

- ESCAVAÇÃO

$$(86,50m^2 + 144,69m^2) / 2 \times 1,35m = 156,05m^3$$

$$(697,09m^2 + 1.426,15m^2) / 2 \times 5,25m = 5.573,50m^3$$

$$(29,51m^2 + 6,09m^2) / 2 \times 3,00m = 53,40m^3$$

$$5.783m^3$$

- ATERRO

$$5.626,45m^3 - ((611,76m^2 \times 4,40m) + (44,36m^2 \times 2,20m) + (17,06m^2 \times 2,96m))$$

$$= 2.786,60m^3$$

$$156,05m^3 - (19,64m^2 \times 1,50m) = 126,60m^3$$

$$2.913m^3$$

- CONCRETO

$$40,80m \times 4,00m \times 0,25m = 40,80m^3$$

$$44,12m^2 \times 0,25m \times 2 = 22,10m^3$$

$$19,50m \times 4,00m \times 0,25m = 19,50m^3$$

$$19,50m^2 \times 0,25m = 4,90m^3$$

$$11,50m \times 4,00m \times 0,25m = 11,50m^3$$

$$504m^3$$

$$22,35m \times 4,00m \times 0,25m = 22,35m^3$$

$$1,75m \times 4,00m \times 0,25m \times 4 = 3,50m^3$$

$$7,90m \times 4,00m \times 0,25m = 7,90m^3$$

$$4,00m \times 7,25m \times 0,25m \times 2 = 14,50m^3$$

$$9,75m \times 7,25m \times 0,25m = 17,70m^3$$

$$9,75m \times 9,25m \times 0,25m = 22,55m^3$$

$$9,75m \times 5,60m \times 0,25m = 13,65m^3$$

$$2,00m \times 5,60m \times 0,25m \times 2 = 5,60m^3$$

$$23,50m \times 1,00m \times 0,25m = 5,90m^3$$

$$33,50m^2 \times 0,25m \times 2 = 16,75m^3$$

$$550,83m^2 \times 0,25m \times 2 = 275,40m^3$$

- AÇO CA-50 > 12,5mm

$$504m^3 \times 90kg/m^3 = 45.360kg \times 80\% = 36.288kg$$

- AÇO CA-50 < 12,5mm

$$45.360kg - 36.288kg = 9.072kg$$

- FORMA

$$(40,80m + 19,00m + 7,90m + 1,50m + 1,50m + 22,35m \times 14,00m) \times 4,00m = 416,20m^2$$

$$(11,50m + 41,30m + 19,50m + 8,10m + 2,00m + 2,00m + 22,25m) \times 4,50m = 484m^2$$

$$(4,00m + 9,25m + 4,00m) \times 7,00m = 120,75m^2$$

$$(9,75m + 4,30m + 4,30m) \times 7,25m = 133,00m^2$$

$$9,75m \times 9,00m = 87,75m^2$$

$$9,75m \times 9,25m = 90,20m^2$$

$$(1,50m + 1,50m + 9,25m) \times 5,35m = 65,50m^2$$

$$(2,00m + 2,00m + 9,75m) \times 5,60m = 77m^2$$

$$23,50m \times 1,00m = 23,50m^2$$

$$23,50m \times 1,50m = 35,25m^2$$

$$27,65m^2 + 565,88m^2 = 593,53m^2$$

$$2.127m^2$$

- LASTRO

$$550,88m^2 \times 0,10m = 55,10m^3$$

$$44,12m^2 \times 0,10m = 4,4m^3$$

$$19,50m^2 \times 0,10m = 1,9m^3$$

$$33,50m^2 \times 0,10m = 3,35m^3$$

$$65m^3$$

REV. 1 - ESGOTAMENTO

$$10 \text{ MESES} \times 30 \text{ DIAS} \times 10 \text{ h} = 3000h$$

- TAPUME DE FECHAMENTO

$$155 \times 2,5 = 388m^2$$

REV. 1

- CIMBRAMENTO

$$523,95m^2 \times 4,00m = 2.095,80m^3$$

$$37,00m^2 \times 6,80m = 251,60m^3$$

$$27,65m^2 \times 4,00m = 27,65m^3$$

$$\boxed{2.375m^3}$$

- GRAMA

$$\boxed{812m^2}$$

- PASSEIO

$$98m^2 \times 0,075m = \boxed{7m^3}$$

- FECHAMENTO DO RES. REV. 2

$$\boxed{98m} \times 2,5 = \boxed{245m^2}$$

- BINDER

$$207,70m^2 \times 0,07m \times 1,8 = \boxed{26T}$$

- IMPRIMAÇÃO

$$\boxed{208m^2}$$

- CAPA DE ROLAMENTO

$$207,70m^2 \times 0,05m \times 1,8 = \boxed{19T}$$

- BRITA

$$207,70m^2 \times 0,42m = \boxed{25m^3}$$

- CARGA CONCRETO ASFÁLTICO

$$207,70m^2 \times 0,05m = \boxed{10m^3}$$

- CARGA BINDER

$$207,70m^2 \times 0,07m = \boxed{14m^3}$$

- SARJETA

$$\boxed{108m}$$

PACHADO (BASE)

$$\frac{19,5 + 11,5}{2} \times 40,90$$

$$\boxed{634m^2}$$

REV. 2

$$\times 0,30m = \boxed{190m^3}$$

GRADEAMENTO

RETENÇÃO:

$$1,4 \times 400 \times 4 = 22,4m^2$$

$$22,40 \times 140kg = \boxed{3136kg}$$

REV. 2

RISO

$$2,17 \times 1,31 \times 4 = 11,37m^2$$

$$1,57 \times 0,82 \times 1 = 1,29m^2$$

$$1,42 \times 0,42 \times 4 = 2,38m^2$$

$$1,56 \times 1,68 \times 6 = 15,72m^2$$

$$4,18 \times 3,38 \times 1 = 14,13m^2$$

$$44,89m^2 \times 80kg = \boxed{3.591kg}$$

REV. 2

PÓRICO

$$\boxed{8115kg}$$

REV. 1

$$\Sigma = 14.842kg$$

REV. 2

- GUIA TIPO PMSP

$$\boxed{108m}$$

- TRANSP. CONC. SARJETA

$$108m \times 0,45m \times 0,15m = 7,30m^3$$

$$\times 15km = \boxed{109m^3 \times km}$$