



BURKINA FASO
UNITE – PROGRES – JUSTICE



**PROJET DE CONSTRUCTION DE LA CANTINE DE L'ORGANISATION
OUEST AFRICAINE DE LA SANTE**



MAITRE D'OUVRAGE

OOAS

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DOSSIER D'INGENIERIE / DEVIS ESTIMATIF

| INTITULE | REF. | DATE |
|---|-----------------|---------------------|
| CARNET DE FERRAILLAGE DES OUVRAGES | ST : DEC | JUILLET 2021 |

ETUDES

MAITRE D'ŒUVRE :



**Groupe de Réalisation et d'Etudes Techniques
en constructions Civiles et Hydraulique**

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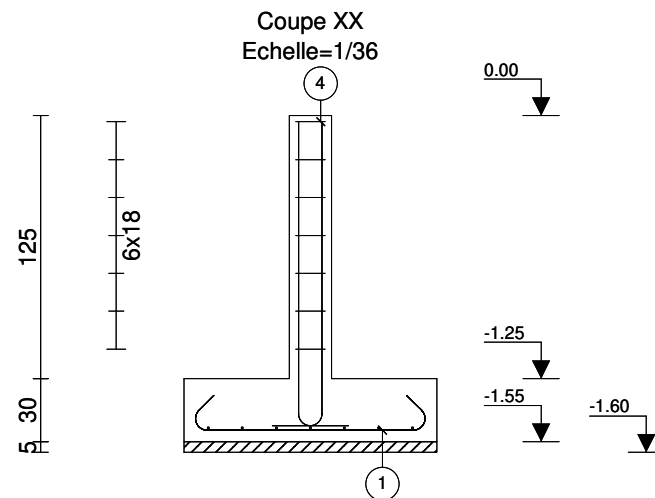
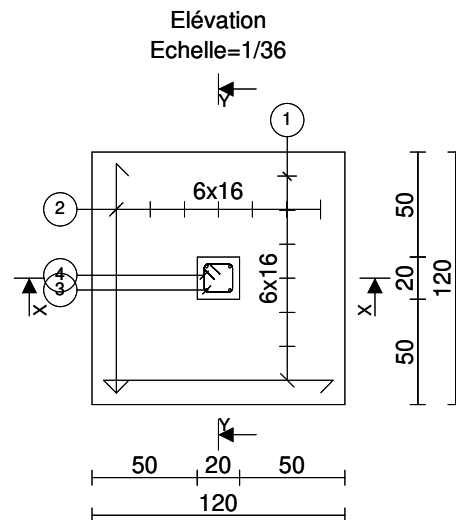
Email: gretech_sarl@yahoo.fr

SIGNATURE

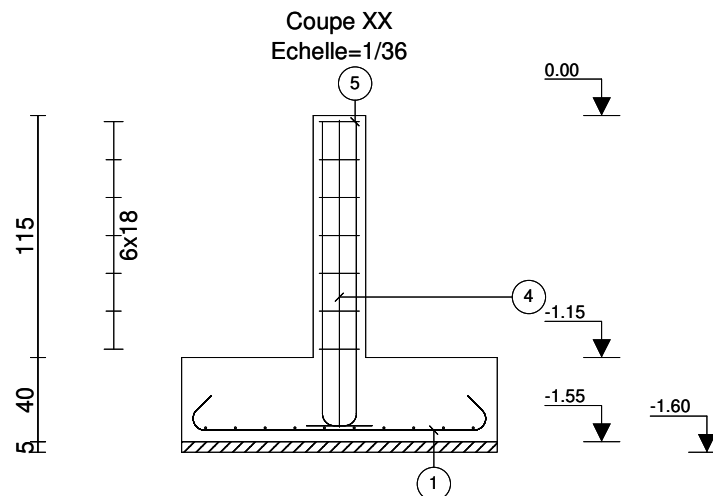
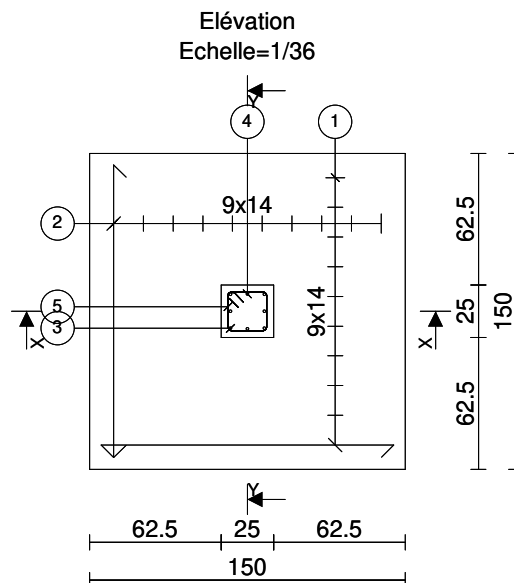
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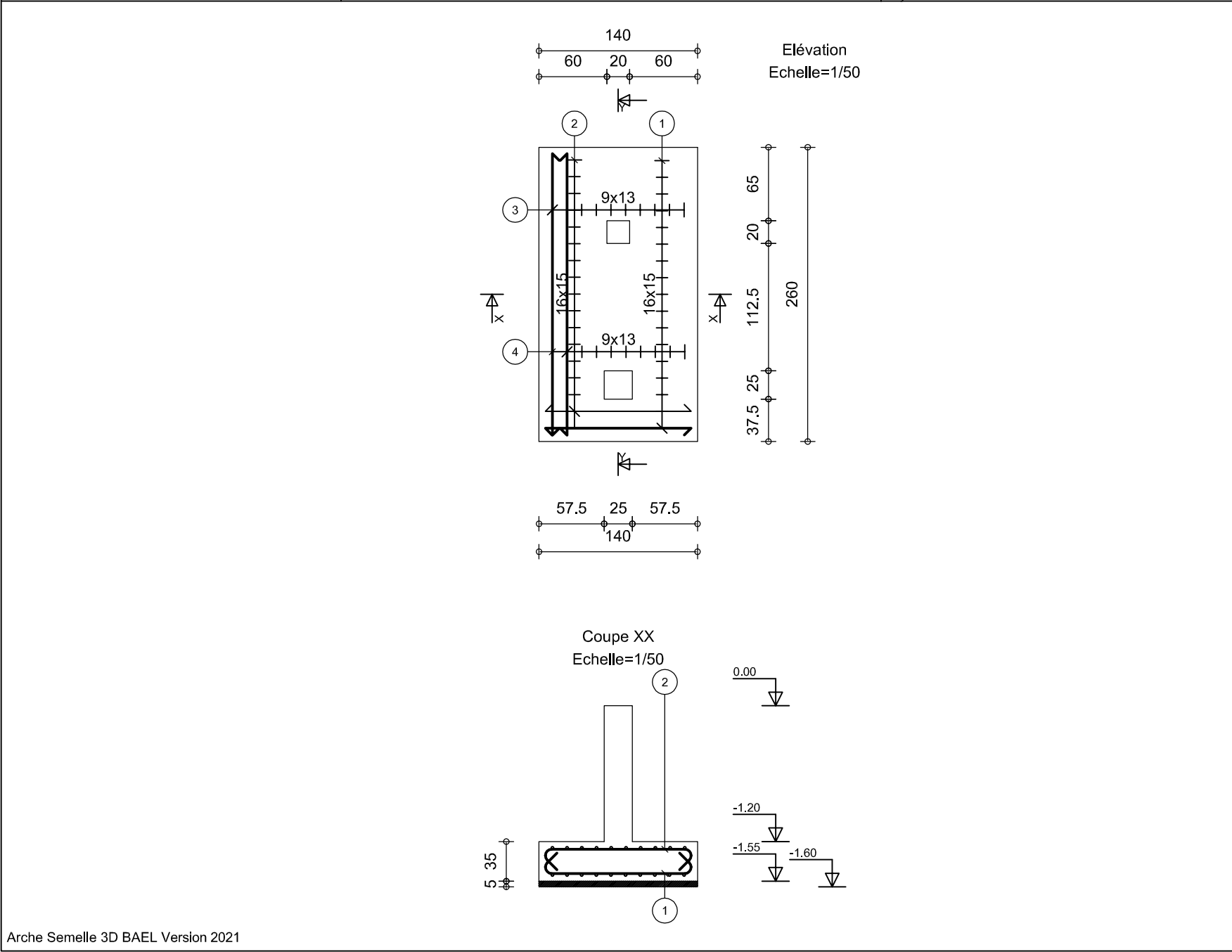
I. CARNET DE FERRAILLAGE DES SEMELLES



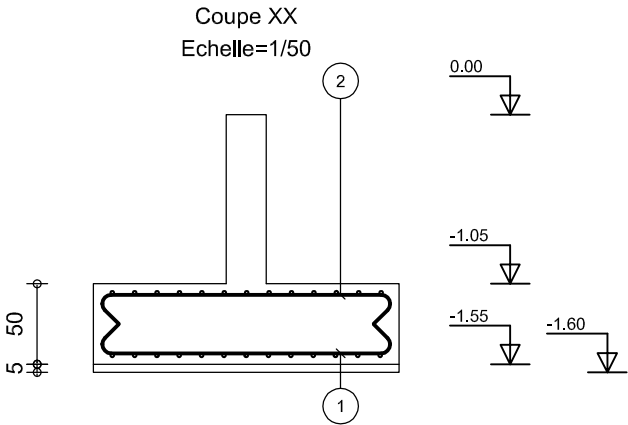
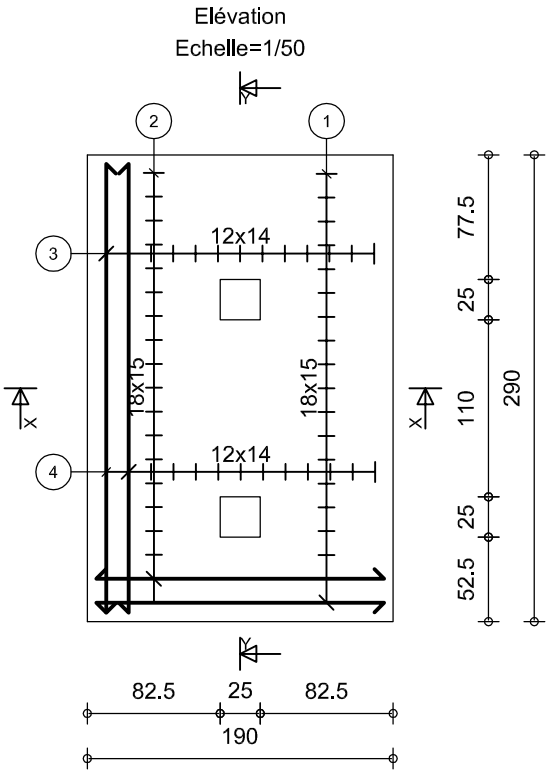
| Barre | Lg | Forme |
|---------|-----|---------------|
| 1 7HA10 | 144 | 135° 110 135° |
| 2 7HA10 | 144 | 135° 110 135° |
| 3 4HA12 | 166 | 145 90° |
| 4 7HA6 | 68 | 14 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 4.8/1.1 |
| HA10 | | 20.1/12.4 |
| HA12 | | 6.6/5.9 |



| Barre | Lg | Forme |
|----------|-----|---------------|
| 1 10HA10 | 174 | 135° 140 135° |
| 2 10HA10 | 174 | 135° 140 135° |
| 3 6HA12 | 166 | 145 90° |
| 4 2HA12 | 166 | 145 90° |
| 5 7HA6 | 88 | 19 19 |
| Barre | | Lg/Poids |
| HA6 | | 6.2/1.4 |
| HA10 | | 34.8/21.4 |
| HA12 | | 13.2/11.8 |

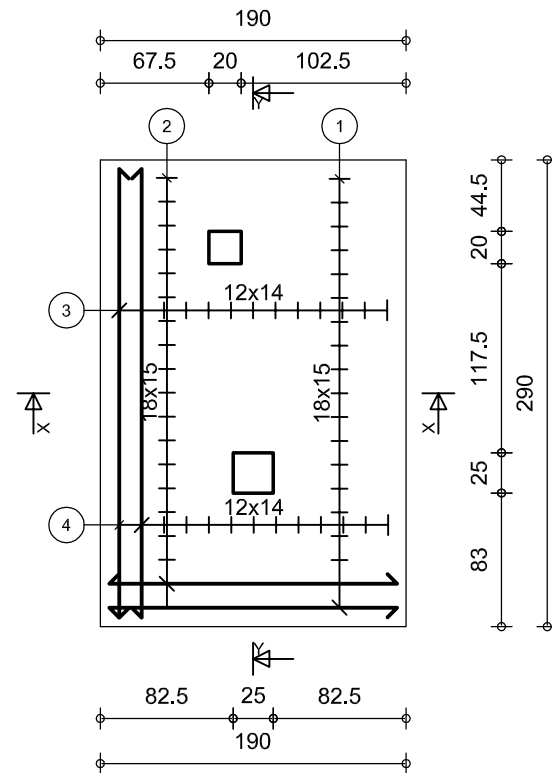


| Barre | | Lg | Forme |
|-------|--------|-------------|-------|
| 1 | 17HA12 | 168 | |
| 2 | 17HA12 | 168 | |
| 3 | 10HA12 | 288 | |
| 4 | 10HA12 | 288 | |
| | | | |
| Barre | | Lg/Poids | |
| HA12 | | 121.3/107.7 | |

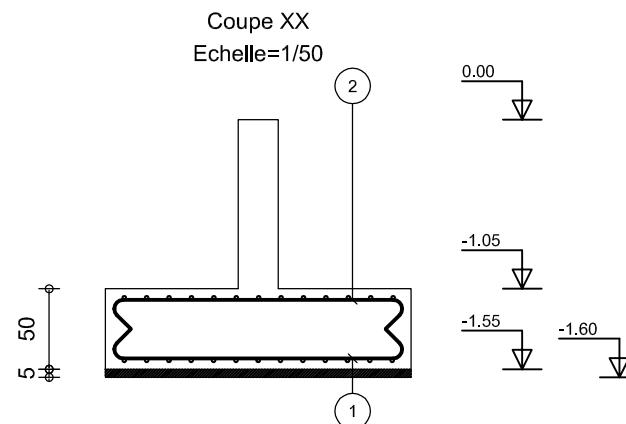






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|-------|--------|-------------|-------|
| 1 | 19HA12 | 218 | |
| 2 | 19HA12 | 218 | |
| 3 | 13HA12 | 318 | |
| 4 | 13HA12 | 318 | |
| | | | |
| Barre | | Lg/Poids | |
| HA12 | | 185.3/164.5 | |

Fc28= 20 MPa Fe= 400 MPa Fissuration préjudiciable

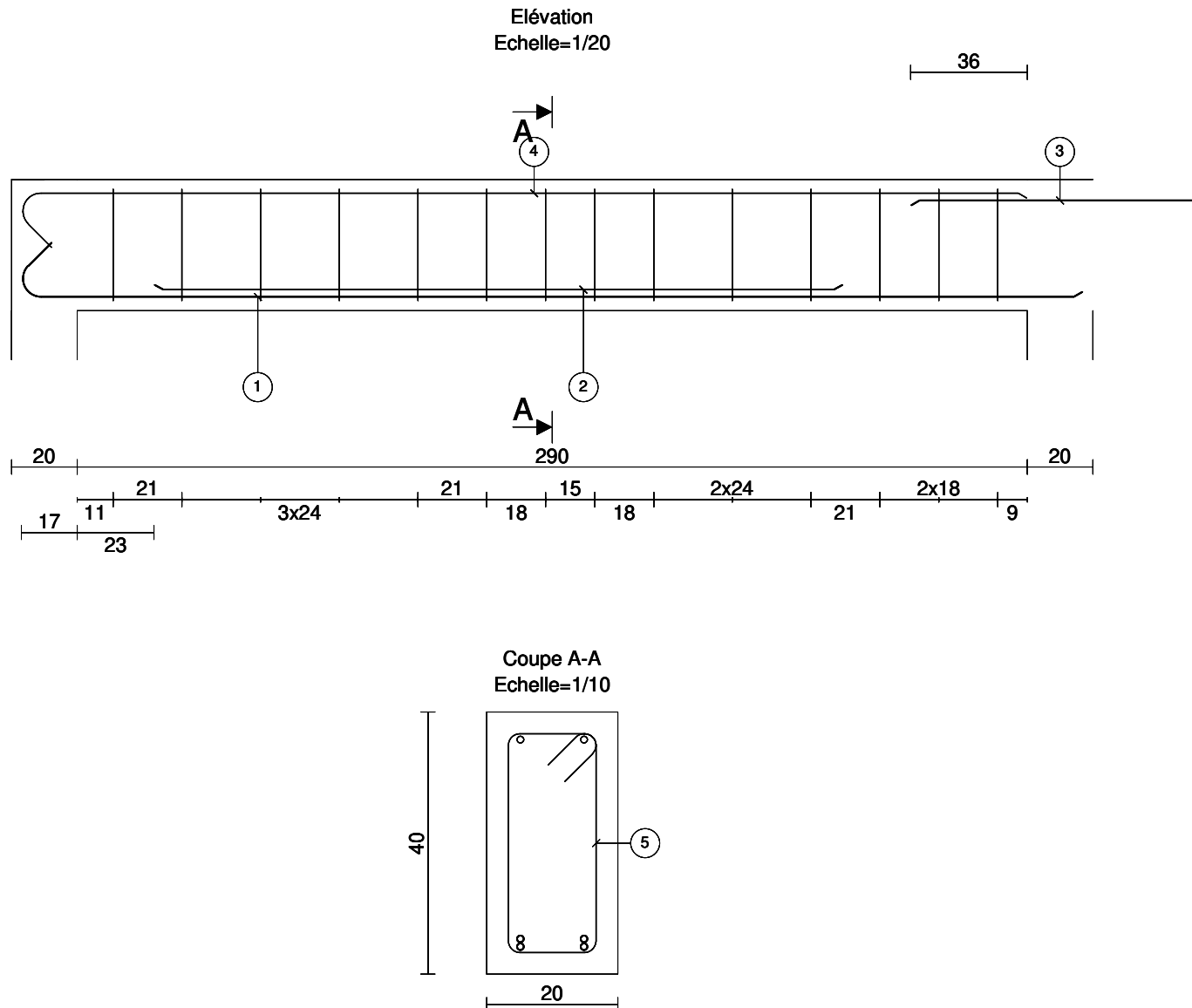


Elévation
Echelle=1/50

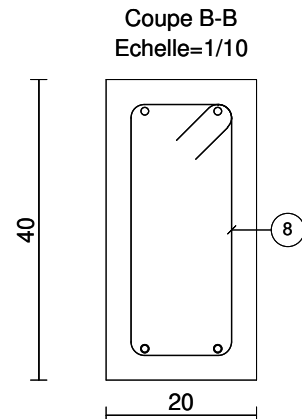
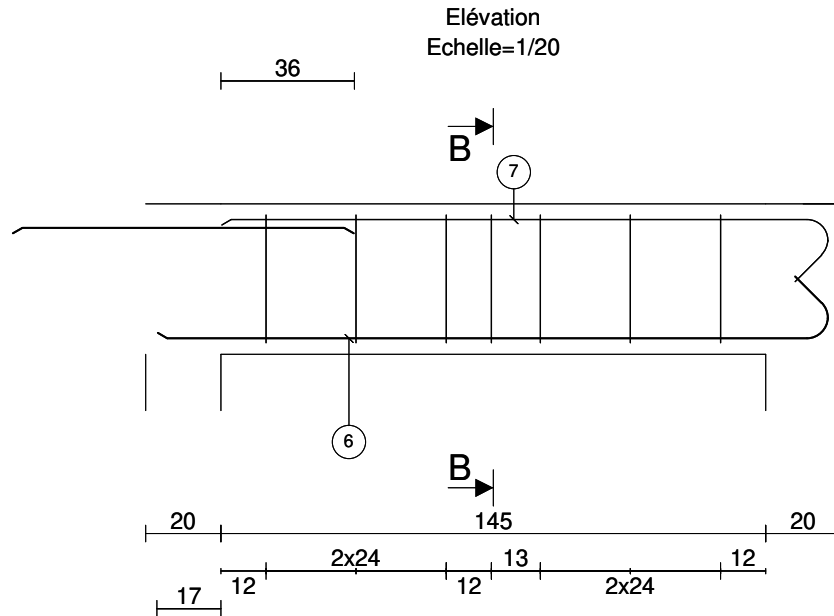


| Barre | | Lg | Forme |
|-------|--------|-------------|--|
| 1 | 19HA12 | 218 |  135° 180 135° |
| 2 | 19HA12 | 218 |  135° 180 135° |
| 3 | 13HA12 | 318 |  135° 280 135° |
| 4 | 13HA12 | 318 |  135° 280 135° |
| | | | |
| Barre | | Lg/Poids | |
| HA12 | | 185.3/164.5 | |

II. CARNET DE FERRAILLAGE DES LONGRINES

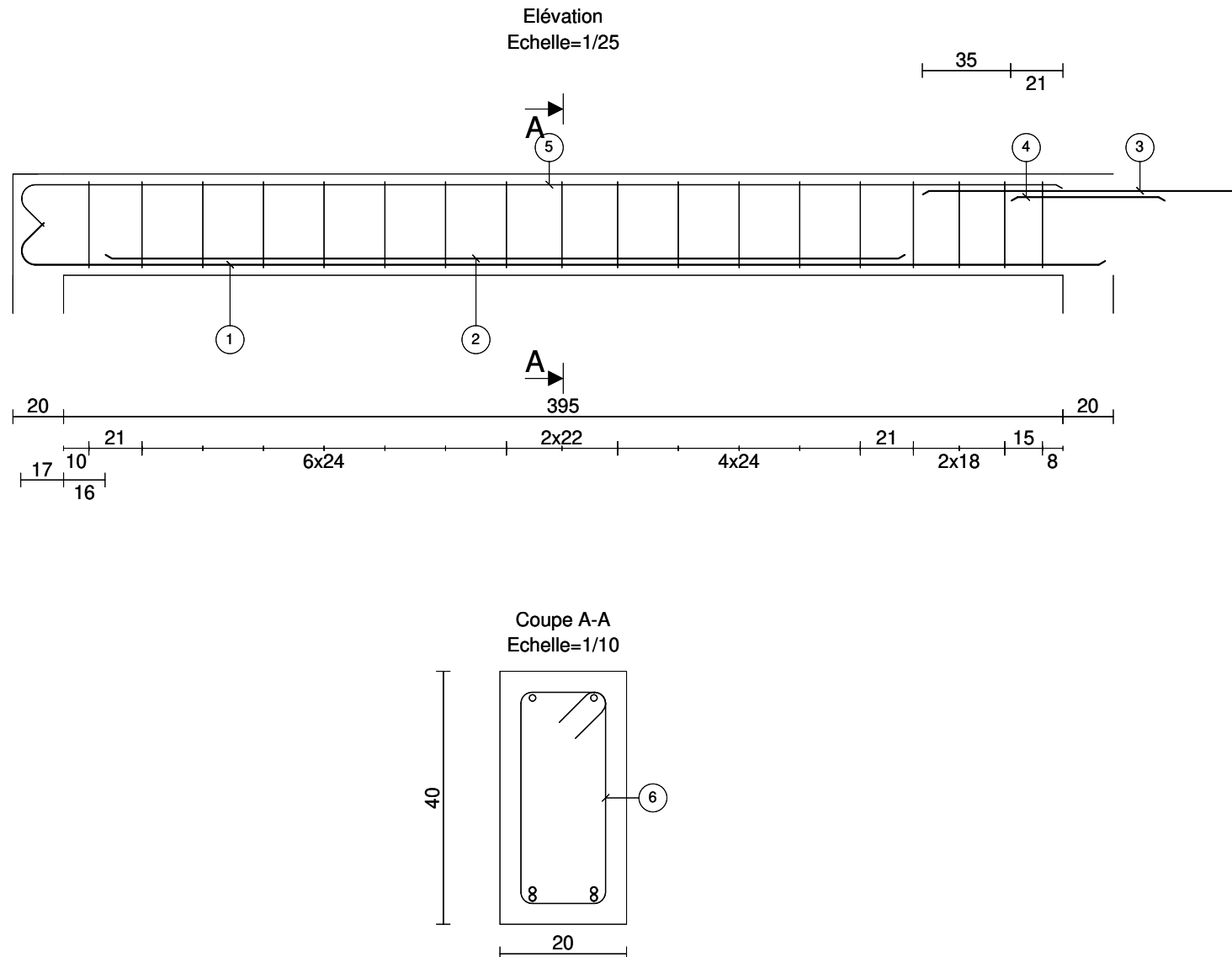


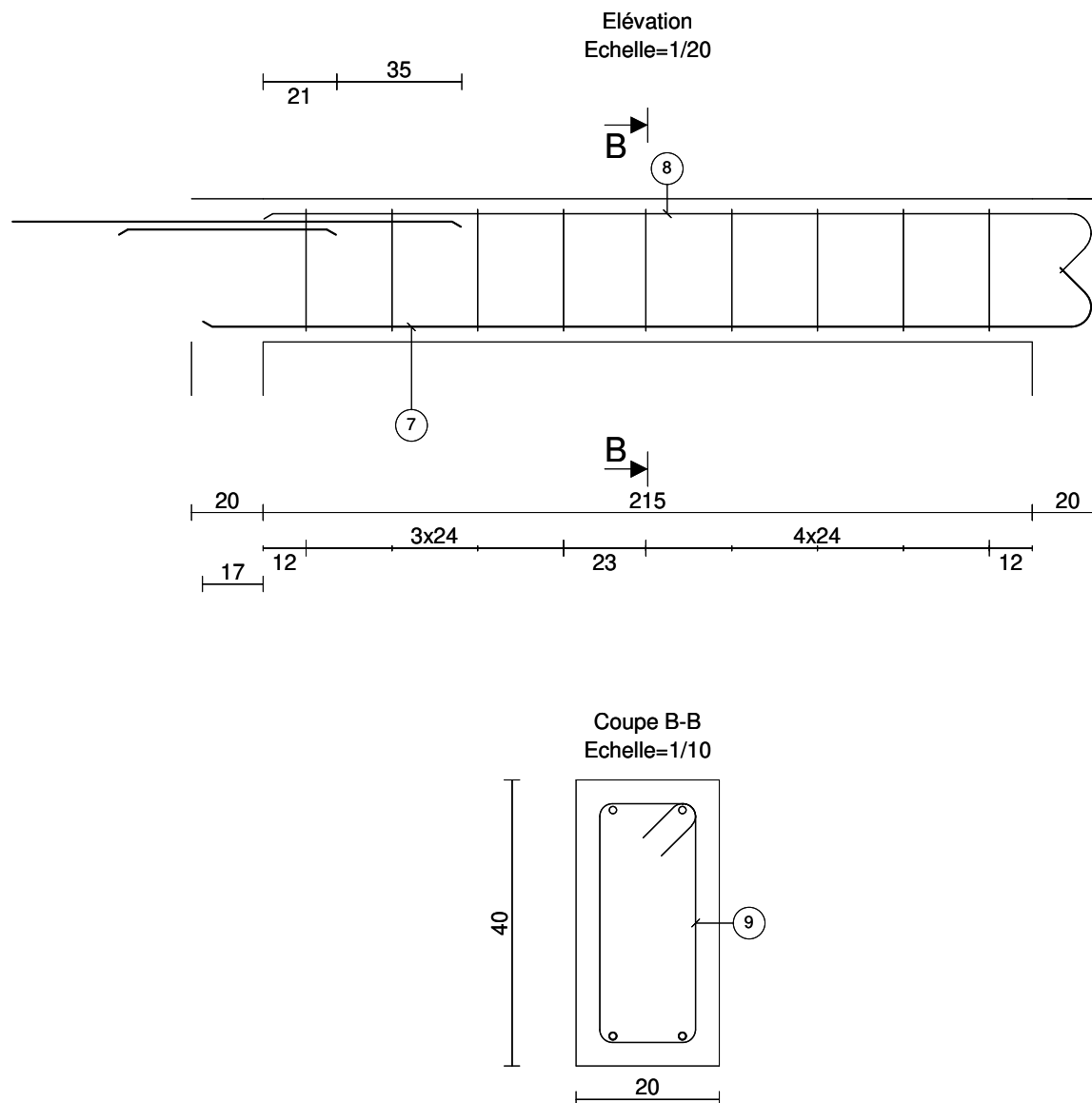
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 1 | 2HA10 | 341 | |
| 2 | 2HA10 | 210 | |
| 3 | 2HA10 | 91 | |
| 4 | 2HA10 | 324 | |
| 5 | 14HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 15.1/3.4 | |
| HA10 | | 19.3/11.9 | |



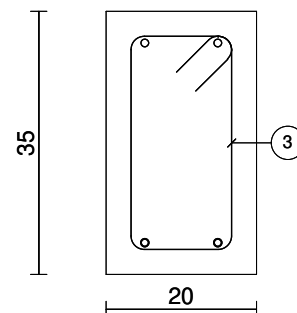
| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 6 | 2HA10 | 196 | |
| 7 | 2HA10 | 179 | |
| 8 | 7HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 7.6/1.7 | |
| HA10 | | 7.5/4.6 | |

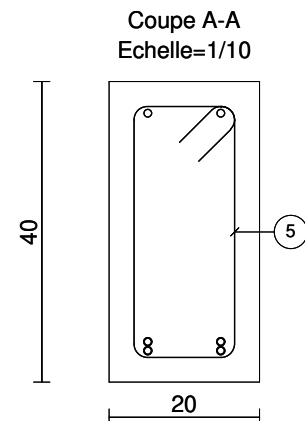
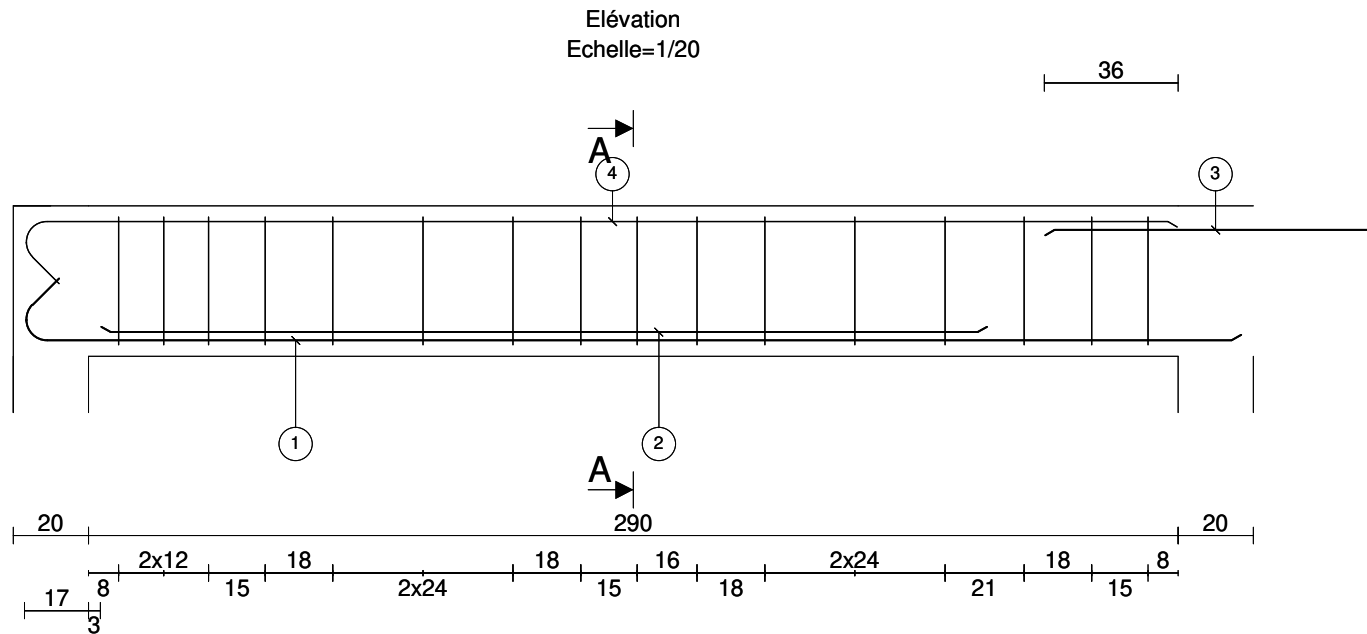
Fc28= 20 MPa Fe= 400 MPa Fissuration préjudiciable

[illegible]

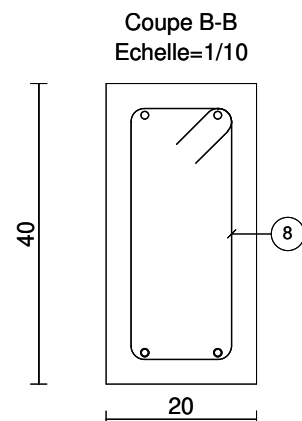
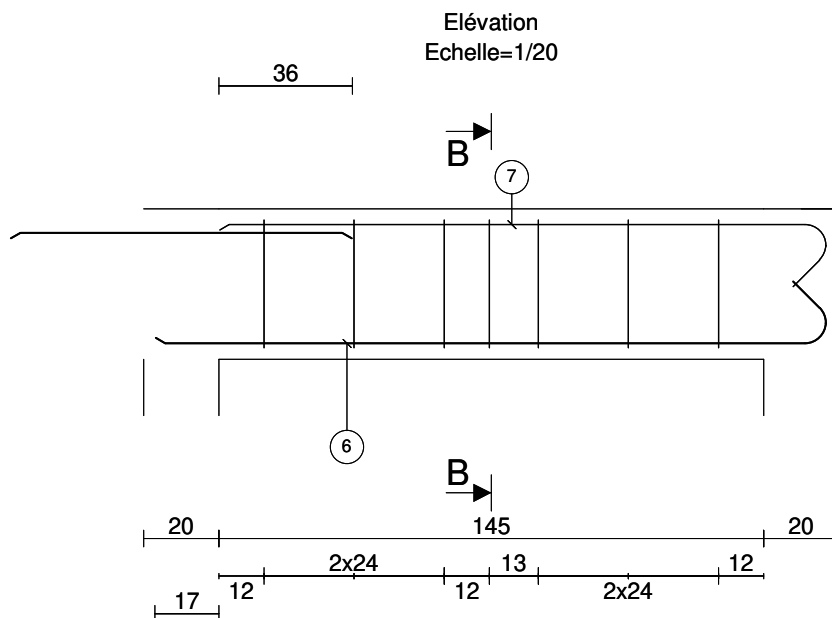


| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 7 | 2HA10 | 266 | |
| 8 | 2HA10 | 249 | |
| 9 | 9HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 9.7/2.2 | |
| HA10 | | 10.3/6.3 | |

[illegible]

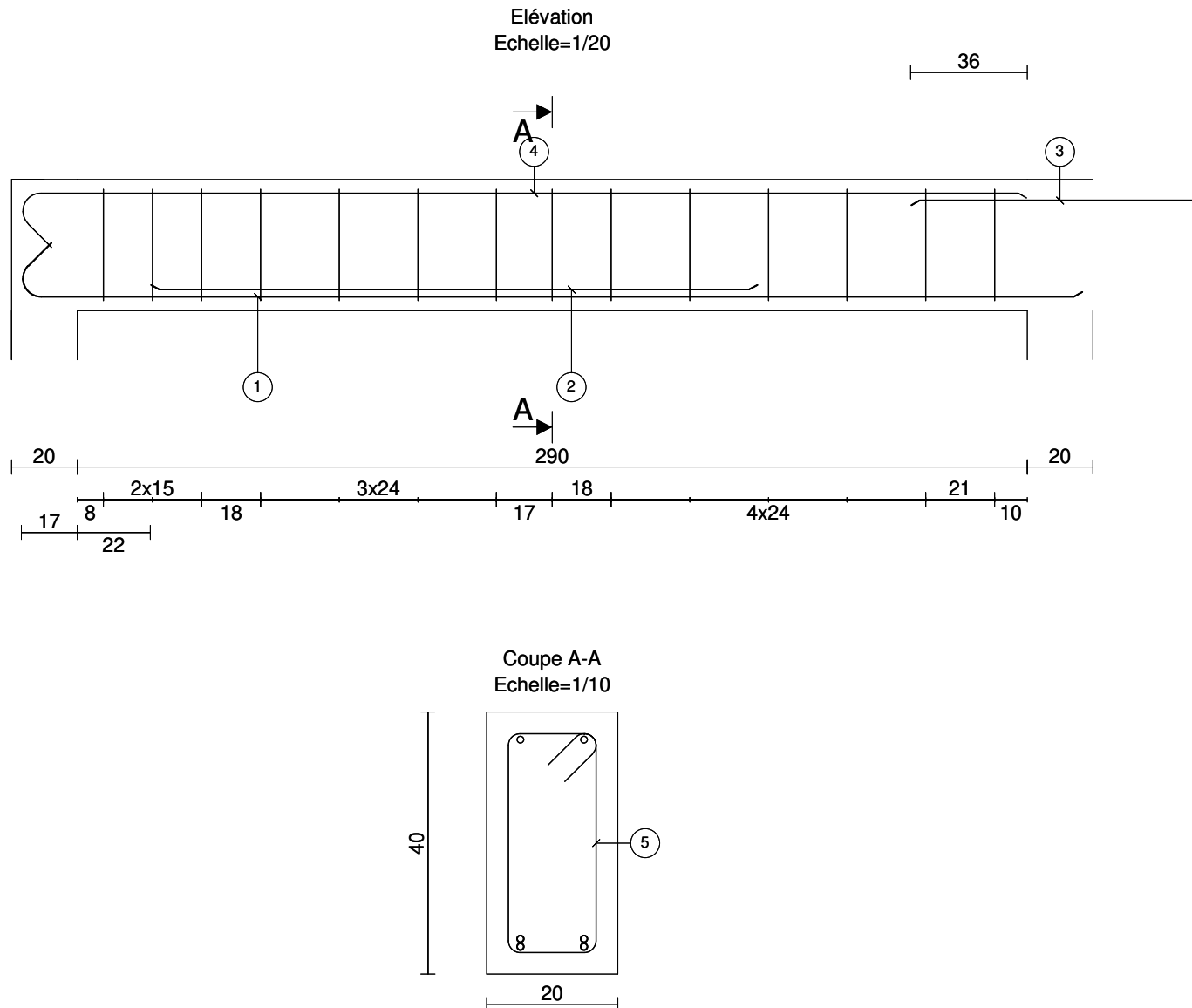


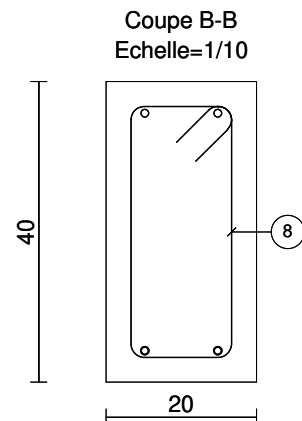
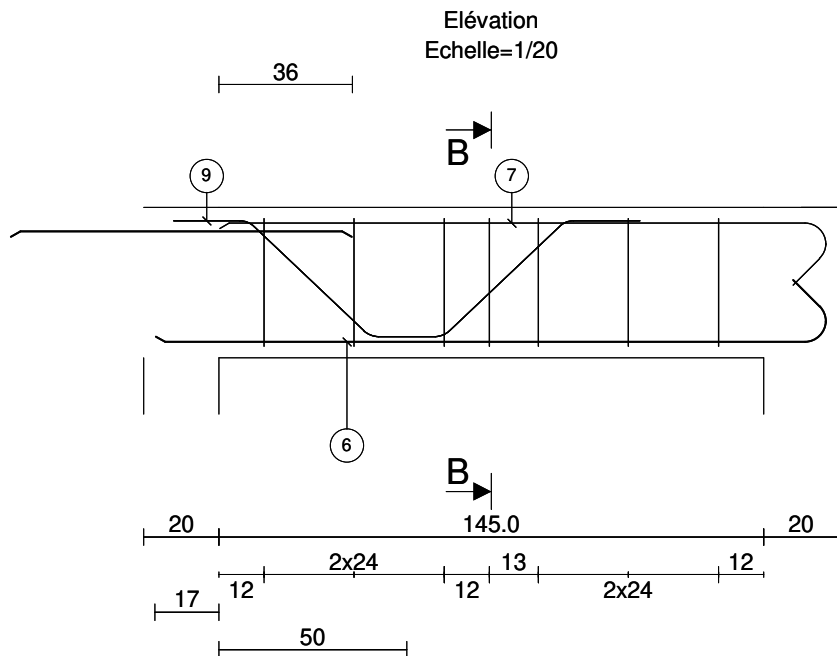
| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA10 | 341 |
| 2 | 2HA10 | 236 |
| 3 | 2HA10 | 91 |
| 4 | 2HA10 | 324 |
| 5 | 16HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 17.3/3.8 |
| HA10 | | 19.8/12.2 |



| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 6 | 2HA10 | 196 | |
| 7 | 2HA10 | 179 | |
| 8 | 7HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 7.6/1.7 | |
| HA10 | | 7.5/4.6 | |

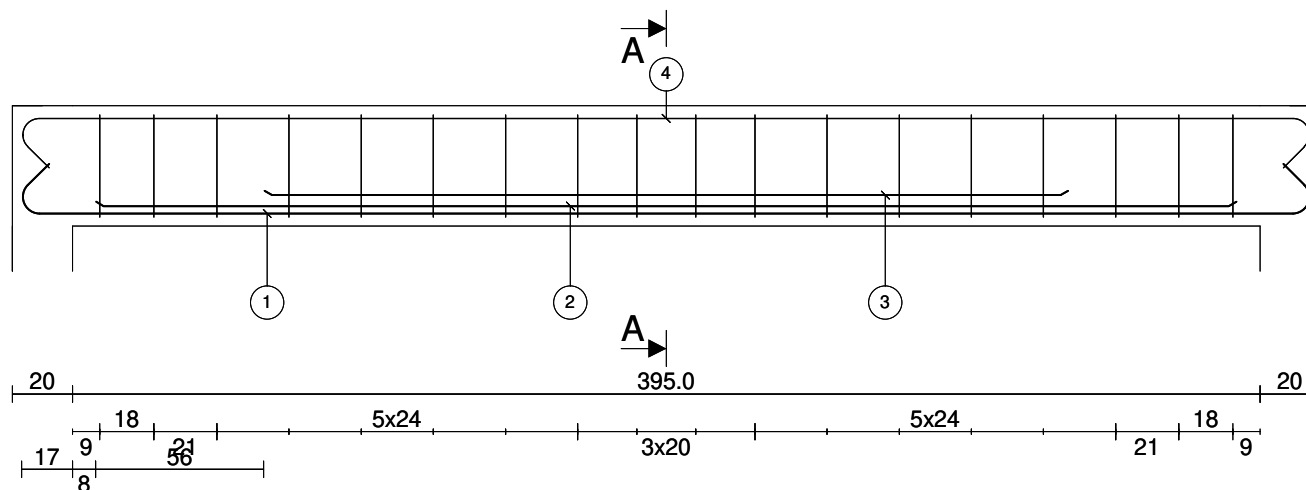
Fc28= 20 MPa Fe= 400 MPa Fissuration préjudiciable

[illegible]

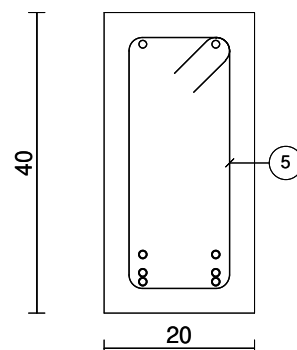


| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 6 | 2HA10 | 196 | |
| 7 | 2HA10 | 179 | |
| 8 | 7HA6 | 108 | |
| 9 | 2HA10 | 148 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 7.6/1.7 | |
| HA10 | | 10.5/6.4 | |

Elévation
Echelle=1/25

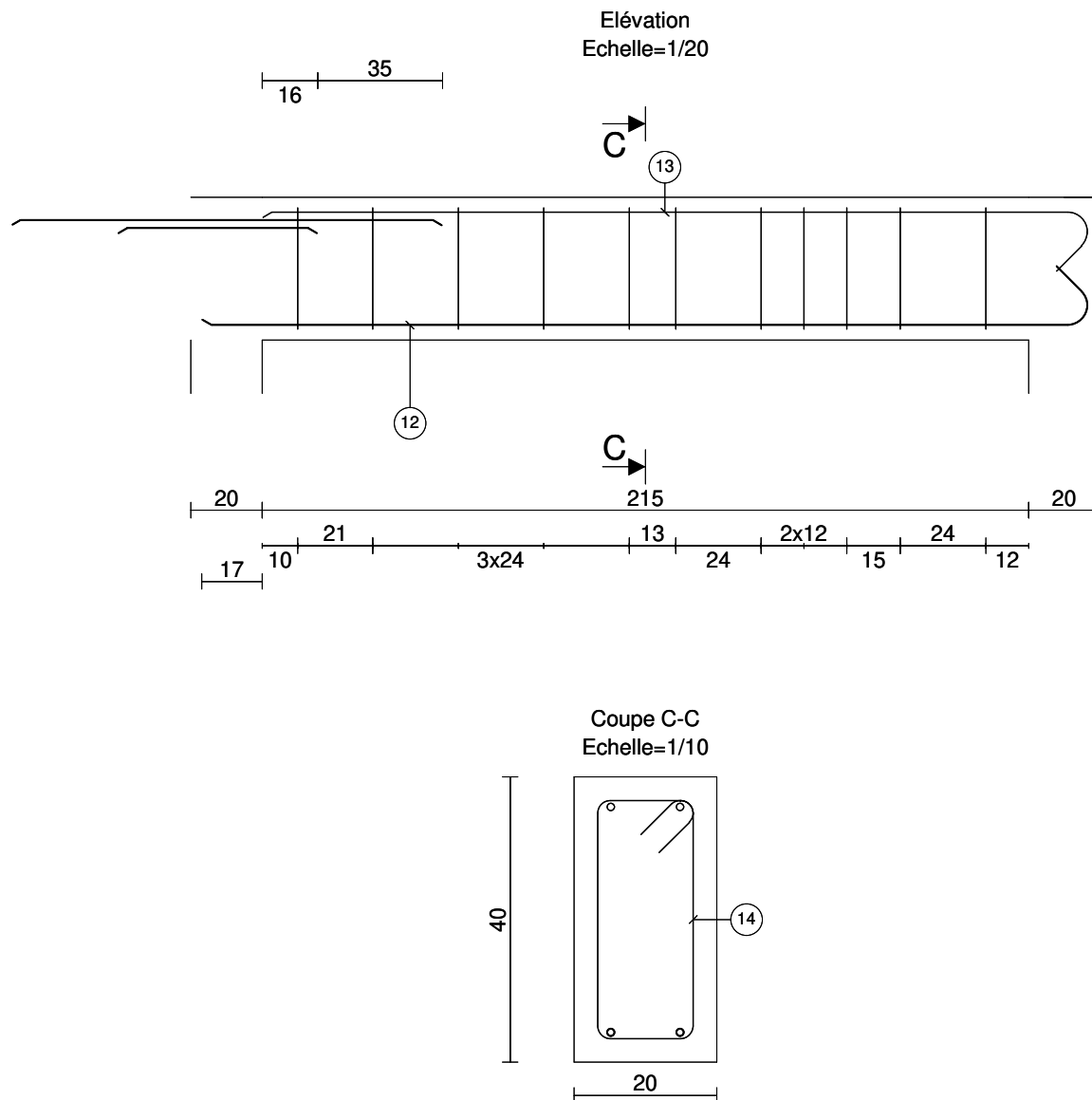


Coupe A-A
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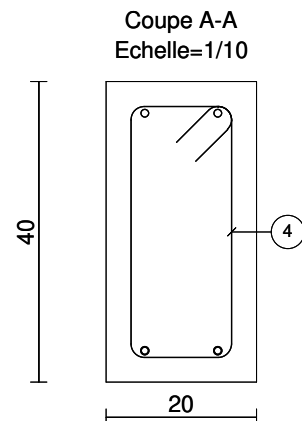
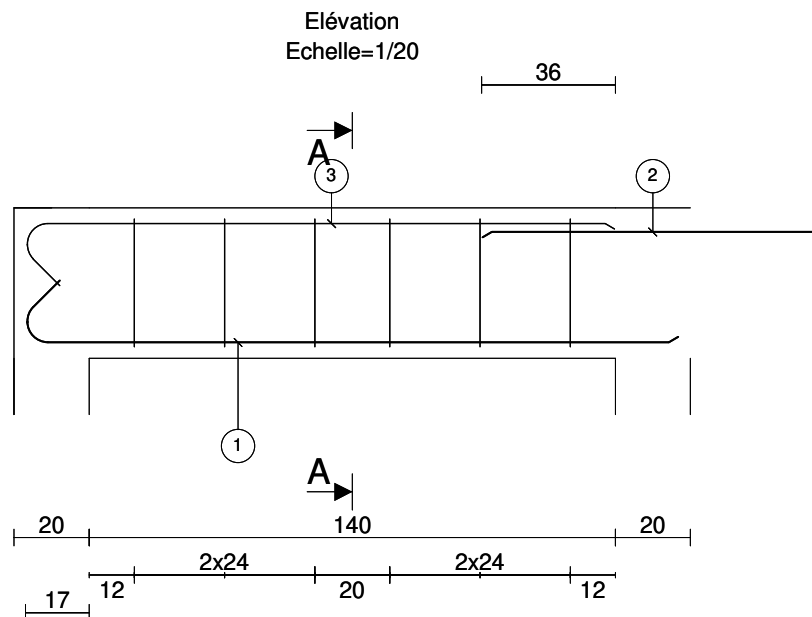


| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA10 | 463 |
| 2 | 2HA10 | 380 |
| 3 | 2HA10 | 268 |
| 4 | 2HA10 | 463 |
| 5 | 18HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 19.5/4.3 |
| HA10 | | 31.5/19.4 |

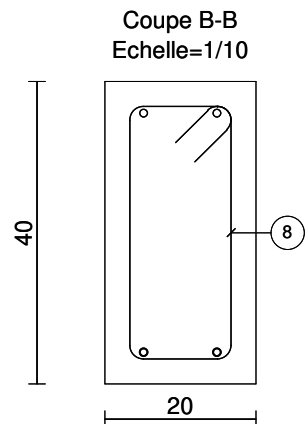
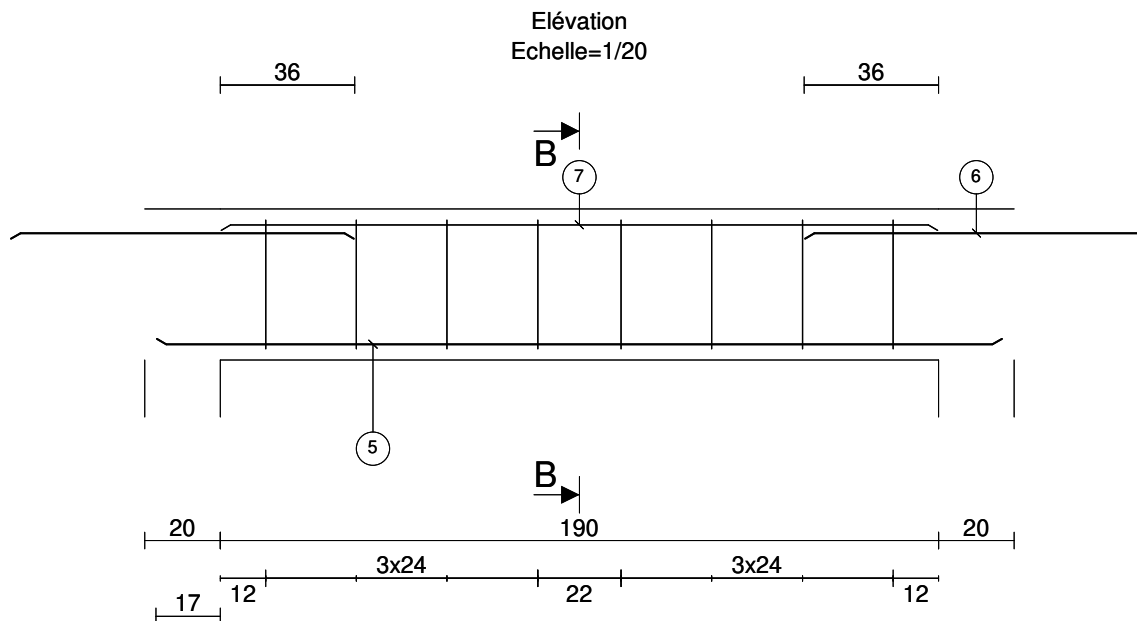
Arche Poutre BAEL Version 2021



| | Barre | Lg | Forme |
|-------------|-------|----------------------|-------------------|
| 12 | 2HA10 | 266 | 11/16 249 135° |
| 13 | 2HA10 | 249 | 16/11 135° 232 |
| 14 | 11HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 11.9/2.6 10.3/6.3 | |

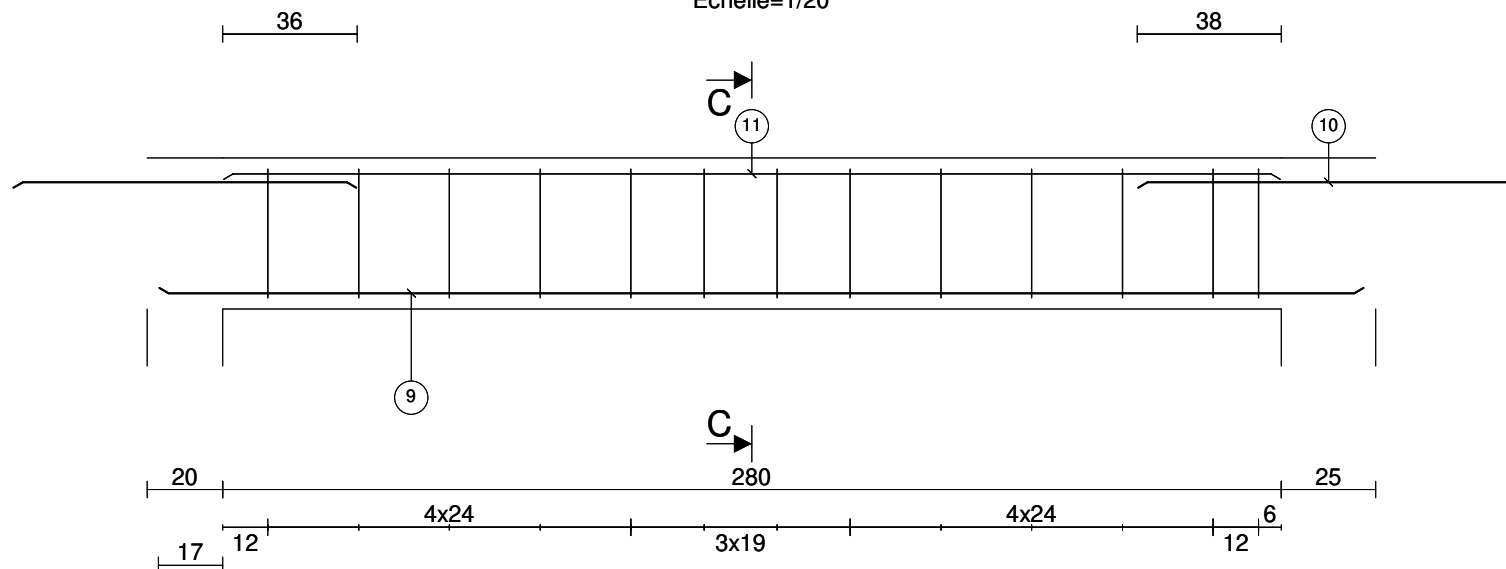


| | Barre | Lg | Forme |
|-------|-------|----------|-------------------------|
| 1 | 2HA10 | 191 | 16 11 135° 174 |
| 2 | 2HA10 | 91 | 91 |
| 3 | 2HA10 | 174 | 11 157 135° |
| 4 | 6HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 6.5/1.4 | |
| HA10 | | 9.1/5.6 | |

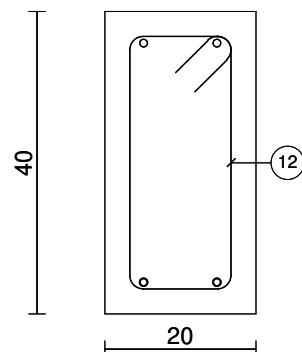



| Barre | | Lg | Forme |
|-------|-------|----------|-------|
| 5 | 2HA10 | 224 | 224 |
| 6 | 2HA10 | 91 | 91 |
| 7 | 2HA10 | 190 | 190 |
| 8 | 8HA6 | 108 | |
| Barre | | Lg/Poids | |
| HA6 | | 8.7/1.9 | |
| HA10 | | 10.1/6.2 | |

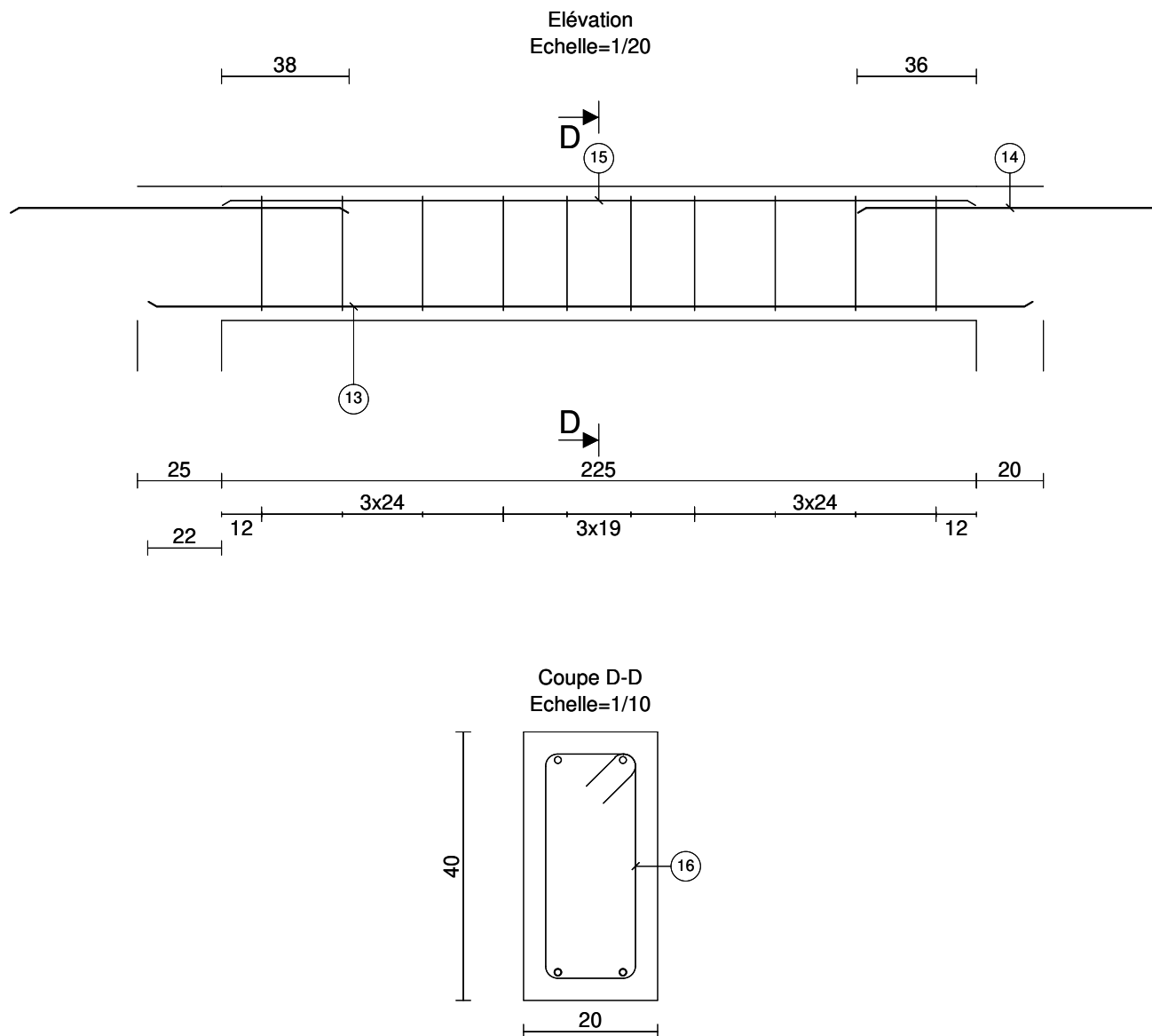
Elévation
Echelle=1/20



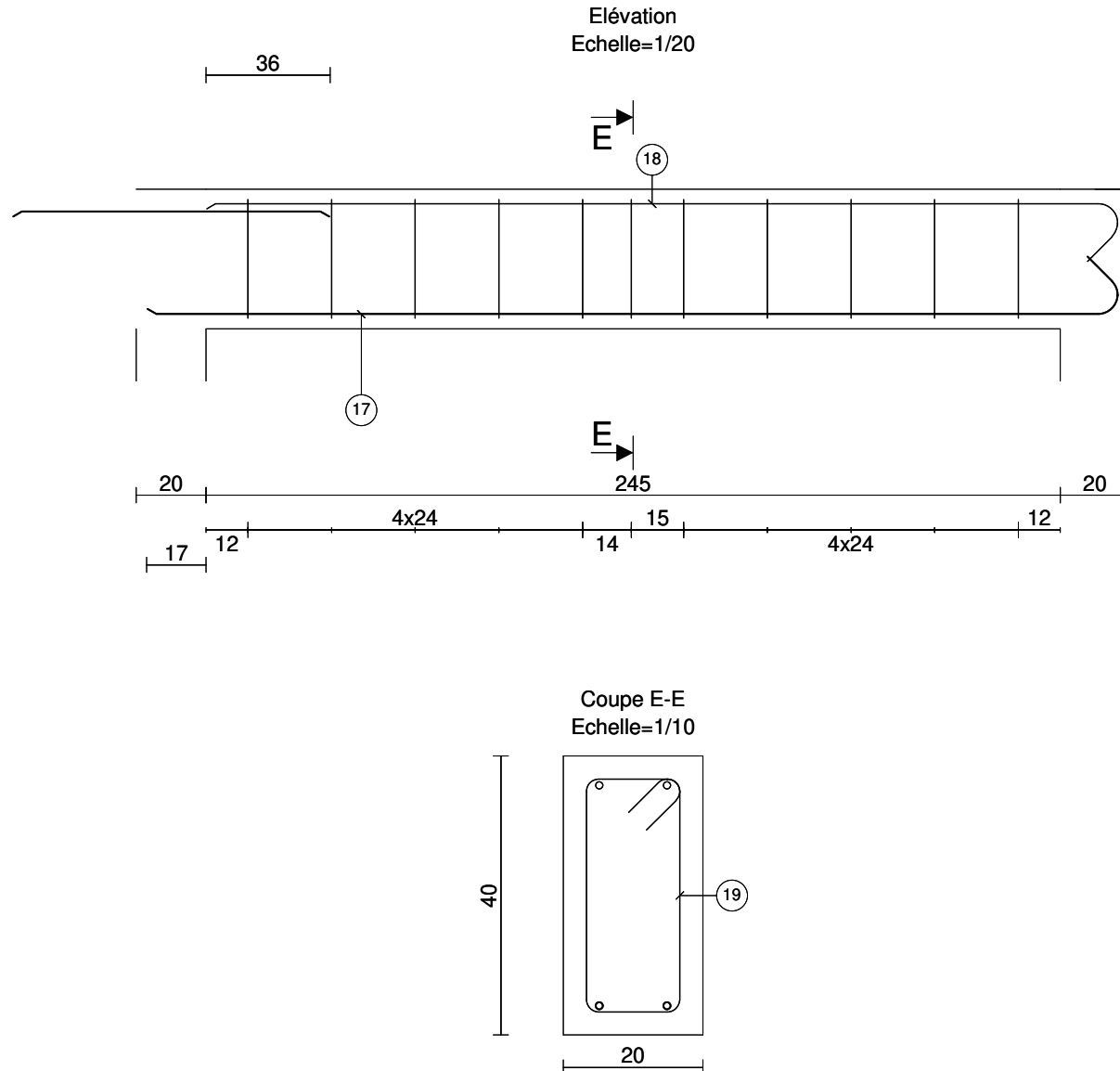
Coupe C-C
Echelle=1/10



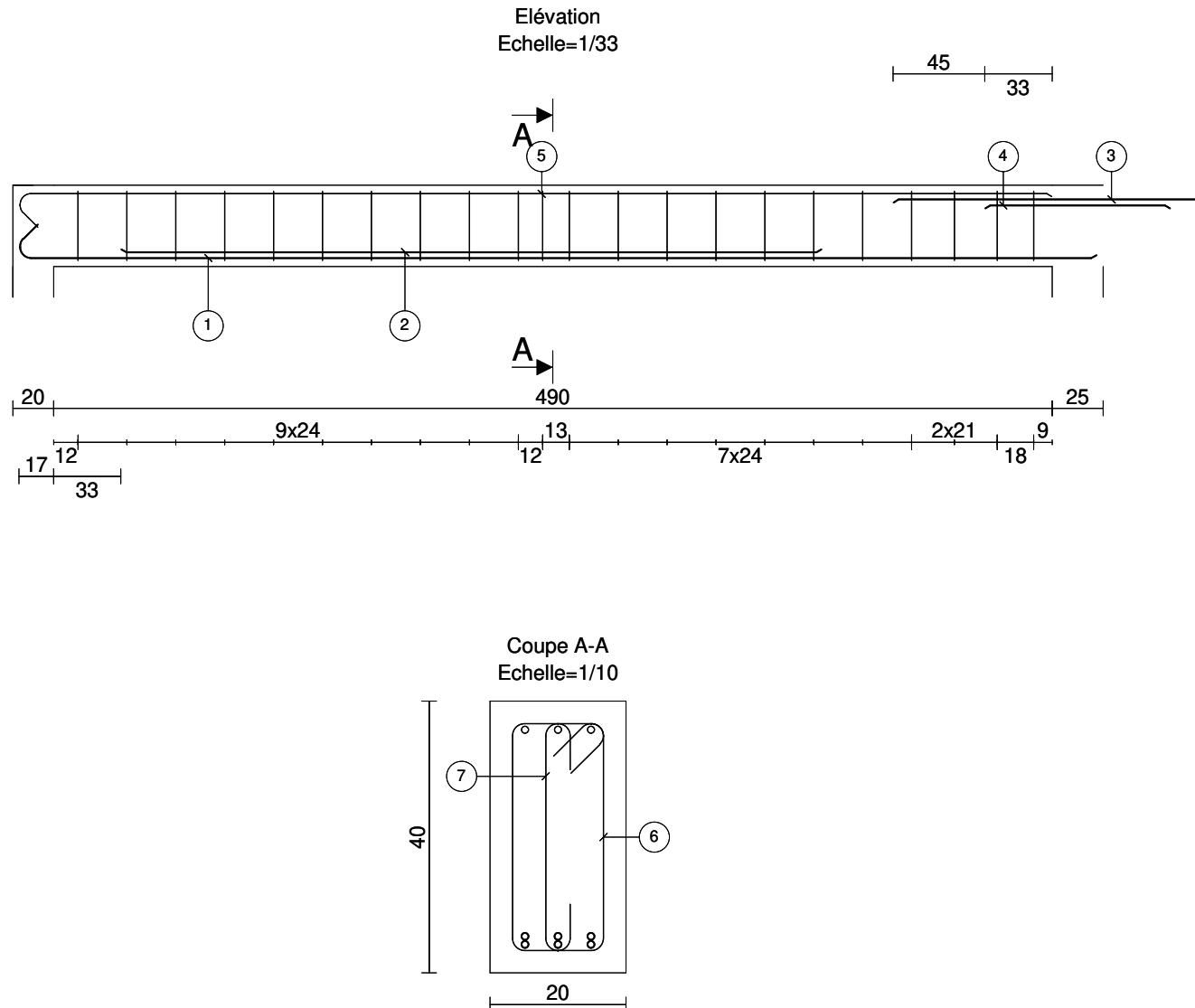
| Barre | | Lg | Forme |
|-------|-------|----------|---|
| 9 | 2HA10 | 319 | 319 |
| 10 | 2HA10 | 101 | 101 |
| 11 | 2HA10 | 280 | 280 |
| 12 | 13HA6 | 108 |  |
| Barre | | Lg/Poids | |
| HA6 | | 14.1/3.1 | |
| HA10 | | 14.0/8.6 | |



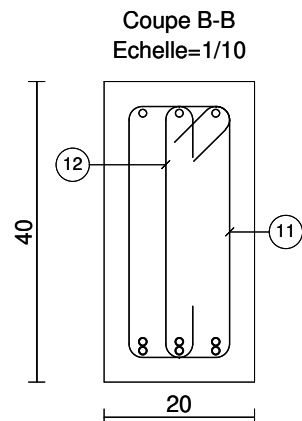
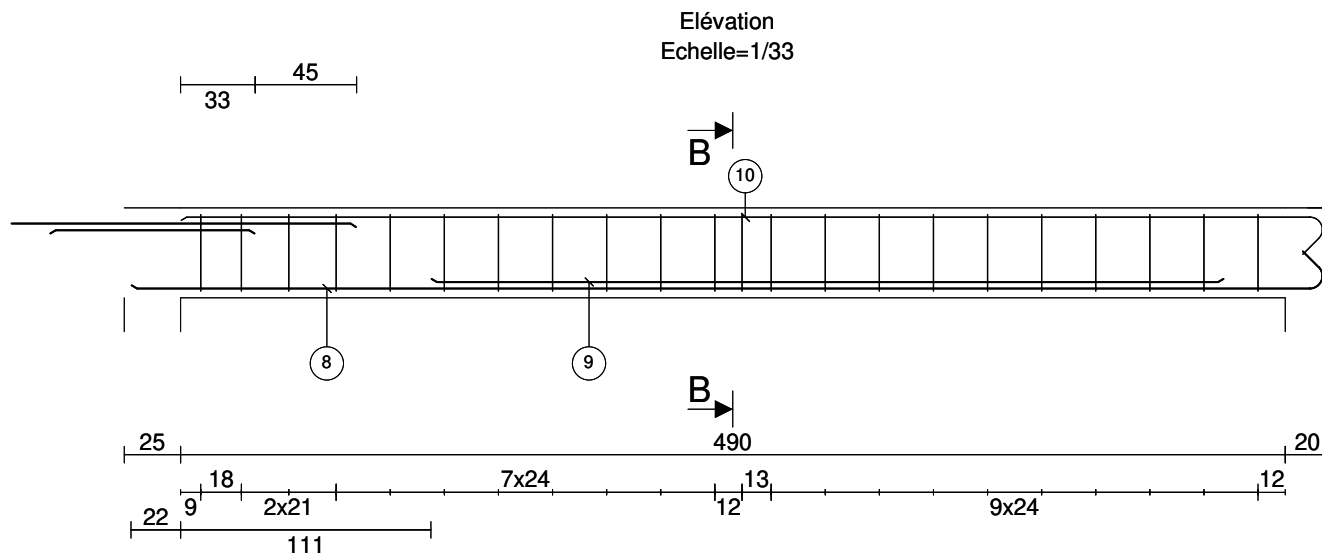
| Barre | | Lg | Forme |
|-------|-------|----------|-------|
| 13 | 2HA10 | 264 | 264 |
| 14 | 2HA10 | 91 | 91 |
| 15 | 2HA10 | 225 | 225 |
| 16 | 10HA6 | 108 | |
| Barre | | Lg/Poids | |
| HA6 | | 10.8/2.4 | |
| HA10 | | 11.6/7.2 | |



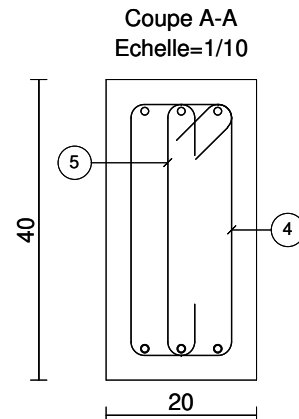
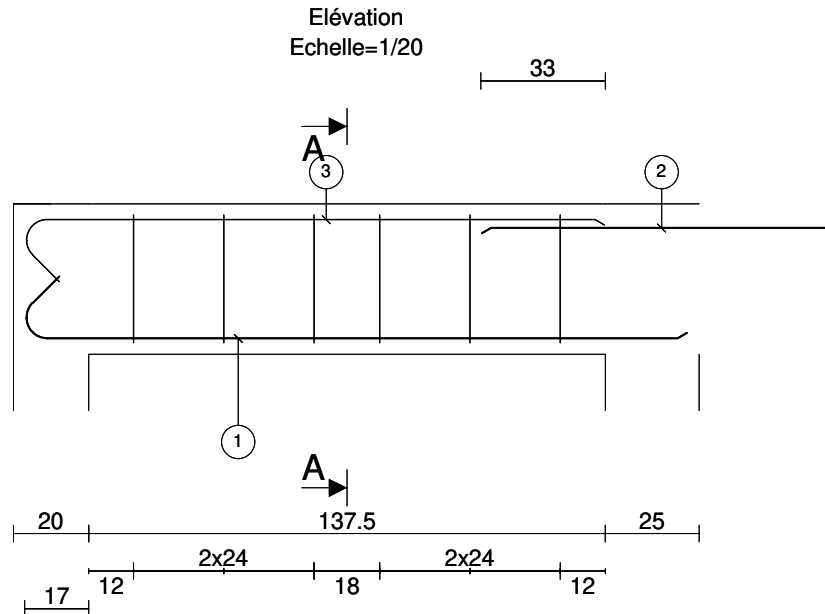
| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 17 | 2HA10 | 296 | |
| 18 | 2HA10 | 279 | |
| 19 | 11HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 11.9/2.6 | |
| HA10 | | 11.5/7.1 | |



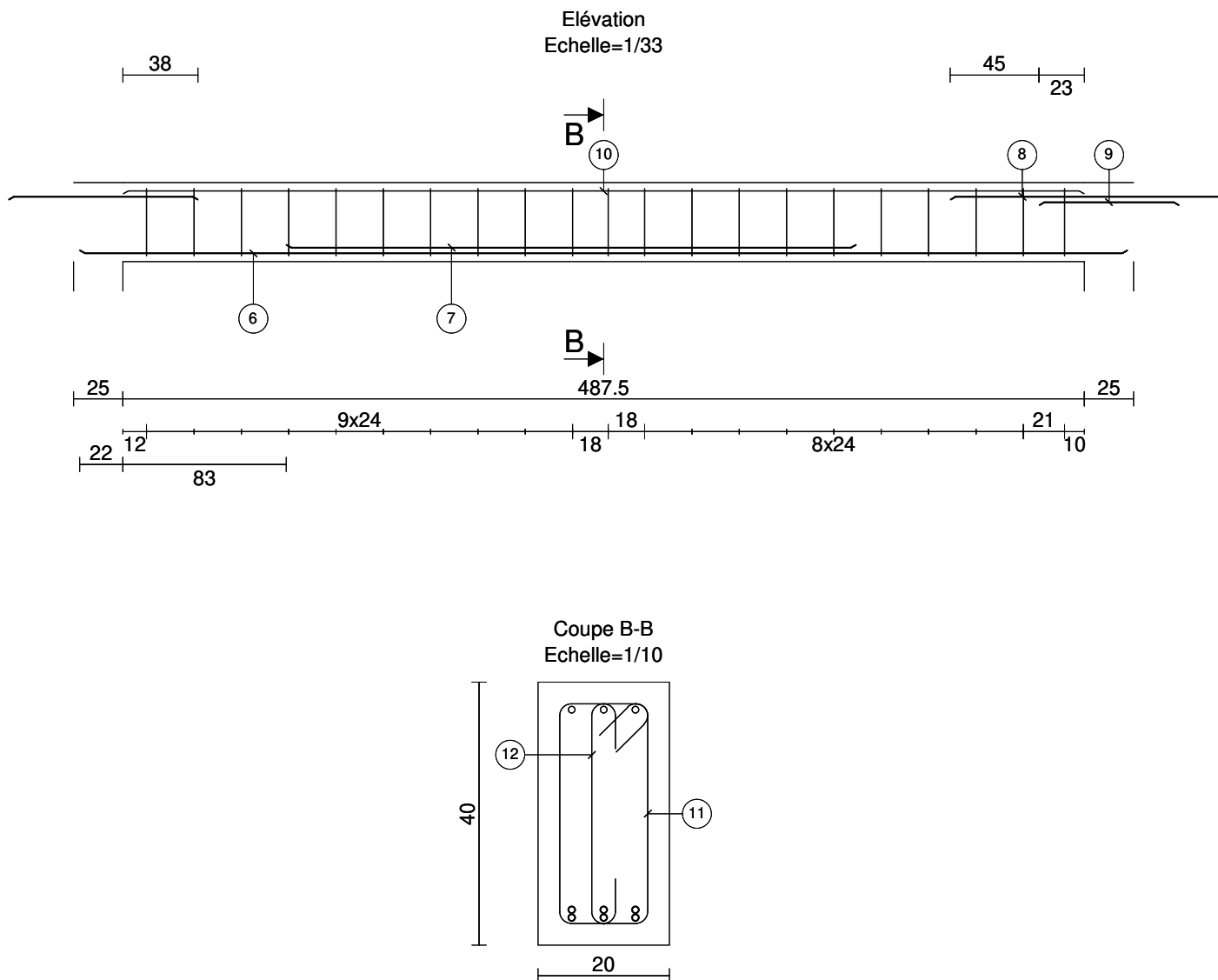
| Barre | Lg | Forme |
|-------------|-------|--------------------------------|
| 1 | 3HA10 | 546 135° 16 11 529 |
| 2 | 3HA10 | 344 344 |
| 3 | 3HA10 | 181 181 |
| 4 | 3HA10 | 91 91 |
| 5 | 3HA10 | 524 11 16 507 135° |
| 6 | 22HA6 | 108 34 14 |
| 7 | 22HA6 | 51 34 |
| | | |
| Barre | | Lg/Poids |
| HA6 HA10 | | 35.0/7.8 50.6/31.2 |



| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 8 | 3HA10 | 546 | |
| 9 | 3HA10 | 352 | |
| 10 | 3HA10 | 524 | |
| 11 | 22HA6 | 108 | |
| 12 | 22HA6 | 51 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 35.0/7.8 | |
| HA10 | | 42.7/26.3 | |

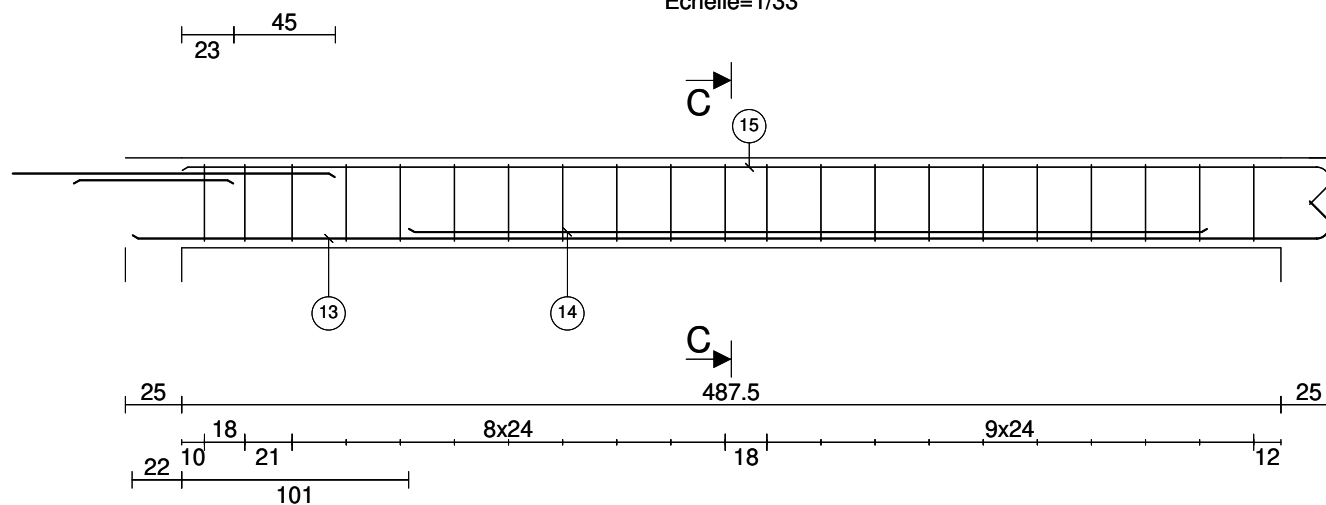


| | Barre | Lg | Forme |
|-------------|-------|---------------------|-------------------------|
| 1 | 3HA10 | 193 | 16 11 135° 176 |
| 2 | 3HA10 | 96 | 96 |
| 3 | 3HA10 | 171 | 11 155 135° |
| 4 | 6HA6 | 108 | 34 14 |
| 5 | 6HA6 | 51 | 34 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 9.6/2.1 13.8/8.5 | |

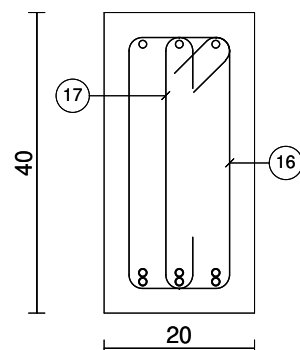


| Barre | | Lg | Forme |
|-------|-------|-----------|----------|
| 6 | 3HA10 | 531 | 531 |
| 7 | 3HA10 | 289 | 289 |
| 8 | 3HA10 | 161 | 161 |
| 9 | 2HA10 | 71 | 71 |
| 10 | 3HA10 | 488 | 488 |
| 11 | 21HA6 | 108 | 34 14 |
| 12 | 21HA6 | 51 | 34 |
| Barre | | Lg/Poids | |
| HA6 | | 33.4/7.4 | |
| HA10 | | 45.5/28.1 | |

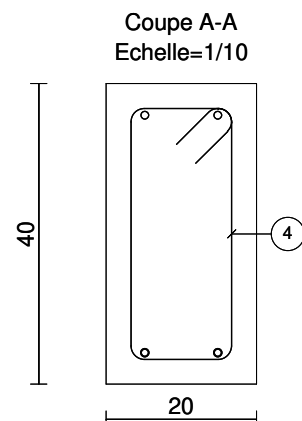
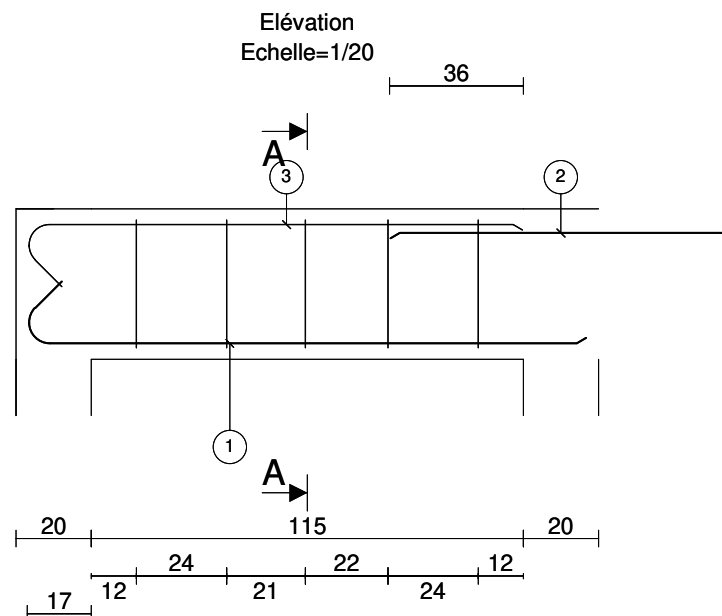
Elévation
Echelle=1/33



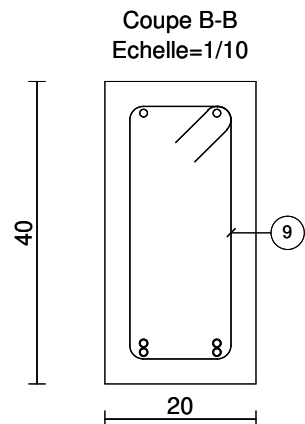
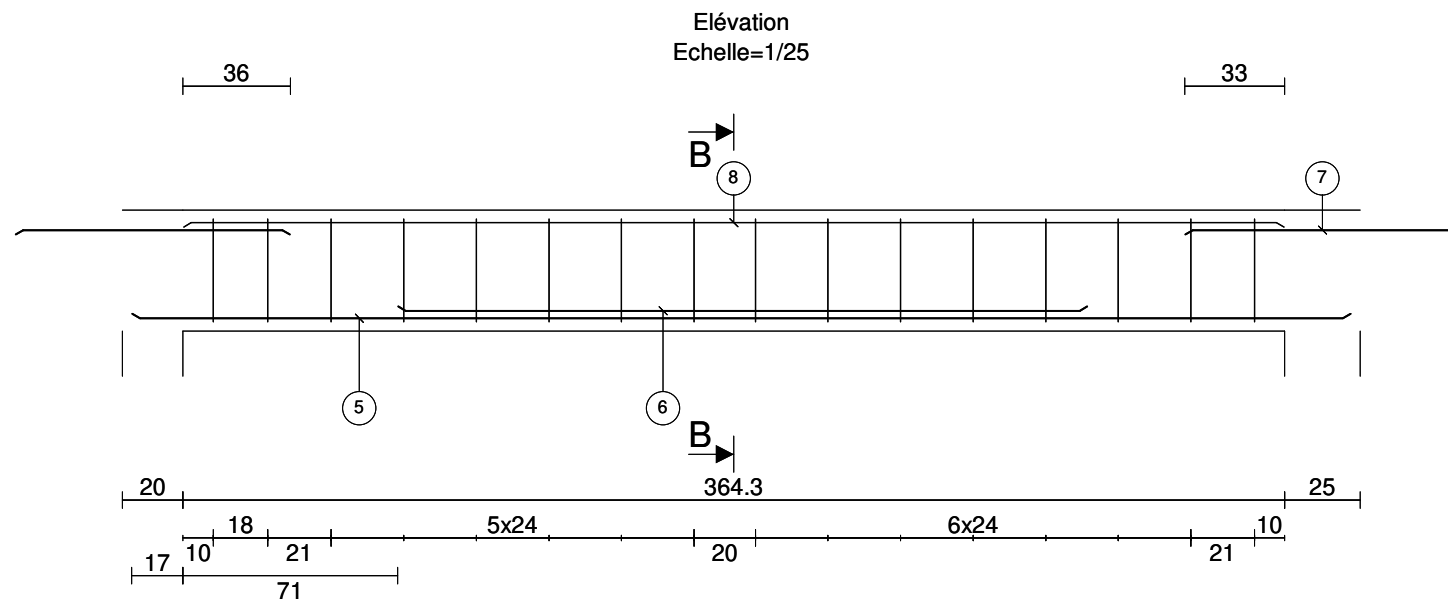
Coupe C-C
Echelle=1/10



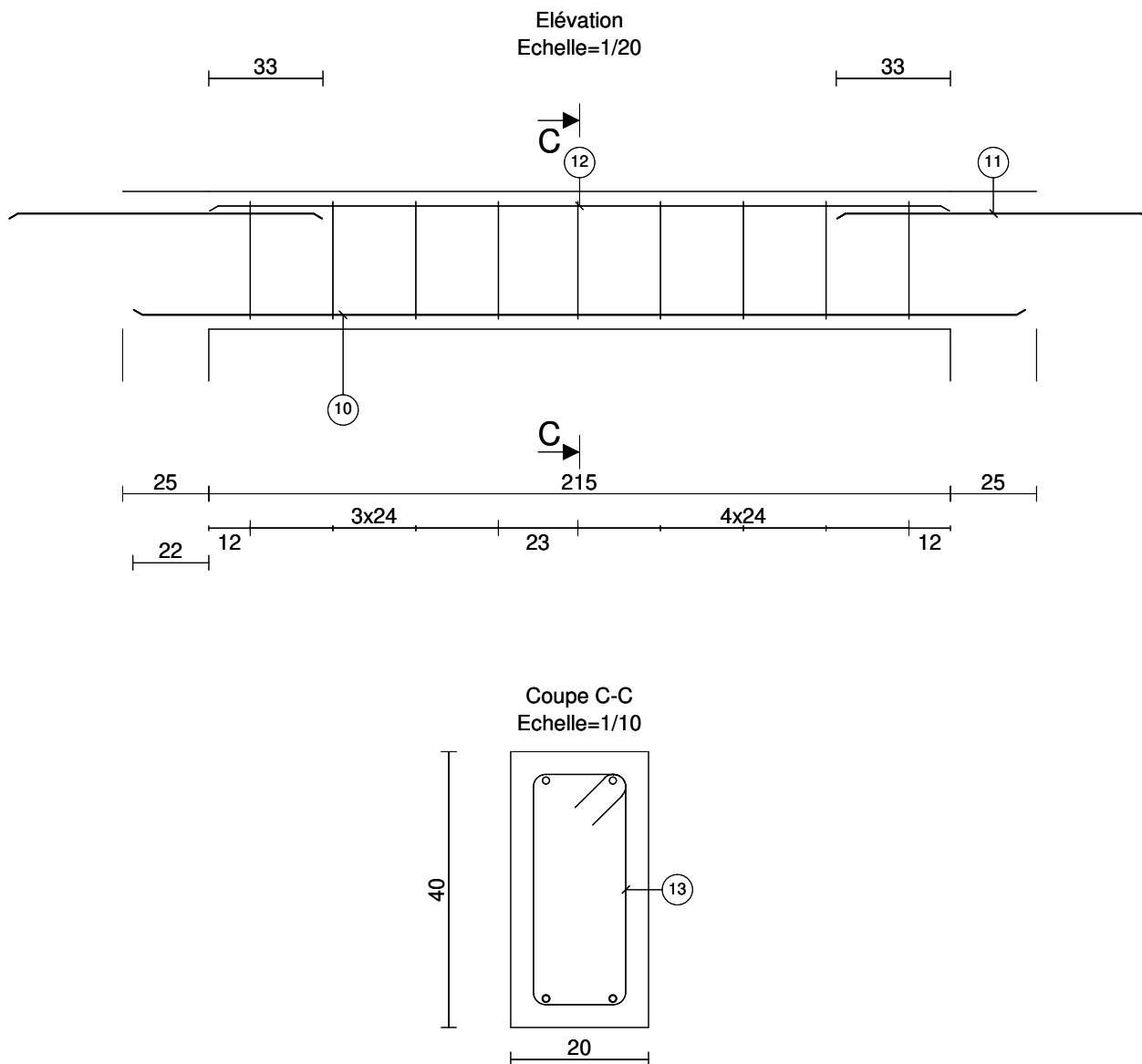
| | Barre | Lg | Forme |
|-------|-------|-----------|-------------------|
| 13 | 3HA10 | 548 | 11/16 531 135° |
| 14 | 3HA10 | 354 | 354 |
| 15 | 3HA10 | 526 | 16/11 135° 510 |
| 16 | 21HA6 | 108 | 14 34 |
| 17 | 21HA6 | 51 | 34 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 33.4/7.4 | |
| HA10 | | 42.9/26.4 | |



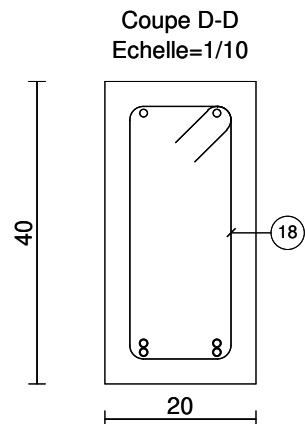
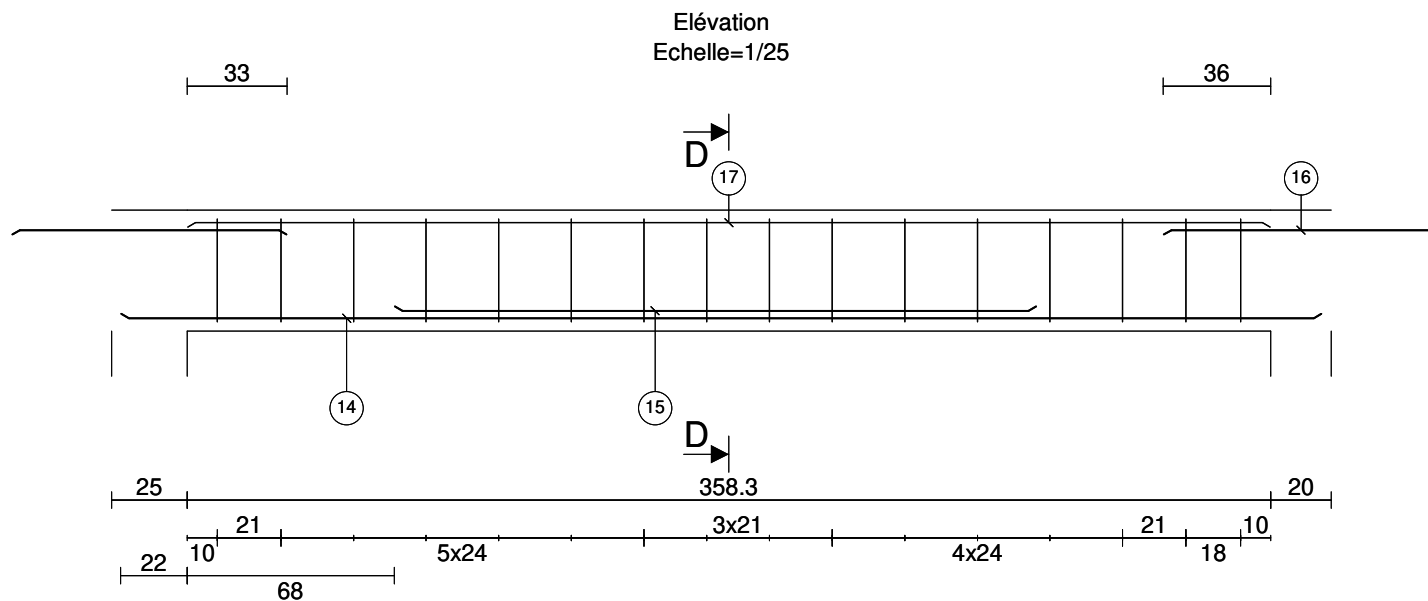
| | Barre | Lg | Forme |
|-------|-------|----------|-------------------------|
| 1 | 2HA10 | 166 | 16 11 135° 149 |
| 2 | 2HA10 | 91 | 91 |
| 3 | 2HA10 | 149 | 11 132 135° |
| 4 | 5HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 5.4/1.2 | |
| HA10 | | 8.1/5.0 | |



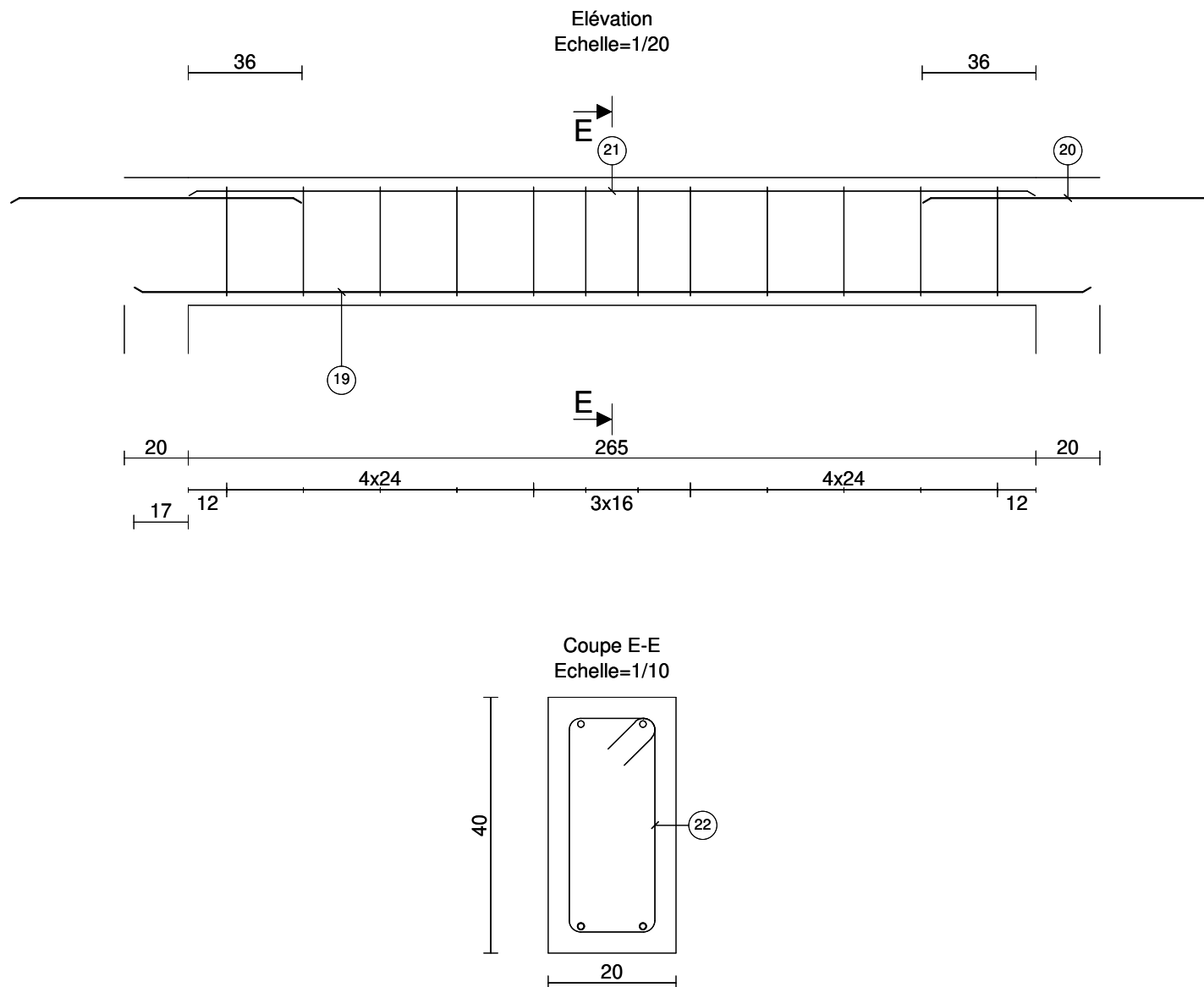
| | Barre | Lg | Forme |
|-------|-------|-----------|----------|
| 5 | 2HA10 | 403 | 403 |
| 6 | 2HA10 | 228 | 228 |
| 7 | 2HA10 | 91 | 91 |
| 8 | 2HA10 | 364 | 364 |
| 9 | 16HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 21.7/13.4 | |



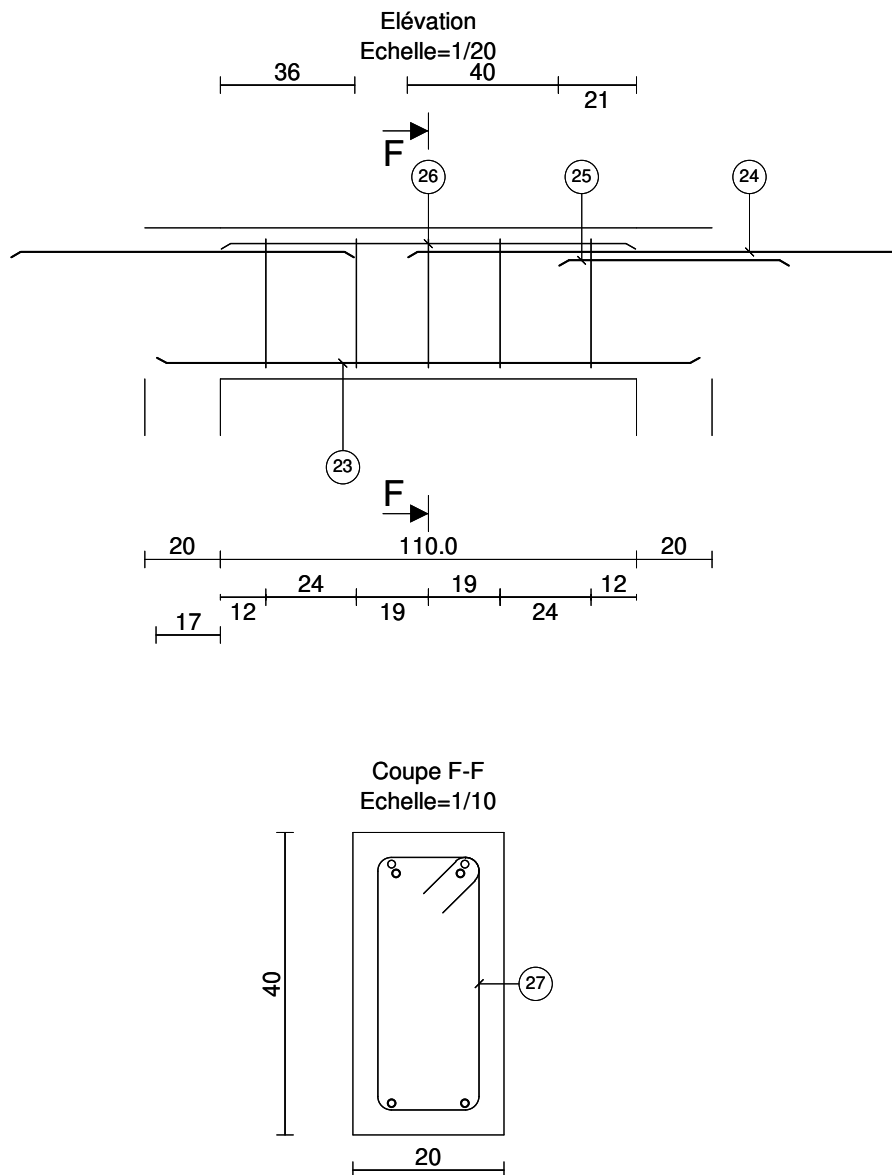
| | Barre | Lg | Forme |
|-------|-------|----------|---|
| 10 | 2HA10 | 259 | 259 |
| 11 | 2HA10 | 91 | 91 |
| 12 | 2HA10 | 215 | 215 |
| 13 | 9HA6 | 108 | <div style="border: 1px solid black; width: 20px; height: 10px; position: relative;"> 34 </div> 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 9.7/2.2 | |
| HA10 | | 11.3/7.0 | |



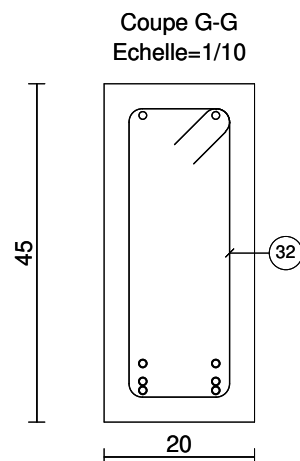
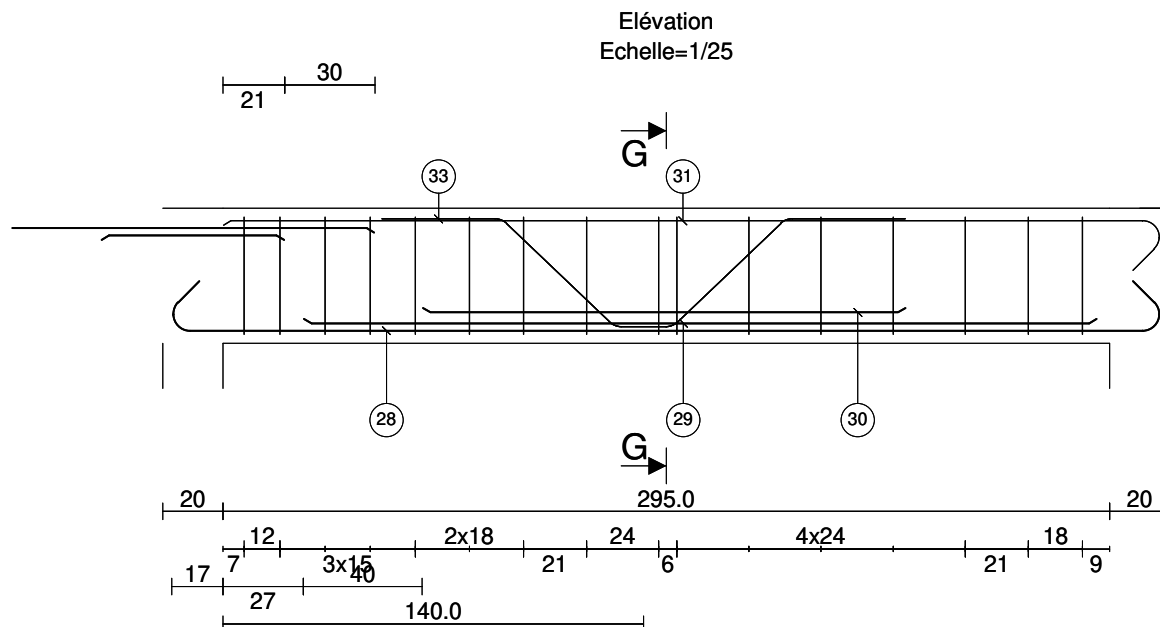
| | Barre | Lg | Forme |
|-------|-------|-----------|----------|
| 14 | 2HA10 | 397 | 397 |
| 15 | 2HA10 | 212 | 212 |
| 16 | 2HA10 | 91 | 91 |
| 17 | 2HA10 | 358 | 358 |
| 18 | 16HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 21.2/13.1 | |



| Barre | | Lg | Forme |
|-------|-------|----------|-------|
| 19 | 2HA10 | 299 | 299 |
| 20 | 2HA10 | 91 | 91 |
| 21 | 2HA10 | 265 | 265 |
| 22 | 12HA6 | 108 | 14 |
| Barre | | Lg/Poids | |
| HA6 | | 13.0/2.9 | |
| HA10 | | 13.1/8.1 | |

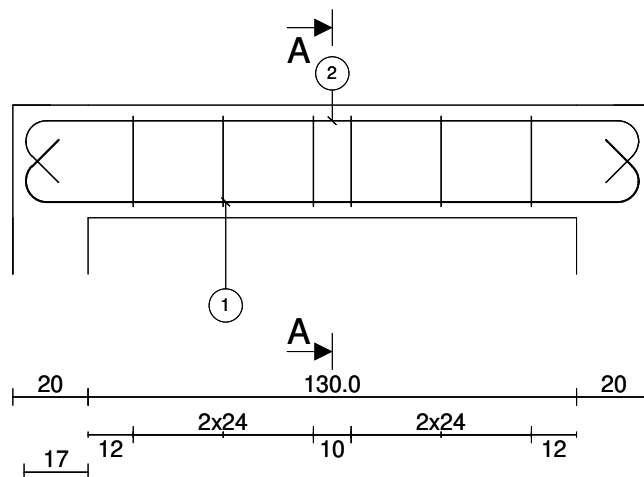


| | Barre | Lg | Forme |
|-------|-------|----------|----------|
| 23 | 2HA10 | 144 | 144 |
| 24 | 2HA10 | 131 | 131 |
| 25 | 2HA10 | 61 | 61 |
| 26 | 2HA10 | 110 | 110 |
| 27 | 5HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 5.4/1.2 | |
| HA10 | | 8.9/5.5 | |

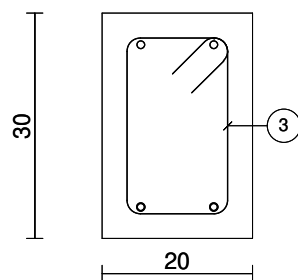


| | Barre | Lg | Forme |
|-------|-------|-----------|-------------------------------|
| 28 | 2HA10 | 363 | 16 111116 135° 329 135° |
| 29 | 2HA10 | 264 | 264 |
| 30 | 2HA10 | 161 | 161 |
| 31 | 2HA10 | 329 | 16 11 135° 312 |
| 32 | 16HA6 | 118 | 39 14 |
| 33 | 2HA10 | 202 | 40 40 45° 20 45° 37 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 18.9/4.2 | |
| HA10 | | 26.4/16.3 | |

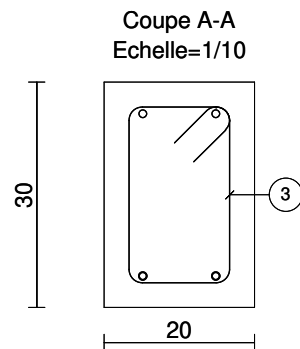
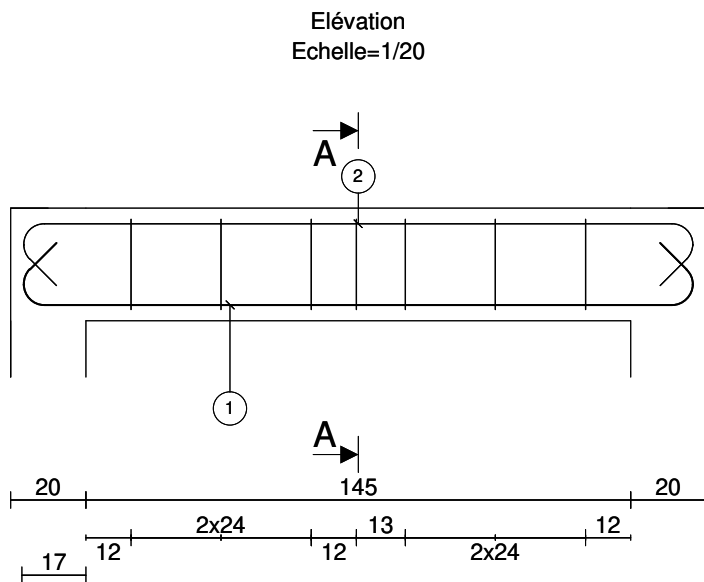
Elévation
Echelle=1/20



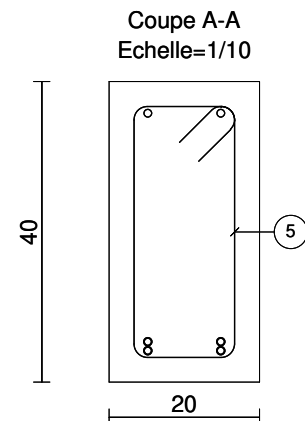
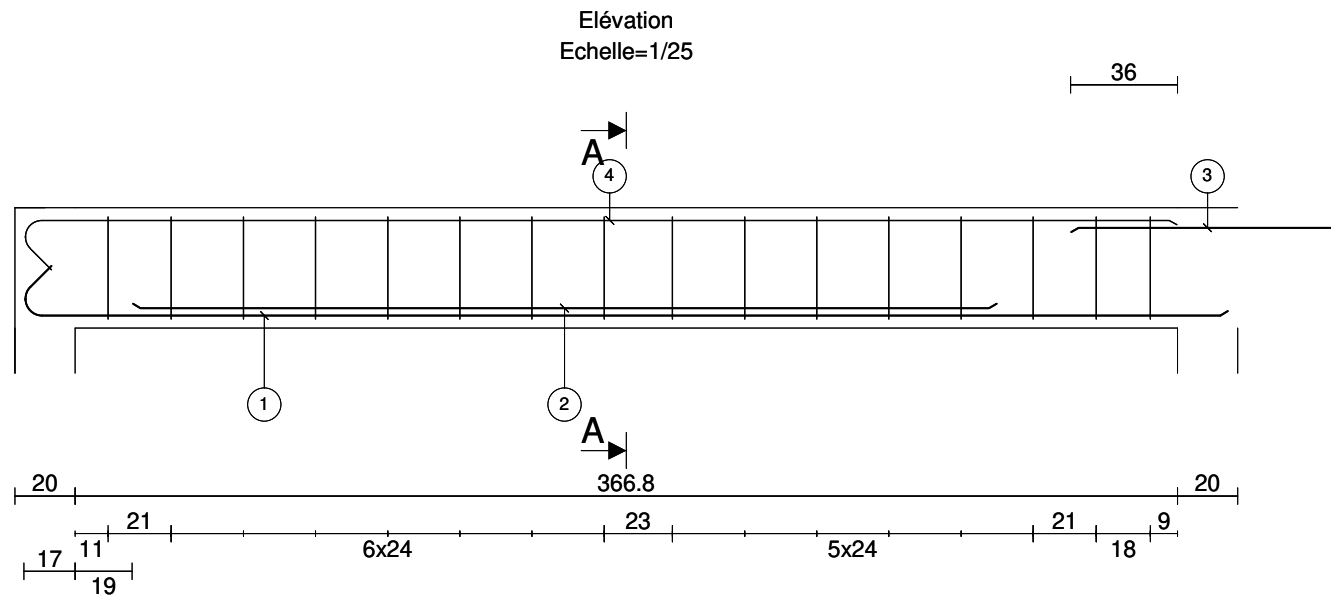
Coupe A-A
Echelle=1/10



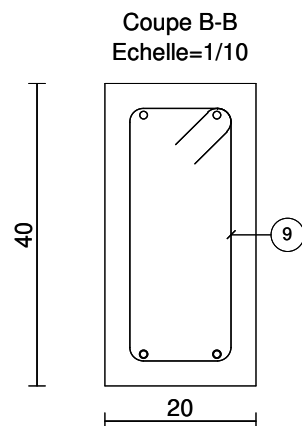
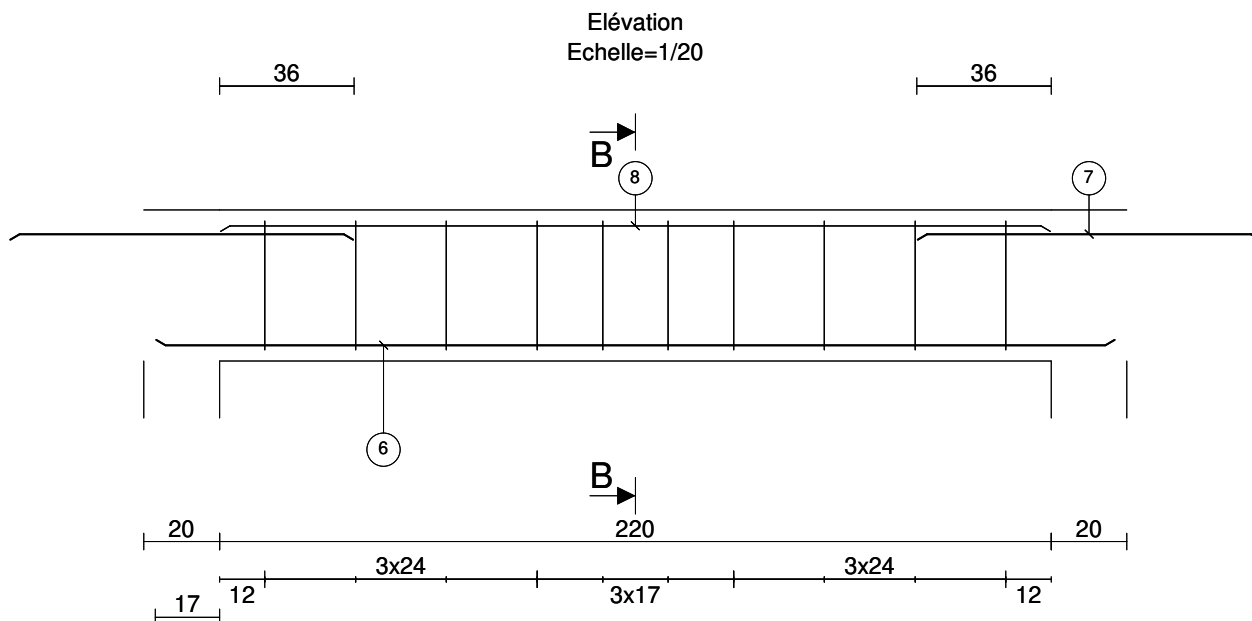
| | Barre | Lg | Forme |
|-------|-------|----------|-----------------------------|
| 1 | 2HA10 | 198 | 16 135° 1111 135° 164 |
| 2 | 2HA10 | 198 | 16 135° 1111 135° 164 |
| 3 | 6HA6 | 88 | 24 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 5.3/1.2 | |
| HA10 | | 7.9/4.9 | |



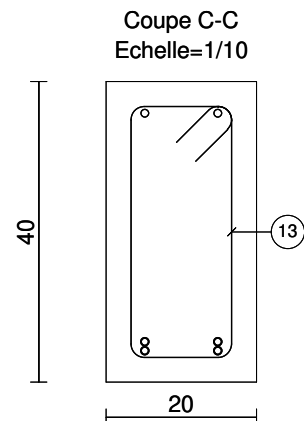
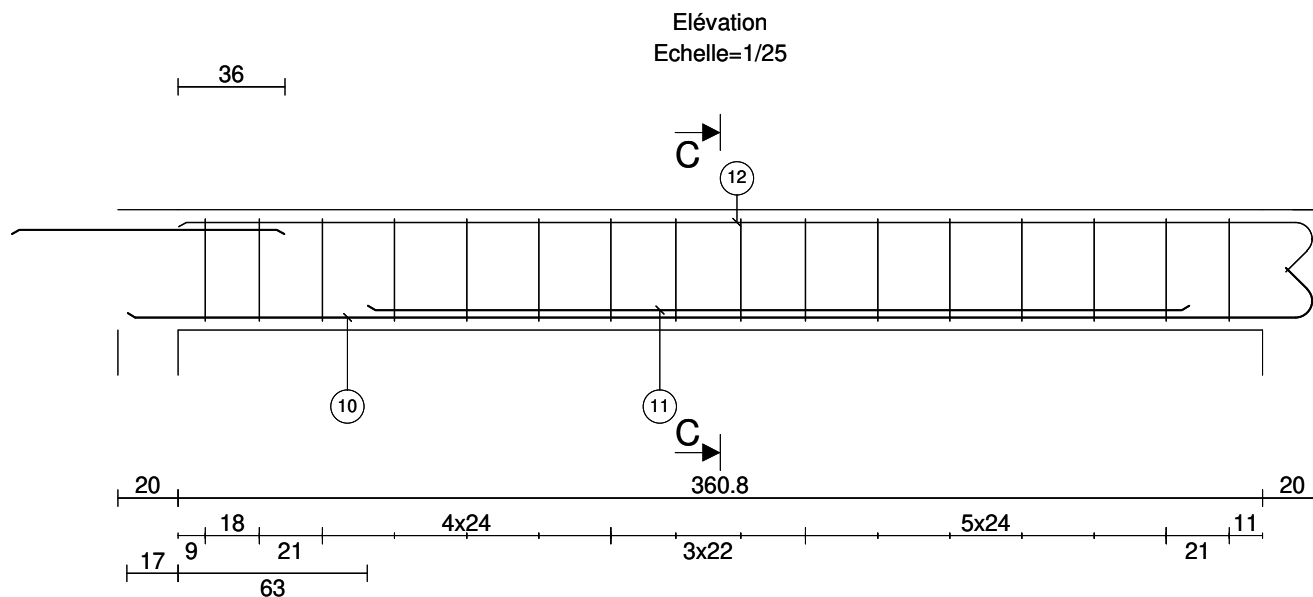
| | Barre | Lg | Forme |
|-------|-------|----------|---------------|
| 1 | 2HA10 | 213 | 135° 179 135° |
| 2 | 2HA10 | 213 | 135° 179 135° |
| 3 | 7HA6 | 88 | 24 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 6.2/1.4 | |
| HA10 | | 8.5/5.3 | |



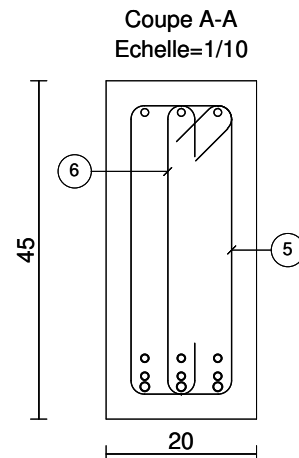
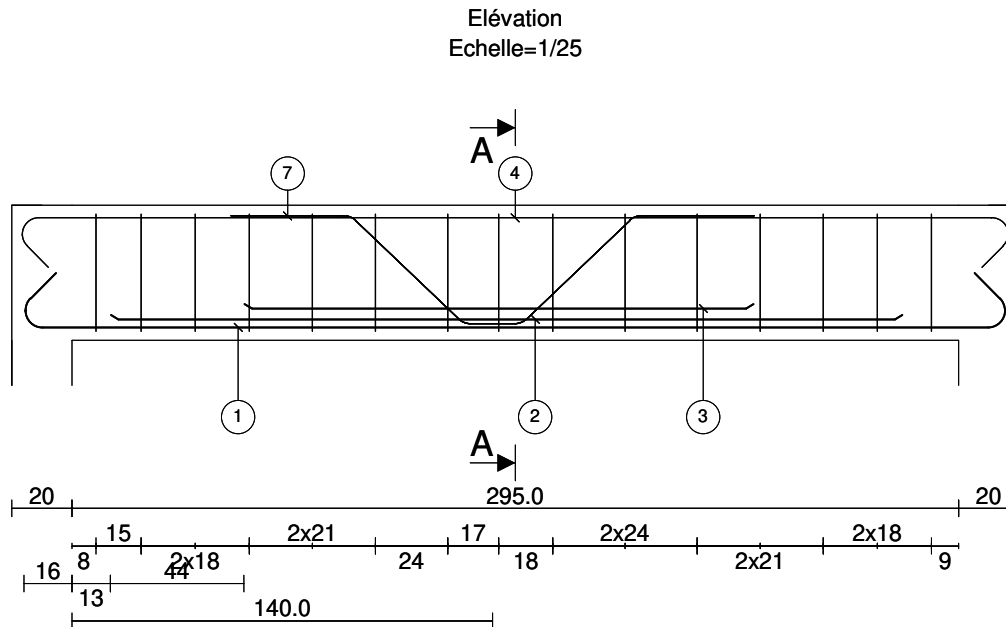
| | Barre | Lg | Forme |
|-------|-------|-----------|-------------------------|
| 1 | 2HA10 | 418 | 16 11 135° 401 |
| 2 | 2HA10 | 288 | 288 |
| 3 | 2HA10 | 91 | 91 |
| 4 | 2HA10 | 401 | 16 11 135° 384 |
| 5 | 16HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 23.9/14.8 | |



| Barre | | Lg | Forme |
|-------|-------|----------|-------|
| 6 | 2HA10 | 254 | 254 |
| 7 | 2HA10 | 91 | 91 |
| 8 | 2HA10 | 220 | 220 |
| 9 | 10HA6 | 108 | 14 34 |
| Barre | | Lg/Poids | |
| HA6 | | 10.8/2.4 | |
| HA10 | | 11.3/7.0 | |



| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 10 | 2HA10 | 412 | |
| 11 | 2HA10 | 274 | |
| 12 | 2HA10 | 395 | |
| 13 | 16HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 21.6/13.3 | |



| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 3HA12 | 365 |
| 2 | 3HA10 | 264 |
| 3 | 3HA10 | 170 |
| 4 | 3HA10 | 363 |
| 5 | 15HA6 | 118 |
| 6 | 15HA6 | 56 |
| 7 | 3HA10 | 202 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 26.1/5.8 |
| HA10 | | 30.0/18.5 |
| HA12 | | 10.9/9.7 |

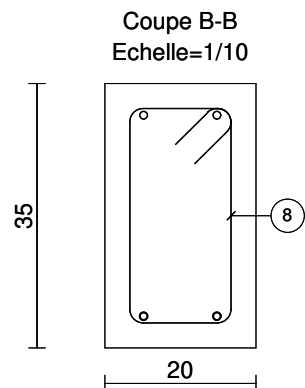
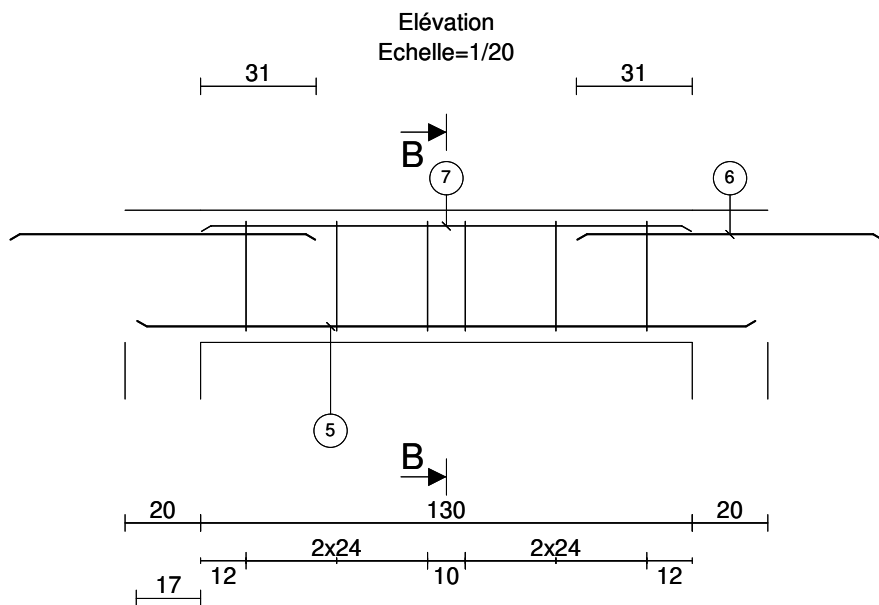
Coupe A-A
Echelle=1/10

35

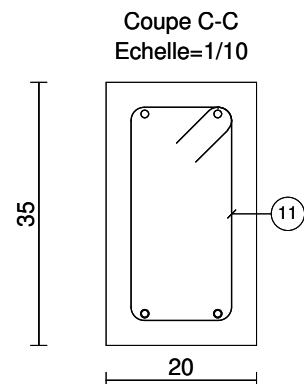
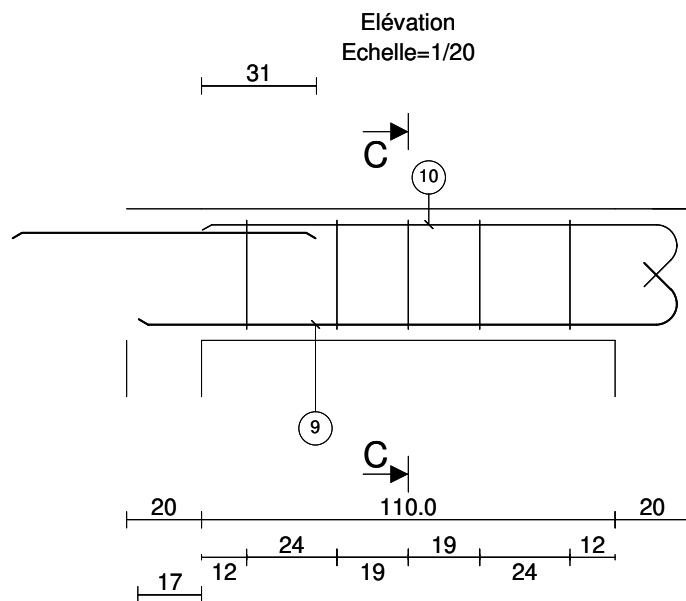
20

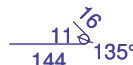
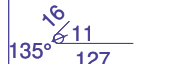

4

Arche Poutre BAEL Version 2021

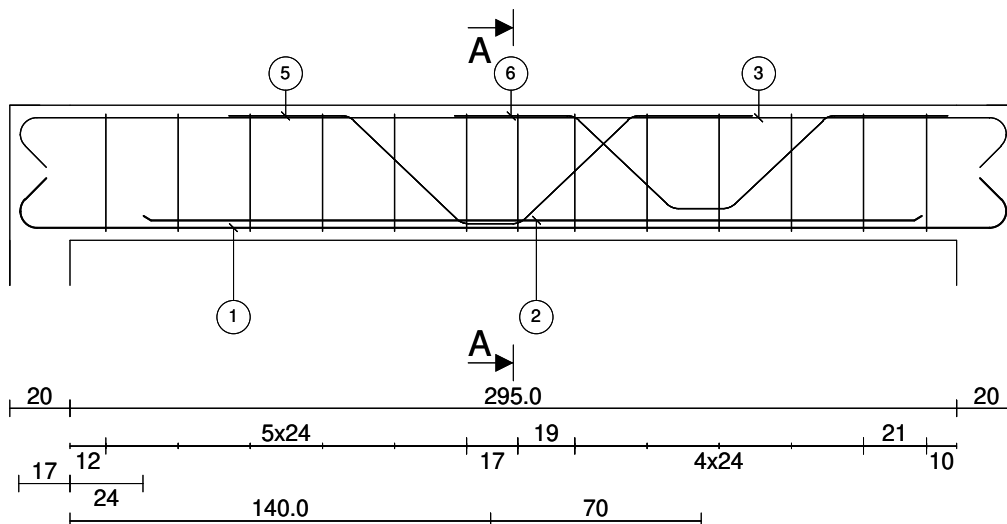


| | Barre | Lg | Forme |
|-------|-------|----------|----------|
| 5 | 2HA10 | 164 | 164 |
| 6 | 2HA10 | 81 | 81 |
| 7 | 2HA10 | 130 | 130 |
| 8 | 6HA6 | 98 | 28 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 5.9/1.3 | |
| HA10 | | 7.5/4.6 | |

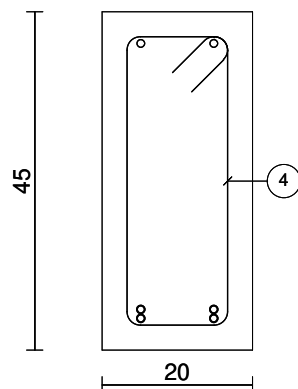


| | Barre | Lg | Forme |
|-------|-------|----------|---|
| 9 | 2HA10 | 161 |  |
| 10 | 2HA10 | 144 |  |
| 11 | 5HA6 | 98 |  |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 4.9/1.1 | |
| HA10 | | 6.1/3.8 | |

Elévation
Echelle=1/25

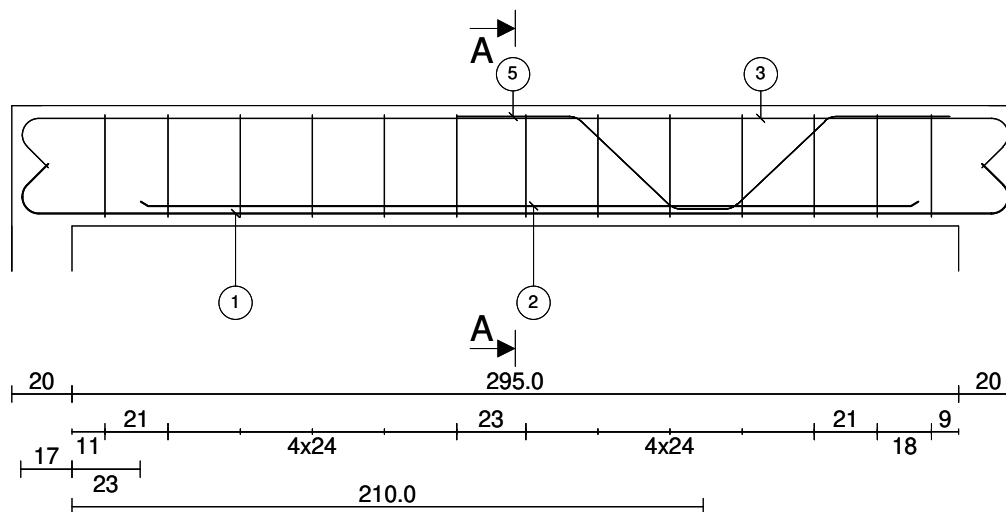


Coupe A-A
Echelle=1/10

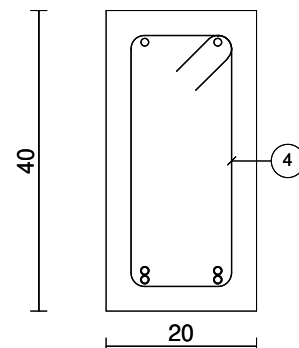


| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA10 | 363 |
| 2 | 2HA10 | 259 |
| 3 | 2HA10 | 363 |
| 4 | 13HA6 | 118 |
| 5 | 2HA10 | 202 |
| 6 | 2HA10 | 188 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 15.4/3.4 |
| HA10 | | 27.5/17.0 |

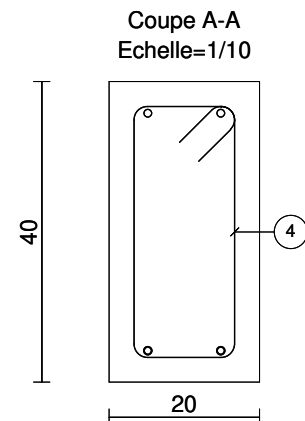
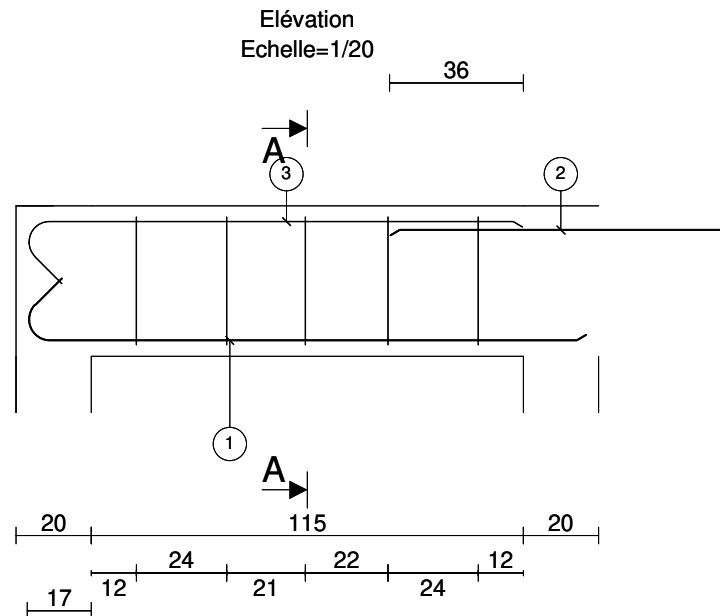
Elévation
Echelle=1/25



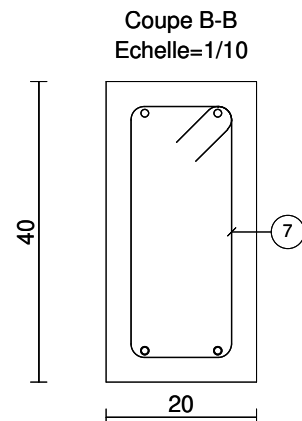
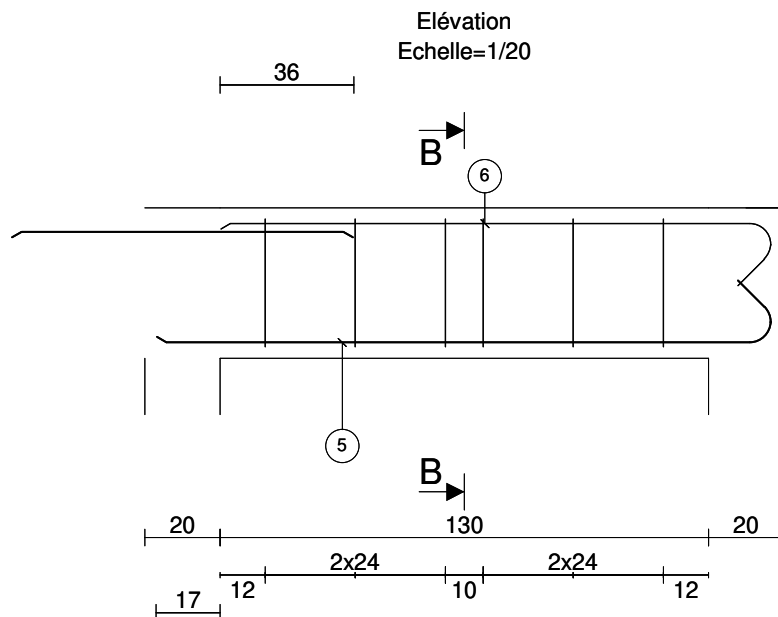
Coupe A-A
Echelle=1/10



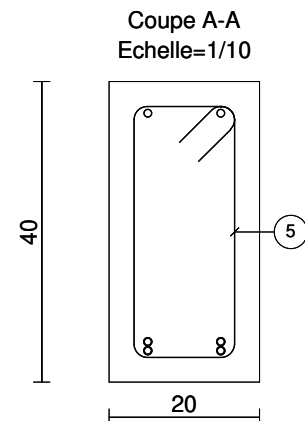
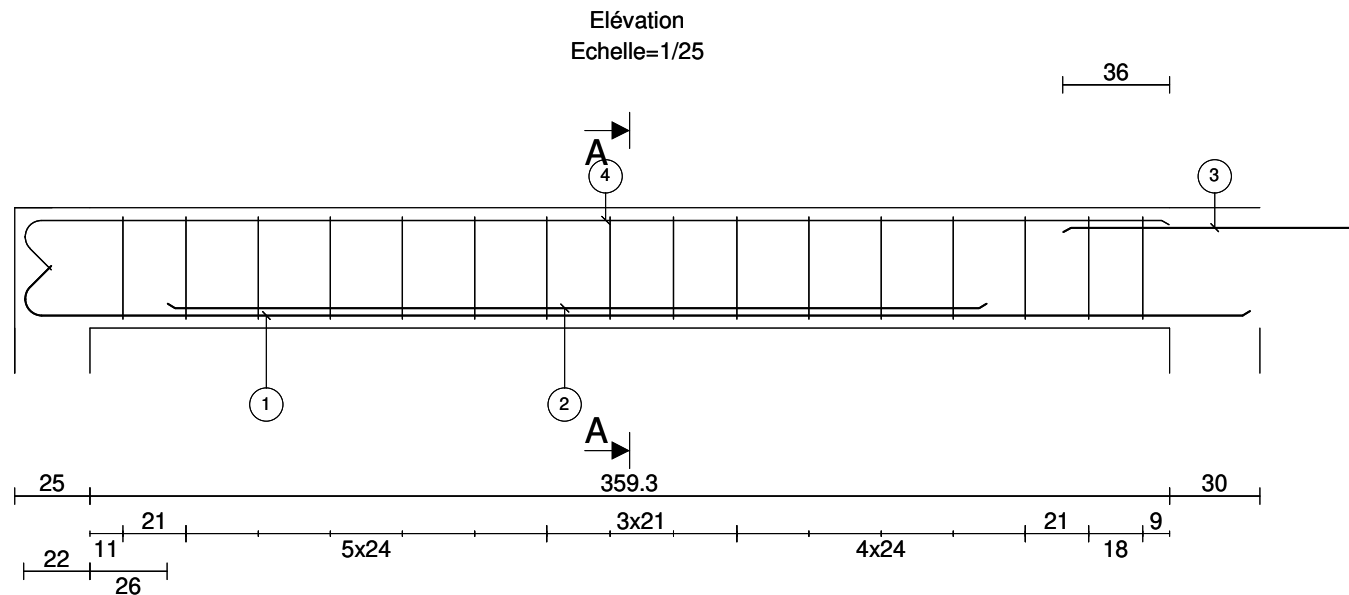
| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA10 | 363 |
| 2 | 2HA10 | 259 |
| 3 | 2HA10 | 363 |
| 4 | 13HA6 | 108 |
| 5 | 2HA10 | 188 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 14.1/3.1 |
| HA10 | | 23.5/14.5 |



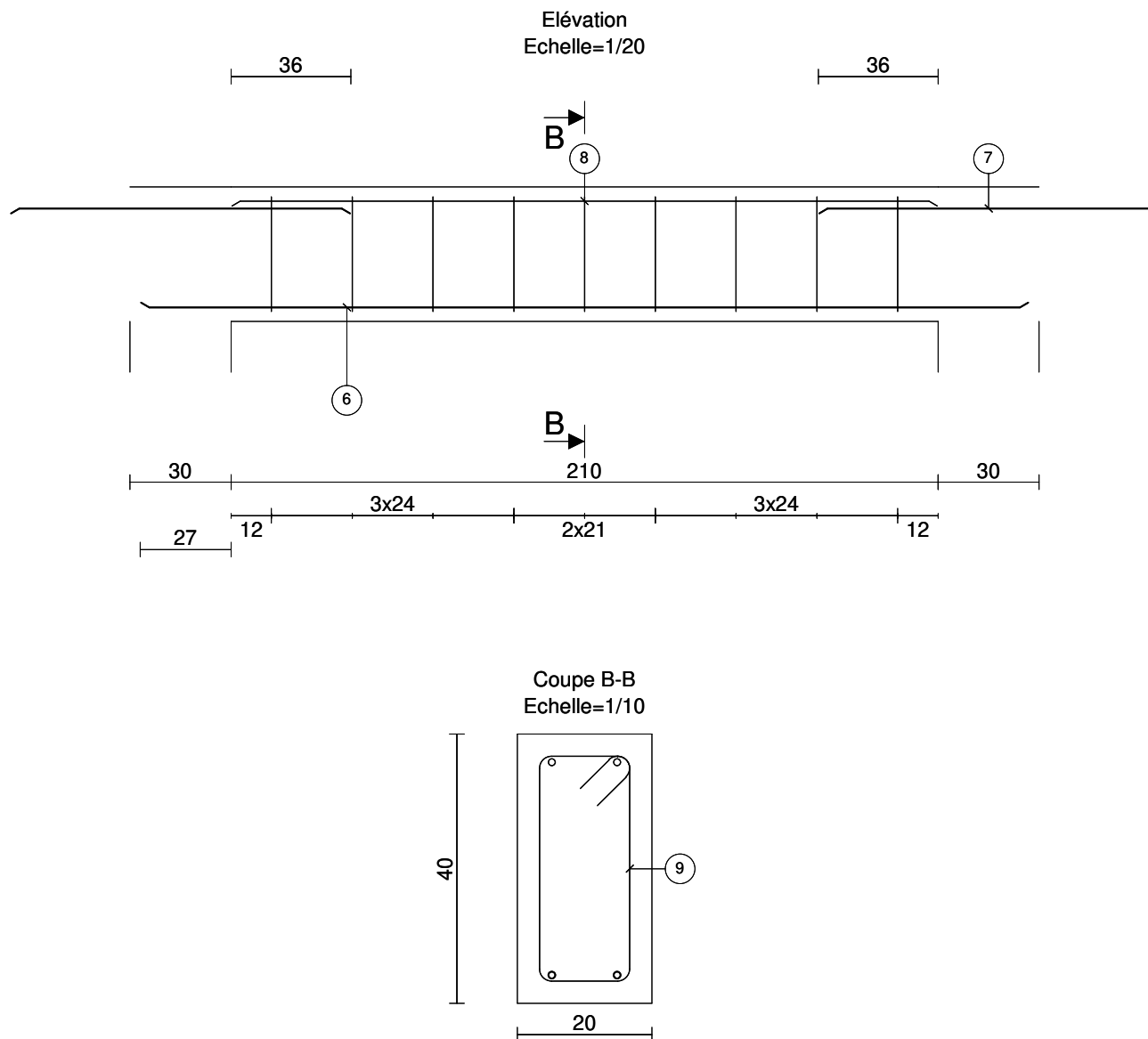
| | Barre | Lg | Forme |
|-------|-------|----------|-------------------------|
| 1 | 2HA10 | 166 | 16 11 135° 149 |
| 2 | 2HA10 | 91 | 91 |
| 3 | 2HA10 | 149 | 11 132 135° |
| 4 | 5HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 5.4/1.2 | |
| HA10 | | 8.1/5.0 | |



| | Barre | Lg | Forme |
|-------|-------|----------|-------------------|
| 5 | 2HA10 | 181 | 11/16 164 135° |
| 6 | 2HA10 | 164 | 16/11 135° 147 |
| 7 | 6HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 6.5/1.4 | |
| HA10 | | 6.9/4.3 | |



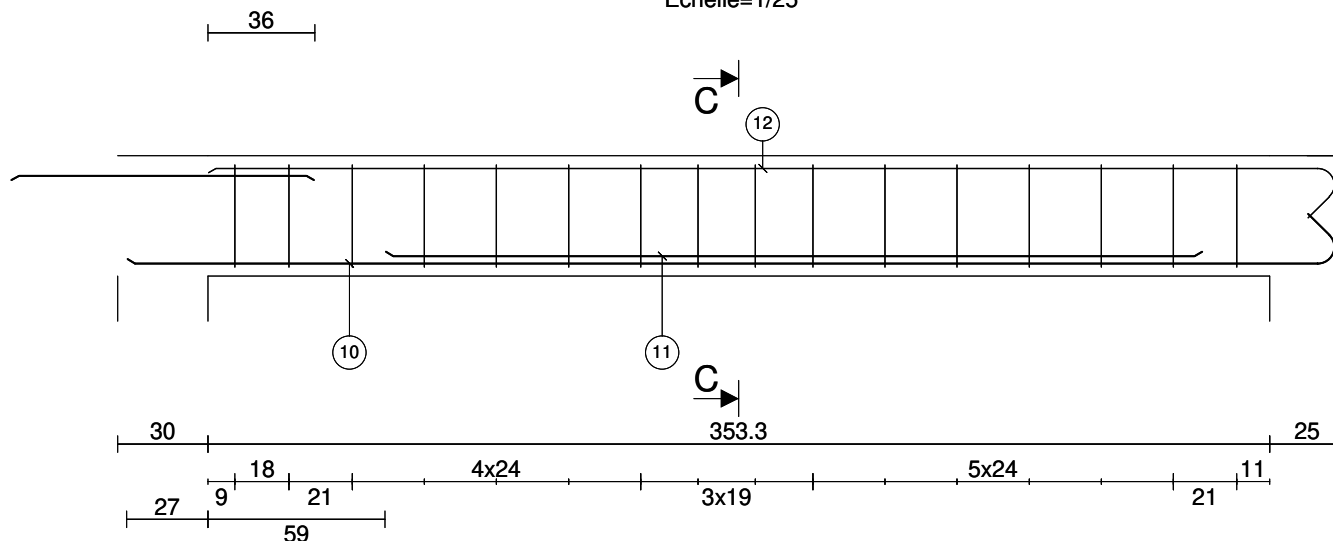
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 1 | 2HA10 | 425 | |
| 2 | 2HA10 | 273 | |
| 3 | 2HA10 | 101 | |
| 4 | 2HA10 | 398 | |
| 5 | 16HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 24.0/14.8 | |



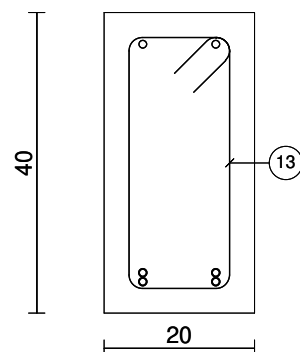
| Barre | | Lg | Forme |
|-------|-------|----------|-------|
| 6 | 2HA10 | 264 | 264 |
| 7 | 2HA10 | 101 | 101 |
| 8 | 2HA10 | 210 | 210 |
| 9 | 9HA6 | 108 | |
| Barre | | Lg/Poids | |
| HA6 | | 9.7/2.2 | |
| HA10 | | 11.5/7.1 | |

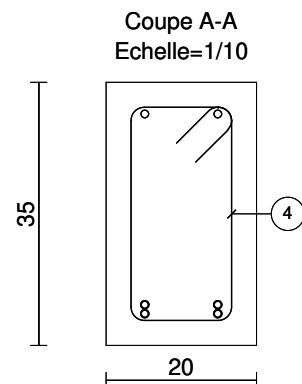
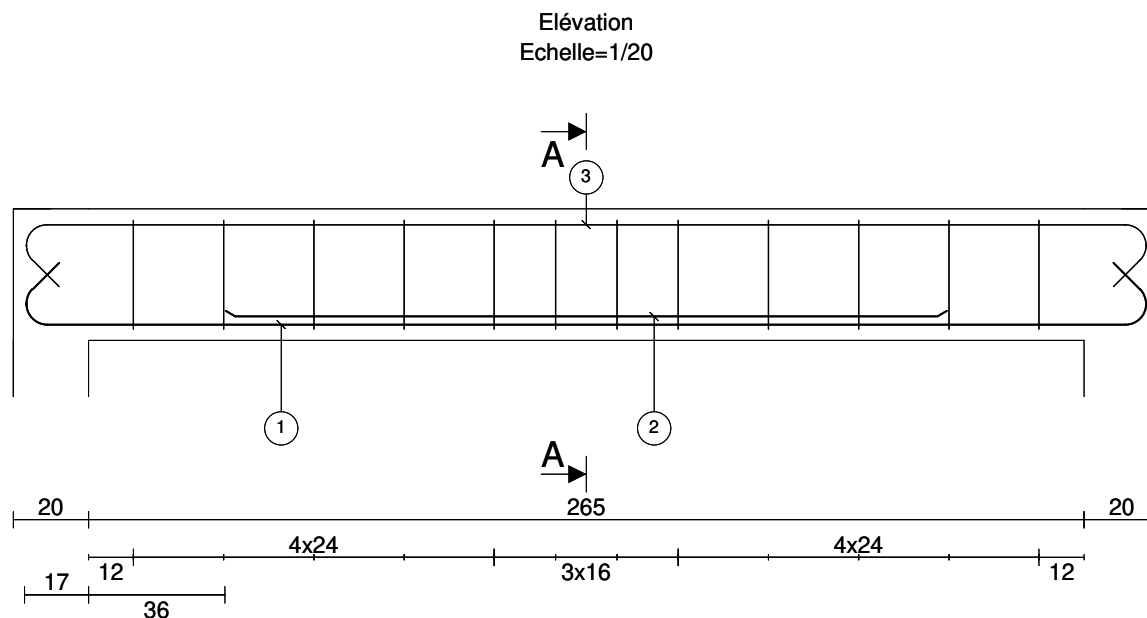
| | Barre | Lg | Forme |
|-------------|-------|-----------------------|-------|
| 10 | 2HA10 | 419 | |
| 11 | 2HA10 | 272 | |
| 12 | 2HA10 | 392 | |
| 13 | 16HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 17.3/3.8 21.7/13.4 | |

Elévation
Echelle=1/25

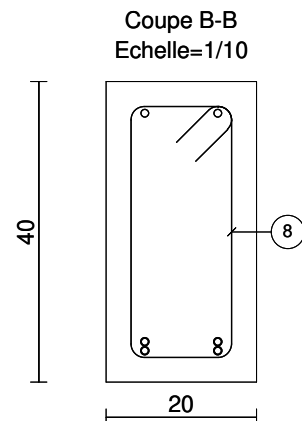
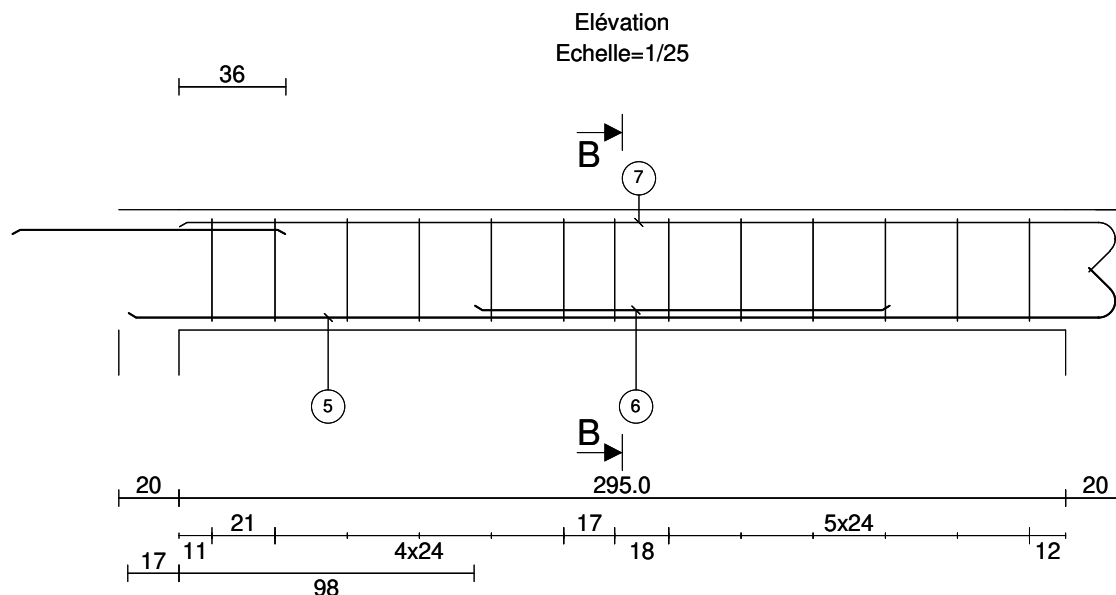


Coupe C-C
Echelle=1/10

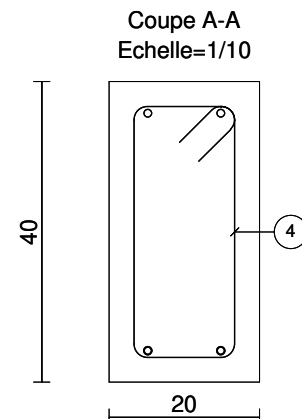
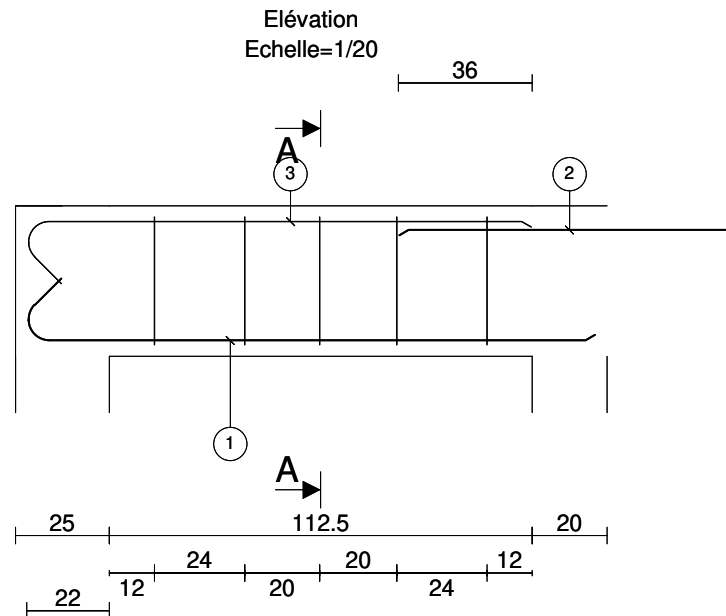


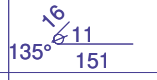

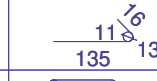



| | Barre | Lg | Forme |
|-------------|-------|-----------------------|--------------------------|
| 1 | 2HA10 | 333 | 16 1111 16 135° 299 135° |
| 2 | 2HA10 | 192 | 192 |
| 3 | 2HA10 | 333 | 16 1111 16 135° 299 135° |
| 4 | 12HA6 | 98 | 14 2 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 11.8/2.6 17.2/10.6 | |



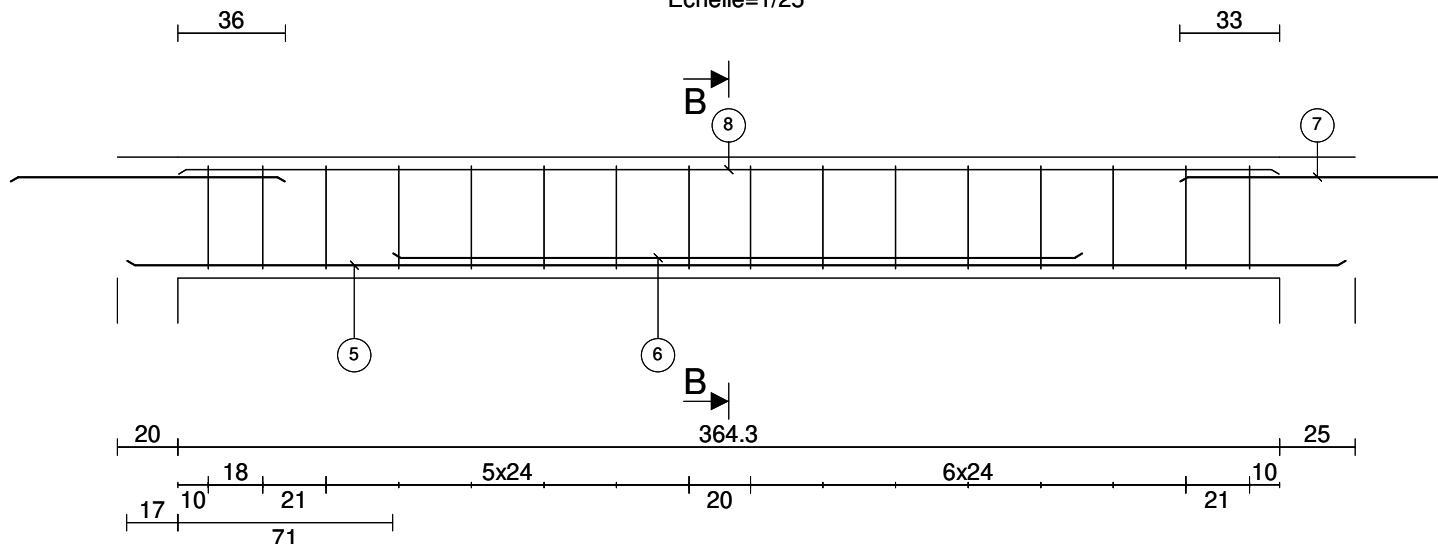
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 5 | 2HA10 | 346 | |
| 6 | 2HA10 | 138 | |
| 7 | 2HA10 | 329 | |
| 8 | 13HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 14.1/3.1 | |
| HA10 | | 16.3/10.0 | |



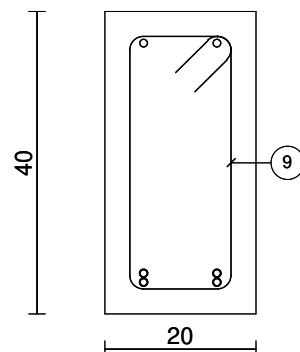
| | Barre | Lg | Forme |
|-------------|-------|--------------------|---|
| 1 | 2HA10 | 168 |  |
| 2 | 2HA10 | 91 |  |
| 3 | 2HA10 | 151 |  |
| 4 | 5HA6 | 108 |  |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 5.4/1.2 8.2/5.1 | |

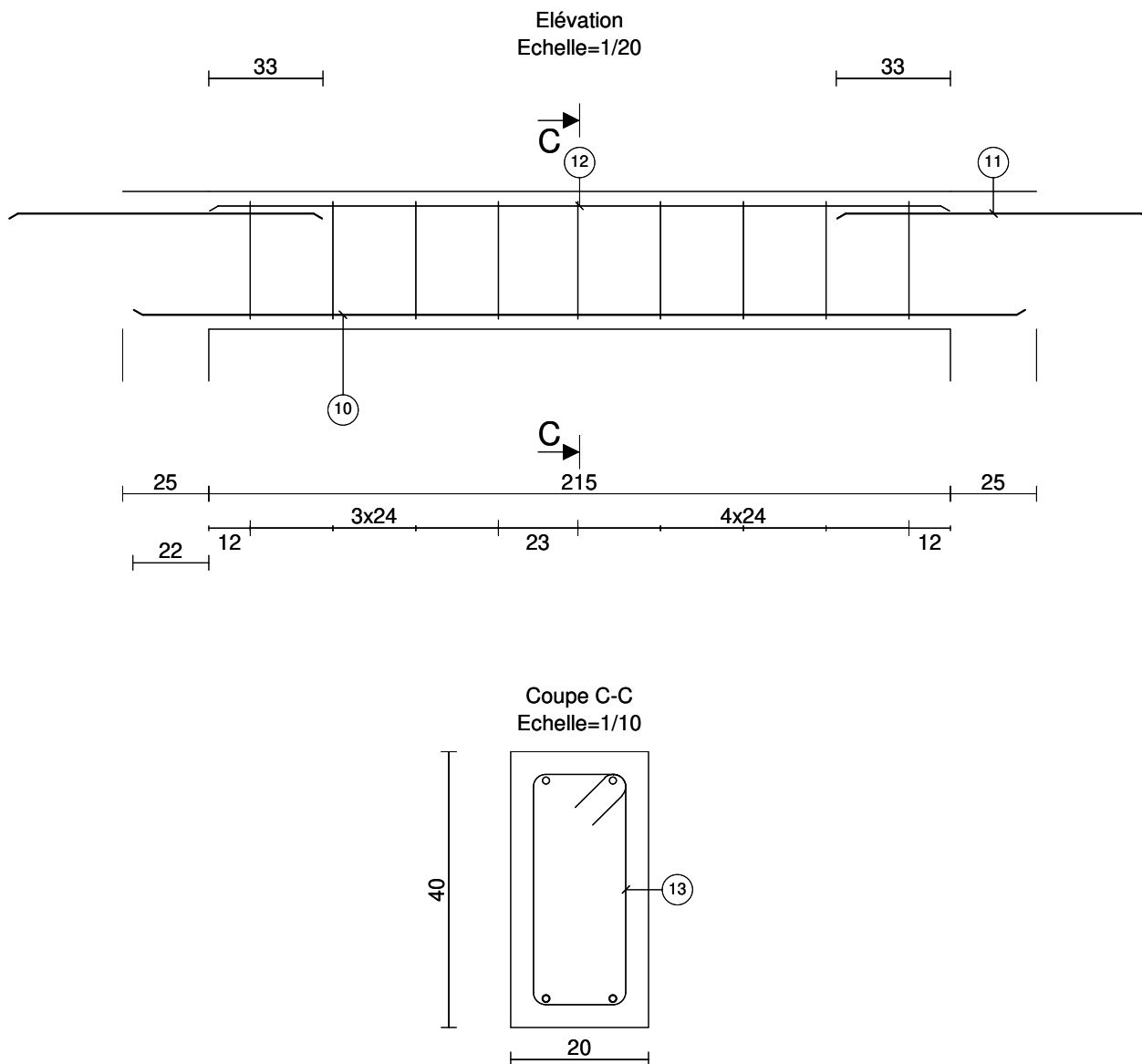
| | Barre | Lg | Forme |
|-------|-------|-----------|----------|
| 5 | 2HA10 | 403 | 403 |
| 6 | 2HA10 | 228 | 228 |
| 7 | 2HA10 | 91 | 91 |
| 8 | 2HA10 | 364 | 364 |
| 9 | 16HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 21.7/13.4 | |

Elévation
Echelle=1/25

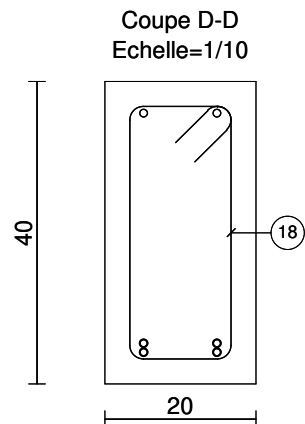
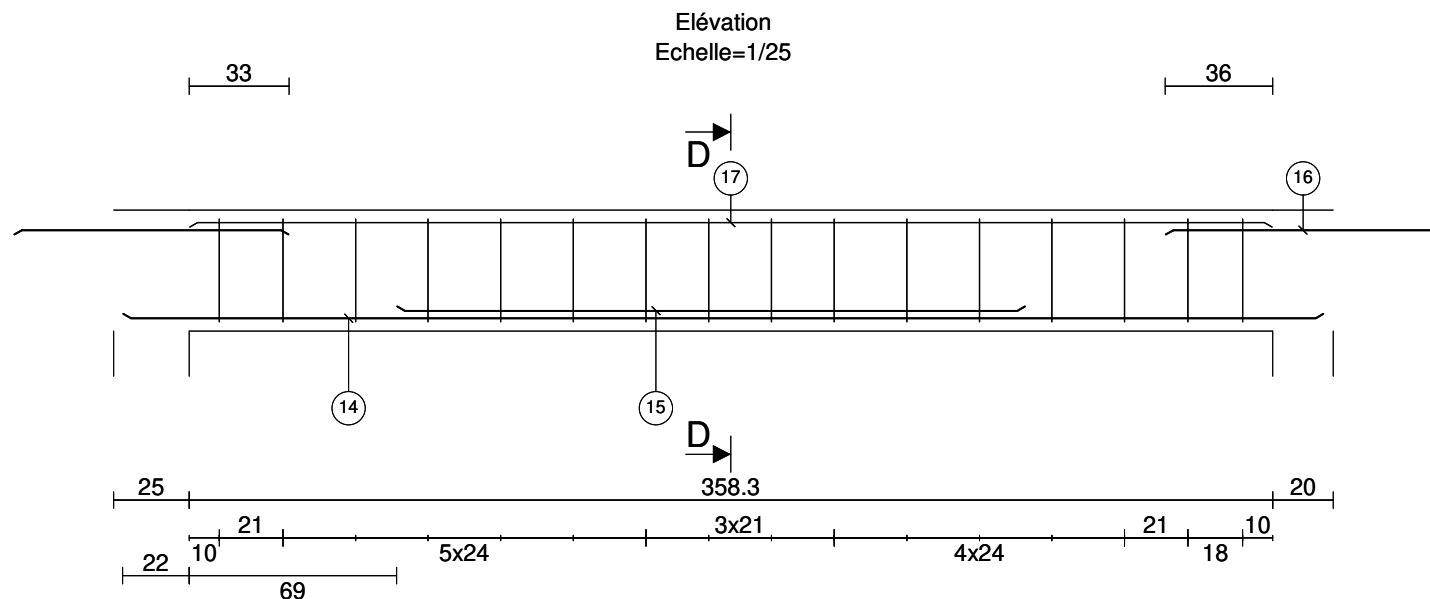


Coupe B-B
Echelle=1/10

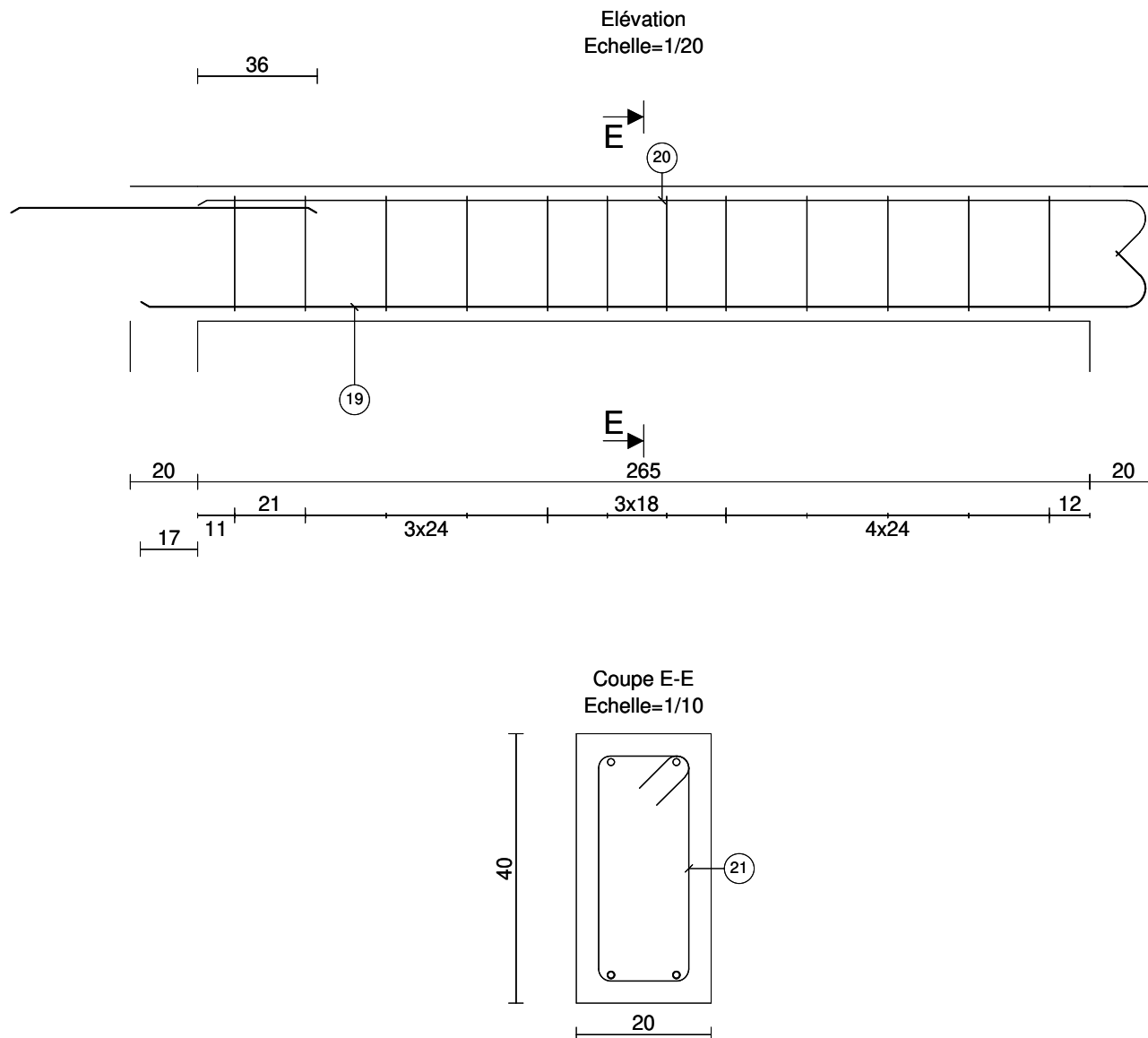




| | Barre | Lg | Forme |
|-------|-------|----------|--|
| 10 | 2HA10 | 259 | 259 |
| 11 | 2HA10 | 91 | 91 |
| 12 | 2HA10 | 215 | 215 |
| 13 | 9HA6 | 108 | <div style="border: 1px solid black; width: 20px; height: 10px; position: relative;"> 34 14 </div> |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 9.7/2.2 | |
| HA10 | | 11.3/7.0 | |

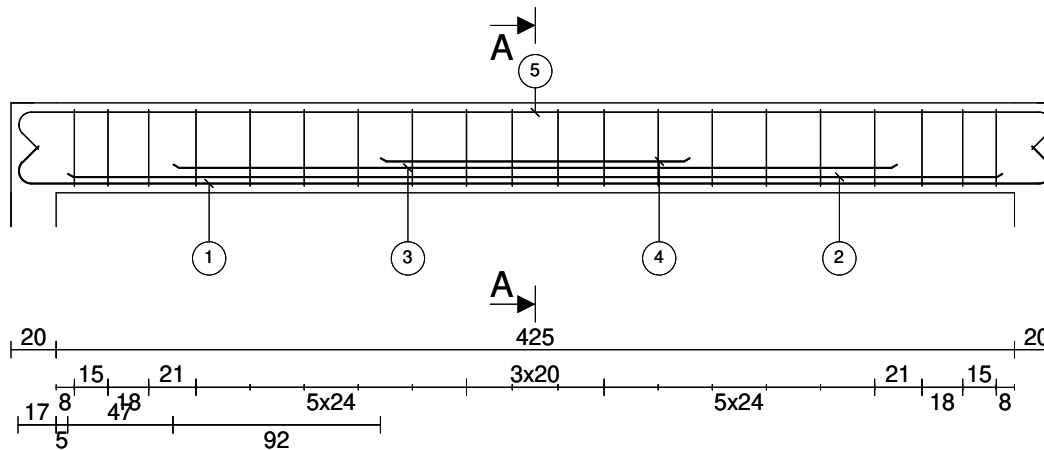


| | Barre | Lg | Forme |
|-------|-------|-----------|----------|
| 14 | 2HA10 | 397 | 397 |
| 15 | 2HA10 | 208 | 208 |
| 16 | 2HA10 | 91 | 91 |
| 17 | 2HA10 | 358 | 358 |
| 18 | 16HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 17.3/3.8 | |
| HA10 | | 21.1/13.0 | |

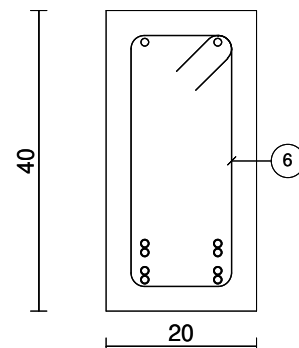


| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 19 | 2HA10 | 316 | |
| 20 | 2HA10 | 299 | |
| 21 | 12HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 13.0/2.9 | |
| HA10 | | 12.3/7.6 | |

Elévation
Echelle=1/33

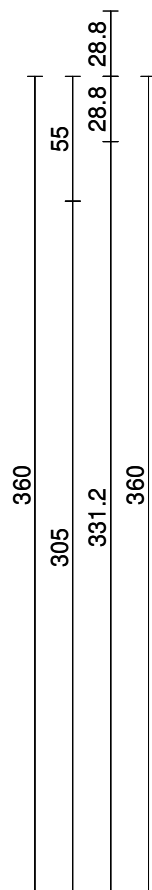


Coupe A-A
Echelle=1/10

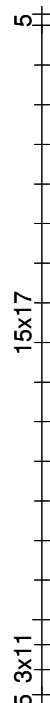
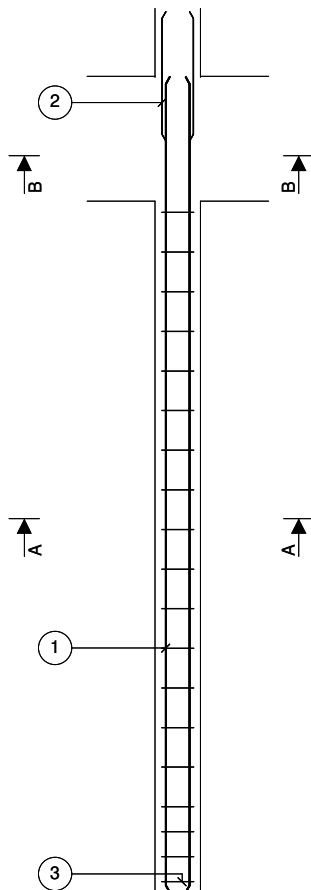


| Barre | | Lg | Forme |
|-------------|-------|-----------------------|--------------------------|
| 1 | 2HA10 | 493 | 135° 16 1111 16 459 135° |
| 2 | 2HA10 | 415 | 415 |
| 3 | 2HA10 | 321 | 321 |
| 4 | 2HA10 | 138 | 138 |
| 5 | 2HA10 | 493 | 135° 16 1111 16 459 135° |
| 6 | 20HA6 | 108 | 34 14 |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 21.6/4.8 37.2/22.9 | |

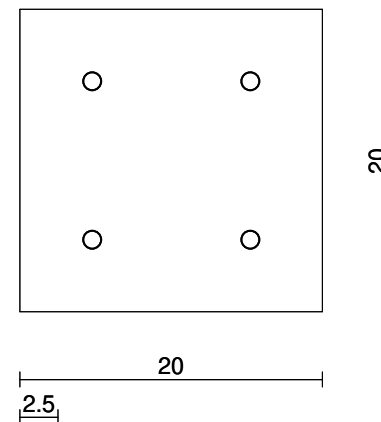
III. CARNET DE FERRAILLAGE DES POTEAUX



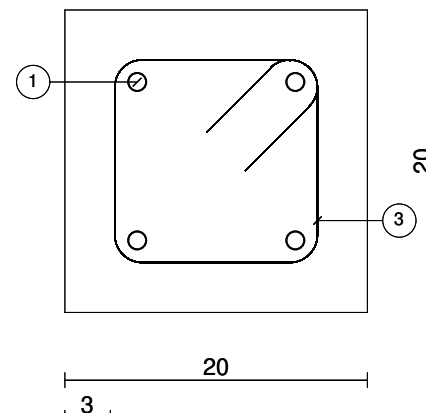
Elévation
Echelle=1/33



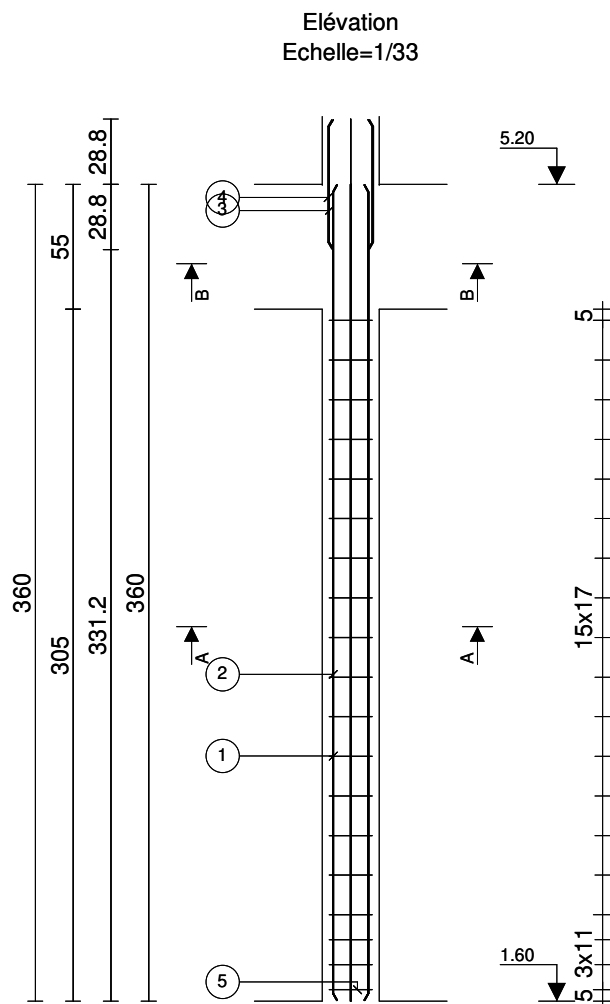
Coupe BB Attente sup
Echelle=1/5



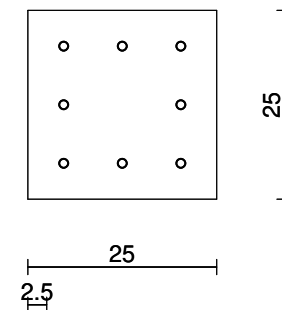
Coupe AA Courante
Echelle=1/5



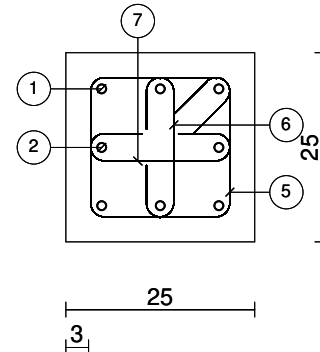
| Barre | | Lg | Forme |
|-------|-------|-----------|-------|
| 1 | 4HA12 | 360 | 360 |
| 2 | 4HA12 | 58 | 58 |
| 3 | 19HA6 | 68 | 14 |
| Barre | | Lg/Poids | |
| HA6 | | 13.0/2.9 | |
| HA12 | | 16.7/14.8 | |



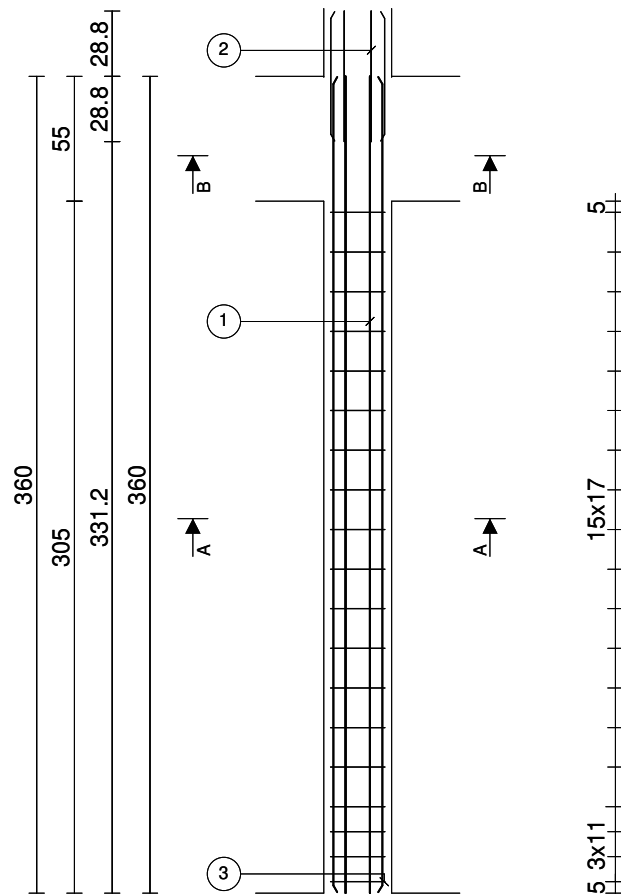
Coupe BB Attente sup
Echelle=1/10



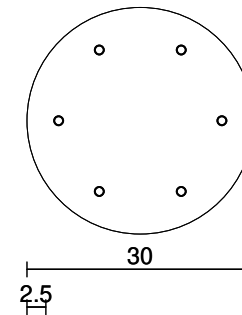
Coupe AA Courante
Echelle=1/10



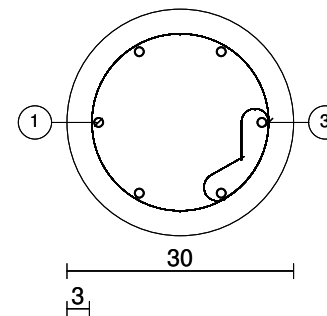
| Barre | | Lg | Forme |
|-------|-------|-----------|-------|
| 1 | 6HA12 | 360 | 360 |
| 2 | 2HA12 | 360 | 360 |
| 3 | 6HA12 | 58 | 58 |
| 4 | 2HA12 | 58 | 58 |
| 5 | 19HA6 | 88 | 19 |
| 6 | 19HA6 | 36 | 19 |
| 7 | 19HA6 | 36 | 19 |
| Barre | | Lg/Poids | |
| HA6 | | 30.5/6.8 | |
| HA12 | | 33.4/29.7 | |



Coupe BB Attente sup
Echelle=1/10



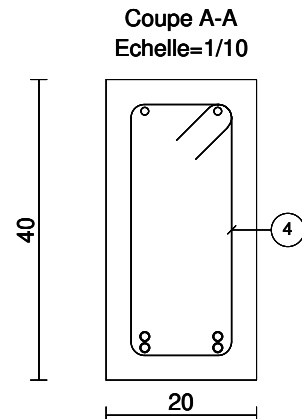
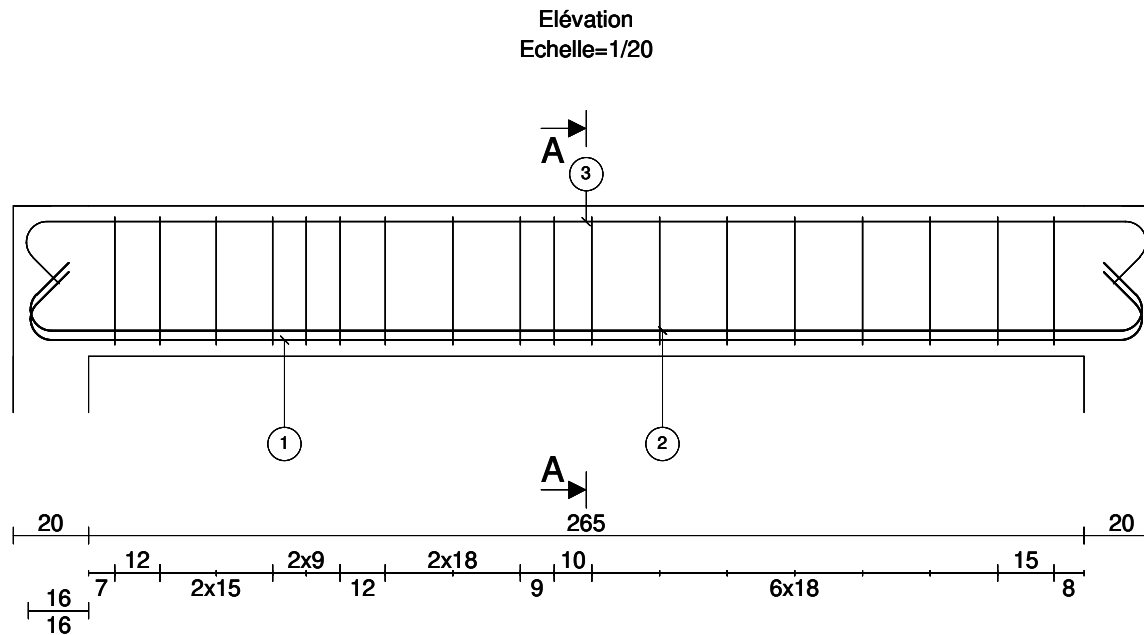
Coupe AA Courante
Echelle=1/10

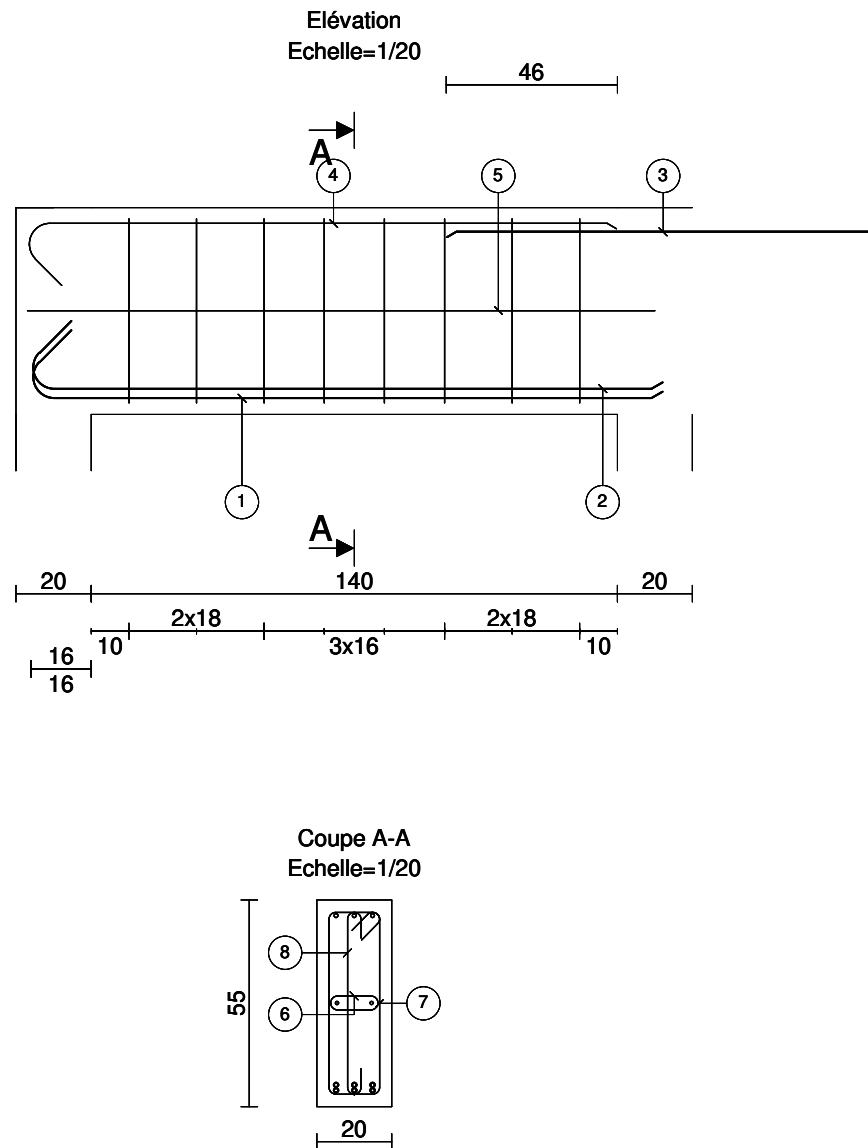


| Barre | | Lg | Forme |
|-------|-------|-----------|------------|
| 1 | 6HA12 | 360 | 360 |
| 2 | 6HA12 | 58 | 58 |
| 3 | 19HA6 | 107 | 180° 24 |
| Barre | | Lg/Poids | |
| HA6 | | 20.3/4.5 | |
| HA12 | | 25.1/22.2 | |

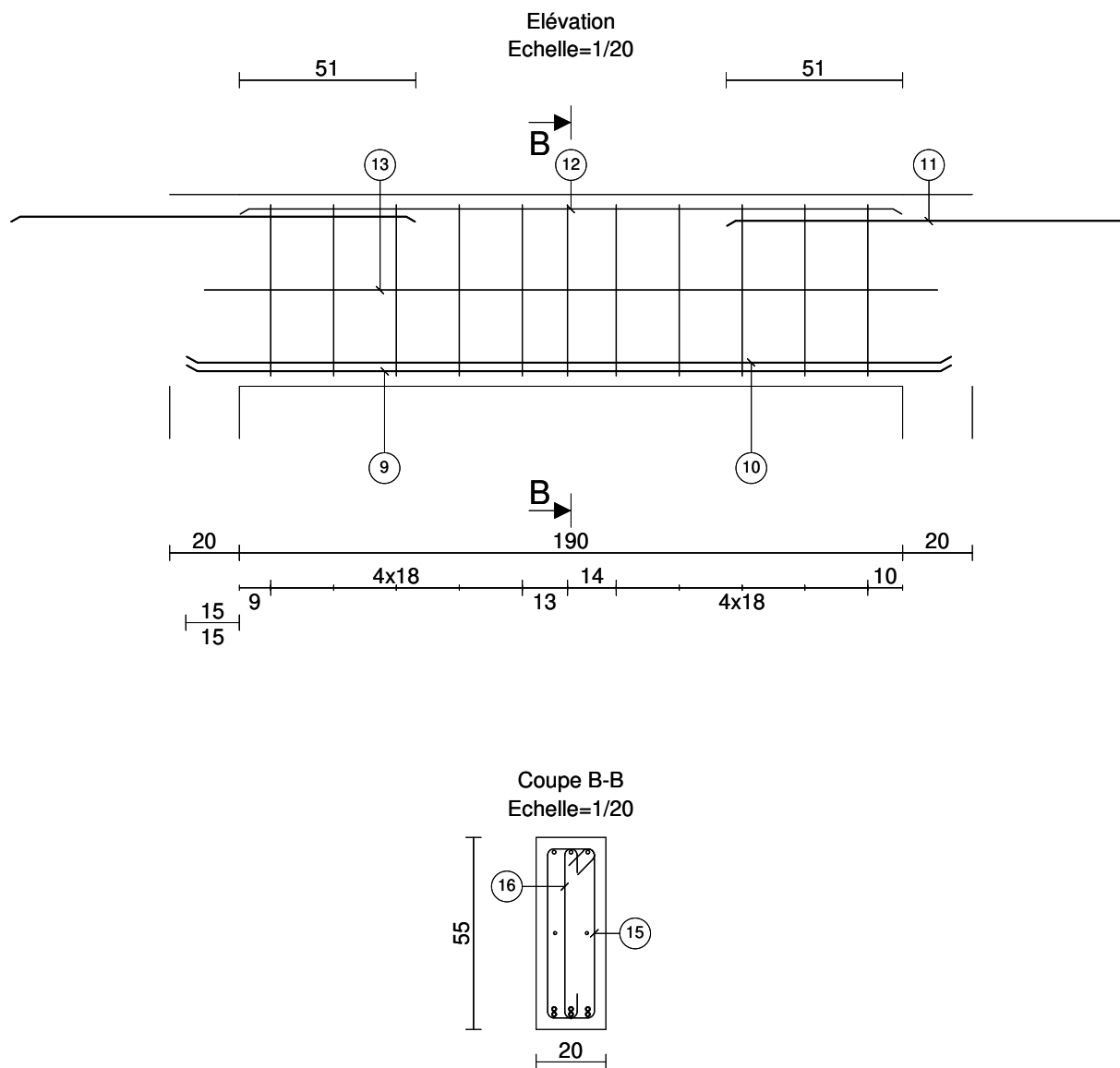
IV. CARNET DE FERRAILLAGE DES POUTRES PHRDC

Fc28= 20 MPa Fe= 400 MPa Fissuration peu préjudiciable Coupe feu 1 H

[illegible]

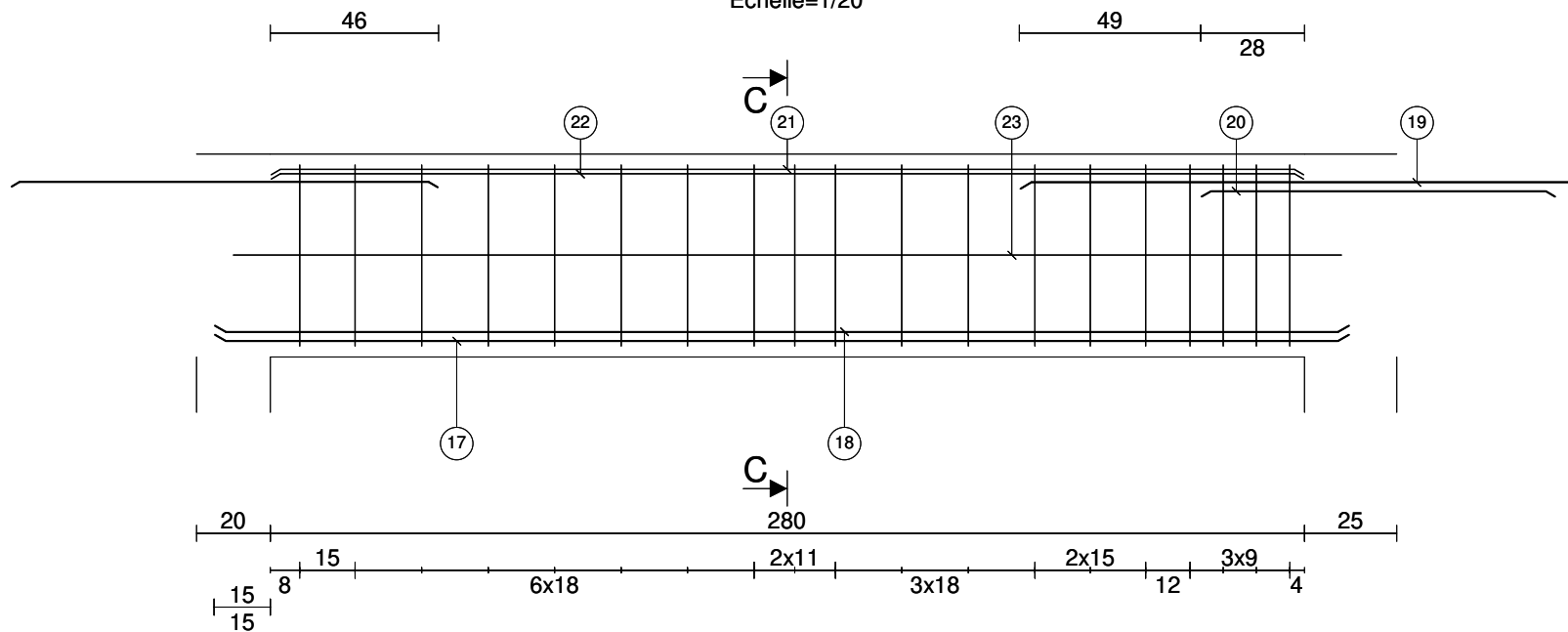


| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 3HA12 | 187 |
| 2 | 3HA12 | 187 |
| 3 | 3HA10 | 116 |
| 4 | 3HA10 | 174 |
| 5 | 2HA8 | 167 |
| 6 | 3HA8 | 31 |
| 7 | 8HA6 | 138 |
| 8 | 8HA6 | 66 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 16.3/3.6 |
| HA8 | | 4.3/1.7 |
| HA10 | | 8.7/5.4 |
| HA12 | | 11.2/10.0 |



| Barre | | Lg | Forme |
|-------|-------|-----------|-------|
| 9 | 3HA12 | 219 | 219 |
| 10 | 3HA12 | 219 | 219 |
| 11 | 3HA10 | 116 | 116 |
| 12 | 3HA10 | 190 | 190 |
| 13 | 2HA8 | 210 | 210 |
| 14 | 4HA8 | 31 | 13 |
| 15 | 11HA6 | 138 | 49 |
| 16 | 11HA6 | 66 | 49 |
| Barre | | Lg/Poids | |
| HA6 | | 22.5/5.0 | |
| HA8 | | 5.4/2.1 | |
| HA10 | | 9.2/5.7 | |
| HA12 | | 13.2/11.7 | |

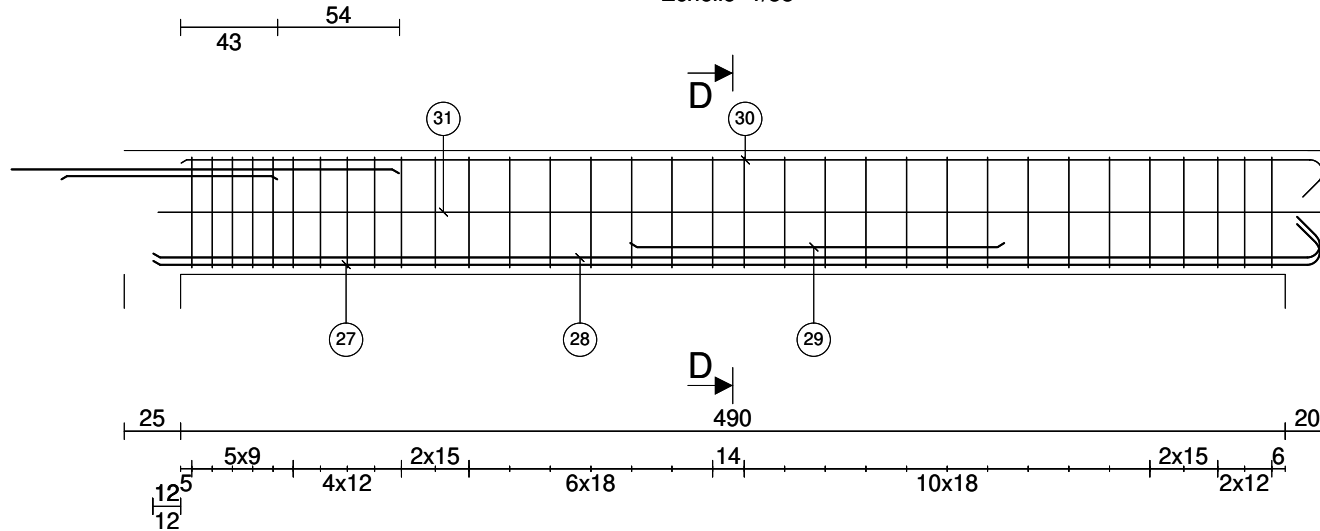
Elévation
Echelle=1/20



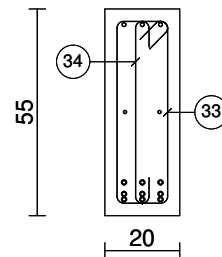
| | Barre | Lg | Forme |
|----|-------|-----|-------|
| 17 | 3HA12 | 308 | 308 |
| 18 | 3HA12 | 308 | 308 |
| 19 | 3HA12 | 199 | 199 |
| 20 | 3HA10 | 96 | 96 |
| 21 | 3HA10 | 280 | 280 |
| 22 | 2HA10 | 280 | 280 |
| 23 | 2HA8 | 300 | 300 |
| 24 | 6HA8 | 31 | 13 |
| 25 | 19HA6 | 138 | 49 |
| 26 | 19HA6 | 66 | 49 |

| Barre | Lg/Poids |
|-------|-----------|
| HA6 | 38.8/8.6 |
| HA8 | 7.8/3.1 |
| HA10 | 16.9/10.4 |
| HA12 | 24.4/21.7 |

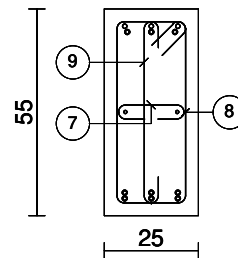
Elévation
Echelle=1/33












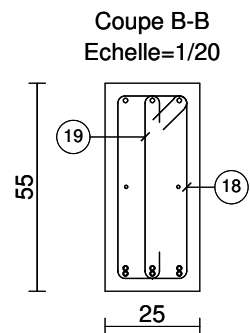
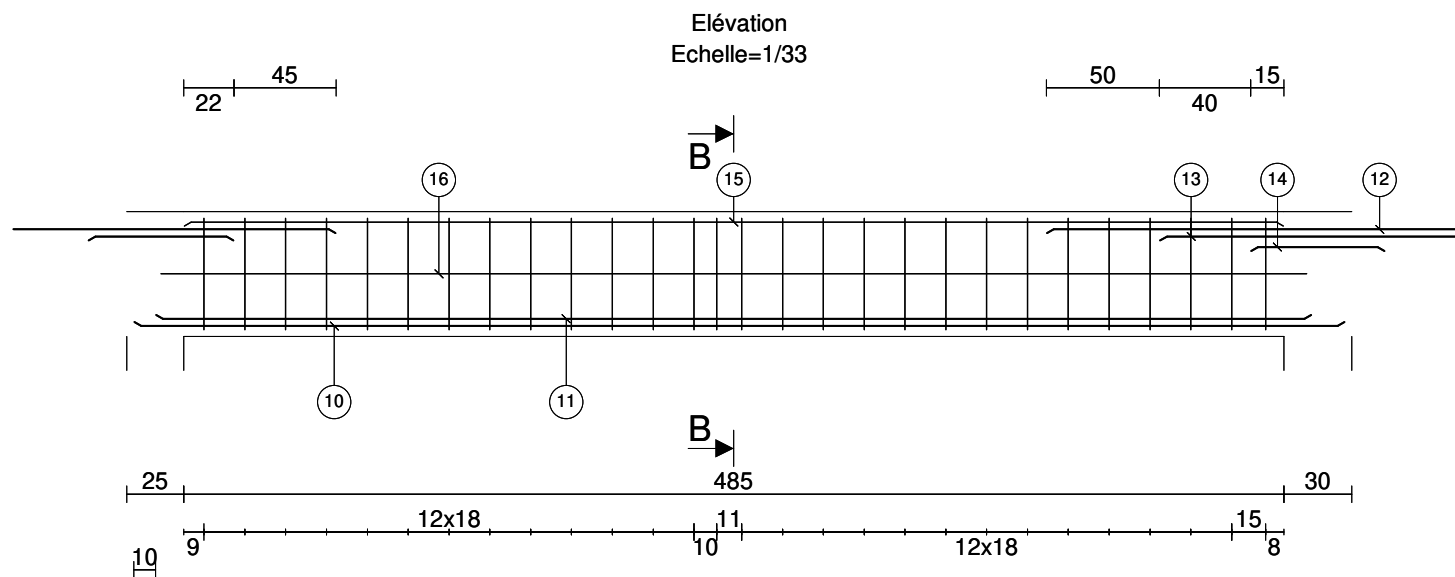
Coupe D-D
Echelle=1/20



| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 27 | 3HA12 | 537 | |
| 28 | 3HA12 | 537 | |
| 29 | 3HA12 | 166 | |
| 30 | 3HA10 | 524 | |
| 31 | 2HA8 | 517 | |
| 32 | 10HA8 | 31 | |
| 33 | 33HA6 | 138 | |
| 34 | 33HA6 | 66 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 67.4/15.0 | |
| HA8 | | 13.4/5.3 | |
| HA10 | | 15.7/9.7 | |
| HA12 | | 37.2/33.1 | |

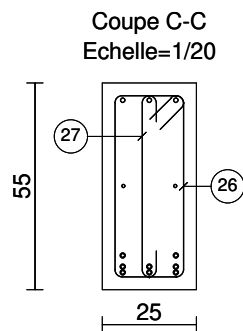
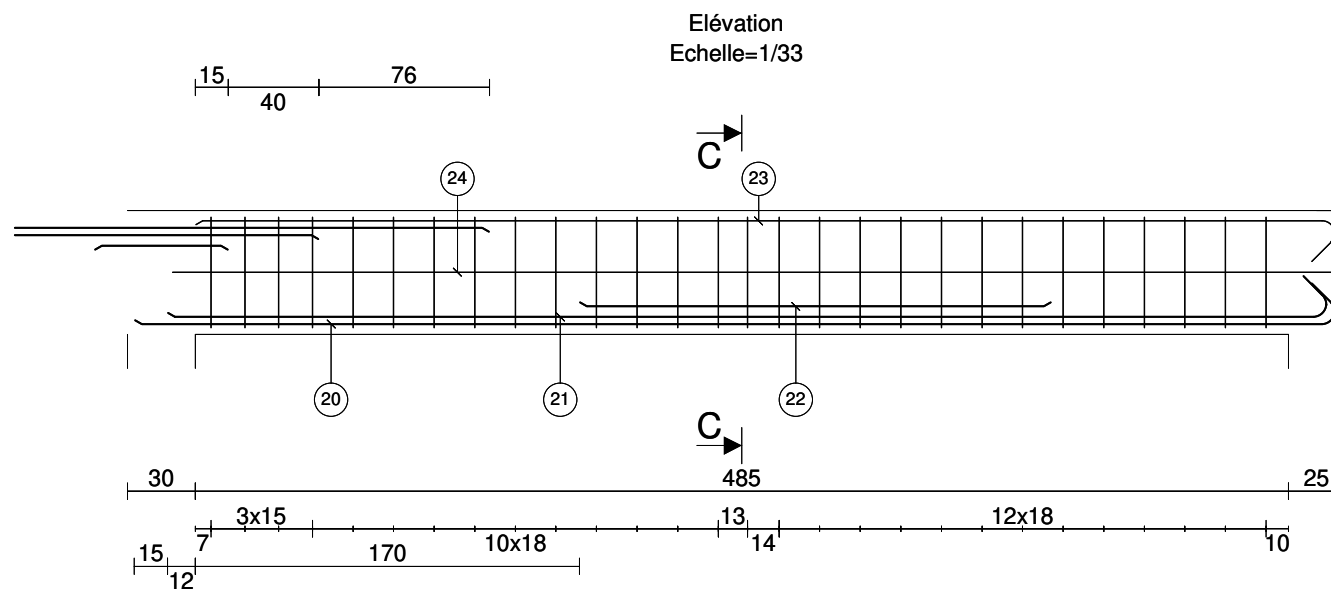


| Barre | | Lg | Forme |
|-------------|-------|-----------------------|--|
| 1 | 3HA12 | 197 |  |
| 2 | 3HA12 | 184 |  |
| 3 | 3HA12 | 164 |  |
| 4 | 2HA12 | 64 |  |
| 5 | 3HA12 | 175 |  |
| 6 | 2HA8 | 167 |  |
| 7 | 3HA8 | 36 |  |
| 8 | 8HA8 | 152 |  |
| 9 | 8HA8 | 66 |  |
| | | | |
| Barre | | Lg/Poids | |
| HA8 HA12 | | 21.8/8.6 22.9/20.3 | |

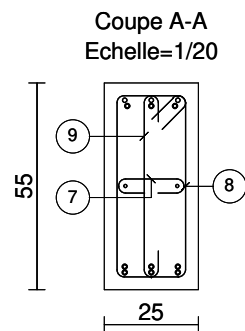
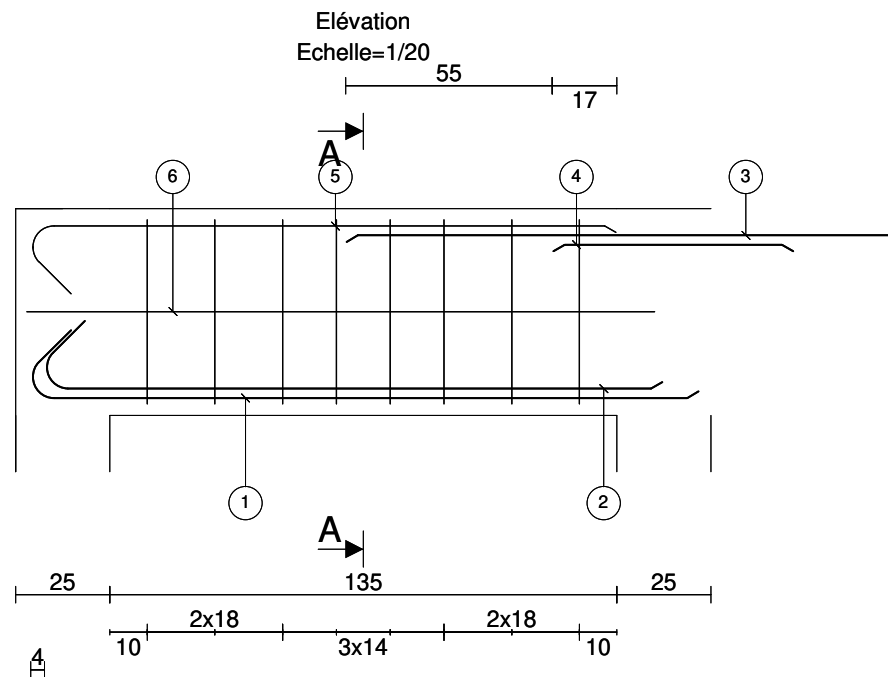


| | Barre | Lg | Forme |
|----|-------|-----|-------|
| 10 | 3HA12 | 534 | 534 |
| 11 | 3HA12 | 510 | 510 |
| 12 | 3HA12 | 265 | 265 |
| 13 | 3HA12 | 140 | 140 |
| 14 | 2HA12 | 59 | 59 |
| 15 | 3HA12 | 485 | 485 |
| 16 | 2HA8 | 505 | 505 |
| 17 | 10HA8 | 36 | 18 |
| 18 | 28HA8 | 152 | 19 |
| 19 | 28HA8 | 66 | 49 |

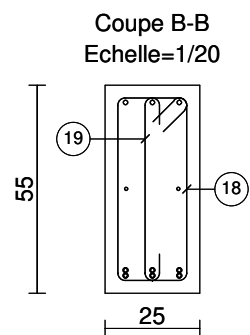
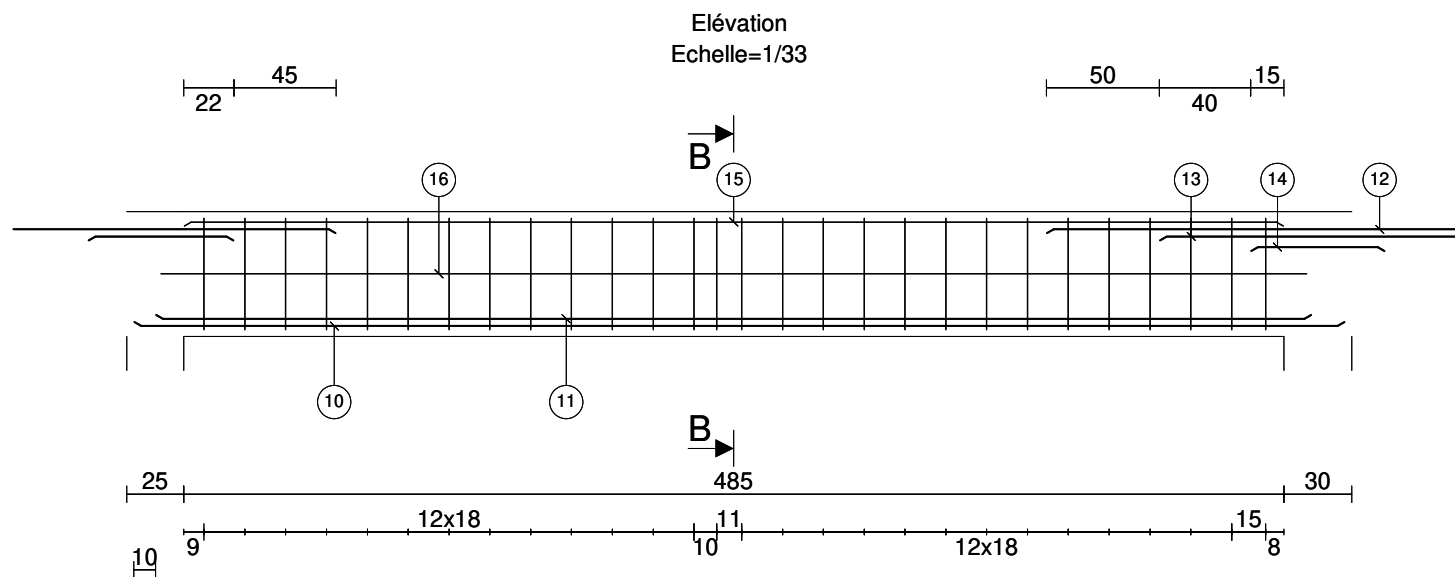
| Barre | Lg/Poids |
|-------|-----------|
| HA8 | 74.7/29.5 |
| HA12 | 59.2/52.6 |



| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 20 | 3HA12 | 552 | |
| 21 | 3HA12 | 534 | |
| 22 | 2HA12 | 209 | |
| 23 | 3HA12 | 525 | |
| 24 | 2HA8 | 517 | |
| 25 | 10HA8 | 36 | |
| 26 | 28HA8 | 152 | |
| 27 | 28HA8 | 66 | |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 74.9/29.6 | |
| HA12 | | 52.5/46.6 | |

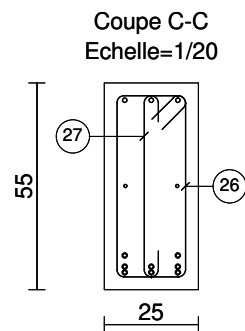
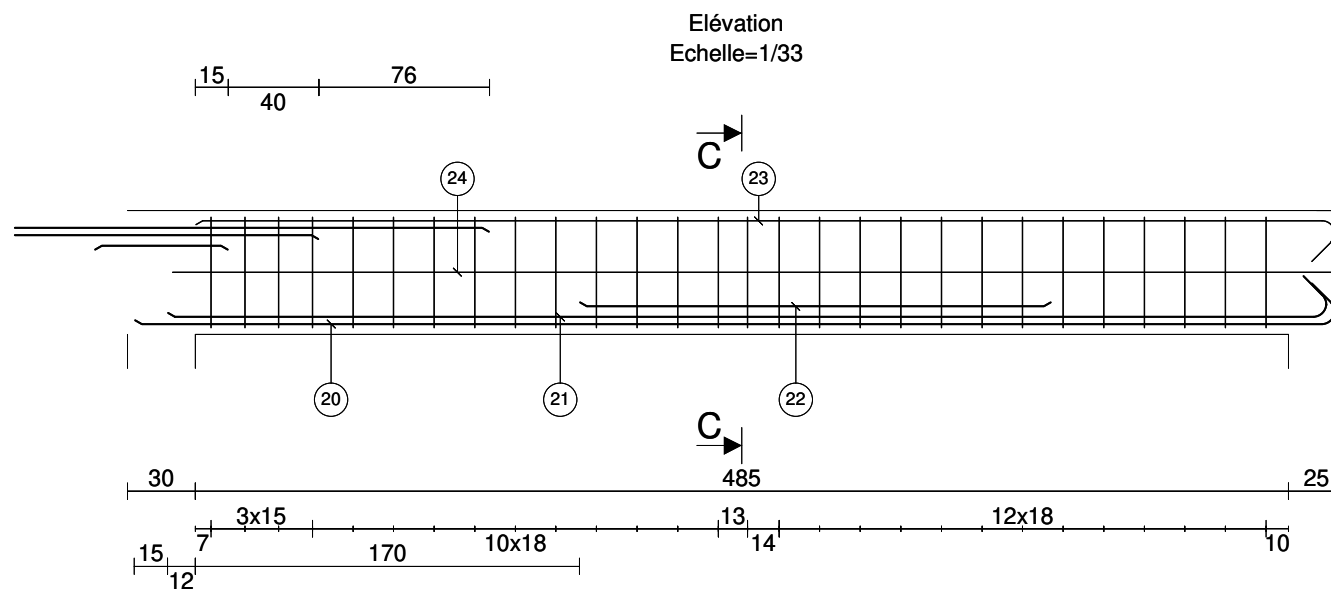


| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 3HA12 | 197 |
| 2 | 3HA12 | 184 |
| 3 | 3HA12 | 164 |
| 4 | 2HA12 | 64 |
| 5 | 3HA12 | 175 |
| 6 | 2HA8 | 167 |
| 7 | 3HA8 | 36 |
| 8 | 8HA8 | 152 |
| 9 | 8HA8 | 66 |
| | | |
| Barre | | Lg/Poids |
| HA8 | | 21.8/8.6 |
| HA12 | | 22.9/20.3 |

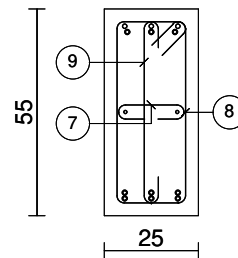











| | Barre | Lg | Forme |
|----|-------|-----|-------|
| 10 | 3HA12 | 534 | 534 |
| 11 | 3HA12 | 510 | 510 |
| 12 | 3HA12 | 265 | 265 |
| 13 | 3HA12 | 140 | 140 |
| 14 | 2HA12 | 59 | 59 |
| 15 | 3HA12 | 485 | 485 |
| 16 | 2HA8 | 505 | 505 |
| 17 | 10HA8 | 36 | 18 |
| 18 | 28HA8 | 152 | 19 |
| 19 | 28HA8 | 66 | 49 |

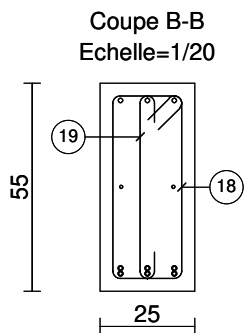
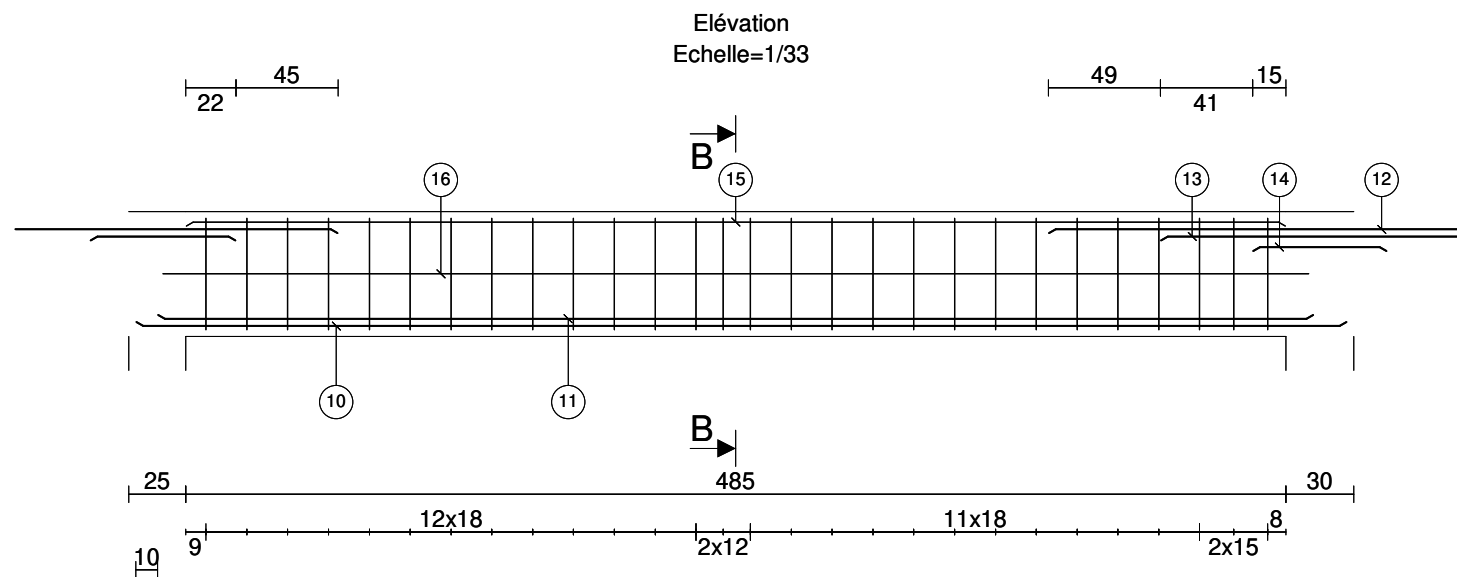
| Barre | Lg/Poids |
|-------|-----------|
| HA8 | 74.7/29.5 |
| HA12 | 59.2/52.6 |



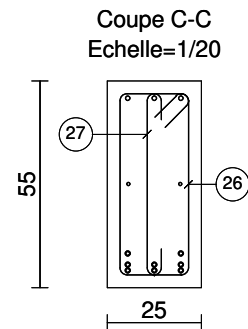
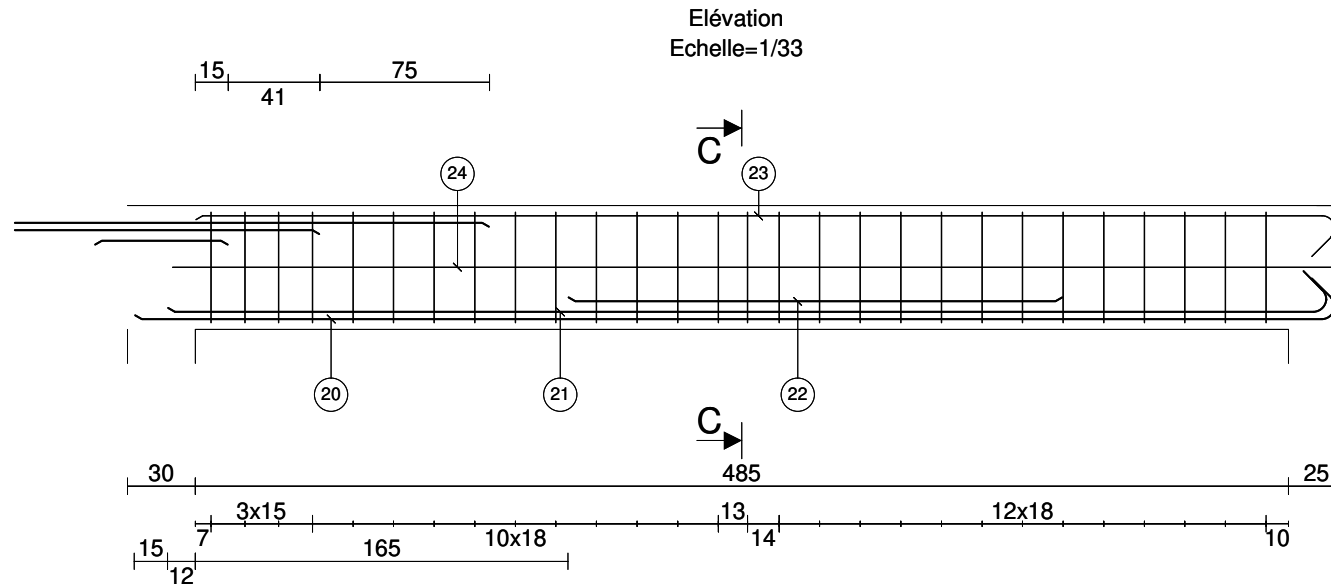
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 20 | 3HA12 | 552 | |
| 21 | 3HA12 | 534 | |
| 22 | 2HA12 | 209 | |
| 23 | 3HA12 | 525 | |
| 24 | 2HA8 | 517 | |
| 25 | 10HA8 | 36 | |
| 26 | 28HA8 | 152 | |
| 27 | 28HA8 | 66 | |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 74.9/29.6 | |
| HA12 | | 52.5/46.6 | |



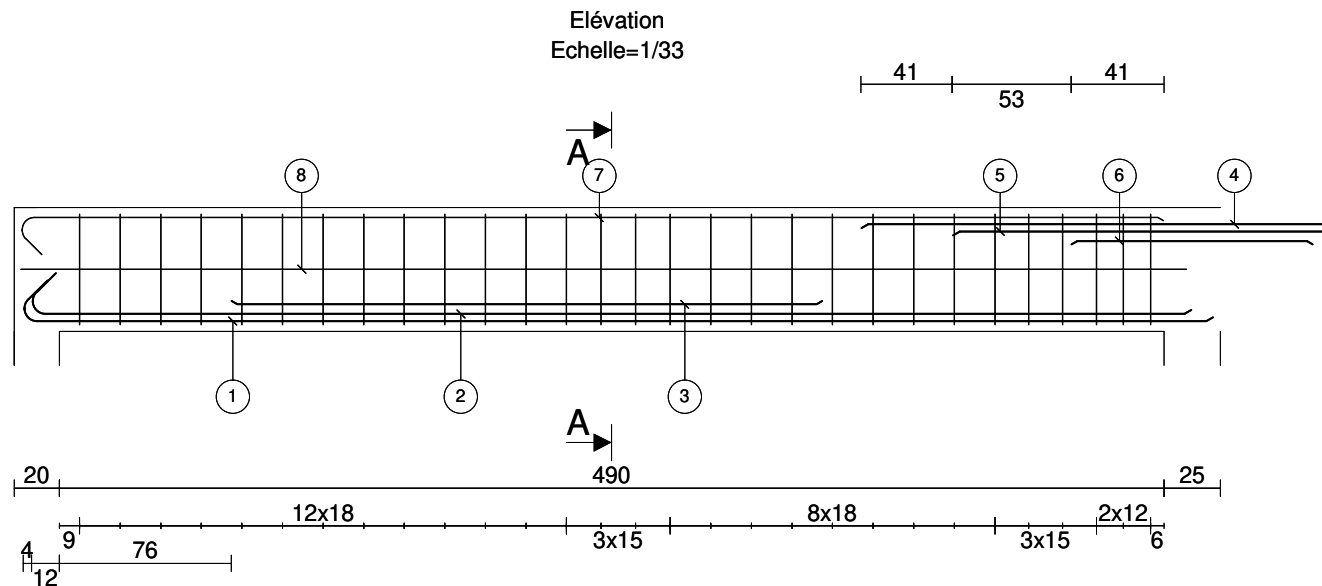
| Barre | | Lg | Forme |
|-------------|-------|-----------------------|--|
| 1 | 3HA12 | 197 |  |
| 2 | 3HA12 | 184 |  |
| 3 | 3HA12 | 164 |  |
| 4 | 2HA12 | 64 |  |
| 5 | 3HA12 | 175 |  |
| 6 | 2HA8 | 167 |  |
| 7 | 3HA8 | 36 |  |
| 8 | 8HA8 | 152 |  |
| 9 | 8HA8 | 66 |  |
| | | | |
| Barre | | Lg/Poids | |
| HA8 HA12 | | 21.8/8.6 22.9/20.3 | |



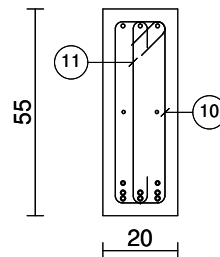
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 10 | 3HA12 | 534 | 534 |
| 11 | 3HA12 | 510 | 510 |
| 12 | 3HA12 | 265 | 265 |
| 13 | 3HA12 | 141 | 141 |
| 14 | 2HA12 | 59 | 59 |
| 15 | 3HA12 | 485 | 485 |
| 16 | 2HA8 | 505 | 505 |
| 17 | 10HA8 | 36 | 18 |
| 18 | 28HA8 | 152 | 49 |
| 19 | 28HA8 | 66 | 49 |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 74.7/29.5 | |
| HA12 | | 59.2/52.6 | |



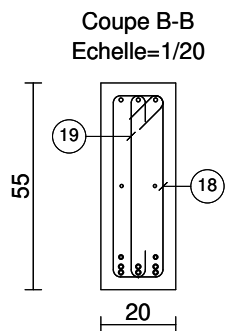
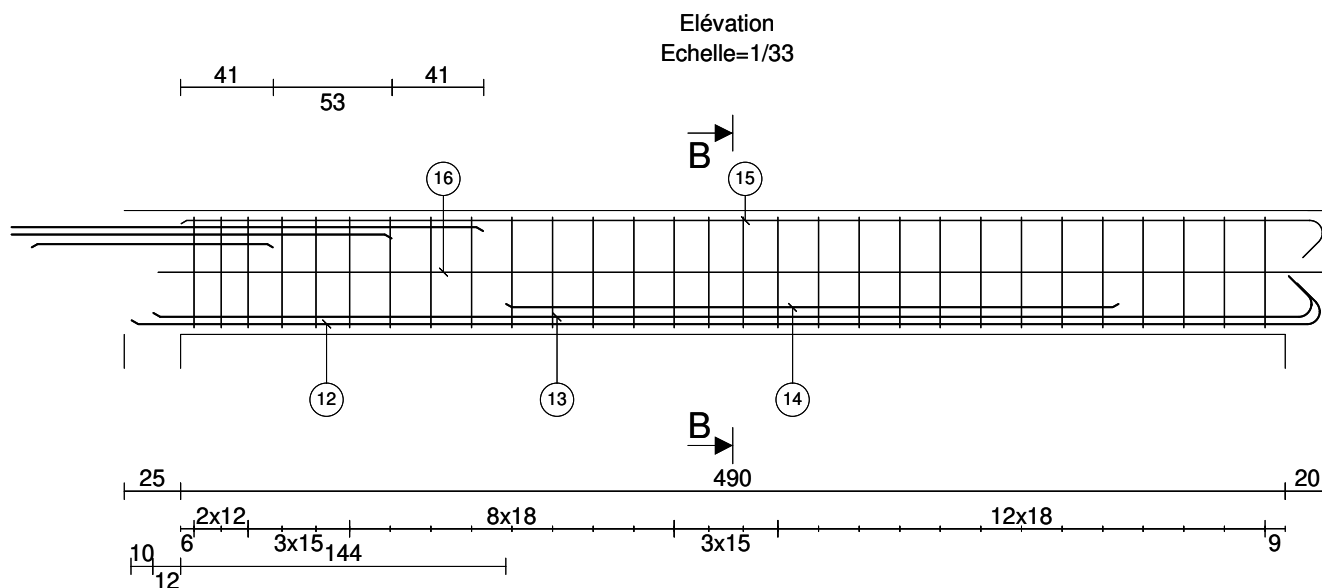
| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 20 | 3HA12 | 552 | |
| 21 | 3HA12 | 534 | |
| 22 | 2HA12 | 220 | |
| 23 | 3HA12 | 525 | |
| 24 | 2HA8 | 517 | |
| 25 | 10HA8 | 36 | |
| 26 | 28HA8 | 152 | |
| 27 | 28HA8 | 66 | |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 74.9/29.6 | |
| HA12 | | 52.7/46.8 | |



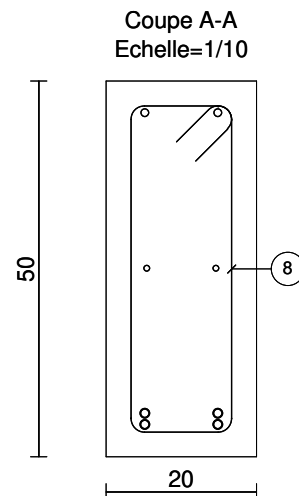
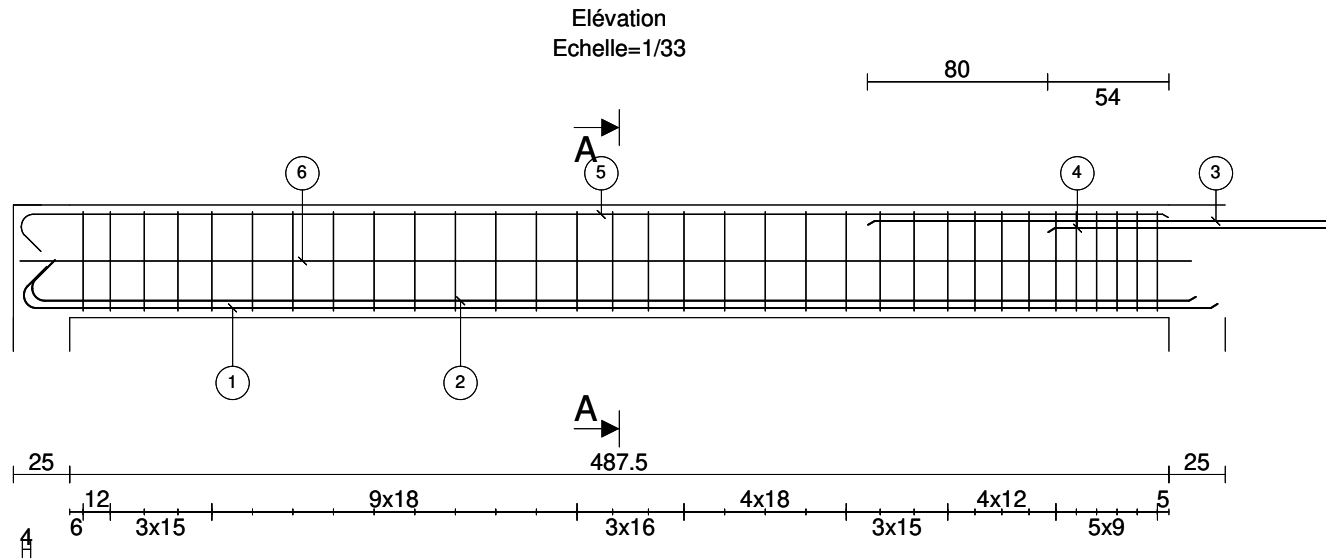
Coupe A-A
Echelle=1/20



| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 3HA12 | 547 |
| 2 | 3HA12 | 534 |
| 3 | 2HA10 | 262 |
| 4 | 3HA12 | 294 |
| 5 | 3HA12 | 213 |
| 6 | 3HA10 | 107 |
| 7 | 3HA10 | 524 |
| 8 | 2HA8 | 517 |
| 9 | 10HA8 | 31 |
| 10 | 29HA8 | 142 |
| 11 | 29HA8 | 66 |
| | | |
| Barre | | Lg/Poids |
| HA8 | | 73.7/29.1 |
| HA10 | | 24.2/14.9 |
| HA12 | | 47.6/42.3 |

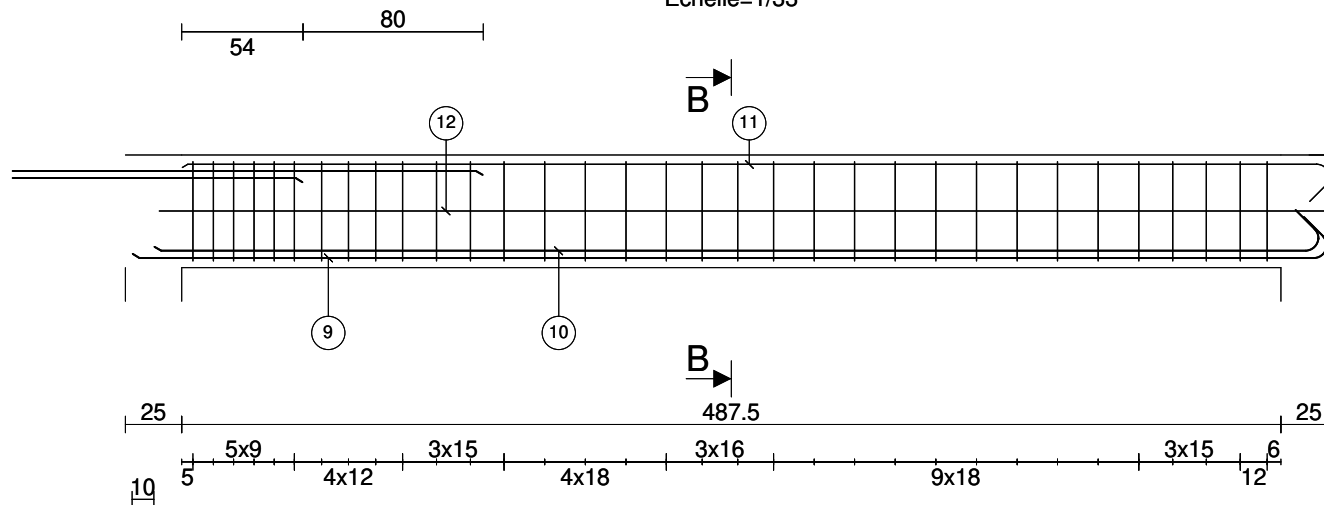


| | Barre | Lg | Forme |
|-------|-------|-----------|---------------|
| 12 | 3HA12 | 547 | 11mm 135° 528 |
| 13 | 3HA12 | 534 | 11mm 135° 515 |
| 14 | 2HA10 | 272 | 272 |
| 15 | 3HA10 | 524 | 16mm 135° 507 |
| 16 | 2HA8 | 517 | 517 |
| 17 | 10HA8 | 31 | 13 |
| 18 | 29HA8 | 142 | 49 14 |
| 19 | 29HA8 | 66 | 49 |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 73.7/29.1 | |
| HA10 | | 21.2/13.0 | |
| HA12 | | 32.4/28.8 | |

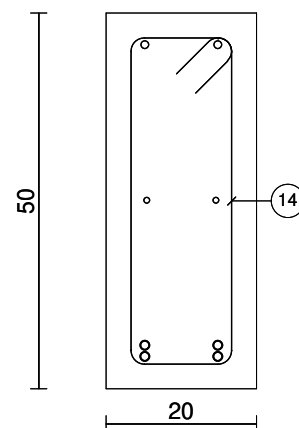


| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA12 | 549 |
| 2 | 2HA12 | 536 |
| 3 | 2HA12 | 293 |
| 4 | 2HA12 | 133 |
| 5 | 2HA10 | 526 |
| 6 | 2HA8 | 519 |
| 7 | 10HA8 | 31 |
| 8 | 33HA6 | 128 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 42.3/9.4 |
| HA8 | | 13.5/5.3 |
| HA10 | | 10.5/6.5 |
| HA12 | | 30.2/26.8 |

Elévation
Echelle=1/33

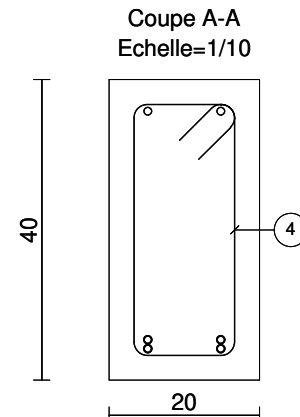
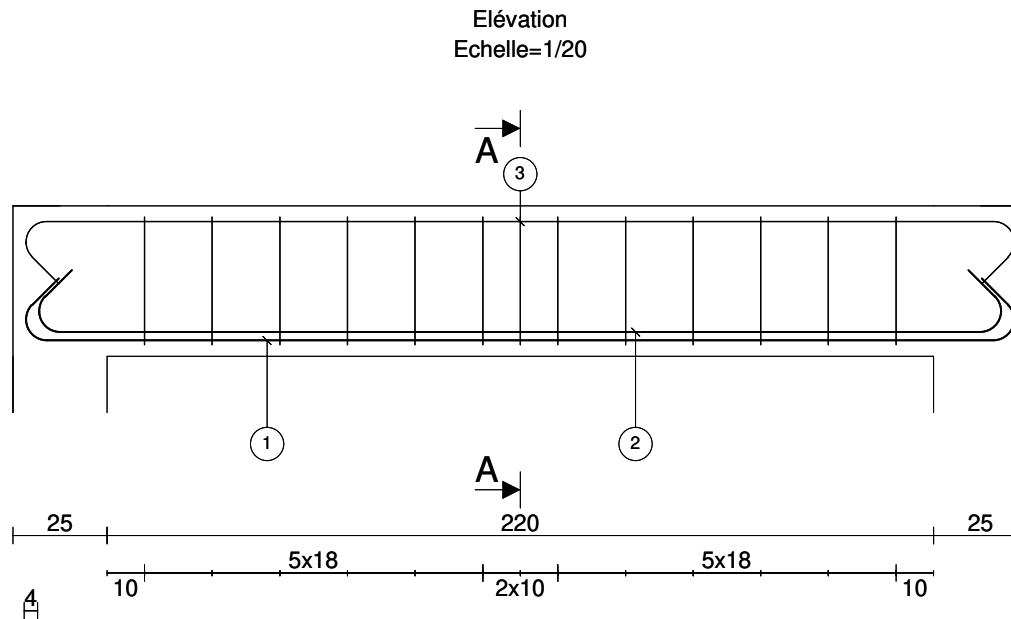


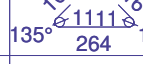
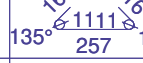
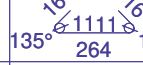

Coupe B-B
Echelle=1/10

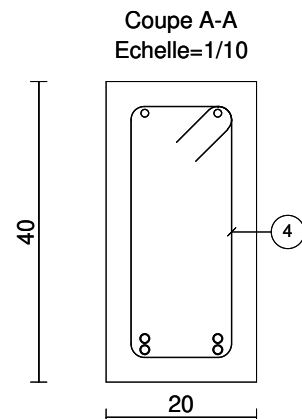
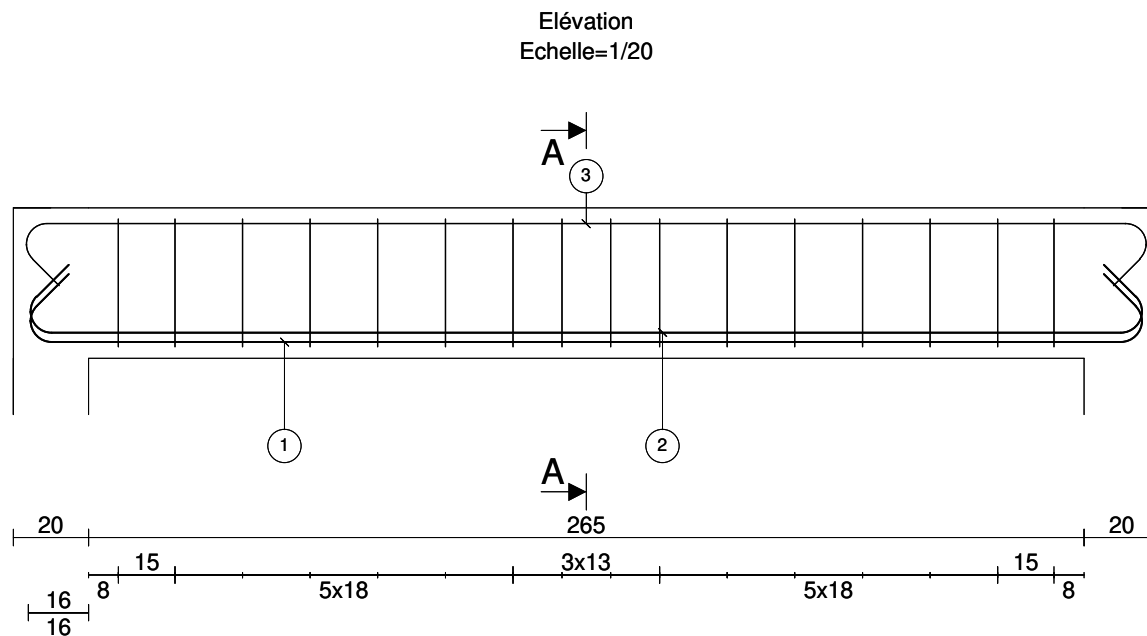


| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 9 | 2HA12 | 549 | |
| 10 | 2HA12 | 536 | |
| 11 | 2HA10 | 526 | |
| 12 | 2HA8 | 519 | |
| 13 | 10HA8 | 31 | |
| 14 | 33HA6 | 128 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 42.3/9.4 | |
| HA8 | | 13.5/5.3 | |
| HA10 | | 10.5/6.5 | |
| HA12 | | 21.7/19.3 | |

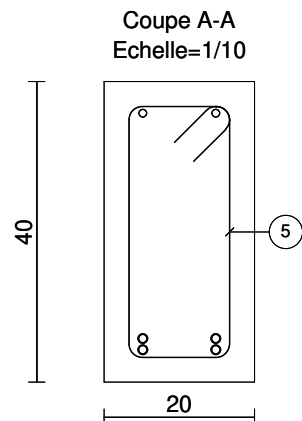
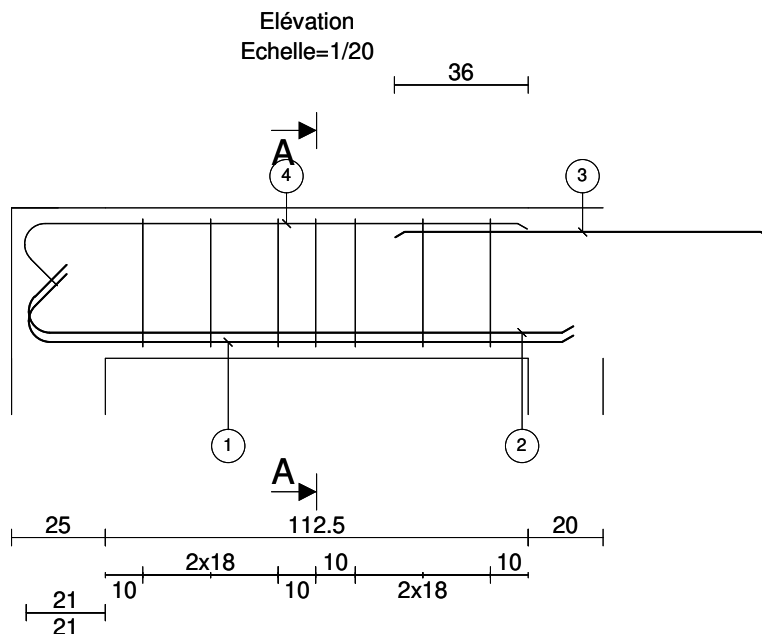
Fc28= 20 MPa Fe= 400 MPa Fissuration peu préjudiciable Coupe feu 1 H



| Barre | | Lg | Forme |
|-------------|-------|-----------------------|---|
| 1 | 2HA10 | 298 |  |
| 2 | 2HA10 | 291 |  |
| 3 | 2HA10 | 298 |  |
| 4 | 13HA6 | 108 |  |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 14.1/3.1 17.7/10.9 | |

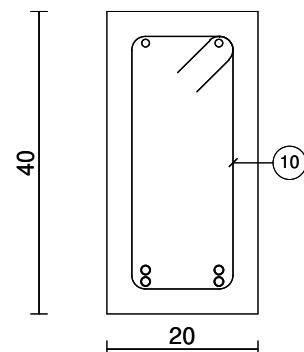
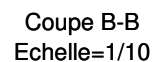


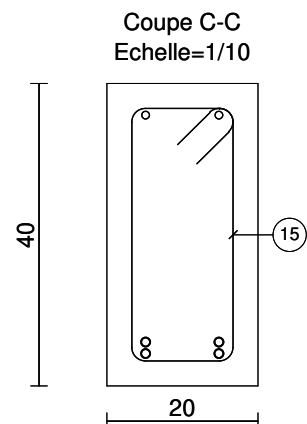
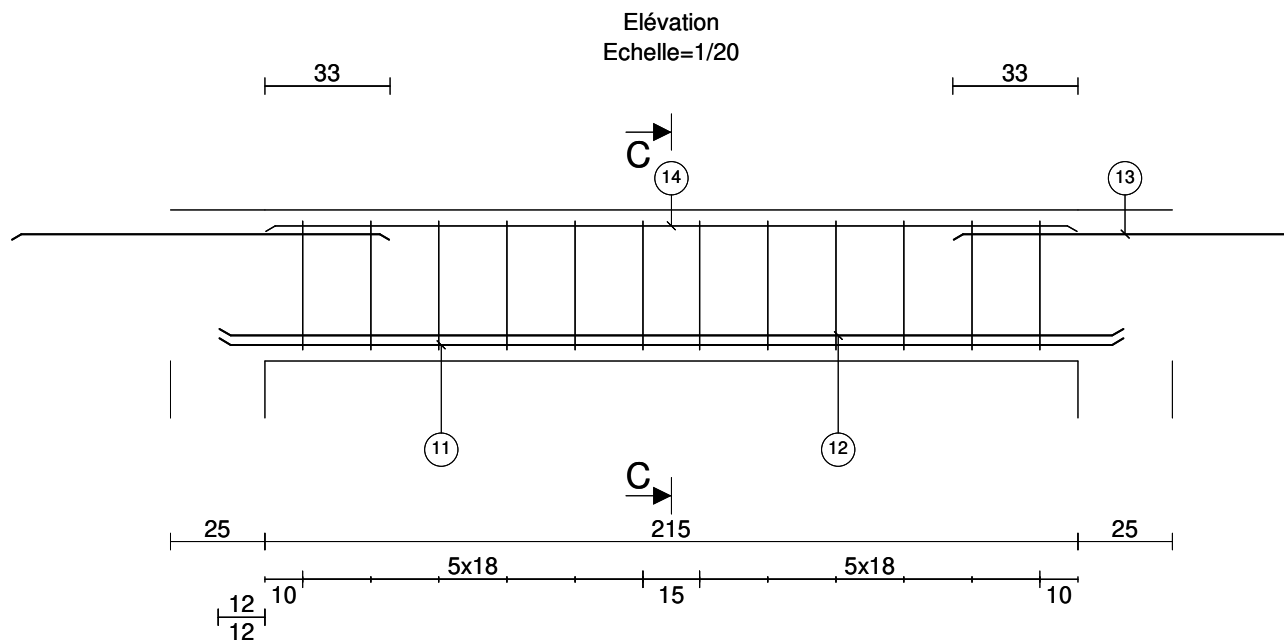
| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA12 | 335 |
| 2 | 2HA12 | 335 |
| 3 | 2HA10 | 333 |
| 4 | 16HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 17.3/3.8 |
| HA10 | | 6.7/4.1 |
| HA12 | | 13.4/11.9 |



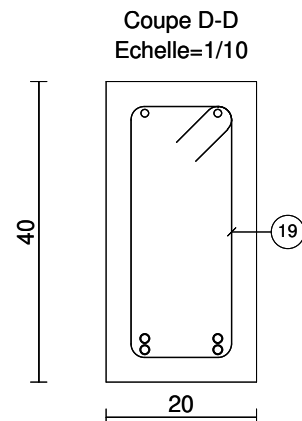
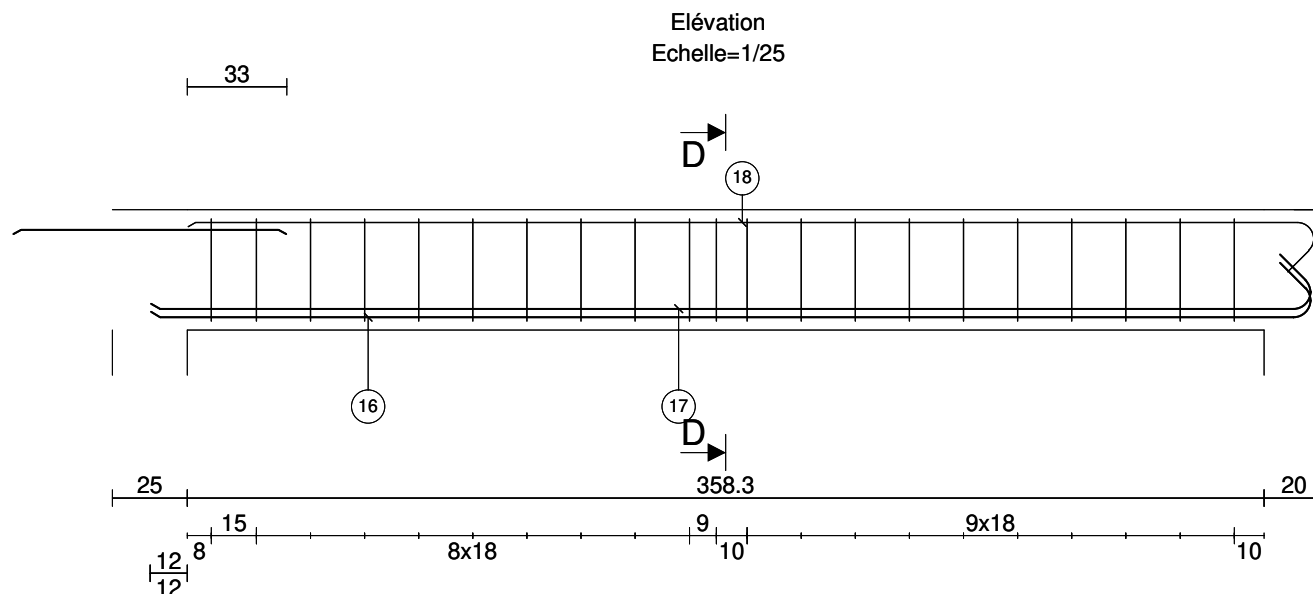
| Barre | Lg | Forme |
|-------|-------|----------|
| 1 | 2HA12 | 165 |
| 2 | 2HA12 | 165 |
| 3 | 2HA10 | 100 |
| 4 | 2HA10 | 151 |
| 5 | 7HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 7.6/1.7 |
| HA10 | | 5.0/3.1 |
| HA12 | | 6.6/5.9 |

Section : 20 x 10 cm



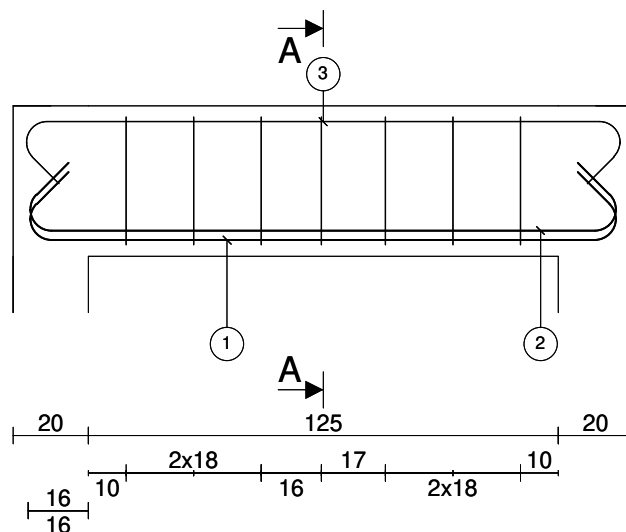


| Barre | | Lg | Forme |
|-------|-------|----------|----------|
| 11 | 2HA12 | 240 | 240 |
| 12 | 2HA12 | 240 | 240 |
| 13 | 2HA10 | 91 | 91 |
| 14 | 2HA10 | 215 | 215 |
| 15 | 12HA6 | 108 | 34 14 |
| Barre | | Lg/Poids | |
| HA6 | | 13.0/2.9 | |
| HA10 | | 6.1/3.8 | |
| HA12 | | 9.6/8.5 | |

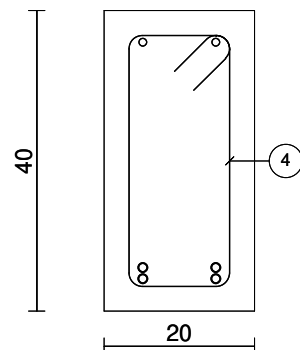


| | Barre | Lg | Forme |
|-------|-------|-----------|----------------|
| 16 | 2HA12 | 406 | 11 387 135° |
| 17 | 2HA12 | 406 | 11 387 135° |
| 18 | 2HA10 | 392 | 16 11 135° 375 |
| 19 | 21HA6 | 108 | 34 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 22.7/5.0 | |
| HA10 | | 7.8/4.8 | |
| HA12 | | 16.2/14.4 | |

Elévation
Echelle=1/20

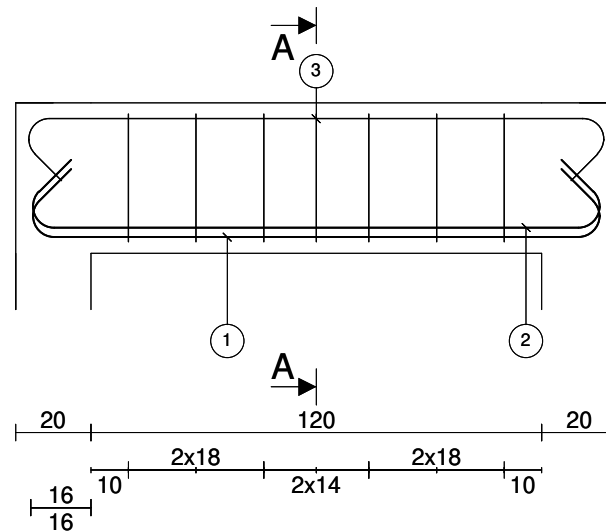


Coupe A-A
Echelle=1/10

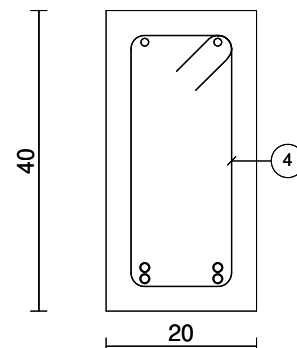


| Barre | Lg | Forme |
|-------|-------|----------|
| 1 | 2HA12 | 195 |
| 2 | 2HA12 | 195 |
| 3 | 2HA10 | 193 |
| 4 | 7HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 7.6/1.7 |
| HA10 | | 3.9/2.4 |
| HA12 | | 7.8/6.9 |

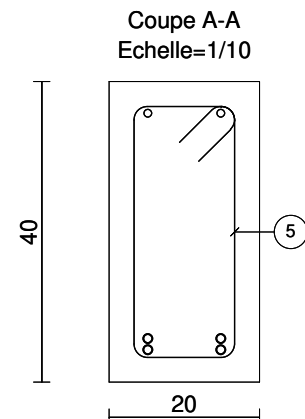
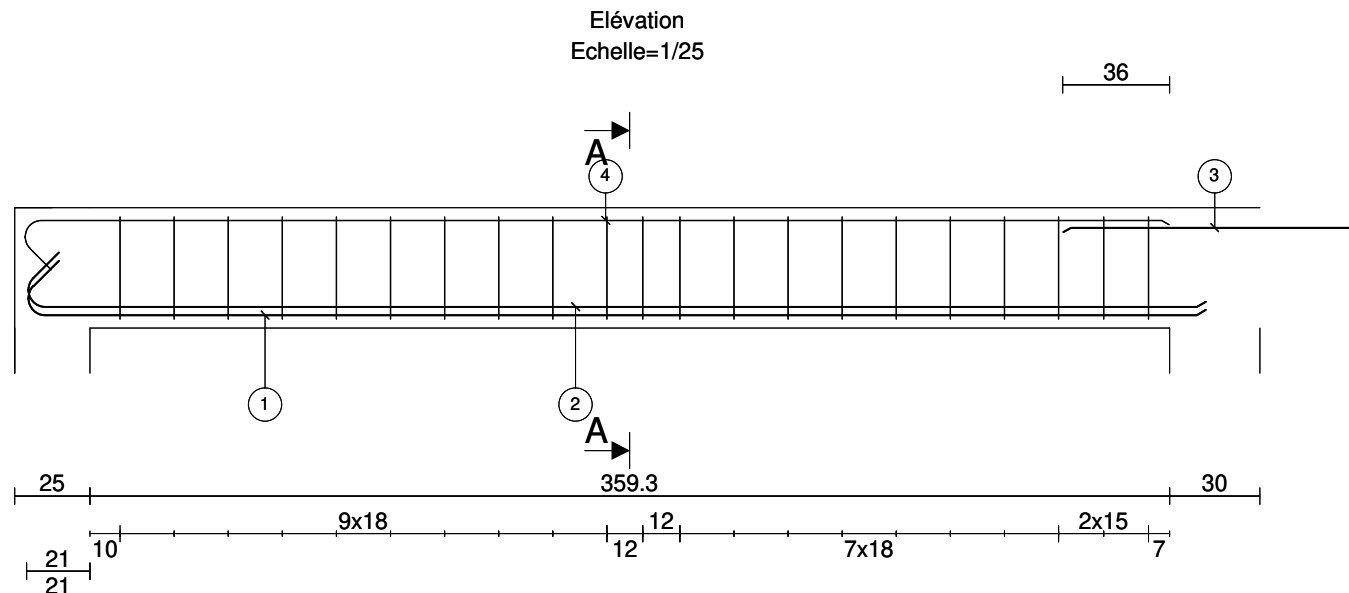
Elévation
Echelle=1/20



Coupe A-A
Echelle=1/10

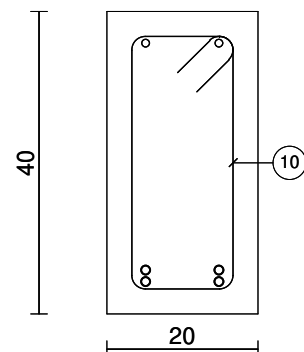
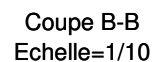


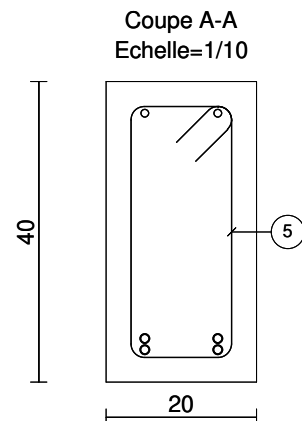
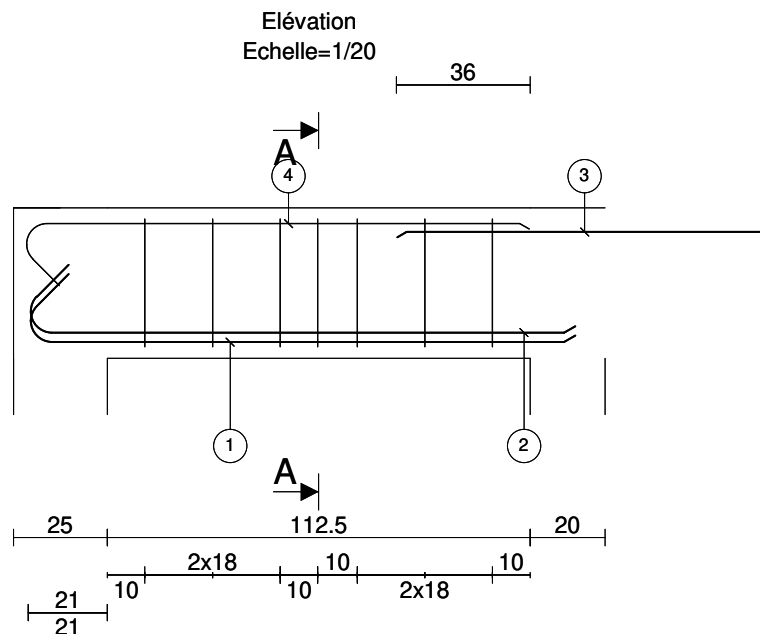
| Barre | Lg | Forme |
|-------|-------|----------|
| 1 | 2HA12 | 190 |
| 2 | 2HA12 | 190 |
| 3 | 2HA10 | 188 |
| 4 | 7HA6 | 108 |
| | | 14 |
| Barre | | Lg/Poids |
| HA6 | | 7.6/1.7 |
| HA10 | | 3.8/2.3 |
| HA12 | | 7.6/6.7 |



| Barre | Lg | Forme |
|-------|-------|-----------|
| 1 | 2HA12 | 412 |
| 2 | 2HA12 | 412 |
| 3 | 2HA10 | 101 |
| 4 | 2HA10 | 398 |
| 5 | 21HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 22.7/5.0 |
| HA10 | | 10.0/6.2 |
| HA12 | | 16.5/14.6 |

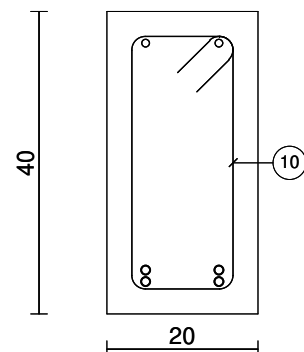
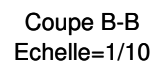
Section : 20 x 10 cm

Arche Poutre BAEL Version 2021



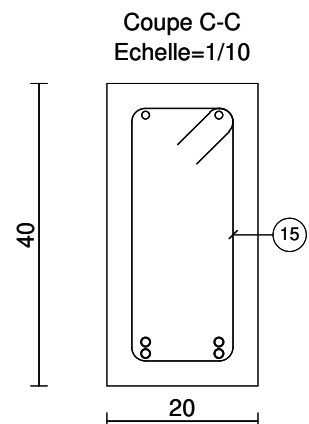
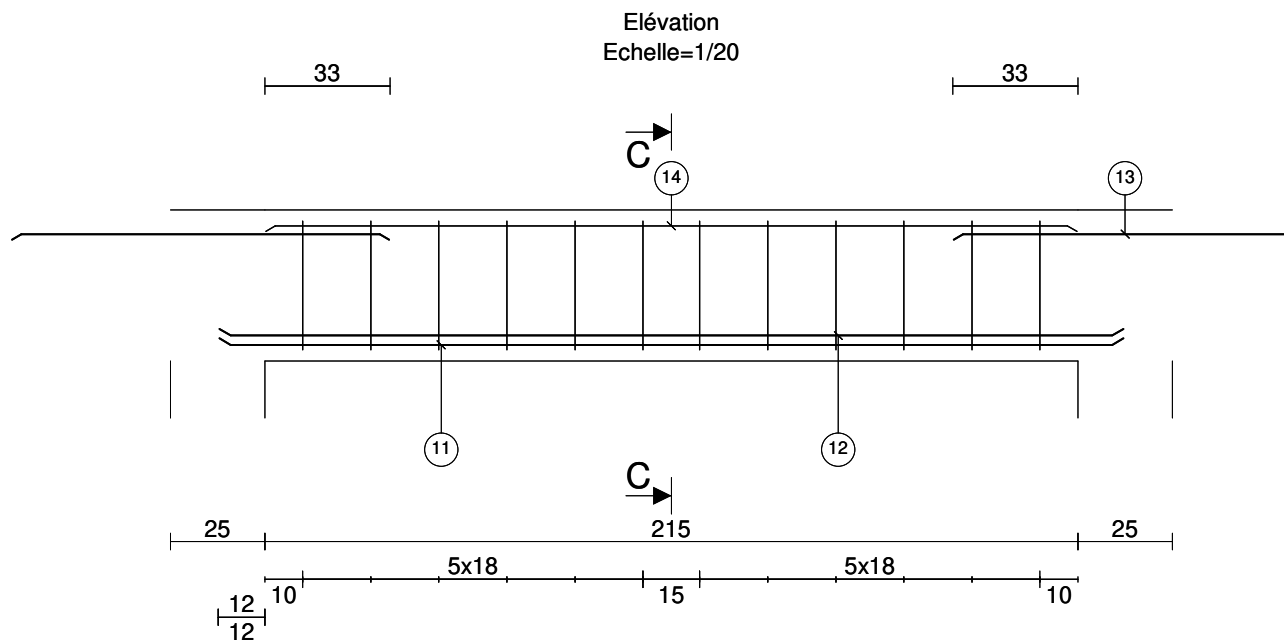
| Barre | Lg | Forme |
|-------|-------|----------|
| 1 | 2HA12 | 165 |
| 2 | 2HA12 | 165 |
| 3 | 2HA10 | 100 |
| 4 | 2HA10 | 151 |
| 5 | 7HA6 | 108 |
| | | |
| Barre | | Lg/Poids |
| HA6 | | 7.6/1.7 |
| HA10 | | 5.0/3.1 |
| HA12 | | 6.6/5.9 |

Section : 20 x 10 cm
Fc28= 20 MPa Fe= 400 MPa Fissuration peu préjudiciable Coupe feu 1 H

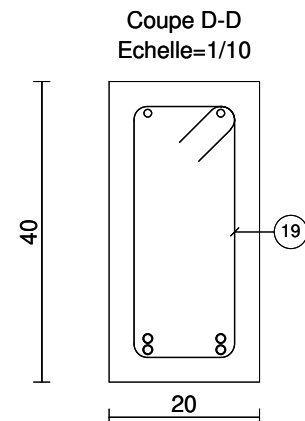
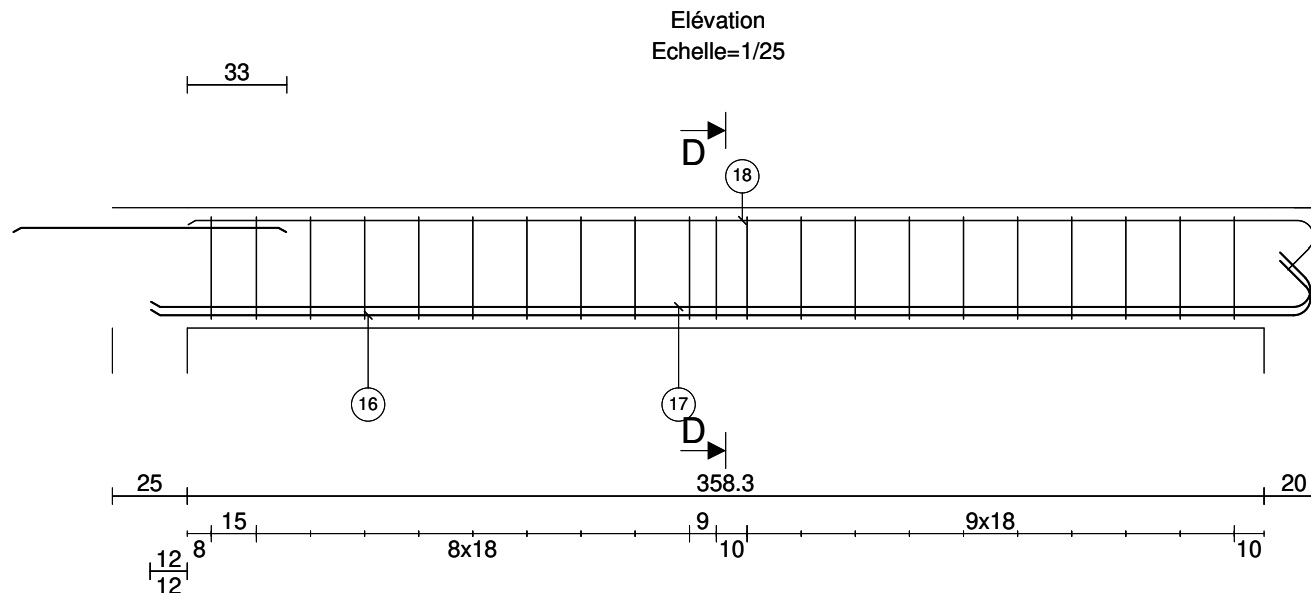


Section : 20 x 40ht

Fc28= 20 MPa Fe= 400 MPa Fissuration peu préjudiciable Coupe feu 1 H

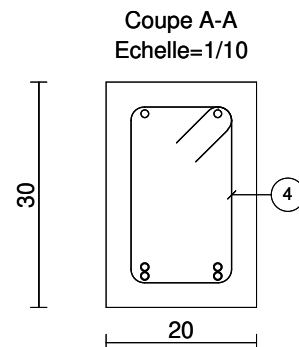
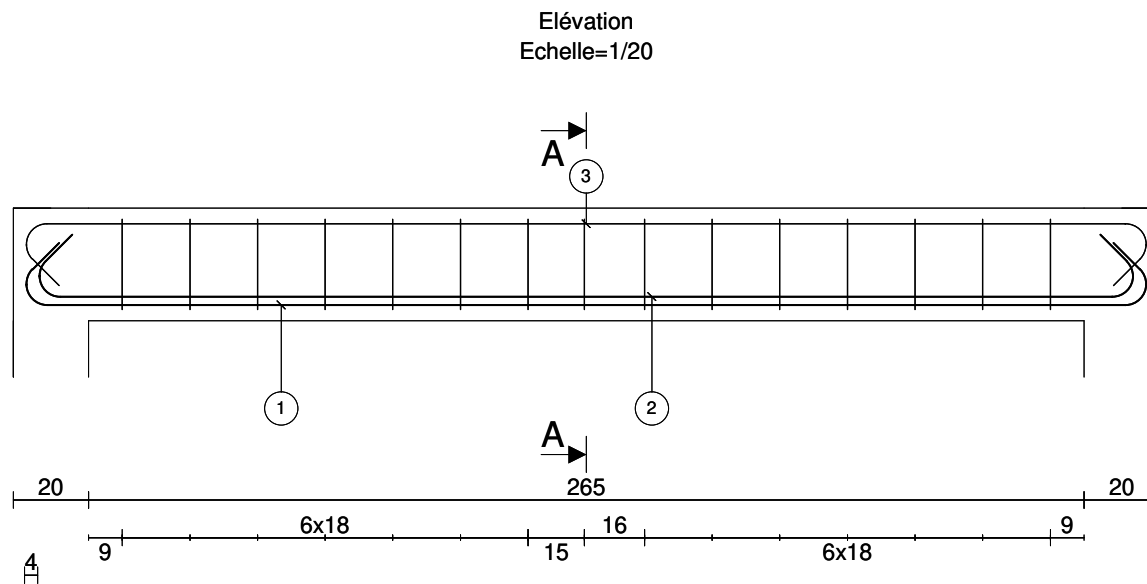


| Barre | | Lg | Forme |
|-------|-------|----------|----------|
| 11 | 2HA12 | 240 | 240 |
| 12 | 2HA12 | 240 | 240 |
| 13 | 2HA10 | 91 | 91 |
| 14 | 2HA10 | 215 | 215 |
| 15 | 12HA6 | 108 | 34 14 |
| Barre | | Lg/Poids | |
| HA6 | | 13.0/2.9 | |
| HA10 | | 6.1/3.8 | |
| HA12 | | 9.6/8.5 | |

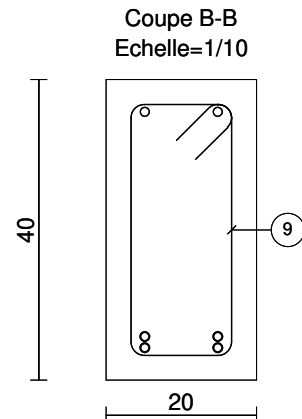
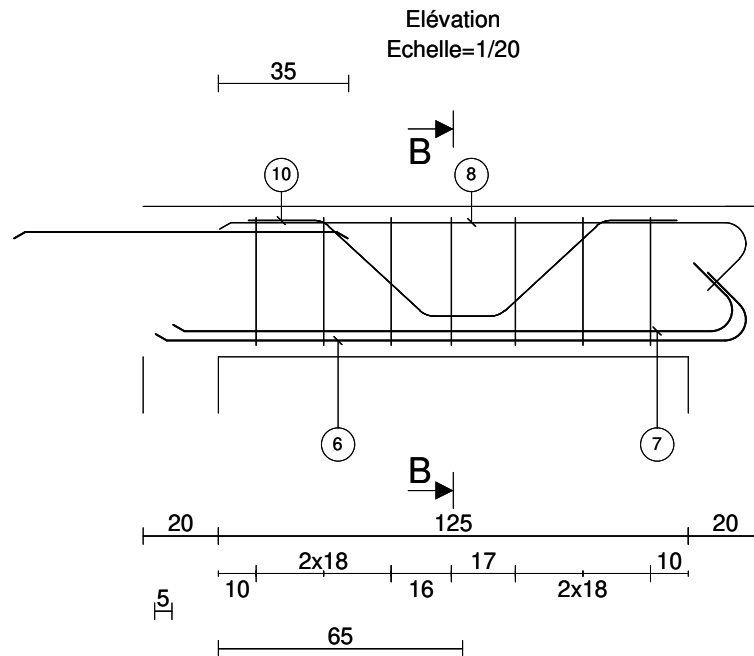


| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 16 | 2HA12 | 406 | |
| 17 | 2HA12 | 406 | |
| 18 | 2HA10 | 392 | |
| 19 | 21HA6 | 108 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 22.7/5.0 | |
| HA10 | | 7.8/4.8 | |
| HA12 | | 16.2/14.4 | |

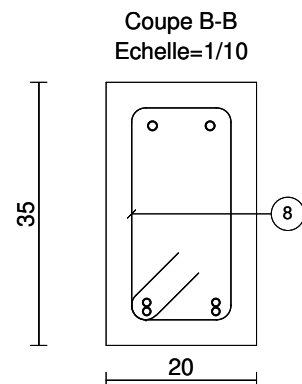
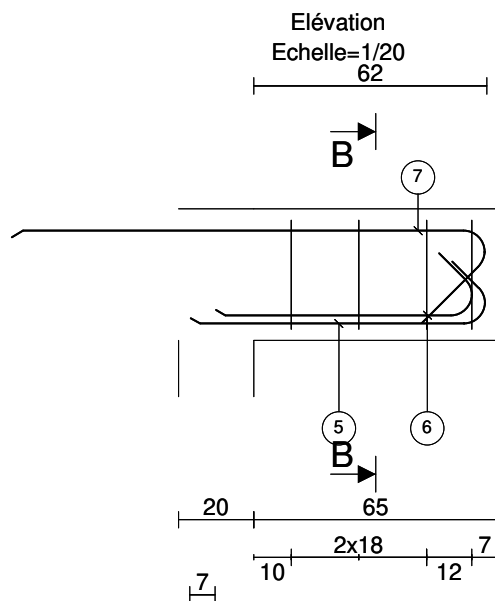
V. CARNET DE FERRAILLAGE DES POUTRES PHR+1



| | Barre | Lg | Forme |
|-------------|-------|-----------------------|-----------------------------|
| 1 | 2HA10 | 333 | 16 1111 135° 299 135° |
| 2 | 2HA10 | 326 | 16 1111 135° 292 135° |
| 3 | 2HA10 | 333 | 16 1111 135° 299 135° |
| 4 | 15HA6 | 88 | 24 14 |
| | | | |
| Barre | | Lg/Poids | |
| HA6 HA10 | | 13.2/2.9 19.8/12.2 | |

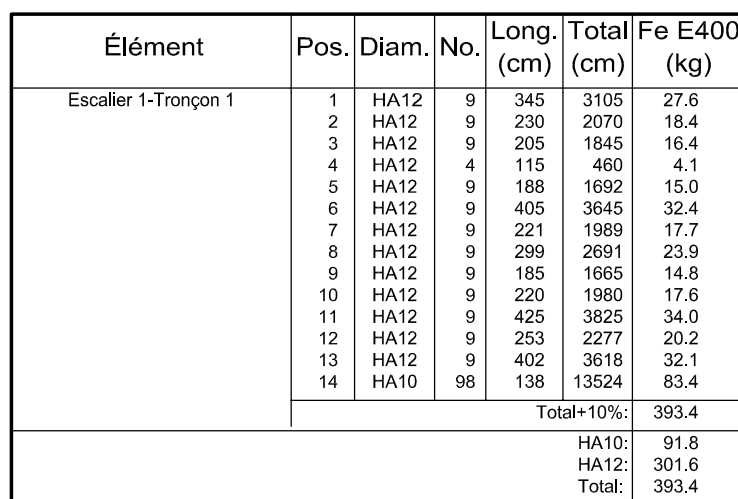
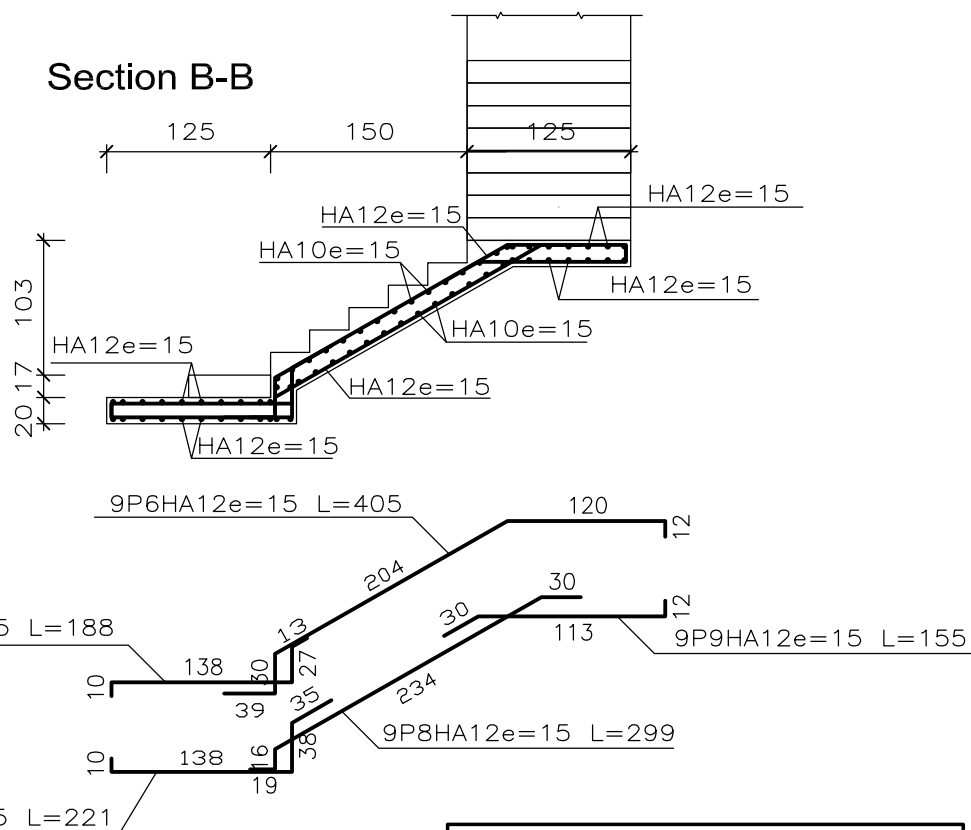
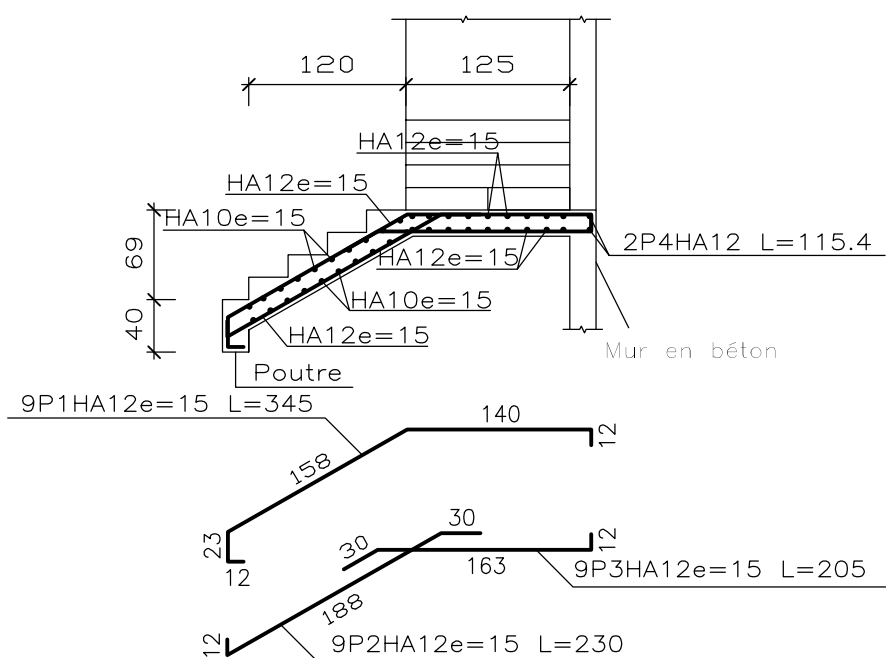
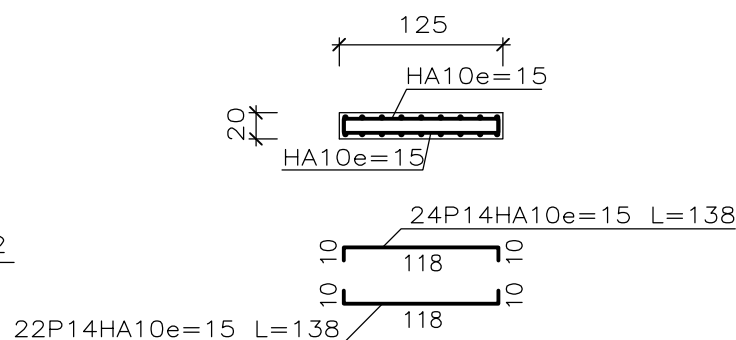
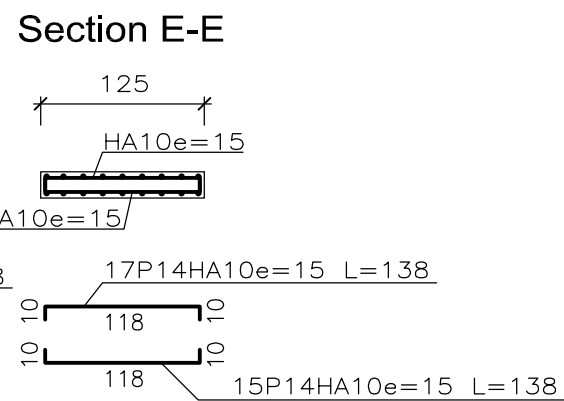


| | Barre | Lg | Forme |
|-------|-------|-----------|-------|
| 6 | 2HA12 | 177 | |
| 7 | 2HA12 | 169 | |
| 8 | 2HA12 | 160 | |
| 9 | 7HA6 | 108 | |
| 10 | 2HA12 | 133 | |
| | | | |
| Barre | | Lg/Poids | |
| HA6 | | 7.6/1.7 | |
| HA12 | | 12.8/11.3 | |



| | Barre | Lg | Forme |
|-------|-------|----------|-------|
| 5 | 2HA10 | 96 | |
| 6 | 2HA10 | 86 | |
| 7 | 2HA12 | 155 | |
| 8 | 4HA8 | 102 | |
| | | | |
| Barre | | Lg/Poids | |
| HA8 | | 4.1/1.6 | |
| HA10 | | 3.6/2.2 | |
| HA12 | | 3.1/2.8 | |

VI. CARNET DE FERRAILLAGE DE L'ESCALIER



| Récapitulatif Acier Escalier 1 | | Long. total (m) | Poids+10% (kg) | Total |
|--------------------------------|------|-----------------|----------------|-------|
| Fe E400 | HA10 | 135.2 | 92 | |
| | HA12 | 308.6 | 301 | 393 |

| Tronçon 1 | | |
|-----------|------------------------------------|------------------------|
| Géométrie | Emmarchement | 1.250 m |
| | Épaisseur | 0.20 m |
| | Marche | 0.300 m |
| | Contremarche | 0.171 m |
| | Franchissement de dénivelé | 3.60 m |
| | Nb de marches | 21 |
| | Niveau final | PHRDC |
| Charges | Niveau initial | PBRDC |
| | Poids propre | 4.91 kN/m ² |
| | Marches (Bétonné avec la dalle) | 1.82 kN/m ² |
| | Revêtement | 1.00 kN/m ² |
| | Rampes | 3.00 kN/m |
| | Charge d'exploitation | 4.00 kN/m ² |
| Matériaux | Béton | B20 |
| | Acier | Fe E400 |
| | Enr. géométrique | 3.0 cm |