Chapter 1 – Commercial Building Plans and Specifications

Review

Note: Refer to the *CEC* or the blueprint package as necessary.

1. **What section of the specifications contains a list of contract documents?**

   The *General Clauses and Conditions* section. See **Specifications | Proposals | General Conditions**.

2. **The requirement for temporary light and power at the job site will be found in what portion of the specifications?**

   Supplementary General Conditions. See **Supplementary General Conditions**.

3. **The electrician uses the Schedule of Drawings for what purpose?**

   To determine whether all of the drawings are included in the drawing set. See **Supplementary General Conditions | Schedule of Drawings**.

Complete the following items by indicating the letter(s) designating the correct source(s) of information for each:

4.	**Room width**	b	**a. Site plan**
5.	**Grading elevations**	c and/or g	**b. Architectural floor plan**
6.	**Ceiling height**	g	**c. Elevations**
7.	**Panelboard schedules**	e	**d. Details**
8.	**Exterior wall finishes**	g	**e. Electrical layout drawings**
9.	**View of interior wall**	g	**f. Specifications**
10.	**Electrical outlet location**	e	**g. Sections**
11.	**Electrical receptacle style**	h	**h. Electrical symbol schedule**
12.	**Swing of door**	b	

See **Supplementary General Conditions | The Drawing Set**.

Match the initialism on the left with the phrase or word that best relates to that organization, document, or person.

13. **SCC**	c	**a. Accrediting organizations**
14. ***CEC***	e	**b. Seal**
15. **ULC**	d	**c. Manufacturers' standards**
16. **PEng**	b	**d. Listing service**
17. **CSA**	a	**e. Electrical code**

See **Approval of Equipment**, **Registered Professional Engineer (PEng)**, and **Codes and Standards**.

Write the appropriate letters (a, b, c, or d) to indicate the proper interpretation of the *CEC*.

18. **Must be done**	a	**a. Shall**
19. **May be done**	d	**b. Special permission**
20. **Up to the electrician**	d	**c. Not allowed**
21. **Can never be done**	c	**d. Allowed**
22. **With the inspector's approval**	d	

See **Codes and Standards | Canadian Electrical Code**.

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

- Legend of symbols
- Site plan
- One-line diagram
- Lighting layout
- Power layout
- Electrical details
- Schematic and wiring diagrams
- Schedules

See **Supplementary General Conditions | The Electrical Drawing Set**.

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

- Check that the drawing set is complete.
- Review the plans to get a mental view of the project.
- Orient the plans to the site. Add North, South, East, and West to the drawings.
- Check the scale of all drawings.
- Identify the type of construction.
- Read all drawing notes.
- Relate details to larger drawings.
- Note multiple or identical drawings.

See **Supplementary General Conditions | Working with the Drawings**.

25. Measure the length of each line using the scale indicated.

a.	**1:100**	7.5 m	(75 mm × 100 = 7500 mm)
b.	**1:50**	4.45 m	(89 mm × 50 = 4450 mm)
c.	**1:25**	2.25 m	(90 mm × 25 = 2250 mm)
d.	**1:75**	4.8 m	(64 mm × 75 = 4800 mm)
e.	**1:50**	3.8 m	(76 mm × 50 = 3800 mm)
f.	**1:125**	12.13 m	(97 mm × 125 = 12 125 mm)
g.	**1:100**	7.3 m	(73 mm × 100 = 7300 mm)
h.	**1:25**	2.23 m	(89 mm × 25 = 2225 mm)

i.	**1:50**	4.35 m	(87 mm × 50 = 4350 mm)
j.	**1:25**	2.38 m	(95 mm × 25 = 2375 mm)
k.	**$\frac{1}{8}$″ = 1 ft**	22′ 6″	(2 $\frac{13}{16}$ ″/ $\frac{1}{8}$ ″ = 22′ 6″)
l.	**$\frac{1}{4}$″ = 1 ft**	14′	(3 $\frac{1}{2}$″ / $\frac{1}{4}$ ″ = 14′)
m.	**$\frac{1}{2}$″ = 1 ft**	7′ 6″	(3 $\frac{3}{4}$″ / $\frac{1}{2}$″ = 7′ 6″)
n.	**1 $\frac{1}{2}$″ = 1 ft**	1′ 8″	(2 $\frac{1}{2}$″ / 1 $\frac{1}{2}$″ = 1′ 8″)
o.	**$\frac{3}{8}$″ = 1 ft**	8′	(3″ / $\frac{3}{8}$″ = 8′)
p.	**$\frac{3}{4}$″ = 1 ft**	5′	(3 ¾″ / ¾″ =5′)
q.	**$\frac{1}{4}$″ = 1 ft**	11′ 6″	(2 $\frac{7}{8}$″ / $\frac{1}{4}$″ =11′ 6″)
r.	**$\frac{1}{8}$″ = 1 ft**	28′	(3 $\frac{1}{2}$″ / $\frac{1}{8}$″ = 28′)
s.	**$\frac{1}{4}$″ = 1 ft**	13′ 9″	(3 $\frac{7}{16}$″ / $\frac{1}{4}$″ =13′ 9″)
t.	**$\frac{1}{2}$″ = 1 ft**	7′ 6″	(3 $\frac{3}{4}$″ / $\frac{1}{2}$″ = 7′ 6″)

See **Supplementary General Conditions | Scale** and **Supplementary General Conditions | Types of Scale (Measuring Instruments)**.

26. Which of the following is the symbol for duplex receptacle 5-15?

b. 

See **The Commercial Building Plans**.

27. Which of the following is the symbol for a four-way switch?

a. 

See **The Commercial Building Plans**.

28. Which of the following is a ceiling outlet?

b. 

See **The Commercial Building Plans**.

Practical Application

The following question will pertain to this chapter and/or refer to the drawings in this book unless otherwise stated.

1. **The owner of the bakery has requested five additional 15 A dedicated receptacles located within 20 feet of the main service panel. This installation can be done using AC/90. What would the additional cost to project be?**

   Note to instructor: The intention of this question is to have students access local distributors for pricing and availability to gain experience with the challenges facing running projects. No one answer is correct as cost will vary if substitutions are necessary.

   Key items to include:
   - Five 15 A single pole breakers
   - Approx. 100 feet of AC/90
   - Boxes
   - Fittings
   - Receptacles
   - Cover Plates

   This price will vary due to the following:
   - Labour rates (due to time constraints. Is it overtime?)
   - Material availability / cost differences in different Provinces