UDS

Mi Universidad

Losas

:

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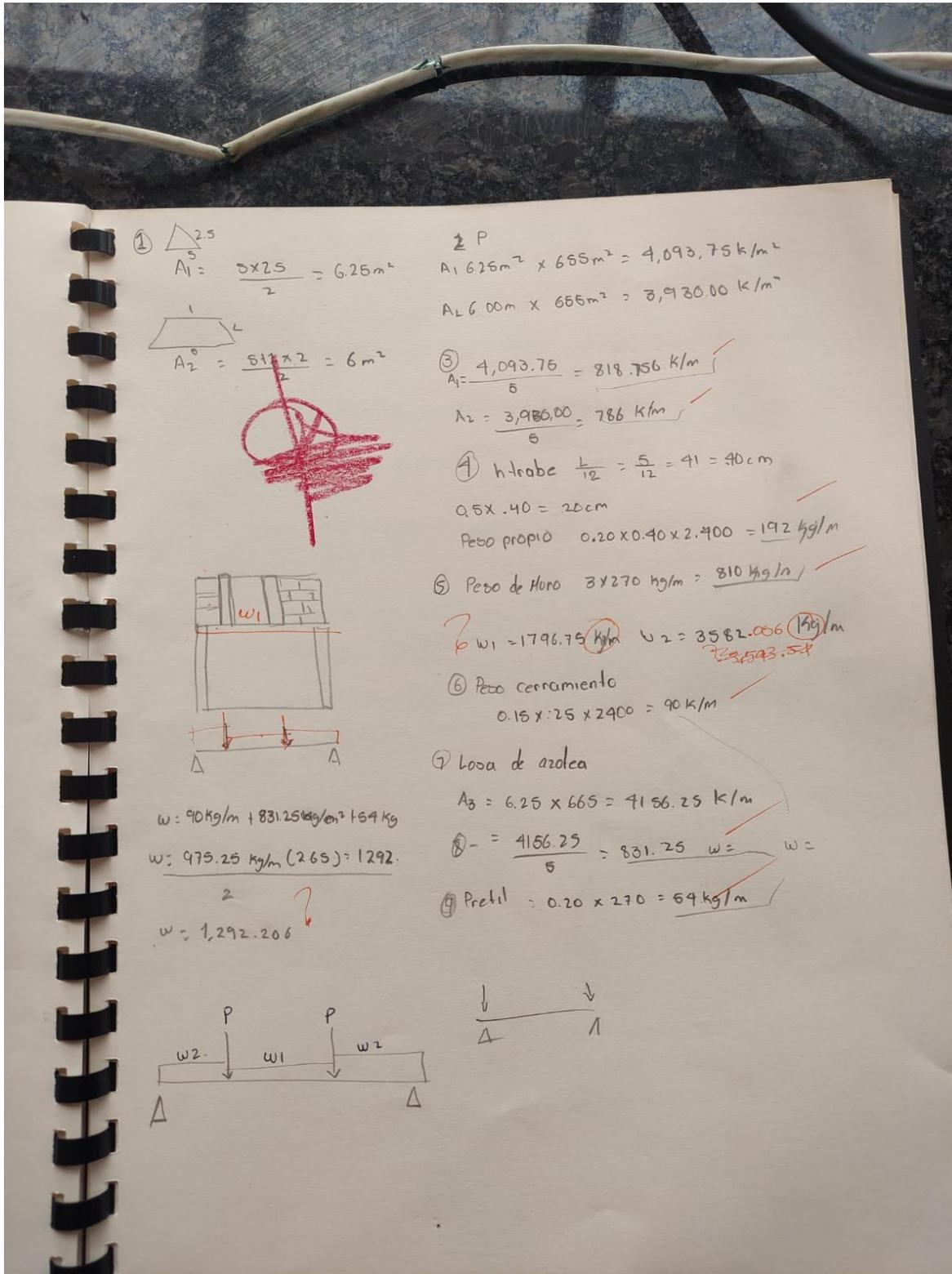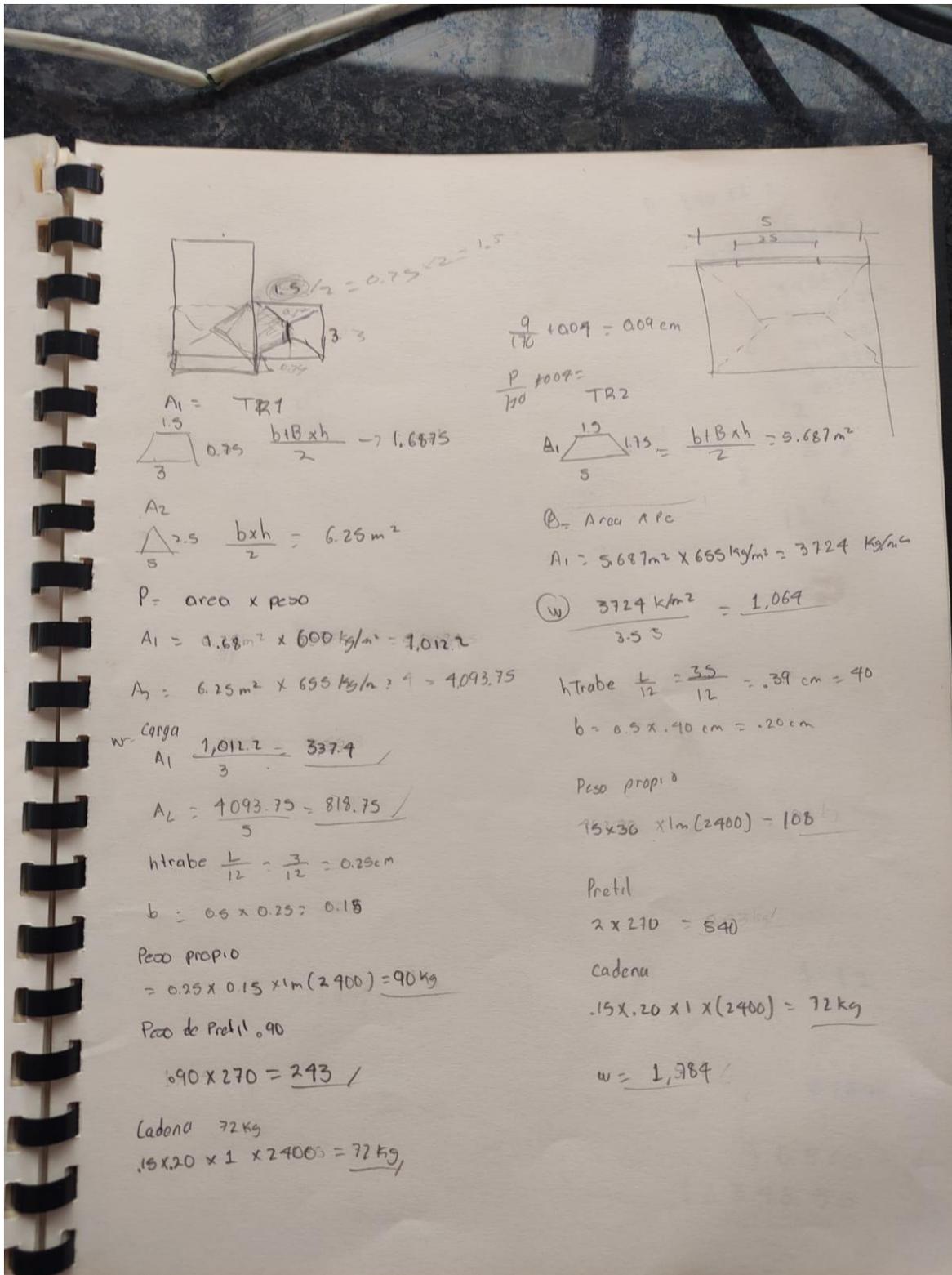
Nombre del tema: losas

Parcial: primero

Nombre de la Materia ; Analisis de estructuras

Nombre del profesor: Pedro Albeto Garcia Lopez

 Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 5to

①
$$A_1 = \frac{5 \times 2.5}{2} = 6.25\,m^2$$

$$A_2 = \frac{5 + 1 \times 2}{2} = 6\,m^2$$

w_1

$$w = 90\,kg/m + 831.25\,kg/m^2 + 64\,kg$$

$$w = 975.25\,kg/m\,(2.65) = 1292.$$
$$\frac{\quad}{2} \quad ?$$

$$w = 1,292.206$$

P   P

w2   w1   w2

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② P

$A_1\ 6.25\,m^2 \times 655\,m^2 = 4,093.75\,k/m^2$

$A_2\ 6.00\,m \times 655\,m^2 = 3,930.00\,k/m^2$

③ $A_1 = \dfrac{4,093.75}{5} = 818.756\,k/m$

$A_2 = \dfrac{3,930.00}{5} = 786\,k/m$

④ h trabe $\dfrac{L}{12} = \dfrac{5}{12} = 41 = 40\,cm$

$0.5 \times .40 = 20\,cm$

Peso propio $0.20 \times 0.40 \times 2.400 = 192\,kg/m$

⑤ Peso de Muro $3 \times 270\,kg/m = 810\,kg/m$

$w_1 = 1796.75\,kg/m$ $w_2 = 3582.006\,kg/m$
3593.5

⑥ Peso cerramiento
$0.15 \times .25 \times 2400 = 90\,k/m$

⑦ Losa de azotea
$A_3 = 6.25 \times 665 = 4156.25\,k/m$

⑧ $\dfrac{4156.25}{5} = 831.25$ $w =$ $w =$

⑨ Pretil $= 0.20 \times 270 = 54\,kg/m$

↓   ↓
△   △

$$\frac{(1.5)}{2} = 0.75 \times 2 = 1.5$$

$$3.3$$

0.75

0.74

$$\frac{9}{170} + 0.09 = 0.09 \, cm$$

$$\frac{P}{170} + 0.09 =$$

TR2

$A_1 =$ TR1

1.5
0.75 $\frac{b+B \times h}{2} \to 1.6875$
3

A_2

2.5 $\frac{b \times h}{2} = 6.25 \, m^2$
5

A_1 1.5   1.75 $\frac{b+B \times h}{2} = 5.687 \, m^2$
5

$B = $ Area $\times$ Pc

$A_1 = 5.687 m^2 \times 655 \, kg/m^2 = 3724 \, kg/m^2$

$P = $ area $\times$ peso

$A_1 = 9.68 m^2 \times 600 \, kg/m^2 = 9,012.2$

$A_3 = 6.25 m^2 \times 655 \, kg/m^2 = 4,093.75$

$\widehat{w}$ $\frac{3724 \, k/m^2}{3.5 \, 5} = \underline{1,069}$

$w = $ carga
$\frac{A_1}{} \quad \frac{1,012.2}{3} = \boxed{337.4}$ ✓

$A_2 = \frac{4093.75}{5} = \boxed{818.75}$ ✓

h Trabe $\frac{L}{12} = \frac{35}{12} = .39 \, cm = 40$

$b = 0.5 \times .40 \, cm = .20 \, cm$

h trabe $\frac{L}{12} = \frac{3}{12} = 0.25 cm$

$b = 0.5 \times 0.25 = 0.15$

Peso propio

$15 \times 30 \times 1m \, (2400) = \underline{108}$

Peso propio
$= 0.25 \times 0.15 \times 1m \, (2400) = \underline{90 \, kg}$

Peso de Pretil $.90$

$.90 \times 270 = \underline{243}$ ✓

Pretil

$2 \times 270 = \underline{540}$ ✓

Cadena

$.15 \times .20 \times 1 \times (2400) = \underline{72 \, kg}$

Cadena   72 kg

$.15 \times 20 \times 1 \times 2400 = \underline{72 \, kg}$ ✓

$w = \underline{1,984}$ ✓

$$\frac{P}{170} + 0.04 = \frac{17}{170} + 0.04 = 0.14\ cm$$

$$T_2 = \frac{20}{170} + 0.04 = 15\ cm$$

Trabe

A_1 $\quad$ $\frac{b+B \times h}{2} \longrightarrow 5.687\ m^2$

A_2 $\quad$ $\frac{b \times h}{2} \longrightarrow 6.25\ m^2$

$P = Area \times Peso\ de\ lo$

A_1 $\quad$ $5.687\ m^2 \times 655\ k/m = 3,724\ k/m^2$

$A_2 = 6.25\ m \times 655\ k/m^2 = 4.903.75\ k/m^2$

$\textcircled{w} = carga$

$A_1 = \dfrac{3,724\ kg/m}{5m} = 744.995\ k/m$

$A_2 = \dfrac{4.403.75}{5m} = 818.75\ k/m$

$h\ trabe = \dfrac{L}{12} \longrightarrow \dfrac{5.0m}{12} = 0.41 \longrightarrow 0.40\ min$

$b) = 0.5(h) = 0.20m = 0.15m$

Peso propio Trabe $\quad - 0.15 \times 0.40 \times 1m$ (Densidad de concreto)
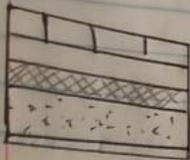
$\qquad = 0.15 \times 0.40 \times 1m\ (2,400) = 144\ kg/m$

Peso de Muro $\qquad$ Peso de cadena

$2 \times 270 = 540 \qquad .15 \times .20 \times 1m \times 2400 = 72\ kg/m$

2.32 t/m
5m

Muro → 270 k/m
A_2 $\quad$ A_1
15
25

$W = 744.995$
818.75
144.00
540.00
72
$\overline{2\,314.795}$

Peso de casetón 15 kg/m3

$(0.10 \times 0.10 \times 0.20)(2 p_z) = 0.04 m^2 \times 2,400 kg/m3$
$= 96 kg/m^2$

$(0.10 \times 0.20 \times 0.80) \times (2 p_z) = 0.032 m^3 \times 2.400 = 76.8 kg/m$

$(1.0 m \times 1.6 \times 0.05 m) = 0.05 m^2 \times 24000 = 120 kg/m^2$

$0.6 m \times 0.60 m \times 0.20 m) \times (2.5 p_z) = 0.18 m^2 (15 kg/m3)$
$= 2.70 kg/m^3$

Total = 96 kg/m²
         76.8 kg/m²
         120 kg/m²
         2.7 kg/cm²
         295.5 kg/m²

Losa Azotea 12cm A.

Petalillo	70 kg/cm²
Entortado	30 kg/cm²
Relleno	100 kg/cm²
Losa	288 kg/cm²
Aplanado	30 kg/cm²
	40 kg/cm²
	558 kg/cm²

100 kg/cm²   CVm = (100) kg/cm²

$CVa = \frac{170}{}$ kg/cm²   Total 658 kg/cm²

170

Teja	→	50 kg/m²
Entortado		30 kg/m²
Losa		240 kg/m²
Aplanado		30 kg/m²
		40 kg/m²
		390 kg/m²

$CV = \dfrac{40 \ kg/cm²}{}$

4.30 kg/cm²

Losa Azotea 10cm A

Petatillo ... 70 kg/cm²
Entortado ... 30 kg/cm²
Relleno ... 100 kg/cm²
Losa ... 240 kg/cm²
Aplanado ... 30 kg/cm²
... 40 kg/cm²
510 kg/cm²

100 kg/cm²
Cva = + 90 kg/cm²   Cva 100 kg/cm²
170   Total 610 kg/cm²

Losa azotea 12cm H

Petatillo ... 70 kg/cm²
Entortado ... 30 kg/cm²
Relleno ... 100 kg/cm²
Losa ... 288 kg/cm²
Aplanado ... 30 kg/cm²
... 40 kg/cm²
558 kg/cm²

100 kg/cm²
Cva = 170 kg/cm²   Cum 100 kg/cm²
170 kg/cm²   Total 658

Losa Maciza 12 cm Aob
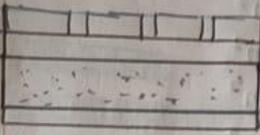
Acabado de piso .... 70 kg/cm²
Enlortado .... 36 kg/cm²
Losa Maciza .... 288 kg/cm²
Aplanado .... 36 kg/cm²
.... 40 kg/cm²

250 kg/cm²   458 kg/cm²
Cva = 160 kg/cm²   Cvm = 250 kg/cm²
430 kg/cm²   Total = 708 kg/cm²

Losa Azotea 10 cm H
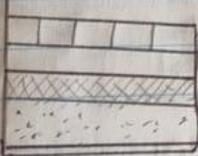
Petatillo .... 70 kg/cm²
Enlortado .... 36 kg/cm²
Relleno .... 100 kg/cm²
Losa .... 240 kg/cm²
Aplanado .... 36 kg/cm²
100 kg/cm²   40 kg/cm²
Cva = 170 kg/cm²   510 kg/cm²
170 kg/cm²   Cvm = 100 kg/cm²
Total 610 kg/cm²

Losa 10cm Entrepiso Aula H   30-50 m.
                                                                    Plafón
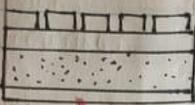
Acabado de piso	70 kg/m²
Enlortado	30 kg/m²
Losa maciza 10cm	240 kg/cm²
Aplanado	30 kg/cm²
	40 kg/cm² ← Reglamento

190 kg/cm²   410 kg/cm²

Cva = 100 kg/cm²   Cu = 190 kg/cm²
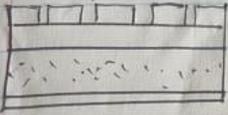
290 kg/cm²   Total 600 kg/cm²

Losa 10cm Entrepiso habitacional Aula
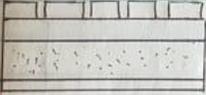
Acabado de piso	70 kg/cm²
Enlortado	30 kg/cm²
Losa Maciza 10cm	240 kg/cm²
Aplanado	30 kg/cm²
	40 kg/cm² ← Reglamento

250 kg/cm²   410 kg/cm²

Cva = 180 kg/cm²   Cvm = 250 kg/cm²

430 kg/cm²   Total 660 kg/cm²

Losa 12 cm Entrepiso H   70 kg/cm²   Cu = 190

2400 × 0.12 = 288   30 kg/cm²   Cva = 100

2400   290 kg/cm²

Acabado de piso	288 kg/cm²
Enlortado	30 kg/cm²
Losa Maciza 12 cm	40 kg/cm²
Aplanado	458 kg/cm² = 648 kg/cm²

Cvm 190