.
Student Instructions	• Label given diagram components as the # symbol appears in red next to the term (Note: term may appear on multiple diagrams provided) while following the presentation. • Check your answers using the provided key and label additional components not highlighted in the PowerPoint Presentation.
Resource(s)	 Guided Instruction and Diagrams- Floo  Guided Instruction and Diagrams- Answ  Guided Instruction and Diagrams- Raise
G. Understand how basic floor design calculations are determined. *Note: Activity combines with Indicator 3.02.*	
Activity	Authentic Code Research- Foundations
Teacher Instructions	• Provide digital copy of *Authentic Code Research-Foundations* and access to copy of NC Residential Building Code. • Facilitate students answering questions and locating information using the code for teacher-selected floor plans or their Custom Home Project.
Student Instructions	• Answer questions and locate information in *Authentic Code Research- Foundations* using the NC Residential

	Building Code for teacher-selected floor plans or your Custom Home Project.
Resource(s)	Authentic Code Research- Foundati
D. Apply wood sill construction.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
E. Apply floor construction.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-3.04.1	
Anchor Bolt	A threaded rod inserted in masonry construction to secure the sill plate to the foundation.
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen floor system and reduce deflection.
Brick	A common type of block made of clay used to build walls, pavements, and other elements in masonry construction; Bricks are sized nominally to account for mortar joints.
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Crawl space	An area of limited height under a floor giving access to wiring and plumbing with a constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Finished Floor	Ultimate top layer of flooring.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Header Joist	Horizontal framing member that caps or encloses the end of floor joists by running perpendicular to them at their ends.

Joist Hanger	Metal angle or strap used to support the ends of the horizontal framing members.
Ledger Strip or Plate	A narrow strip of lumber nailed to the side of a girder and flush with its bottom edge to help support floor or ceiling joists notched to accommodate it.
Level	Vertical distance or marker.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field; Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Pier	Vertical foundations supports commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4"-6" thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24") to allow for extra strength around the perimeter. (also referred to as "slab-on-grade" foundation).
Sole or Bottom Plate	Lowest horizontal member of the wall frame. Generally, sits on top of the subfloor.
Span	Horizontal distance between two supporting members.
Subfloor	Floor layer that rests directly on the floor joists.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Wood Sill	A large pressure-treated, horizontal framing member to which vertical members of the foundation and wall are attached.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	3.00	C3	15%	Apply procedures to create Foundation plans and Levels of a Building.
Indicator	3.05	N/A	N/A	Apply procedures to draw a foundation plan using 3D CAD, BIM software.
Culminating Question	**How are procedures to draw a foundation plan using 3D CAD, BIM software applied?**			

UNPACKED CONTENT

a. Content Literacy Terminology.

INSTRUCTIONAL ACTIVITIES-3.05	
A. Content Literacy Terminology	
Resource(s)	**(See 3.05.1)**
B. Apply procedures to draw a foundation plan using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-3.05.1	
Anchor Bolt	A threaded rod inserted in masonry construction to secure the sill plate to the foundation.
Architect's Scale	A specialized ruler designed to facilitate the drafting and measuring of architectural drawings, such as floor plans and orthographic projections.
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen the floor system and reduce deflection.
Brick	A common type of block made of clay used to build walls, pavements, and other elements in masonry construction. Bricks are sized nominally to account for mortar joints.
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Concrete	Composite material composed of fine and coarse aggregate bonded together with cement and water that hardens over time.
Continuous Foundation Wall Footing	Continuous strip of concrete that serves to spread the weight of a load-bearing wall across an area of soil. Represented by dashed lines drawn parallel to both sides of a foundation wall and placed below the frost line.
Crawl space	An area of limited height under a floor giving access to wiring and plumbing with a constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Finished Floor	Ultimate top layer of flooring.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.

Foundation Access Door	Door located in foundation wall for access to crawl space.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Foundation Vent	Perforated opening in foundation wall for the process of supplying conditioned or unconditioned air to, or removing such air from, any space.
Foundation Wall	Vertical wall that extends from the top of the footing up to the first-floor level represented by parallel lines.
Foundation Wall Drain Pipe or Tile	4" perforated drainpipe used to remove excess groundwater from around the footing.
Frost Line	The maximum depth of ground below which the soil does not freeze in winter.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Header Joist	Horizontal framing member that caps or encloses the end of floor joists by running perpendicular to them at their ends.
Joist Hanger	Metal angle or strap used to support the ends of the horizontal framing members.
Ledger Strip or Plate	A narrow strip of lumber nailed to the side of a girder and flush with its bottom edge to help support floor or ceiling joists notched to accommodate it.
Level	Vertical distance or marker.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2” x 3 1/2”.
Pier	Vertical foundations supports commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
Pier or Column Footing	Concrete pad used to support a single point of contact, such as under a pier or post. (Also referred to as “Spot Footing”). Drawing note example: 2'-0" × 2'-0" × 10" CONC PIER.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for

	a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4”-6” thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24”) to allow for extra strength around the perimeter. (Also referred to as a “slab-on-grade” foundation).
Sole or Bottom Plate	Lowest horizontal member of the wall frame. Generally sits on top of the subfloor.
Span	Horizontal distance between two supporting members.
Subfloor	Floor layer that rests directly on the floor joists.
T-Foundation	Foundation construction commonly used in areas that freeze that consists of a foundation footing and foundation wall which resembles an inverted “T”.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation to show construction material used and notation.
Unbalanced Fill	The difference in height between the exterior and interior finish ground levels.
Unexcavated	Location where the earth has not been dug out.
Vapor Barrier	A thin layer of impermeable material, typically polyethylene sheeting, included in building construction to prevent moisture from damaging the fabric of the building. It is applied to the heated side of insulation.
Welded Wire Mesh	Grid consisting of a series of perpendicular longitudinal and transverse rebar placed inside concrete for added support.
Wood Sill	A large pressure-treated, horizontal framing member to which vertical members of the foundation and wall are attached.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	4.00	C3	20%	Apply procedures to create Simple Roof and Floor System Designs.
Indicator	4.01	N/A	N/A	Understand terms and definitions related to roof plans.
Culminating Question	**What are terms and definitions related to roof plans?**			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand terms and definitions related to roof plans.

INSTRUCTIONAL ACTIVITIES-4.01	
A. Content Literacy Terminology	
Resource(s)	**(See 4.01.1)**
B. Understand terms and definitions related to roof plans.	
Activity	Secondary Research and Concept Connections- Roof and Floor Design
Teacher Instructions	● Provide copy of *Secondary Research and Concept Connections-Roof and Floor Design- Activity*. Facilitate students creating a slide presentation on all terms following rules included in activity. Slides can be preorganized, color coded, or a presentation template provided ahead of time if needed. ● Facilitate students in small groups or pairs sharing their presentations when completed or choose the best out of class and share as a whole-class review.
Student Instructions	● Create a slide presentation on all terms following instructions included in *Secondary Research and Concept Connections-Roof and Floor Design- Activity.* ● Share your presentation and/or participate in class sharing of presentation(s).
Resource(s)	 Secondary Research and Concept Conne

Content Literacy Terminology-4.01.1	
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen floor system and reduce deflection.
Ceiling Joist	Horizontal supporting member which runs from the bottom of opposing rafters. 12", 16", 19.2", & 24" spacing. Length (span) depends on type and size of wood.
Collar Tie or Rafter Tie	Horizontal ties connecting opposing rafters to help resist rafters separating.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Dutch Hip Roof	A combination between a hip roof and a gable roof.
Eave or Overhang	Bottom edge of the roof that projects past the exterior wall.
Fascia	Board attached to the end of the rafter tail.
Finished Floor	Ultimate top layer of flooring.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Flat Roof	A roof with no pitch. Common in areas with little rain or snow.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.
Gable Roof	One of the most common roof types in residential construction; constructed with two sloping sides that meet to form a ridge.
Gambrel Roof	A traditional shape that dates back to the colonial period; the lower level is covered with a steep roof surface, which connects into the upper roof system with a slighter pitch.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Header Joist	Horizontal framing member that caps or encloses the end of floor joists by running perpendicular to them at their ends.
Hip	Term for the exterior edge formed by two sloping roof surfaces.
Joist Hanger	Metal angle or strap used to support the ends of the horizontal framing members.
Knee Wall	Roof member which can help support and lengthen rafter span.

Ledger Strip or Plate	A narrow strip of lumber nailed to the side of a girder and flush with its bottom edge to help support floor or ceiling joists notched to accommodate it.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Lookout	Framing member whose purpose is to provide a nailing surface for the soffit and support eave load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides; Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Mansard Roof	Roof style similar to gambrel roof but has an angled lower slope on all four sides.
Pitch Symbol	Representation of a roof pitch used in elevation views .
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Rafter	One of a series of sloped structural members (beams) that extend from the ridge or hip to the wall plate, downslope perimeter, or eave, and that are designed to support the roof deck and its associated loads.
Rafter Tail	Bottom end of the rafter which extends past the structure and makes up part of the overhang.
Ridge Board	The horizontal timber or member at the top of the roof to which the upper ends of the rafters are attached.
Roof Pitch	Numerical measure of roof slope by rise (vertical) over run (horizontal) represented by a fraction over 12 (i.e. 4/12 or 8/12). Higher pitch roofs are needed where increased dead loads are expected such as snow.
Roof Ridge	The uppermost area of two intersecting roof planes.
Sheathing	the board or panel material used in floor, wall and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Shed Roof	Single pitch, offers simplicity and economical construction.
Shingle	A small thin piece of building material often with one end thicker than the other for laying in overlapping rows as a covering for the roof.
Sistering	To fasten the joists or lumber together through the face to double the thickness of the framing.
Sky Light	Glass or plastic opening in the roof allowing for light and ventilation.

Spot Slope Symbol	Representation of a roof slope used in elevation views .
Soffit	Underside of the roof overhang or eave. Typically includes ventilation.
Sole or Bottom Plate	Lowest horizontal member of the wall frame. Generally, sits on top of the subfloor.
Span	Horizontal distance between two supporting members (i.e. ceiling/floor joists) .
Subfloor	Floor layer that rests directly on the floor joists.
Truss	A manufactured unit consisting of all the members needed to perform the function of the rafter, collars, and knees. These can allow for more open planning.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Valley	Internal corner formed between two intersecting roof surfaces.
Ventilation	Perforated opening for the process of supplying conditioned or unconditioned air to, or removing such air from, any space. Attic vents help reduce condensation in the winter.
Web	A member of a truss system which connects the bottom and top chords, and which provides downward support.
Wood Sill	A large pressure-treated, horizontal framing member to which vertical members of the foundation and wall are attached.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.

Course	**IC62 Drafting II - Architectural**			
Essential Standard	4.00	C3	20%	Apply procedures to create Simple Roof and Floor System Designs.
Indicator	4.02	N/A	N/A	Understand concepts of roof construction including roof types: gable, hip, roof slope.
Culminating Question **Essential Questions**	**What are the concepts of roof construction including roof types: gable, hip, roof slope?** ● What are the common types of roof used in residential construction? ● What are the common components used in residential roof construction? ● Where are common components in residential roof construction used?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand common types of roofs.
c. Understand common components of residential roof construction.
d. Identify common roof construction components.

INSTRUCTIONAL ACTIVITIES-4.02	
A. Content Literacy Terminology	
Resource(s)	**(See 4.02.1)**
B. Understand common types of roofs. **C. Understand common components of residential roof construction.** *Note: Activity covers Unpacked Content for B & C. Activity designed to follow Secondary Research and Concept Connections- Roof and Floor Design from Indicator 4.01*	
Activity	Direct Instruction- Roof Plan and Design-Types and Major Components
Teacher Instructions	● Facilitate students creating a table on scrap paper with two columns: "Terms I Know" and "Terms I Don't Know". ● Facilitate whole-class, direct instruction following *Direct Instruction- Roof Plan and Design-Types and Major Components-Presentation*. Ask students to place terms as they come up in one of the 2 columns in their table. ● Review "Terms I Don't Know" with students individually.
Student Instructions	● Create a table on scrap paper with two columns: "Terms I Know" and "Terms I Don't Know". ● Participate in whole-class, direct instruction following *Direct Instruction- Roof Plan and Design-Types and Major Components-Presentation*. During presentation, place terms/concepts into the columns in your table as they are mentioned. ● Review your "Terms I Don't Know" independently.
Resource(s)	 Direct Instruction- Roof Plan and Desig
D. Identify common roof construction components.	
Activity	Independent Practice with Diagrams-Roof Construction
Teacher Instructions	● Provide students a hardcopy of *Independent Practice with Diagrams-Roof Construction-Handout*. Facilitate individual labeling of diagram components. ● Facilitate students checking answers with *Independent Practice* with *Diagrams- Roof Construction-Presentation*.
Student Instructions	● Label given diagram components on your own. ● Check your answers using the provided *Diagrams-Roof Construction-Presentation*.

Resource(s)	 Independent Practice with Diagra  Independent Practice with Diagra

Content Literacy Terminology-4.02.1	
Ceiling Joist	Horizontal supporting member which runs from the bottom of opposing rafters. 12", 16", 19.2", & 24" spacing. Length (span) depends on type and size of wood.
Collar Tie or Rafter Tie	Horizontal ties connecting opposing rafters to help resist rafters separating.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Dutch Hip Roof	A combination between a hip roof and a gable roof.
Eave or Overhang	Bottom edge of the roof that projects past the exterior wall.
Fascia	Board attached to the end of the rafter tail.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Flat Roof	A roof with no pitch. Common in areas with little rain or snow.
Gable Roof	One of the most common roof types in residential construction; constructed with two sloping sides that meet to form a ridge.
Gambrel Roof	A traditional shape that dates back to the colonial period. The lower level is covered with a steep roof surface, which connects into the upper roof system with a slighter pitch.
Hip	Term for the exterior edge formed by two sloping roof surfaces.
Knee Wall	Roof member which can help support and lengthen rafter span.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Lookout	Framing member whose purpose is to provide a nailing surface for the soffit and support eave load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Mansard Roof	Roof style similar to gambrel roof but has an angled lower slope on all four sides.
Pitch Symbol	Representation of a roof pitch used in elevation views.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Rafter	One of a series of sloped structural members (beams) that extend from the ridge or hip to the wall plate, downslope perimeter,

	or eave, and that are designed to support the roof deck and its associated loads.
Rafter Tail	Bottom end of the rafter which extends past the structure and makes up part of the overhang.
Ridge Board	The horizontal timber or member at the top of the roof to which the upper ends of the rafters are attached.
Roof Pitch	Numerical measure of roof slope by rise (vertical) over run (horizontal) represented by a fraction over 12 (i.e. 4/12 or 8/12). Higher pitch roofs are needed where increased dead loads are expected such as snow.
Roof Ridge	The uppermost area of two intersecting roof planes.
Sheathing	The board or panel material used in floor, wall, and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Shed Roof	Single pitch, offers simplicity and economical construction.
Shingle	A small thin piece of building material often with one end thicker than the other for laying in overlapping rows as a covering for the roof.
Sky Light	Glass or plastic opening in the roof allowing for light and ventilation.
Spot Slope Symbol	Representation of a roof slope used in elevation views .
Soffit	Underside of the roof overhang or eave. Typically includes ventilation.
Span	Horizontal distance between two supporting members (i.e. ceiling/floor joists) .
Truss	A manufactured unit consisting of all the members needed to perform the function of the rafter, collars and knees. These can allow for more open planning.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Valley	Internal corner formed between two intersecting roof surfaces.
Ventilation	Perforated opening for the process of supplying conditioned or unconditioned air to, or removing such air from, any space. Attic vents help reduce condensation in the winter.
Web	A member of a truss system which connects the bottom and top chords, and which provides downward support.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.

Course	**IC62 Drafting II - Architectural**			
Essential Standard	4.00	C3	20%	Apply procedures to create Simple Roof and Floor System Designs.
Indicator	4.03	N/A	N/A	Apply concepts of wood sill and floor construction.
Culminating Question **Essential Questions**	**How are concepts of wood sill and floor construction applied?** ● What is a wood sill? ● What components are included in floor construction? ● How are basic calculations in floor systems determined according to code? ● How are wood sills applied in construction? ● How is floor construction applied?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand wood sill in construction.
c. Understand floor construction and components.
d. Understand how basic floor design calculations are determined.
e. Apply wood sill construction.
f. Apply floor construction.

INSTRUCTIONAL ACTIVITIES-4.03 *Note: All activities combine with Indicator 3.04*	
A. Content Literacy Terminology	
Resource(s)	**(See 4.03.1)**
B. Understand wood sill in construction. **C. Understand floor construction and components.** *Note: Includes Unpacked Content for B & C and combines with part of Indicator 3.04 Guided Instruction and Diagrams-Raised T-Foundation (continues with same diagrams)*	
Activity	Guided Instruction and Diagrams- Floor Construction
Teacher Instructions	● Provide students a hardcopy of *Guided Instruction and Diagrams-Raised T-Foundation and Floor Construction-Handout*. Facilitate whole-class or small group progression through *Guided Instruction and Diagrams-Floor Construction-Presentation* and labeling of diagram components as the # symbol appears in red next to the term (note: term may appear on multiple diagrams provided). ● Facilitate students checking answers with *Guided Instruction and Diagrams- Floor Construction-Key* and discussion on additional components not highlighted in the PowerPoint Presentation.
Student Instructions	● Label given diagram components as the # symbol appears in red next to the term (note: term may appear on multiple diagrams provided) while following the presentation. ● Check your answers using the provided key and label additional components not highlighted in the PowerPoint Presentation.
Resource(s)	 Guided Instruction and Diagrams- Floo  Guided Instruction and Diagrams- Answ  Guided Instruction and Diagrams- Raise
H. Understand how basic floor design calculations are determined. *Note: Activity combines with Indicator 3.02.*	
Activity	Authentic Code Research- Foundations
Teacher Instructions	● Provide digital copy of *Authentic Code Research-Foundations* and access to copy of NC Residential Building Code. ● Facilitate students answering questions and locating information using the code for teacher-selected floor plans or their Custom Home Project.
Student Instructions	● Answer questions and locate information in *Authentic Code Research- Foundations* using the NC Residential Building Code for your Custom Home Project.

Resource(s)	 Authentic Code Research- Foundati
D. Apply wood sill construction.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
E. Apply floor construction.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-4.03.1	
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor. Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Anchor Bolt	A threaded rod inserted in masonry construction to secure the sill plate to the foundation.
Blocking	Consists of one piece of framing lumber that is installed perpendicular to floor joists to strengthen floor system and reduce deflection.
Brick	A common type of block made of clay used to build walls, pavements, and other elements in masonry construction; Bricks are sized nominally to account for mortar joints.
CMU	Concrete Masonry Unit- Standard Nominal Size 8x8x16 and actual size 7 5/8" x 7 5/8" x 15 5/8" (also referred to as a "cinderblock").
Crawl space	An area of limited height under a floor giving access to wiring and plumbing constructed with a T-foundation wall with a height of 3'-0" to 5'-0".
Cutting-plane Line	Very wide lines used to denote an area to be sectioned and include the page number where the section can be found; Cuts through a specific portion of a building or object to show details of construction and interior pieces.
Dead Load	Weight of all materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment.
Diagonal Brace/ Bridging	Consists of two pieces of framing lumber that install in a crisscross configuration, which prevents the floor from sagging under weight.
Double Floor Joist	Horizontal framing members used in places where joists need to be doubled up for support because walls above run parallel to the floor joists or are carrying extra loads. They run parallel to regular floor joists.
Excavated	Location where an earth cavity is formed by cutting, digging, or scooping.
Finished Floor	Ultimate top layer of flooring.
Flashing	Components that direct water; in a masonry wall they direct it towards the weep holes.
Floor Joist	Horizontal structural framing member of the floor which is supported by Girder/Joist hangers and exterior foundation wall which supports the subfloor.
Girder	Support beam used in construction as the main horizontal support of a structure to support smaller beams (i.e. floor joists).
Header Joist	Horizontal framing member that caps or encloses the end of floor joists by running perpendicular to them at their ends.

Joist Hanger	Metal angle or strap used to support the ends of the horizontal framing members.
Ledger Strip or Plate	A narrow strip of lumber nailed to the side of a girder and flush with its bottom edge to help support floor or ceiling joists notched to accommodate it.
Level	Vertical distance or marker.
Light-Frame Construction	A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood (or light gage steel) members.
Live Load	Loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Pier	Vertical foundations support commonly constructed of reinforced masonry (brick or concrete block) supported by individual, reinforced-concrete pad footings or by continuous, reinforced-concrete spread footings.
R- Value	The inverse of the time rate of heat flow through a building thermal envelope element from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady state conditions, per unit area.
Slab Foundation	A large, thick monolithic bed of concrete that is typically 4"-6" thick in the center and poured directly on the ground all at one time. The edges of the slab are thicker (as wide as 24") in order to allow for extra strength around the perimeter. (Also referred to as "slab-on-grade" foundation).
Sole or Bottom Plate	Lowest horizontal member of the wall frame. Generally, sits on top of the subfloor.
Span	Horizontal distance between two supporting members.
Subfloor	Floor layer that rests directly on the floor joists.
Typical Wall Section	Shows section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Wood Sill	A large pressure-treated, horizontal framing member to which vertical members of the foundation and wall are attached.
Wooden Floor Trusses	Engineered floor joist systems that allow plumbing to pass through the floor construction.
Wooden I-joists	Engineered wood products are made with wood flanges that are grooved to receive an OSB or plywood web and allow plumbing to pass through the floor construction and for longer spans than conventional solid lumber.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	4.00	C3	20%	Apply procedures to create Simple Roof and Floor System Designs.
Indicator	4.04	N/A	N/A	Apply procedures to draw roof and floor systems using 3D CAD, BIM software.
Culminating Question **Essential Questions**	**How are procedures to draw roof and floor systems using 3D CAD, BIM software applied?** ● How are procedures to draw roof systems using 3D CAD, BIM software applied? ● How are procedures to draw floor systems using 3D CAD, BIM software applied?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Apply procedures to draw floor systems using 3D CAD, BIM software.
c. Apply procedures to draw roof systems using 3D CAD, BIM software.

INSTRUCTIONAL ACTIVITIES-4.04	
A. Content Literacy Terminology	
Resource(s)	**(See 4.04.1)**
B. Apply procedures to draw floor systems using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
C. Apply procedures to draw roof systems using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-4.04.1
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**

Course	IC62 Drafting II - Architectural			
Essential Standard	5.00	C3	15%	Apply procedures for drawing View type.
Indicator	5.01	N/A	N/A	Apply terms and definitions related to construction drawing view types: Plan views, Section views, Elevation views, 3D Views, and Detail views.
Culminating Question **Essential Questions**	**How are terms and definitions related to construction drawing view types: plan views, section views, elevation views, 3D views, and detail views applied?** ● What are the main view types used in construction drawings? ● How are the main view types used in construction drawings shown? ● What are the terms and definitions related to construction drawing view types: plan views? ● What are the terms and definitions related to construction drawing view types: section views? ● What are the terms and definitions related to construction drawing view types: elevation views? ● What are the terms and definitions related to construction drawing view types: 3D views? ● What are the terms and definitions related to construction drawing view types: detail views?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand the main view types used in construction drawings.
c. Demonstrate the main view types used in construction drawings.
d. Understand terms and definitions related to construction drawing view types: plan views.
e. Understand terms and definitions related to construction drawing view types: section views.
f. Understand terms and definitions related to construction drawing view types: elevation views.
g. Understand terms and definitions related to construction drawing view types: 3D views.

h. Understand terms and definitions related to construction drawing view types: detail views.
i. Apply terms and definitions related to construction drawing view types: plan views, section views, elevation views, 3D views, and detail views.

INSTRUCTIONAL ACTIVITIES-5.01	
A. Content Literacy Terminology	
Resource(s)	**(See 5.01.1)**
B. Understand the main view types used in construction drawings.	
Activity	Direct Instruction- Architectural Views Introduction
Teacher Instructions	• Facilitate whole-class, direct instruction following *Direct Instruction- Architectural Views Introduction-Presentation*.
Student Instructions	• Participate in whole-class, direct instruction following *Direct Instruction- Architectural Views Introduction-Presentation*.
Resource(s)	 Direct Instruction-Architectural Views
C. Demonstrate the main view types used in construction drawings. *Note: Activity designed to take place after Direct Instruction- Architectural Views Introduction*	
Activity	Manual Representation-Architectural Views
Teacher Instructions	• Provide a hardcopy of *Manual Representation-Architectural Views- Activity*. Facilitate students defining each of the views and sketching an example on the back of the sheet.
Student Instructions	• Define each view and sketch an example on the back of *Manual Representation-Architectural Views- Activity* handout.
Resource(s)	 Manual Representation-Arcl
D. Understand are terms and definitions related to construction drawing view types: plan views. **E. Understand are terms and definitions related to construction drawing view types: section views.** **F. Understand are terms and definitions related to construction drawing view types: elevation views.** **G. Understand are terms and definitions related to construction drawing view types: 3D views.** **H. Understand are terms and definitions related to construction drawing view types: detail views.** *Note: Activity can be adapted to include terms and definitions specific to each or all Unpacked Content D, E, F, G, & H. Activity designed to take place after content is introduced to students.*	
Activity	Vocabulary Representation-Pictionary-Architectural Views

Teacher Instructions	Facilitate one student at a time creating an illustration of the provided/selected term on the board, while the rest of the class guesses the term. The student may not write down words or use any sounds to give hints. Classes can be broken into teams or played individually.
Student Instructions	Create an illustration of the provided/selected term on the board, while the rest of the class guesses the term. You may not write down words or use any sounds to give hints.
Resource(s)	(See 5.01.1)
I. Apply terms and definitions related to construction drawing view types: plan views, section views, elevation views, 3D views, and detail views.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.01.1	
3D View	A drawing, sketch or view that shows 3 Dimensions- Height (Y), Width (X), Depth (Z).
Casing	The frame around a door or window.
Cavity Wall	A wall formed with two thicknesses with air space between.
Ceiling Line	Start of the ceiling construction marked with a centerline on Construction Drawings.
Corner Bracing	Additional vertical lumber members added to wall intersections to support or tie walls together.
Corrugated Metal Wall Ties	Commonly used fastener to attach brick veneer to a wood frame wall.
Cripple Stud	Vertical lumber members used to support under windowsills and over headers.
Detail View	Elevation or plan view of a structure included to show details of construction (such as would be needed for casement).
Double Top Plate	Horizontal lumber members sistered together which allows overlap to tie intersecting walls together, hold together studs, and support ceiling joists/rafters.
Elevation View	Orthographic view as seen from straight on at eye level.
Exterior Elevation	Flat or orthographic view of a building from the outside. Typically include notes on materials, vertical distances from floor to ceiling. For an architectural project elevation are usually labeled off of cardinal directions North, South, East, and West or Front, Back, Right, and Left.
Exterior Finishes	Outer most construction material such as Brick, Stucco, or Siding.
Finished Floor	Highest elevation of a constructed floor.
Floor Plan View	Sectional plan view of structure as seen from above cut at a specific horizontal plane. Cut plane can be changed, but the default in Revit is 4'-0" above ground/floor. Typically includes all attached parts of a structure, dimensions, room tags, tags, and other needed information.
Dry wall	Panel used as the interior most construction of walls and ceilings. (Also referred to as wall board, sheet rock, or plaster board).
Header	Large or sistered horizontal lumber piece that carries the load of the roof where studs have been removed to create an opening; Supported by trimmer or jack studs.
Horizontal Surface	Any surface parallel to the top or bottom regular isometric planes of projection.
Insulation	Material used to stop the passage of electricity, heat, or sounds.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Isometric Drawing	A three-dimensional sketch or drawing where the front edge of the object is on the projection plane and all width and depth dimensions are drawn at 30 degrees off horizontal.

Jack or Trimmer Studs	Vertical framing members that support headers.
King Stud	Full-ceiling-height, vertical framing member located on the ends of headers to support openings.
Light Frame Construction	Generally 2x4 (sometimes 2x6 or 2x8; example: water walls) lumber construction.
Longitudinal Section	General section view showing the longest distance across a structure.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Orthographic View	A system that allows you to make two-dimensional drawings of a three-dimensional object or structure by projecting edges of the object onto planes to form lines; The images created are considered "views"; All objects have 6 standard views.
Perspective 3D View (Revit)	Presentation 3D view showing the building model where all components' height, width, depth, and position are skewed in relation to each other when viewed from a particular camera's point/location/distance.
Plan View	View of structure as seen from above (or reflected looking back up) at a horizontal plane.
Plumbing Walls	Walls located behind plumbing fixtures that require extra space for piping (also referred to as "water walls"); At least 6" thick.
R- Value	Measured value of resistance to heat flow.
Rough Sill (Window)	Horizontal framing members used to support bottoms of windows at opening.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Sheathing	The board or panel material used in floor, wall, and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Sistering	To fasten the joists or lumber together through the face to double the thickness of the framing.
Sole Plate	Horizontal lumber pieces which anchor walls to the subfloor and hold together studs. (Also referred to as bottom plate).
Stud	General full-ceiling-height, vertical framing members, spaced 16" or 24" on center.
Transverse Section	General section view showing the opposite distance across a structure from the longitudinal.
Trimmer Stud	Vertical framing members used to support from window sill to window header. (Also referred to as a jack stud).
Typical Wall Section	Section view using section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Vapor Barrier	Thin protective construction layer used to retard the migration of water/moisture.

Vertical Surface	Any surface parallel to the front, back or sides regular isometric planes of projection; for structures these are commonly referred to as elevation views.
Wall Section	Large scale section drawing which reveals detailed internal construction.
Wall Ties	Support bracket used to tie two types of material together (i.e. wood frame construction and brick masonry) in a cavity wall.
Weep Hole	Hole in a masonry cavity wall to allow moisture to flow to the outside.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15 %	Apply procedures for drawing View type.
Indicator	5.02	N/A	N/A	Apply terms and definitions related to wall sections and details.
Culminating Question **Essential Question**	**How are terms and definitions related to wall sections and details applied?** What are the terms and definitions related to wall sections and details?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand terms and definitions related to wall sections and details.
c. Apply terms and definitions related to wall sections and details.

INSTRUCTIONAL ACTIVITIES-5.02 *Note: All activities combine with Indicator 5.04*	
A. Content Literacy Terminology	
Resource(s)	**(See 5.02.1)**
B. Understand terms and definitions related to wall sections and details.	
Activity	Leading Questions and Activities-Typical Wall Section
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Typical Wall Section-Presentation* and *Leading Questions and Answer-Typical Wall Section-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and internet. *Note:* Numbers in brackets coincide with slide numbers if needed. • Facilitate students working in pairs to review answers, collect image examples and sketches. • Facilitate whole-class review of questions.
Student Instructions	• Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and internet. • In pairs, review your answers to the *Activity* and share your selected image examples and sketches. • Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Activities-Typica  Leading Questions and Answer- Typical
C. Apply terms and definitions related to wall sections and details.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.02.1	
Cavity Wall	A wall formed with two thicknesses with air space between.
Ceiling Line	Start of the ceiling construction marked with a centerline on Construction Drawings.
Corrugated Metal Wall Ties	Commonly used fastener to attach brick veneer to a wood frame wall.
Detail View	Elevation or plan view of a structure included to show details of construction (such as would be needed for casement).
Double Top Plate	Horizontal lumber members sistered together which allows overlap to tie intersecting walls together, hold together studs, and support ceiling joists/rafters.
Exterior Finishes	Outer most construction material such as Brick, Stucco, or Siding.
Finished Floor	Highest elevation of a constructed floor.
Dry wall	Panel used as the interior most construction of walls and ceilings. (Also referred to as wall board, sheet rock, or plaster board).
Insulation	Material used to stop the passage of electricity, heat, or sounds.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Light Frame Construction	Generally 2x4 (sometimes 2x6 or 2x8; example: water walls) lumber construction.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
R- Value	Measured value of resistance to heat flow.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Sheathing	The board or panel material used in floor, wall, and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Sole Plate	Horizontal lumber pieces which anchor walls to the subfloor and hold together studs. (Also referred to as bottom plate).
Stud	General full-ceiling-height, vertical framing member, spaced 16" or 24" on center.
Typical Wall Section	Section view using section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Vapor Barrier	Thin protective construction layer used to retard the migration of water/moisture.
Wall Section	Large scale section drawing which reveals detailed internal construction.
Wall Ties	Support bracket used to tie two types of material together (i.e. wood frame construction and brick masonry) in a cavity wall.
Weep Hole	Hole in a masonry cavity wall to allow moisture to flow to the outside.

For more information on Content Literacy Terminology for this indicator please visit:
Revit Glossary

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15%	Apply procedures for drawing View type.
Indicator	5.03	N/A	N/A	Apply concepts of wood frame wall construction.
Culminating Question **Essential Question**	**How are concepts of wood frame wall construction applied?** What are the main view types used in construction drawings?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand the main components of wood frame wall construction.
c. Apply concepts of wood frame wall construction.

INSTRUCTIONAL ACTIVITIES-5.03	
A. Content Literacy Terminology	
Resource(s)	**(See 5.03.1)**
B. Understand the main view types used in construction drawings.	
Activity	Guided Diagram Labeling- Wood Frame Wall Construction
Teacher Instructions	● Provide students a hardcopy of *Guided Diagram Labeling-Wood Frame Wall Construction-Handout*. Facilitate whole-class or small group progression through *Guided Diagram Labeling-Wood Frame Wall Construction-Presentation* and labeling of diagram components as term is discussed (note: term may appear on multiple diagrams provided but is only labeled by # once in the presentation).
Student Instructions	● Label diagram components as term is discussed (note: term may appear on multiple diagrams provided but is only labeled by # once in the presentation) while following the presentation.
Resource(s)	 Guided Diagram Labeling- Wood Fra  Guided Diagram Labeling- Wood Fra
C. Apply concepts of wood frame wall construction.	
Activity	Scale Model Building- Wood Frame Wall Construction
Teacher Instructions	● Facilitate students creating scale models of a basic wood framed wall. These can include door/window cuts/members. Students can determine a scale and/or one be given to them to use. Facilitate students labeling members present in scale models either on model or with a key. ● Facilitate students sharing scale models with class.
Student Instructions	● Create a scale model of a basic wood framed wall. Determine a scale to use or one will be given to you to use. Label members present in scale models. ● Share your scale models with class
Resource(s)	 Scale Model Building- Wood Fra

Content Literacy Terminology-5.03.1	
Casing	The frame around a door or window.
Ceiling Line	Start of the ceiling construction marked with a centerline on Construction Drawings.
Corner Bracing	Additional vertical lumber members added to wall intersections to support or tie walls together.
Cripple Stud	Vertical lumber members used to support under window sills and over headers.
Detail View	Elevation or plan view of a structure included to show details of construction (such as would be needed for casement).
Double Top Plate	Horizontal lumber members sistered together which allows overlap to tie intersecting walls together, hold together studs, and support ceiling joists/rafters.
Elevation View	Orthographic view as seen from straight on at eye level .
Exterior Finishes	Outer most construction material such as Brick, Stucco, or Siding.
Finished Floor	Highest elevation of a constructed floor.
Dry wall	Panel used as the interior most construction of walls and ceilings. (Also referred to as wall board, sheet rock, or plaster board).
Header	Large or sistered horizontal lumber piece that carries the load of the roof where studs have been removed to create an opening; Supported by trimmer or jack studs.
Insulation	Material used to stop the passage of electricity, heat, or sounds.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Jack or Trimmer Studs	Vertical framing members that support headers.
King Stud	Full-ceiling-height, vertical framing member located on the ends of headers to support openings.
Light Frame Construction	Generally 2x4 (sometimes 2x6 or 2x8; example: water walls) lumber construction.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
Plumbing Walls	Walls located behind plumbing fixtures that require extra space for piping (also referred to as "water walls"); At least 6" thick.
R- Value	Measured value of resistance to heat flow.
Rough Sill (Window)	Horizontal framing members used to support window and bottom of window opening.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Sheathing	The board or panel material used in floor, wall and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Sistering	To fasten the joists or lumber together through the face to double the thickness of the framing.

Sole Plate	(Also referred to as Bottom Plate) Lumber which horizontal lumber pieces which anchor wall to the subfloor and hold together studs.
Stud	General full-ceiling-height, vertical framing member, spaced 16” or 24” on center.
Trimmer Stud	Vertical framing members used to support from window sill to window header. (Also referred to as a jack stud).
Typical Wall Section	Section view using section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Vapor Barrier	Thin protective construction layer used to retard the migration of water/moisture.
Wall Section	Large scale section drawing which reveals detailed internal construction .
Wall Ties	Support bracket used to tie two types of material together (i.e. wood frame construction and brick masonry) in a cavity wall.

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15%	Apply procedures for drawing View type.
Indicator	5.04	N/A	N/A	Apply the purpose and features of a wall section, noting insulation and vapor barrier materials and construction.
Culminating Question **Essential Question**	**How are terms and definitions related to wall sections and details applied?** What are the terms and definitions related to wall sections and details?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand the purpose of wall section features and details.
c. Apply the purpose of wall section features and details.

INSTRUCTIONAL ACTIVITIES-5.04 *Note: All activities combine with Indicator 5.02*	
A. Content Literacy Terminology	
Resource(s)	**(See 5.04.1)**
B. Understand the purpose of wall section features and details.	
Activity	Leading Questions and Activities-Typical Wall Section
Teacher Instructions	• Provide digital copies of *Leading Questions and Answer-Typical Wall Section-Presentation* and *Leading Questions and Answer-Typical Wall Section-Activity*. Facilitate students answering questions independently in the *Activity* document using the associated PowerPoint Presentation and internet. *Note:* Numbers in brackets coincide with slide numbers if needed. • Facilitate students working in pairs to review answers, collect image examples and sketches. • Facilitate whole-class review of questions.
Student Instructions	• Answer questions independently in the *Activity* document provided using the associated PowerPoint Presentation and internet. • In pairs, review your answers to the *Activity* and share your selected image examples and sketches. • Participate in whole-class discussion of questions.
Resource(s)	 Leading Questions and Activities-Typica  Leading Questions and Answer- Typical
C. Apply the purpose of wall section features and details.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.04.1	
Cavity Wall	A wall formed with two thicknesses with air space between.
Ceiling Line	Start of the ceiling construction marked with a centerline on Construction Drawings.
Corrugated Metal Wall Ties	Commonly used fastener to attach brick veneer to a wood frame wall.
Detail View	Elevation or plan view of a structure included to show details of construction (such as would be needed for casement).
Double Top Plate	Horizontal lumber members sistered together which allows overlap to tie intersecting walls together, hold together studs, and support ceiling joists/rafters.
Exterior Finishes	Outer most construction material such as Brick, Stucco, or Siding.
Finished Floor	Highest elevation of a constructed floor.
Dry wall	Panel used as the interior most construction of walls and ceilings. (Also referred to as wall board, sheet rock, or plaster board).
Insulation	Material used to stop the passage of electricity, heat, or sounds.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Light Frame Construction	Generally, 2x4 (sometimes 2x6 or 2x8; example: water walls) lumber construction.
Nominal Lumber	Measurement of a board's size before it has been planned smooth (surfaced) on all 4 sides. Actual size is what it measures in the field. Example: 2x4 nominal measures closer to 1 1/2" x 3 1/2".
R- Value	Measured value of resistance to heat flow.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Sheathing	The board or panel material used in floor, wall, and roof assemblies to form a surface to which other materials can be applied and provide bracing support.
Sole Plate	Horizontal lumber pieces which anchor walls to the subfloor and hold together studs. (Also referred to as bottom plate).
Stud	General full-ceiling-height, vertical framing member, spaced 16" or 24" on center.
Typical Wall Section	Section view using section cut of the exterior walls from the roof down through the foundation in order to show construction material used and notation.
Vapor Barrier	Thin protective construction layer used to retard the migration of water/moisture.
Wall Section	Large scale section drawing which reveals detailed internal construction.
Wall Ties	Support bracket used to tie two types of material together (i.e. wood frame construction and brick masonry) in a cavity wall.
Weep Hole	Hole in a masonry cavity wall to allow moisture to flow to the outside.

For more information on Content Literacy Terminology for this indicator please visit:
Revit Glossary

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15%	Apply procedures for drawing View type.
Indicator	5.05	N/A	N/A	Apply terms, purpose, features and definitions related to exterior elevations and building sections.
Culminating Question **Essential Questions**	**How are terms, purpose, features and definitions related to exterior elevations and building sections applied?** ● What are the terms, purpose, features, and definitions of exterior elevations? ● How are terms, purpose, features, and definitions related to exterior elevations applied? ● What are the terms, purpose, features, and definitions of building sections? ● How are terms, purpose, features, and definitions related to building sections applied?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand terms, purpose, features, and definitions of exterior elevations.
c. Apply terms, purpose, features, and definitions of exterior elevations.
d. Understand terms, purpose, features, and definitions of building sections.
e. Apply terms, purpose, features, and definitions of building sections.

INSTRUCTIONAL ACTIVITIES-5.05	
A. Content Literacy Terminology	
Resource(s)	**(See 5.05.1)**
B. Understand terms, purpose, features and definitions of exterior elevations.	
Activity	Direct Instruction and Concept Exploration- Building Sections
Teacher Instructions	● Facilitate whole-class or small group instruction following *Direct Instruction and Concept Exploration-Building Sections-Presentation*. ● Facilitate time for students to explore Building Section Drawings online.
Student Instructions	● Participate in whole-class or small group instruction following *Direct Instruction and Concept Exploration-Building Sections-Presentation*. ● Explore Building Section Drawings online.
Resource(s)	 Direct Instruction and Concept Explor.
C. Apply terms, purpose, features and definitions of exterior elevations.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
D. Understand terms, purpose, features and definitions of building sections.	
Activity	Guided Diagram Labeling- Exterior Elevations
Teacher Instructions	● Provide students a hardcopy of *Guided Diagram Labeling-Exterior Elevations-Handout*. Facilitate whole-class or small group progression through *Guided Diagram Labeling- Exterior Elevations-Presentation* and labeling of diagram components as term is discussed *(Note*: term may appear on multiple diagrams provided but is only labeled by # once). ● Facilitate time for students to explore Exterior Elevation Drawings online.
Student Instructions	● Participate in whole-class or small group instruction following *Guided Diagram Labeling- Exterior Elevations-Presentation*. Label diagram components as term is discussed (*Note*: term may appear on multiple diagrams provided but is only labeled by # once.) while following the presentation. ● Explore Exterior Elevation Drawings online.

Resource(s)	 Guided Diagram Labeling- Exterior El  Guided Diagram Labeling- Exterior El
E. Apply terms, purpose, features and definitions of building sections.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.05.1	
Ceiling Line	Start of the ceiling construction marked with a centerline on Construction Drawings.
Elevation View	Orthographic view as seen from straight on at eye level.
Exterior Elevation	Flat or orthographic view of a building from the outside. Typically include notes on materials, vertical distances from floor to ceiling. For an architectural project elevation are usually labeled off of cardinal directions North, South, East, & West or Front, Back, Right, & Left.
Exterior Finishes	Outer most construction material such as Brick, Stucco, or Siding.
Finished Floor	Highest elevation of a constructed floor.
Horizontal Surface	Any surface parallel to the top or bottom regular isometric planes of projection.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Longitudinal Section	General section view showing the longest distance across a structure.
Orthographic View	A system that allows you to make two-dimensional drawings of a three-dimensional object or structure by projecting edges of the object onto planes to form lines. The images created are considered "views". All objects have six standard views.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Transverse Section	General section view showing the opposite distance across a structure from the longitudinal.
Vertical Surface	Any surface parallel to the front, back or sides regular isometric planes of projection. For structures, vertical surfaces are commonly referred to as elevation views.
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15%	Apply procedures for drawing View type.
Indicator	5.06	N/A	N/A	Apply procedures to draw typical wall sections using 3D CAD, BIM software.
Culminating Question **Essential Question**	**How are procedures to draw typical wall sections using 3D CAD, BIM software applied?** What are the terms and definitions related to wall sections and details?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Apply procedures to draw typical wall sections using 3D CAD, BIM software.

INSTRUCTIONAL ACTIVITIES-5.06	
A. Content Literacy Terminology	
Resource(s)	**(See 5.06.1)**
B. Apply procedures to draw typical wall sections using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.06.1
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**

Course	**IC62 Drafting II - Architectural**			
Essential Standard	5.00	C3	15 %	Apply procedures for drawing View type.
Indicator	5.07	N/A	N/A	Apply procedures to draw exterior elevations and building sections using 3D CAD, BIM software.
Culminating Question **Essential Questions**	**How are procedures to draw exterior elevations and building sections using 3D CAD, BIM software applied?** ● How are procedures to draw exterior elevations using 3D CAD, BIM software applied? ● How are procedures to draw building sections using 3D CAD, BIM software applied?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Apply procedures to draw exterior elevations using 3D CAD, BIM software.
c. Apply procedures to draw building sections using 3D CAD, BIM software.

INSTRUCTIONAL ACTIVITIES-5.07	
A. Content Literacy Terminology	
Resource(s)	**(See 5.07.1)**
B. Apply procedures to draw exterior elevations using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	
C. Apply procedures to draw building sections using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-5.07.1
For more information on Content Literacy Terminology for this indicator please visit: **Revit Glossary**

Course	**IC62 Drafting II - Architectural**			
Essential Standard	6.00	C3	5%	Apply Procedures to Complete a Residential Construction Documents (CD) Set.
Indicator	6.01	N/A	N/A	Apply key components/sheets needed, sheet numbering, naming conventions for a CD set.
Culminating Question **Essential Question**	**How are key components/sheets needed, sheet numbering, naming conventions for a CD set applied?** What are the key components/sheets needed, sheet numbering, naming conventions for a CD set?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand key components/sheets needed, sheet numbering, naming conventions for a CD set.
c. Apply key components/sheets needed, sheet numbering, naming conventions for a CD set.

INSTRUCTIONAL ACTIVITIES-6.01	
A. Content Literacy Terminology	
Resource(s)	**(See 6.01.1)**
B. Understand key components/sheets needed, sheet numbering, naming conventions for a CD set.	
Activity	Peer Research- Construction Document Standards
Teacher Instructions	• Facilitate students choosing groups or assign small groups of 2-3 students. Provide a copy of *Peer Research-Construction Document Standards-Instructions*. Facilitate students creating one of the teaching tools on Construction Document sets. • Facilitate students sharing their products.
Student Instructions	• In a small group, create one of the teaching tools on Construction Document sets. • Share your product with the class.
Resource(s)	 Peer Research-Construction Docun
C. Apply key components/sheets needed, sheet numbering, naming conventions for a CD set.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-6.01.1	
Construction Documents	The records that you share with clients, engineers, and construction professionals to communicate a design organized in a set of sheets. Each sheet contains one or more drawings/views and schedules for the building design. (Also called a drawing set or a sheet set).
Detail View	Elevation or plan view of a structure included to show details of construction (such as would be needed for casement).
Electrical Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane. Typically includes all attached parts of a structure, general electrical fixture locations and any other needed electrical information.
Exterior Elevation	Flat or orthographic view of a building from the outside. Typically include notes on materials, vertical distances from floor to ceiling. For an architectural project elevation are usually labeled off of cardinal directions North, South, East, & West or Front, Back, Right, & Left.
Floor Plan View	Sectional plan view of structure as seen from above cut at a specific horizontal plane. Cut plane can be changed, but the default in Revit is 4'-0" above ground/floor. Typically includes all attached parts of a structure, dimensions, room tags, tags, and other needed information.
Foundation Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane showing below first floor; Typically includes all attached parts of a structure, the location and size of footings, piers, columns, foundation walls, supporting beams, etc.
Furniture Plan	Sectional plan view of structure as seen from above cut at a specific horizontal plane (usually at same cut as floor plan). Cut plane can be changed, but the default in Revit is 4'-0" above ground/floor. Typically includes all attached parts of a structure and general layout of furniture. Used for space planning/understanding.
Interior Elevations	Flat or orthographic view of a portion of the interior of a home.
Lighting Plan	Sectional, reflected plan view of structure at a specific horizontal plane. Typically includes all attached lighting parts of a structure and electrical connections.
Longitudinal Section	General section view showing the longest distance across a structure.
Plan View	View of structure as seen from above (or reflected looking back up) at a horizontal plane.
Reflected Ceiling Plan	A drawing, which shows the items that are located on the ceiling of a room or space (such as lights, electrical, and fire protection).

Roof Plan	Plan view of structure as seen from above at a specific horizontal plane. Typically includes general dimensions (including overhangs), roof layout, roof slopes, and material notes.
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Section View	Flat or orthographic view created by using a cutting-plane to show the interior of a building.
Sheet	Single page layout for a technical drawing; Can be set to an industry standard size.
Title block	A template for a sheet that generally includes a border for the page and information about the design firm, such as its name, address, and logo. Also displays information about the project, client, and individual sheets, including issue dates and revision information.
Transverse Section	General section view showing the opposite distance across a structure from the longitudinal.
Wall Section	Large scale section drawing which reveals detailed internal construction.
For more information on Content Literacy Terminology for this indicator please visit: Revit Glossary	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	6.00	C3	5%	Apply Procedures to Complete a Residential Construction Documents (CD) Set.
Indicator	6.02	N/A	N/A	Apply schedules and labels used in CD Set.
Culminating Question	**How are schedules and labels applied in a CD Set?**			
Essential Question	How are schedules and labels used in a CD Set?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand schedules and labels used in a CD Set.
c. Apply schedules and labels used in a CD Set.

INSTRUCTIONAL ACTIVITIES-6.02	
A. Content Literacy Terminology	
Resource(s)	**(See 6.02.1)**
B. Understand schedules and labels used in a CD Set.	
Activity	Industry Examples- Schedules
Teacher Instructions	● Provide students with digital or hard copies of Construction Document sets which includes at least a Floor Plan and Schedule Sheet. ● Facilitate students identifying information for specific door and windows according to the Construction Documents provided (i.e. width, height, material, manufacturers). Note: This activity can be set-up in stations with different sets of drawings and/or identifying information for each station.
Student Instructions	Identify information for specific door and windows according to the Construction Documents provided (i.e. width, height, material, manufacturers).
Resource(s)	Teacher Selected Construction Document Set
C. Apply schedules and labels used in CD Set.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-6.02.1	
Construction Documents	The records that you share with clients, engineers, and construction professionals to communicate a design organized in a set of sheets. Each sheet contains one or more drawings/views and schedules for the building design. (Also called a drawing set or a sheet set).
Door Tag	Symbol which marks a door to corresponding information contained in schedule. 
Floor Plan View	Sectional plan view of structure as seen from above cut at a specific horizontal plane. Cut plane can be changed, but the default in Revit is 4'-0" above ground/floor. Typically includes all attached parts of a structure, dimensions, room tags, tags, and other needed information.
Schedule	An organized arrangement of notes or information usually lettered within an enclosure/table, conveniently placed, and coordinated with other drawings.
Sheet	Single page layout for a technical drawing. Can be set to an industry standard size.
Title block	A template for a sheet that generally includes a border for the page and information about the design firm, such as its name, address, and logo. Also displays information about the project, client, and individual sheets, including issue dates and revision information.
Window Tag	Symbol which marks a window to corresponding information contained in schedule. 
For more information on Content Literacy Terminology for this indicator please visit: Revit Glossary	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	6.00	C3	5%	Apply Procedures to Complete a Residential Construction Documents (CD) Set.
Indicator	6.03	N/A	N/A	Apply CAD printing and set up.
Culminating Question	**How is CAD printing and set up applied?**			
Essential Question	What are the common sheet sizes used in CD sets?			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Understand common sheet sizes used in CD sets.
c. Apply CAD printing and set up.

INSTRUCTIONAL ACTIVITIES-6.03	
A. Content Literacy Terminology	
Resource(s)	**(See 6.03.1)**
B. Understand common sheet sizes used in CD sets.	
Activity	Physical Model- Paper Sizes
Teacher Instructions	● Provide students ARCH E size sheet. Facilitate students researching the standard ARCH paper sizes using the internet. ● Facilitate students cutting or marking the standard sizes, labeling each.
Student Instructions	● Research the ARCH paper sizes on the internet. ● Cut or mark the ARCH standard sheet sizes on the provided ARCH E size sheet, labeling each.
Resource(s)	ARCH E sheet and the internet
C. Apply CAD printing and set up.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-6.03.1	
Construction Documents	The records that you share with clients, engineers, and construction professionals to communicate a design organized in a set of sheets. Each sheet contains one or more drawings/views and schedules for the building design. (Also called a drawing set or a sheet set).
Sheet	Single page layout for a technical drawing; Can be set to an industry standard size.
Title block	A template for a sheet that generally includes a border for the page and information about the design firm, such as its name, address, and logo. Also displays information about the project, client, and individual sheets, including issue dates and revision information.
For more information on Content Literacy Terminology for this indicator please visit: Revit Glossary	

Course	**IC62 Drafting II - Architectural**			
Essential Standard	6.00	C3	5%	Apply Procedures to Complete a Residential Construction Documents (CD) Set.
Indicator	6.04	N/A	N/A	Apply procedures to complete a residential Construction Documents Set using 3D CAD, BIM software.
Culminating Question	**How are procedures to complete a residential CD set using 3D CAD, BIM software applied?**			

UNPACKED CONTENT

a. Content Literacy Terminology.
b. Apply procedures to complete a residential CD set using 3D CAD, BIM software.

INSTRUCTIONAL ACTIVITIES-6.04	
A. Content Literacy Terminology	
Resource(s)	**(See 6.04.1)**
B. Apply procedures to complete a residential Construction Documents Set using 3D CAD, BIM software.	
Activity	Project Based-Learning-ARC II-Custom Home Project
	Teachers are encouraged to use or create video tutorial session(s) which align with the current version being used in PSU. Autodesk Revit Resources
This Unpacked Content is covered in a general manner through the ARC II- Custom Home Project and does not contain specific supplemental activities.	

Content Literacy Terminology-6.04.1
For more information on Content Literacy Terminology for this indicator please visit: Revit Glossary