

ERRATA for
PE Civil: Structural Practice Exam
ISBN: 978-1-947801-31-8
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Errata posted 10/01/2024

Revisions are shown in red.

Question 31, p. 23:

An A992 W8×28 beam is loaded as shown. To have zero deflection at the free end of the overhanging section, the magnitude (kips) of the concentrated force, **P**, at the free end must be _____. **Ignore member self-weight.**

Question 36, p. 26:

A contractor is planning to install a temporary structure that will support a concrete pump at a construction site. According to the construction contract, the contractor must submit design drawings and calculations for the temporary structure to the **project engineer of record** for approval. What is the purpose of this submittal requirement?

Question 37, p. 27:

According to IBC 2018 and applicable quality assurance inspection requirements, which of the following inspection tasks are required for ASTM **A325** high-strength bolts **in a snug-tightened joint** used in a steel-framed structure?

Question 51, p. 36:

Per ASCE 7-16, the estimated design lateral soil load (psf/foot of depth) for nonrigid walls is most nearly:

Question 65, p. 48:

Option B should read as follows:

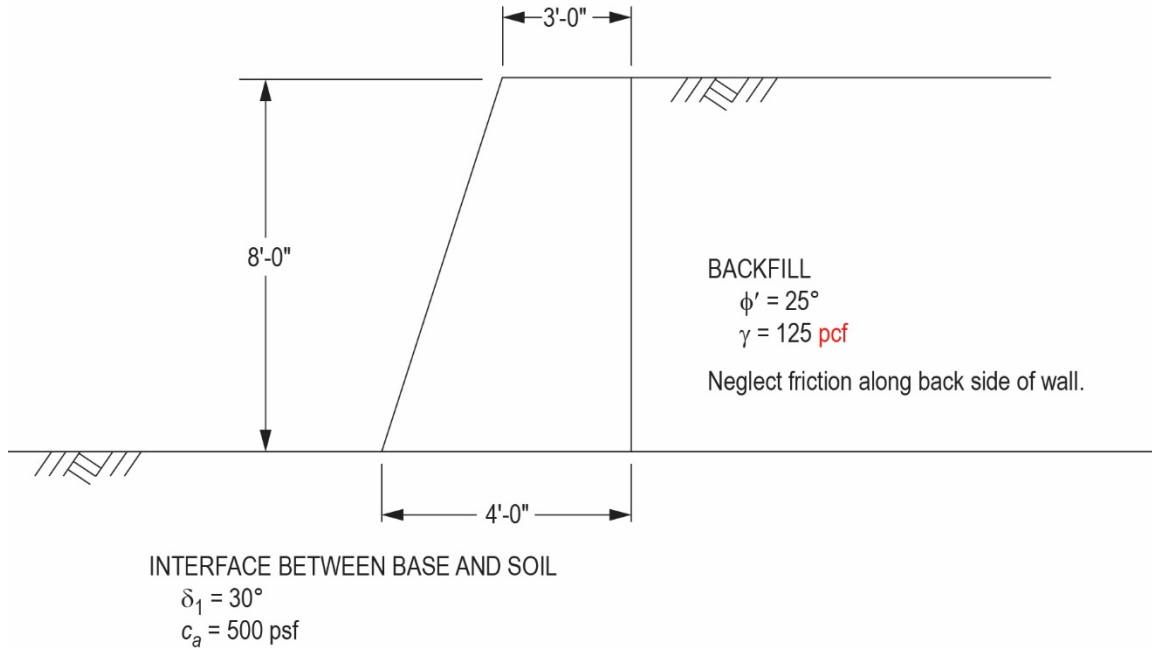
- B. ASD = **21.3**
LRFD = **32.1**

Question 74, p. 52:

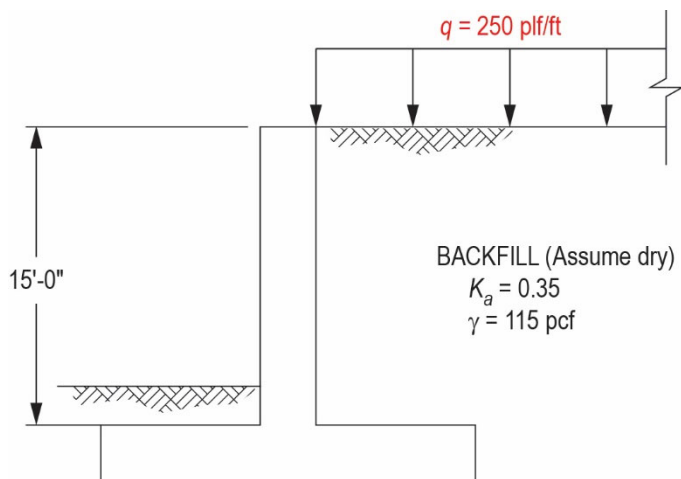
For the figure shown, **unfactored** vertical reactions from the grade beam to the drilled pier are LL = 10 kips and DL = 8 kips. According to ASCE 7-16, the **minimum** horizontal design strength (lb) of the connection from the grade beam to the drilled pier is most nearly:

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Question 79, p. 54:



Question 80, p. 55:



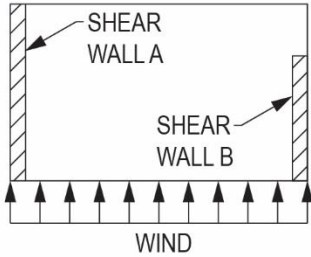
Solution 61, p. 79:

By inspection P controls. P is limited by the yielding of the horizontal leg of the angle. Use plate yielding limit state, per section F11.1.

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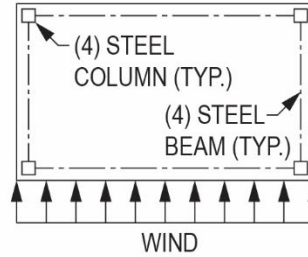
Solution 62, p. 80:

- WOOD
- DIAPHRAGM DEFLECTION CAN BE TOLERATED



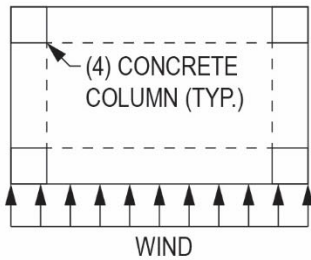
Flexible
 Torsionally **regular**

- METAL DECK SUPPORTED BY STEEL BEAMS AND COLUMNS



Flexible
 Torsionally regular

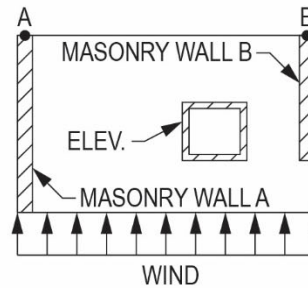
- PT CONCRETE SLAB SUPPORTED BY CONCRETE COLUMNS/BEAMS



Rigid
 Torsionally regular

- CONCRETE SLAB SUPPORTED BY MASONRY WALLS

$$A_{\text{STORYDRIFT}} = 1.5 \left(\frac{A_{\text{STORYDRIFT}} + B_{\text{STORYDRIFT}}}{2} \right)$$



Torsionally irregular
 Rigid

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Solution 65, p. 81:

Reference: AISC, 15th ed.

$$R_n = F_n A_b$$

$$\phi = 0.75, \Omega = 2.00$$

Equation J3-1

ASD:

$$F_{nv} = 27 \text{ ksi}$$

$$F_{nv}/\Omega = 13.5 \text{ ksi}$$

Table J3.2

$$\text{Allowable load} = 2(13.5)(0.79) = 21.33 \text{ kips}$$

LRFD:

$$\phi R_n = \phi F_{nv} A_b$$

$$\phi F_{nv} = 20.3 \text{ ksi (A307 bolts)}$$

$$\phi R_n = (20.3)(0.79)(2) = 32.07 \text{ kips}$$

Alternate solution, use Table 7-1

Solution 74, p. 86:

Reference: ASCE 7-16, Section 12.1.4, p. 89 and Section 1.4.3, p. 4

Unfactored reactions from grade beam to drilled pier:

$$\text{LL} = 10 \text{ kips}$$

$$\text{DL} = 8 \text{ kips}$$

Solution 75, p. 86:

J 3.5 max edge distance $12(t) = 12(3/4) = 9 \text{ in.}$, 6 in. maximum governs.

THE CORRECT ANSWERS ARE: A, D, F