



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

MEMORIAL DE CÁLCULO

OBRA: Reforma do Antigo Matadouro

LOCAL: BR-482 – Guaçuí - ES

1.0 SERVIÇOS PRELIMINARES

01.01 – Retirada de vidros quebrados.

- MATADOURO = $[3_{\text{Und}} \times (1,70_{\text{Larg}} \times 1,70_{\text{Comp}})] + [3_{\text{Und}} \times (2,00_{\text{Larg}} \times 2,00_{\text{Comp}})] =$
20,67 m²

- DEPÓSITO = $(1,20_{\text{Larg}} \times 1,00_{\text{Comp}}) =$ **1,20 m²**

TOTAL DO ITEM = 21,87m²

01.02 – Remoção de telhas cerâmica, tipo francesa, inclusive cumeeira

- MATADOURO = $(16,80_{\text{Larg}} \times 22,67_{\text{Comp}}) =$ **380,86 m²**

- DEPÓSITO = $(4,10_{\text{Larg}} \times 9,75_{\text{Comp}}) =$ **39,98 m²**

TOTAL DO ITEM = 420,84 m²

01.03 – Lixamento de parede com pintura antiga PVA para recebimento de nova camada de tinta

- PARTE INTERNA MATADOURO = $\{(16,36_{\text{Comp}} \times 3,57_{\text{Alt}}) + [2 \times (21,21_{\text{Comp}} \times 3,57_{\text{Alt}})] + [2 \times (2,56_{\text{Comp}} \times 3,57_{\text{Alt}})] + (10,80_{\text{Comp}} \times 3,57_{\text{Alt}}) + (8,46_{\text{Comp}} \times 1,60_{\text{Alt}}) + (7,23_{\text{Comp}} \times 3,57_{\text{Alt}}) + (28,38_{\text{Comp}} \times 3,20_{\text{Alt}}) + (1,03_{\text{Comp}} \times 3,57_{\text{Alt}}) + (11,26_{\text{Comp}} \times 1,60_{\text{Alt}}) + (13,24_{\text{Comp}} \times 3,20_{\text{Alt}}) + (19,58_{\text{Comp}} \times 3,57_{\text{Alt}}) + (34,68_{\text{Comp}} \times 1,50_{\text{Alt}}) + \{6_{\text{Unid}} \times [4_{\text{Lados}} \times (0,30_{\text{Larg}} \times 1,60_{\text{Alt}})]\} + (14,39_{\text{Comp}} \times 0,40_{\text{Alt}}) + \{5_{\text{Unid}} \times [4_{\text{Lados}} \times (0,30_{\text{Larg}} \times 1,60_{\text{Alt}})]\} + (18,01_{\text{Comp}} \times 1,27_{\text{Alt}}) + (3,43_{\text{Larg}} \times 5,34_{\text{Comp}}) + (23,02_{\text{Comp}} \times 2,87_{\text{Alt}})\} - \{[8_{\text{Unid}} \times (0,80_{\text{Larg}} \times 2,10_{\text{Alt}})] + [3_{\text{Unid}} \times (2,00_{\text{Comp}} \times 2,00_{\text{Larg}}) + (2,00_{\text{Larg}} \times 2,87_{\text{Alt}}) + (2,10_{\text{Comp}} \times 0,26_{\text{Alt}}) + [2 \times (1,67_{\text{Larg}} \times 0,30_{\text{Alt}})] + (1,50_{\text{Larg}} \times 2,10_{\text{Alt}}) + (0,60_{\text{Larg}} \times 2,10_{\text{Alt}}) + (1,00_{\text{Larg}} \times 0,60_{\text{Alt}}) + (0,60_{\text{Larg}} \times 0,60_{\text{Alt}}) + [2 \times (1,70_{\text{Larg}} \times 1,70_{\text{Alt}})]\} =$ **673,08 m²**



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

- PARTE EXTERNA MATADOURO = $\{(16,80_{\text{Comp}} \times 5,17_{\text{Alt}}) + [2 \times (21,21_{\text{Comp}} \times 5,17_{\text{Alt}}) + (20,55_{\text{Comp}} \times 7,90_{\text{Alt}}) + (10,80_{\text{Comp}} \times 1,25_{\text{Larg}})] - [4 \times (0,80_{\text{Larg}} \times 2,10_{\text{Alt}})] + [3 \times (2,00_{\text{Larg}} \times 2,00_{\text{Comp}})] + (2,00_{\text{Larg}} \times 2,87_{\text{Comp}}) + (2,10_{\text{Larg}} \times 0,26_{\text{Alt}}) + (1,55_{\text{Larg}} \times 2,10_{\text{Alt}}) + [2 \times (1,67_{\text{Larg}} \times 0,30_{\text{Alt}}) + (1,00_{\text{Larg}} \times 0,60_{\text{Alt}}) + (0,60_{\text{Larg}} \times 0,60_{\text{Alt}}) + [2 \times (1,70_{\text{Larg}} \times 1,70_{\text{Alt}})]\} = 446,00 \text{ m}^2$

- PARTE INTERNA DEPÓSITO = $\{[2 \times (3,66_{\text{Comp}} \times 4,80_{\text{Alt}})] + [2 \times (9,31_{\text{Comp}} \times 4,80_{\text{Alt}})]\} - \{(1,20_{\text{Comp}} \times 1,00_{\text{Alt}}) + (3,20_{\text{Comp}} \times 3,15_{\text{Alt}})\} = 113,23 \text{ m}^2$

- PARTE EXTERNA DEPÓSITO = $[2 \times (4,10_{\text{Comp}} \times 4,80_{\text{Alt}})] + [2 \times (9,75_{\text{Comp}} \times 4,80_{\text{Alt}})] - \{(1,20_{\text{Comp}} \times 1,00_{\text{Alt}}) + (3,20_{\text{Comp}} \times 3,15_{\text{Alt}})\} = 121,68 \text{ m}^2$

TOTAL DO ITEM = 1.353,99 m²

01.04 - Remoção de engradamento de madeira de cobertura para reaproveitamento

- MATADOURO = $(16,80_{\text{Larg}} \times 22,67_{\text{Comp}}) = 380,86 \text{ m}^2$

- DEPÓSITO = $(4,10_{\text{Larg}} \times 9,75_{\text{Comp}}) = 39,98 \text{ m}^2$

TOTAL DO ITEM = 420,84 m²

01.05 - Retirada de caixas/quadros elétricos

- EXTERIOR = 1 und

TOTAL DO ITEM = 1 und

2.0 COBERTURA

02.01 - TRAMA DE AÇO COMPOSTA POR RIPAS E CAIBROS PARA TELHADOS DE ATÉ 2 ÁGUAS PARA TELHA DE ENCAIXE DE CERÂMICA OU DE CONCRETO, INCLUSO TRANSPORTE VERTICAL. AF_12/2015

- MATADOURO = $(16,80_{\text{Larg}} \times 22,67_{\text{Comp}}) = 380,86 \text{ m}^2$

TOTAL DO ITEM = 380,86 m²

02.02 - Cobertura nova de telhas onduladas de fibrocimento 6.0mm, inclusive cumeeiras e acessórios de fixação



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

- MATADOURO = $(16,80_{\text{Larg}} \times 22,67_{\text{Comp}}) = 380,86 \text{ m}^2$

- DEPÓSITO = $(4,10_{\text{Larg}} \times 9,75_{\text{Comp}}) = 39,98 \text{ m}^2$

TOTAL DO ITEM = 420,84 m²

02.03 - CALHA EM CHAPA DE AÇO GALVANIZADO NÚMERO 24, DESENVOLVIMENTO DE 50 CM, INCLUSO TRANSPORTE VERTICAL. AF_06/2016

- MATADOURO = $(22,87\text{m} + 16,80\text{m}) = 39,67 \text{ m}$

TOTAL DO ITEM = 39,67 m

3.0 INSTALAÇÕES ELÉTRICAS

03.01 - Ponto padrão de luz no teto - considerando eletroduto PVC rígido de 3/4" inclusive conexões (4.5m), fio isolado PVC de 2.5mm² (16.2m) e caixa estampada 4x4" (1 und)

- MATADOURO = 17 und

TOTAL DO ITEM = 17 und

03.02 - Padrão de entrada de energia elétrica, bifásico, entrada aérea, a 3 fios, carga instalada de 9001 até 15000W, instalada em muro

- MATADOURO = 01 und

TOTAL DO ITEM = 01 und

03.03 - Quadro distrib. energia, embutido ou semi embutido, capac. p/ 16 disj. DIN, c/barram trif. 100A barra. neutro e terra, fab. em chapa de aço 12 USG com porta, espelho, trinco com fechad ch yale, Ref. QDTN II-16DIN-CEMAR ou equiv.

- MATADOURO = 01 und

TOTAL DO ITEM = 01 und

03.04 - Ponto padrão de interruptor de 1 tecla simples e 1 tomada dois pólos mais terra 10A/250V - considerando eletroduto PVC rígido de 3/4"



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

inclusive conexões (4.5m), fio isolado PVC de 2.5mm² (19.4m) e caixa estampada 4x2" (1 und)

- MATADOURO = 07 und

TOTAL DO ITEM = 07 und

03.05 - Ponto padrão de interruptor de 2 teclas simples - considerando eletroduto PVC rígido de 3/4" inclusive conexões (3.3m), fio isolado PVC de 2.5mm² (17.2m) e caixa estampada 4x2" (1 und)

- MATADOURO = 02 und

TOTAL DO ITEM = 02 und

03.06 - Ponto padrão de interruptor de 3 teclas simples - considerando eletroduto PVC rígido de 3/4" inclusive conexões (4.5m), fio isolado PVC de 2.5mm² (25.8m) e caixa estampada 4x2" (1 und)

- MATADOURO = 02 und

TOTAL DO ITEM = 02 und

03.07 - Ponto padrão de tomada 2 pólos mais terra - considerando eletroduto PVC rígido de 3/4" inclusive conexões (5.0m), fio isolado PVC de 2.5mm² (16.5m) e caixa estampada 4x2" (1 und)

- MATADOURO = 10 und

TOTAL DO ITEM = 10 und

4 APARELHOS ELÉTRICOS

04.01 - Tomada padrão brasileiro linha branca, NBR 14136 2 polos + terra 10A/250V, com placa 4x2"

- MATADOURO = 10 und

TOTAL DO ITEM = 10 und



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

04.02 - LÂMPADA LED 6 W BIVOLT BRANCA, FORMATO TRADICIONAL (BASE E27) - FORNEC

- MATADOURO = **09 und**

TOTAL DO ITEM = 09 und

04.03 - REFLETOR EM ALUMÍNIO COM SUPORTE E ALÇA, LÂMPADA LED 10 W - FORNECIMENTO E INSTALAÇÃO. AF_11/2017

- MATADOURO = **08 und**

TOTAL DO ITEM = 08 und

04.04 - Interruptor de uma tecla simples 10A/250V e uma tomada 3 polos 10A/250V, padrão brasileiro, NBR 14136, linha branca, com placa 4x2"

- MATADOURO = **07 und**

TOTAL DO ITEM = 07 und

04.05 - Interruptor de duas teclas simples 10A/250V, com placa 4x2"

- MATADOURO = **02 und**

TOTAL DO ITEM = 02 und

04.06 - Interruptor de três teclas simples 10A/250V, c/ placa 4x2"

- MATADOURO = **02 und**

TOTAL DO ITEM = 02 und

5.0 REVESTIMENTO

05.01 - Pintura com tinta látex PVA, marcas de referência Suvinil, Coral ou Metalatex, inclusive selador em paredes e forros, a três demãos

- PARTE INTERNA MATADOURO = $\{(16,36_{\text{Comp}} \times 3,57_{\text{Alt}}) + [2 \times (21,21_{\text{Comp}} \times 3,57_{\text{Alt}})] + [2 \times (2,56_{\text{Comp}} \times 3,57_{\text{Alt}})] + (10,80_{\text{Comp}} \times 3,57_{\text{Alt}}) + (8,46_{\text{Comp}} \times 1,60_{\text{Alt}}) + (7,23_{\text{Comp}} \times 3,57_{\text{Alt}}) + (28,38_{\text{Comp}} \times 3,20_{\text{Alt}}) + (1,03_{\text{Comp}} \times 3,57_{\text{Alt}}) + (11,26_{\text{Comp}} \times 1,60_{\text{Alt}}) + (13,24_{\text{Comp}} \times 3,20_{\text{Alt}}) + (19,58_{\text{Comp}} \times 3,57_{\text{Alt}}) + (34,68_{\text{Comp}} \times 1,50_{\text{Alt}}) + \{6_{\text{Unid}}$



PREFEITURA MUNICIPAL DE GUAÇUÍ
SECRETARIA MUNICIPAL DE OBRAS, INFRAESTRUTURA
E SERVIÇOS PÚBLICOS

$X [4_{\text{Lados}} \times (0,30_{\text{Larg}} \times 1,60_{\text{Alt}})] + (14,39_{\text{Comp}} \times 0,40_{\text{Alt}}) + \{5_{\text{Unid}} \times [4_{\text{Lados}} \times (0,30_{\text{Larg}} \times 1,60_{\text{Alt}})] + (18,01_{\text{Comp}} \times 1,27_{\text{Alt}}) + (3,43_{\text{Larg}} \times 5,34_{\text{Comp}}) + (23,02_{\text{Comp}} \times 2,87_{\text{Alt}}) - \{8_{\text{Unid}} \times (0,80_{\text{Larg}} \times 2,10_{\text{Alt}}) + [3_{\text{Unid}} \times (2,00_{\text{Comp}} \times 2,00_{\text{Larg}}) + (2,00_{\text{Larg}} \times 2,87_{\text{Alt}}) + (2,10_{\text{Comp}} \times 0,26_{\text{Alt}}) + [2 \times (1,67_{\text{Larg}} \times 0,30_{\text{Alt}})] + (1,50_{\text{Larg}} \times 2,10_{\text{Alt}}) + (0,60_{\text{Larg}} \times 2,10_{\text{Alt}}) + (1,00_{\text{Larg}} \times 0,60_{\text{Alt}}) + (0,60_{\text{Larg}} \times 0,60_{\text{Alt}}) + [2 \times (1,70_{\text{Larg}} \times 1,70_{\text{Alt}})]\} = 673,08 \text{ m}^2$

- PARTE EXTERNA MATADOURO = $\{(16,80_{\text{Comp}} \times 5,17_{\text{Alt}}) + [2 \times (21,21_{\text{Comp}} \times 5,17_{\text{Alt}}) + (20,55_{\text{Comp}} \times 7,90_{\text{Alt}}) + (10,80_{\text{Comp}} \times 1,25_{\text{Larg}})] - \{[4 \times (0,80_{\text{Larg}} \times 2,10_{\text{Alt}})] + [3 \times (2,00_{\text{Larg}} \times 2,00_{\text{Comp}})] + (2,00_{\text{Larg}} \times 2,87_{\text{Comp}}) + (2,10_{\text{Larg}} \times 0,26_{\text{Alt}}) + (1,55_{\text{Larg}} \times 2,10_{\text{Alt}}) + [2 \times (1,67_{\text{Larg}} \times 0,30_{\text{Alt}}) + (1,00_{\text{Larg}} \times 0,60_{\text{Alt}}) + (0,60_{\text{Larg}} \times 0,60_{\text{Alt}}) + [2 \times (1,70_{\text{Larg}} \times 1,70_{\text{Alt}})]\} = 446,00 \text{ m}^2$

- PARTE INTERNA DEPÓSITO = $\{[2 \times (3,66_{\text{Comp}} \times 4,80_{\text{Alt}})] + [2 \times (9,31_{\text{Comp}} \times 4,80_{\text{Alt}})]\} - \{(1,20_{\text{Comp}} \times 1,00_{\text{Alt}}) + (3,20_{\text{Comp}} \times 3,15_{\text{Alt}})\} = 113,23 \text{ m}^2$

- PARTE EXTERNA DEPÓSITO = $[2 \times (4,10_{\text{Comp}} \times 4,80_{\text{Alt}})] + [2 \times (9,75_{\text{Comp}} \times 4,80_{\text{Alt}})] - \{(1,20_{\text{Comp}} \times 1,00_{\text{Alt}}) + (3,20_{\text{Comp}} \times 3,15_{\text{Alt}})\} = 121,68 \text{ m}^2$

TOTAL DO ITEM = 1.353,99 m²

6.0 SERVIÇOS COMPLEMENTARES

06.01 - Limpeza geral da obra

- MATADOURO = $(16,80_{\text{Larg}} \times 22,67_{\text{Comp}}) = 380,86 \text{ m}^2$

- DEPÓSITO = $(4,10_{\text{Larg}} \times 9,75_{\text{Comp}}) = 39,98 \text{ m}^2$

TOTAL DO ITEM = 420,84 m²

BIANCA TIRADENTES DOS SANTOS LIMA

Superintendente de Obras

Engenheira Civil

CREA-ES 043573/D