

BUILDING DESIGN & CONSTRUCTION SYSTEMS MOCK EXAM

1. A small commercial building is to have a stair built between three different levels including 0' (at grade) to 13'-6" (at second floor) to the top floor at 27' - 6 3/4".

- a. Straight run stair with a 6.75" riser without any landing
- b. 7" riser, 11" tread
- c. First floor: 6.75" riser, Second floor: 6.5" riser
- d. Switchback stair with a 6.75" riser

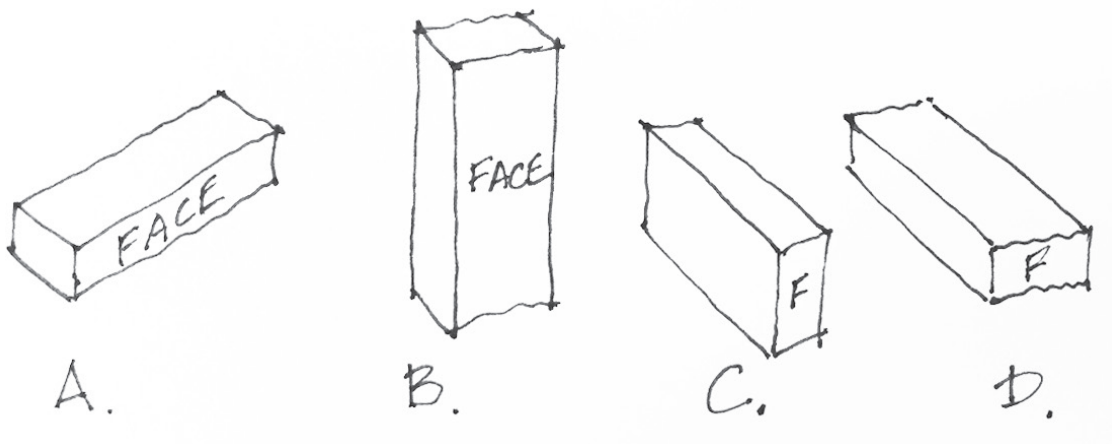
2. What is the height of the guardrail at the stair landing reference in question 1?

3. The span is going to be 160' for the gymnasium. The engineer has suggested a few options. Which of the following rings true?

- a. The trouble with precast concrete will be transportation logistics for such a long span
- b. Open web steel joists will give the strongest and stiffest long span structure
- c. Glulam wood systems would clearly be the most economical
- d. The advantage of post-tensioned concrete is very low formwork costs

4. The beam to be placed in the historic rehab is a 20' W16x50. If each worker can carry 100lbs, how many workers would it take to carefully move it into place?

5. Which of the following is a Rowlock? (Bonus question to ponder: Why would I use it?)

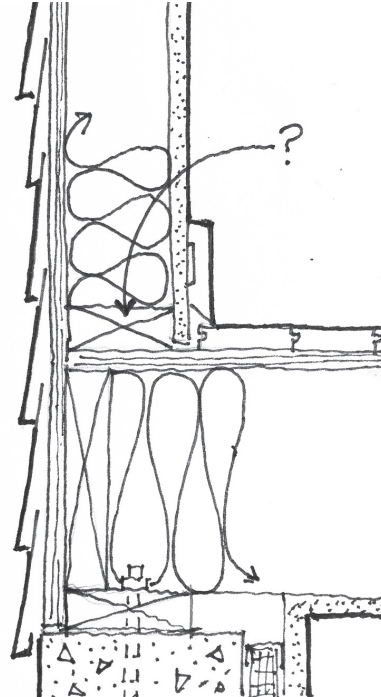


6. The structural steel commercial building is sited right on the property line. Which of the following is likely NOT to be true?

- a. It would be reasonable to have the exterior columns set back a few feet in order to allow those columns to be placed in the center of their respective footings
- b. The exterior column footings can be eccentrically loaded without difficulty
- c. Excavation of the exterior column footings is difficult if the building is built to the property line without damaging neighboring properties
- d. It is highly likely that there will be a grade beam at the building perimeter

7. What is the item marked?

- a. Sill Plate
- b. Sheathing Plate
- c. Sole Plate
- d. Base Plate



8. The public library is being designed with a concrete waffle slab system. Which of the following is true?

- a. The dropped ceiling is easily attached to the ribs of the waffle
- b. Waffle slab is typically a very economical choice
- c. The most complicated aspect will be how to conceal or express the utilities
- d. Due to all the ribs, the waffle can be easily adjusted later down the road if the building program alters

9. When you have a “rubble” stone exterior finish with a CMU backup wall, it is likely that you will use a ...?

- a. Ladder type reinforcing
- b. Truss type reinforcing
- c. Adjustable type reinforcing
- d. Solid barrier type wall system

10. The slab floor at the big box store has just been finished and the contractor has just put a giant plastic sheet over the top. Why?

- a. Worried about curling
- b. Protect the trowelling
- c. Allows the finish floor to be added on top
- d. Keeps the moisture from wicking up from the hydrostatic pressure