## ASSIGNMENT 4

Textbook Assignment: "Project drawings."Pages 4-1 through 4-13.
"Specifications/Material Estimating/Advanced Base Planning."
Pages 5-1 through 5- 13.

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Learning Objective: Describe the different divisions of project drawings and the types of drawings and information that is contained in each division.

4-1. Which of the following information should you provide in the civil division of project drawings?

1. Direction and distance for all property boundaries
2. Demolition requirement
3. Existing site conditions
4. All of the above

4-2. Which of the following drawings is/are NOT part of the structural division?

1. Foundation plan
2. Building cross section
3. Rebar bending schedules
4. Both 2 and 3 above

4-3. The size of water piping is ALWAYS specified in what dividion(s) of a project drawing?

1 Civil
2. Mechanical
3. Fire protection
4. Each of the above, depending upon the usage of the piping

4-4. When needed, where in a set of project drawings should you show seismic design data?

1. On the first sheet of the project drawings
2. On the first sheet of the civil drawings
3. On the first sheet of the structural drawings
4. On the first sheet of the electrical drawings

4-5. For which of the following reasons is the use of isometric riser diagrams preferred over orthographic riser diagrams?

1. They use standard symbo1s to represent pipe fittings and connections
2. They can be drawn with less regard to proper projection methods
3. They show in elevation each section of a piping system
4. They are three-dimensional representations of an entire piping system

Learning Objective: Describe HVAC systems and equipment.

4-6. What component(s) of a warm-air heating system is/are used to distribute the heated air?

1. Ducts
2. Fans
3. Pumps
4. Heat exchanger

4-7. What component(s) of a warm-air heating system is/are used to circulate the heated air?

1. Ducts
2. Fans
3. Pumps
4. Heat exchanger

4-8. A gravity warm-air heating system must be installed in a basement for which of the following reasons?

1. To allow warm air to be blown upward by fans
2. To hide unsightly ductwork
3. To allow heated air to rise through the ductwork into the areas reguiring heat
4. To provide the necessary floor space for the large-size furnace

4-9. What type of heating system is most often used for heating large industrial shops?

1. Forced-air furnace
2. Unit heaters
3. Steam
4. Hot water

4-10. What type of heating system is designed to compensate for the loss of body heat to surrounding surfaces?

1. Forced-air furnace
2. Steam
3. Hot water
4. Radiant

4-11. Which of the following conditions apply to the term *comfort conditioning?*

1. Controlled room temperature
2. Controlled humidity
3. Controlled air quality and motion
4. All of the above

4-12. In addition to cooling, a secondary effect that you achieve with mechanical refrigeration is higher humidity.

1. True
2. False

4-13. What part of a window air-conditioning unit changes the liquid refrigerant to a low-pressure gas?

1. Condenser
2. Condenser coils
3. Evaporator
4. Evaporator coils

4-14. Which of the following descriptions best describes a heat pump?

1. A self-contained air-conditioning unit that you can use for both cooling and heating
2. A device that is built into a window air conditioner that pumps the high-temperature refrigerant gas to the condenser
3. A built-in pump that blows heated air into a room from a self-contained air-conditioning unit
4. A control device that regulates the flow of liquid refrigerant to the evaporator coils

4-15. What publication provides information on the standard mechanical symbols used for preparing HVAC drawings?

1. MIL-HDBK-1006/1
2. MIL-STD-17B
3. MIL-STD-14A
4. MIL-STD-100E

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Learning Objective: Describe the various attributes that you should look for when checking and editing project drawings.

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4-16. When editing a drawing, you are performing what action?

1. Inspecting the drawing to ensure that all information shown is in compliance with the various data sources
2. Making editorial changes to the drawing
3. Making sure that all appropriate conventions and practices are followed
4. Ensuring that the red-line drawings reflect all changes that occurred during construction

4-17. You begn to edit a construction drawing at what point in the development process?

1. When the drawing is approximately 30-percent complete
2. When the drawing is completed and ready for review
3. As soon as the drawing first begins
4. As soon as the red-line data is ready to be recorded

4-18. When you look at the reverse side of a drawing as it is held against a bright light, what are you checking?

1. The translucency of the tracing paper or vellum
2. The reproducibility of the drawing
3. The opaqueness of the tracing paper or vellum

4-19. When, if ever, should you allow the preparation of a roll–size project drawing?

1. When the required scale of the drawing is too large for flat-size paper
2. When the drawing is deemed to satisfy any of the exceptions noted in MIL-HDBK-1006/1
3. When the size reguirement listed in MIL–STD-100E overrides MIL-HDBK-1006/1
4. Never

4-20. Which of the following groups of drawings is arranged in the proper order?

1. Architectural, civil, structural, electrical, mechanical, plumbing, and fire protection
2. Index, civil, architectural, structural, electrical, mechanical, and plumbing
3. Civil, landscaping, architectural, structural, mechanical, plumbing, and electrical
4. Title sheet, civil, landscaping, architectural, structural, mechanical, fire protection, and plumbing

4-21. When checking a site plan, you should expect to find at least how many dimensions used to locate a building or structure?

1. One
2. Two
3. Three
4. Four

4-22. You are checking a drawing that includes a cross-sectional detail of a chair rail. What is the minimum scale that the detail should be drawn?

1. 3/4 inch equals 1 foot
2. 3/4 inch equals 1 inch
3. 1 1/2 inches equals 1 foot
4. Half scale

4-23. For a flat, D-size project drawing, what title-block format should you use?

1. Horizontal only
2. Vertical only
3. Horizontal or vertical, depending upon your preference or the direction given by your supervisor

4-24. When reviewing a set of A-E prepared project drawings, You find the incorrect phase “By the plumber.” What correct phrase, if any, should have been used?

1. “By the Government”
2. “By others”
3. “By the UT”
4. None

4-25. What publication provides basic guidance and NAVFAC policy for the preparation of project drawings and specifications?

1. MIL-HDBK-1006/1
2. DOD-STD-100E
3. MIL-STD-100E
4. NAVFAC DM-6

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Learning Objective: Identify and describe project specifications and the different types of reference specifications.

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4-26. Building structure information that CANNOT be shown graphically should be documented in the form of specifications.

1. True
2. False

4-27. What are the basic types of reference specifications that you should use to prepare project specifications for a project located on a Marine Corps installation?

1. Federal specifications
2. EFD regional guide specification
3. NAVFACENGCOM guide specifications
4. Standard specifications

A. Federal specification

B. Military specification

C. Manufacturer’s specification

D. NAVFACENGCOM standard specification

E. EFD regional guide specification

Figure 4A

IN ANSWERING QUESTIONS 4-28 THROUGH 4-31, SELECT FROM FIGURE 4A THE TYPE OF SPECIFICATION THAT BEST SATISFIES THE CONDITION GIVEN AS THE QUESTION.

4-28. Covers only the characteristics of materials.

1. A and B
2. B and C
3. A and C
4. C only

4-29. Should NEVER be copied verbatim in project specifications.

1. A
2. C
3. D
4. E

4-30. Must be referenced and must denote any exceptions taken to NAVFACENGCOM directions or requirements.

1. A
2. B
3. D
4. E

4-31. May be used in a given geographical area provided it is just as current as the NAVFACENGCOM guide spec having the same identification number.

1. A
2. B
3. D
4. E

4-32. Which of the following factors should NOT be included in project specifications?

1. Quality of materials
2. Workmanship standards
3. Crew sizes
4. Description of materials

4-33. The project supervisor should take which of the following actions when conflicts occur between the project drawings and the specification?

1. Comply with the drawings
2. Comply with the specifications
3. Obtain guidance from S-3
4. Obtain guidance from the ROICC

4-34. A contractor desiring to bid on a government construction project should find specific bidding requirements in what division of the project specifications?

1. 1
2. 10
3. 3
4. 13

4-35. The quality of all lumber to be used in a project is specified under what division of project specifications?

1. 10
2. 8
3. 6
4. 4

4-36. What division of the project specifications will normally specify the gauge of metal to be used for HVAC ductwork?

1. 5
2. 7
3. 13
4. 15

4-37. The type of materials used in a plumbing system should be specified in what part of the division dealing with plumbing?

1. 1
2. 2
3. 3

4-38. The specified fastening method for ceiling installation of gypsum wallboard should be identified in what part of the Finishes division of the project specifications?

1. 1
2. 2
3. 3

4-39. To save time and effort, you should make reference to NAVFAC and EFD guide specifications in the project specs. This is a common and accepted practice of spec writers.

1. True
2. False

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Learning Objective: Define terminology and describe technigues used in material estimating.

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4-40. Which of the following qualities is required to be a good estimator?

1. Sound construction knowledge
2. Knowledge of material estimating procedures
3. Knowledge of material estimating pitfalls
4. Each of the above

4-41. When a conflict exists between the general drawing and a detail, which drawing, if either, should you follow?

1. General always
2. Detail unless it is obviously wrong
3. Detail always
4. Neither, contact the drafter

4-42. What step should the estimator do first when starting an estimate?

1. Review the drawings
2. Read NAVFAC P-405
3. Study the specifications
4. Make a rough estimate from the drawings

4-43. The NAVFAC P-405 is based on

1. general construction knowledge
2. timed sample projects
3. Seabees' experience
4. the dart board theory

4-44. Quantity estimates serve a variety of purposes. Which of the following items is NOT based on the quantity estimate?

1. Start dates
2. Manpower needs
3. Delivery schedules
4. Equipment needs

4-45. What method is recommended to check your quantity estimate?

1. Do two separate estimates yourself
2. Have someone review your estimate
3. Have someone else do an estimate and then compare it with your results
4. Have two people do an estimate at the same time and compare their results

4-46. When preparing a material estimate, you do NOT need to read drawing notes to have an accurate estimate.

1. True
2. False

4-47. All drawings are NOT drawn to scale. You cannot scale them to obtain information for an estimate.

1. True
2. False

4-48. Omissions in material estimations are the result of careless examination. Which of the following examples results in omissions?

1. Failure to check for revisions
2. Failure to ensure all the pages are available
3. Failure to review the specifications
4. All of the above

4-49. Your material estimate calls for 100 board feet of 2 x 4s. Should you order the exact amount?

1. No, you must allow for a waste factor
2. Yes, this is the amount needed
3. No, you must allow for excess material build up for future projects

4-50. The term *bulk material* refers to which of the following materials?

1. Concrete
2. Prime coat material
3. Crushed rock
4. Each of the above

4-51. You are calculating an estimate for fill. What reference provides you the compaction factor for a particular type of fill?

1. NAVFAC P-315
2. NAVFAC P-405
3. NAVFAC P–437
4. NAVEDTRA 12540

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Learning Objective: Describe the contents and use of NAVFAC P-437 for the planning and installation of ABFC components, facilities, and assemblies.

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4-52. Which of the following NAVFAC publications contains estimating information on common facilities and assemblies?

1. NAVFAC P-315
2. NAVFAC P-437, Volume I
3. NAVFAC P-437, Volume II
4. NAVFAC P-405

4-53. What is an NMCB according to the P-437?

1. P-25, component
2. P-25, assembly
3. P-26, facility
4. P-26, component

4-54. Volume II of NAVFAC P-437 lists by national stock number (NSN) the material requirements for which of the following units?

1. Facility
2. Assembly
3. Component
4. Each of the above

4-55. Which of the following statements is not true of the ABFC system?

1. Seabees construct assemblies
2. Facilities comprise components
3. Assemblies comprise facilities
4. Components comprise assemblies

4-56. Volume I of the P-437 contains which of the following information?

1. Sizes of the crews required to operate components
2. Number of acres required for an assembly
3. Drawings of facilities and assemblies
4. Amount of fuel needed to operate components