|  |  |
| --- | --- |
| **1.0** | **Serviços preliminares** |
| **1.1** | Limpeza de terreno – **400,43 m²**  Demolição de pilares e fundações já existentes – **25 UN – 3,60 m³**  Demarcação de obra – **349,75m²** |
| **2.0** | **Escavação** |
| **2.1** | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Escavação – Vigas Baldrames - Obra** | | | | | | | **Itens** | **bw(m)** | **h(m)** | **Para cada lado (m)** | **Comprimento (m)** | **Volume (m³)** | | VC1 | 0,15 | 0,40 | 0,25 | 264,67 | 86,02 | | **Total de Escavação (m³)=** | | | | | **86,02** |  |  |  |  |  | | --- | --- | --- | --- | | **Aterro Vigas Baldrames (m³)** | | | | | **Itens** | **Escavação (m³)** | **Concreto (m³)** | **Lastro de Concreto fck 15MPa (m³)** | | VC1 | 86,02 | 15,880 | 1,99 | | **Total de Aterro (m³)=** | | | **68,15** |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Escavação Viga baldrame e Trados do Muro** | | | | | | | | **Itens** | **bw(m)** | **h(m)** | **Para cada lado (m)** |  | **Comprimento (m)** | **Volume (m³)** | | VC1 | 0,20 | 0,40 | 0,25 |  | 27,00 | 9,45 | | **Total de Escavação (m³)=** | | | | | | **9,45** | | **Itens** | **D (m)** | **Área da seção (m²)** | **Comprimento (m)** |  | **Quantidade** | **Total comprimento (m)** | | Trado Ø30 | 0,30 | 0,6000 | 1,80 |  | 17,00 | 30,60 | | **Total de Escavação (m)=** | | | | | | **30,60** |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Aterro (m³)** | | | | | | **Itens** | **Escavação (m³)** | **Concreto (m³)** |  | **Lastro de Concreto fck 15MPa (m³)** | | V1 | 9,45 | 2,16 |  | 0,27 | | **Total de Aterro (m³)=** | | |  | **7,02** |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Escavação – Fundações (Sapatas)** | | | | | | **Itens** | **L1 (m)** | **h(m)** | **L2 (m)** | **Quantidades** | **Volume (m³)** | | S1 | 1,20 | 2,00 | 0,95 | 1 | 2,28 | | S2 | 1,05 | 2,00 | 1,20 | 5 | 12,60 | | S3 | 1,00 | 2,00 | 0,85 | 1 | 1,70 | | S4 | 1,10 | 2,00 | 0,95 | 3 | 6,27 | | S5 | 0,75 | 2,00 | 0,90 | 4 | 5,40 | | S6 | 1,40 | 2,00 | 1,08 | 1 | 3,02 | | S7 | 1,30 | 2,00 | 1,15 | 3 | 8,97 | | S8 | 0,90 | 2,00 | 0,90 | 2 | 3,24 | | S9 | 1,10 | 2,00 | 0,60 | 1 | 1,32 | | S10 | 1,20 | 2,00 | 0,80 | 1 | 1,92 | | S11 | 1,10 | 2,00 | 1,10 | 1 | 2,42 | | **Total de Escavação (m³)=** | | | | | **49,14** |  |  |  |  |  | | --- | --- | --- | --- | | **Aterro (m³) Fundações Sapatas** | | | | | **Itens** | **Escavação (m³)** | **Concreto (m³)** | **Lastro de Concreto fck 15MPa (m³)** | | S | 49,14 | 9,57 | 1,15 | | **Total de Aterro (m³)=** | | | **38,42** | |
| **3.0** | **Estruturas e Alvenaria** |
| **3.1** | **TOTAL OBRA – Resumo Fundações**   |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Sapatas isoladas | CA-50 | Ø10 | 550.67 | 373 | | Ø12.5 | 51.80 | 55 | | **Total + 10%** | | **428** | | CA-60 | Ø5 | 69.42 | 12 | | **Total + 10%** | | **12** |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Volume | | (m³) | | | Sapatas isoladas | 37.83 | 7.804 | | **Total** | **-** | **7.804** |     **TOTAL OBRA – Vigas Baldrames**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Superfície | | (m²) | | |  | | --- | | Volume | | (m³) | | | Vigas | 194.35 | 36.27 | 15.730 | | Pilares | 70.88 | - | 3.490 | | **Total** | **-** | **36.27** | **19.220** | | **Índices (por m²)** | **-** | **-** | **0.499** |  |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Vigas de concreto | CA-60 | Ø5 | 1201.00 | 207 | | **Total + 10%** | | **207** | | CA-50 | Ø10 | 1114.29 | 755 | | Ø12.5 | 42.86 | 45 | | **Total + 10%** | | **800** | | Pilares em concreto | CA-50 | Ø10 | 256.82 | 173.4 | | Ø12.5 | 12.40 | 13 | | **Total + 10%** | | **186.4** | | CA-60 | Ø5 | 214.87 | 37.8 | | **Total + 10%** | | **37.8** |   **NÍVEL TÉRREO**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Superfície | | (m²) | | |  | | --- | | Volume | | (m³) | | | Lajes de vigotas | - | 267.75 | 23.710 | | Vigas | 145.56 | 35.95 | 15.120 | | Pilares | 1.86 | - | 0.100 | | Escadas | - | 8.81 | 1.026 | | **Total** | **-** | **312.51** | **39.956** | | **Índices (por m²)** | **-** | **-** | **0.131** |  |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Lajes de vigotas | CA-50 | Ø6.3 | 5.90 | 2 | | Ø8 | 619.59 | 269 | | Ø10 | 335.40 | 227 | | Ø12.5 | 165.80 | 176 | | Ø16 | 34.10 | 59 | | Ø20 | 5.70 | 15 | | Ø25 | 9.20 | 39 | | **Total + 10%** | | **787** | | Vigas de concreto | CA-60 | Ø5 | 1891.90 | 327 | | **Total + 10%** | | **327** | | CA-50 | Ø10 | 937.70 | 636 | | Ø12.5 | 227.99 | 242 | | **Total + 10%** | | **878** | | Pilares em concreto | CA-50 | Ø10 | 40.20 | 27 | | **Total + 10%** | | **27** | | CA-60 | Ø5 | 16.50 | 3 | | **Total + 10%** | | **3** | | Escadas | CA-50 | Ø8 | 254.50 | 111 | | **Total + 10%** | | **111** |   **NÍVEL PÉ DIREITO ALTO DA RECEPÇÃO**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Superfície | | (m²) | | |  | | --- | | Volume | | (m³) | | | Lajes de vigotas | - | 21.16 | 1.860 | | Vigas | 12.52 | 2.75 | 1.220 | | Pilares | 18.66 | - | 0.970 | | **Total** | **-** | **23.91** | **4.050** | | **Índices (por m²)** | **-** | **-** | **0.165** |  |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Lajes de vigotas | CA-50 | Ø8 | 29.50 | 13 | | **Total + 10%** | | **13** | | Vigas de concreto | CA-60 | Ø5 | 89.30 | 15 | | **Total + 10%** | | **15** | | CA-50 | Ø10 | 87.69 | 59 | | **Total + 10%** | | **59** | | Pilares em concreto | CA-50 | Ø10 | 87.52 | 59 | | **Total + 10%** | | **59** | | CA-60 | Ø5 | 173.35 | 30 | | **Total + 10%** | | **30** |   **NÍVEL CAIXA D’ÁGUA**   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Superfície | | (m²) | | |  | | --- | | Volume | | (m³) | | |  | | --- | | Barras | | (kg) | | | Lajes de vigotas | - | 33.99 | 2.990 | 54 | | Vigas | 17.39 | 5.91 | 1.910 | 186 | | Pilares | 0.00 | - | - | - | | **Total** | **-** | **39.90** | **4.900** | **240** | | **Índices (por m²)** | **-** | **-** | **0.122** | **5.96** | | **Superfície total: 40.26 m²** | | | | |  |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Lajes de vigotas | CA-50 | Ø8 | 110.90 | 48 | | Ø10 | 8.70 | 6 | | **Total + 10%** | | **54** | | Vigas de concreto | CA-60 | Ø5 | 211.64 | 37 | | **Total + 10%** | | **37** | | CA-50 | Ø10 | 152.49 | 103 | | Ø12.5 | 43.67 | 46 | | **Total + 10%** | | **149** |   ***TOTAL OBRA***   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Volume | | (m³) | | |  | | --- | | Barras | | (kg) | | | Sapatas isoladas | 37.83 | 7.800 | 440 | | **Total** | **-** | **7.800** | **440** |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Elemento | |  | | --- | | Fôrmas | | (m²) | | |  | | --- | | Volume | | (m³) | | |  | | --- | | Barras | | (kg) | | | Lajes de vigotas | - | 28.56 | 854 | | Vigas | 374,82 | 34,33 | 2487 | | Pilares | 155.6 | 7.97 | 1018.4 | | Escadas | - | 1.03 | 111 | | **Total** | **-** | **74.08** | **4806** |  |  | Tipo de aço | Referência | Comprimento (m) | Peso (kg) | | --- | --- | --- | --- | --- | | Sapatas isoladas | CA-50 | Ø10 | 550.67 | 373 | | Ø12.5 | 51.80 | 55 | | **Total + 10%** | | **428** | | CA-60 | Ø5 | 69.42 | 12 | | **Total + 10%** | | **12** | | Lajes de vigotas | CA-50 | Ø6.3 | 5.90 | 2 | | Ø8 | 759.99 | 330 | | Ø10 | 344.10 | 233 | | Ø12.5 | 165.80 | 176 | | Ø16 | 34.10 | 59 | | Ø20 | 5.70 | 15 | | Ø25 | 9.20 | 39 | | **Total + 10%** | | **854** | | Vigas de concreto | CA-60 | Ø5 | 3405.68 | 588 | | **Total + 10%** | | **588** | | CA-50 | Ø10 | 2292.17 | 1553 | | Ø12.5 | 327.24 | 346 | | **Total + 10%** | | **1899** | | Pilares em concreto | CA-50 | Ø10 | 1134.42 | 767.4 | | Ø12.5 | 25.00 | 26 | | **Total + 10%** | | **793.4** | | CA-60 | Ø5 | 1295.47 | 225 | | **Total + 10%** | | **225** | | Escadas | CA-50 | Ø8 | 254.50 | 111 | | **Total + 10%** | | **111** |   **RESUMO DO AÇO – MURO**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **AÇO** | **DIAM** | | **C. TOTAL (m)** | **PESO +10% (Kg)** | | **VIGAS** | CA-60 | Ø5 | | 385.84 | 59.42 | | **Total + 10%** | | | **59.42** | | CA-50 | Ø10,0 | | 216,00 | 133,27 | | **Total + 10%** | | | **133,27** | | **PILARES** | CA-50 |  | |  |  | | Ø10 | | 132,60 | 81,81 | | **Total + 10%** | | | **81,81** | | CA-60 | Ø5 | | 271,66 | 41,83 | | **Total + 10%** | | | **41,83** | | **REFORÇO** | CA - 50 | Ø10 | 162,00 | | 99,95 | | **Total + 10%** | | | **99,95** | | **FUNDAÇÕES** | CA - 50 | Ø10 | 128,52 | | 79,22 | | **Total + 10%** | | | **79,22** | | CA-60 | Ø5 | | 142,28 | 21,99 | | **Total + 10%** | | | **21,99** |   **RESUMO DO CONCRETO – MURO**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **ELEMENTO** | |  | | --- | | **FÔRMAS** | | **(M²)** | | |  | | --- | | **VOLUME C-25** | | **(M³)** | | | Vigas | 58.4 | 3,78 | | Pilares | 53.46 | 2,04 | | Graute | - | 8,06 | | Fundações | - | 2,14 | | **Total** | **111,86** | **16,02** |   **Blocos: 37.04 m² ~ 192 Unidades**  **DRENAGEM – MURO**   |  |  | | --- | --- | | **ELEMENTO** | **QUANTIDADE** | | Brita 2 | 17,55m³ | | Manta Geotêxtil Bidim | 109,35m² | | Tubo Corrugado | 27,00 m | | Calha de crista - concreto | 1,37 m³ | | Pintura Impermeabilizante | 48,60 m² | | Joelho Cotovelo PVC 90 | 4 UN | | Barbacãs | 33UN | | Tubo Pvc 100mm | 1,80m |     **RAMPA**   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **AÇO** | **DIAM** | **C. TOTAL (m²)** | **PESO +10% (Kg)** | | **RAMPA** | CA-50  (Malha Pop) | Ø8 | 14,62 | 6,35 | | **Total + 10%** | | **6,35** |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **ELEMENTO** | |  | | --- | | **FÔRMAS** | | **(M²)** | | |  | | --- | | **VOLUME C-25** | | **(M³)** | | | Rampa | 58,48 | 1,46 | | **Total** | **58,48** | **1,46** |   **ATENÇÃO: Atentar as tabelas de muro e adendo de rampa, pois contem concreto de graute, ferro de reforço, metragem quadrada de bloco e parte de drenagem que não foram incluídos na referente planilha de totais.** |
| **4.0** | **Bota Fora** |
| **4.1** | Total de escavação – 170.85 m³  Total de aterro – 113.85 m³  **Bota Fora: 170,85 – 113,85 = 57,00 m³** |