HYPOTHESES DE CALCUL

BPE =
Aciers HA FeE 500 MPa
Enrobage 5cm
Coupe feu : 2h
Séisme : 2(faible)–catégorie 2

CHARGES

daN/m²					
ch perm.G					
ch expl.Q					

Ingénieur	Dessinateur
K.NGUILI	B.GUGLIELMO

INDICE	DATE	DESIGNATION
0	26.02.2018	Première diffusion

SETB INGENIERIE . BTP
INGENIERIE . BTP
ZAC de la Poulasse – Avenue de Lion – 83210 SOLLIES PONT
TEL : 04.94.48.41.90 – FAX : 04.94.48.78.25 – E.Mail : bet-setb@wanadoo.fr

MAITRE D'OUVRAGE
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QUALICONSULT Marseille

BATIMENT A
PL HT R-1
POUTRES

Ferraillage

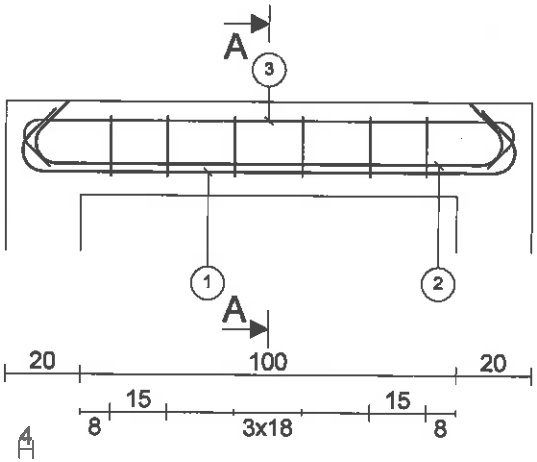
ECHELLE 1/50

AFFAIRE n° V17-114

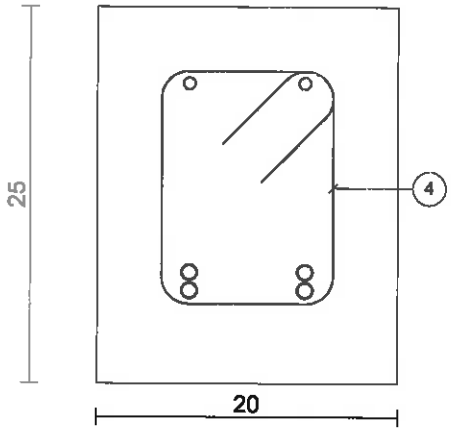
PLAN n° 0 EXE 102A

SETB INGENIERIE BTP	PL HT R-1 V17-114 O FIL DE L'EAU	L100	Béton=0.07 m3 Acier=6.1 kg d=87.9 kg/m3 Fi=8.5 mm Cof=0.7 m²	Eb=5.0 cm Eh=4.0 cm El=4.0 cm
	Section : 20 x 25ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/5



	Barre	Lg	Forme
1	2HA10	166	16, 16, 1111, 135°, 135°, 132
2	2HA10	159	16, 16, 1111, 135°, 135°, 125
3	2HA8	157	12, 12, 8, 8, 135°, 135°, 131
4	6HA6	68	16, 12

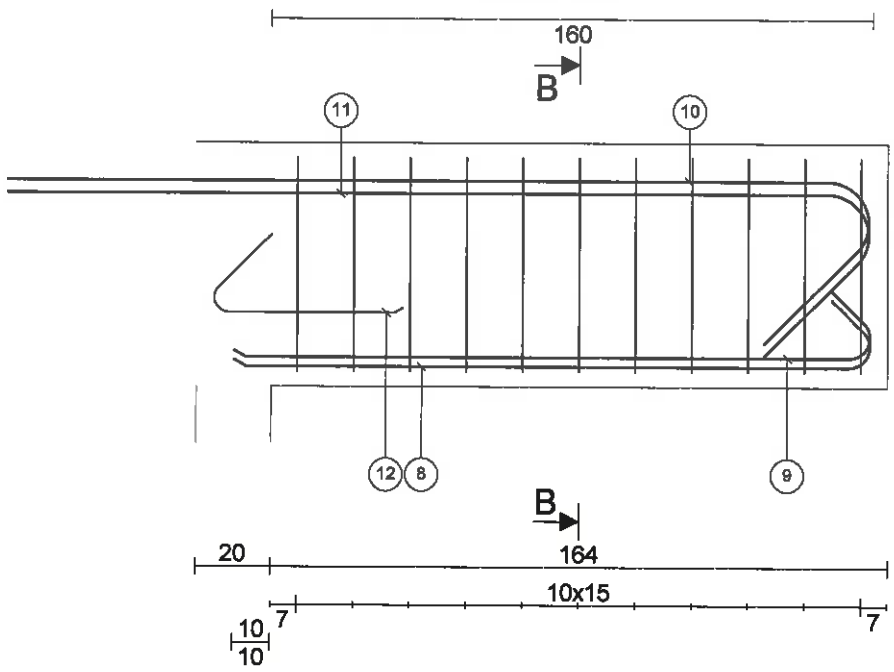
Barre	Lg/Poids
HA6 HA8 HA10	4.1/0.9 3.1/1.2 6.5/4.0

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	CO103	Béton=0.51 m3 Acier=220.6 kg d=431.3 kg/m3 Fi=12.9 mm Cof=2.5 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm

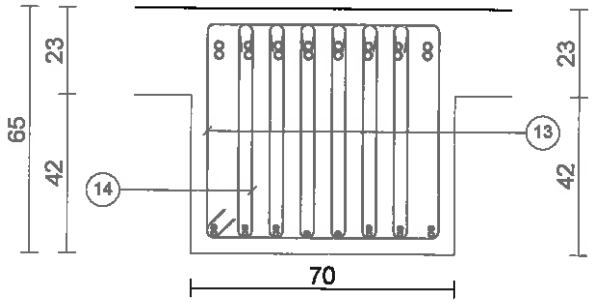
Section : 70 x 65ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/20



Coupe B-B
Echelle=1/20

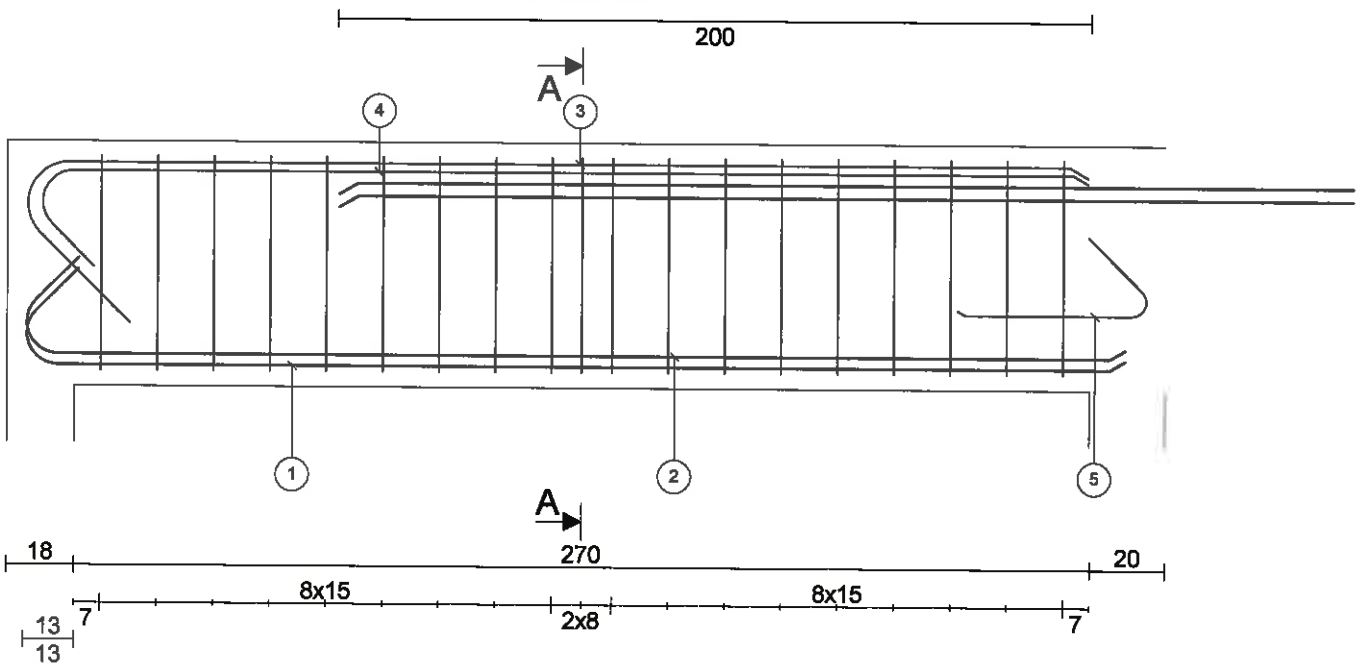


	Barre	Lg	Forme
8	8HA12	189	18 / 11 / 135° / 170
9	6HA12	189	18 / 11 / 135° / 170
10	8HA20	429	47 / 22 / 135° / 380
11	8HA20	429	47 / 22 / 135° / 380
12	8HA8	76	24 / 8 / 135° / 51
13	11HA6	250	57 / 62
14	66HA6	133	57

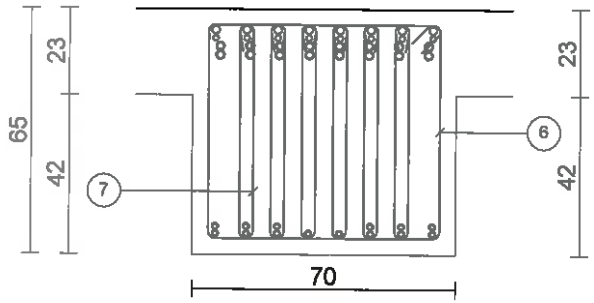
Barre	Lg/Poids
HA6 HA8 HA12 HA20	115.4/25.6 6.1/2.4 26.5/23.5 68.6/169.2

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO104	Béton=0.88 m3 Acier=221.3 kg d=252.6 kg/m3 Fi=13.1 mm Cof=4.2 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	8HA16	320	25 / 17 / 135° / 294
2	6HA16	320	25 / 17 / 135° / 294
3	8HA20	331	46 / 22 / 283 / 135°
4	8HA16	306	25 / 17 / 279 / 135°
5	8HA8	76	24 / 8 / 51 / 135°
6	19HA6	250	57 / 62
7	114HA6	133	57

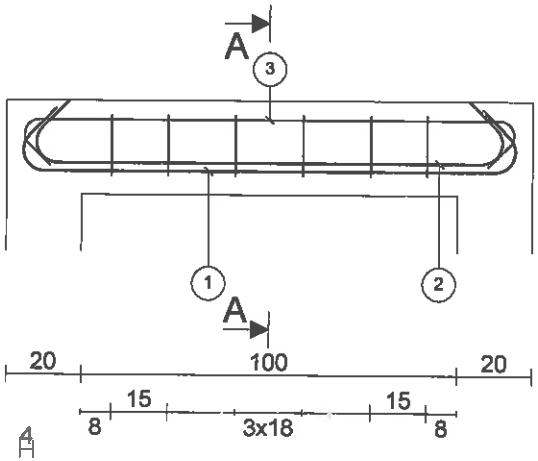
Barre	Lg/Poids
HA6 HA8 HA16 HA20	199.3/44.2 6.1/2.4 69.3/109.3 26.5/65.3

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	L105	Béton=0.07 m3 Acier=6.1 kg d=87.9 kg/m3 Fi=8.5 mm Cof=0.7 m²	Eb=5.0 cm Eh=4.0 cm El=4.0 cm

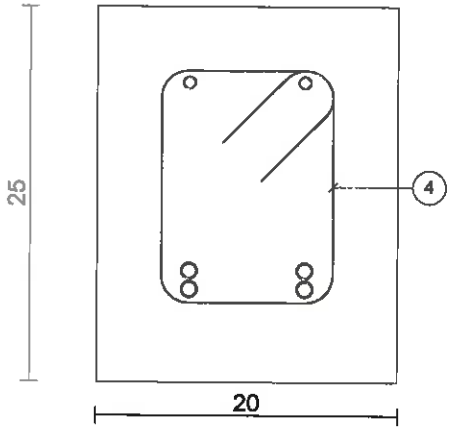
Section : 20 x 25ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/5



	Barre	Lg	Forme
1	2HA10	166	16, 16, 1111, 135°, 135°, 132
2	2HA10	159	16, 16, 1111, 135°, 135°, 125
3	2HA8	157	12, 12, 8, 8, 135°, 135°, 131
4	6HA6	68	16, 12

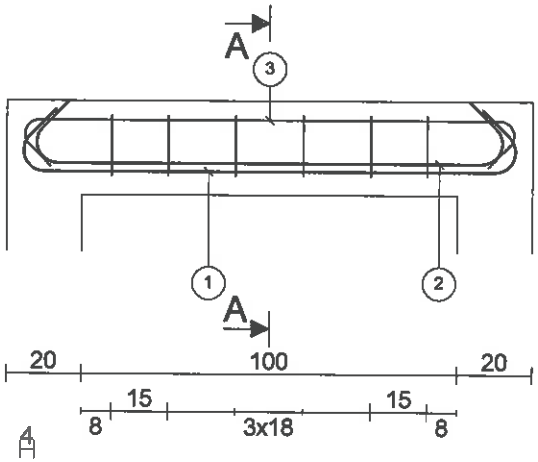
Barre	Lg/Poids
HA6 HA8 HA10	4.1/0.9 3.1/1.2 6.5/4.0

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	L106	Béton=0.07 m3 Acier=6.1 kg d=87.9 kg/m3 Fi=8.5 mm Cof=0.7 m²	Eb=5.0 cm Eh=4.0 cm El=4.0 cm

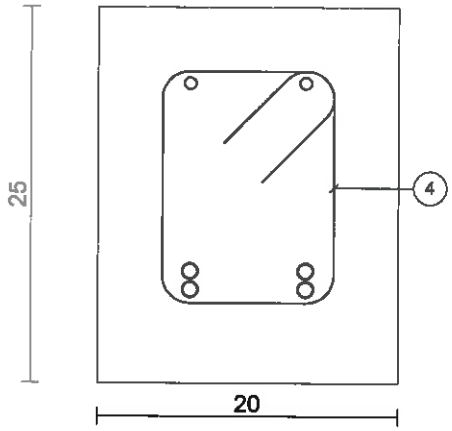
Section : 20 x 25ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/5

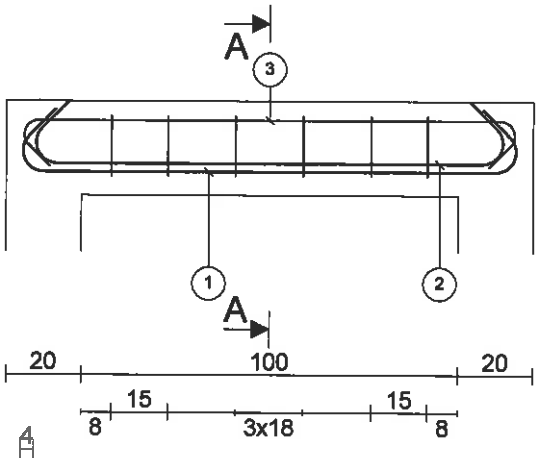


	Barre	Lg	Forme
1	2HA10	166	16 135° 1111 16 135° 132
2	2HA10	159	16 135° 1111 16 135° 125
3	2HA8	157	12 135° 8 8 12 135° 131
4	6HA6	68	16 12

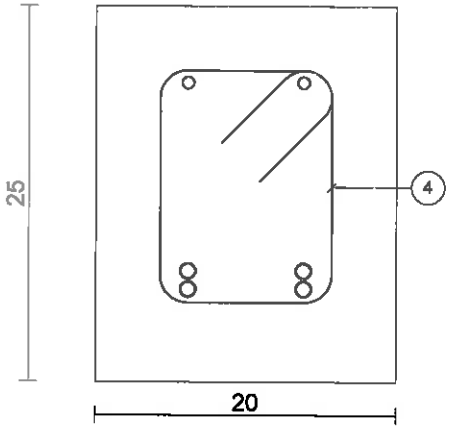
Barre	Lg/Poids
HA6 HA8 HA10	4.1/0.9 3.1/1.2 6.5/4.0

SETB INGENIERIE BTP	PL HT R-1 V17-114 O FIL DE L'EAU	L107	Béton=0.07 m3 Acier=6.1 kg d=87.9 kg/m3 Fi=8.5 mm Cof=0.7 m²	Eb=5.0 cm Eh=4.0 cm El=4.0 cm
	Section : 20 x 25ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/5

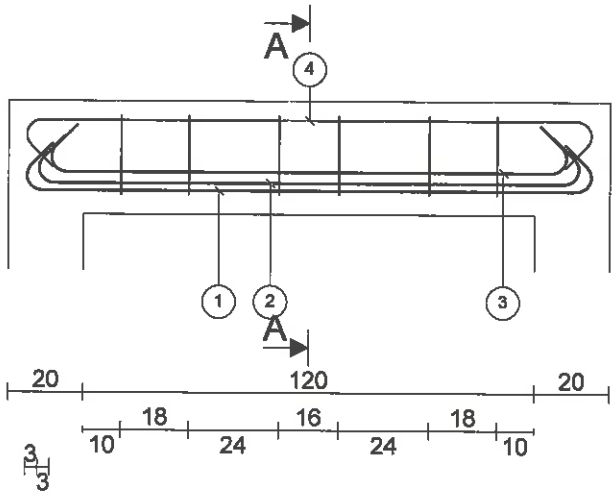


	Barre	Lg	Forme
1	2HA10	166	16 16 1111 135° 135° 132
2	2HA10	159	16 16 1111 135° 135° 125
3	2HA8	157	12 13 8 8 135° 135° 131
4	6HA6	68	16 12

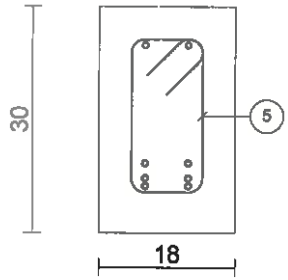
Barre	Lg/Poids
HA6 HA8 HA10	4.1/0.9 3.1/1.2 6.5/4.0

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	L108	Béton=0.09 m3 Acier=6.4 kg d=74.2 kg/m3 Fi=7.6 mm Cof=0.9 m²	Eb=5.1 cm Eh=4.0 cm El=4.0 cm
	Section : 18 x 30ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/10

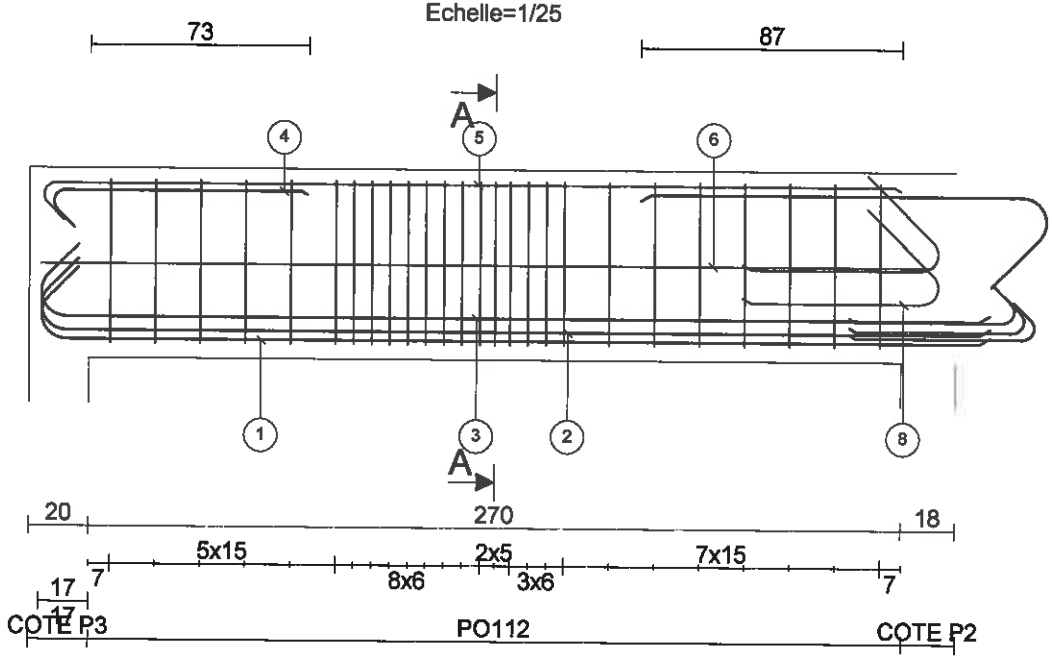


	Barre	Lg	Forme
1	2HA8	177	12 8 8 12 135° 135° 151
2	2HA8	170	12 8 8 12 135° 135° 144
3	2HA8	164	12 8 8 12 135° 135° 138
4	2HA8	177	12 8 8 12 135° 135° 151
5	6HA6	74	21 10

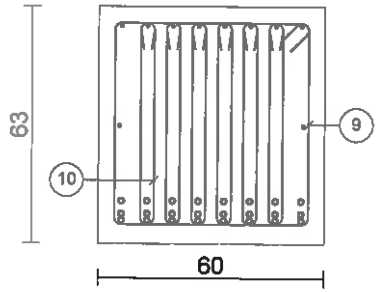
Barre	Lg/Poids
HA6 HA8	4.4/1.0 13.7/5.4

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO112	Béton=1.13 m3 Acier=187.2 kg d=165.7 kg/m3 Fl=8.9 mm Cof=5.0 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm
	Section : 60 x 63ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/25



Coupe A-A
Echelle=1/20

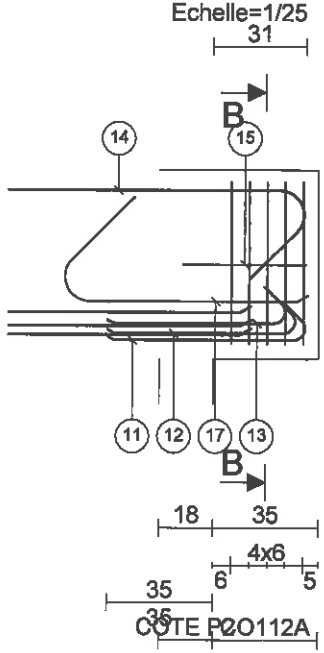


	Barre	Lg	Forme
1	8HA14	341	23 / 16 / 135° / 316
2	8HA14	341	23 / 16 / 135° / 316
3	8HA14	341	23 / 16 / 135° / 316
4	8HA8	98	12 / 8 / 85 / 135°
5	8HA8	298	12 / 8 / 286 / 135°
6	2HA8	296	296
7	6HA8	69	52
8	16HA12	104	31 / 11 / 66 / 135°
9	26HA6	225	54 / 52
10	156HA6	128	54

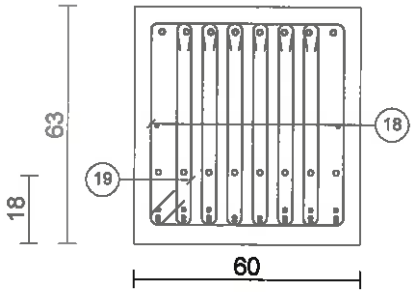
Barre	Lg/Poids
HA6	257.4/57.1
HA8	41.7/16.5
HA12	16.6/14.8
HA14	81.8/98.9

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	CO112A	Béton=0.17 m3 Acier=54.9 kg d=330.2 kg/m3 Fi=12.0 mm Cof=0.7 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm
	Section : 60 x 63ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/25



Coupe B-B
Echelle=1/20

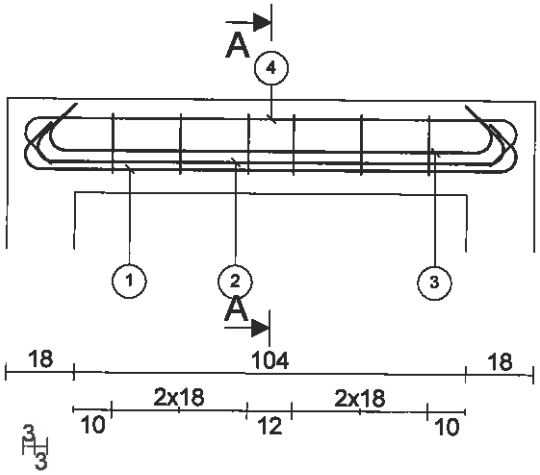


	Barre	Lg	Forme
11	8HA8	79	8 ⌀ 12 135° 66
12	8HA8	76	8 ⌀ 12 135° 63
13	6HA8	73	8 ⌀ 12 135° 60
14	8HA14	169	37 ⌀ 16 135° 136
15	2HA8	41	41
16	1HA8	68	51
17	8HA14	122	38 ⌀ 16 135° 82
18	5HA8	228	54 52
19	30HA8	128	54

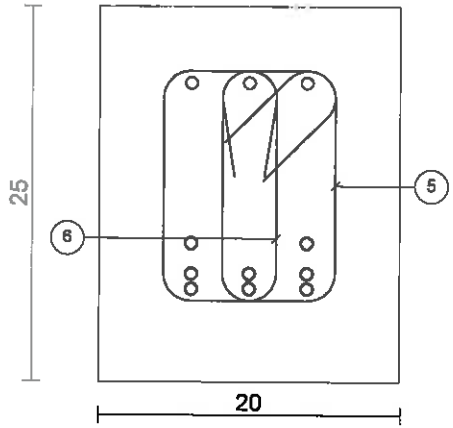
Barre	Lg/Poids
HA8 HA14	68.0/26.8 23.3/28.1

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	L113	Béton=0.07 m3 Acier=8.2 kg d=117.2 kg/m3 Fl=7.5 mm Cof=0.7 m²	Eb=5.1 cm Eh=4.0 cm El=4.0 cm
	Section : 20 x 25ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/5



	Barre	Lg	Forme
1	3HA8	157	12 8 8 12 135° 135° 131
2	3HA8	150	12 8 8 12 135° 135° 124
3	2HA8	144	12 8 8 12 135° 135° 118
4	3HA8	157	12 8 8 12 135° 135° 131
5	6HA6	68	16 12
6	6HA6	51	16

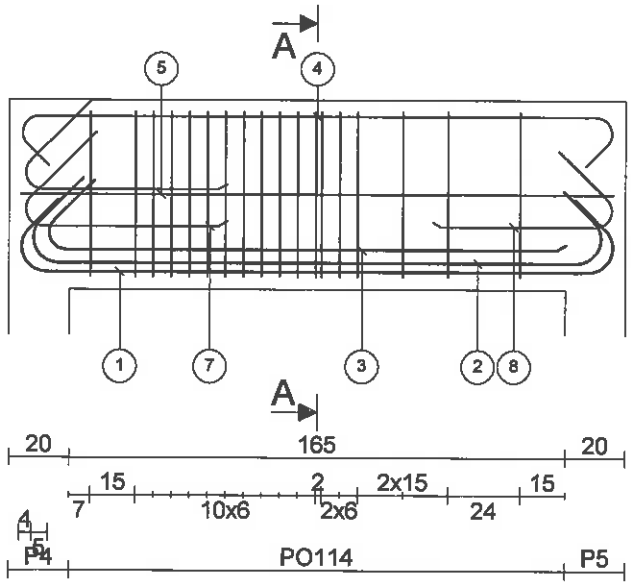
Barre	Lg/Poids
HA6 HA8	7.1/1.6 16.8/6.6

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO114	Béton=0.26 m3 Acier=56.5 kg d=218.7 kg/m3 Fi=10.0 mm Cof=2.4 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm

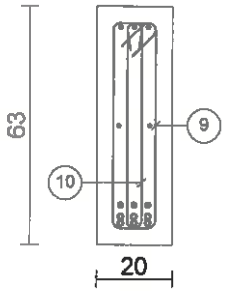
Section : 20 x 63ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable

Elévation
Echelle=1/25



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	3HA14	247	23 / 1616 / 23 ; 135° 135° ; 198
2	3HA14	245	29 / 1616 / 23 ; 135° 135° ; 190
3	3HA12	199	25 / 11 ; 135° ; 173
4	3HA10	231	16 / 1111 / 16 ; 135° 135° ; 197
5	2HA8	197	197
6	4HA8	28	11
7	6HA12	106	37 / 11 ; 135° ; 68
8	3HA10	90	11 / 29 ; 135° ; 60
9	18HA8	150	55 / 12
10	18HA8	129	55

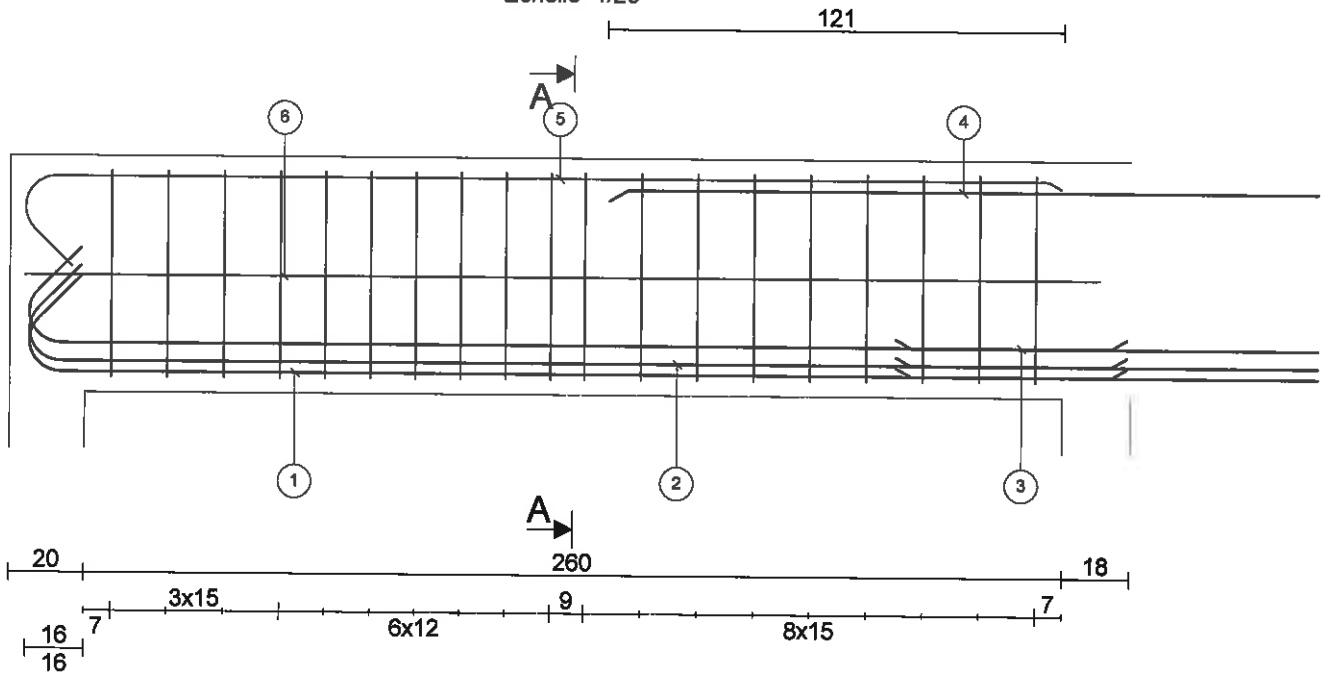
Barre	Lg/Poids
HA8	55.3/21.8
HA10	9.6/5.9
HA12	12.3/10.9
HA14	14.8/17.8

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO115	Béton=1.27 m3 Acier=245.5 kg d=192.6 kg/m3 Fi=12.4 mm Cof=5.1 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm

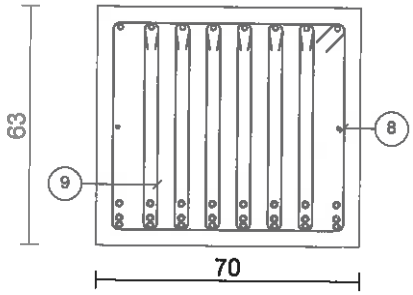
Section : 70 x 63ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/20

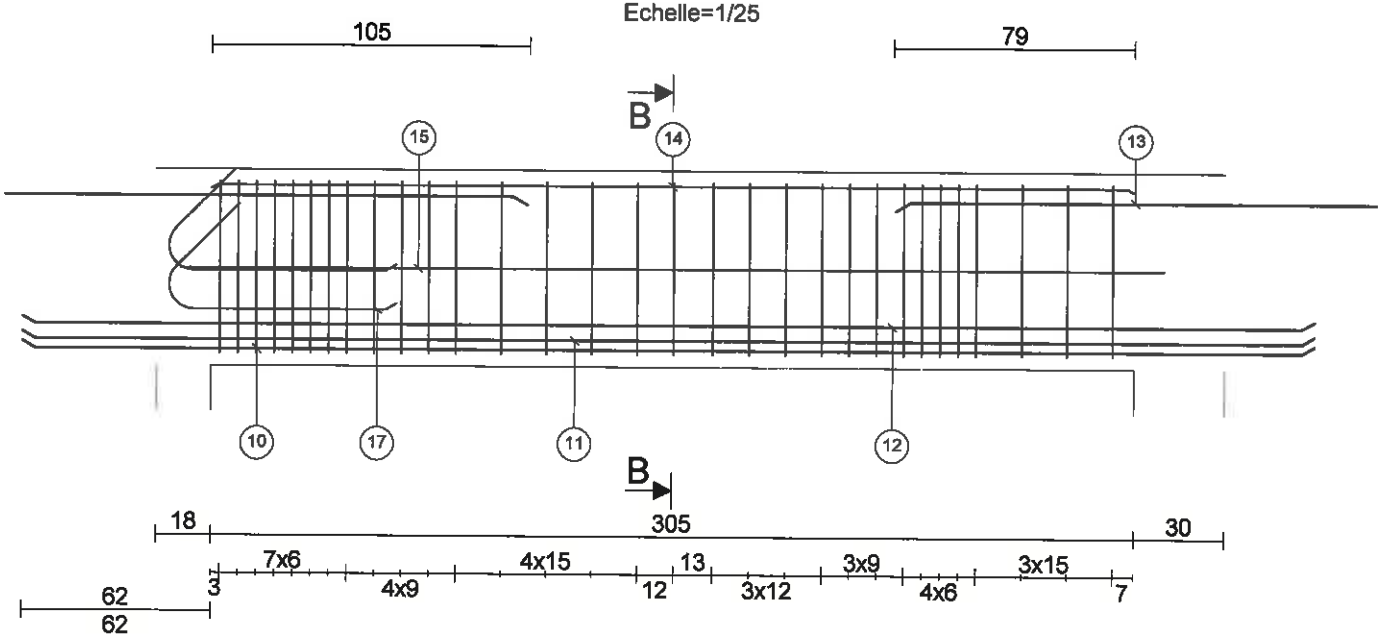


	Barre	Lg	Forme
1	8HA16	320	25 ⌀17 135° 293
2	8HA16	320	25 ⌀17 135° 293
3	8HA16	320	25 ⌀17 135° 293
4	8HA20	244	244
5	8HA14	301	16 ⌀23 276 135°
6	2HA8	286	286
7	6HA8	79	62
8	19HA6	246	55 62
9	114HA6	129	55

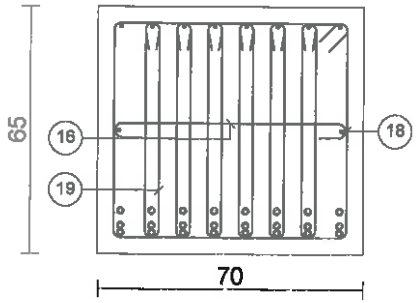
Barre	Lg/Poids
HA6	194.0/43.1
HA8	10.5/4.1
HA14	24.1/29.1
HA16	76.7/121.1
HA20	19.5/48.2

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO116	Béton=1.50 m3 Acier=304.2 kg d=203.2 kg/m3 Fi=10.5 mm Cof=6.1 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/25



Coupe B-B
Echelle=1/20



	Barre	Lg	Forme
10	8HA16	428	428
11	8HA16	428	428
12	8HA16	428	428
13	8HA20	168	168
14	8HA8	305	305
15	2HA8	325	325
16	7HA8	79	62
17	16HA14	116	38 16 135° 76
18	31HA6	250	57 62
19	186HA6	133	57

Barre	Lg/Poids
HA6	325.2/72.2
HA8	36.4/14.4
HA14	18.6/22.5
HA16	102.6/162.0
HA20	13.5/33.2

SETB

PL HT R-1
V17-114 O FIL DE L'EAU

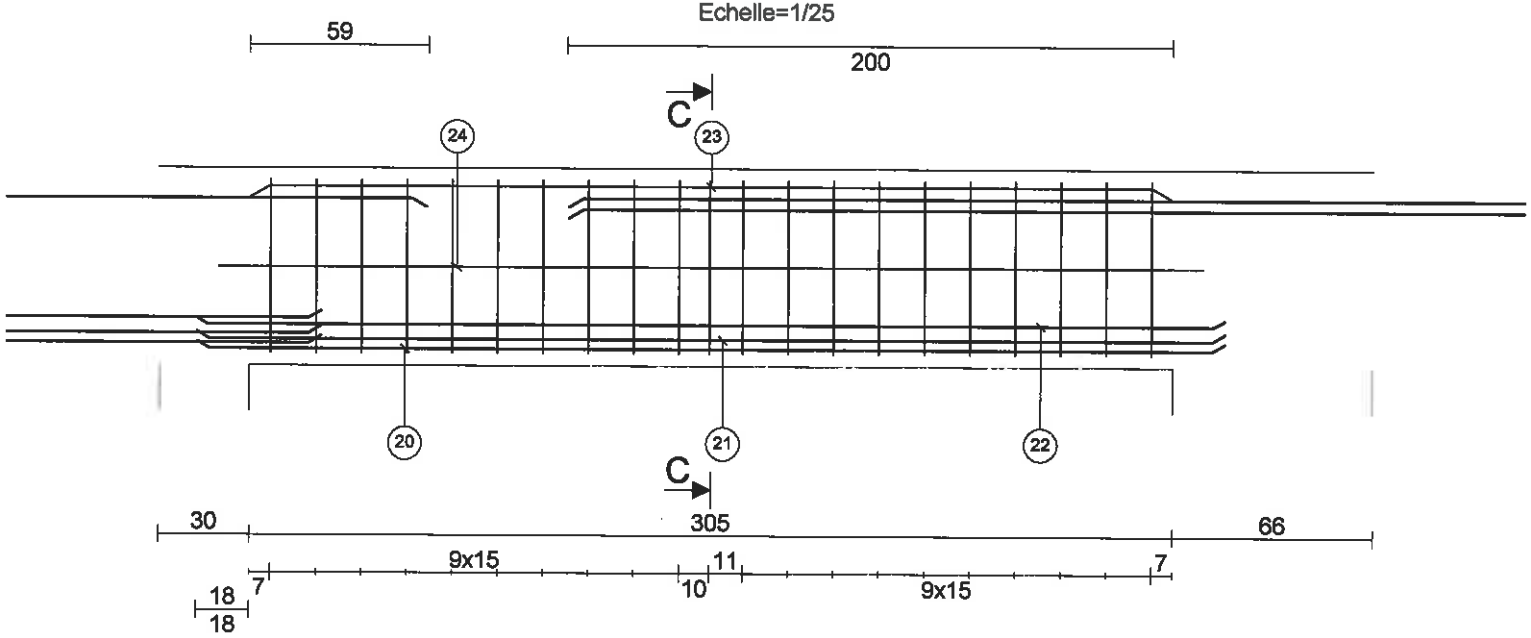
P0 117

Béton=1.61 m3
Acier=266.5 kg d=165.9 kg/m3
Fl=14.0 mm Cof=6.1 m²

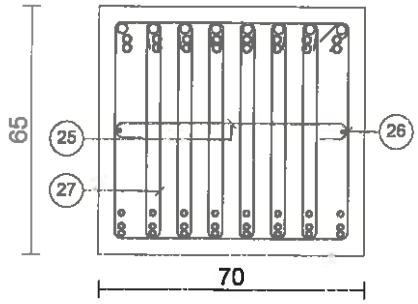
Eb=4.0 cm
Eh=4.0 cm
El=4.0 cm

Section : 70 x 65ht
Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/25



Coupe C-C
Echelle=1/20

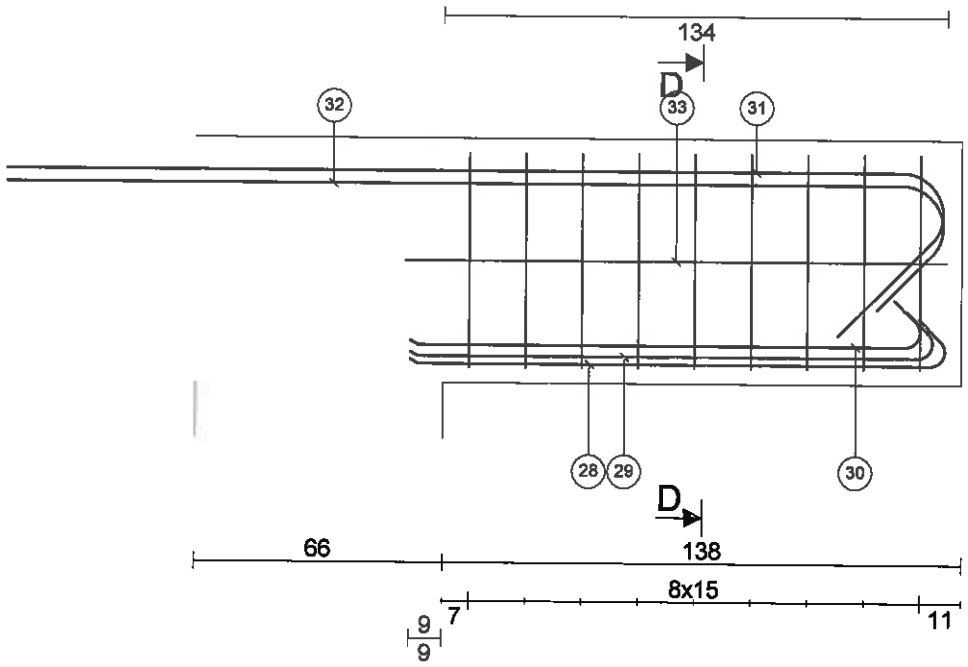


	Barre	Lg	Forme
20	8HA16	340	340
21	8HA16	340	340
22	8HA14	340	340
23	8HA25	305	305
24	2HA8	325	325
25	7HA8	79	62
26	21HA6	250	57 / 62
27	126HA6	133	57

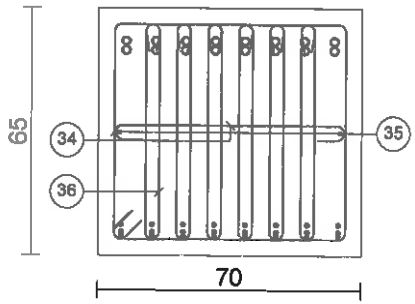
Barre	Lg/Poids
HA6	220.3/48.9
HA8	12.0/4.7
HA14	27.2/32.9
HA16	54.4/85.9
HA25	24.4/94.0

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	CO118	Béton=0.78 m3 Acier=211.6 kg d=272.0 kg/m3 Fi=12.9 mm Cof=2.8 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe D-D
Echelle=1/20

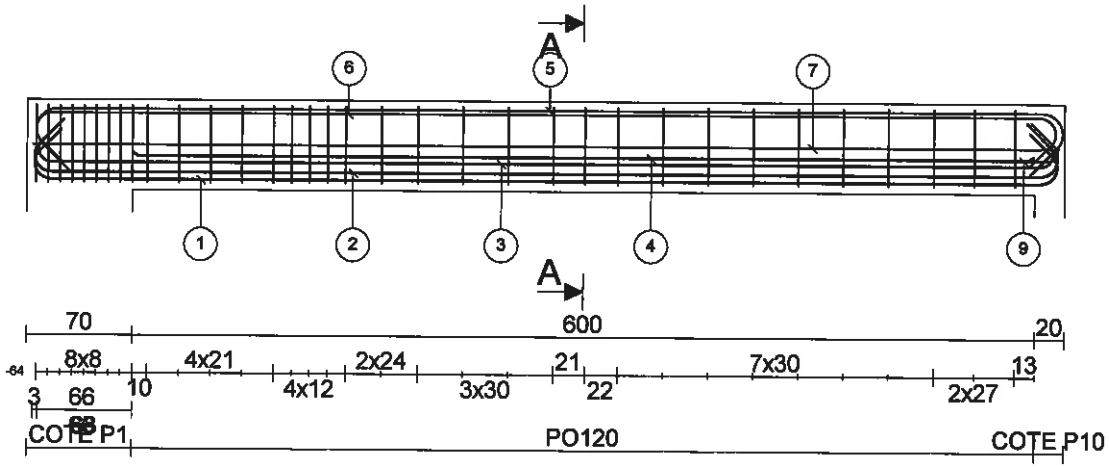


	Barre	Lg	Forme
28	8HA8	156	8 12 135° 143
29	8HA8	152	8 12 135° 140
30	8HA8	149	8 12 135° 136
31	8HA20	449	47 22 135° 400
32	8HA20	434	32 22 135° 400
33	2HA8	144	144
34	3HA8	79	62
35	9HA6	250	57 62
36	54HA6	133	57

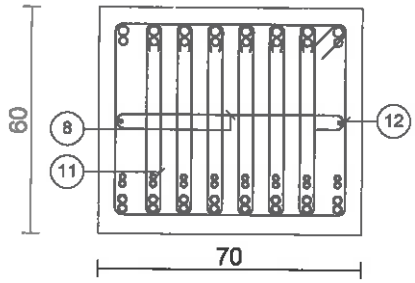
Barre	Lg/Poids
HA6 HA8 HA20	94.4/21.0 41.8/16.5 70.6/174.1

SETB	PL HT R-1	PO120	Béton=2.90 m3 Acier=956.0 kg d=329.9 kg/m3 Fi=15.5 mm Cof=11.4 m²	Eb=4.7 cm Eh=4.0 cm El=4.0 cm
	V17-114 O FIL DE L'EAU			
	Section : 70 x 60ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



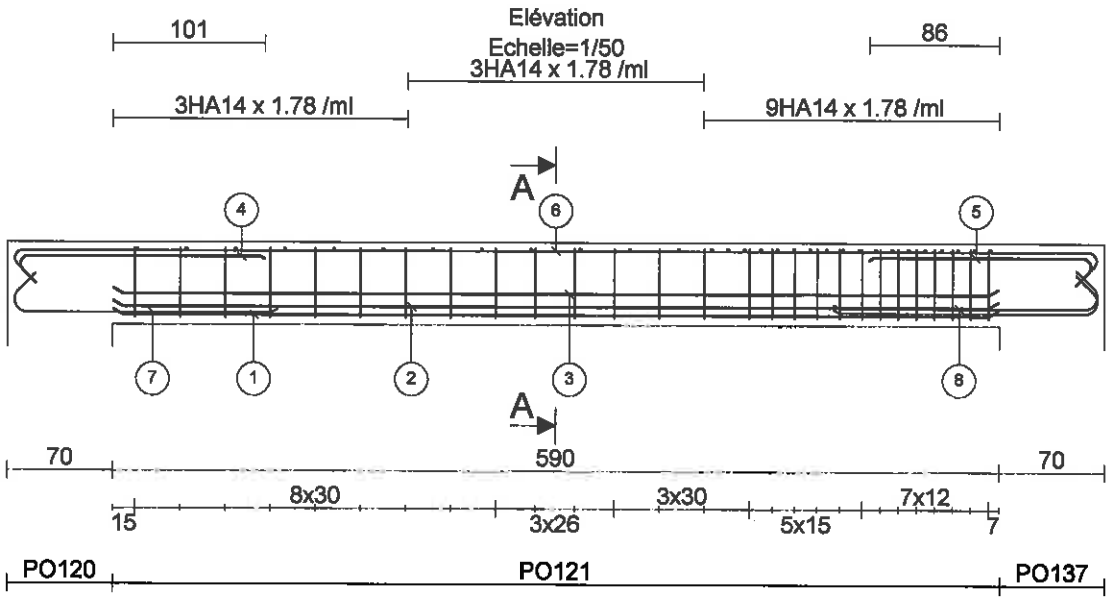
	Barre	Lg	Forme
1	8HA20	751	32 2222 33 135° 682 135°
2	8HA20	751	32 2222 33 135° 682 135°
3	8HA16	738	29 1717 30 135° 676 135°
4	8HA14	600	600
5	8HA25	770	40 2828 40 135° 685 135°
6	8HA20	748	32 2222 30 135° 680 135°
7	2HA8	682	682
8	14HA8	78	61
9	8HA10	90	11 29 60 135°
10	9HA10	246	51 62
11	150HA8	122	51
12	25HA8	242	51 62

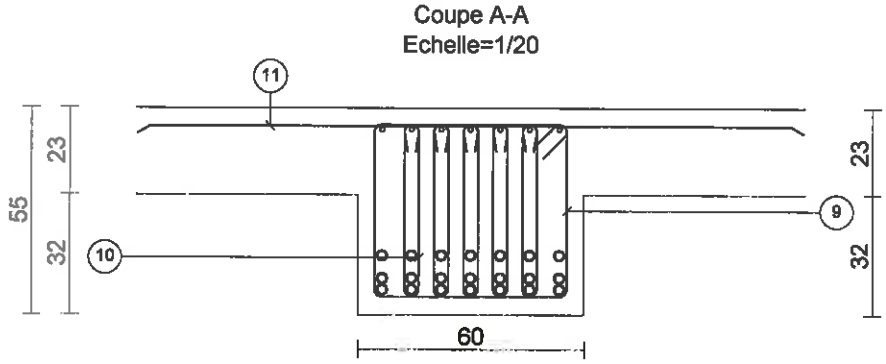
Barre	Lg/Poids
HA8	267.9/105.7
HA10	29.3/18.1
HA14	48.0/58.0
HA16	59.0/93.2
HA20	179.9/443.7
HA25	61.6/237.3

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO121	Béton=2.41 m3 Acier=760.6 kg d=315.7 kg/m3 Fi=15.6 mm Cof=7.3 m²	Eb=4.4 cm Eh=4.0 cm El=4.0 cm

Section : 60 x 55ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H



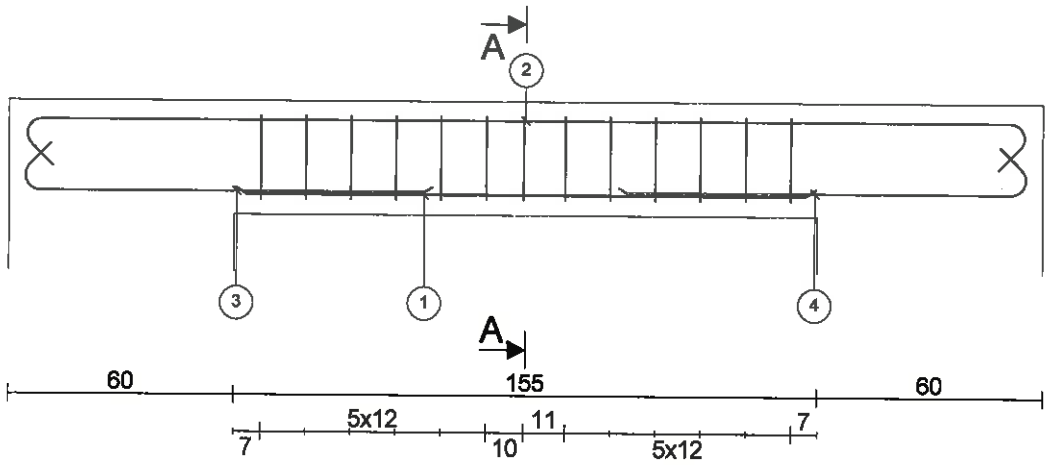


	Barre	Lg	Forme
1	7HA25	590	590
2	7HA25	590	590
3	7HA25	590	590
4	7HA12	182	18 / 11 / 135° / 163
5	7HA12	167	18 / 135° / 11 / 148
6	7HA12	759	18 / 135° / 1111 / 18 / 135° / 721
7	7HA16	203	25 / 135° / 17 / 176
8	14HA16	203	17 / 25 / 135° / 176
9	27HA8	213	47 / 52
10	135HA8	112	47
11	30HA14	178	178

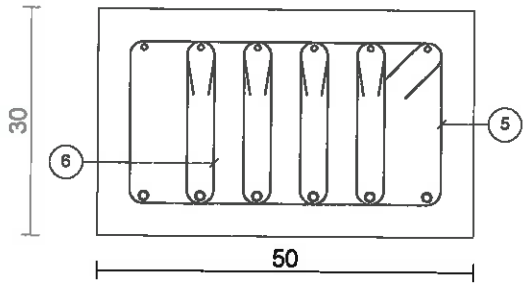
Barre	Lg/Poids
HA8	209.3/82.6
HA12	77.6/68.9
HA14	53.4/64.5
HA16	42.6/67.2
HA25	123.9/477.4

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO125	Béton=0.41 m3 Acier=32.3 kg d=78.2 kg/m3 Fi=7.5 mm Cof=1.7 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm
	Section : 50 x 30ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/10



	Barre	Lg	Forme
1	6HA12	155	155
2	6HA8	292	12 8 8 12 135° 266 135°
3	6HA8	122	12 8 135° 109
4	6HA8	122	8 12 109 135°
5	13HA6	140	22 42
6	52HA6	63	22

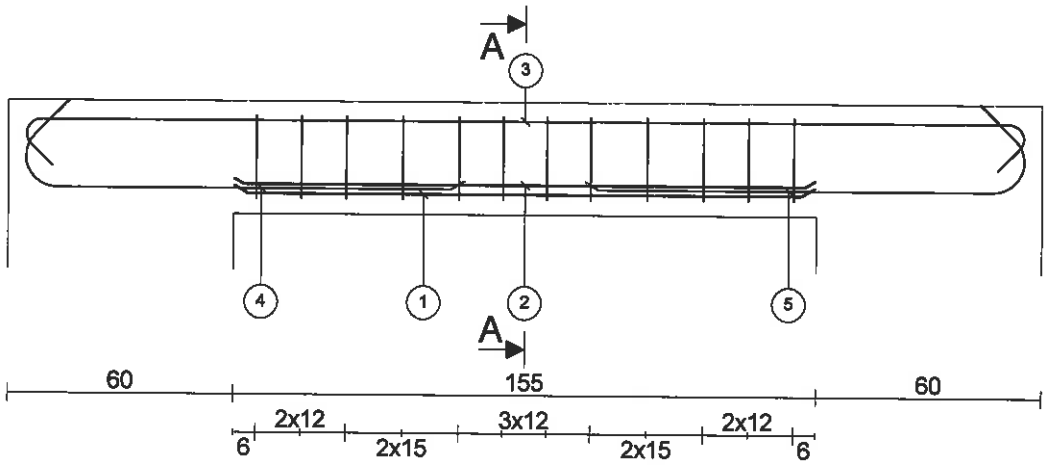
Barre	Lg/Poids
HA6 HA8 HA12	51.0/11.3 32.1/12.7 9.3/8.3

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO126	Béton=0.17 m3 Acier=17.0 kg d=102.8 kg/m3 Fi=10.0 mm Cof=1.2 m²	Eb=4.0 cm Eh=4.0 cm El=4.0 cm

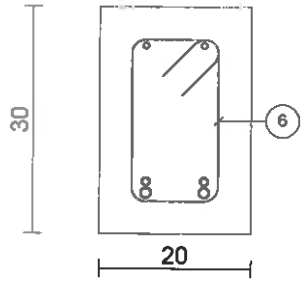
Section : 20 x 30ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable

Elévation
Echelle=1/20



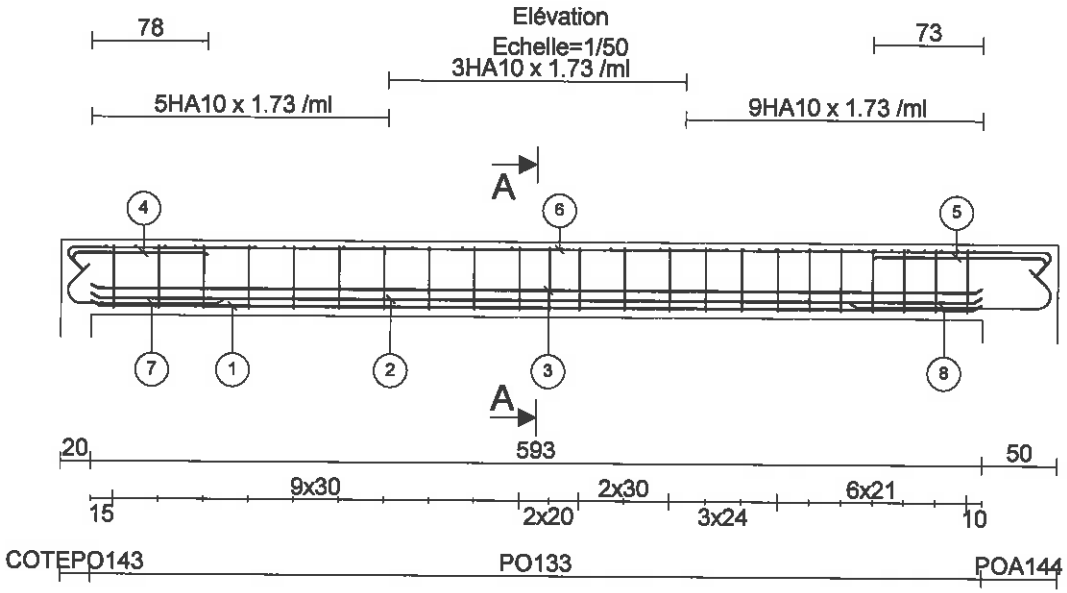
Coupe A-A
Echelle=1/10

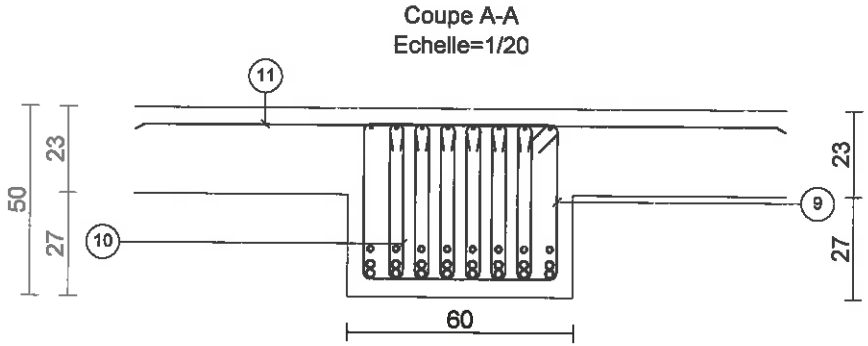


	Barre	Lg	Forme
1	2HA14	155	155
2	2HA10	155	155
3	2HA8	292	12 8 8 12 135° 135° 266
4	2HA14	142	23 16 135° 118
5	2HA14	142	16 23 135° 118
6	12HA6	80	22 12

Barre	Lg/Poids
HA6	9.6/2.1
HA8	5.8/2.3
HA10	3.1/1.9
HA14	8.8/10.6

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO133	Béton=1.07 m3 Acier=452.2 kg d=421.0 kg/m3 Fi=12.3 mm Cof=6.8 m²	Eb=4.5 cm Eh=4.0 cm El=4.0 cm
	Section : 60 x 50ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			



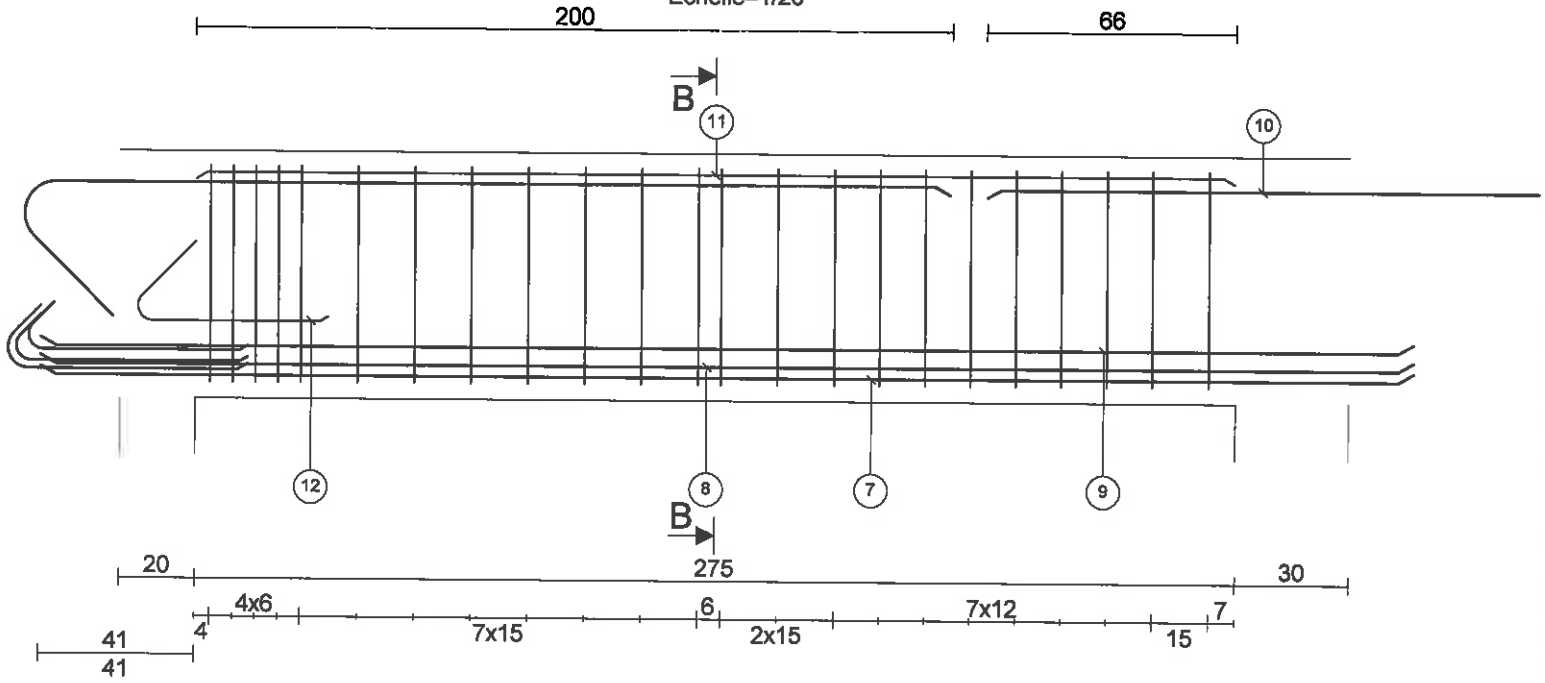


	Barre	Lg	Forme
1	8HA20	593	593
2	8HA20	593	593
3	8HA16	593	593
4	8HA8	103	8 Ø 12 / 90 / 135°
5	8HA8	128	135° 12 Ø 8 / 115
6	8HA8	680	135° 12 Ø 8 / 654 / 8 Ø 12 135°
7	8HA16	131	135° 25 Ø 17 / 104
8	8HA16	161	17 Ø 25 / 134 / 135°
9	23HA6	199	42 / 52
10	138HA6	102	42
11	34HA10	173	173

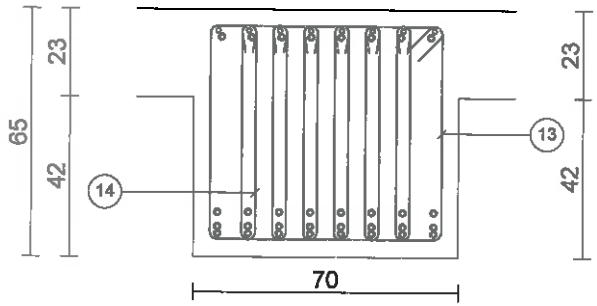
Barre	Lg/Poids
HA6	186.9/41.5
HA8	72.8/28.7
HA10	59.0/36.3
HA16	70.7/111.7
HA20	94.9/234.0

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO134	Béton=0.88 m3 Acier=238.0 kg d=269.8 kg/m3 Fi=10.6 mm Cof=4.2 m²	Eb=4.2 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe B-B
Echelle=1/20

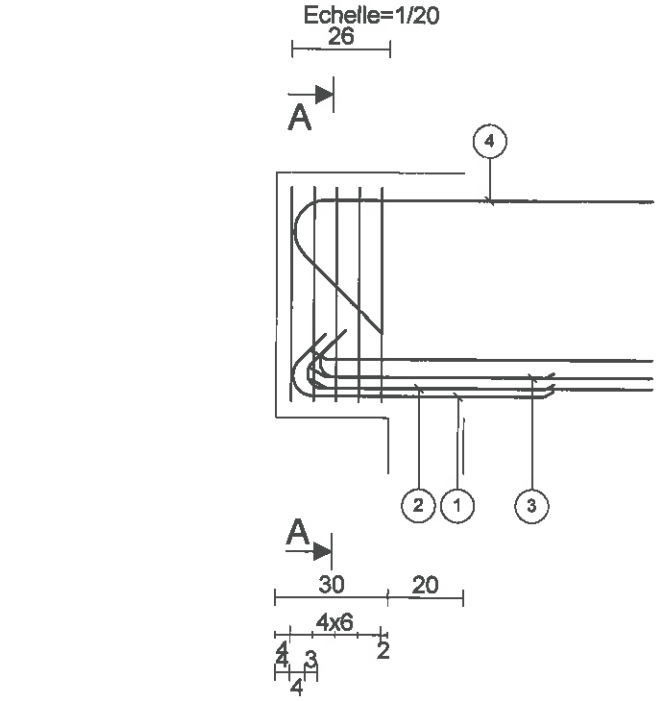


	Barre	Lg	Forme
7	8HA16	364	364
8	8HA16	364	364
9	8HA16	364	364
10	8HA14	152	152
11	8HA12	275	275
12	8HA8	76	24 / 8 / 135° / 51
13	23HA8	253	57 / 62
14	138HA6	133	57

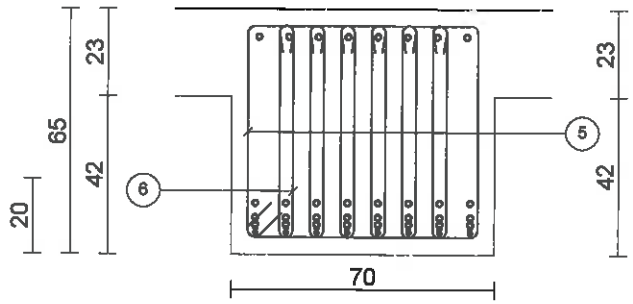
Barre	Lg/Poids
HA6	183.1/40.6
HA8	64.3/25.4
HA12	22.0/19.5
HA14	12.1/14.7
HA16	87.3/137.8

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	CO134A	Béton=0.12 m3 Acier=58.5 kg d=497.9 kg/m3 Fi=13.3 mm Cof=0.5 m²	Eb=4.2 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe A-A
Echelle=1/20

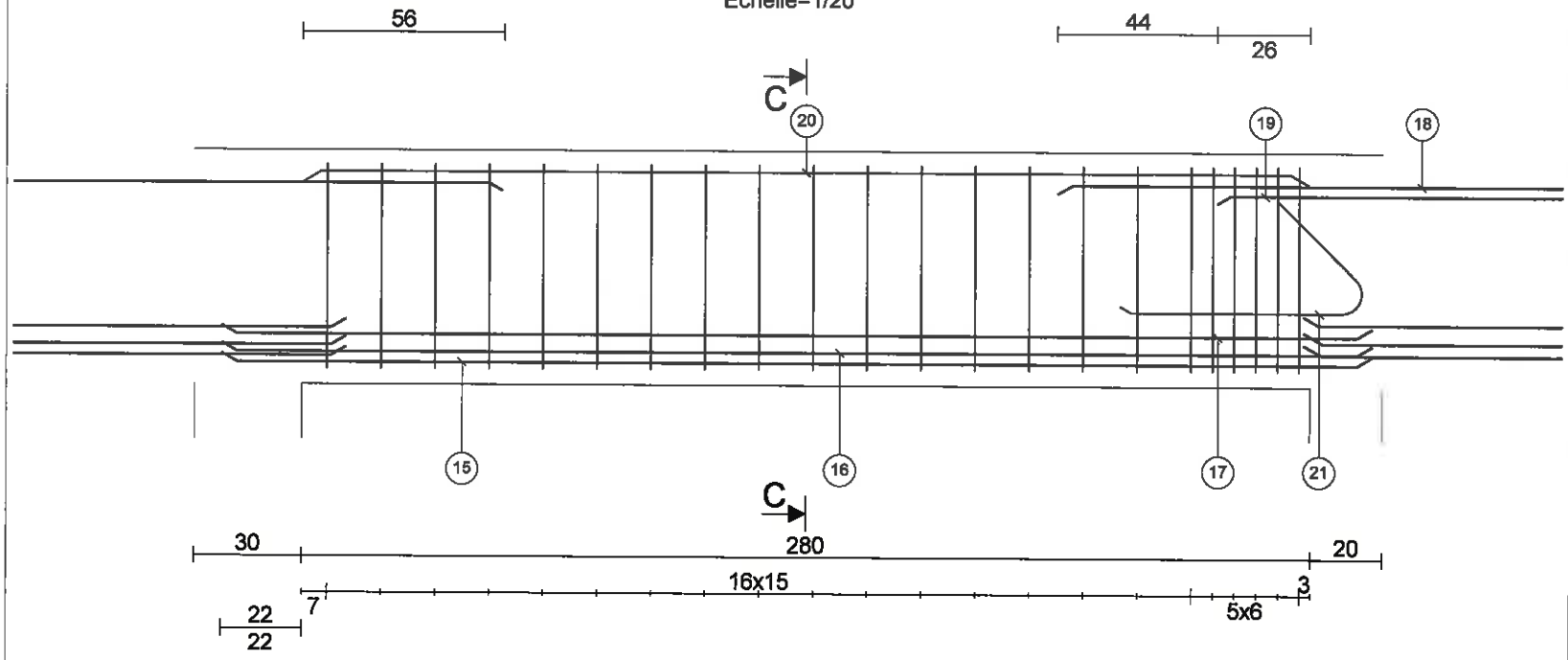


	Barre	Lg	Forme
1	8HA10	87	16 / 11 / 135° / 70
2	8HA8	79	12 / 8 / 135° / 66
3	6HA8	76	12 / 8 / 135° / 63
4	8HA16	286	30 / 17 / 246 / 135°
5	5HA8	253	57 / 62
6	30HA6	133	57

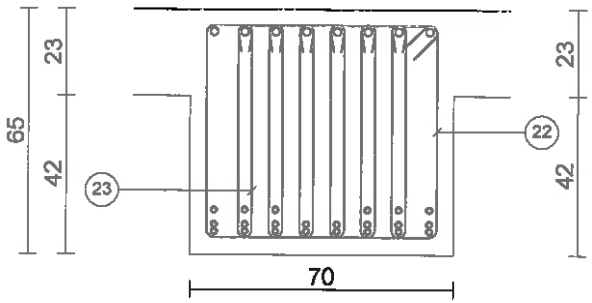
Barre	Lg/Poids
HA6	39.8/8.8
HA8	23.5/9.3
HA10	7.0/4.3
HA16	22.9/36.1

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO135	Béton=0.90 m3 Acier=277.4 kg d=309.3 kg/m3 Fi=14.2 mm Cof=4.3 m²	Eb=4.2 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/20



Coupe C-C
Echelle=1/20

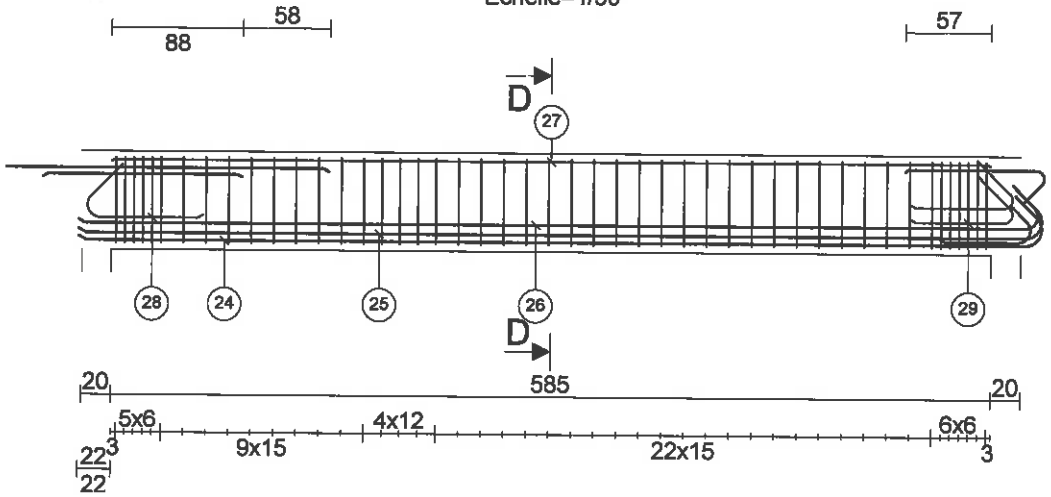


Barre		Lg	Forme
15	8HA16	320	320
16	8HA16	320	320
17	6HA16	320	320
18	8HA16	236	236
19	8HA14	133	133
20	8HA20	280	280
21	8HA12	106	37 11 68 135°
22	22HA8	253	57 62
23	132HA6	133	57

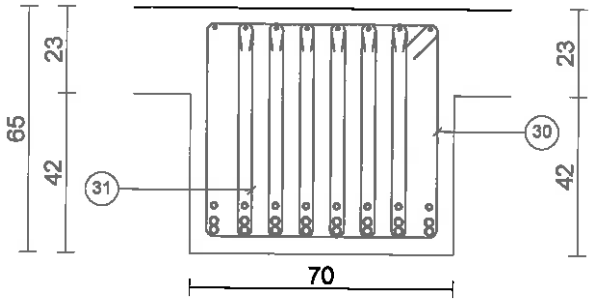
Barre	Lg/Poids
HA6	175.1/38.9
HA8	55.7/22.0
HA12	8.5/7.5
HA14	10.7/12.9
HA16	89.3/140.9
HA20	22.4/55.2

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO136	Béton=1.78 m3 Acier=526.2 kg d=295.8 kg/m3 Fi=11.1 mm Cof=9.0 m²	Eb=4.2 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 65ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/50



Coupe D-D
Echelle=1/20



	Barre	Lg	Forme
24	8HA20	676	22 ⌀32 135° 642
25	8HA20	676	22 ⌀32 135° 642
26	8HA16	670	17 ⌀20 135° 639
27	8HA8	585	585
28	8HA14	118	135° ⌀38 16 78
29	16HA12	106	11 ⌀37 135° 68
30	47HA8	253	57 62
31	282HA6	133	57

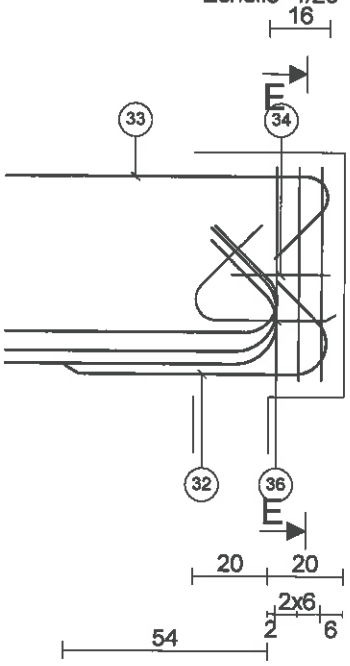
Barre	Lg/Poids
HA6	374.2/83.1
HA8	165.7/65.4
HA12	16.9/15.0
HA14	9.5/11.4
HA16	53.6/84.5
HA20	108.2/266.7

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	CO136A	Béton=0.14 m3 Acier=27.2 kg d=199.2 kg/m3 Fi=16.8 mm Cof=0.4 m²	Eb=4.2 cm Eh=4.0 cm El=4.0 cm

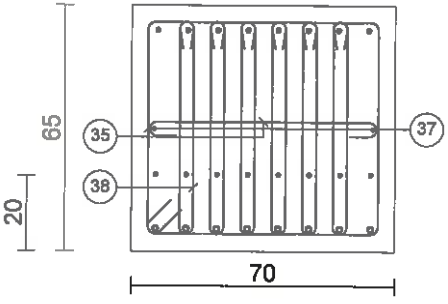
Section : 70 x 65ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/20



Coupe E-E
Echelle=1/20

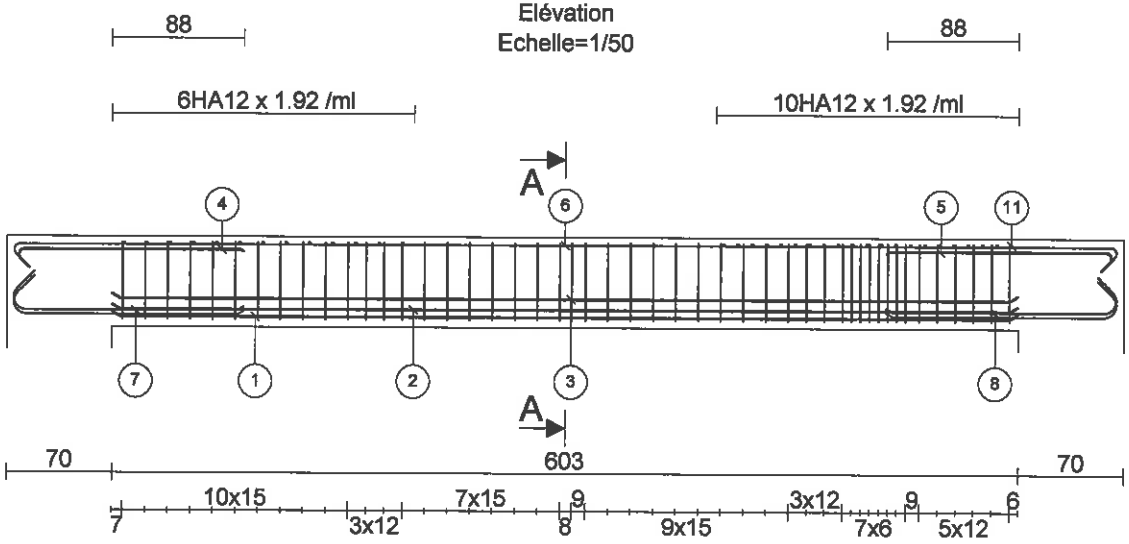


	Barre	Lg	Forme
32	8HA14	96	24 / 16 / 135° / 70
33	8HA10	117	23 / 11 / 135° / 93
34	2HA8	26	26
35	1HA8	78	61
36	8HA10	67	29 / 11 / 135° / 38
37	3HA8	253	57 / 62
38	18HA6	133	57

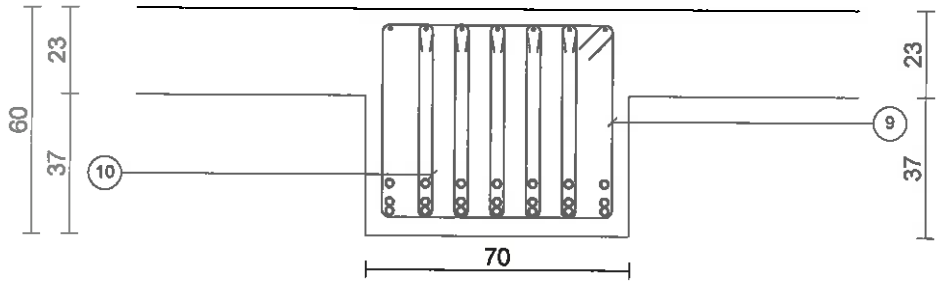
Barre	Lg/Poids
HA6 HA8 HA10 HA14	23.9/5.3 8.9/3.5 14.8/9.1 7.7/9.3

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO137	Béton=3.12 m3 Acier=590.6 kg d=189.2 kg/m3 Fi=11.5 mm Cof=8.7 m²	Eb=4.5 cm Eh=4.0 cm El=4.0 cm
	Section : 70 x 60ht			
	Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H			

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	7HA20	603	603
2	7HA20	603	603
3	7HA20	603	603
4	7HA8	163	8 ⌀ 13 / 150 / 135°
5	7HA8	163	135° ⌀ 12 / 8 / 150
6	7HA8	760	135° ⌀ 12 / 8 / 8 ⌀ 13 / 734 / 135°
7	14HA16	181	135° 25 / ⌀ 17 / 154
8	14HA16	179	17 ⌀ 23 / 154 / 135°
9	48HA8	242	51 / 62
10	240HA6	122	51
11	34HA12	192	192

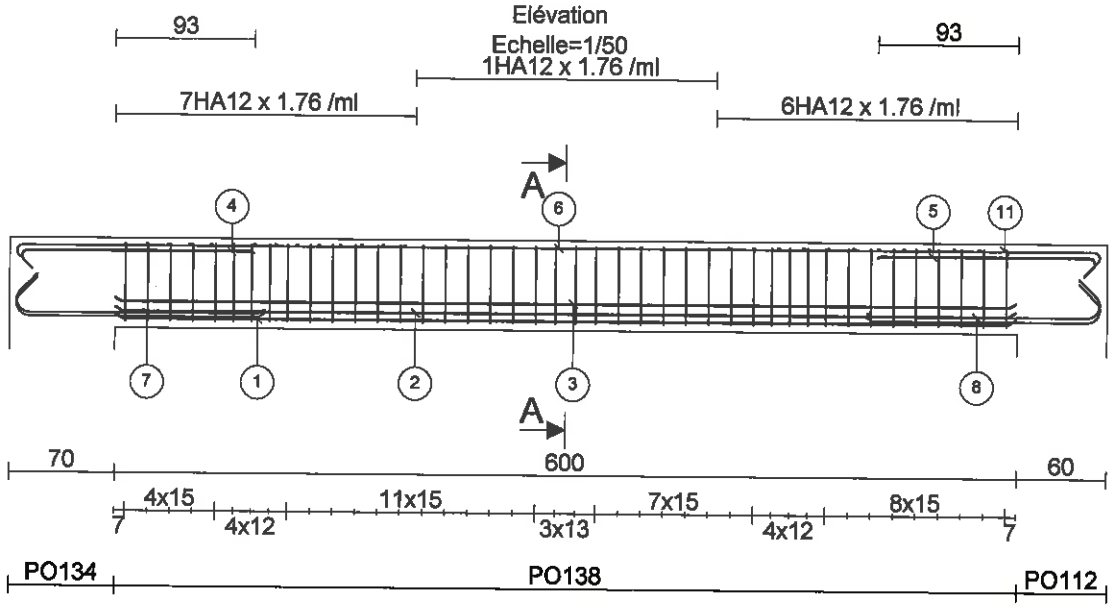
Barre	Lg/Poids
HA6	293.0/65.0
HA8	192.3/75.9
HA12	65.3/58.0
HA16	50.3/79.4
HA20	126.6/312.3

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO138	Béton=1.62 m3 Acier=506.9 kg d=312.8 kg/m3 Fi=11.2 mm Cof=8.0 m²	Eb=4.5 cm Eh=4.0 cm El=4.0 cm

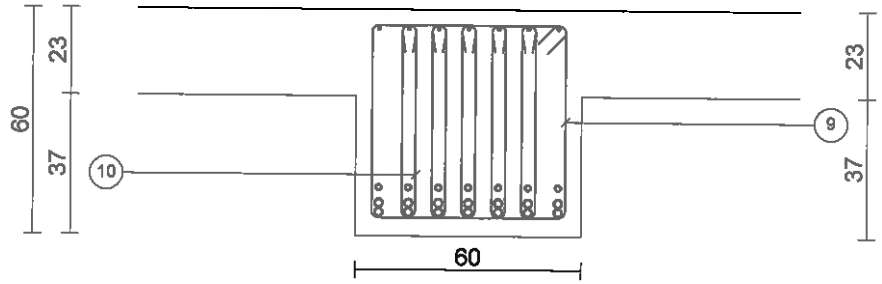
Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



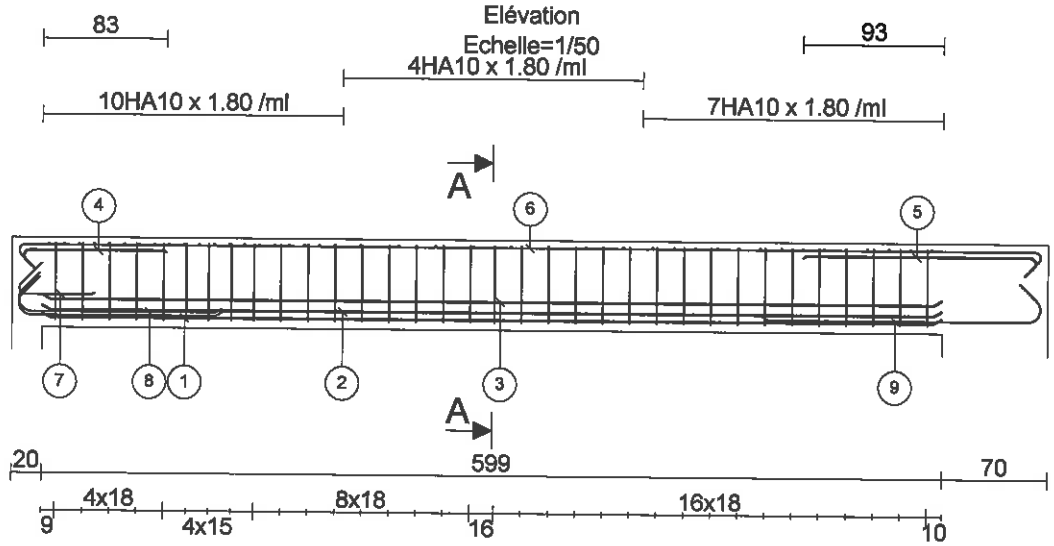
	Barre	Lg	Forme
1	7HA20	600	600
2	7HA20	600	600
3	7HA16	600	600
4	7HA8	168	8 Φ 12 / 155 / 135°
5	7HA8	158	12 Φ 8 / 135° / 145
6	7HA8	747	12 Φ 8 / 135° / 721 / 8 Φ 12 / 135°
7	14HA16	192	25 Φ 17 / 135° / 166
8	14HA16	182	17 Φ 25 / 156 / 135°
9	42HA6	219	51 / 52
10	210HA6	122	51
11	28HA12	176	176

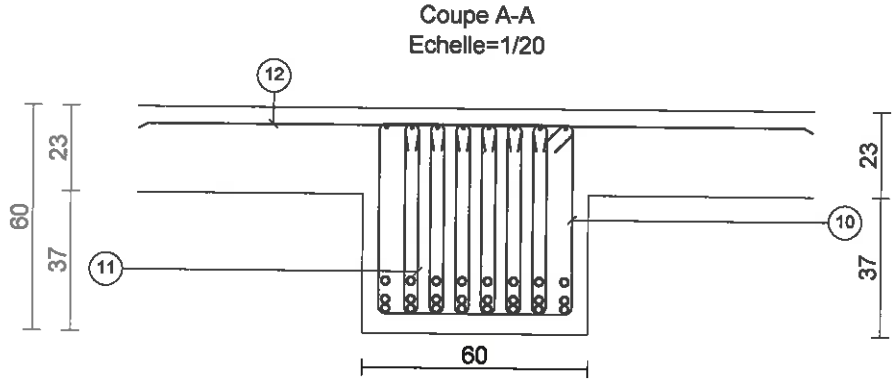
Barre	Lg/Poids
HA6	348.4/77.3
HA8	75.1/29.6
HA12	49.2/43.7
HA16	94.5/149.1
HA20	84.0/207.2

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO139	Béton=1.53 m3 Acier=573.8 kg d=375.1 kg/m3 Fi=11.8 mm Cof=8.0 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm

Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H





	Barre	Lg	Forme
1	8HA20	599	599
2	8HA20	599	599
3	8HA20	599	599
4	8HA8	108	8 ⌀ 12 / 95 / 135°
5	8HA8	168	12 ⌀ 8 / 135° / 155
6	8HA8	706	12 ⌀ 8 / 135° / 680 / 8 ⌀ 12 / 135°
7	8HA8	76	24 ⌀ 8 / 135° / 51
8	16HA16	162	25 ⌀ 17 / 135° / 136
9	8HA16	212	17 ⌀ 25 / 186 / 135°
10	34HA6	219	51 / 52
11	204HA6	121	51
12	42HA10	180	180

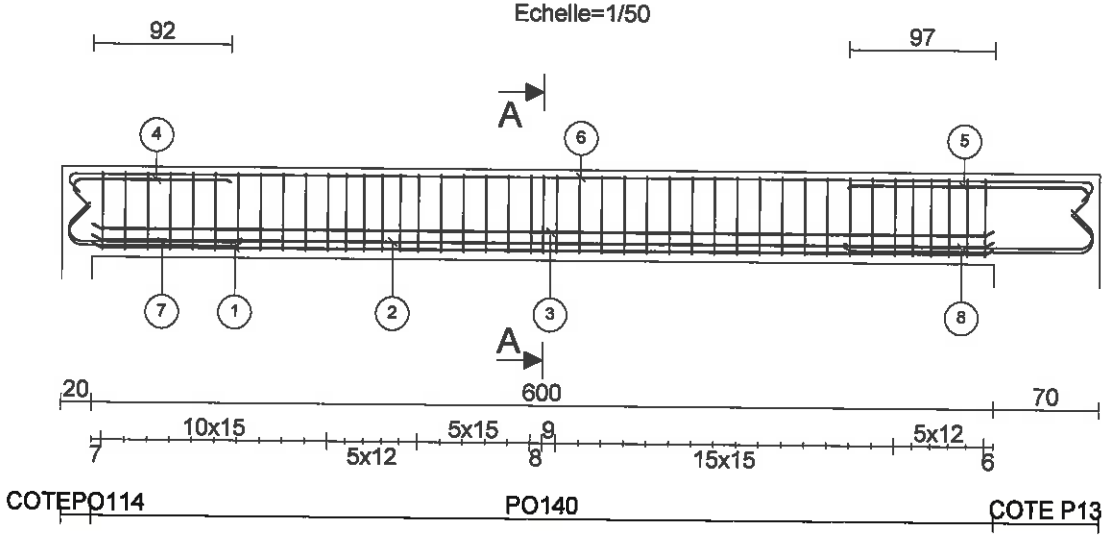
Barre	Lg/Poids
HA6	322.1/71.5
HA8	84.6/33.4
HA10	75.5/46.6
HA16	43.0/67.9
HA20	143.8/354.5

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO140	Béton=1.53 m3 Acier=496.1 kg d=323.9 kg/m3 Fi=11.6 mm Cof=8.0 m²	Eb=4.7 cm Eh=4.0 cm El=4.0 cm

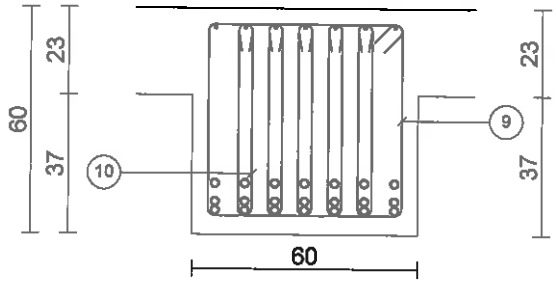
Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	7HA20	600	600
2	7HA20	600	600
3	7HA20	600	600
4	7HA10	122	11 Φ16 135° 105
5	7HA10	177	135° Φ16 11 160
6	7HA8	707	135° 12 8 8 12 135° 681
7	14HA16	142	135° 25 Φ17 116
8	14HA16	192	17 Φ25 135° 166
9	43HA6	219	51 52
10	215HA6	122	51

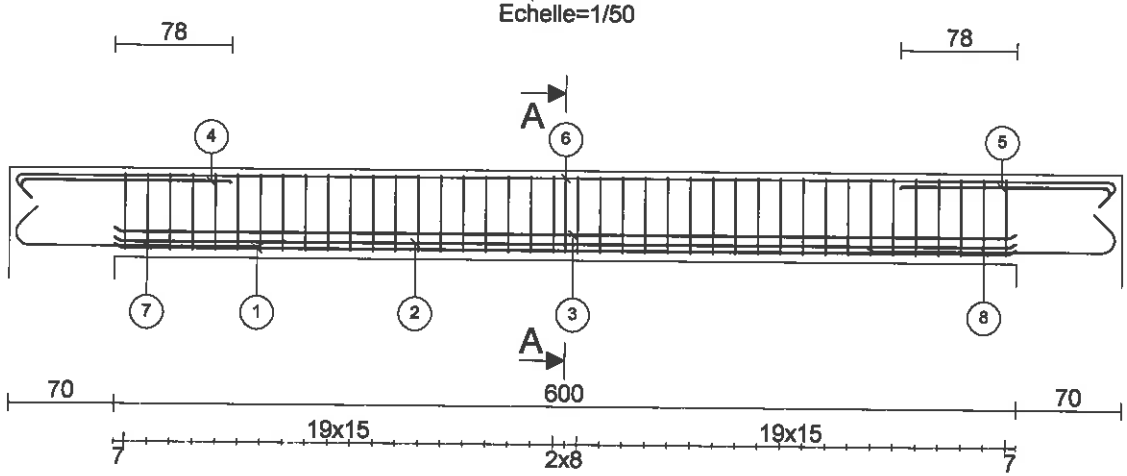
Barre	Lg/Poids
HA6	355.7/78.9
HA8	49.5/19.5
HA10	20.9/12.9
HA16	46.9/74.0
HA20	126.0/310.7

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO141	Béton=1.64 m3 Acier=345.9 kg d=210.6 kg/m3 Fi=10.0 mm Cof=8.0 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm

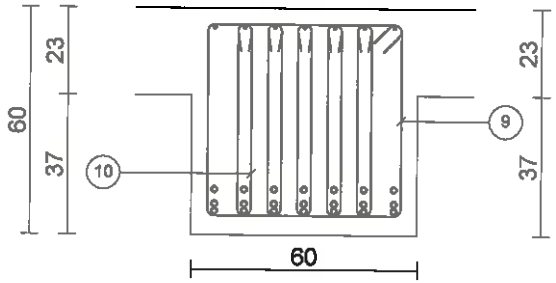
Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	7HA16	600	600
2	7HA16	600	600
3	7HA16	600	600
4	7HA8	153	8 / 12 ; 140 ; 135°
5	7HA8	153	12 / 8 ; 135° ; 140
6	7HA8	757	12 / 8 ; 135° ; 731 ; 8 / 12 ; 135°
7	7HA16	192	25 / 17 ; 135° ; 166
8	7HA16	192	17 / 25 ; 166 ; 135°
9	41HA6	219	51 ; 52
10	205HA6	121	51

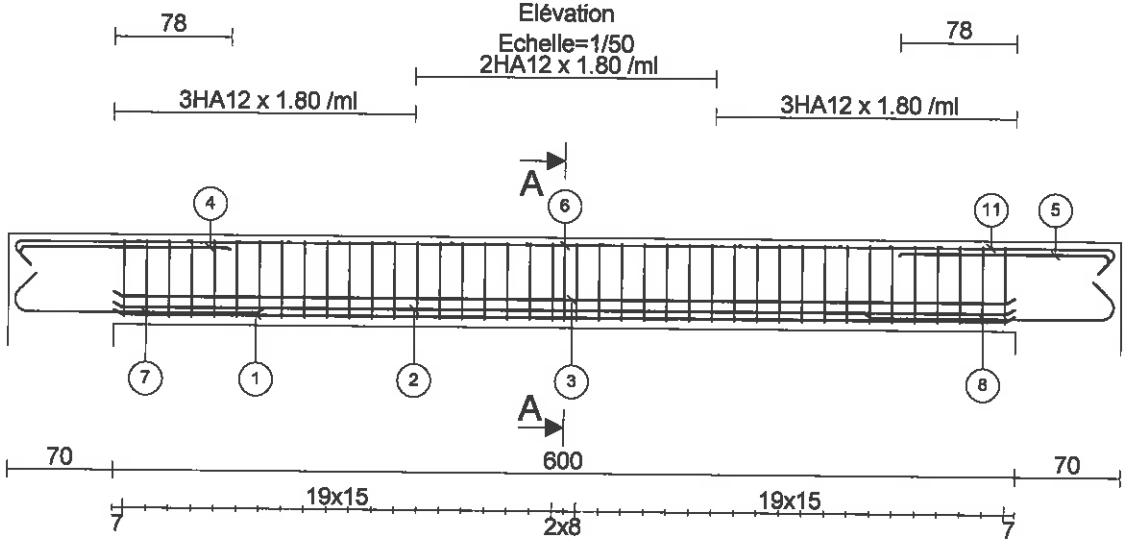
Barre	Lg/Poids
HA6 HA8 HA16	338.6/75.2 74.4/29.3 152.9/241.4

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO142	Béton=1.64 m3 Acier=483.3 kg d=294.2 kg/m3 Fi=11.5 mm Cof=8.0 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm

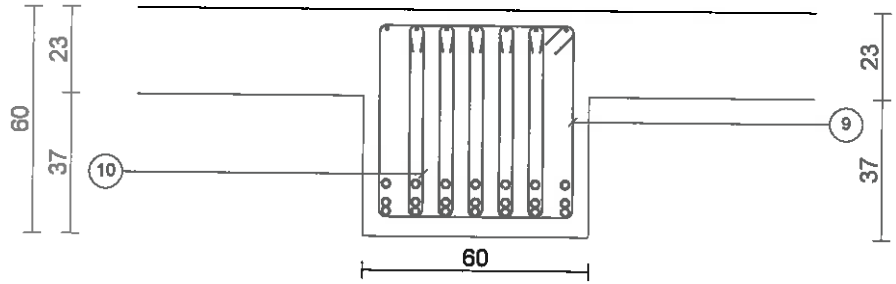
Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	7HA20	600	600
2	7HA20	600	600
3	7HA20	600	600
4	7HA8	153	8 ⌀12 / 140 / 135°
5	7HA8	153	135° / ⌀12 8 / 140
6	7HA8	757	135° / ⌀12 8 8 ⌀12 / 731 / 135°
7	7HA16	192	135° / 25 17 / 166
8	7HA16	192	17 ⌀25 / 166 / 135°
9	41HA6	219	51 / 52
10	205HA6	121	51
11	16HA12	180	180

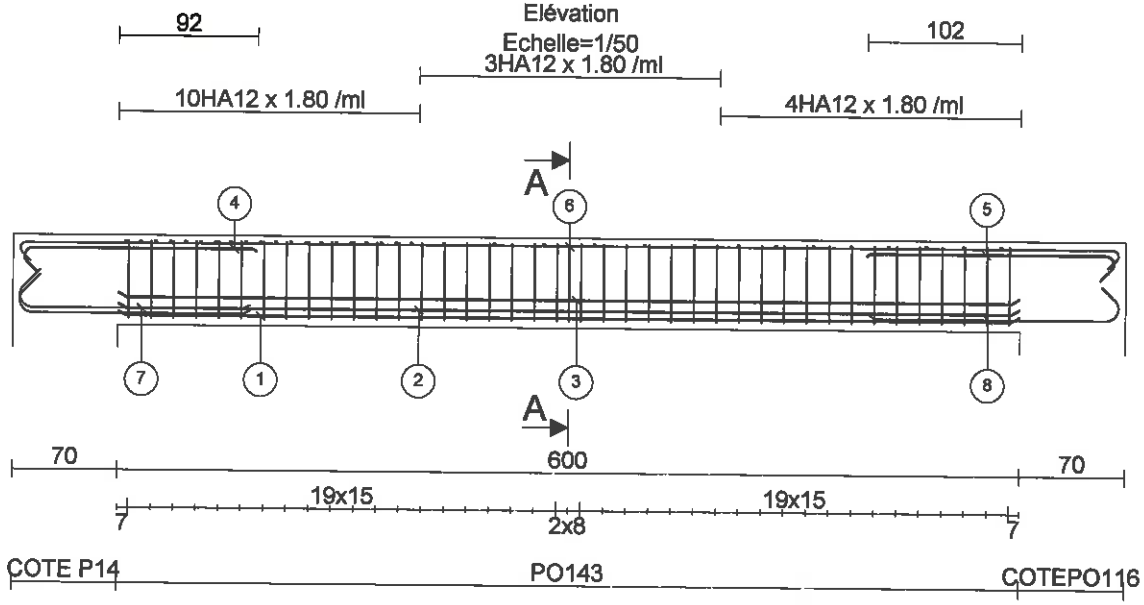
Barre	Lg/Poids
HA6	338.6/75.2
HA8	74.4/29.3
HA12	28.8/25.6
HA16	26.9/42.5
HA20	126.0/310.7

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	PO143	Béton=1.64 m3 Acier=669.5 kg d=407.6 kg/m3 Fi=12.2 mm Cof=8.0 m²	Eb=4.4 cm Eh=4.0 cm El=4.0 cm

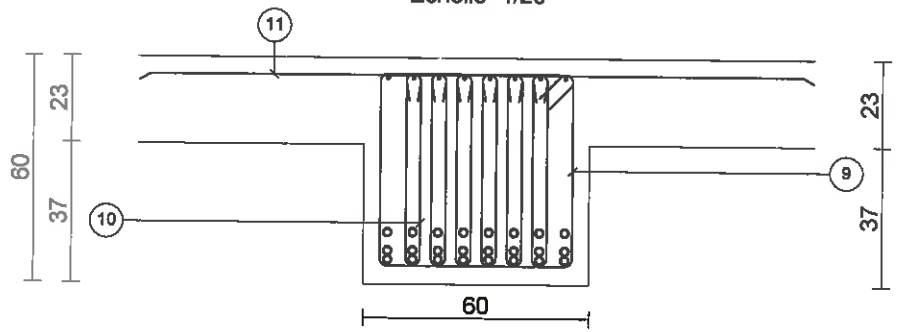
Section : 60 x 60ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/20



	Barre	Lg	Forme
1	8HA20	600	600
2	8HA20	600	600
3	8HA20	600	600
4	8HA10	172	16 / 11 / 155 / 135°
5	8HA10	182	16 / 11 / 135° / 165
6	8HA8	757	12 / 8 / 8 / 12 / 135° / 731 / 135°
7	16HA16	181	25 / 17 / 135° / 154
8	8HA14	188	21 / 16 / 166 / 135°
9	41HA8	223	52 / 52
10	246HA8	122	52
11	34HA12	180	180

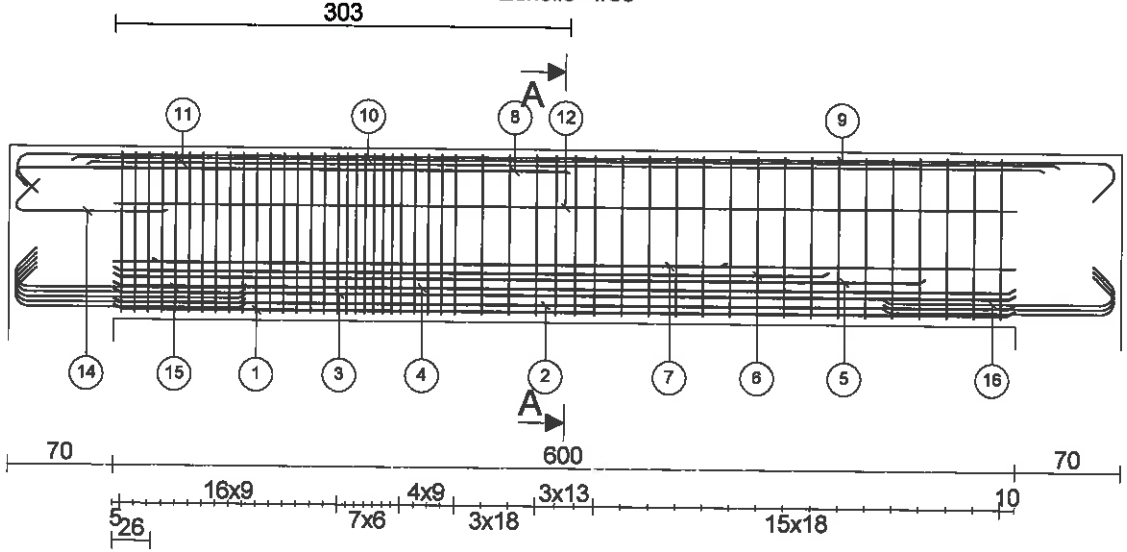
Barre	Lg/Poids
HA8	453.2/178.8
HA10	28.3/17.4
HA12	61.2/54.3
HA14	15.1/18.2
HA16	28.9/45.6
HA20	144.0/355.1

SETB	PL HT R-1 V17-114 O FIL DE L'EAU	POA144	Béton=1.53 m3 Acier=282.3 kg d=184.3 kg/m3 Fi=12.2 mm Cof=14.9 m²	Eb=4.8 cm Eh=4.0 cm El=4.0 cm

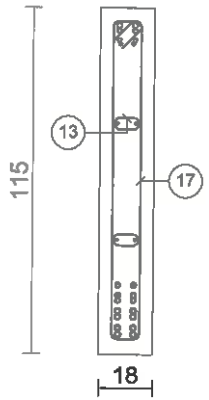
Section : 18 x 115ht

Fc28= 25 MPa Fe= 500 MPa Fissuration peu préjudiciable Coupe feu 2 H

Elévation
Echelle=1/50



Coupe A-A
Echelle=1/25



	Barre	Lg	Forme
1	2HA20	600	600
2	2HA16	600	600
3	2HA16	600	600
4	2HA16	600	600
5	2HA14	540	540
6	2HA14	476	476
7	2HA14	382	382
8	2HA8	381	8 / 12 / 368 / 135°
9	2HA16	784	25 / 1717 / 25 / 135° / 135° / 731
10	2HA14	657	657
11	2HA12	637	637
12	4HA8	600	600
13	30HA8	26	9
14	2HA8	126	24 / 8 / 135° / 101
15	10HA16	181	25 / 17 / 135° / 154
16	6HA16	181	17 / 25 / 154 / 135°
17	49HA8	248	106 / 10

Barre	Lg/Poids
HA8 HA12 HA14 HA16 HA20	163.5/64.5 12.7/11.3 41.1/49.7 80.6/127.2 12.0/29.6