



| PLANILLA DE HIERROS |    |      |     |             |      |      |      |      |        |          |          |                                |               |
|---------------------|----|------|-----|-------------|------|------|------|------|--------|----------|----------|--------------------------------|---------------|
| Mc                  | φ  | Tipo | No  | Dimensiones |      |      |      |      | Trasp. | Parcial  | Total    | Peso(kg)                       | Observaciones |
|                     |    |      |     | a           | b    | c    | d    | g    |        |          |          |                                |               |
| 100                 | 14 | G    | 232 | 7.54        | 0.10 | 0.91 |      |      | 9.56   | 2,217.92 | 2,680.16 | ACERO PRINCIPAL LOSA(H-I)      |               |
| 101                 | 12 | I    | 26  | 29.94       |      |      |      | 0.64 | 31.22  | 811.72   | 720.66   | ACERO REPARTICIÓN LOSA(+)      |               |
| 102                 | 10 | I    | 31  | 29.94       |      |      |      | 0.53 | 31.00  | 961.00   | 592.49   | ACERO POR TEMPERATURA LOSA     |               |
| 103                 | 10 | I    | 120 | 7.54        |      |      |      |      | 7.54   | 904.80   | 557.84   | ACERO POR TEMPERATURA LOSA     |               |
| 200                 | 12 | Z    | 200 | 0.10        | 0.70 | 0.25 | 0.25 |      | 1.30   | 260.00   | 230.83   | ACERO REFUERZO ACERA           |               |
| 201                 | 12 | C    | 10  | 29.86       | 0.25 |      |      | 0.64 | 31.64  | 316.40   | 280.90   | ACERO REFUERZO ACERA           |               |
| 202                 | 12 | L    | 88  | 1.30        | 0.30 |      |      |      | 1.60   | 140.80   | 125.00   | ACERO REFUERZO BALUSTRE        |               |
| 203                 | 10 | O    | 132 | 0.15        | 0.15 |      | 0.10 |      | 0.80   | 105.60   | 65.11    | ACERO REFUERZO BALUSTRE        |               |
| 300                 | 25 | C    | 20  | 5.50        | 0.30 |      |      |      | 6.10   | 122.00   | 470.11   | ACERO PRINCIPAL DIAFRAGMA(H-I) |               |
| 301                 | 18 | C    | 20  | 5.50        | 0.10 |      |      |      | 5.70   | 114.00   | 227.72   | ACERO CENTRAL DIAFRAGMA        |               |
| 302                 | 10 | O    | 100 | 1.42        | 0.12 |      | 0.10 |      | 3.28   | 328.00   | 202.22   | ACERO REFUERZO DIAFRAGMA       |               |
| 303                 | 10 | O    | 100 | 0.52        | 0.12 |      | 0.10 |      | 1.48   | 148.00   | 91.25    | ACERO REFUERZO DIAFRAGMA       |               |
| 400                 | 32 | C    | 30  | 29.94       | 0.66 |      |      | 2.83 | 36.92  | 1,107.60 | 6,992.66 | ACERO PRINCIPAL VIGA(H)        |               |
| 401                 | 32 | I    | 24  | 20.00       |      |      |      | 2.83 | 22.83  | 547.92   | 3,459.21 | ACERO PRINCIPAL VIGA(H)        |               |
| 402                 | 32 | I    | 12  | 10.00       |      |      |      |      | 10.00  | 120.00   | 757.60   | ACERO PRINCIPAL VIGA(H)        |               |
| 403                 | 32 | I    | 63  | 0.35        |      |      |      |      | 0.35   | 22.05    | 139.21   | SEPARADOR                      |               |
| 404                 | 28 | C    | 12  | 29.94       | 0.50 |      |      | 1.40 | 33.74  | 404.88   | 1,957.05 | ACERO SUPERIOR VIGA(L)         |               |
| 405                 | 25 | C    | 12  | 29.90       | 0.40 |      |      | 1.66 | 34.02  | 408.24   | 1,573.10 | ACERO LATERAL VIGA             |               |
| 406                 | 12 | O    | 162 | 1.90        | 0.34 |      | 0.10 |      | 4.68   | 758.16   | 673.11   | ACERO REFUERZO VIGA            |               |
| 407                 | 12 | O    | 162 | 0.80        | 0.35 |      | 0.10 |      | 2.49   | 403.38   | 358.13   | ACERO REFUERZO VIGA            |               |

  

| TIPO DE HIERROS |        |        |        |                 |  |  |  |  |  |  |  |
|-----------------|--------|--------|--------|-----------------|--|--|--|--|--|--|--|
| BARRA φ         | Ld (m) | Lg (m) | Lt (m) | Lt pequeñas (m) |  |  |  |  |  |  |  |
| 10              | 1.41   | 0.21   | 1.53   | 0.21            |  |  |  |  |  |  |  |
| 12              | 0.49   | 0.15   | 0.64   | 0.15            |  |  |  |  |  |  |  |
| 14              | 0.53   | 0.29   | 0.75   | 0.29            |  |  |  |  |  |  |  |
| 16              | 0.66   | 0.33   | 0.83   | 0.33            |  |  |  |  |  |  |  |
| 18              | 0.74   | 0.37   | 0.86   | 0.37            |  |  |  |  |  |  |  |
| 20              | 1.03   | 0.51   | 1.06   | 0.51            |  |  |  |  |  |  |  |
| 25              | 1.64   | 0.66   | 2.01   | 0.66            |  |  |  |  |  |  |  |

  

| RESUMEN DE MATERIALES  |                         |                |          |          |          |        |       |          |          |                  |  |
|--|-------------------------|----------------|----------|----------|----------|--------|-------|----------|----------|------------------|--|
| HORMIGÓN SIMPLE F <sub>cc</sub> =240kg/cm <sup>2</sup> (m <sup>3</sup> ) | CANTIDAD DE HIERRO (kg) |                |          |          |          |        |       |          |          |                  |  |
|  | Losas                   | φ10mm          | φ12mm    | φ14mm    | φ18mm    | φ20mm  | φ25mm | φ28mm    | φ32mm    |                  |  |
| 45.60  | m <sup>3</sup>          |                |          |          |          |        |       |          |          |                  |  |
| Aceras   | 9.60                    | m <sup>3</sup> |          |          |          |        |       |          |          |                  |  |
| Barandas   | 1.05                    | m <sup>3</sup> |          |          |          |        |       |          |          |                  |  |
| Vigas  | 64.85                   | m <sup>3</sup> | 1,508.91 | 2,388.63 | 2,680.16 | 227.72 | 0.00  | 2,043.21 | 1,957.05 | 11,348.68        |  |
| Diafragmas   | 7.80                    | m <sup>3</sup> |          |          |          |        |       |          |          |                  |  |
| <b>TOTAL</b>   | <b>128.91</b>           |                |          |          |          |        |       |          |          | <b>22,154.37</b> |  |

**Unach** FACULTAD DE INGENIERÍA  
CARRERA DE INGENIERÍA CIVIL

PROYECTO: **INFRAESTRUCTURA VIAL SOBRE EL RÍO ALAO**  
DISEÑO ESTRUCTURAL SUPERESTRUCTURA

DISEÑO: JUAN ANDRÉS SEGOVIA BONIFAZ  
REVISÓ: ING. DANIEL FERNANDO RIOS LARA  
APROBÓ: ING. OSCAR EFRÉN PAREDES PEÑAHERRERA

CONTIENE:  
- ARMADO LONGITUDINAL Y TRANSVERSAL DE LOSA  
- DETALLE ARMADO BARANDA Y ACERA  
- DETALLE ARMADO DIAFRAGMA  
- ARMADO SECCIÓN LONGITUDINAL Δ-A'  
- UBICACIÓN  
- PLANILLA RESUMEN MATERIALES

LUGAR Y FECHA: RIOBAMBA, AGOSTO 2016  
ESCALA: INDICADAS

LÁMINA: 2  
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