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NO 1

fig NO 1:-

When Shear wall form the main Latrel resistant element of a Structure & There is not continuous load path Through the wall form roof to foundations, The result can be serious overstressing at the point of discontinuity. This discontinous Shear wall condition represent a Special, but common, Case of the "Soft" first - Story problem.

The discontinous Shear wall is Fundamental design contradictio ⓑe

Solution:-

→ The Solution to the problem of The discontinous Shear wall is to eliminate the Shear walls.

→ if The decision is made to use Shear wall, the Their presence must be recognized form the beginning of Schematic design, & Their Size & location made the Subject of Careful architechural & engineering coordination early.

Q NO1:- fig NO2:-

This is a soft story building which the lower portion is less stiffness and upper portion is more stiffness- the building code distinguish between "soft" & "weak" stories - soft stories are less stiff, or more flexible, than the story above; weak stories have strength-

A soft or weak story at any height create a problem, but since the cummulative load are greatest toward the base of the building, A discontinous between the first second floor lends or result in the most serious condition-

Solution:- It should be problem in add columes and add braces-

QNO1:- Fig NO 3

There are two problem Created by These shapes.

Solution:-

Problem:-

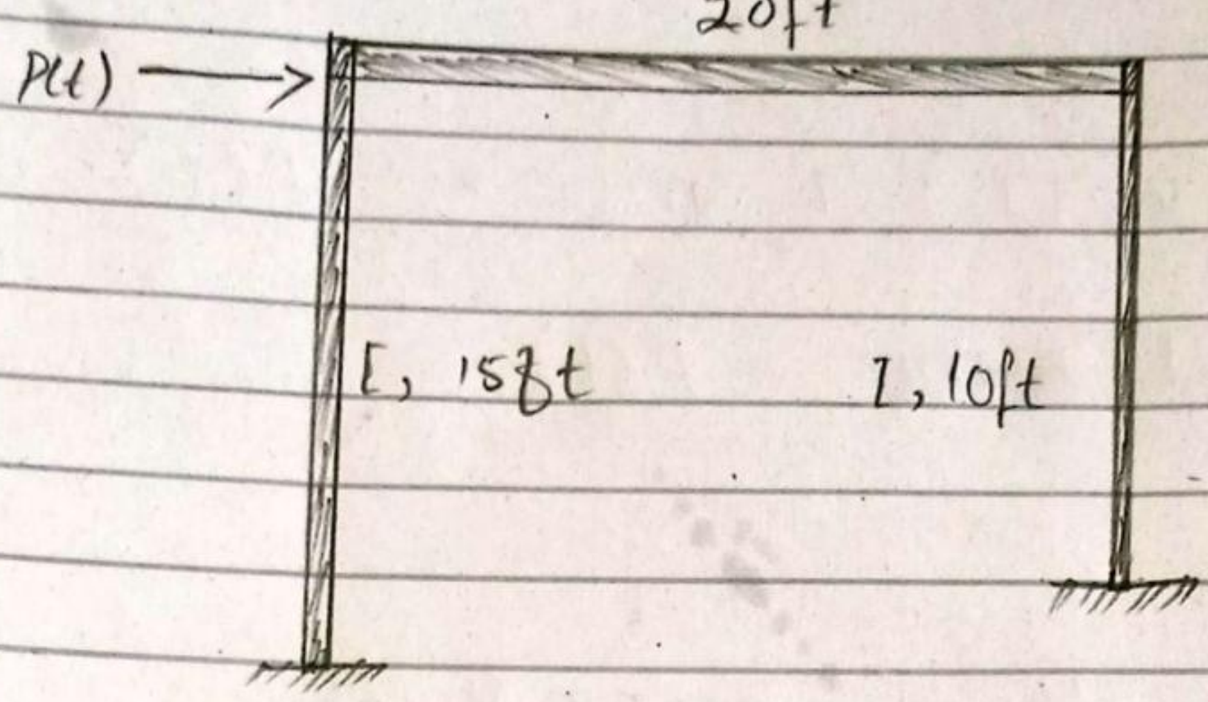
There are two problem.

→ The first is That They tend to produce differential motion between different wings of the building.

→ The second problem of this from is torsion which is caused because the centre of mass & the centre of rigidity is This from cannot geometrically coincide for all posible earthquake direction.

Solution:- There should be Separation in the two portion as it a type shape building, OR it should be be embessed or protected with stiff resistant eleminete.

NO2:-



Sol:-

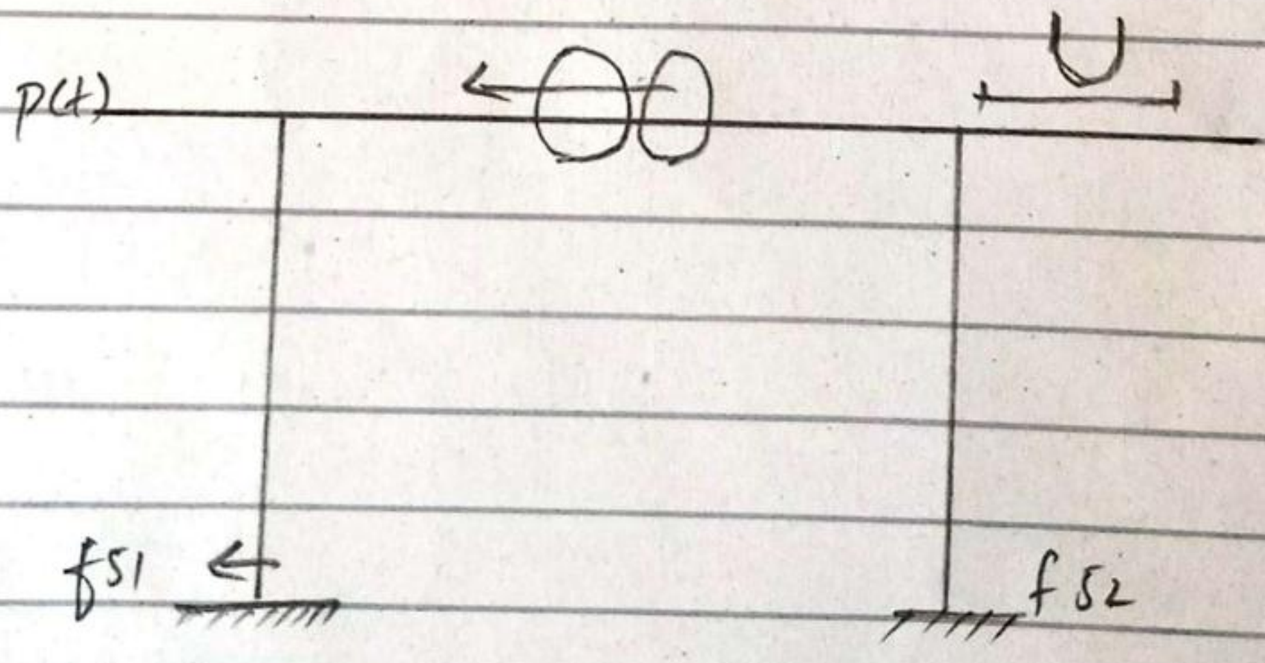
As we Know That

$$m = \frac{w}{g}$$

$$m = \frac{7783 \times 20}{32.2}$$

$$m = 4834.16 \text{ lb} \cdot \text{sec}^2/\text{ft}$$

using D-Alembert principle of dynamic equilbrum.



$$P(t) - f_I - f_{s_1} - f_{s_2} = 0$$

$$P(t) - m\ddot{u} - (f_{s_1} + f_{s_2}) = 0$$

$$(K_1 U + K_2 U) + m\ddot{U} = p(t)$$

$$(KU) + m\ddot{U} = p(t)$$

As

$$K = 3759 \text{ k/ft}$$

$$4834.16\,\ddot{U} + 3.76 \times 10^6 U = p(t)$$

Where U & $p(t)$ are in ft and lb.