**UNIT 1 contract documents and drawings**

***nOTE: tHE SOLUTIONS FOR THIS CHAPTER WILL REQUIRE A SCALING RULER AND THE DRAWINGS THAT ACCOMPANY THE TEXT.***

**Review**

1. List the drawings that are normally included in an electrical drawing set.

A legend of symbols, site plan, lighting and power electrical floor plans, power riser diagram, details and schedules

1. List the steps to be followed when working with a set of drawings.

* Check that the drawing set is complete.
* Review the floor plans and elevations to get a mental picture of the size and shape of the building.
* Orient the building to the site using the plot plan. Be sure you know which sides are north, south, east, and west. Add this information to your floor plans.
* Check the scale of all drawings.
* Identify the type of construction (combustible, noncombustible), materials and components shown in the drawings. Non-standard items should be shown in a legend of symbols.
* Read all notes on the drawings carefully.
* Relate details to larger views.
* Note multiple or identical drawings. *Typical* means uniform throughout the building.

1. Measure the length of each line using the metric scale indicated. *(Use these numbers as approximations. Variations occur during the printing process and the lines will vary in length between one printing run and the next.)*
   1. 1.86 m
   2. 4.5 m
   3. 9.65 m
   4. 4.75 m
   5. 2.4 m
   6. 12.2 m
   7. 7.35m
   8. 1.87 m
   9. 4.4 m
   10. 7.35 m
2. Measure the length of each line using the architectural scale indicated. *(Use these numbers as approximations. Variations occur during the printing process and the lines will vary in length between one printing run and the next.)*
   1. 23’ 6”
   2. 14’ 2”
   3. 7’ 7”
   4. 1’ 8-1/4”
   5. 8’ 0”
   6. 5’ 1-1/2”
   7. 11’ 7”
   8. 28’ 4”
   9. 13’ 10”
   10. 7’ 6-1/2”

5. Identify the construction event during which the following electrical activities should take place.

a. Trenching and underground work = Site preparation

b. Feeders = Building enclosure

c. Finishing = Floor Finishing

d. Panelboards = Interior walls, partitions and ceilings

e. Branch circuits and pulling wire = Interior walls, partitions and ceilings

f. Embedded work = Footings and foundations, superstructure and floors.

6. Draw the symbol for each of the following items found on a site plan.

a. Existing contour lines

b. Finished contour lines 

c. Benchmark

d. Gas line

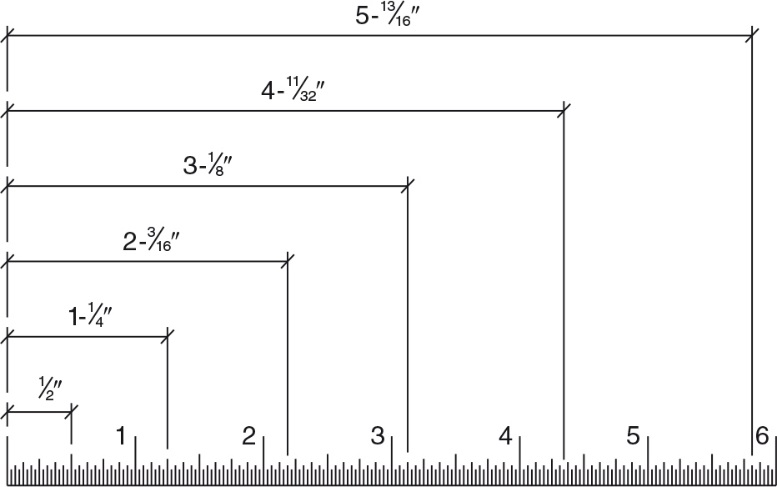
e. Fence line

f. Property line

The symbols for items found on a site plan are shown in Figure 1-2 of Unit 1.

7. Give the measurement indicated by each dimension in the diagram below.

The measurements are shown in Figure 1-3 in Unit 1.



They are 1/2”, 1-1/4”, 2-3/16.”, 3-1/8”, 4-11/32”, 5-13/16”.

8. Determine the following using the blueprint drawings supplied with this textbook.

Note: The north-facing arrow is missing from the site plan. *(Use these numbers as approximations. Variations occur during the printing process and the lines will vary in length between one printing run and the next.)*

The north-facing side of the building can be determined on the plan based on the exterior elevations on drawing A5.

a. What is the distance from the south lot line to the southeast corner of the building?

The distance from the south lot line to the southeast corner of the building is 42682 mm.

b. Where is the new electrical room located?

The new electrical room is located at column lines A15 to B14.

c. What size and voltage transformers are used to supply this building?

The size and voltage of the transformers used to supply this building are 3-1000KVA 27600V- 347/600V.

d. Where is the chiller located?

There are two chillers located in the chiller room.

e. Where is lighting panel “D” located?

Lighting panel D is between column lines A12 and A13.

f. What is the voltage and current rating of power panel 102?

The voltage and current rating of PP102 is 120/208V 225A main busses and 200A main breaker.

9. Perform the following conversions.

a. 12.5 mm to inches = 0.492”

b. 25.4 mm to inches = 1”

c. 500 mm to inches = 19.6”

d. 6000 mm to inches = 236.2”

e. 3412 mm to feet = 11.19’

f. 0.025 mm to feet = 8.2 x 10-5**’**

g. 1/8″to mm = 3.175 mm

h. 1/4″ to mm = 6.35 mm

i. 1/2″ to mm = 12.7 mm

j. 9/64″ to mm = 3.57 mm