

CMGT 235 – Electrical and Mechanical Systems

Take Home Activity #5 – Electrical Plans and Specifications

Points: 50 [2 points each properly formatted answer]

Due: 11/10/2022

WRITE NEATLY

Check One: Worked with a: Partner INDIVIDUAL

Name	Answers
Name	
Name	

To answer the following questions, you will need to access electronically the HomeGoods Distribution Center Electrical Plans and specifications. See: <https://lorisweb.com/cmgt235.html>

Do not just give the answer, you must also cite where you found the answer. No points will be given unless you cite where the answer came from. See examples below.

Plan Answer Example: 3 ½", E-004, Schedule of Feeders & Services

Specification Answer Example: 260519-1 of 2, 2.1 A

Plan Questions

1. What size is the feeder (conductors and conduit) for RTU-A?


4#8, #10G, ¾" conduit

E-003, Mechanical Equipment Connection Schedule

2. For the Site Photometric Plan how many feet above finished grade (AFG) are the luminaire values calculated at?

40 ft

E-101P, Note 2.

3. What type of device is does this symbol represent? 

Passive Infrared Switch

E-003, Occupancy Sensor Schedule

4. How many of the Type Fixture A in the ticket room are connected as night lights?

4

E-210, Detail 3 Partial Plan - Ticket Room Lighting

5. Complete the following for Panel EHB1 and indicate where you find the answers.

Panel	AMPS	VOLTAGE	Ø / WIRES	MLO/MCB	CKTS	TRIP/POLES - QTY	FEEDERS - QTY
PNL EHB1	100A	480/277	3/4W	MLO	42	20/2 - 2 20-1 - 1	#8 - 1 #3 - 4

E-605 Electrical Panel Schedule, Panelboard Schedule - "EHB1"
E-004 Electrical Riser Diagram, Schedule for Feeders and Services

6. What height are the LED Bollards?

42"H

E-001, Lighting Fixture Schedule

7. How high are the exterior CCTV Camera mounted?

25'-0: ABV Finished Grade

E-003, Exterior CCTV Camera Pole Detail

8. How many exterior CCTV cameras are installed on the site?

14

E-101 Site Plan - Electrical

9. What Fixture Types are installed in the Men's Restroom (A21)?

Type F1 and Type C

E-2.08

10. What type of raceway shall all exposed branch circuit wiring in the warehouse be in?

EMT

E-302 - E-307, General Notes. G-4

11. How many duplex receptacles are installed in the telecom Room (A02)?

7

E-308 Detail 2 Enlarged Telco Room - Power

12. What size conductor is connected to the building service ground from the master ground bar for conductive floor tiles?

#3/0

E-309 Detail 2 MDF Grounding Details

13. How is panel BC1 mounted?
Surface
E-601 Panelboard Schedule "BC1"
14. Why has the size feeders to panel EHA4 been increased significantly?
Due to Voltage Drop
E- 005, Key Note: 3
15. How high are the disconnect switches for the battery chargers to be mounted?
+54" AFF
E-311, Key Notes: 1
16. How are the conduits from the floor boxes for data cabling in the conference room (A25) to be terminated?
Nylon Bushings
E-308, Key Notes: 8
17. How high shall all receptacles mounted on columns in the warehouse be mounted?
+48" AFF U.N.O.
E-302 - E-307, General Notes: G-3
18. How is all warehouse lighting to be controlled?
Low Voltage Relays
E-202 - E-207, General Notes: G-5
19. How many duct detectors shall be provided for RTU's 15,000 CFM and greater?
2
E-201, General Notes: G-1
20. What size are the ground rods for the service grounding?
 $\frac{3}{4}$ " x 10'
E-005, Detail Service Grounding & Bonding

Specification Questions

21. What shall the conductor color coding be for 277/480 volt systems?

Phase A - Brown

Phase B - Orange

Phase C - Yellow

Neutral - Gray

Ground - Green

26 0519-1 of 4, 1.3 A.

22. What type of conduit fittings shall be used for EMT?

Fittings and couplings shall be set-screw type and/or compression type per 3.1 12. Steel set screw type for 2.5" conduit and larger shall have 2 screws for connectors and 4 screws for couplings. All connectors shall be insulated throat type.

26 0533-2 of 7, 2.2 B.

23. What type of outlet boxes shall be installed for exposed rigid conduit?

cast ferrous alloy, galvanized or cast aluminum

26 0534-2 of 5, 2.2 F.

24. What shall the transformer coils consist of?

Aluminum windings

26 2200-2 of 2, 2.2 G.

25. What shall the switchboards be mounted?

3" high concrete pad, horizontal dimensions of which shall exceed the base dimensions of the switchboard by 3" on all sides.

26 2413-5 of 6, 3.1 A.