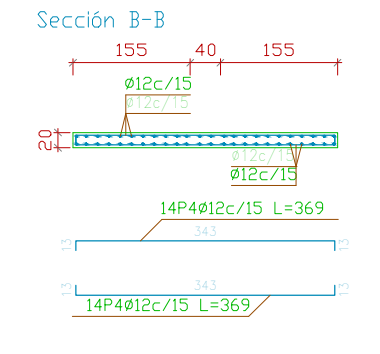
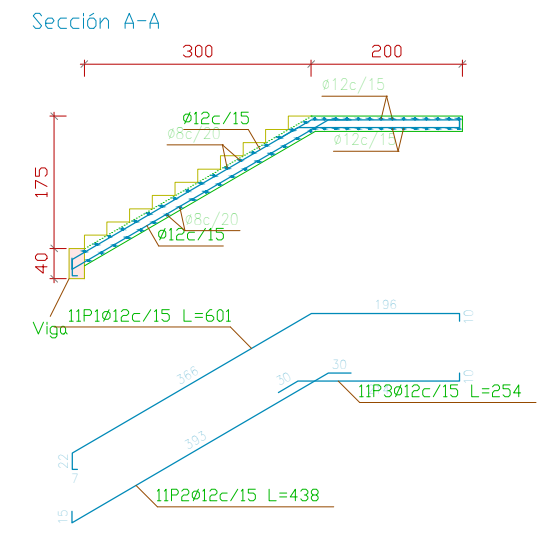
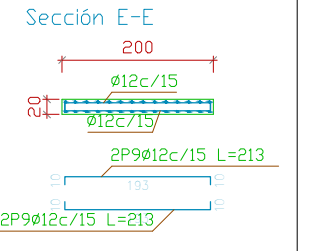
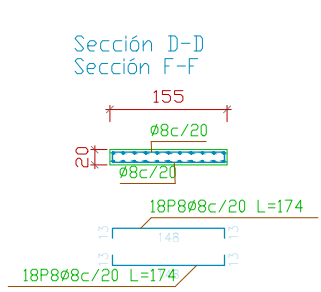
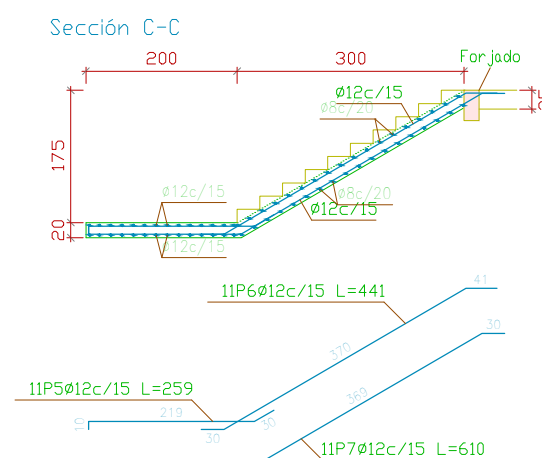


Escalera 1

| Tramo 1                                |                         |
|----------------------------------------|-------------------------|
| Ámbito                                 | 1.550 m                 |
| Espeor                                 | 0.20 m                  |
| Huella                                 | 0.300 m                 |
| Contrahuella                           | 0.175 m                 |
| Desnivel que salva                     | 3.50 m                  |
| Nº de escalones                        | 20                      |
| Tramos consecutivos iguales            | 2                       |
| Planta final                           | SEGUNDO PISO +7.50      |
| Planta inicial                         | PLANTA BAJA             |
| Peso propio                            | 4.91 kN/m <sup>2</sup>  |
| Pelado/Reado (Hormigonado con la losa) | 1.85 kN/m <sup>2</sup>  |
| Salado                                 | 0.80 kN/m <sup>2</sup>  |
| Barandillas                            | 0.50 kN/m               |
| Sobrecarga de uso                      | 3.00 kN/m <sup>2</sup>  |
| Hormigón                               | H-25 , Control Normal   |
| Acero                                  | AH-500 , Control Normal |
| Rec. geométrico                        | 3.0 cm                  |

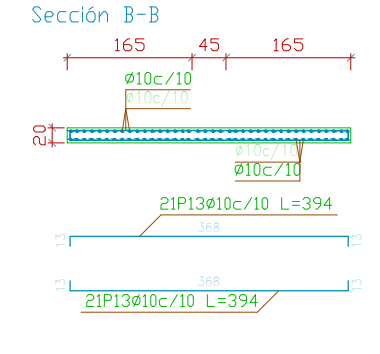
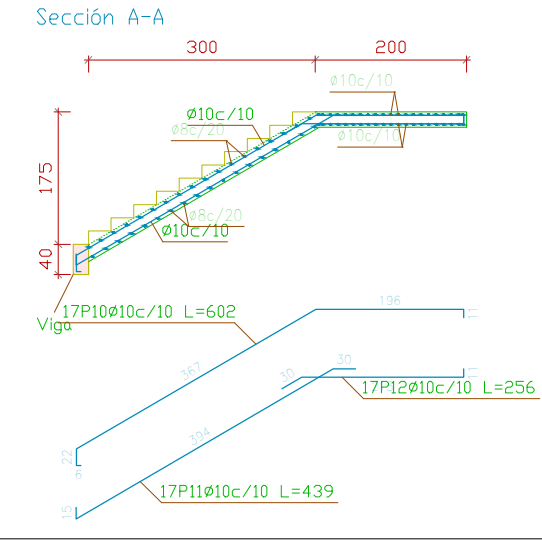
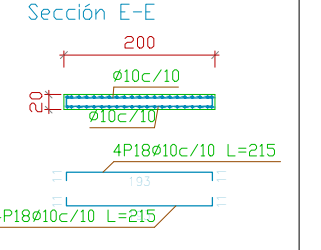
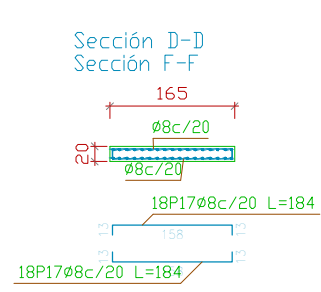
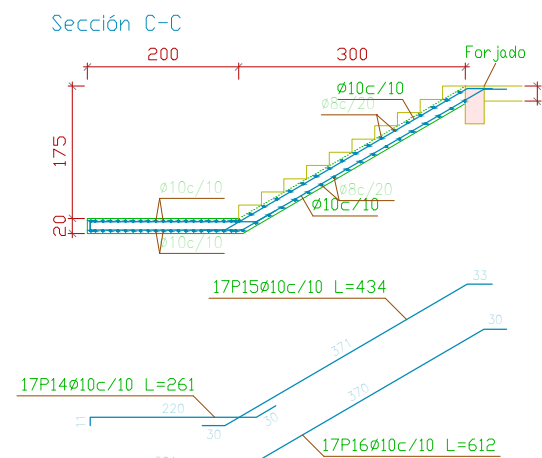


| Resumen Acero | Long. total (m) | Peso+10% (kg) | Total |
|---------------|-----------------|---------------|-------|
| AH-500CN Ø8   | 250.6           | 109           |       |
| Ø12           | 796.3           | 778           | 887   |

Escala 1:100

Escalera 2

| Tramo 1                                |                         |
|----------------------------------------|-------------------------|
| Ámbito                                 | 1.650 m                 |
| Espeor                                 | 0.20 m                  |
| Huella                                 | 0.300 m                 |
| Contrahuella                           | 0.175 m                 |
| Desnivel que salva                     | 3.50 m                  |
| Nº de escalones                        | 20                      |
| Tramos consecutivos iguales            | 3                       |
| Planta final                           | CUBIERTA +11.00         |
| Planta inicial                         | PLANTA BAJA             |
| Peso propio                            | 4.91 kN/m <sup>2</sup>  |
| Pelado/Reado (Hormigonado con la losa) | 1.85 kN/m <sup>2</sup>  |
| Salado                                 | 0.80 kN/m <sup>2</sup>  |
| Barandillas                            | 0.50 kN/m               |
| Sobrecarga de uso                      | 3.00 kN/m <sup>2</sup>  |
| Hormigón                               | H-25 , Control Normal   |
| Acero                                  | AH-500 , Control Normal |
| Rec. geométrico                        | 3.0 cm                  |

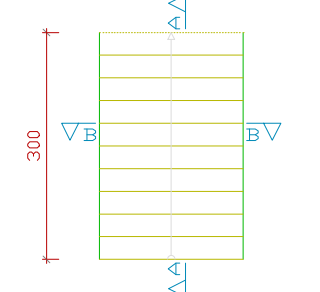
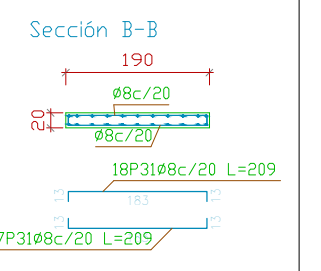
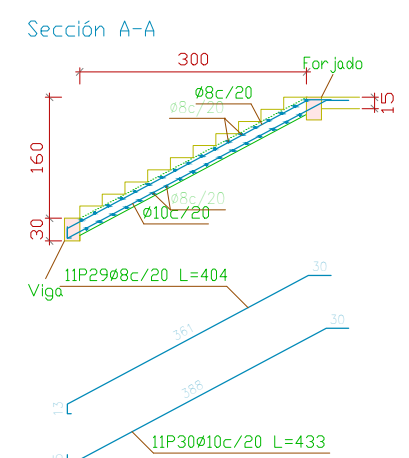


| Resumen Acero | Long. total (m) | Peso+10% (kg) | Total |
|---------------|-----------------|---------------|-------|
| AH-500CN Ø8   | 117.6           | 51            |       |
| Ø10           | 47.6            | 32            | 83    |

Escala 1:100

Escalera 5

| Tramo 1                                |                         |
|----------------------------------------|-------------------------|
| Ámbito                                 | 1.900 m                 |
| Espeor                                 | 0.20 m                  |
| Huella                                 | 0.300 m                 |
| Contrahuella                           | 0.160 m                 |
| Desnivel que salva                     | 1.60 m                  |
| Nº de escalones                        | 10                      |
| Planta final                           | RAMPA                   |
| Planta inicial                         | PLANTA BAJA             |
| Peso propio                            | 4.91 kN/m <sup>2</sup>  |
| Pelado/Reado (Hormigonado con la losa) | 1.73 kN/m <sup>2</sup>  |
| Salado                                 | 0.80 kN/m <sup>2</sup>  |
| Barandillas                            | 0.50 kN/m               |
| Sobrecarga de uso                      | 3.00 kN/m <sup>2</sup>  |
| Hormigón                               | H-25 , Control Normal   |
| Acero                                  | AH-500 , Control Normal |
| Rec. geométrico                        | 3.0 cm                  |

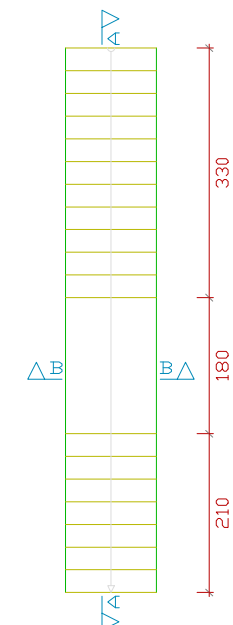
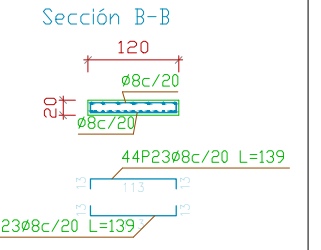
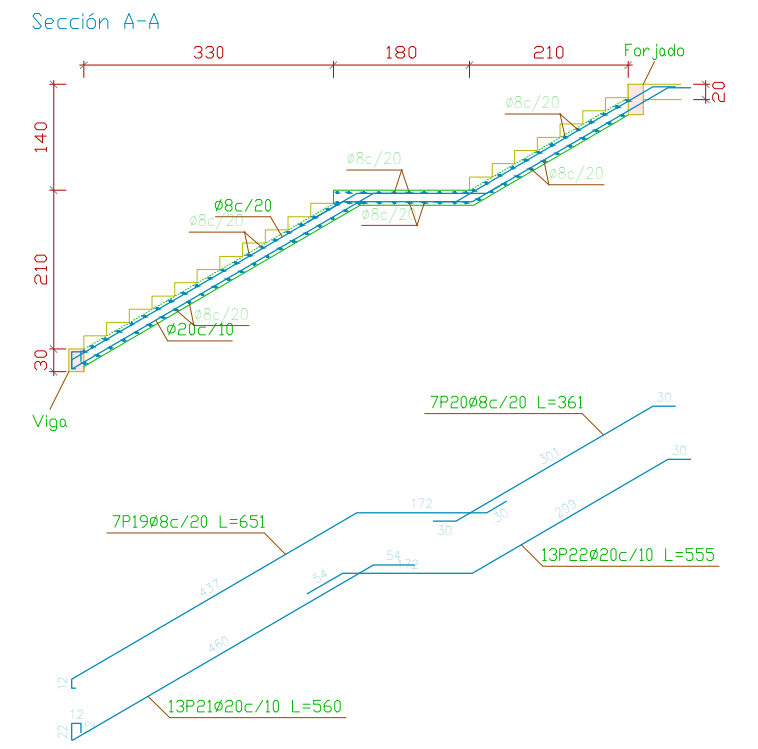


| Resumen Acero | Long. total (m) | Peso+10% (kg) | Total |
|---------------|-----------------|---------------|-------|
| AH-500CN Ø8   | 193.2           | 84            |       |
| Ø20           | 145.0           | 393           | 477   |

Escala 1:100

Escalera 3

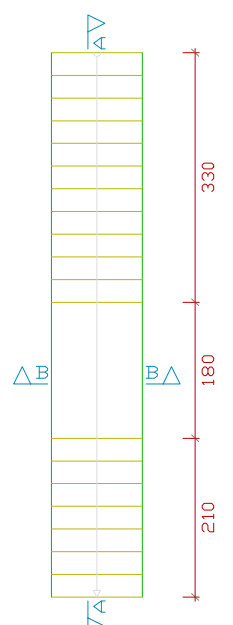
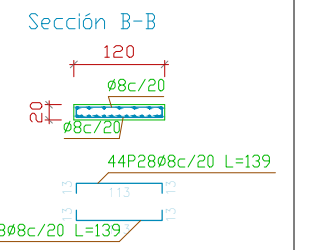
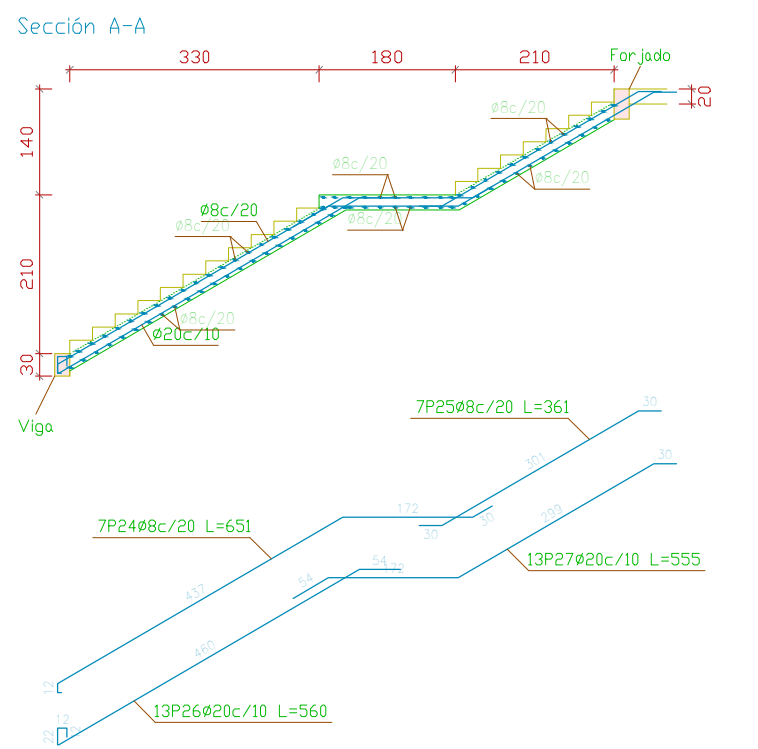
| Tramo 1                                |                         |
|----------------------------------------|-------------------------|
| Ámbito                                 | 1.200 m                 |
| Espeor                                 | 0.20 m                  |
| Huella                                 | 0.300 m                 |
| Contrahuella                           | 0.175 m                 |
| Desnivel que salva                     | 3.50 m                  |
| Nº de escalones                        | 20                      |
| Planta final                           | PRIMER PISO +4.00       |
| Planta inicial                         | PLANTA BAJA             |
| Peso propio                            | 4.91 kN/m <sup>2</sup>  |
| Pelado/Reado (Hormigonado con la losa) | 1.85 kN/m <sup>2</sup>  |
| Salado                                 | 0.80 kN/m <sup>2</sup>  |
| Barandillas                            | 0.50 kN/m               |
| Sobrecarga de uso                      | 3.00 kN/m <sup>2</sup>  |
| Hormigón                               | H-25 , Control Normal   |
| Acero                                  | AH-500 , Control Normal |
| Rec. geométrico                        | 3.0 cm                  |



Escala 1:100

Escalera 4

| Tramo 1                                |                         |
|----------------------------------------|-------------------------|
| Ámbito                                 | 1.200 m                 |
| Espeor                                 | 0.20 m                  |
| Huella                                 | 0.300 m                 |
| Contrahuella                           | 0.175 m                 |
| Desnivel que salva                     | 3.50 m                  |
| Nº de escalones                        | 20                      |
| Planta final                           | PRIMER PISO +4.00       |
| Planta inicial                         | PLANTA BAJA             |
| Peso propio                            | 4.91 kN/m <sup>2</sup>  |
| Pelado/Reado (Hormigonado con la losa) | 1.85 kN/m <sup>2</sup>  |
| Salado                                 | 0.80 kN/m <sup>2</sup>  |
| Barandillas                            | 0.50 kN/m               |
| Sobrecarga de uso                      | 3.00 kN/m <sup>2</sup>  |
| Hormigón                               | H-25 , Control Normal   |
| Acero                                  | AH-500 , Control Normal |
| Rec. geométrico                        | 3.0 cm                  |



Escala 1:100

| Resumen Acero | Long. total (m) | Peso+10% (kg) | Total |
|---------------|-----------------|---------------|-------|
| AH-500CN Ø8   | 117.6           | 51            |       |
| Ø10           | 47.6            | 32            | 83    |

| Elemento           | Pos. | Diám. | No. | Long. (cm) | Total (cm) | AH-500CN (kg) |
|--------------------|------|-------|-----|------------|------------|---------------|
| Escalera 1-Tramo 1 | 1    | Ø12   | 11  | 601        | 6611       | 58.7          |
|                    | 2    | Ø12   | 11  | 438        | 4818       | 42.8          |
|                    | 3    | Ø12   | 11  | 254        | 2794       | 24.8          |
|                    | 4    | Ø12   | 28  | 369        | 10332      | 91.7          |
|                    | 5    | Ø12   | 11  | 239        | 2649       | 23.3          |
|                    | 6    | Ø12   | 11  | 441        | 4851       | 43.1          |
|                    | 7    | Ø12   | 11  | 610        | 6710       | 59.6          |
|                    | 8    | Ø8    | 72  | 174        | 12528      | 49.4          |
|                    | 9    | Ø12   | 4   | 213        | 852        | 7.6           |
| Total+10% (x2)     |      |       |     |            |            | 443.3         |
| Total+10% (x2)     |      |       |     |            |            | 886.6         |
| Escalera 2-Tramo 1 | 10   | Ø10   | 17  | 602        | 10234      | 63.1          |
|                    | 11   | Ø10   | 17  | 439        | 7463       | 46.0          |
|                    | 12   | Ø10   | 17  | 256        | 4352       | 26.8          |
|                    | 13   | Ø10   | 42  | 394        | 16340      | 102.0         |
|                    | 14   | Ø10   | 17  | 261        | 4437       | 27.4          |
|                    | 15   | Ø10   | 17  | 434        | 7378       | 45.5          |
|                    | 16   | Ø10   | 17  | 612        | 10404      | 64.1          |
|                    | 17   | Ø8    | 72  | 184        | 13248      | 52.3          |
|                    | 18   | Ø10   | 8   | 215        | 1720       | 10.6          |
| Total+10% (x3)     |      |       |     |            |            | 481.6         |
| Total+10% (x3)     |      |       |     |            |            | 1444.8        |
| Escalera 3-Tramo 1 | 19   | Ø8    | 7   | 651        | 4557       | 18.0          |
|                    | 20   | Ø8    | 7   | 361        | 2527       | 10.0          |
|                    | 21   | Ø20   | 13  | 560        | 7280       | 179.5         |
|                    | 23   | Ø8    | 88  | 139        | 12232      | 48.3          |
| Total+10% (x3)     |      |       |     |            |            | 477.1         |
| Escalera 4-Tramo 1 | 24   | Ø8    | 7   | 651        | 4557       | 18.0          |
|                    | 25   | Ø8    | 7   | 361        | 2527       | 10.0          |
|                    | 26   | Ø20   | 13  | 560        | 7280       | 179.5         |
|                    | 27   | Ø20   | 13  | 555        | 7215       | 177.9         |
|                    | 28   | Ø8    | 88  | 139        | 12232      | 48.3          |
| Total+10% (x3)     |      |       |     |            |            | 477.1         |
| Escalera 5-Tramo 1 | 29   | Ø8    | 11  | 404        | 4444       | 17.5          |
|                    | 30   | Ø10   | 11  | 433        | 4763       | 29.4          |
|                    | 31   | Ø8    | 35  | 209        | 7315       | 28.9          |
| Total+10% (x3)     |      |       |     |            |            | 63.4          |
|                    |      |       |     |            |            | Ø8: 499.9     |
|                    |      |       |     |            |            | Ø10: 1304.7   |
|                    |      |       |     |            |            | Ø20: 788.4    |
|                    |      |       |     |            |            | Total 3369.0  |

UNIVERSIDAD AUTÓNOMA "JUAN MISAEL SARACHO"  
FACULTAD DE CIENCIAS Y TECNOLOGÍA



CONTENIDO:  
DETALLE ARMADO DE ESCALERAS

|                |                                 |         |            |         |    |
|----------------|---------------------------------|---------|------------|---------|----|
| UNIVERSITARIO: | CRISTHIAN ABEL QUIROGA VELIZ    | ESCALA: | 1:100      | LAMINA: | 29 |
| MATERIA:       | PROYECTO DE INGENIERIA CIVIL II | FECHA:  | JULIO 2021 |         |    |