

## HYPOTHESE DE L'ETUDE

<b>Classe de béton :</b>	<b>C25/30 sauf indications contraires</b>
<b>Classe de béton :</b>	<b>XC1</b>
<b>Degrés CF :</b>	<b>2 heure <u>Sauf spécifié</u></b>
<b>Aciers :</b>	<b>B500B (HA) + B500A (TS)</b>
<b>Enrobage :</b>	<b>3 cm bas / 3cm lat / 5cm haut <u>Sauf spécifié(feux)</u></b>
<b>Fissuration</b>	<b>Wkmax = 0.4mm</b>

Récapitulatif des aciers								
HA 500	HA 8	HA 10	HA 12	HA 14	HA 16	HA 20	HA 25	HA 32
Longueur totale (m)	1 298	3 895	636	298	150	455	244	595
Poids total (kg)	513	2 403	564	360	237	1 123	942	3 754
Masse totale : (kg)	9 896							

Section : 40 x 90ht

fck= 40 MPa ftk= 500 MPa Classe de ductilité B Coupe feu R 180 | Classe d'exposition: XC1

\* Aciers non soudés

Poids Préfa : 2.73T

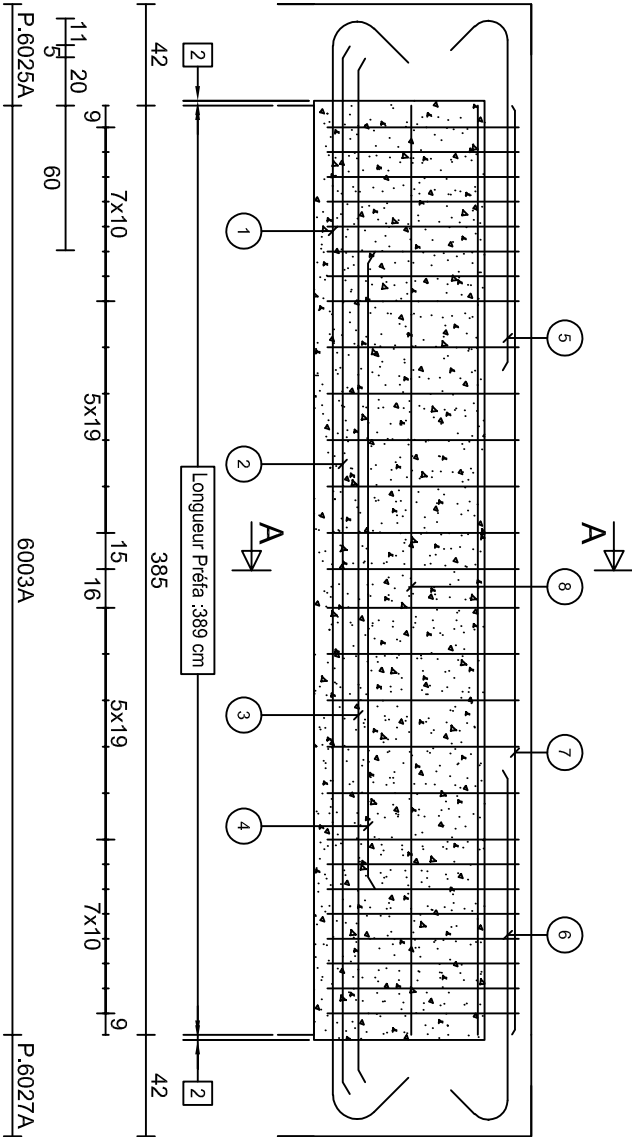
Béton  
C40/50

Elevation

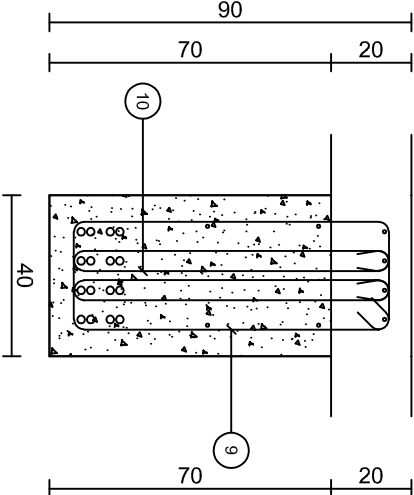
Echelle=1/33

110

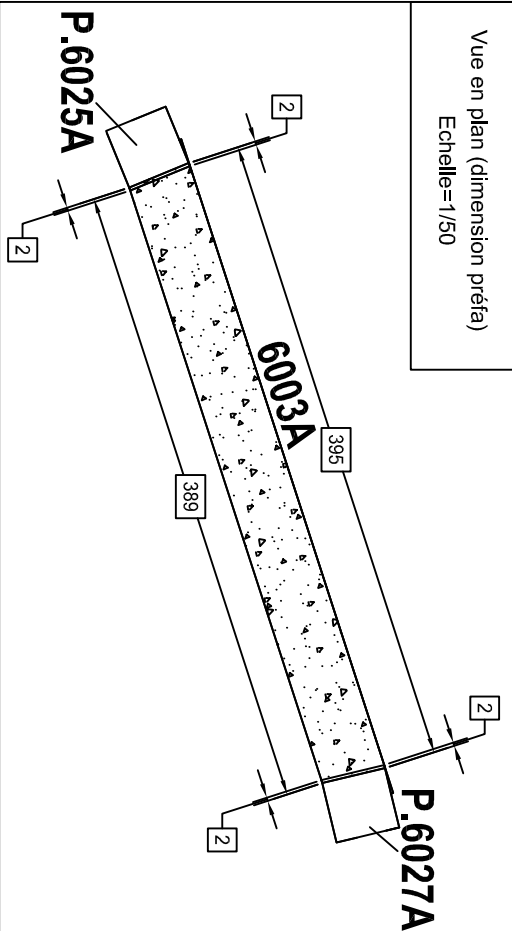
110



Coupe A-A  
Echelle=1/20



Vue en plan (dimension préfa)  
Echelle=1/50



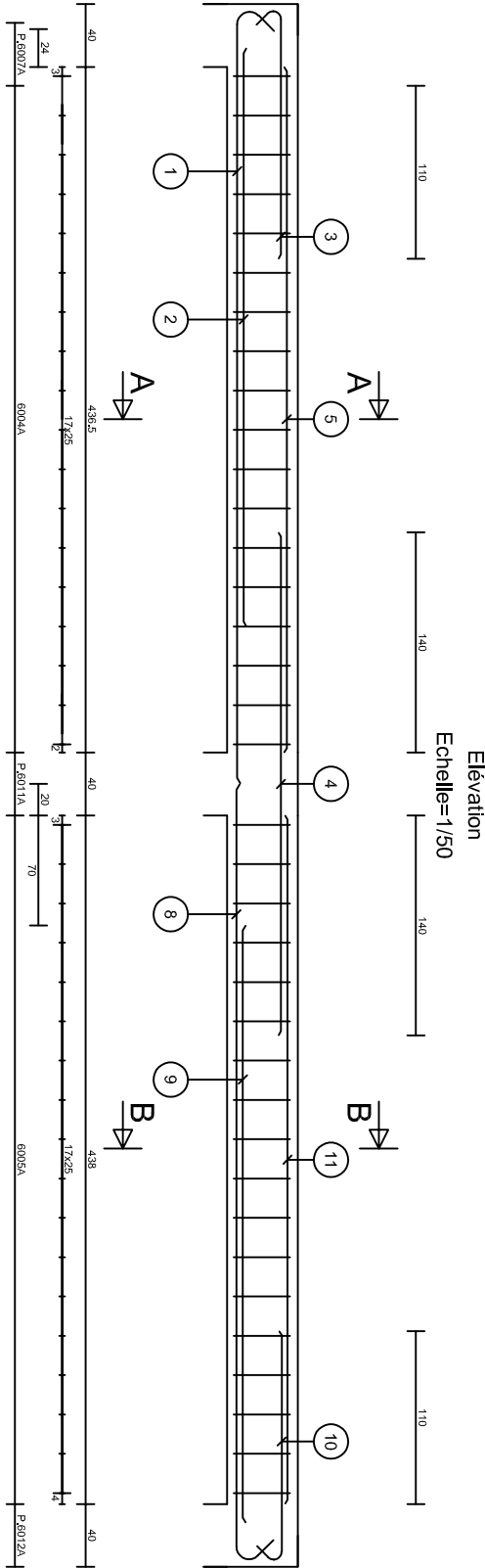
Barre	Lg	Forme
1 4HA20	522	
2 4HA20	435	
3 4HA20	425	
4 4HA20	265	
5 4HA14	170	
6 4HA14	170	
7 4HA8	385	
8 4HA8	385	
9 27HA10	224	
10 54HA10	181	

Barre	Lg/Poids
HA8	30.8/12.2
HA10	158.1/97.5
HA14	13.6/16.4
HA20	65.9/162.4

Section : 33 x 45ht

fck= 25 MPa fvk= 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1

\* Aciers non soudés

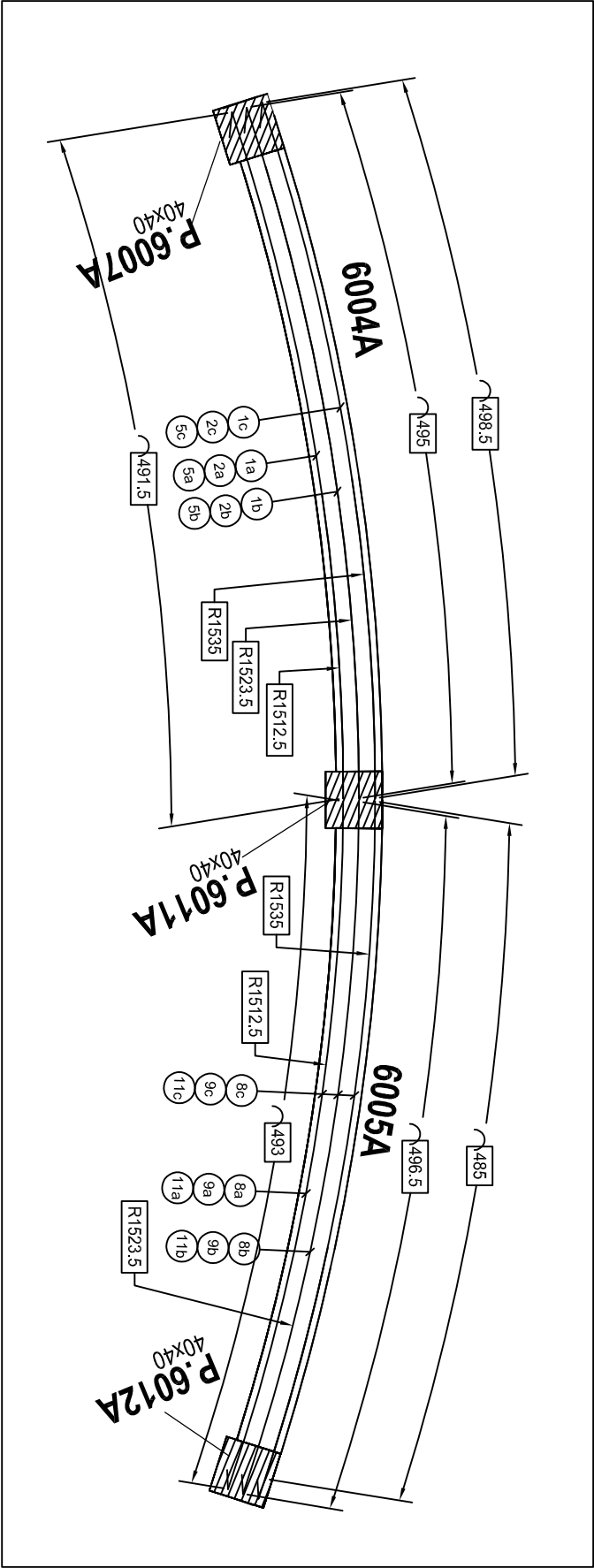


Barre	Lg	Forme	Coupe A-A Echelle=1/25				Coupe B-B Echelle=1/25			
			11a	11b	11c	12	13	18HA8	91	36
1a	1HA14	514	438	441	445	130	91	18HA8	91	36
1b	1HA14	518	441	445	445	130	91	18HA8	91	36
1c	1HA14	521	445	445	445	130	91	18HA8	91	36
2a	1HA12	365	438	441	445	130	91	18HA8	91	36
2b	1HA12	369	438	441	445	130	91	18HA8	91	36
2c	1HA12	373	438	441	445	130	91	18HA8	91	36
3	3HA10	172	438	441	445	130	91	18HA8	91	36
4	3HA10	320	438	441	445	130	91	18HA8	91	36
5a	1HA10	436	438	441	445	130	91	18HA8	91	36
5b	1HA10	440	438	441	445	130	91	18HA8	91	36
5c	1HA10	445	438	441	445	130	91	18HA8	91	36
6	18HA8	130	438	441	445	130	91	18HA8	91	36
7	18HA8	54	438	441	445	130	91	18HA8	91	36
8a	1HA14	518	438	441	445	130	91	18HA8	91	36
8b	1HA14	521	438	441	445	130	91	18HA8	91	36
9a	1HA12	429	438	441	445	130	91	18HA8	91	36
9b	1HA12	432	438	441	445	130	91	18HA8	91	36
9c	1HA12	436	438	441	445	130	91	18HA8	91	36
10	3HA10	162	438	441	445	130	91	18HA8	91	36
Barre			Lg/Poids				Lg/Poids			
HA8			71.0/28.0				71.0/28.0			
HA10			45.2/27.9				45.2/27.9			
HA12			22.1/19.6				22.1/19.6			
HA14			30.7/37.0				30.7/37.0			

Section : 33 x 45ht

fck = 25 MPa fyk = 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1

Vue en plan  
Echelle=1/50

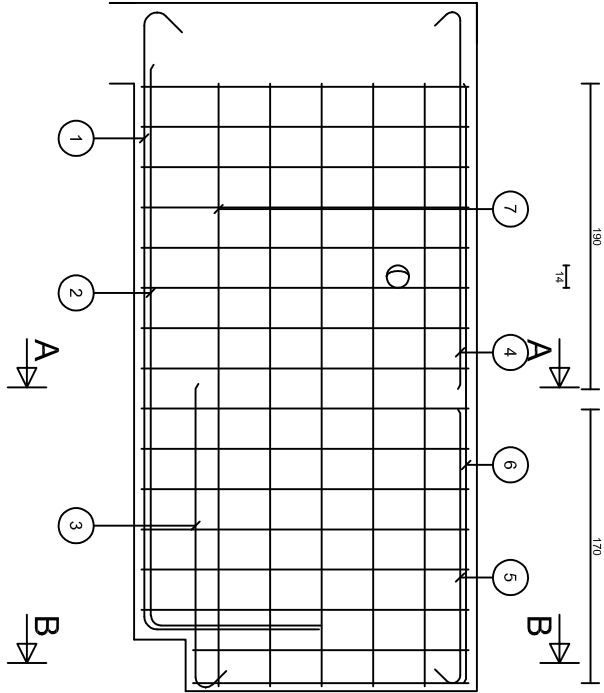


Section : 25 x 213ht

fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 120 | Classe d'exposition: XC1

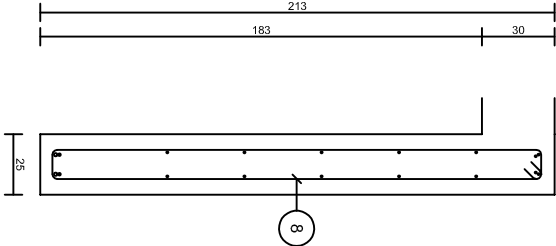
Elevation

Echelle=1/50



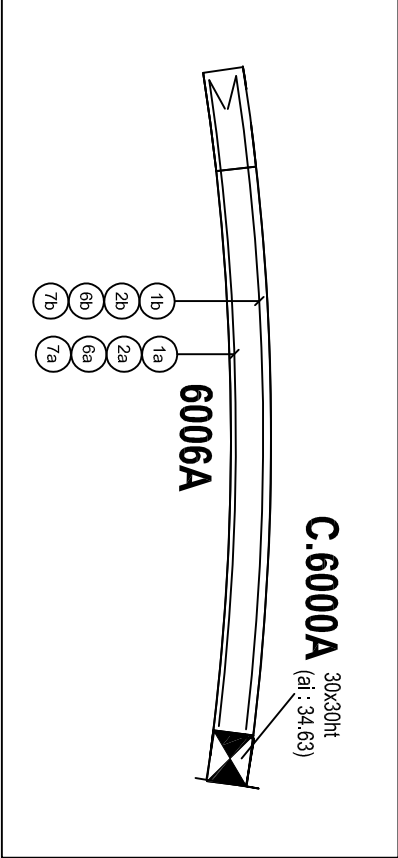
Coupe A-A

Echelle=1/33



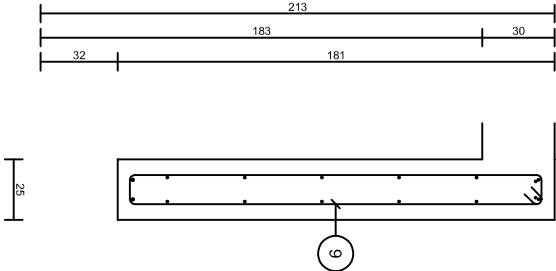
Vue en plan

Echelle=1/50



Coupe B-B

Echelle=1/33

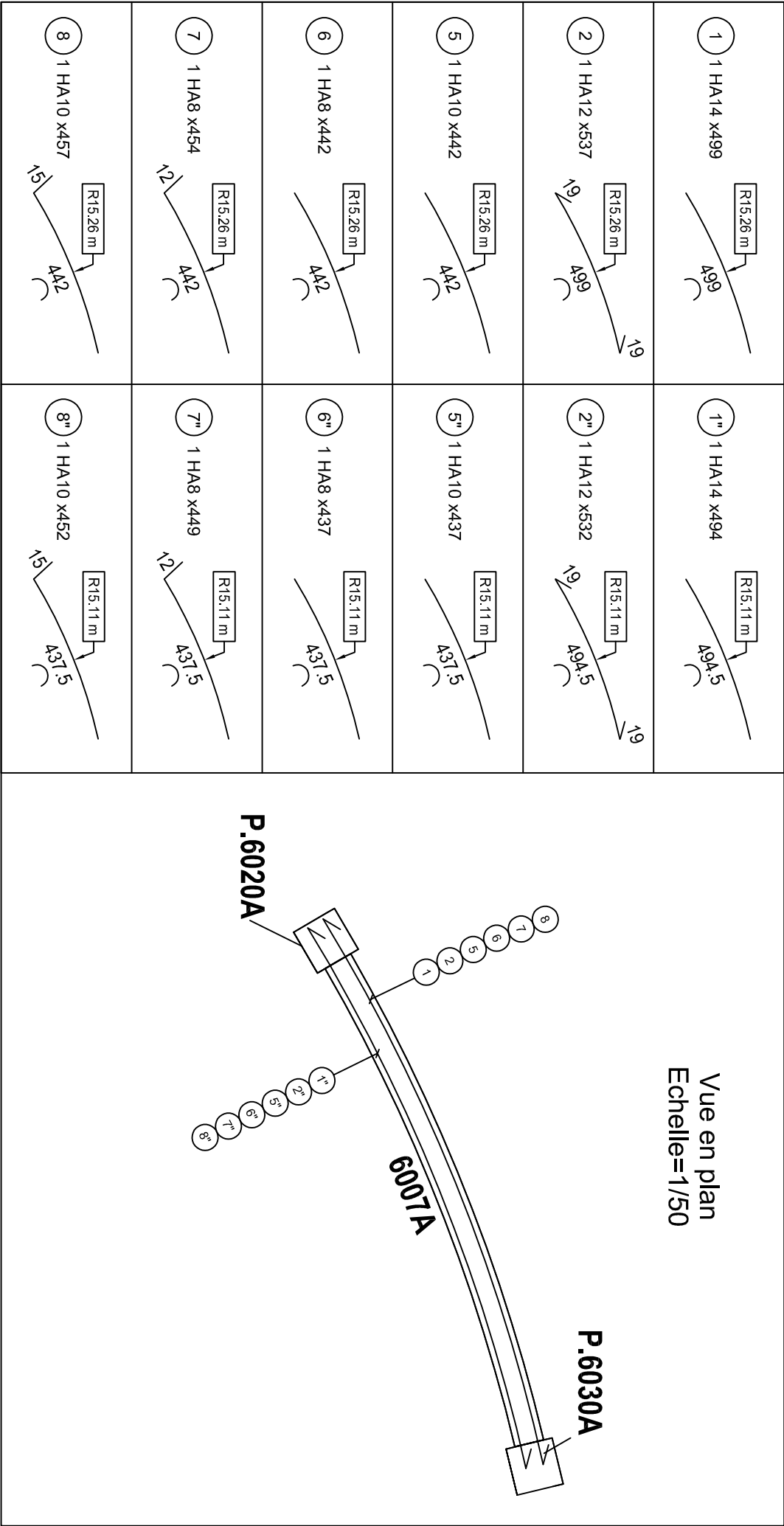


\* Aciers non soudés

Barre	Lg	Forme
1a 1HA14	534	
1b 1HA14	539	
2a 1HA12	472	
2b 1HA12	477	
3 2HA12	209	
4 2HA10	251	
5 2HA10	221	
6a 1HA10	375	
6a 1HA10	380	
7a 5HA8	375	
7b 5HA8	380	
8 14HA8	442	
9 2HA10	378	
Barre	Lg/Poids	
HA8	107 2/42.3	
HA10	17.0/10.5	
HA12	13.2/11.8	
HA14	10.3/12.4	



INSPIRE		6007A		Béton=2.75 m3	Eb=3.0 cm	2
ZONE NORD - PH RDC				Acier=84.3 kg d=30.7 kg/m3	Eh=5.0 cm	2
				Fi=9.0 mm Cof=18.4 m²	El=5.0 cm	
fck= 25 MPa fvk= 500 MPa Classe de ductilité B Coupe feu R 60   Classe d'exposition: XC1						



INSPIRE  
ZONE NORD - PH RDC

6008A

Béton=2.47 m3  
Acier=130.9 kg d=53.1 kg/m3  
Fi=10.6 mm Cof=16.1 m²

Eb=3.0 cm  
Eh=5.0 cm  
EI=5.0 cm

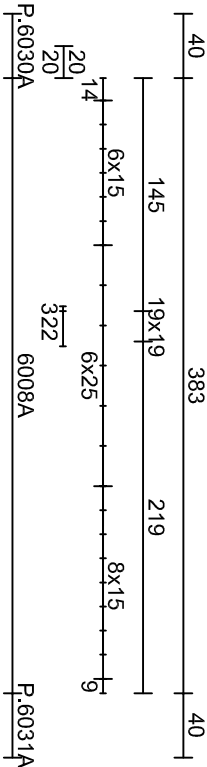
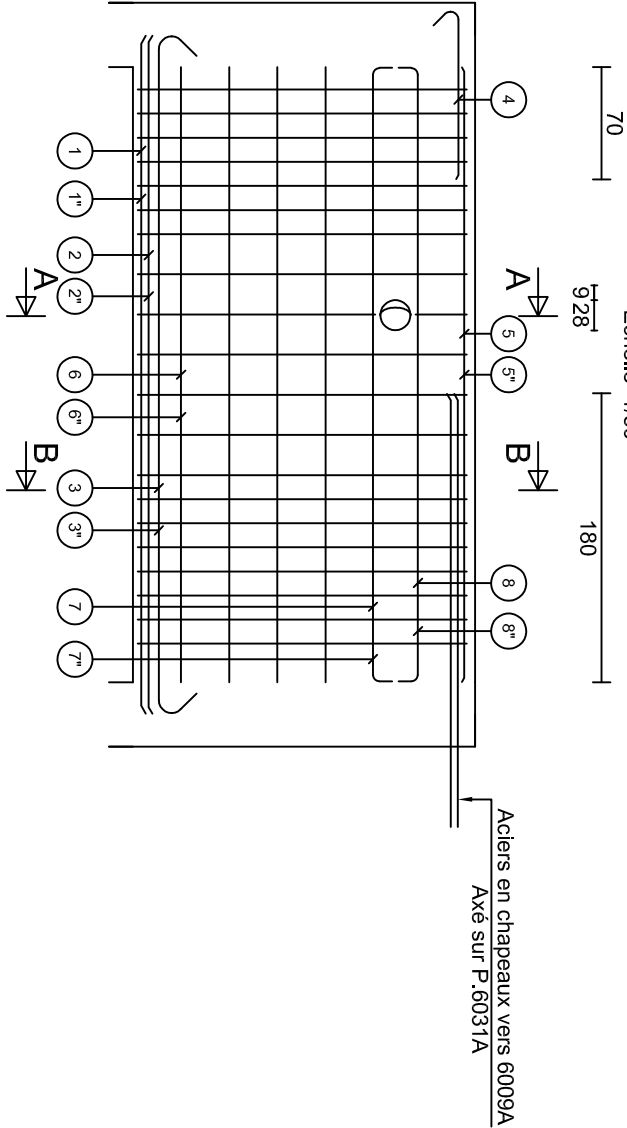
Section : 25 x 213ht

fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1

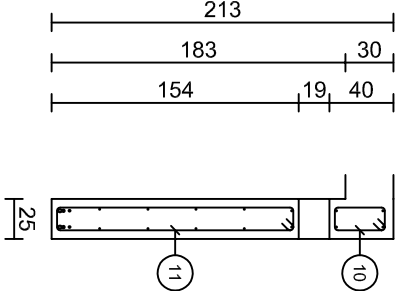
Elevation

Echelle=1/50

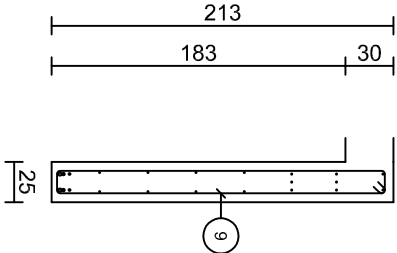
✱ Aciers non soudés

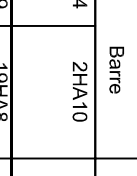

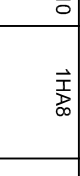
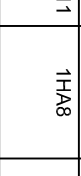


Coupe A-A  
Echelle=1/50



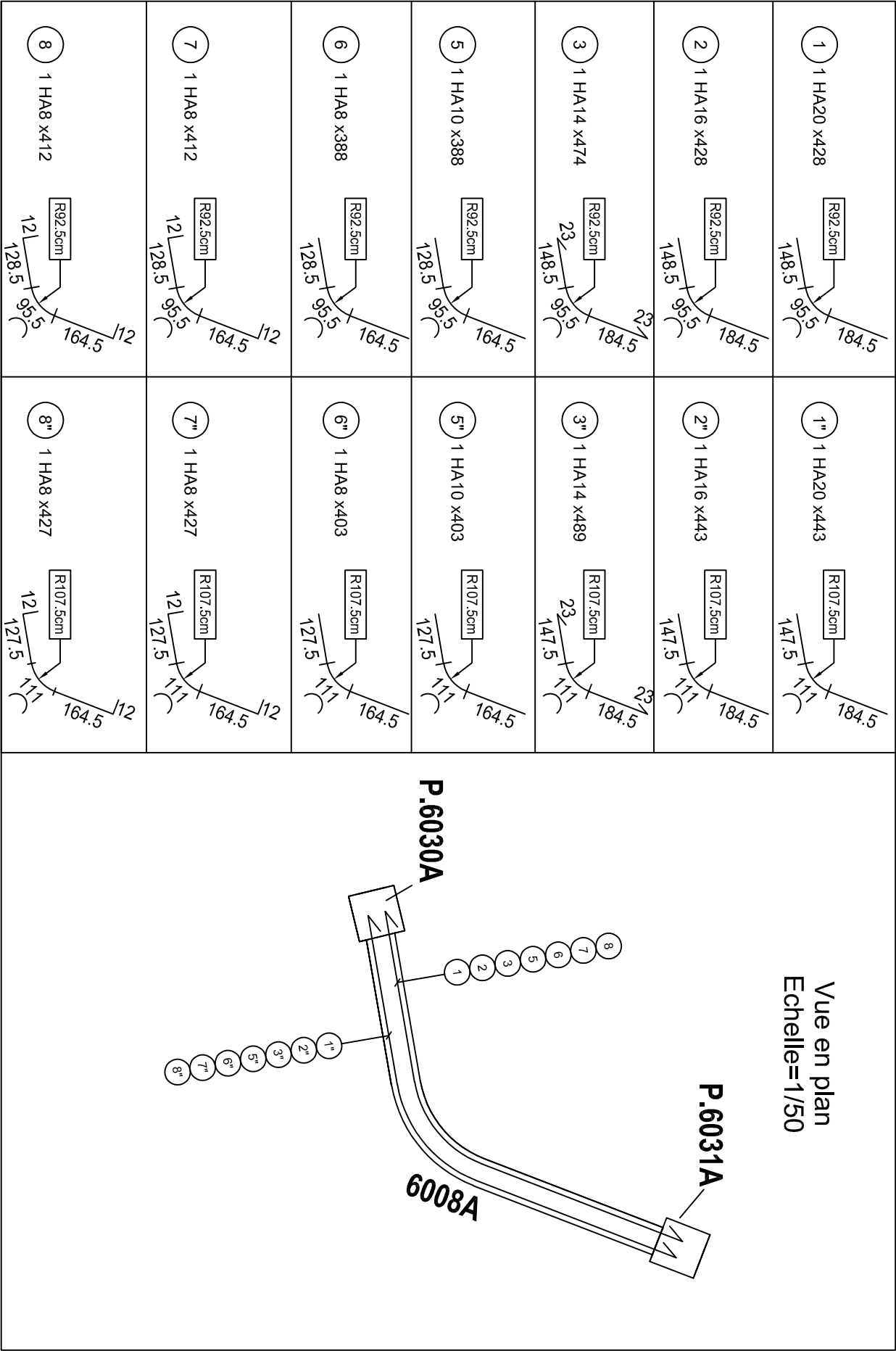
Coupe B-B  
Echelle=1/50



Barre	Lg	Forme
✱ 4 2HA10	121	
9 19HA8	449	
10 1HA8	103	
11 1HA8	335	
Barre	Lg/Poids	
HA8	148.4/58.6	
HA10	10.1/6.2	
HA14	9.4/11.4	
HA16	24.5/38.6	
HA20	8.5/20.9	



Section : 25 x 213ht  
fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1



Section : 25 x 213ht

fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60

Classe d'exposition: XC1

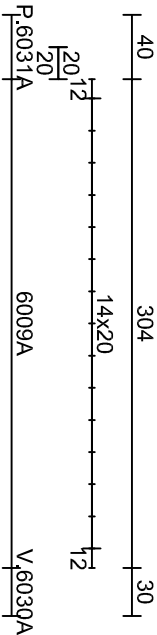
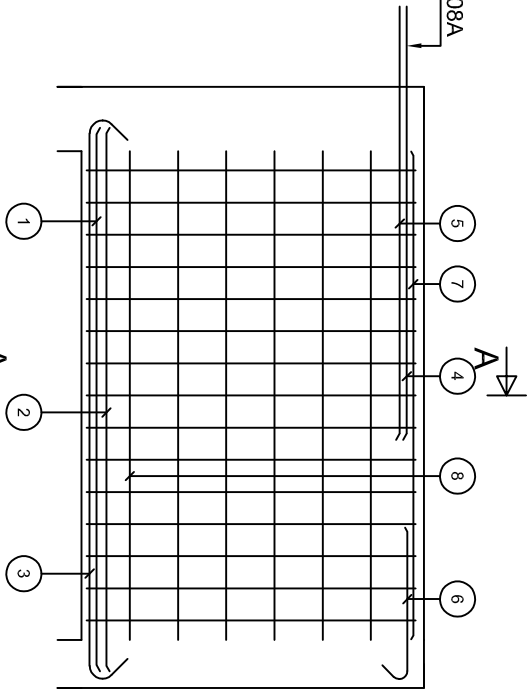
\* Aciers non soudés

Elevation

Echelle=1/50

180 70

Aciers en chapeaux vers 6008A  
Axé sur P.6031A



Coupe A-A  
Echelle=1/50

Barre	Lg	Forme
1 2HA16	339	339
2 2HA14	339	339
3 2HA14	397	397 135° 16.16.135° 349
* 4 2HA16	400	400
* 5 2HA16	400	400
* 6 2HA10	111	111 135° 10.95 95
7 2HA10	304	304
8 12HA8	304	304
9 15HA8	449	449 15
Barre	Lg/Poids	
HA8	103.8/41.0	
HA10	8.3/5.1	
HA14	14.9/18.0	
HA16	23.0/36.3	



INSPIRE  
ZONE NORD - PH RDC

6010A

Béton=1.10 m<sup>3</sup>  
Acier=194.1 kg d=176.3 kg/m<sup>3</sup>  
F=13.4 mm Cof=4.0 m<sup>2</sup>

Eb=5.5 cm  
Et=5.0 cm  
Et=6.0 cm

1  
2

Section : 40 x 65ht

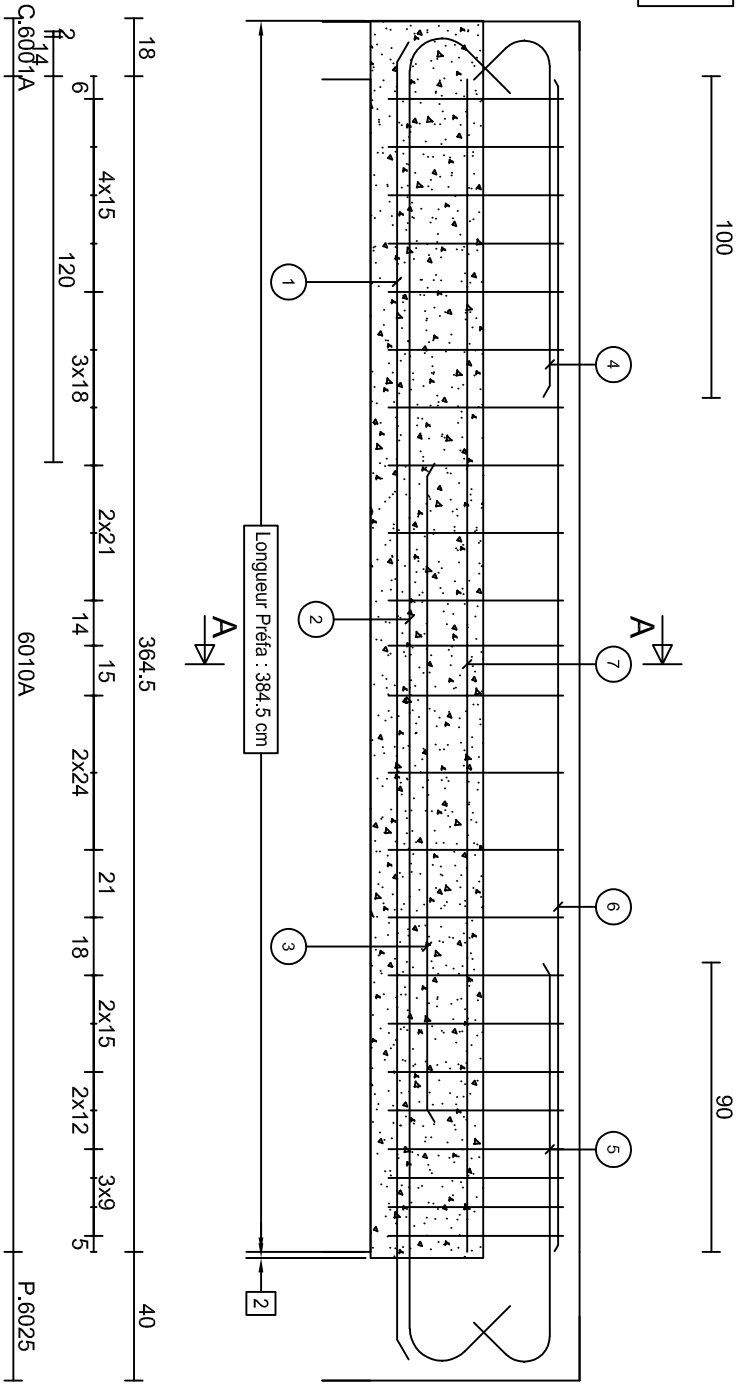
fck= 40 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 180 | Classe d'exposition: XC1

\* Aciers non soudés

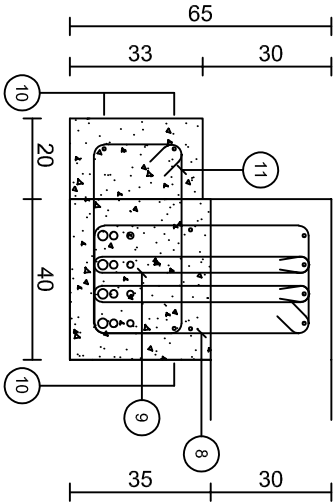
Poids Préfa : 1.99T

Élévation  
Echelle=1/25

Béton  
C40/50



Coupe A-A  
Echelle=1/20



Barre	Lg	Forme
1 4HA25	Var	Var
2 4HA20	Var	Var
3 4HA16	206	206
4 4HA14	137	137
5 4HA14	149	149
6 4HA8	366	364
7 2HA8	366	364
8 23HA10	174	174
9 46HA8	128	128
10 3HA8 (e=20cm)	405	405
11 20HA8 (e=20cm)	154	154

Barre	Lg/Poids
HA8	81.0/32.0
HA10	40.0/24.6
HA14	11.4/13.8
HA16	8.2/13.0
HA20	19.2/47.3
HA25	16.5/63.5

Section : 40 x 65ht

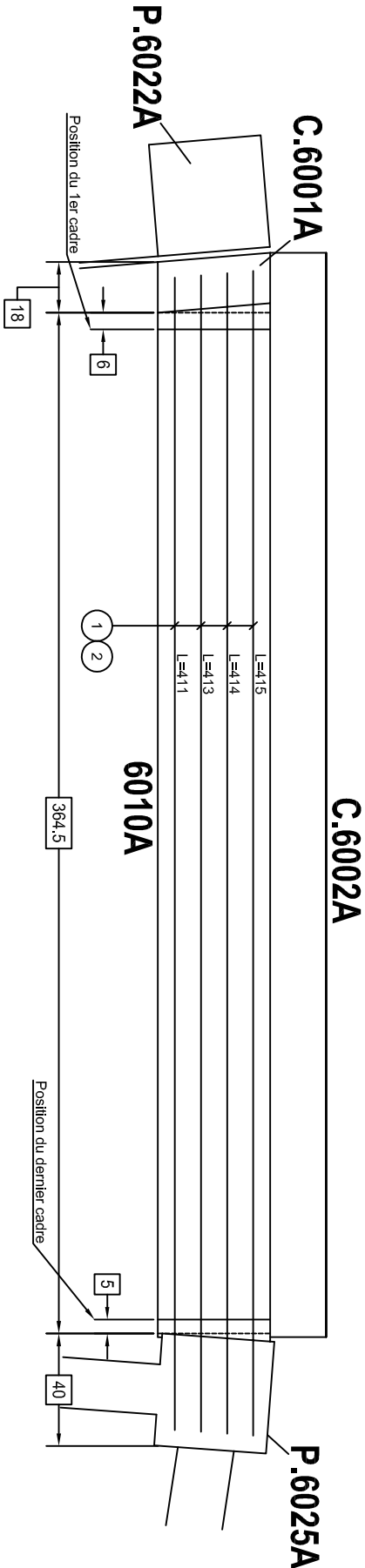
fck= 40 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 180 | Classe d'exposition: XC1

Poids Préfa : 1.99T

Béton  
C40/50

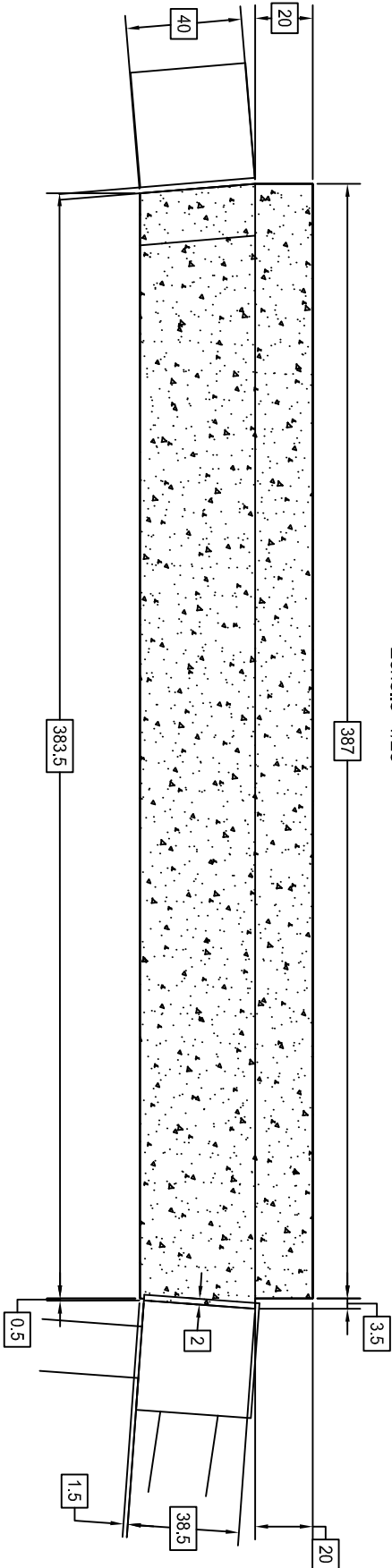
Vue en plan (aciers inf)

Echelle=1/25



Vue en plan (dimension préfa)

Echelle=1/25



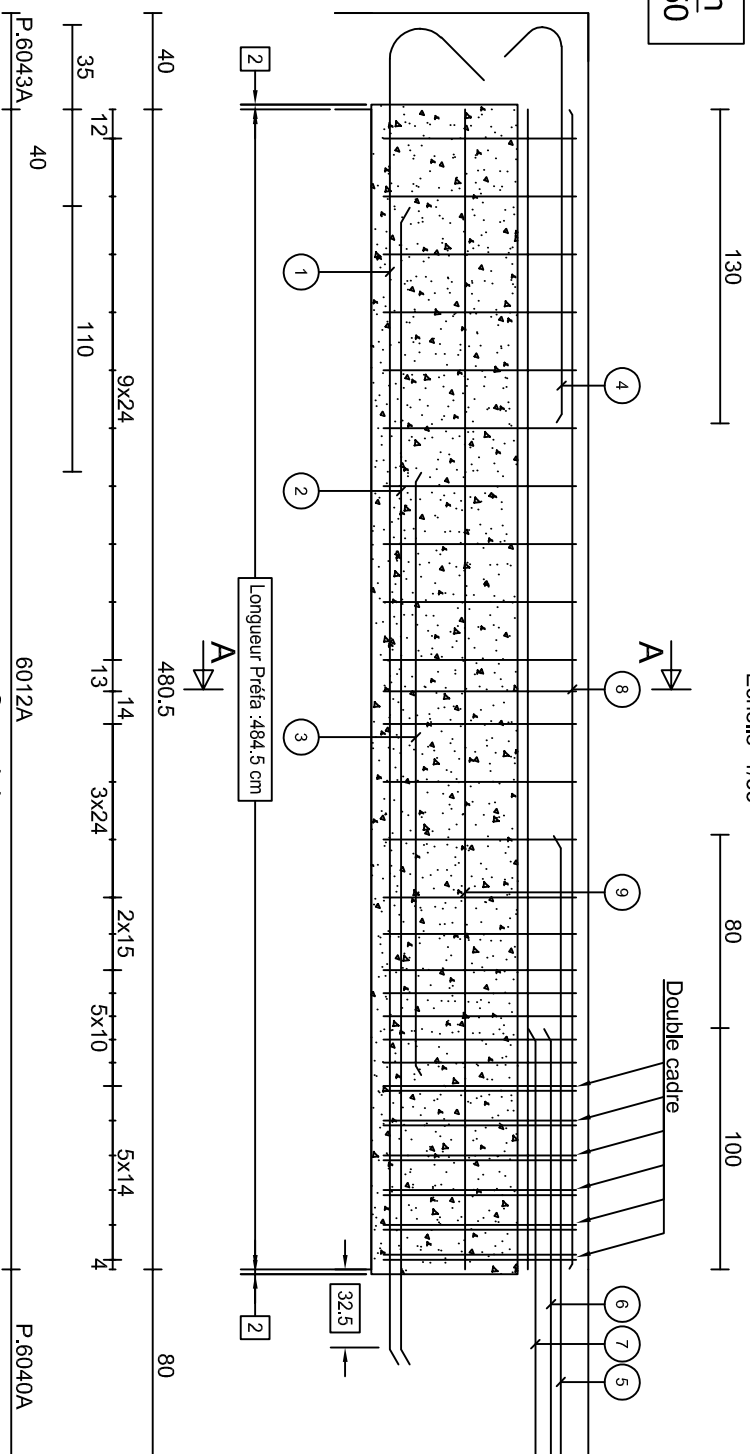
Poids Préfa : 4.36T

Béton  
C40/50

Elevation  
Echelle=1/33

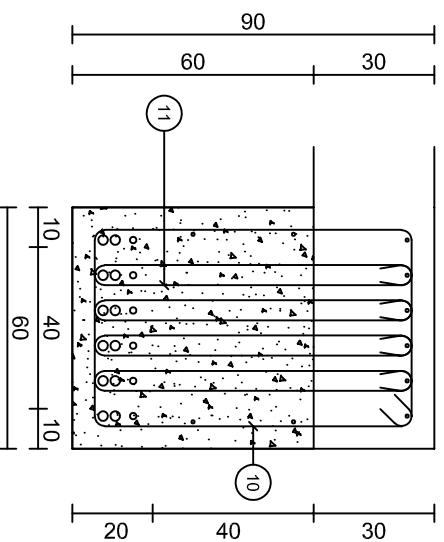
<p>             fck= 40 MPa              fyk= 500 MPa              Classe de ductilité B              Coupe feu R 180           </p>	<p>             Classe d'exposition: XC1              * Aq           </p>
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






**\* Aciers non soudés**



Coupe A-A  
Echelle=1/20

Echelle=1/20



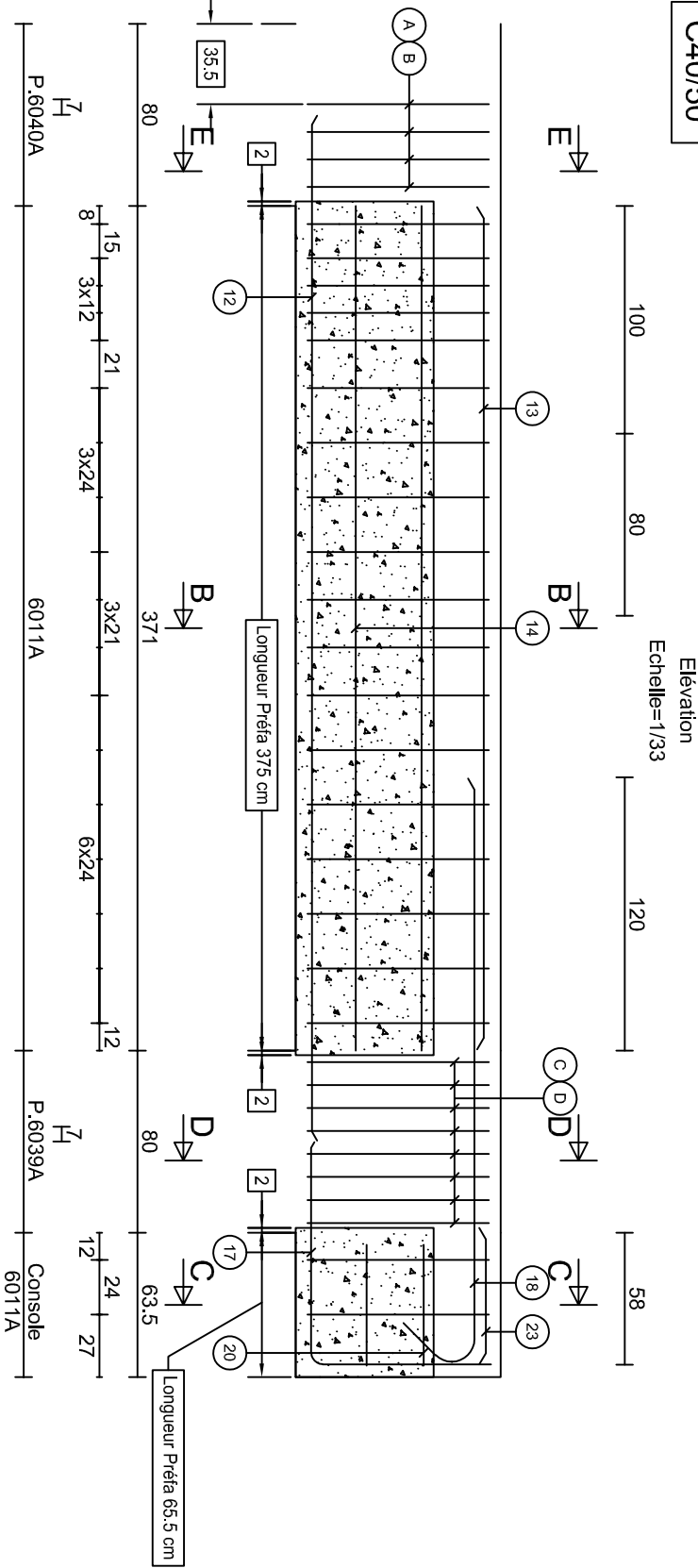
№	Barre	Lg	Forme
1	6HA25	596	
2	6HA25	480	
3	6HA16	250	
4	6HA14	189	
5	6HA20	440	
6	6HA20	280	
7	6HA20	280	
8	6HA8	481	
9	4HA8	481	
10	33HA10	269	
11	132HA10	182	
Barre		Lg/Poids	
HA8		48.0/19.0	
HA10		318.9/196.6	
HA14		11.3/13.7	
HA16		15.0/23.7	
HA20		60.0/148.0	
HA25		64.6/248.9	

Section : 60 x 90ht

fck= 40 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 180 | Classe d'exposition: XC1

Poids Préfa : 3.38T  
Poids Préfa Console : 0.59T

Béton  
C40/50



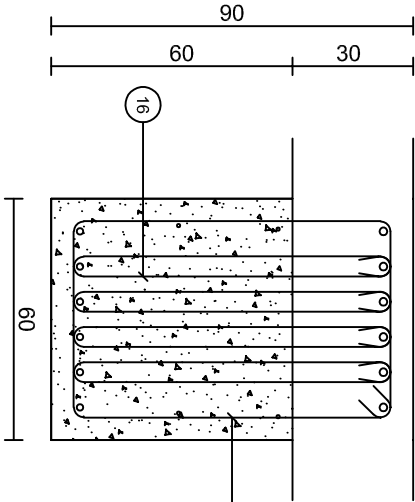
Barre	Lg	Forme
12 6HA16	451	451
13 6HA20	371	371
14 4HA8	371	371
15 18HA10	269	50 08
16 72HA10	182	80
17 6HA10	175	10 08 98 90°
18 6HA20	290	135° 20 258
20 2HA10	150	53 48
21 2HA10	269	50 08
22 8HA10	182	80
23 6HA8	58	58
* A 4x2 UHA10 e=12 cm	110	28 45
* B 6HA10 e=12 cm	182	80
* C 8x2 UHA8 e=10 cm	110	28 45
* D 8x2HA8 e=10 cm	182	80
Barre		
HA8	17.8/7.0	209.8/129.3
HA10	27.1/42.7	39.7/97.9
HA16		
HA20		

Section : 60 x 90ht

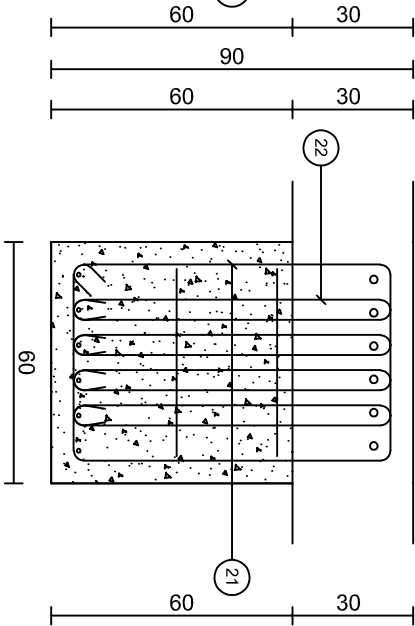
fck= 40 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 180 | Classe d'exposition: XC1

Béton  
C40/50

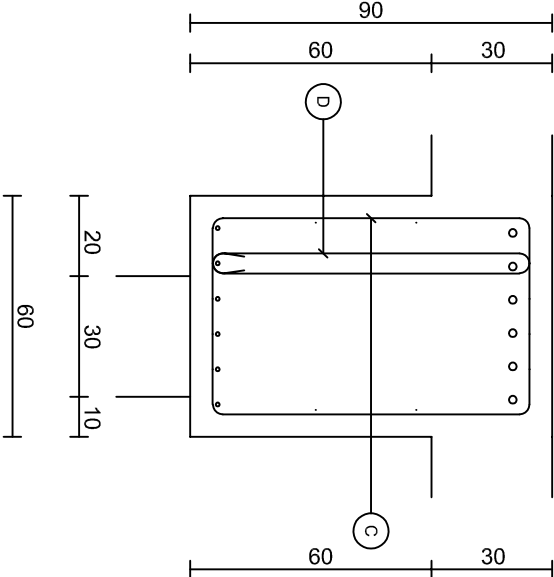
Coupe B-B  
Echelle=1/20



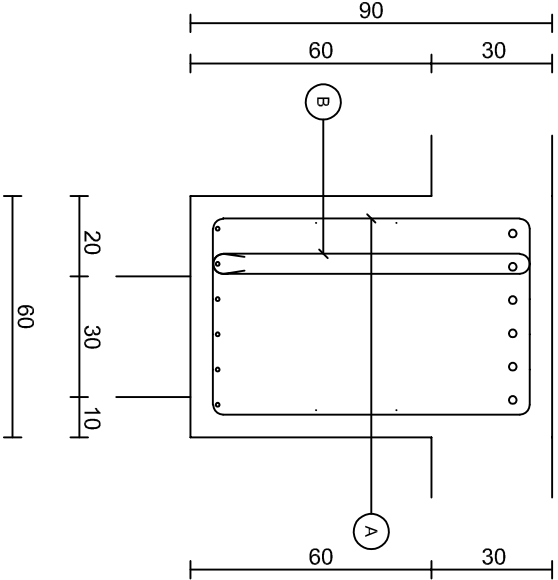
Coupe C-C  
Echelle=1/20



Coupe D-D  
Echelle=1/20



Coupe E-E  
Echelle=1/20



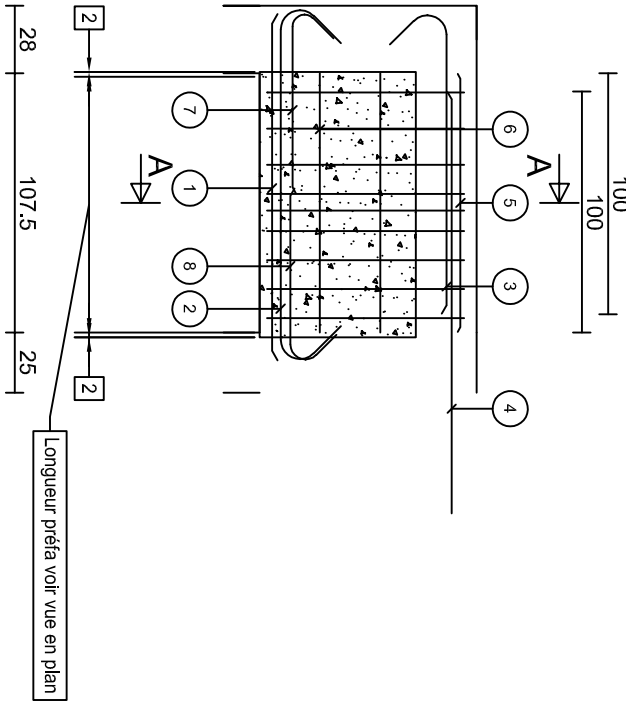
Poids Préfa : 1.17T

Section : 60 x 90ht

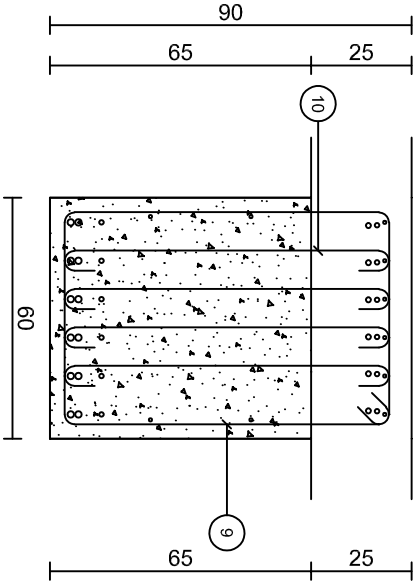
fck= 25 MPa ftk= 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1

\* Aciers non soudés

Elevation  
Echelle=1/33



28 107.5 25  
8 2x15 7 3x12 6  
PY.6026A 6013A PY.6025A  
Coupe A-A  
Echelle=1/20



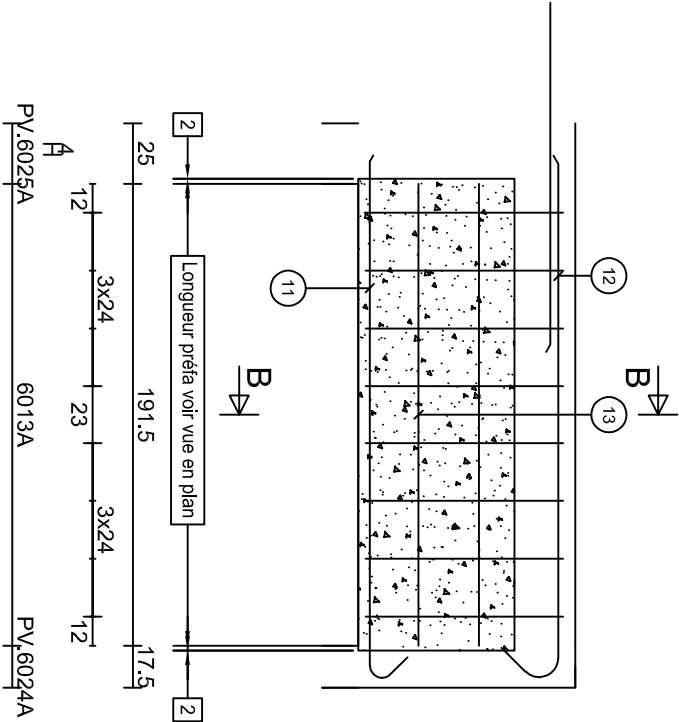
Barre	Lg	Forme
1 6HA16	VAR	VAR
2 6HA16	VAR	VAR
3 6HA14	149	VAR
4 6HA12	195	195
5 6HA8	VAR	VAR
6 4HA8	108	108
7 6HA10	93	93
8 6HA12	92	92
9 9HA10	281	281
10 36HA10	102	102

Barre	Lg/Poids
HA8	10.7/4.2
HA10	67.4/41.6
HA12	17.2/15.3
HA14	8.9/10.8
HA16	20.6/32.5

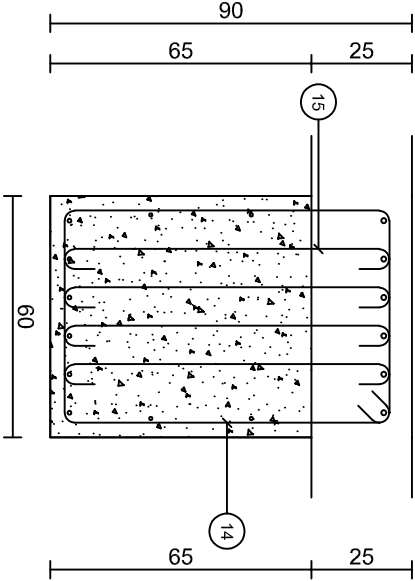


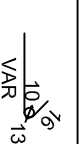
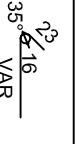
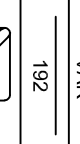
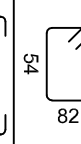
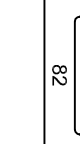
Poids Préfa : 1.99T

Elevation  
Echelle=1/33  
70



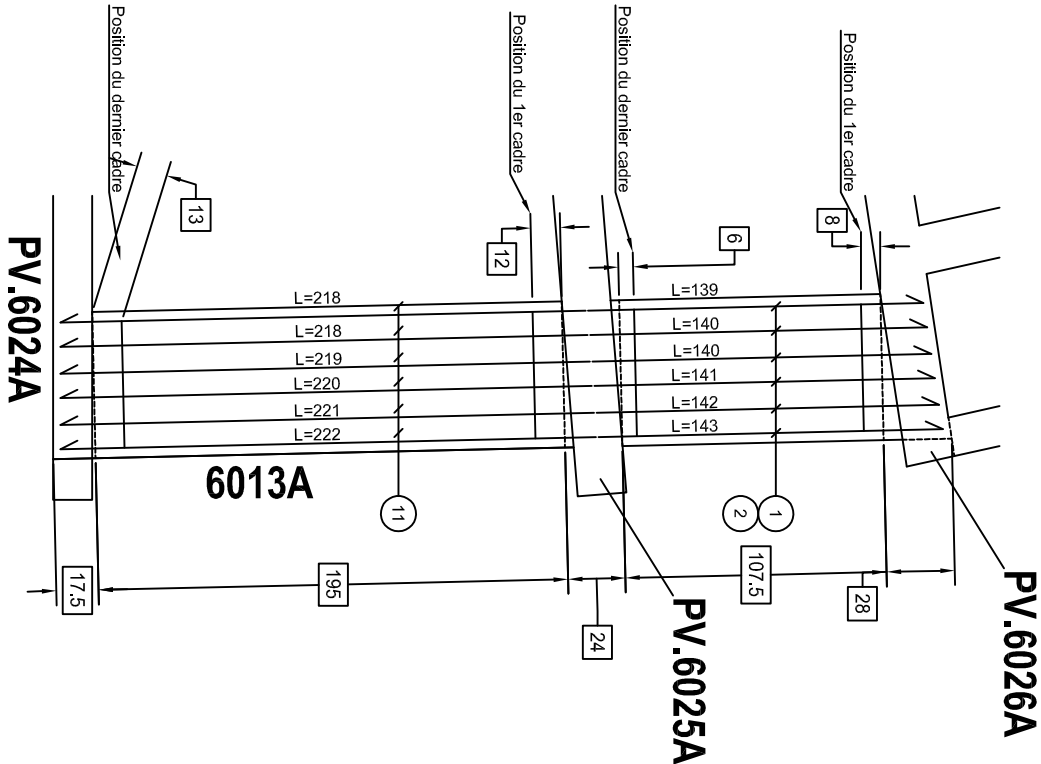
Coupe B-B  
Echelle=1/20



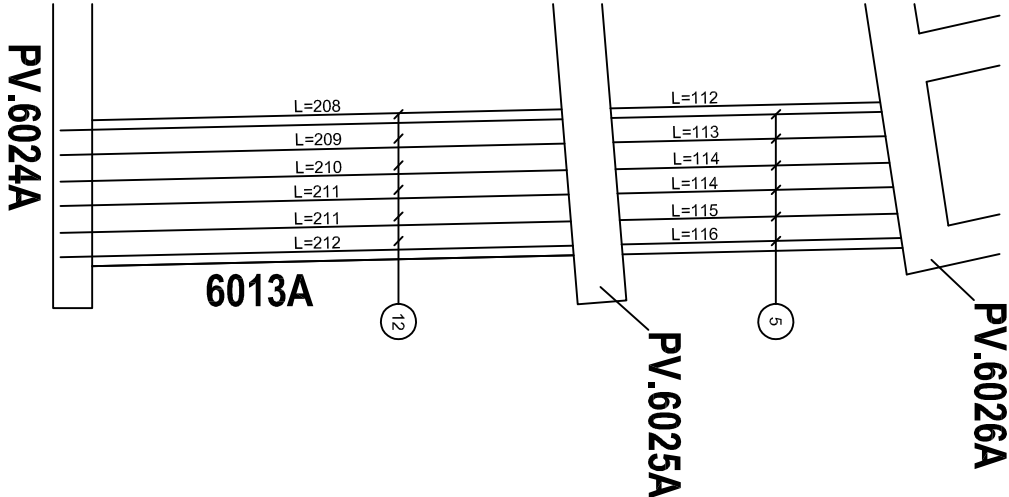
Barre		Lg	Forme
11	6HA10	VAR	
12	6HA14	VAR	
13	4HA8	192	
14	8HA10	281	
15	32HA10	102	
Barre		Lg/Poids	
HA8		7.7/3.0	
HA10		69.0/42.5	
HA14		14.5/17.5	

Section : 60 x 90ht  
fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60 | Classe d'exposition: XC1

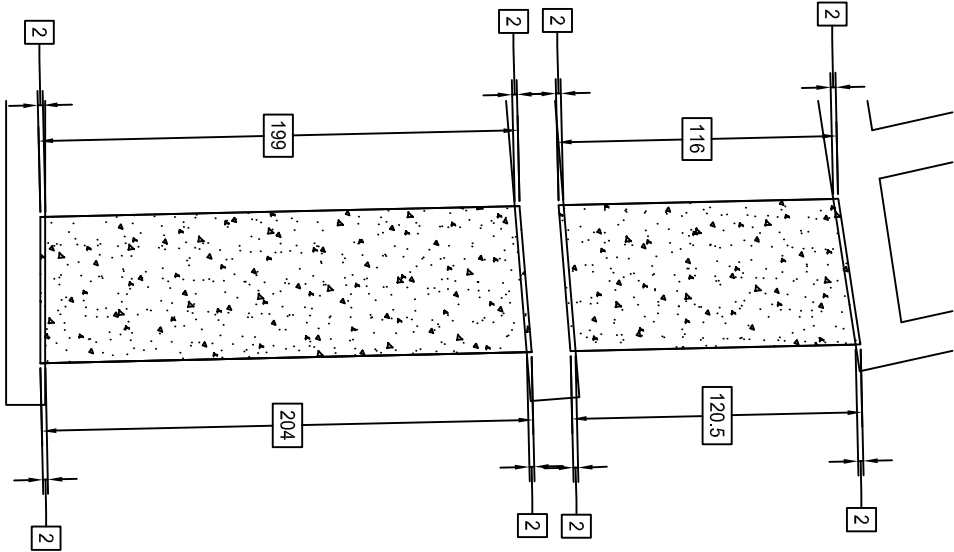
Vue en plan (aciers inf)  
Echelle=1/33



Vue en plan (aciers sup)  
Echelle=1/33



Vue en plan (dimension préfa)  
Echelle=1/33

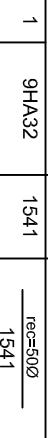
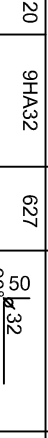
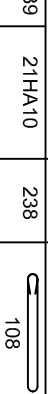
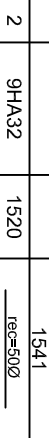
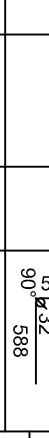
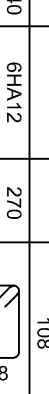
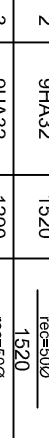
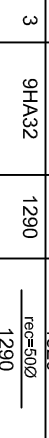
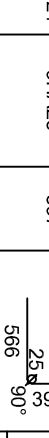
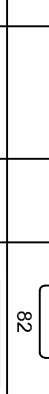

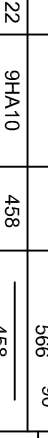
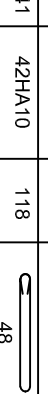
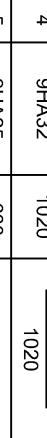
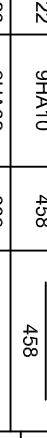
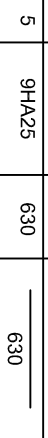
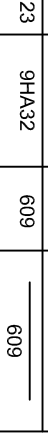
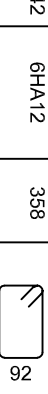
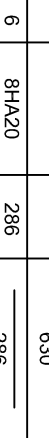
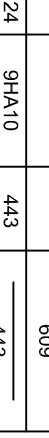

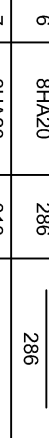
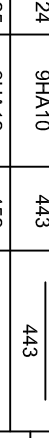
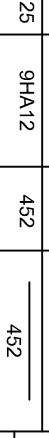
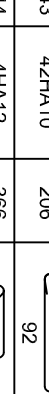

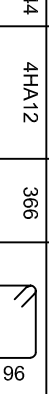
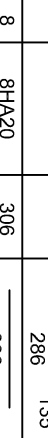
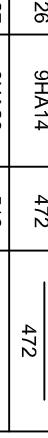
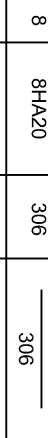
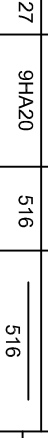
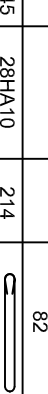
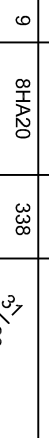

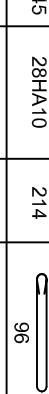
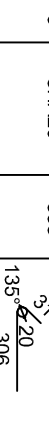
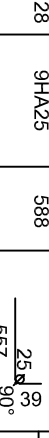
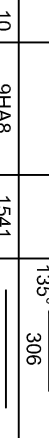
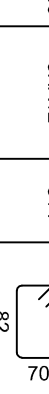
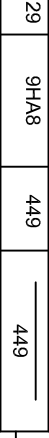
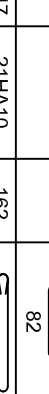
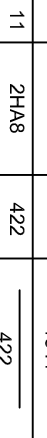
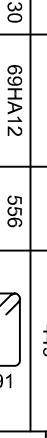
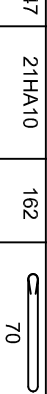
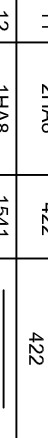
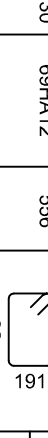
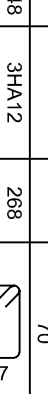
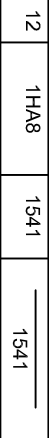

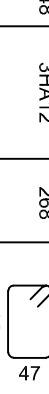
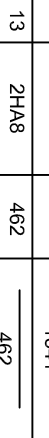
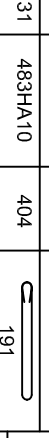



$$\frac{1}{2}$$

Section : 90 x 200ht

fck= 40 MPa fvk= 500 MPa Classe de ductilité B Coupe feu R 60 I Classe d'exposition: XC1

\* Aciers non soudés

Barre	Lg	Forme	Barre	Lg	Forme	Barre	Lg	Forme
1 9HA32	1541		20 9HA32	627		39 21HA10	238	
2 9HA32	1520		21 9HA25	597		40 6HA12	270	
3 9HA32	1290							
4 9HA32	1020		22 9HA10	458		41 42HA10	118	
5 9HA25	630		23 9HA32	609		42 6HA12	358	
6 8HA20	286		24 9HA10	443				
7 8HA20	318		25 9HA12	452		43 42HA10	206	
8 8HA20	306		26 9HA14	472		44 4HA12	366	
9 8HA20	338		27 9HA20	516				
			28 9HA25	588		45 28HA10	214	
10 9HA8	1541					46 3HA12	314	
11 2HA8	422		29 9HA8	449				
12 1HA8	1541		30 69HA12	556		47 21HA10	162	
13 2HA8	462		31 483HA10	404		48 3HA12	268	
14 2HA8	248		32 6HA12	270				
15 9HA20	217					49 21HA10	116	
			33 42HA10	118		50 6HA12	358	
16 9HA20	217		34 4HA12	262				
						51 42HA10	206	
17 9HA16	236		35 28HA10	110		A 3HA10	1590	
18 9HA20	268		36 3HA12	374		B 77HA8 (e=20cm)	235	
19 9HA20	268		37 21HA10	222				
			38 3HA12	390				
Barre		Lg/Poids	Barre		Lg/Poids	Barre		Lg/Poids
HA8 HA10 HA12		217.1/85.7 2549.8/1572.0 565.7/502.2	HA14 HA16 HA20		42.5/51.4 21.2/33.5 233.8/576.6	HA25 HA32		163.3/629.4 594.8/3755.0

Section : 20 x 171ht

fck= 25 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60

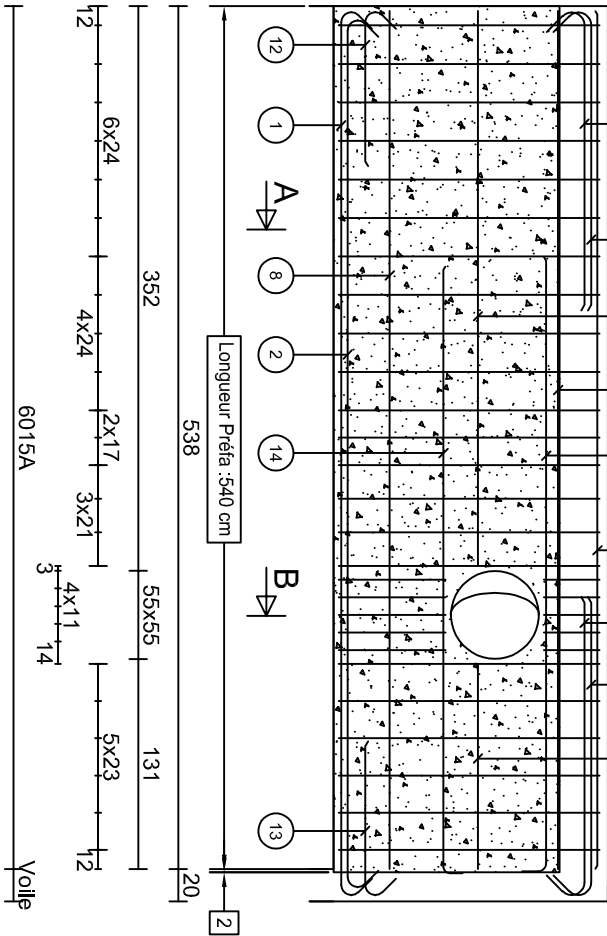
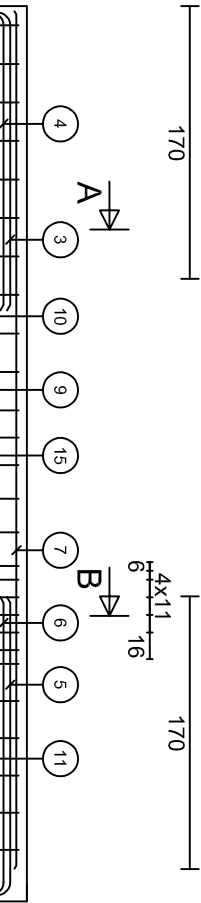
\* Aciers non soudés

Classe d'exposition: XC1

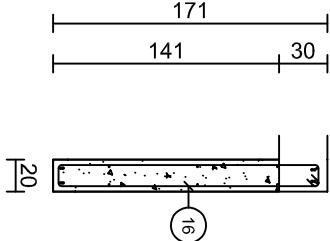
Poids Préfa : 3.81T

Elevation

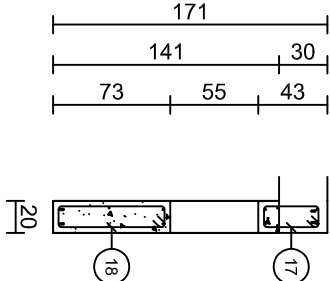
Echelle=1/50



Coupe A-A  
Echelle=1/50



Coupe B-B  
Echelle=1/50



Barre	Lg	Forme	Barre	Lg	Forme
1 2HA14	600		17 5HA8	107	
2 2HA14	590		18 5HA8	171	
3 2HA14	211				
4 2HA14	211				
5 2HA14	211				
6 2HA14	211				
7 2HA8	538				
8 2HA8	538				
9 2HA8	538				
10 2HA8	349				
11 2HA8	128				
12 2HA12	117				
13 2HA12	117				
14 2HA8	389				
15 2HA10	396				
16 22HA8	363				
Barre	Lg/Poids	Barre	Lg/Poids		
HA8 HA10	143.3/56.5 7.9/4.9	HA12 HA14	28.9/25.7 16.9/20.4		



INSPIRE  
ZONE NORD - PH RDC

6016A

Béton=0.83 m3  
Acier=155.4 kg d=187.2 kg/m3  
F=12.2 mm Cot=3.2 m²

Eb=3.0 cm  
Et=5.0 cm  
Et=3.0 cm

1

Poids Préfa : 1.26T

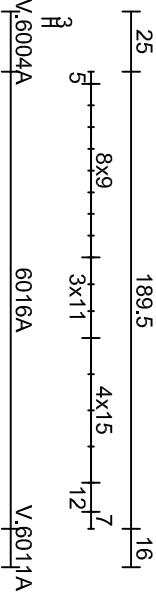
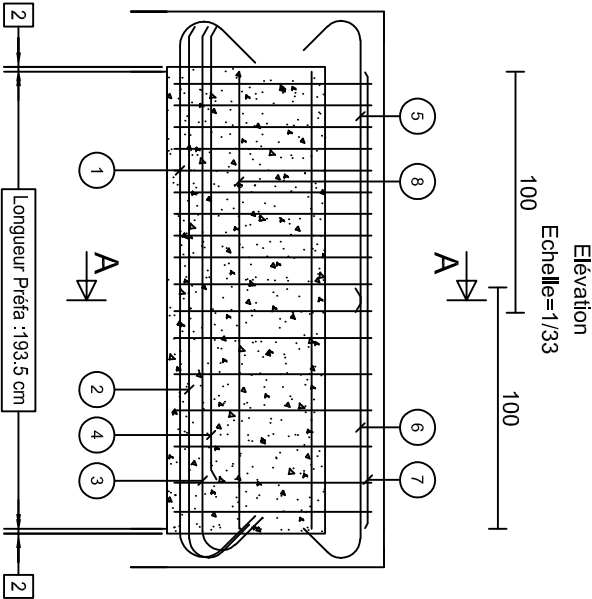
Béton  
C40/50

Section : 40 x 90ht

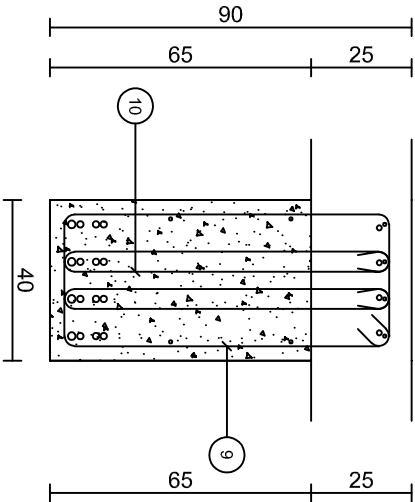
fck= 40 MPa fyk= 500 MPa Classe de ductilité B Coupe feu R 60

Classe d'exposition: XC1

\* Aciers non soudés



Coupe A-A  
Echelle=1/20



Barre	Lg	Forme
1 4HA20	289	
2 4HA16	247	
3 4HA16	244	
4 4HA16	189	
5 4HA14	146	
6 4HA14	137	
7 4HA8	190	
8 4HA8	190	
9 17HA10	241	
10 34HA10	186	
Barre	Lg/Poids	
HA8	15.2/6.0	
HA10	104.2/64.2	
HA14	11.3/13.7	
HA16	27.2/42.9	
HA20	11.6/28.5	