

ETUDES STRUCTURALES

**« TRAVAUX DE CONSTRUCTION DU
POSTE FRONTALIER DE POGNO »**

HYPOTHESES DE CALCUL

Normes :

EUROCODE 2 (EC2)

DTU13.12

Eurocode 1 EN11991-1-1 charges d'exploitations

NFP06-001

La contrainte admissible du sol = 0,200MPa

Béton :

Classe de resistance f_{ck} C20/25

Enrobage $c=3\text{cm}$

Acier :

Fe400 – $f_e = 400 \text{ Mpa}$

Charges :

Plancher 1 : dalle en corps creux (15+5) : 2,85 kN/m²

Enduit en mortier $e = 2,5 \text{ cm}$: 0,5kN/m²

Faux plafonds en platre : 0,3kN/m²

Charges d'exploitation :

Bureaux – catégorie B : 2,5kN/m²

Escalier – catégorie A : 2,5kN/m²

Toiture accessible : 1,5kN/m²

Toiture non-accessible : 1kN/m²

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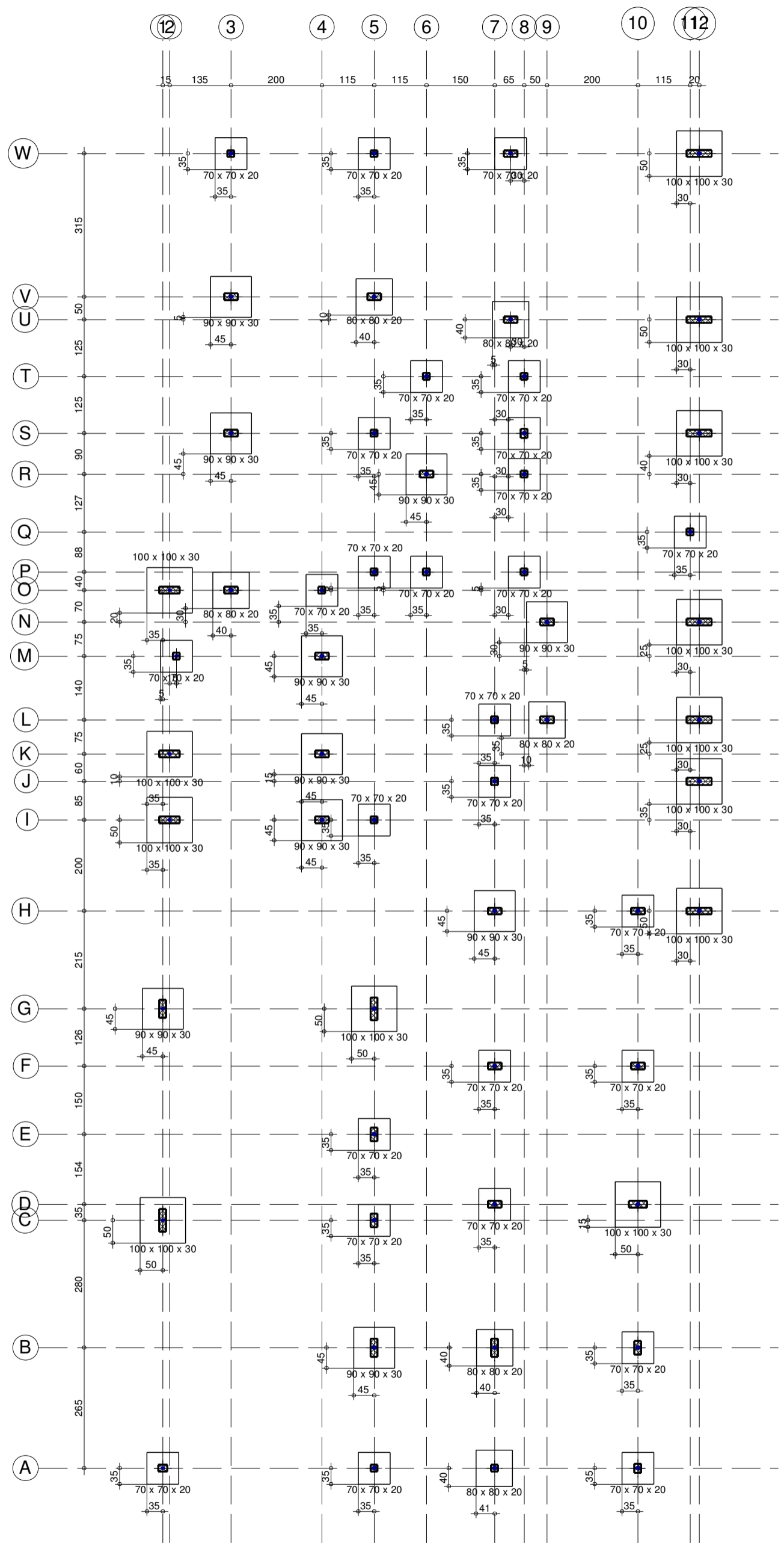
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PLAN D'IMPLANTATION

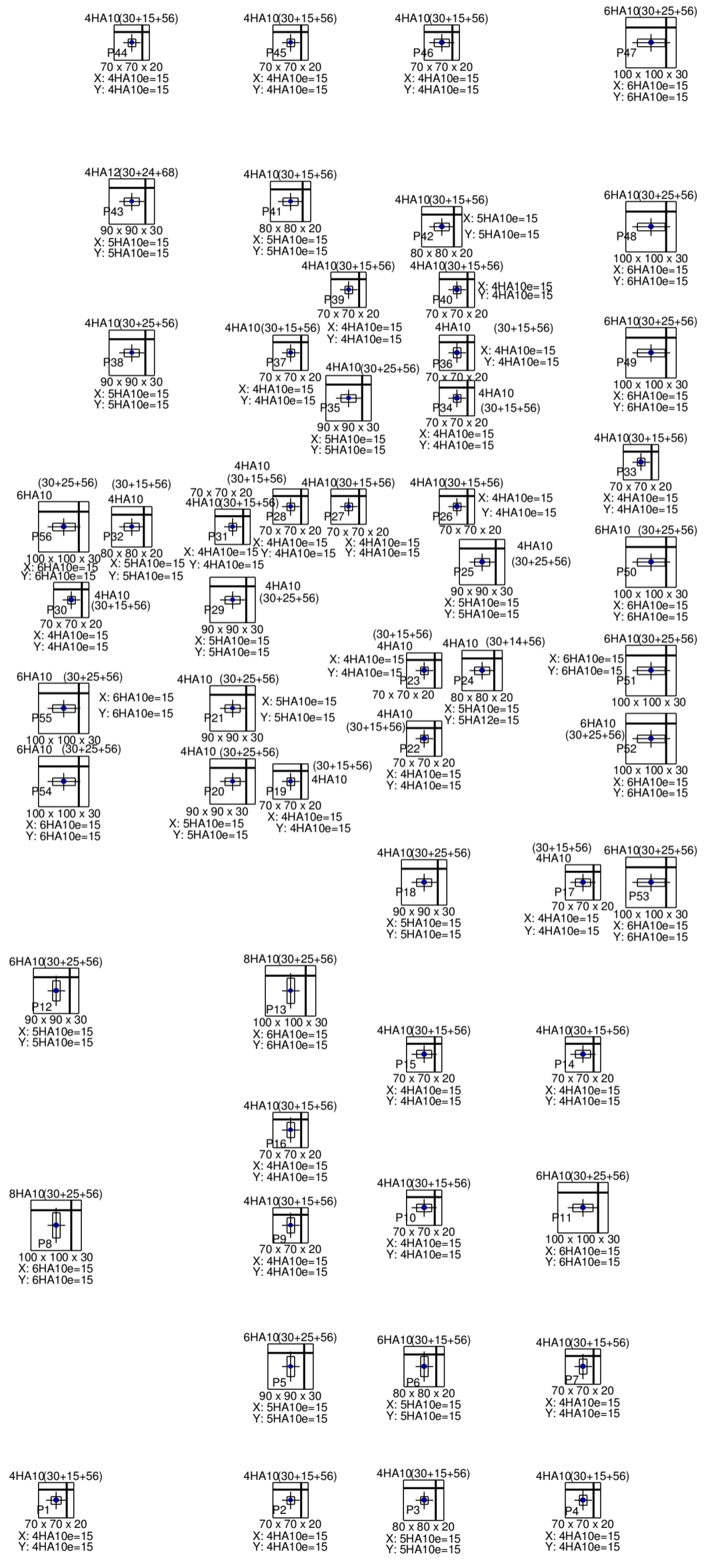


Fondation
Coffrage
Échelle: 1:100

PLAN DE FONDATION

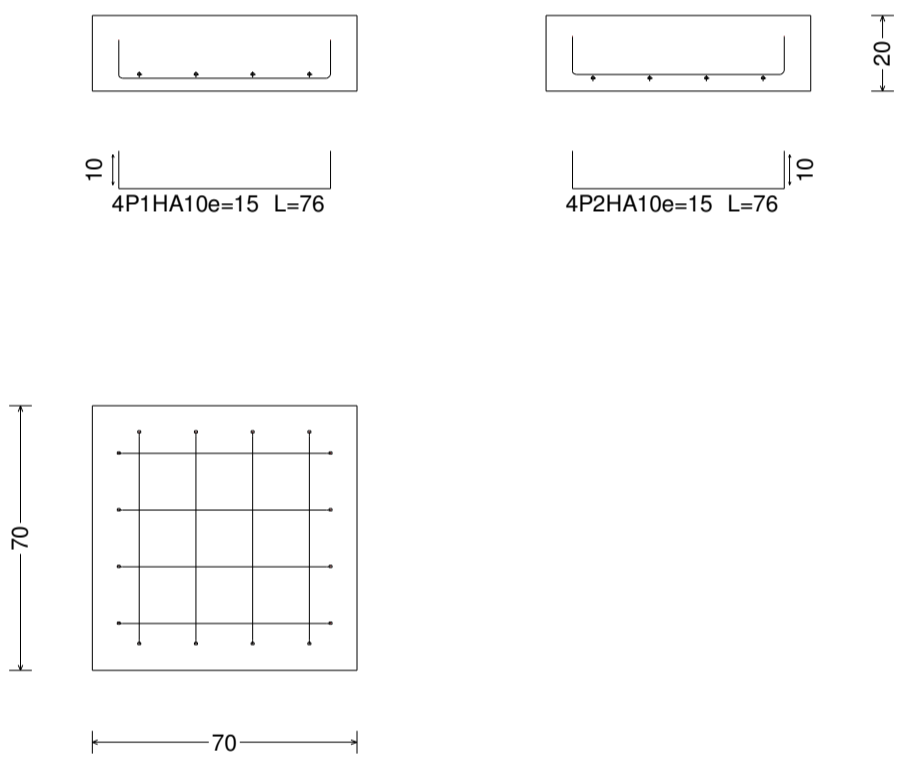
Fondation
 Fondation
 Béton des éléments de fondation: Selon élément
 Échelle: 1:100

TABLE DES ÉLÉMENTS DE FONDATION				
Références	Dimensions (cm)	Épaisseur (cm)	Armature inf. X	Armature inf. Y
P1, P2, P4, P7, P9, P14, P15, P16, P17, P19, P22, P23, P26, P27, P28, P30, P31, P33, P34, P36, P37, P39, P40, P44, P45 et P46	70x70	20	4HA10e=15	4HA10e=15
P3 et P6	80x80	20	5HA10e=15	5HA10e=15
P5, P12, P18, P20, P21, P25 et P29	90x90	30	5HA10e=15	5HA10e=15
P8 et P13	100x100	30	6HA10e=15	6HA10e=15
P10	70x70	20	4HA10e=15	4HA10e=15
P11, P47, P48, P49, P50, P51, P52, P53, P54, P55 et P56	100x100	30	6HA10e=15	6HA10e=15
P24	80x80	20	5HA10e=15	5HA12e=15
P32, P41 et P42	80x80	20	5HA10e=15	5HA10e=15
P35, P38 et P43	90x90	30	5HA10e=15	5HA10e=15

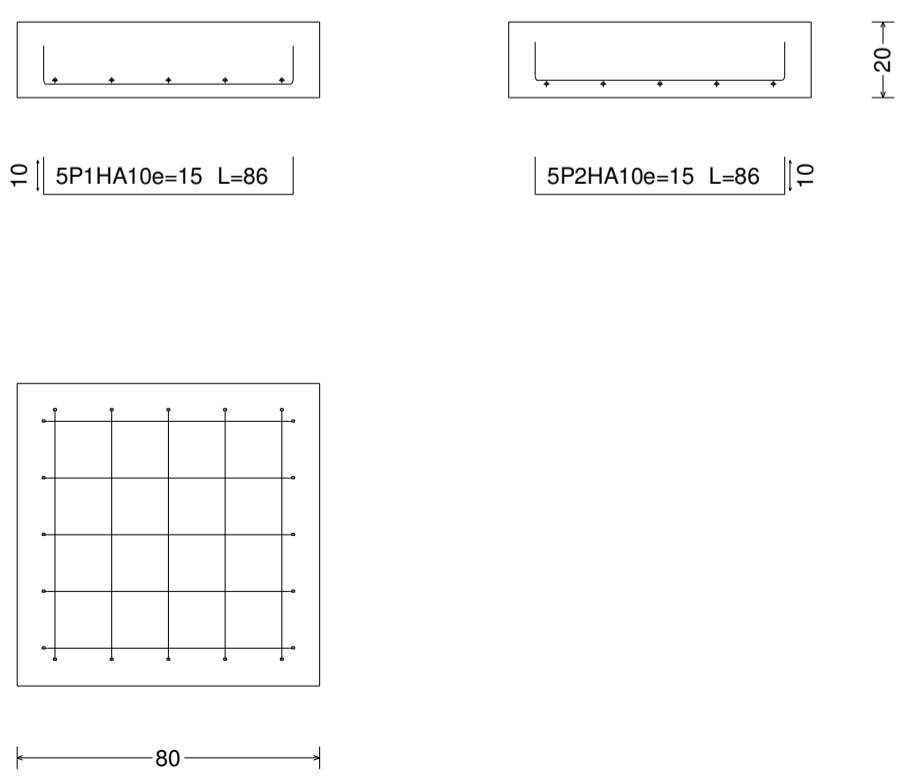


P1, P2, P4, P7, P9, P14, P15, P16, P17, P19, P22, P23, P26, P27, P28, P30, P31, P33, P34, P36, P37, P39, P40, P44, P45 et P46

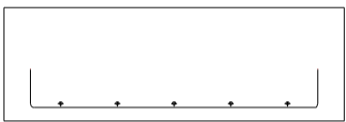
Aciers en attente
 n2xx(aa+bb+cc)
 aa bb cc



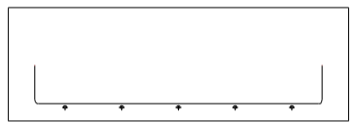
P3 et P6



P5, P12, P18, P20, P21, P25 et P29

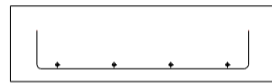


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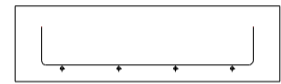


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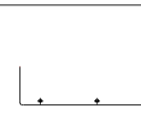


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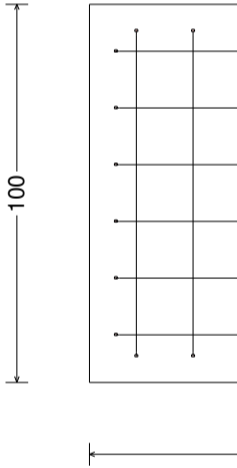
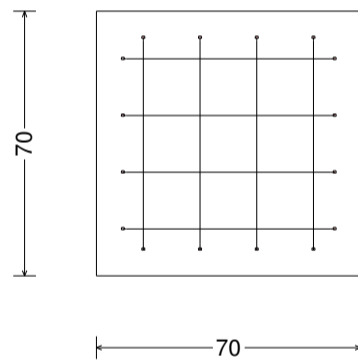
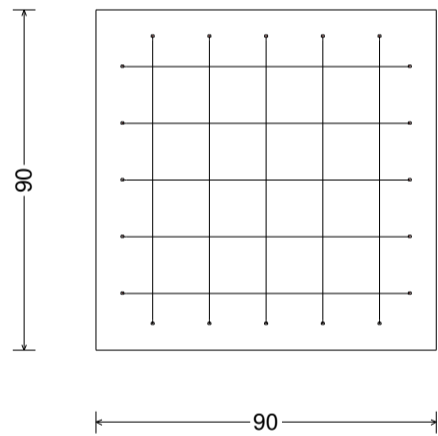


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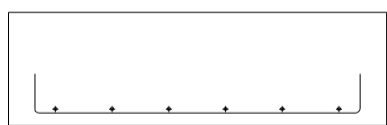
P11, P47, P48, P...



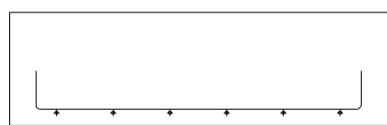
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P8 et P13



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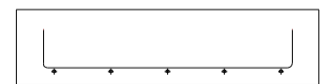


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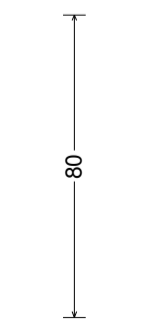
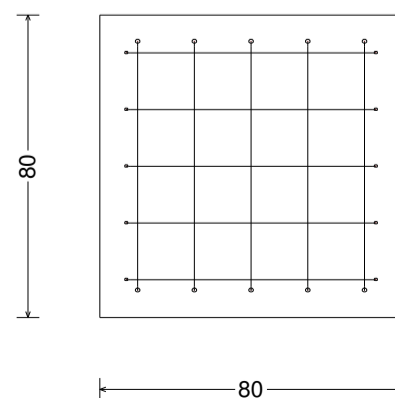
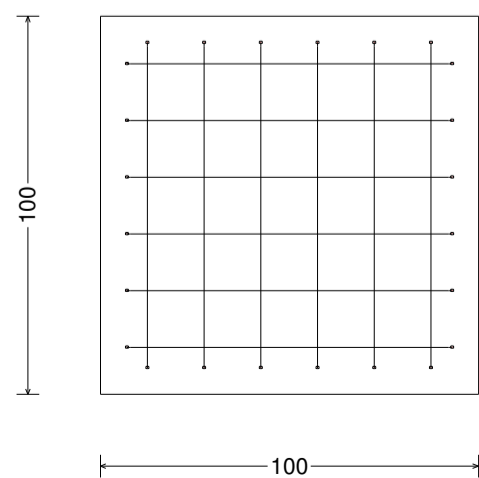


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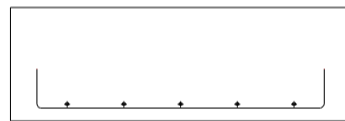


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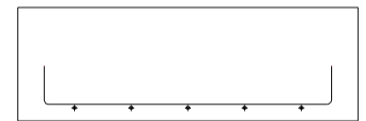
P32, P...



P35, P38 et P43

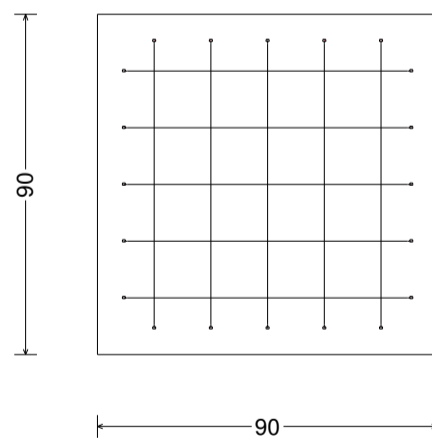


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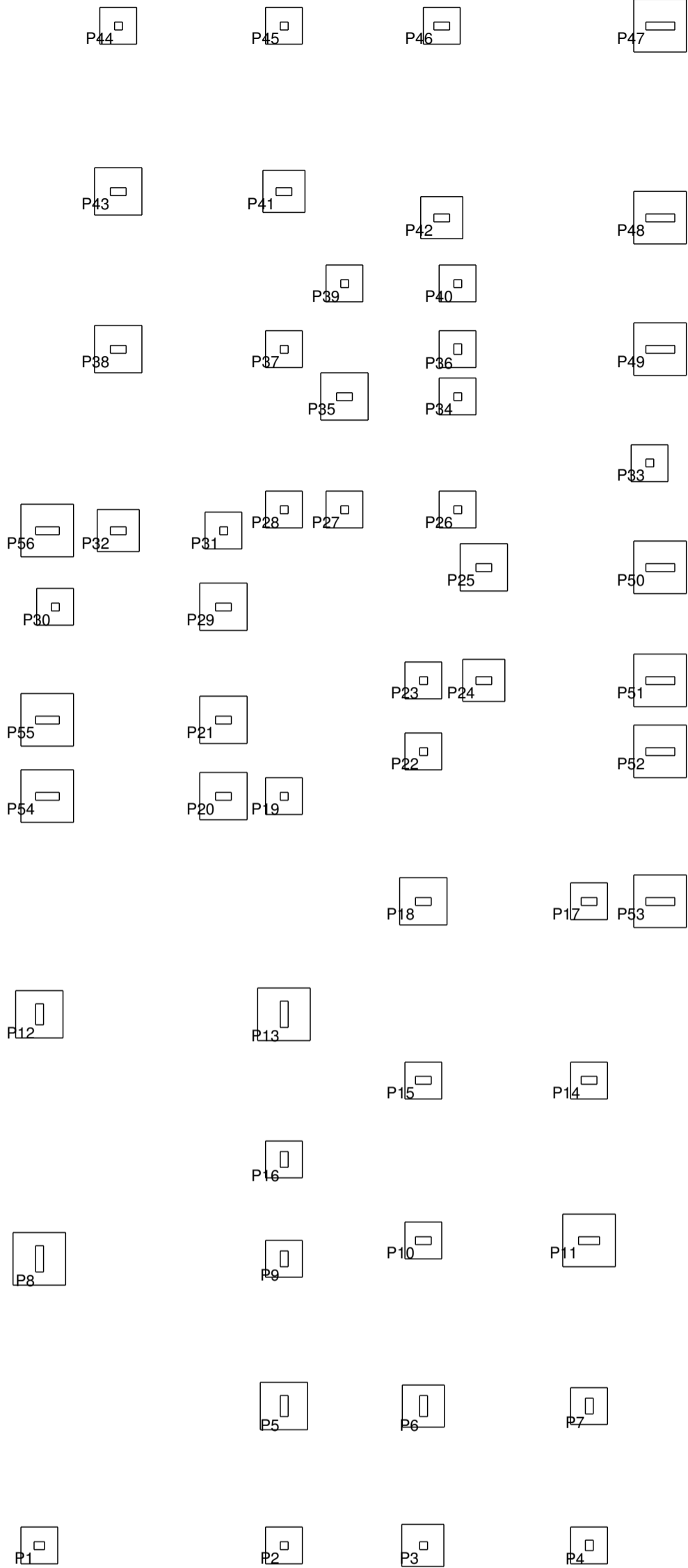


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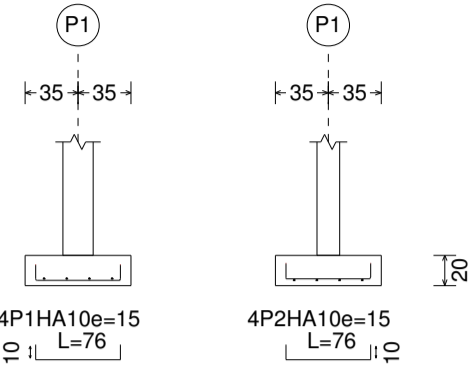
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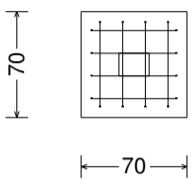
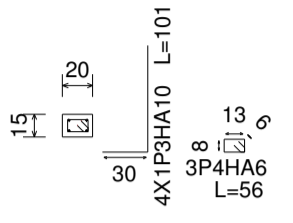
PLAN DE FERRAILLAGE DES SEMELLES



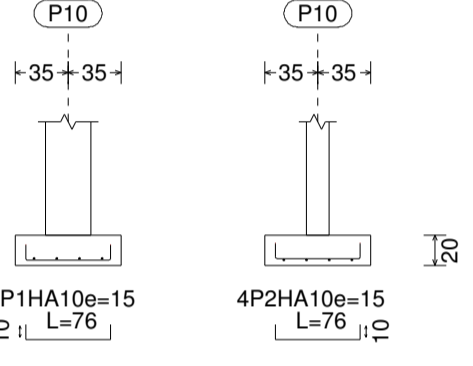
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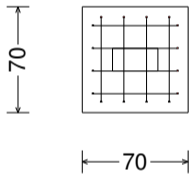
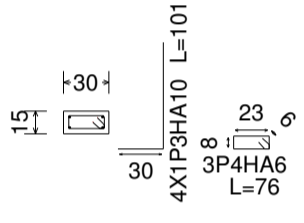
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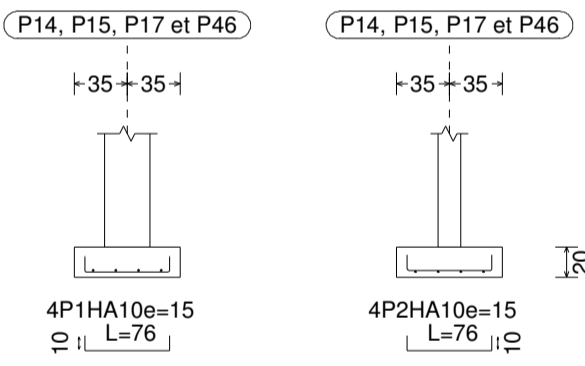
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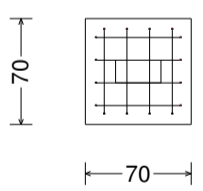
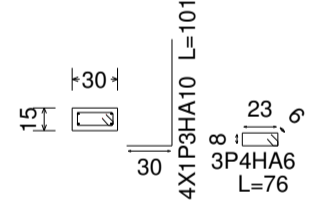
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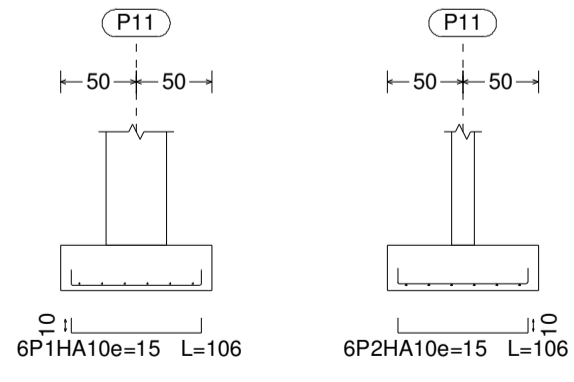
P14, P15, P17 et P46



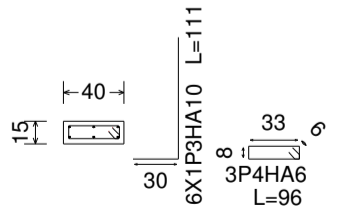
P14, P15, P17 et P46



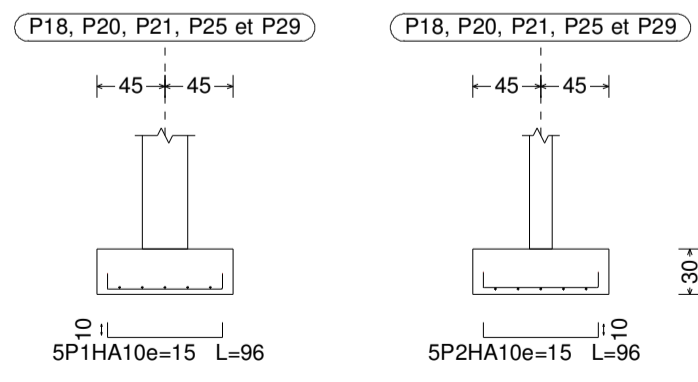
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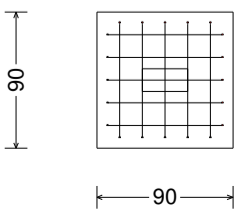
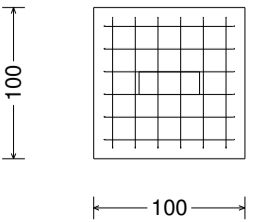
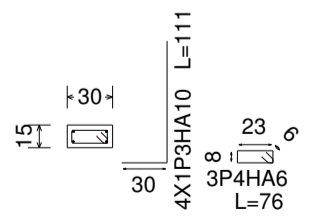
P11



P18, P20, P21, P25 et P29



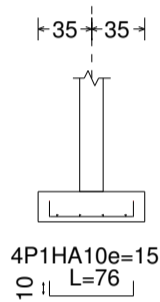
P18, P20, P21, P25 et P29



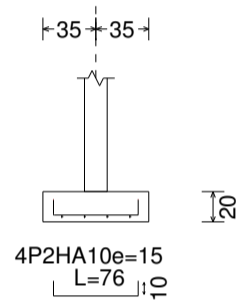
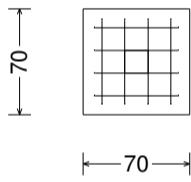
P2, P19, P22, P23, P26, P27, P28, P30, P31, P33, P34, P37, P39, P40, P44 et P45

P2, P19, P22, P23, P26, P27, P28, P30, P31, P33, P34, P37, P39, P40, P44 et P45

P2, P19, P22, P23, P26, P27, P28, P30, P31, P33, P34, P37, P39, P40, P44 et P45

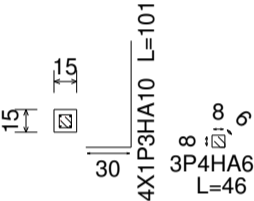


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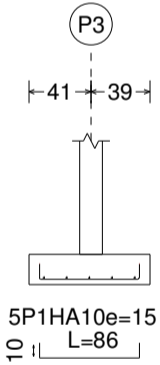


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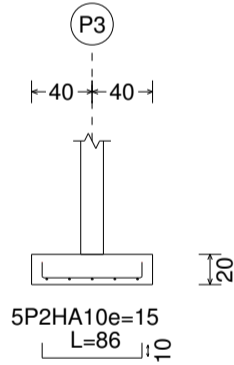
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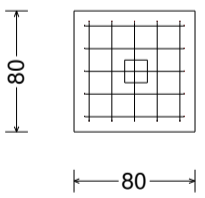
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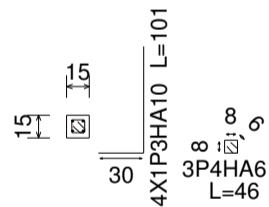
5P1HA10e=15
L=86
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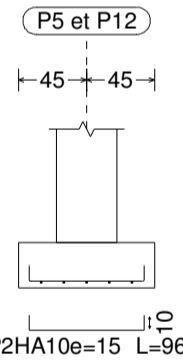
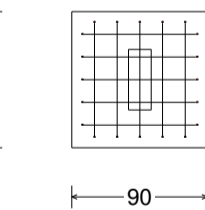
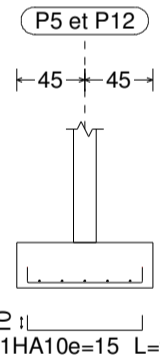
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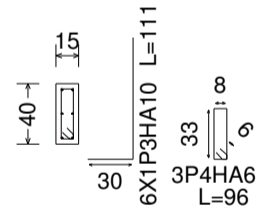


P5 et P12

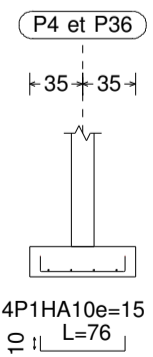


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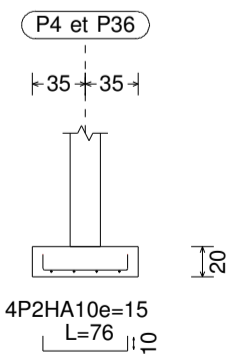
P5 et P12



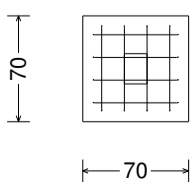
P4 et P36



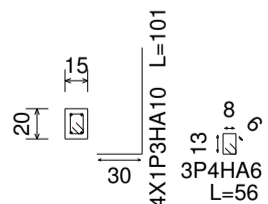
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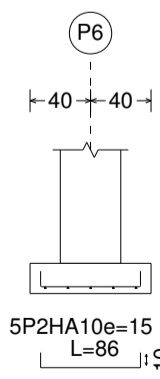
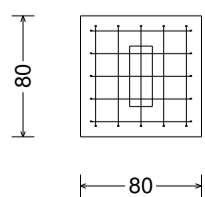
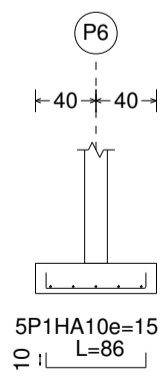
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P4 et P36

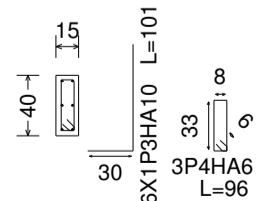


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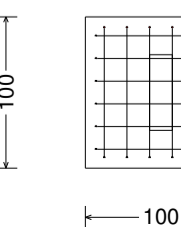
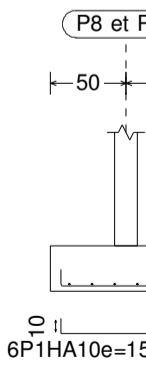


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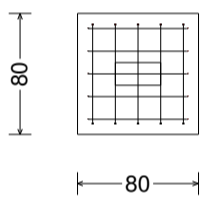
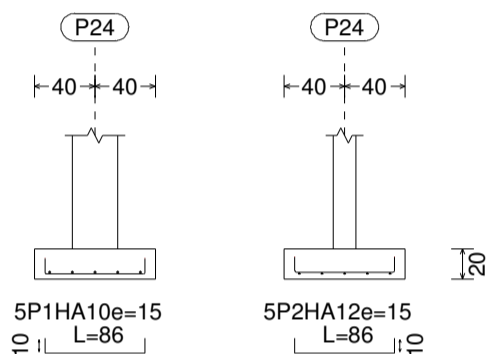
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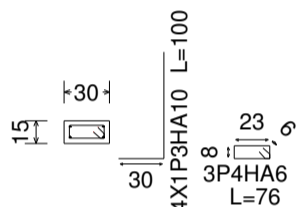
P8 et P13



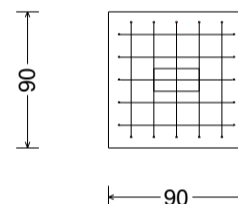
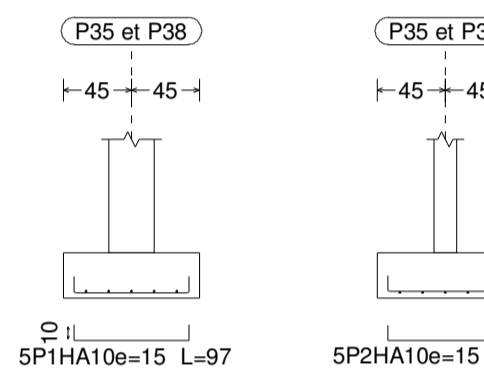
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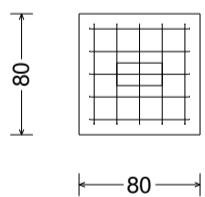
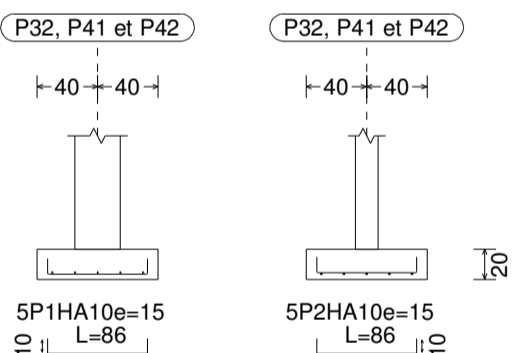
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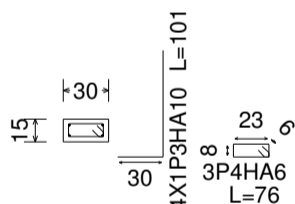
P35 et P38



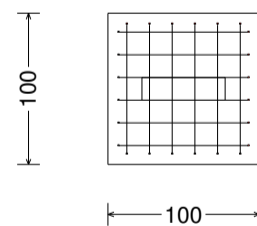
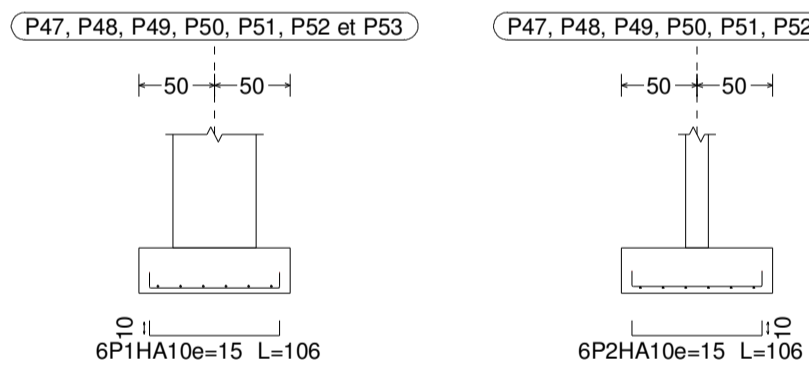
P32, P41 et P42



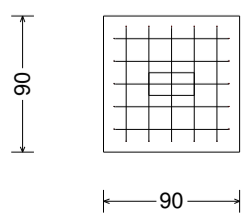
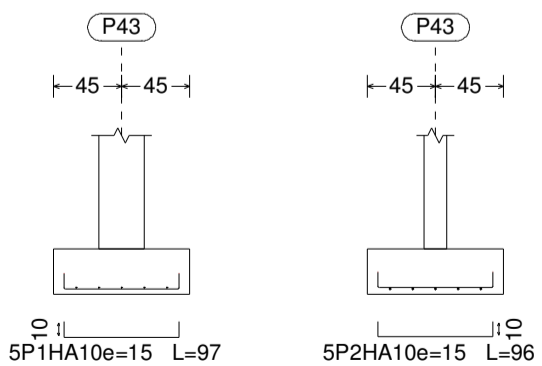
P32, P41 et P42



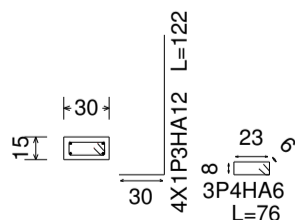
P47, P48, P49, P50, P51, P52 et P53



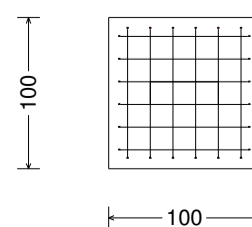
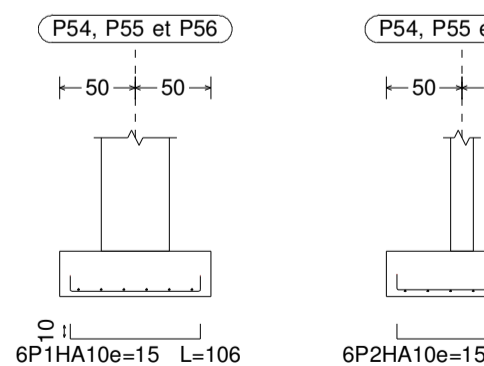
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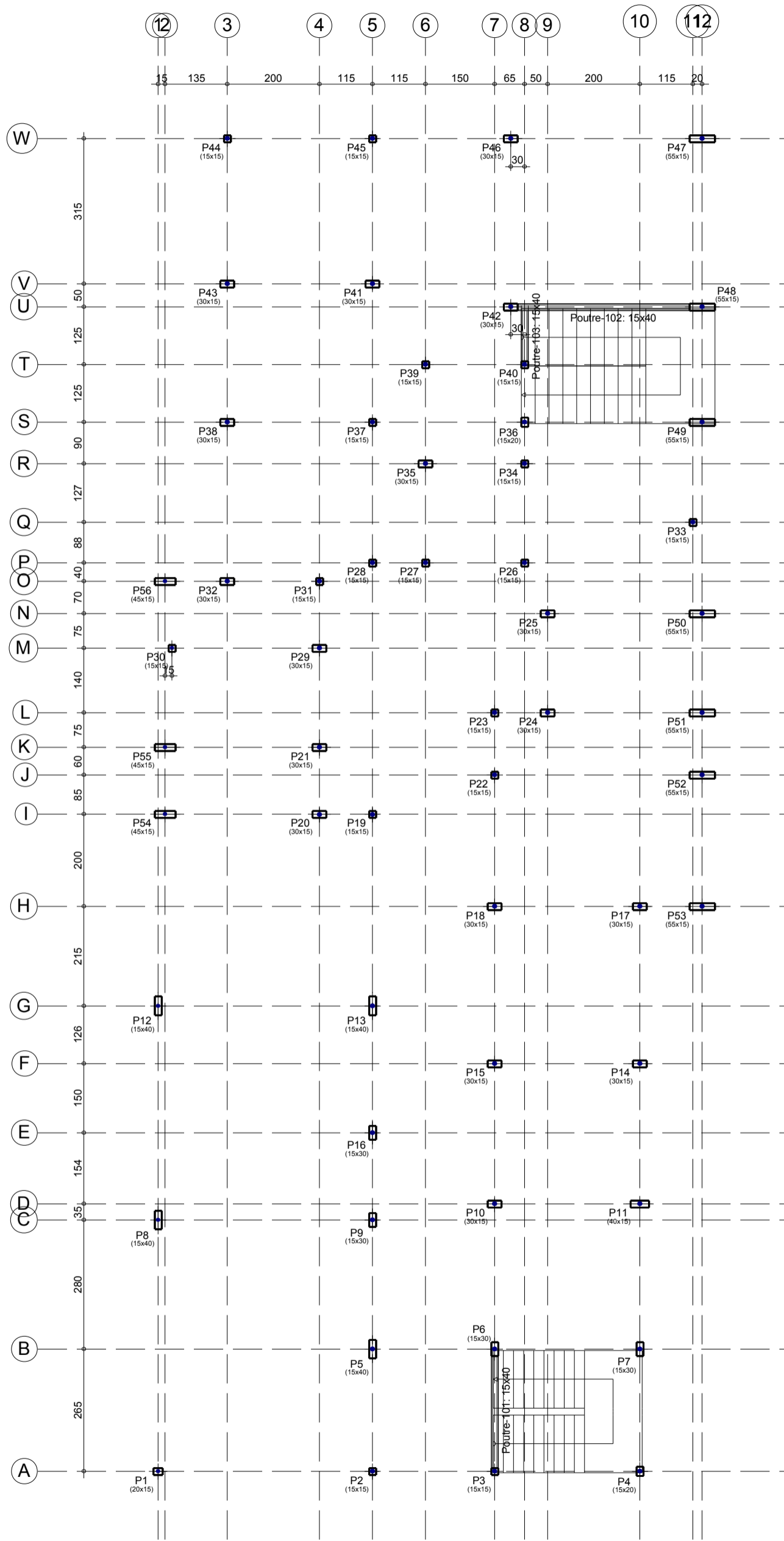
P43



P54, P55 et P56

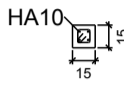

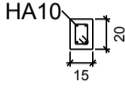

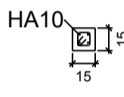

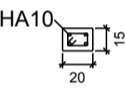

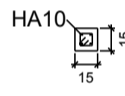

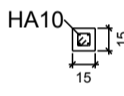

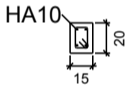

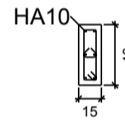




PLAN DE COFFRAGE DES POTEAUX



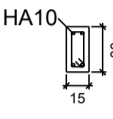

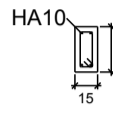

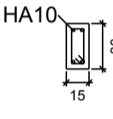





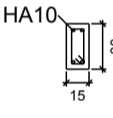

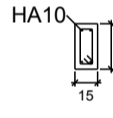

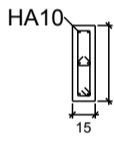


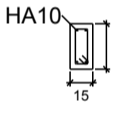

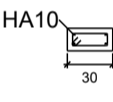

RDC
 Coffrage
 Échelle: 1:100

**PLAN DE DÉTAILS DES POTEAUX / PLAN DES
ARMATURES DES POTEAUX**

P1	P2=P19=P22=P23=P26=P27 P28=P30=P31=P33=P34=P37 P39=P44=P45	P3	P4	P5=P12																																														
		  1HA6(45) Arm. Long.: 4HA10 Armatures transversales: HA6 <table border="1"> <thead> <tr> <th>Intervalle (cm)</th> <th>N°</th> <th>Espacement (cm)</th> </tr> </thead> <tbody> <tr> <td>0 à 300</td> <td>20</td> <td>15</td> </tr> </tbody> </table>	Intervalle (cm)	N°	Espacement (cm)	0 à 300	20	15	  1HA6(55) Arm. Long.: 4HA10 Armatures transversales: HA6 <table border="1"> <thead> <tr> <th>Intervalle (cm)</th> <th>N°</th> <th>Espacement (cm)</th> </tr> </thead> <tbody> <tr> <td>0 à 300</td> <td>20</td> <td>15</td> </tr> </tbody> </table>	Intervalle (cm)	N°	Espacement (cm)	0 à 300	20	15		Toiture																																	
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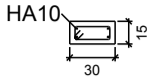

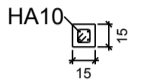

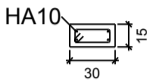



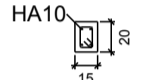



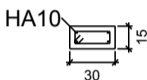

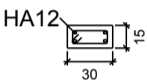

Plans des poteaux
 Échelle 1:50
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

Récapitulatif Acier Plans des poteaux		Long. total (m)	Poids+10% (kg)	Total
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	HA10	1519.5	1031	
	HA12	22.7	22	
				1445

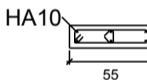


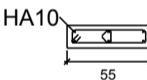


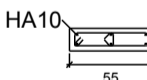


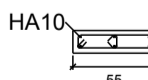


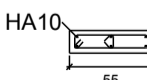


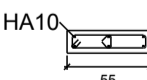


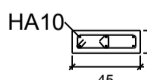


P6	P7	P8=P13	P9=P16	P10=P14=P15=P17=P18=P20 P21=P24=P25=P29=P32=P35 P38=P41=P46																																																																																											
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Plans des poteaux
Échelle 1:50
Béton: C20/25
Acier des barres: Fe E400
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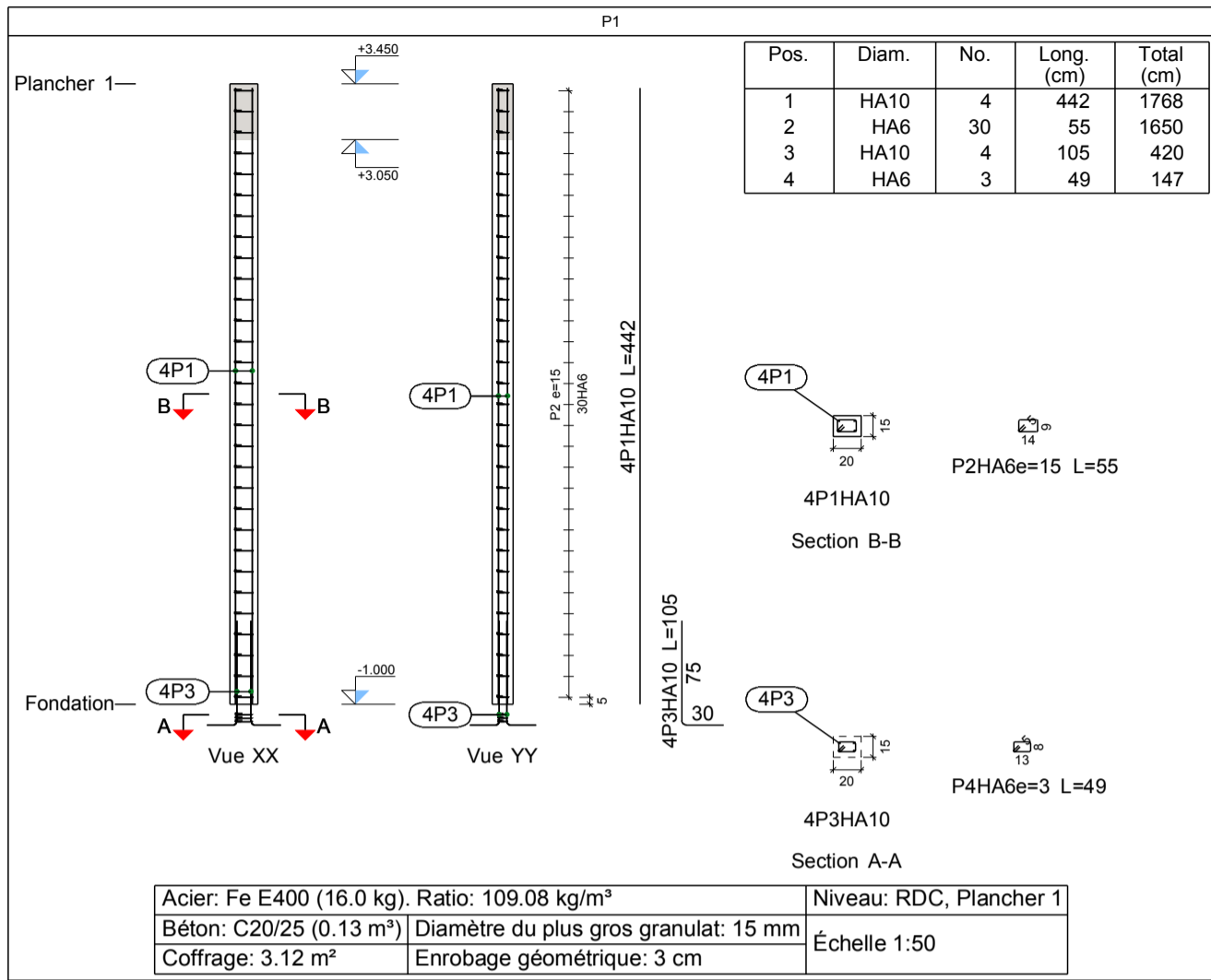
Récapitulatif Acier Plans des poteaux	Long. total (m)	Poids+10% (kg)	Total
Fe E400 HA6	1607.2	392	
HA10	1519.5	1031	
HA12	22.7	22	1445

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Plans des poteaux
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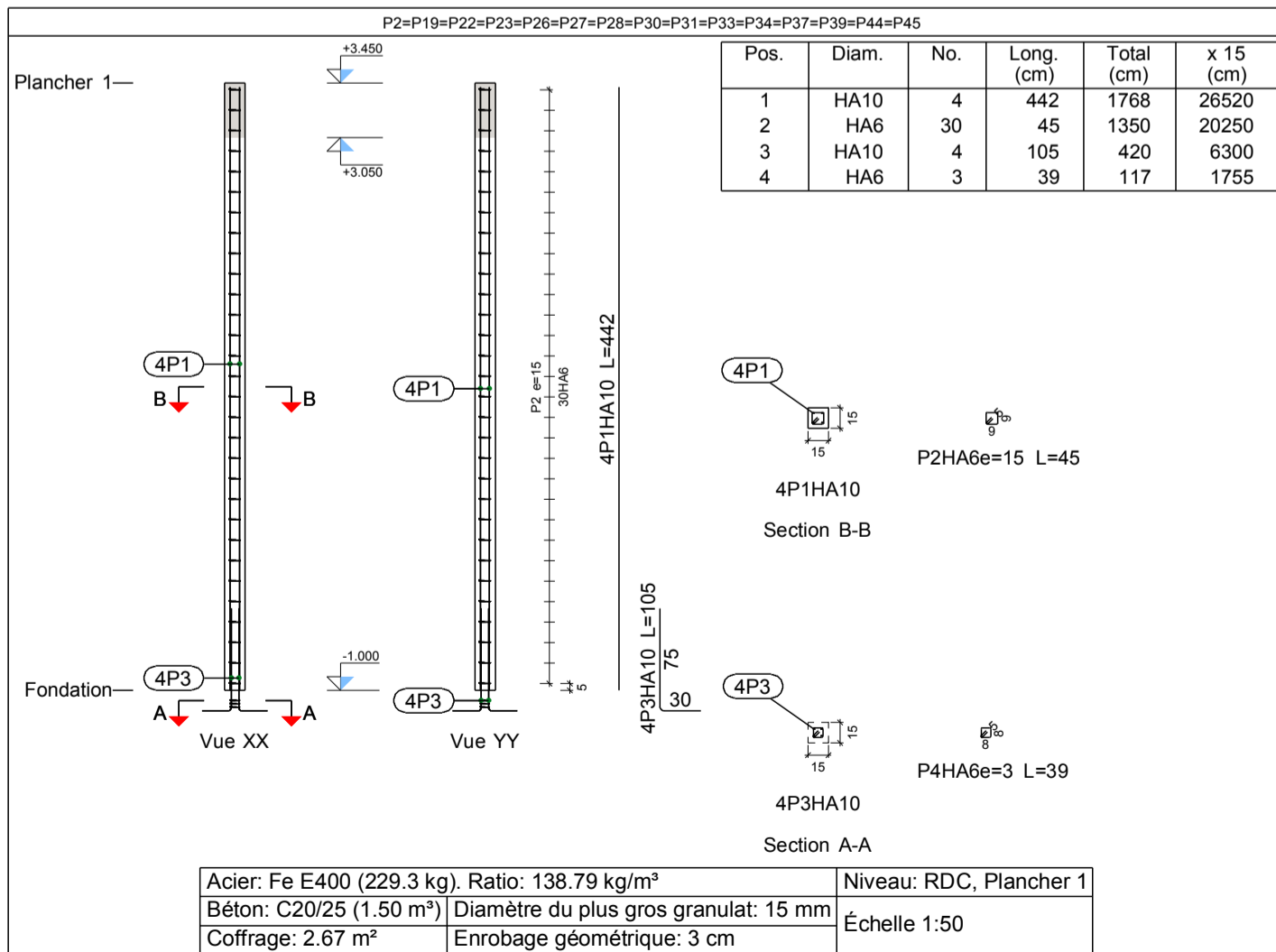
Récapitulatif Acier Plans des poteaux	Long. total (m)	Poids+10% (kg)	Total
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HA10	1519.5	1031	
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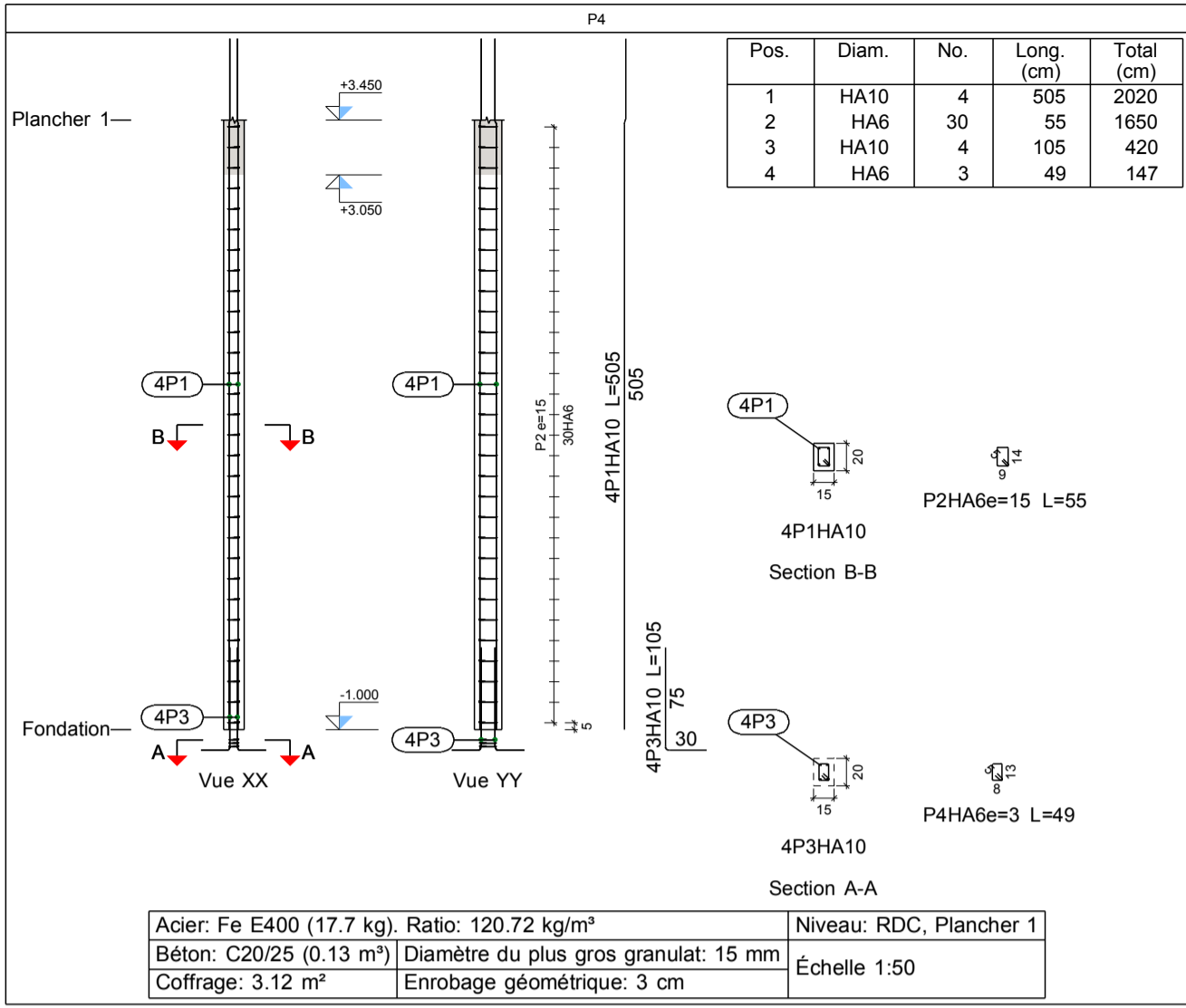
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P1	1	HA10	4	442	442	1768	10.9
	2	HA6	30		55	1650	3.7
	3	HA10	4		105	420	2.6
	4	HA6	3		49	147	0.3
Total+10%:							19.3
P2=P19=P22=P23=P26=P27 P28=P30=P31=P33=P34=P37 P39=P44=P45	1	HA10	4	442	442	1768	10.9
	2	HA6	30		45	1350	3.0
	3	HA10	4		105	420	2.6
	4	HA6	3		39	117	0.3
Total+10%:							18.5
Total+10% (x15):							277.5
HA6:							58.4
HA10:							238.4
Total:							296.8

Acier: Fe E400 (16.0 kg). Ratio: 109.08 kg/m³	Niveau: RDC, Plancher 1
Béton: C20/25 (0.13 m³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 3.12 m²	Enrobage géométrique: 3 cm

Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400



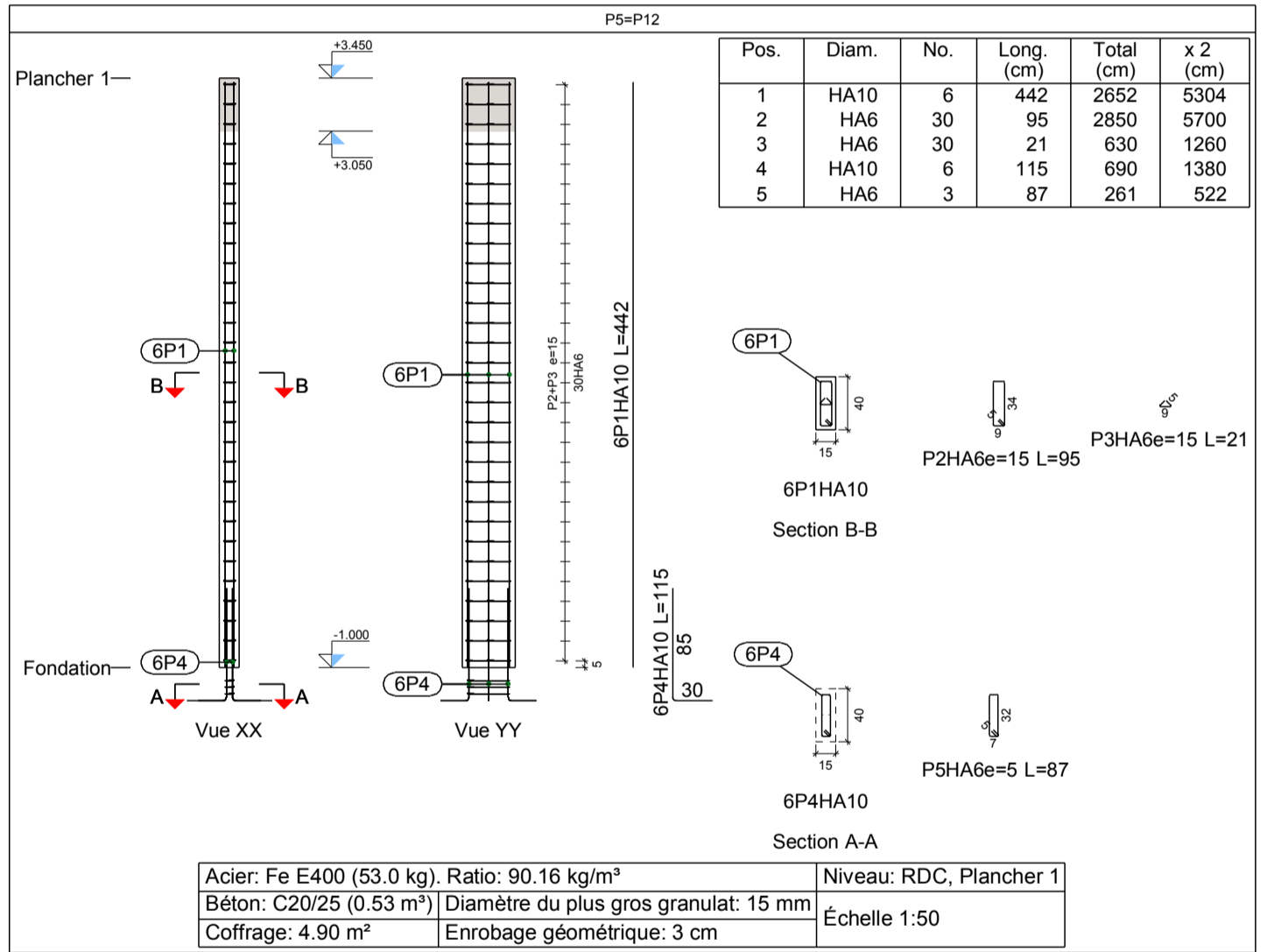
Acier: Fe E400 (229.3 kg). Ratio: 138.79 kg/m³	Niveau: RDC, Plancher 1
Béton: C20/25 (1.50 m³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 2.67 m²	Enrobage géométrique: 3 cm



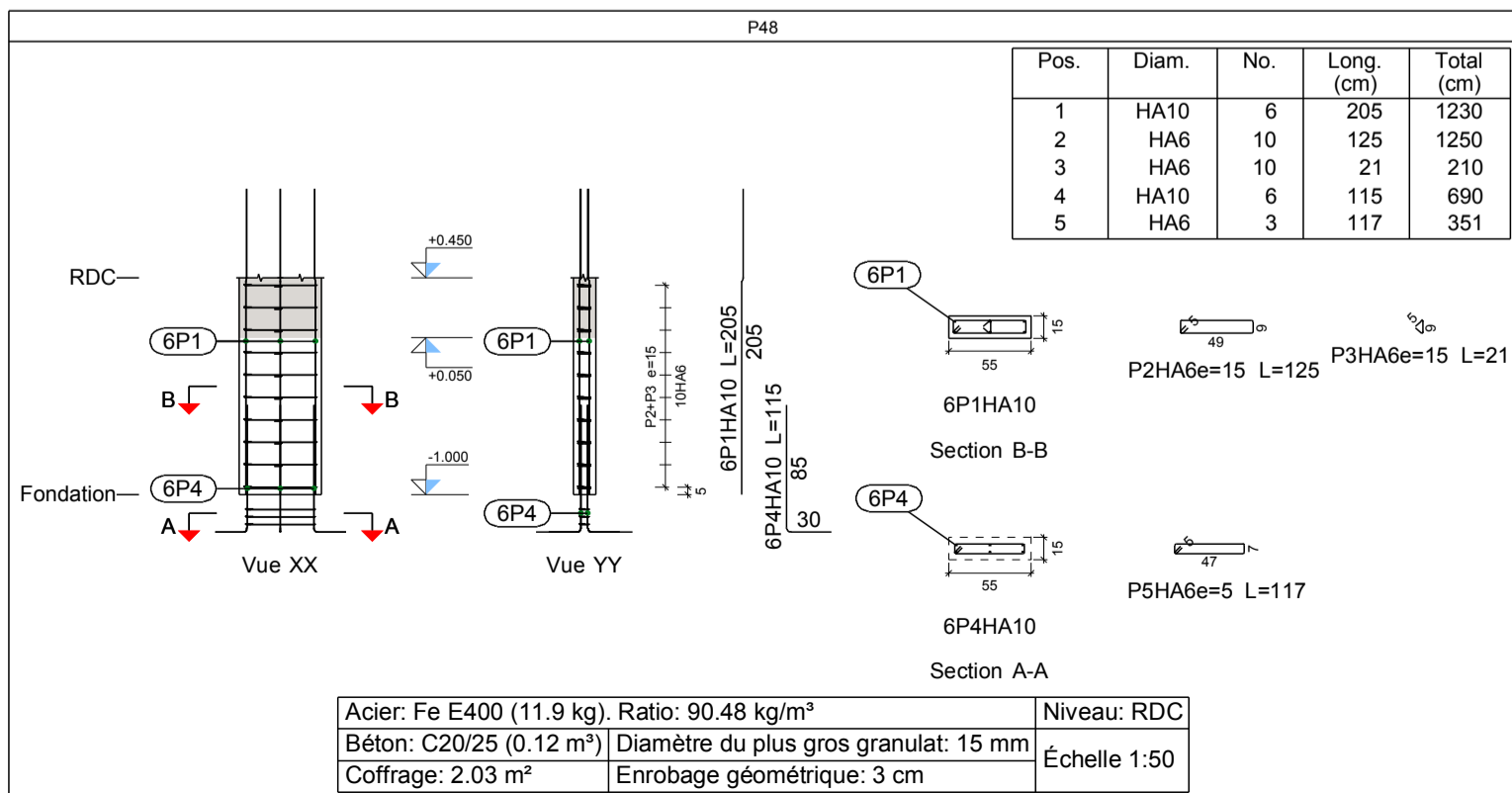
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P4	1	HA10	4	443 60	505	2020	12.5
	2	HA6	30		55	1650	3.7
	3	HA10	4		105	420	2.6
	4	HA6	3		49	147	0.3
Total+10%:							21.0
P5=P12	1	HA10	6	442	442	2652	16.4
	2	HA6	30		95	2850	6.3
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		87	261	0.6
Total+10%:							31.9
Total+10% (x2):							63.8
P48	1	HA10	6	143 60	205	1230	7.6
	2	HA6	10		125	1250	2.8
	3	HA6	10		21	210	0.5
	4	HA10	6		115	690	4.3
	5	HA6	3		117	351	0.8
Total+10%:							17.6
HA6:							27.1
HA10:							75.3
Total:							102.4

Acier: Fe E400 (17.7 kg). Ratio: 120.72 kg/m³	Niveau: RDC, Plancher 1
Béton: C20/25 (0.13 m³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 3.12 m²	Enrobage géométrique: 3 cm
Échelle 1:50	

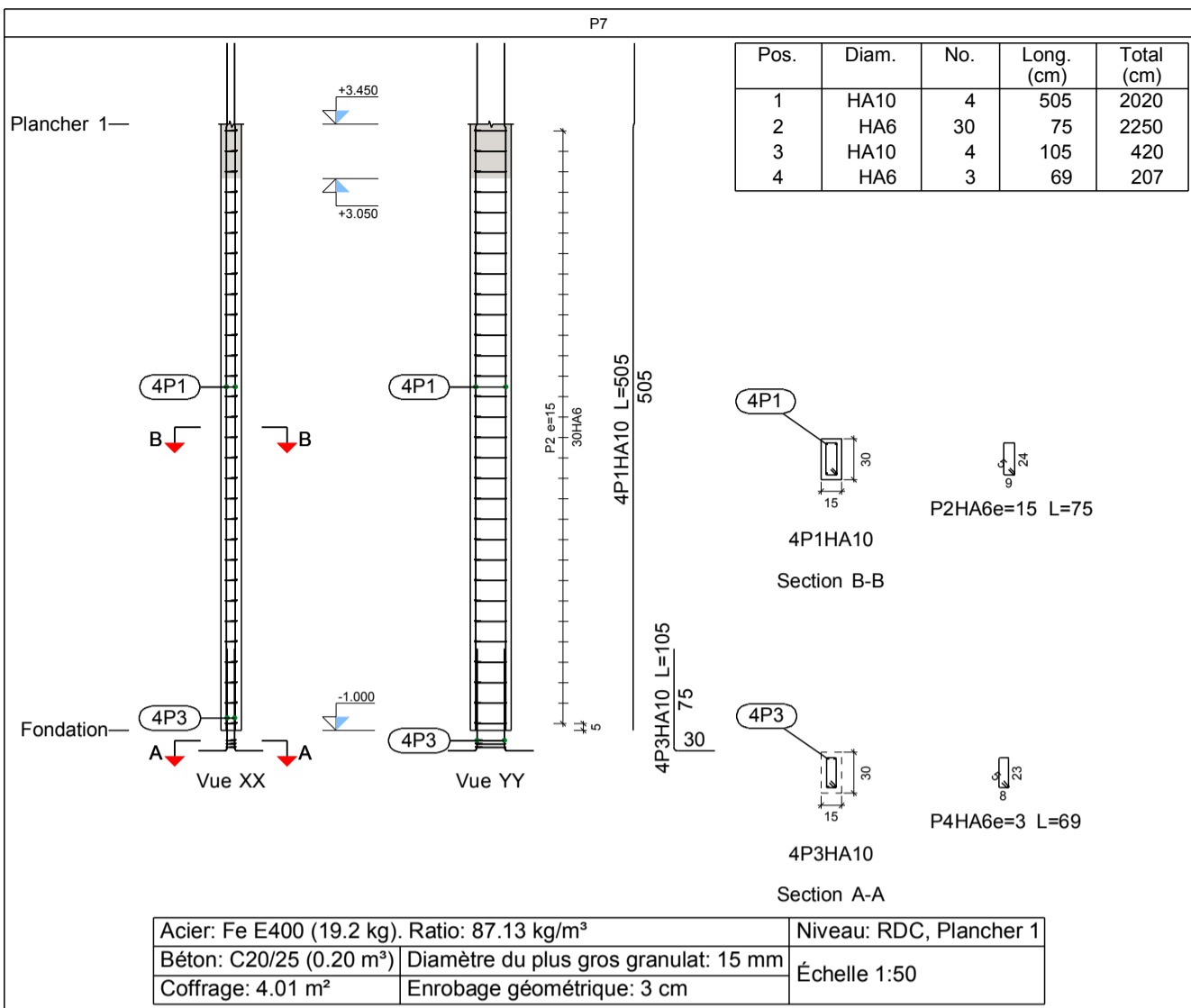
Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400



Acier: Fe E400 (53.0 kg). Ratio: 90.16 kg/m³	Niveau: RDC, Plancher 1
Béton: C20/25 (0.53 m³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 4.90 m²	Enrobage géométrique: 3 cm
Échelle 1:50	

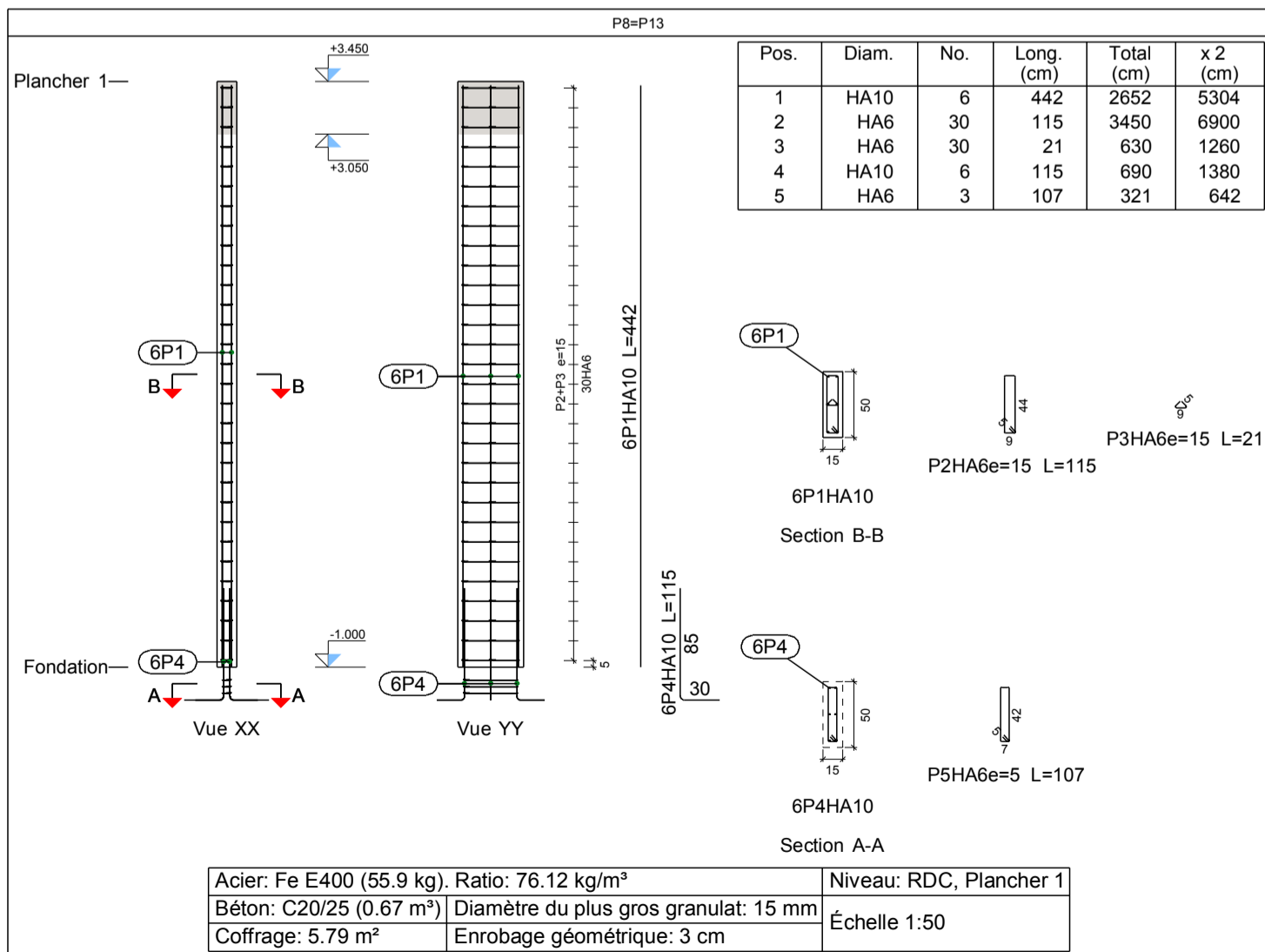


Acier: Fe E400 (11.9 kg). Ratio: 90.48 kg/m³	Niveau: RDC
Béton: C20/25 (0.12 m³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 2.03 m²	Enrobage géométrique: 3 cm
Échelle 1:50	



Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P7	1	HA10	4	443 60	505	2020	12.5
	2	HA6	30		75	2250	5.0
	3	HA10	4		105	420	2.6
	4	HA6	3		69	207	0.5
Total+10%:							22.7
P8=P13	1	HA10	6	442	442	2652	16.4
	2	HA6	30		115	3450	7.7
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		107	321	0.7
Total+10%:							33.6
HA6: (x2):							67.2
HA10:							27.7
Total:							89.9

Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400



Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
P9=P16	1	HA10	4	442	442	1768	10.9	
	2	HA6	30		75	2250	5.0	
	3	HA10	4		105	420	2.6	
	4	HA6	3		69	207	0.5	
Total+10% (x2):							20.9	41.8
P10=P14=P15=P17=P32=P41 P46	1	HA10	4	442	442	1768	10.9	
	2	HA6	30		75	2250	5.0	
	3	HA10	4		105	420	2.6	
	4	HA6	3		69	207	0.5	
Total+10% (x7):							20.9	146.3
							HA6:	54.0
							HA10:	134.1
							Total:	188.1

P9=P16

Plancher 1—

Pos.	Diam.	No.	Long. (cm)	Total (cm)	x 2 (cm)
1	HA10	4	442	1768	3536
2	HA6	30	75	2250	4500
3	HA10	4	105	420	840
4	HA6	3	69	207	414

Fondation—

Vue XX Vue YY

Section B-B Section A-A

Acier: Fe E400 (35.0 kg). Ratio: 79.37 kg/m ³	Niveau: RDC, Plancher 1
Béton: C20/25 (0.40 m ³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 4.01 m ²	Enrobage géométrique: 3 cm
Échelle 1:50	

P10=P14=P15=P17=P32=P41=P46

Plancher 1—

Pos.	Diam.	No.	Long. (cm)	Total (cm)	x 7 (cm)
1	HA10	4	442	1768	12376
2	HA6	30	75	2250	15750
3	HA10	4	105	420	2940
4	HA6	3	69	207	1449

Fondation—

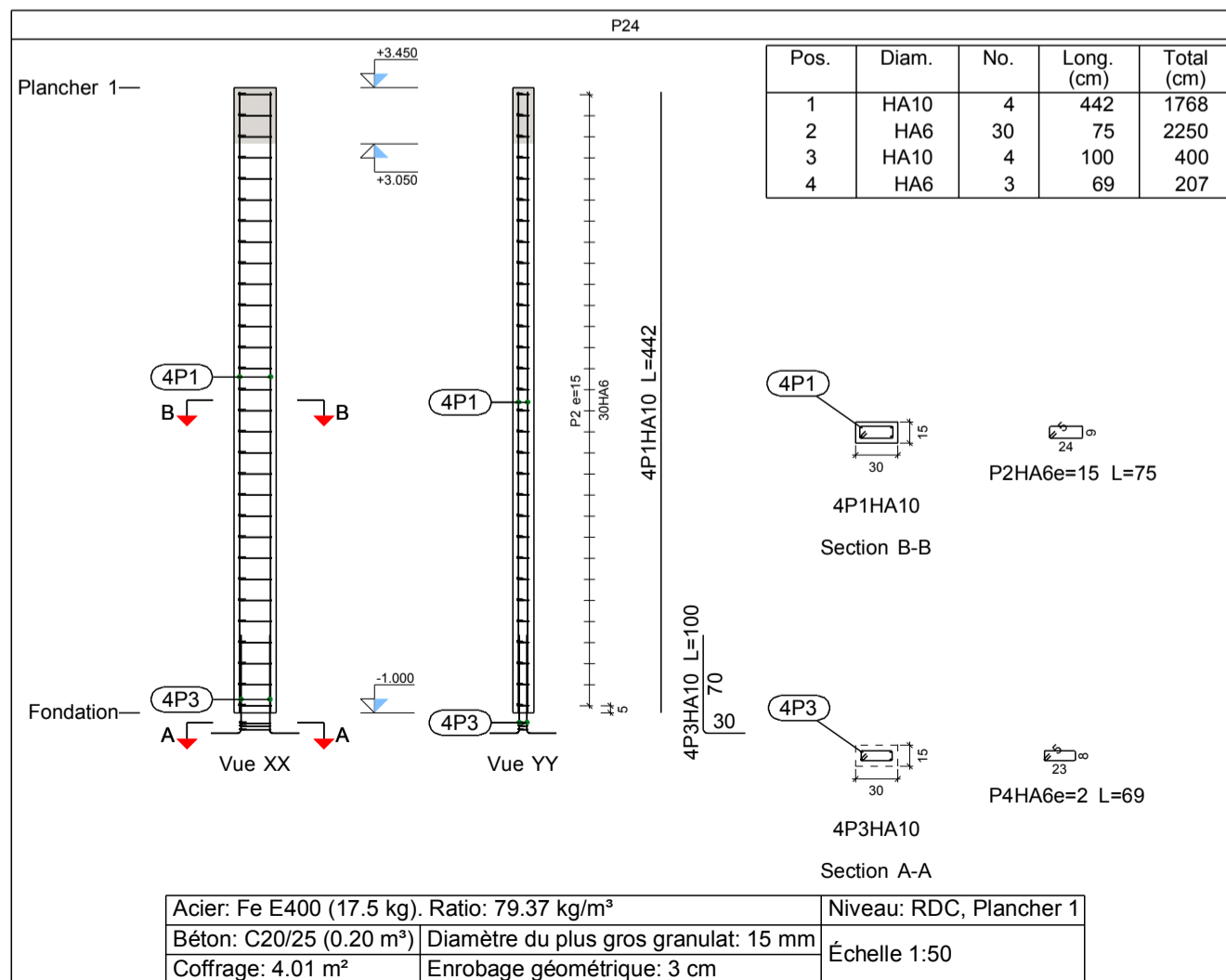
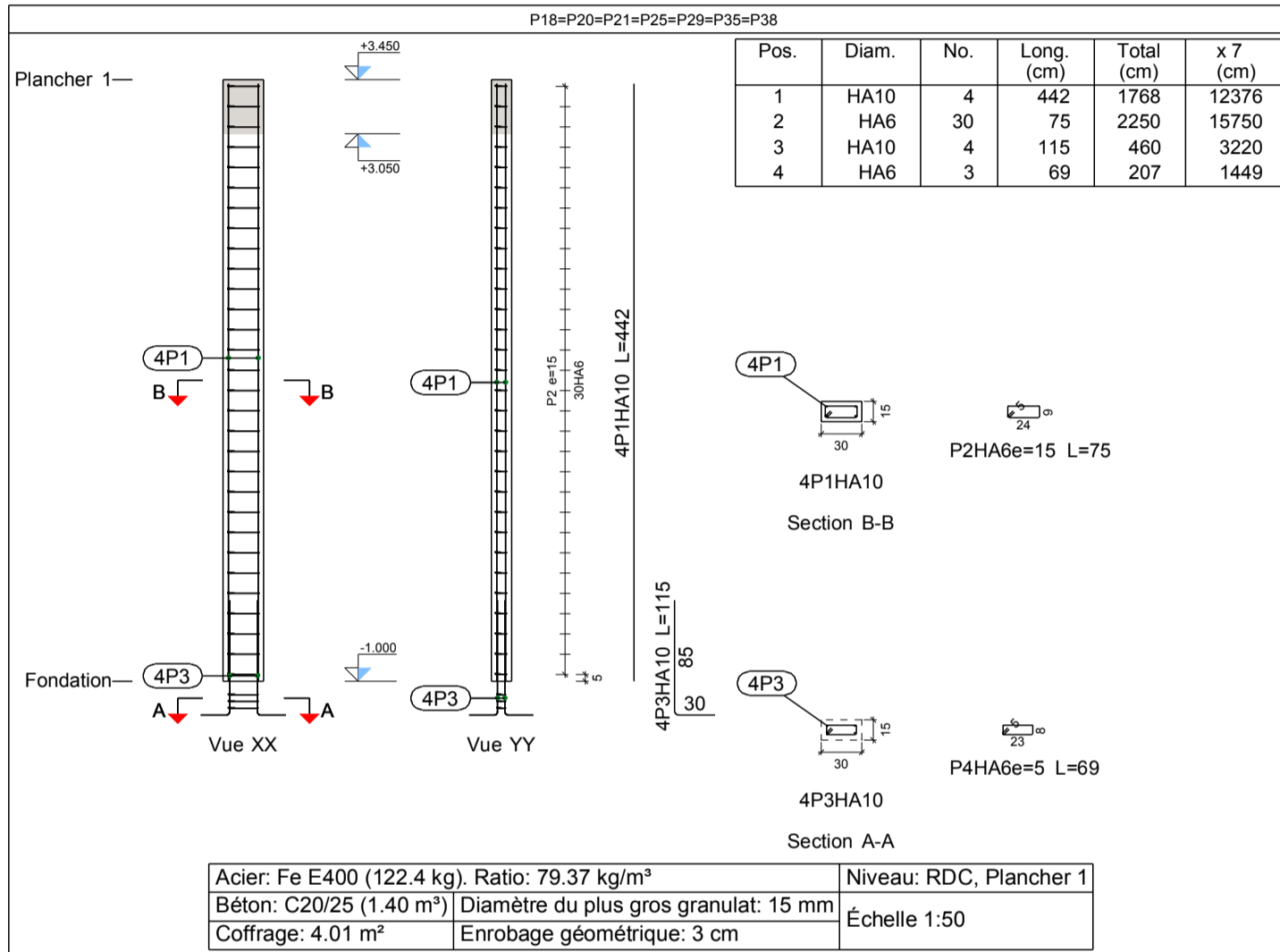
Vue XX Vue YY

Section B-B Section A-A

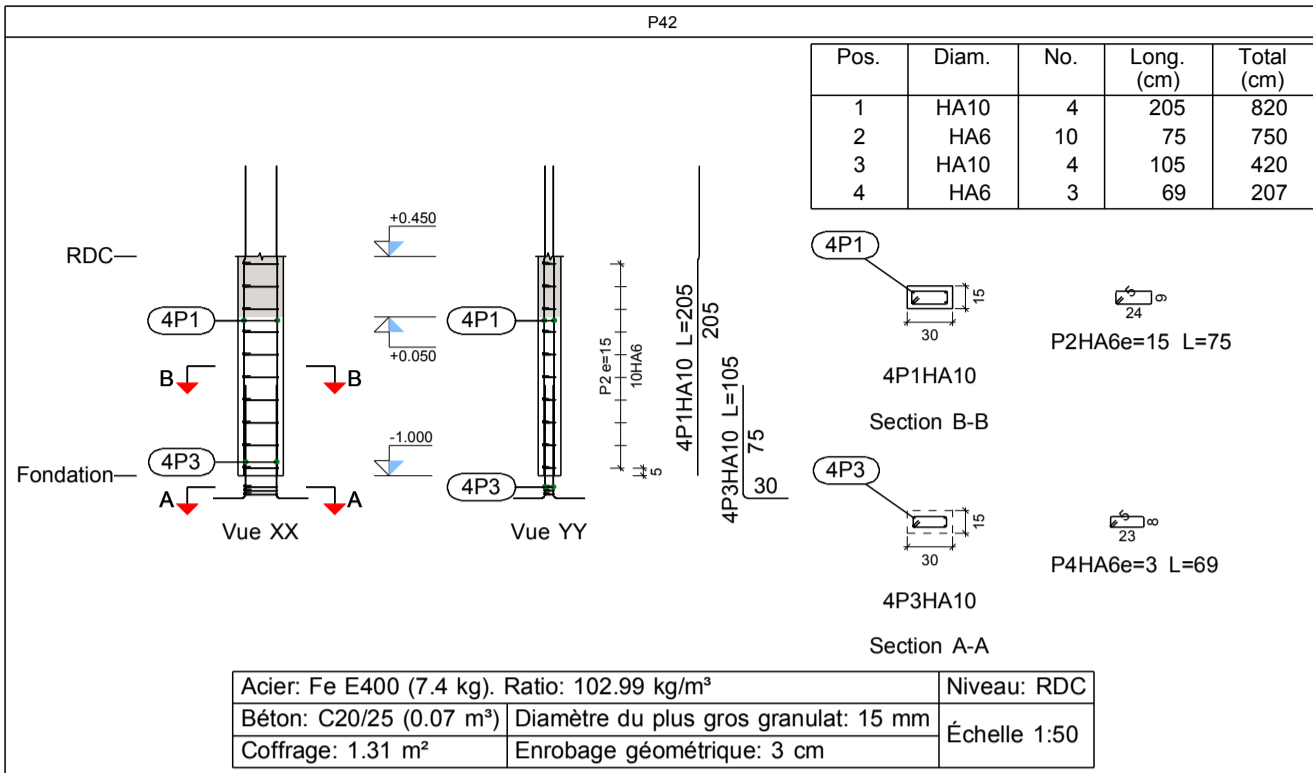
Acier: Fe E400 (122.4 kg). Ratio: 79.37 kg/m ³	Niveau: RDC, Plancher 1
Béton: C20/25 (1.40 m ³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 4.01 m ²	Enrobage géométrique: 3 cm
Échelle 1:50	

Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

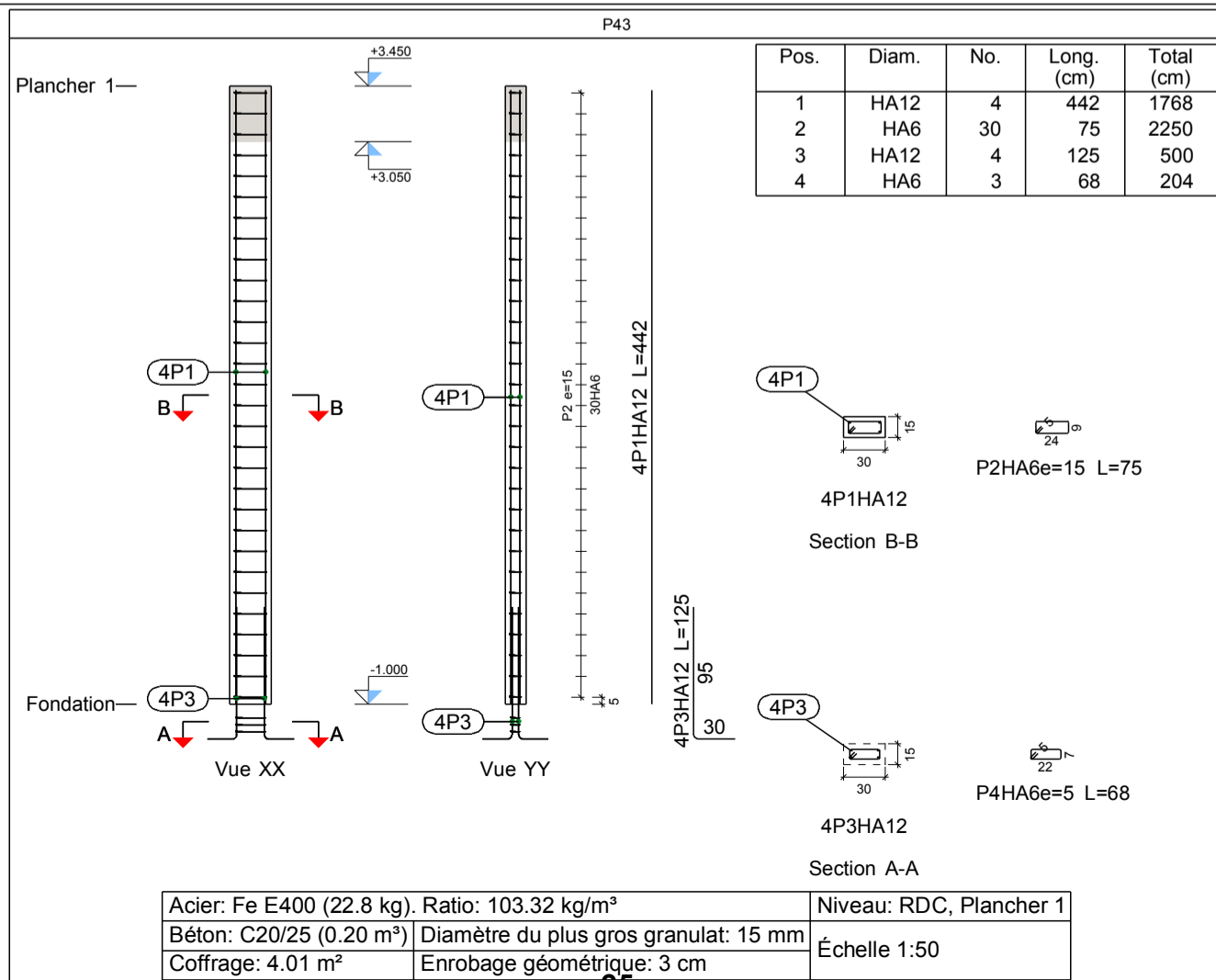
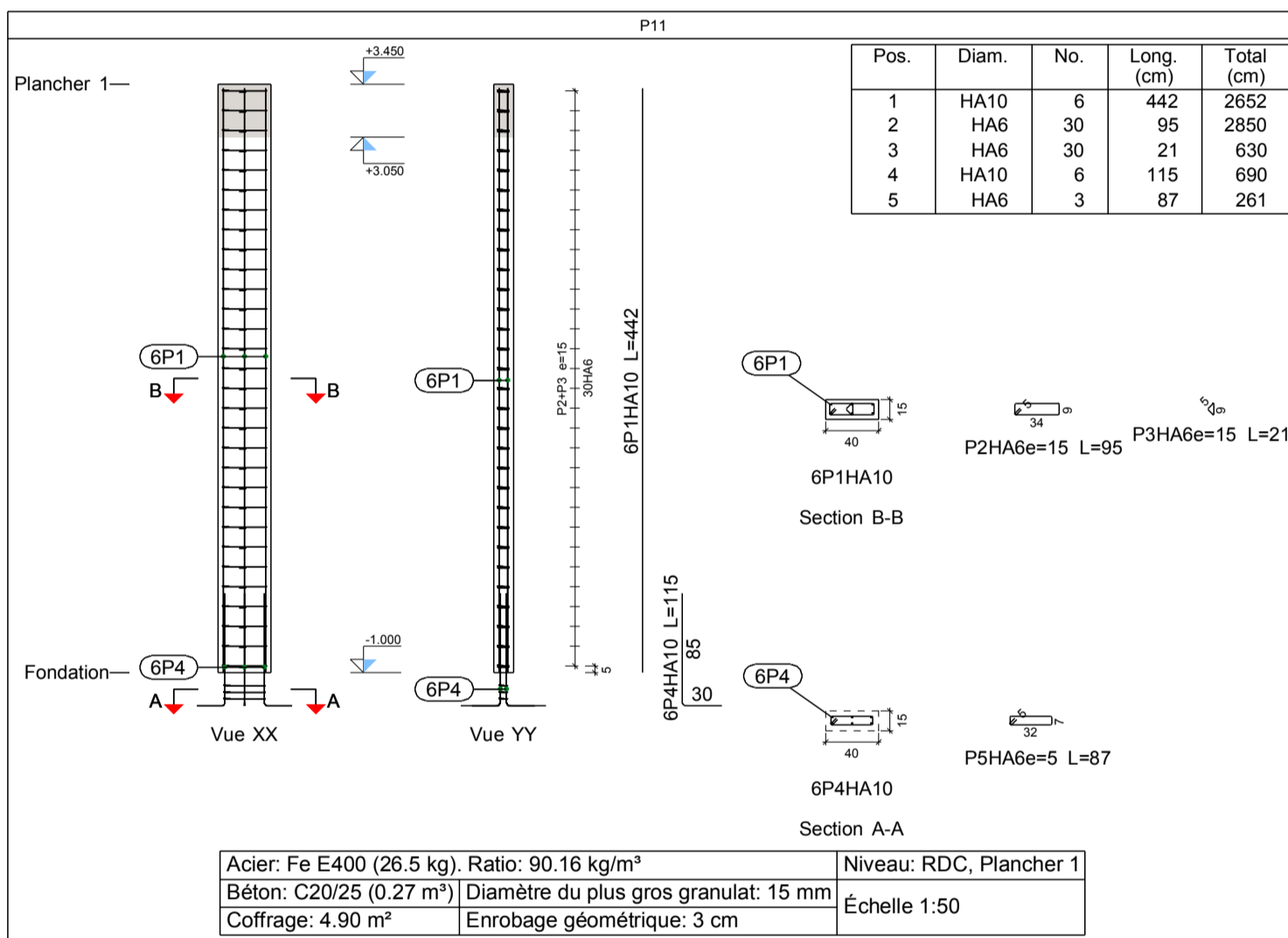
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
P18=P20=P21=P25=P29=P35 P38	1	HA10	4	442	442	1768	10.9	
	2	HA6	30		75	2250	5.0	
	3	HA10	4		115	460	2.8	
	4	HA6	3		69	207	0.5	
Total+10% (x7):							21.1	147.7
P24	1	HA10	4	442	442	1768	10.9	
	2	HA6	30		75	2250	5.0	
	3	HA10	4		100	400	2.5	
	4	HA6	3		69	207	0.5	
Total+10%:							20.8	
							HA6:	48.1
							HA10:	120.4
							Total:	168.5



Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

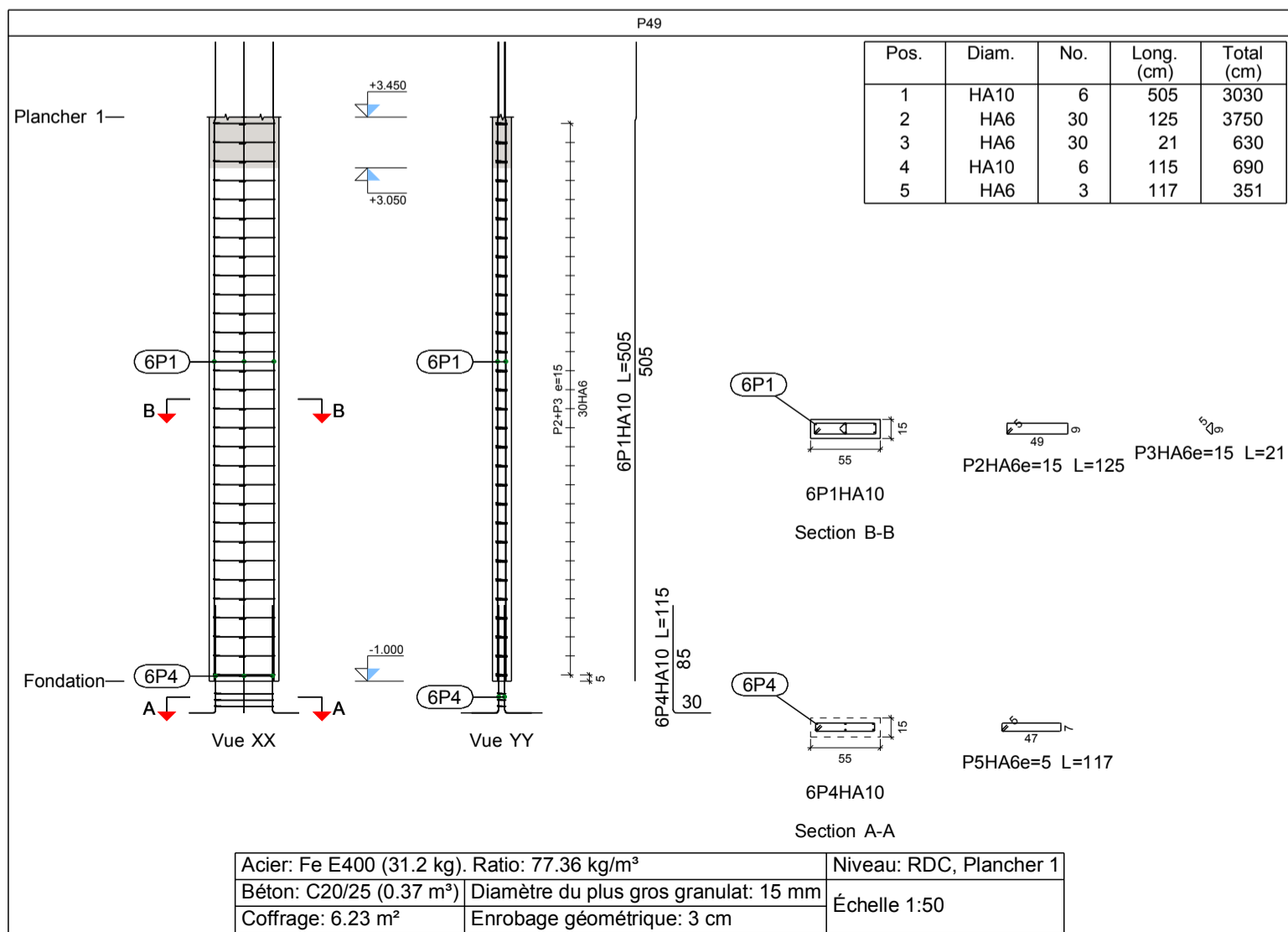
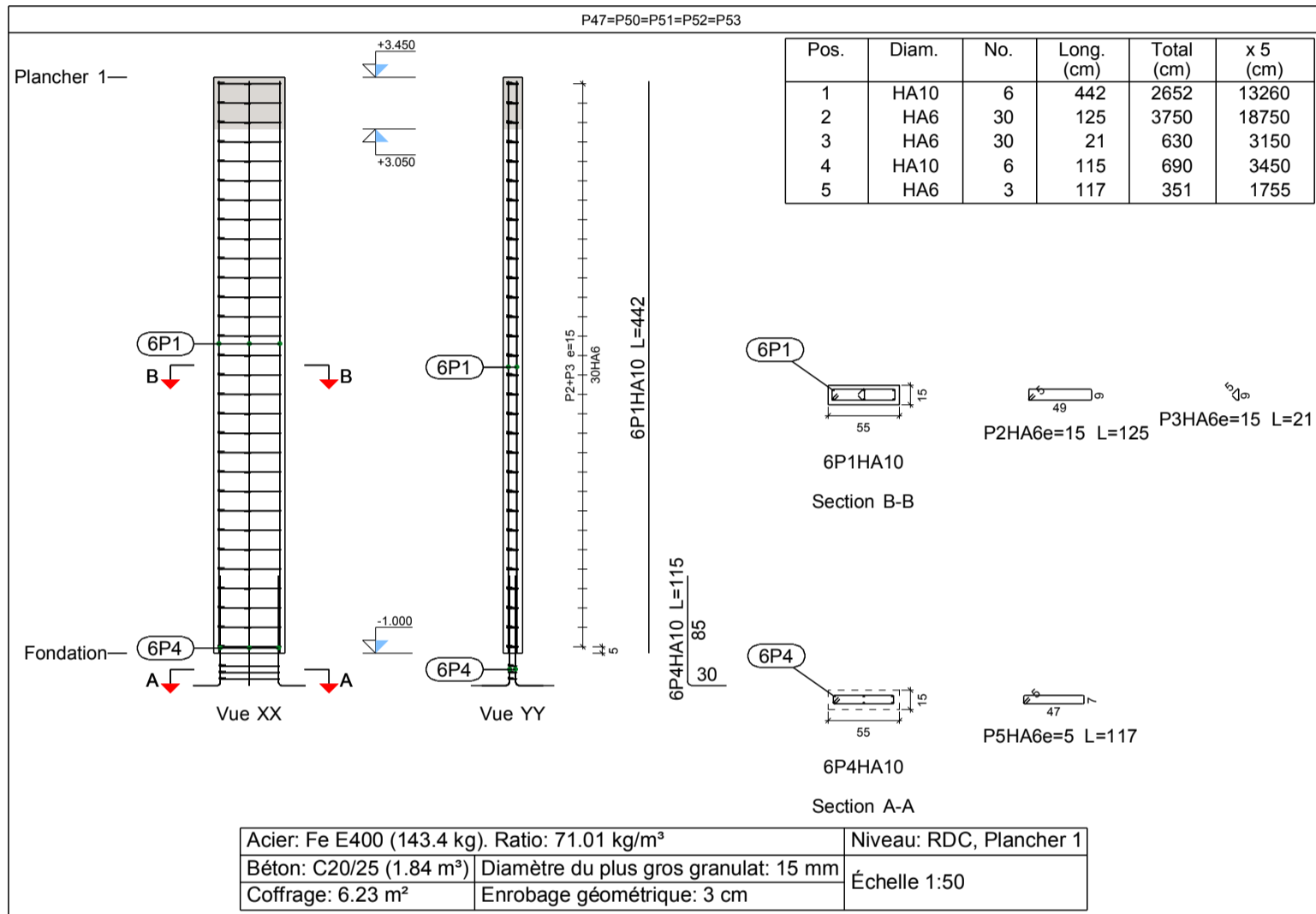


Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P11	1	HA10	6	442	442	2652	16.4
	2	HA6	30		95	2850	6.3
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		87	261	0.6
Total+10%:							31.9
P43	1	HA12	4	442	442	1768	15.7
	2	HA6	30		75	2250	5.0
	3	HA12	4		125	500	4.4
	4	HA6	3		68	204	0.5
Total+10%:							28.2
P42	1	HA10	4	143	205	820	5.1
	2	HA6	10		75	750	1.7
	3	HA10	4		105	420	2.6
	4	HA6	3		69	207	0.5
Total+10%:							10.9
							HA6: 17.6
							HA10: 31.3
							HA12: 22.1
							Total: 71.0

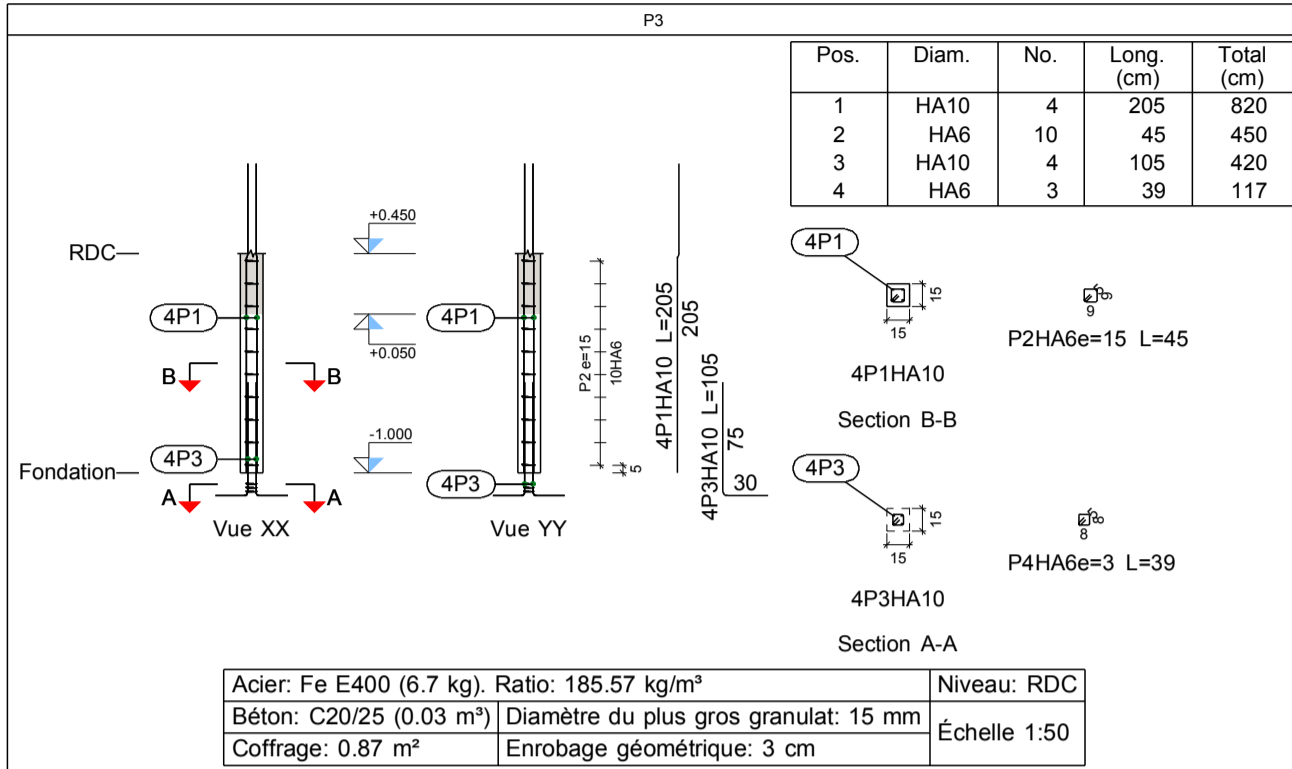


Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P47=P50=P51=P52=P53	1	HA10	6	442	442	2652	16.4
	2	HA6	30		125	3750	8.3
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		117	351	0.8
Total+10% (x5):							34.3
Total:							171.5
P49	1	HA10	6	443	505	3030	18.7
	2	HA6	30		125	3750	8.3
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		117	351	0.8
Total+10%:							36.9
HA6:							69.1
HA10:							139.3
Total:							208.4



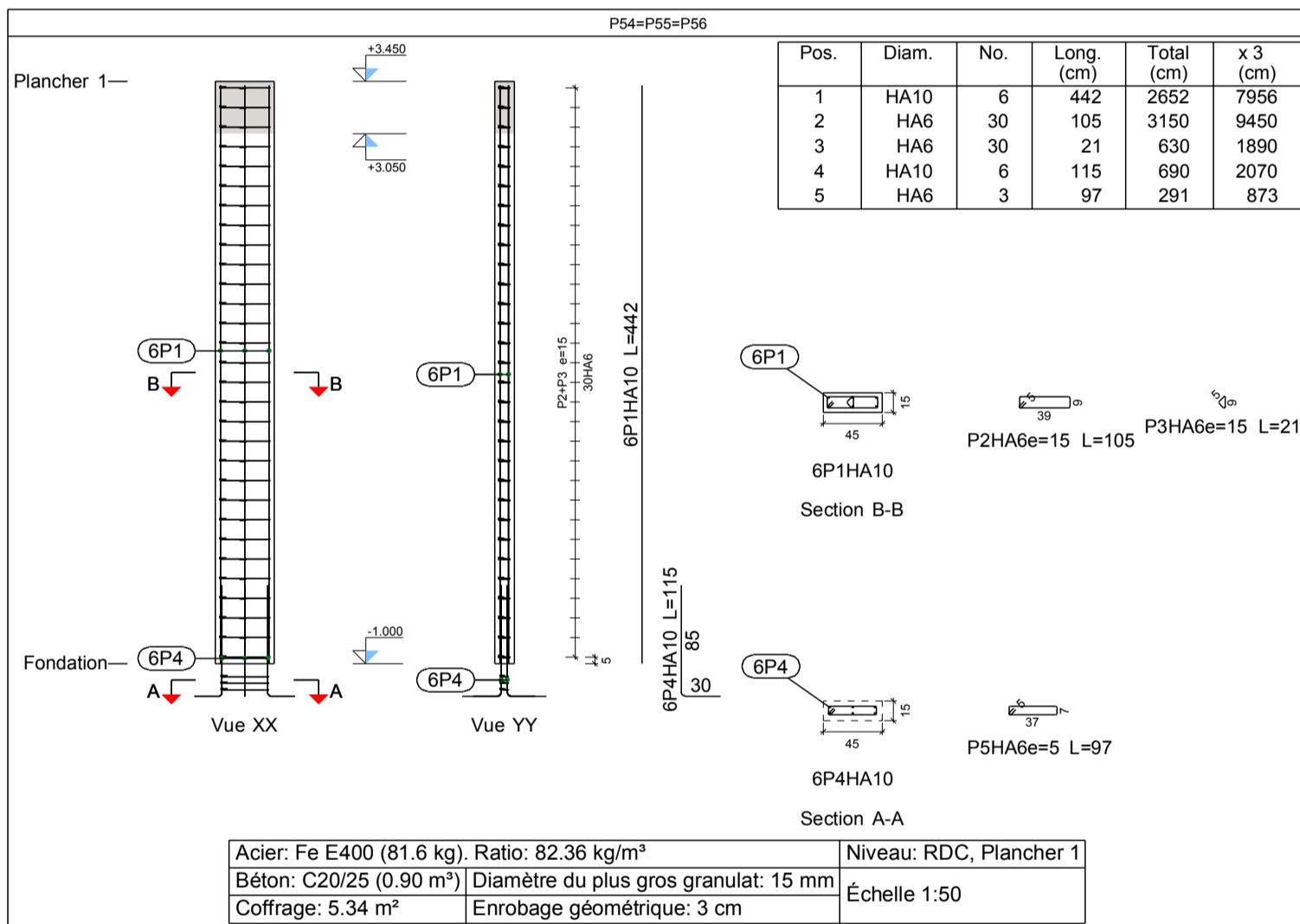
Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400



Acier: Fe E400 (6.7 kg). Ratio: 185.57 kg/m³
 Béton: C20/25 (0.03 m³)
 Coffrage: 0.87 m²

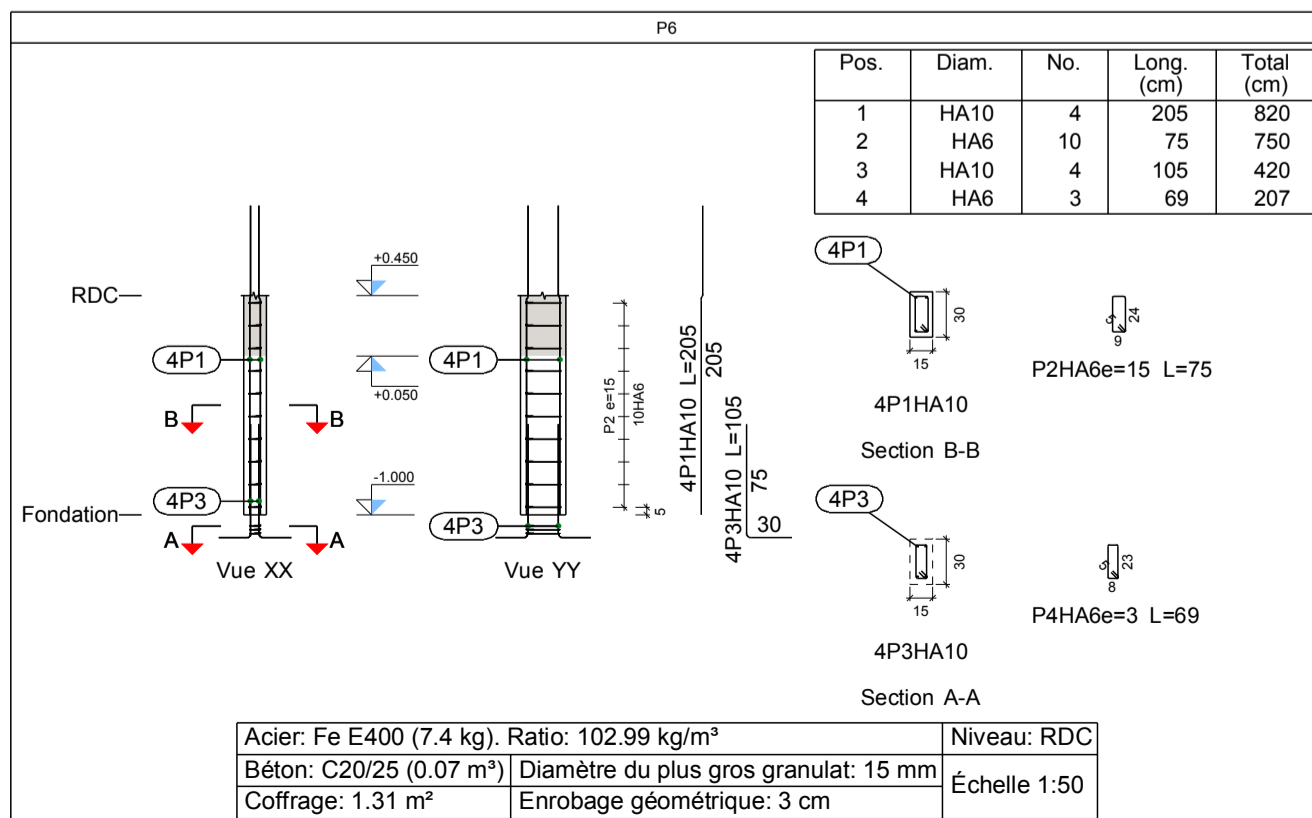
Niveau: RDC
 Diamètre du plus gros granulat: 15 mm
 Enrobage géométrique: 3 cm
 Échelle 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P54=P55=P56	1	HA10	6	442	442	2652	16.4
	2	HA6	30		105	3150	7.0
	3	HA6	30		21	630	1.4
	4	HA10	6		115	690	4.3
	5	HA6	3		97	291	0.6
Total+10% (x3):							32.7
Total: (x3):							98.1
P3	1	HA10	4	143 60	205	820	5.1
	2	HA6	10		45	450	1.0
	3	HA10	4		105	420	2.6
	4	HA6	3		39	117	0.3
Total+10%:							9.9
P6	1	HA10	4	143 60	205	820	5.1
	2	HA6	10		75	750	1.7
	3	HA10	4		105	420	2.6
	4	HA6	3		69	207	0.5
Total+10%:							10.9
HA6:							33.5
HA10:							85.4
Total:							118.9



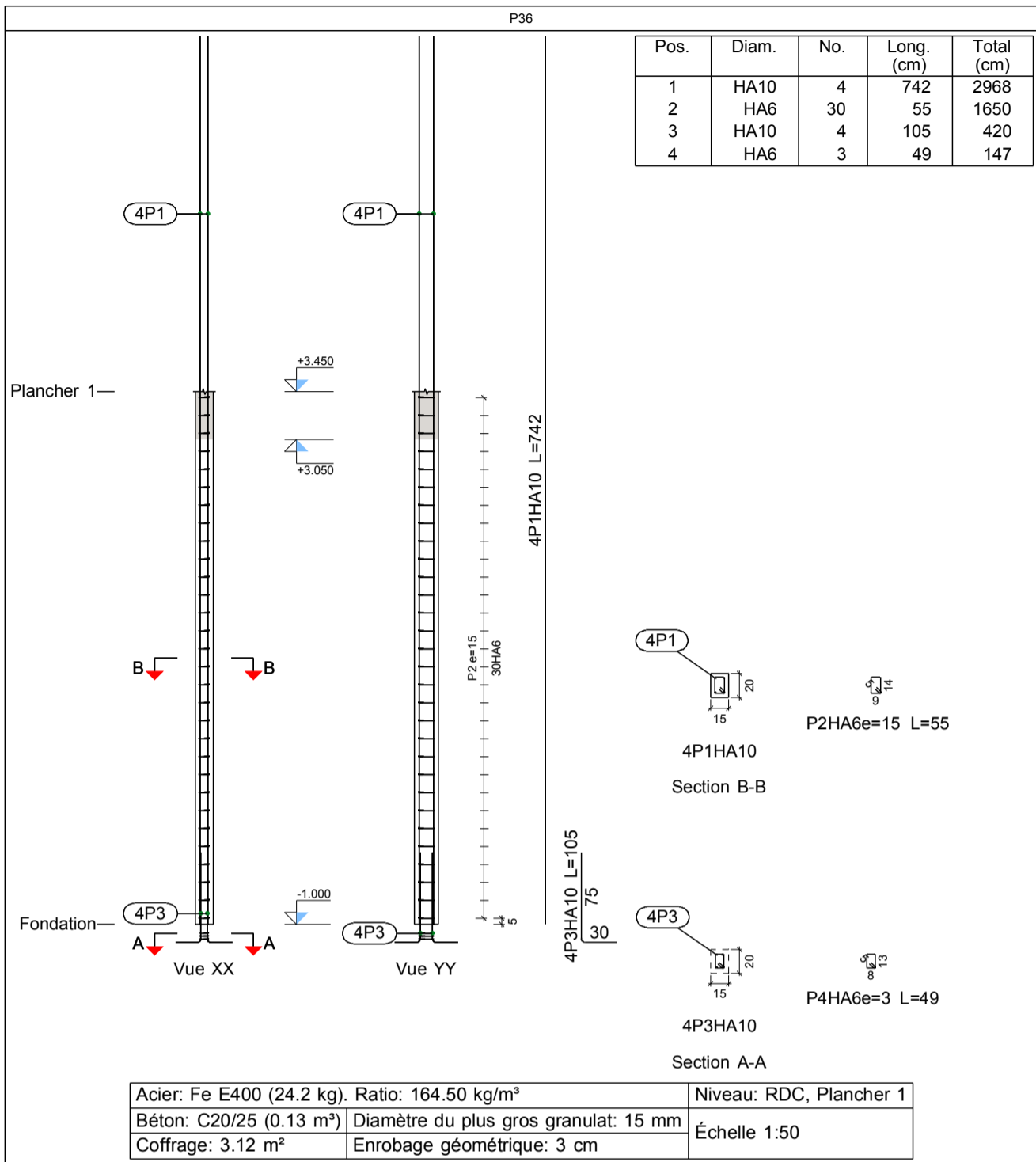
Acier: Fe E400 (81.6 kg). Ratio: 82.36 kg/m³
 Béton: C20/25 (0.90 m³)
 Coffrage: 5.34 m²

Niveau: RDC, Plancher 1
 Diamètre du plus gros granulat: 15 mm
 Enrobage géométrique: 3 cm
 Échelle 1:50



Acier: Fe E400 (7.4 kg). Ratio: 102.99 kg/m³
 Béton: C20/25 (0.07 m³)
 Coffrage: 1.31 m²

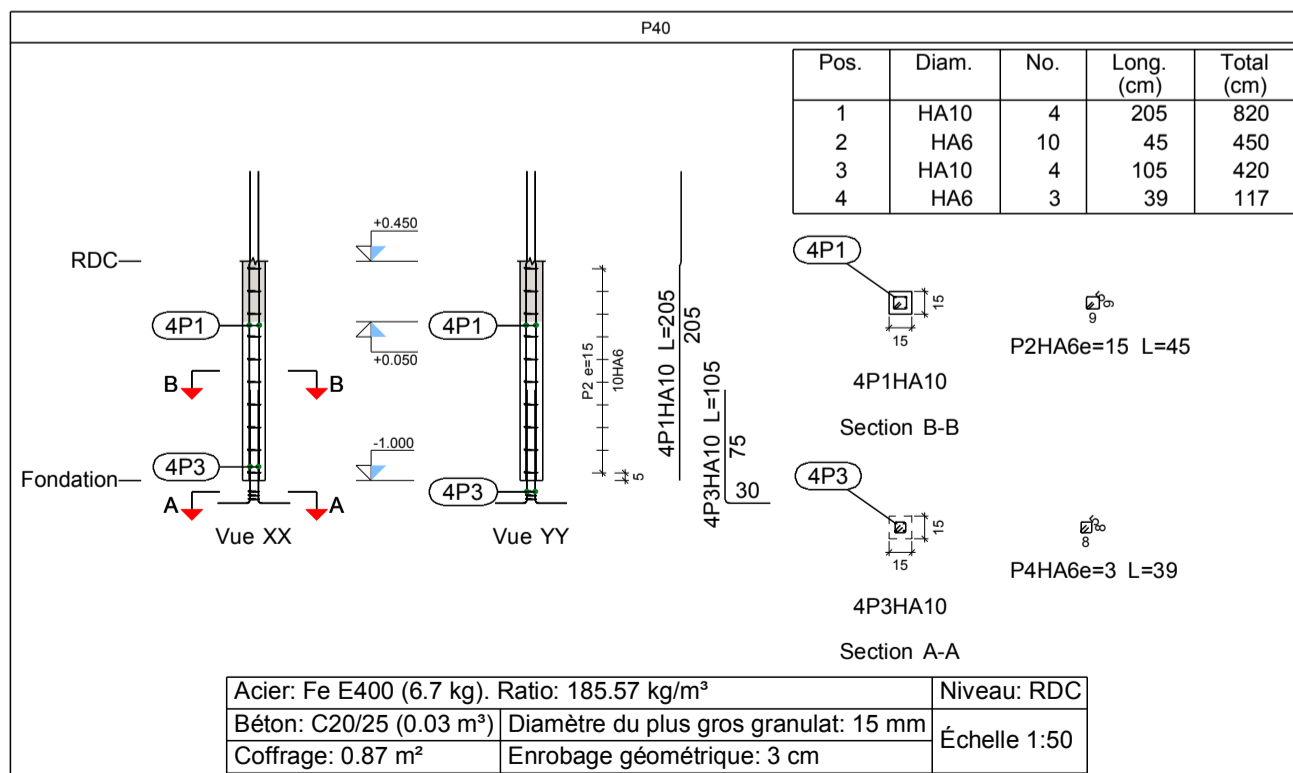
Niveau: RDC
 Diamètre du plus gros granulat: 15 mm
 Enrobage géométrique: 3 cm
 Échelle 1:50

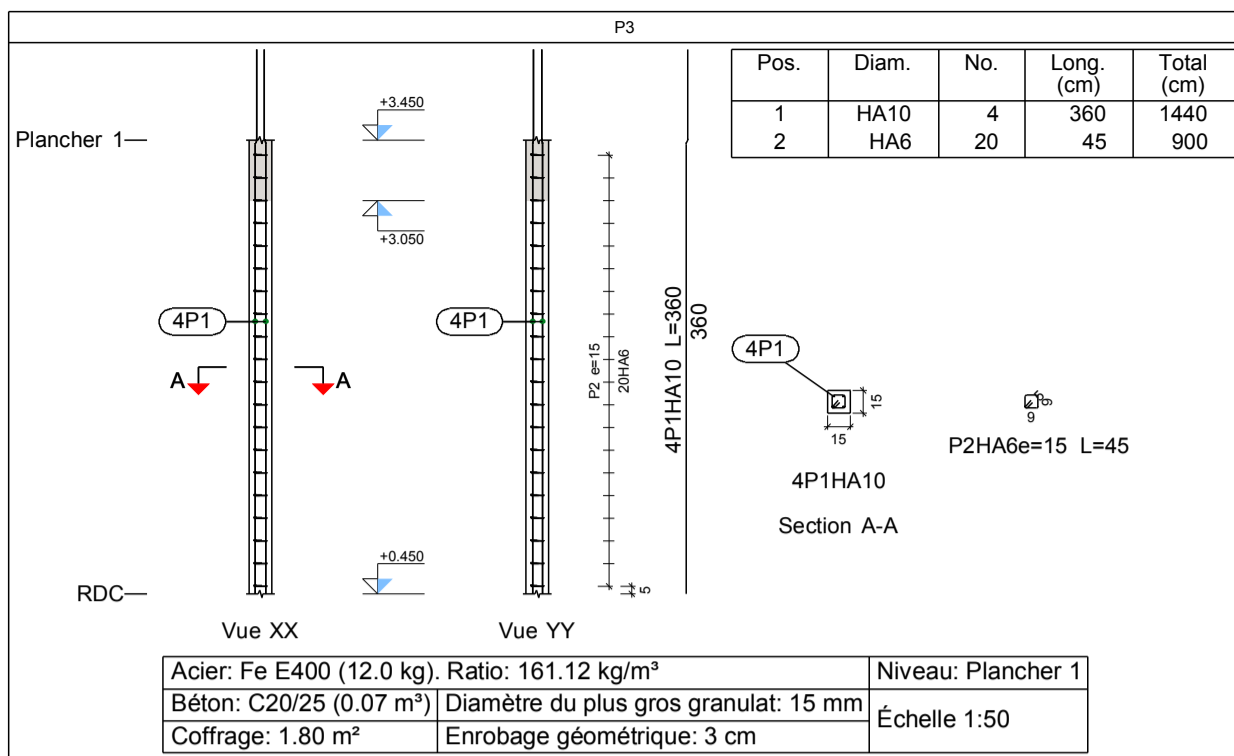


Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P36	1	HA10	4	742	742	2968	18.3
	2	HA6	30		55	1650	3.7
	3	HA10	4		105	420	2.6
	4	HA6	3		49	147	0.3
Total+10%:							27.4
P40	1	HA10	4	143	205	820	5.1
	2	HA6	10		45	450	1.0
	3	HA10	4		105	420	2.6
	4	HA6	3		39	117	0.3
Total+10%:							9.9
HA6:							5.8
HA10:							31.5
Total:							37.3

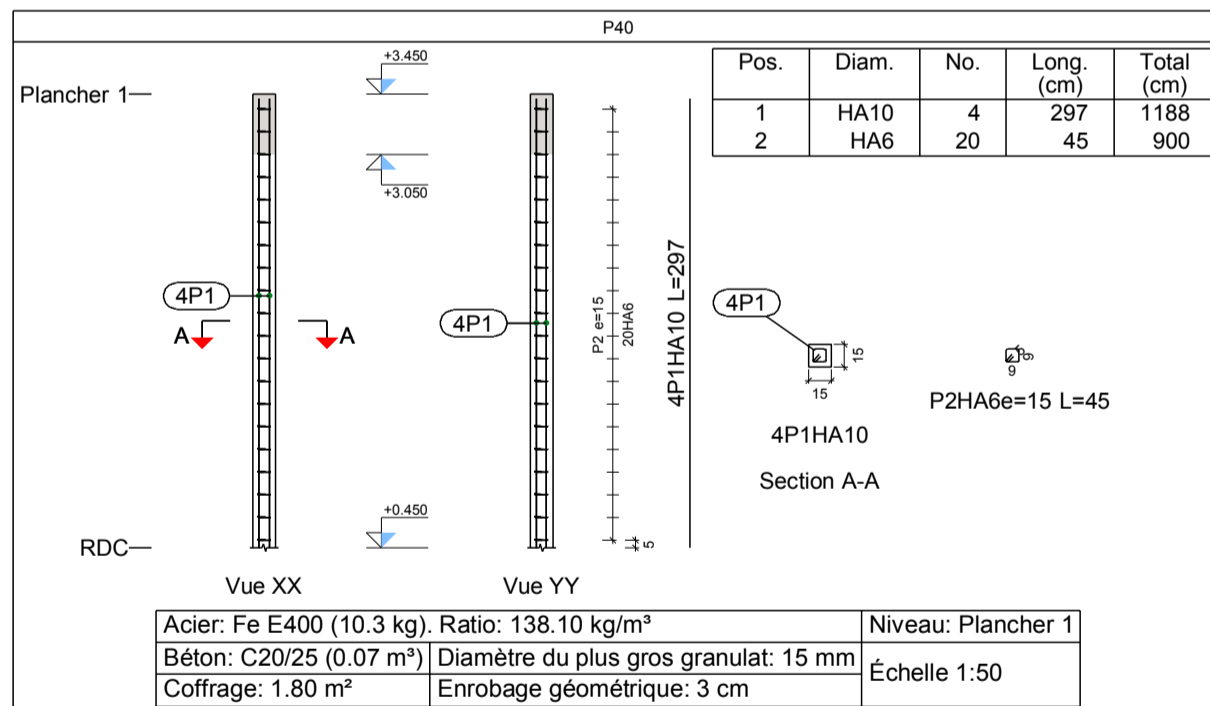
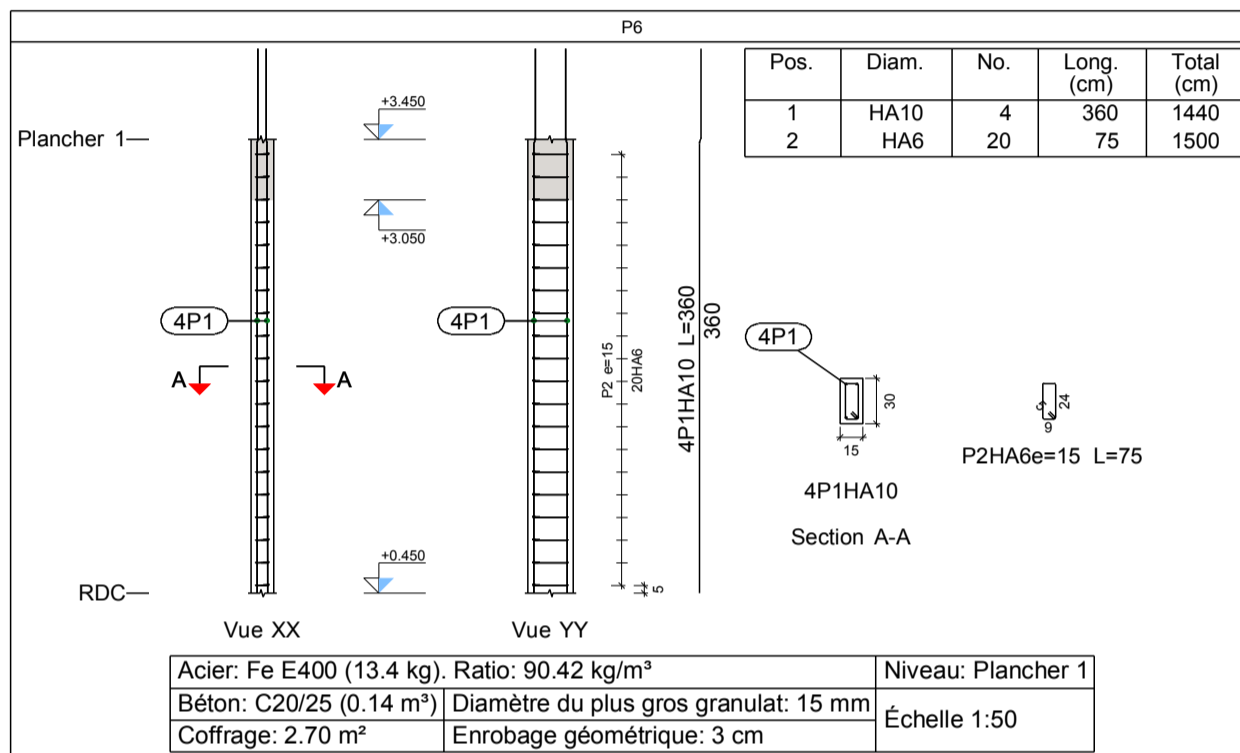
Récapitulatif Acier Poteaux		Long. total (m)	Poids+10% (kg)	Total
Fe E400	HA6	1395.6	341	
	HA10	1347.8	914	
	HA12	22.7	22	

Niveau: RDC
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

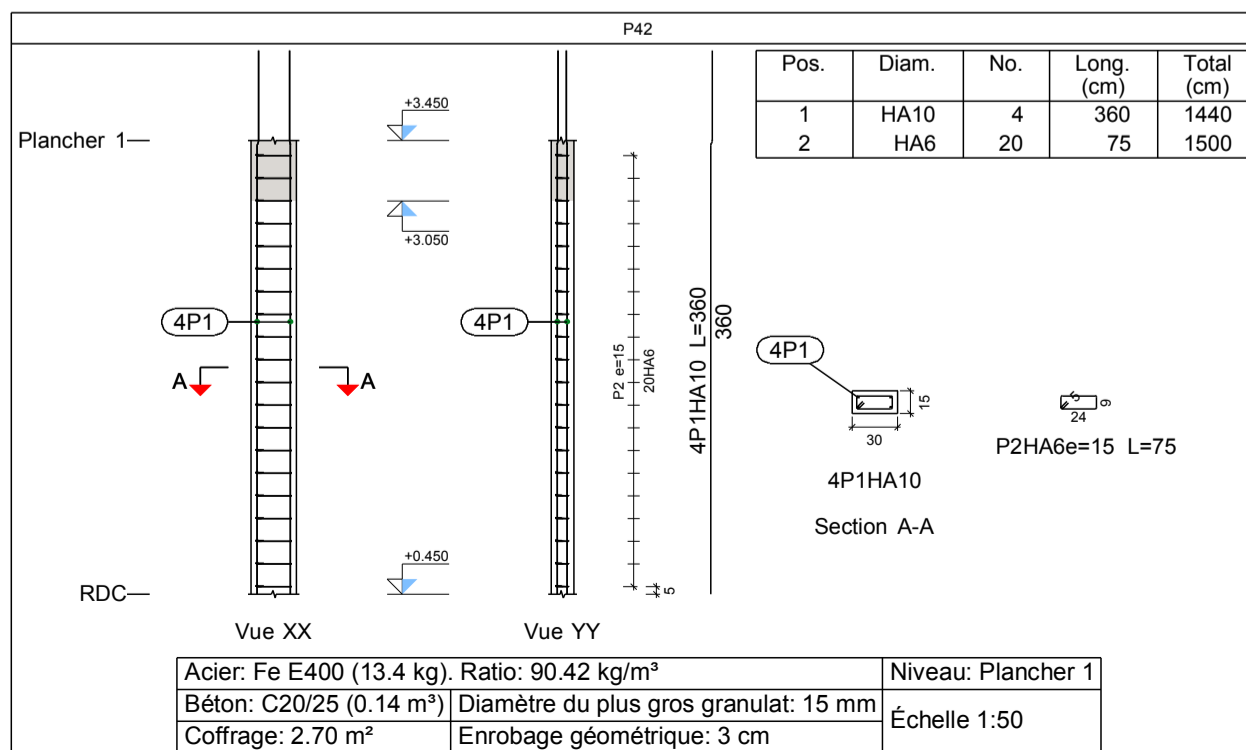




Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P3	1	HA10	4	298 60	360	1440	8.9
	2	HA6	20		45	900	2.0
Total+10%:							12.0
P6	1	HA10	4	298 60	360	1440	8.9
	2	HA6	20		75	1500	3.3
Total+10%:							13.4
P40	1	HA10	4	297	297	1188	7.3
	2	HA6	20		45	900	2.0
Total+10%:							10.2
P42	1	HA10	4	298 60	360	1440	8.9
	2	HA6	20		75	1500	3.3
Total+10%:							13.4
							HA6: 11.6
							HA10: 37.4
							Total: 49.0



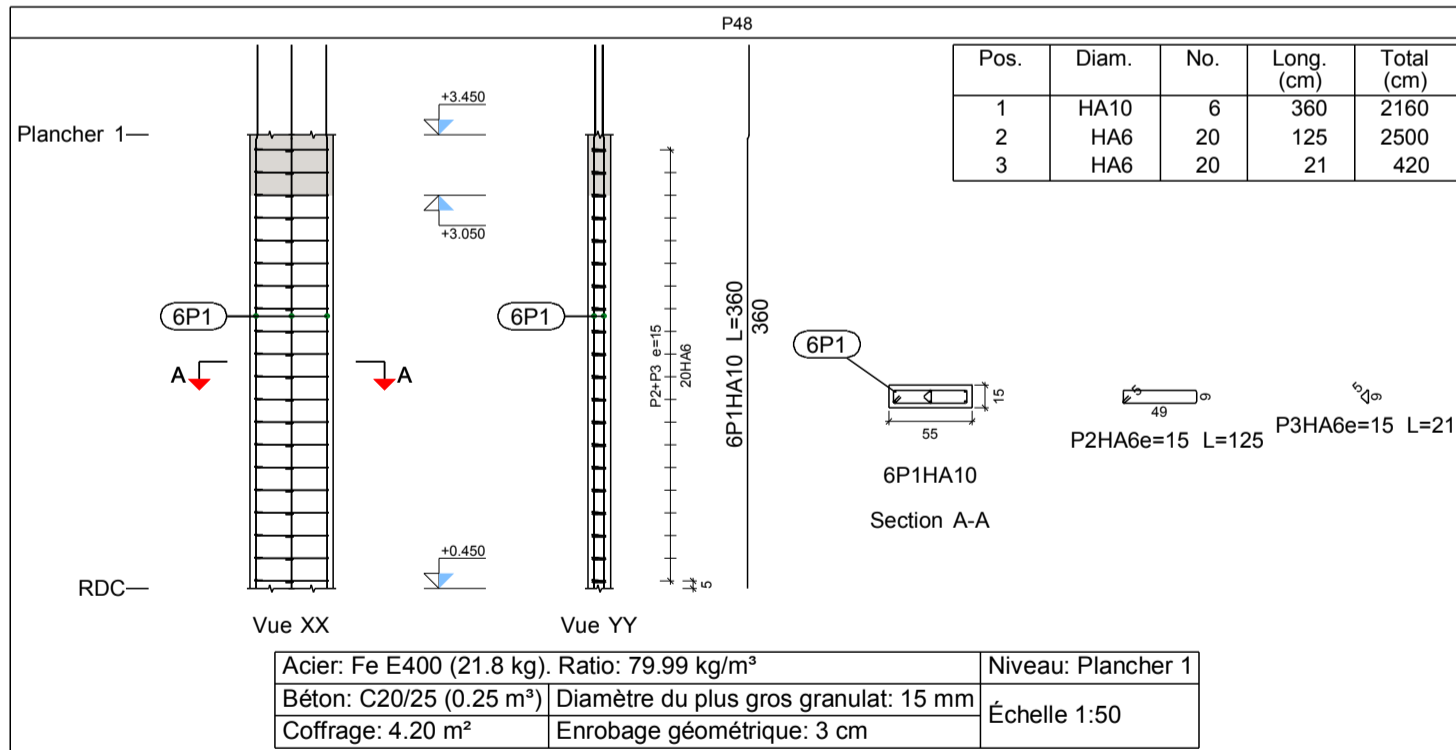
Niveau: Plancher 1
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

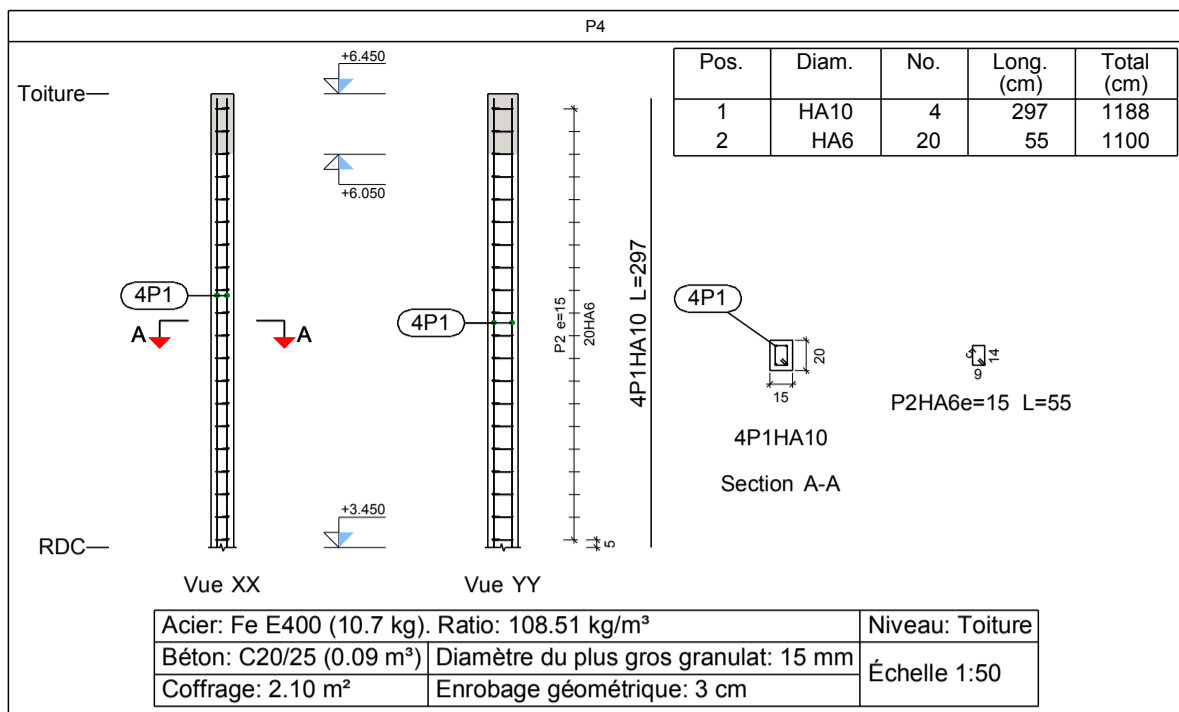


Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
P48	1	HA10	6		360	2160	13.3	
	2	HA6	20		125	2500	5.5	
	3	HA6	20		21	420	0.9	
Total+10%:							21.7	
							HA6:	7.1
							HA10:	14.6
							Total:	21.7

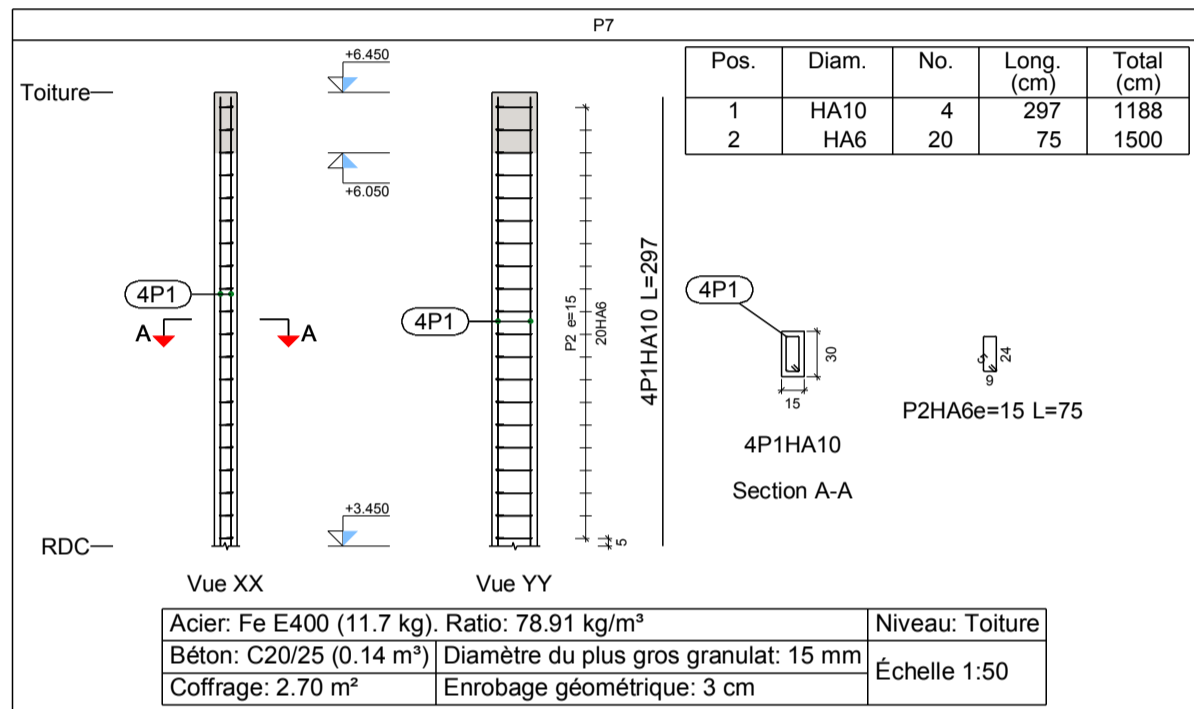
Niveau: Plancher 1
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

Récapitulatif Acier Poteaux	Long. total (m)	Poids+10% (kg)	Total
Fe E400 HA6	77.2	19	
HA10	76.7	52	71

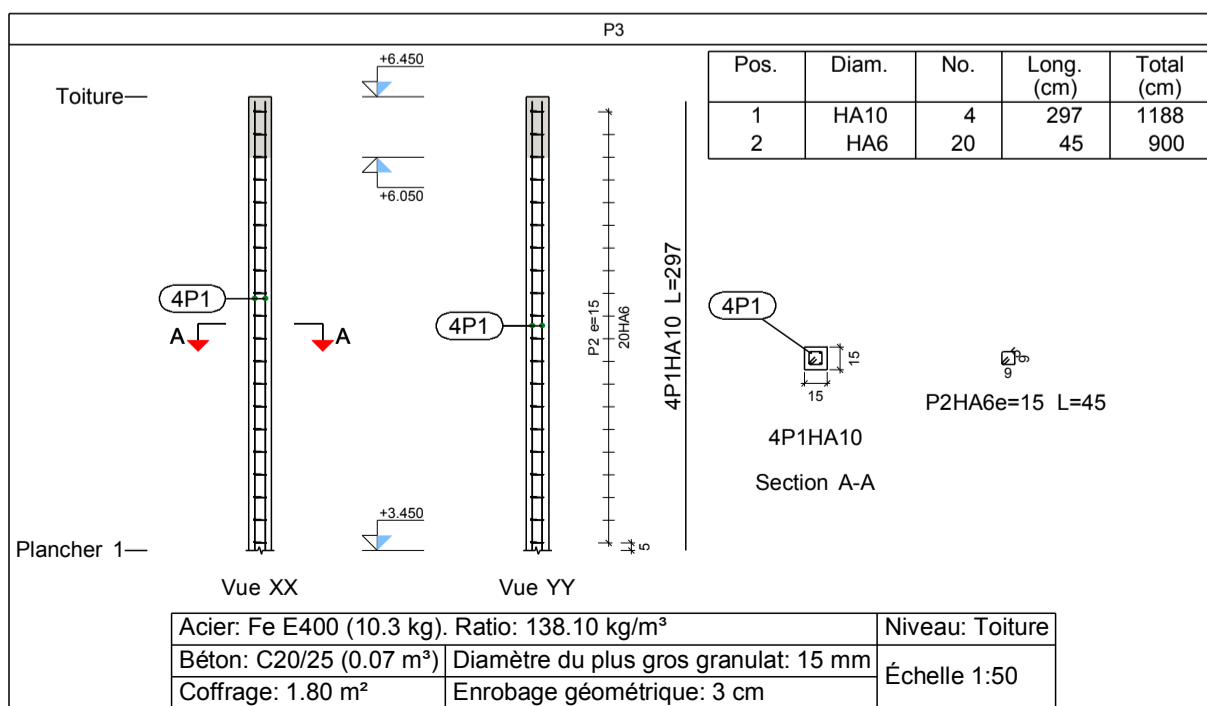
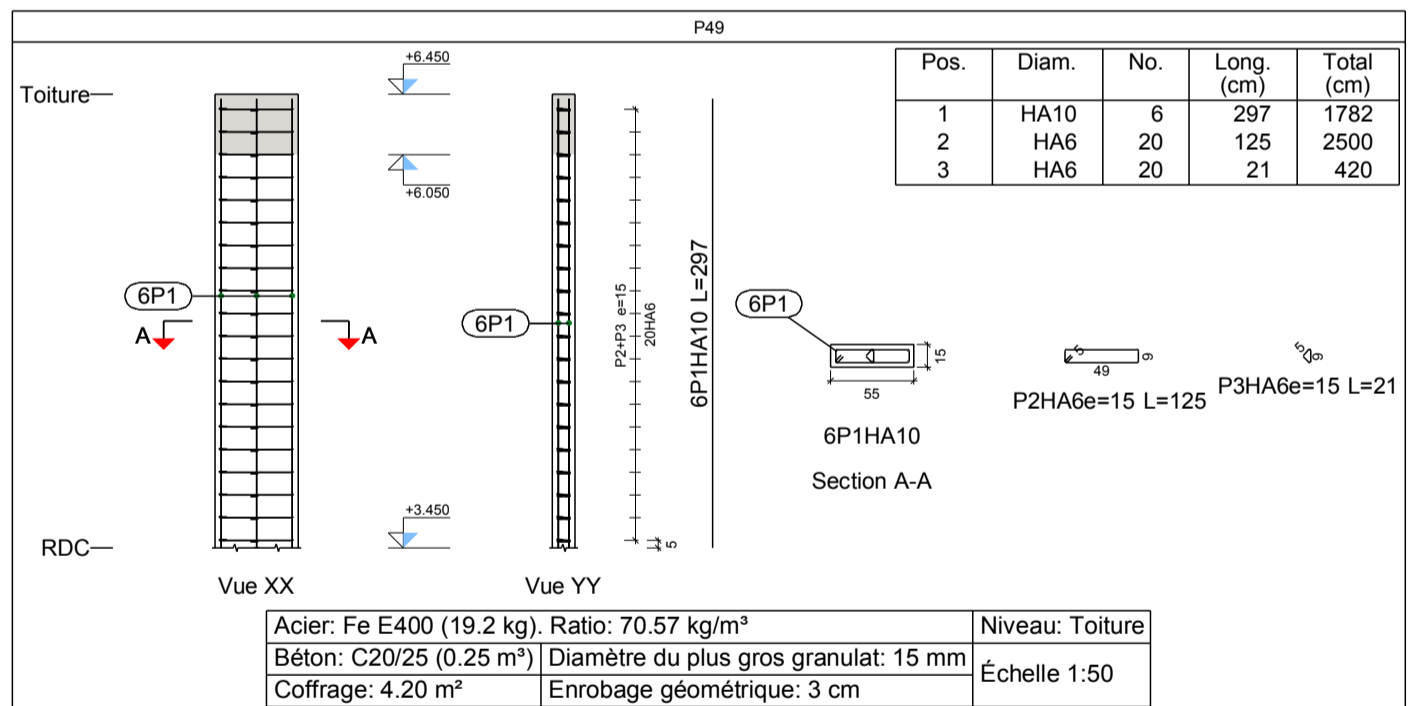


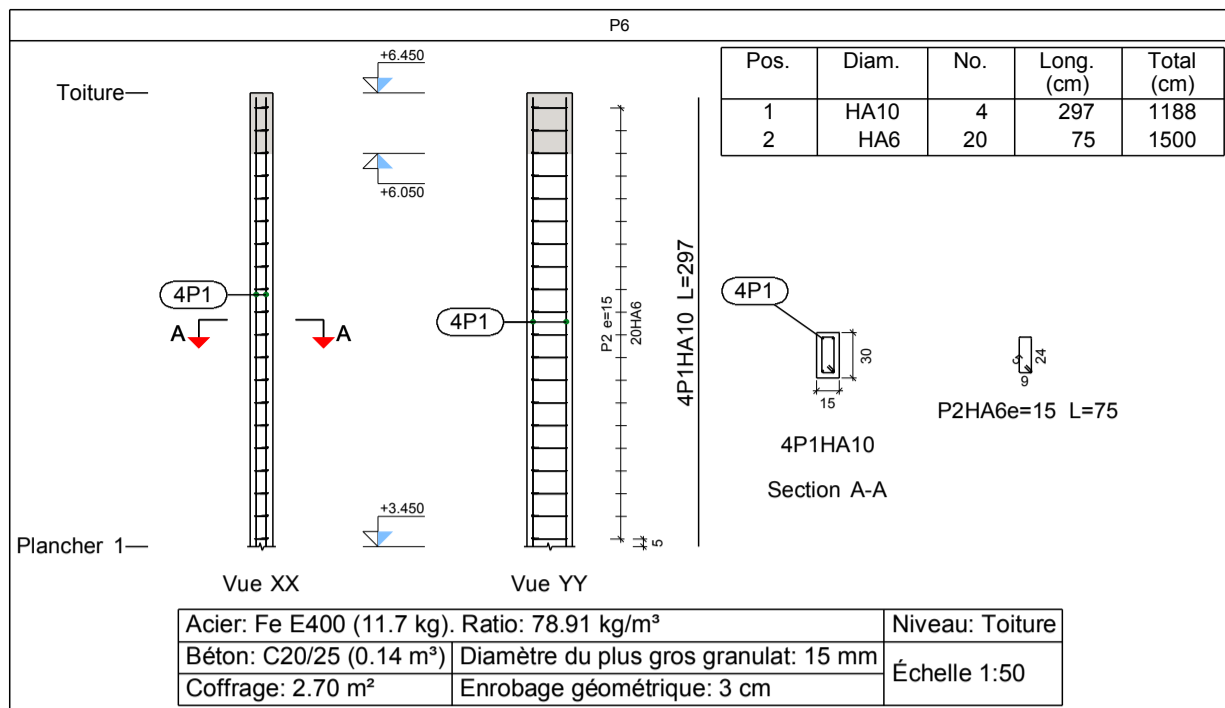


Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
P4	1	HA10	4	297	297	1188	7.3	
	2	HA6	20		55	1100	2.4	
							Total+10%:	10.7
P7	1	HA10	4	297	297	1188	7.3	
	2	HA6	20		75	1500	3.3	
							Total+10%:	11.7
P49	1	HA10	6	297	297	1782	11.0	
	2	HA6	20		125	2500	5.5	
	3	HA6	20		21	420	0.9	
							Total+10%:	19.1
P3	1	HA10	4	297	297	1188	7.3	
	2	HA6	20		45	900	2.0	
							Total+10%:	10.2
							HA6:	15.6
							HA10:	36.1
							Total:	51.7

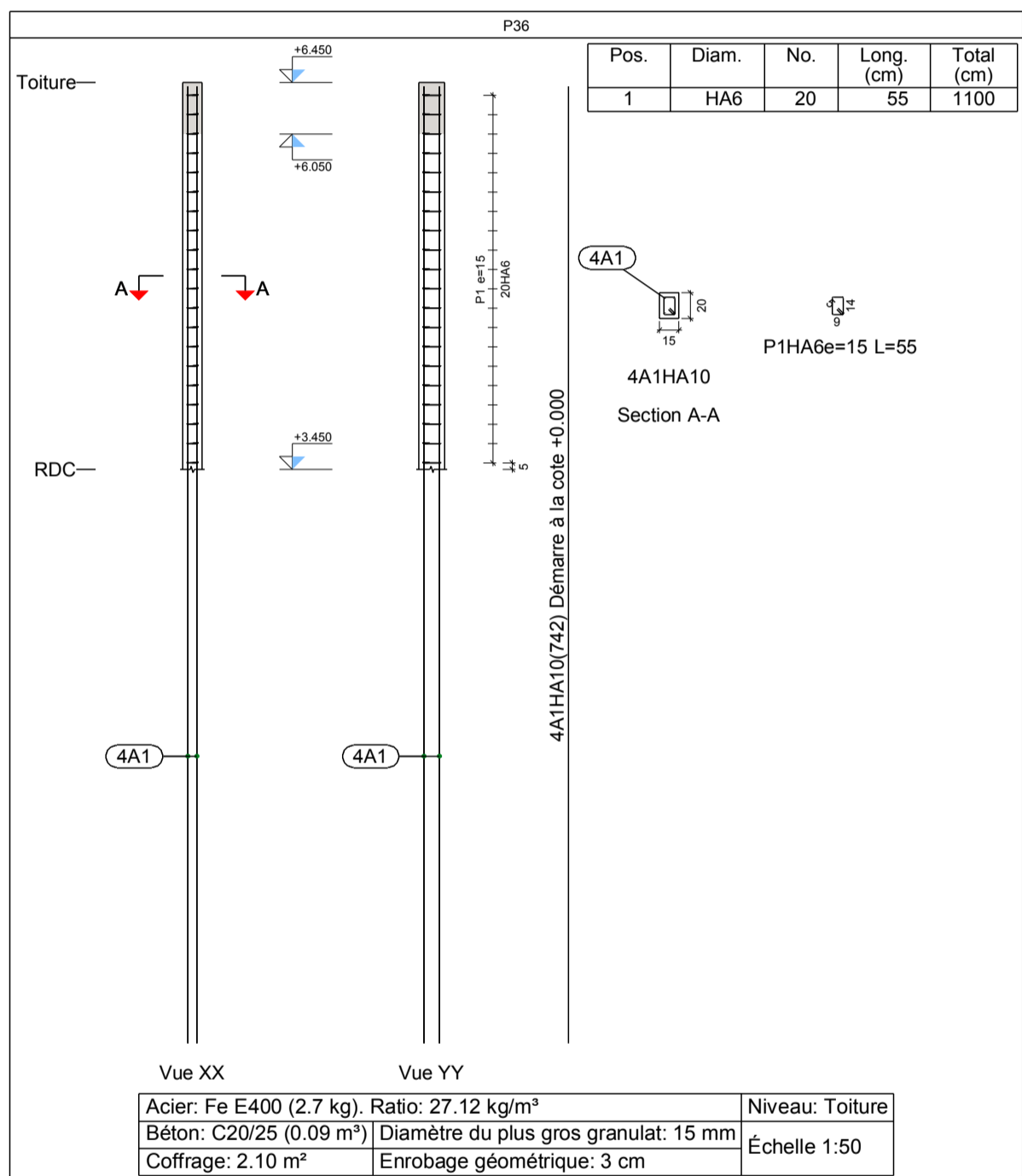


Niveau: Toiture
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

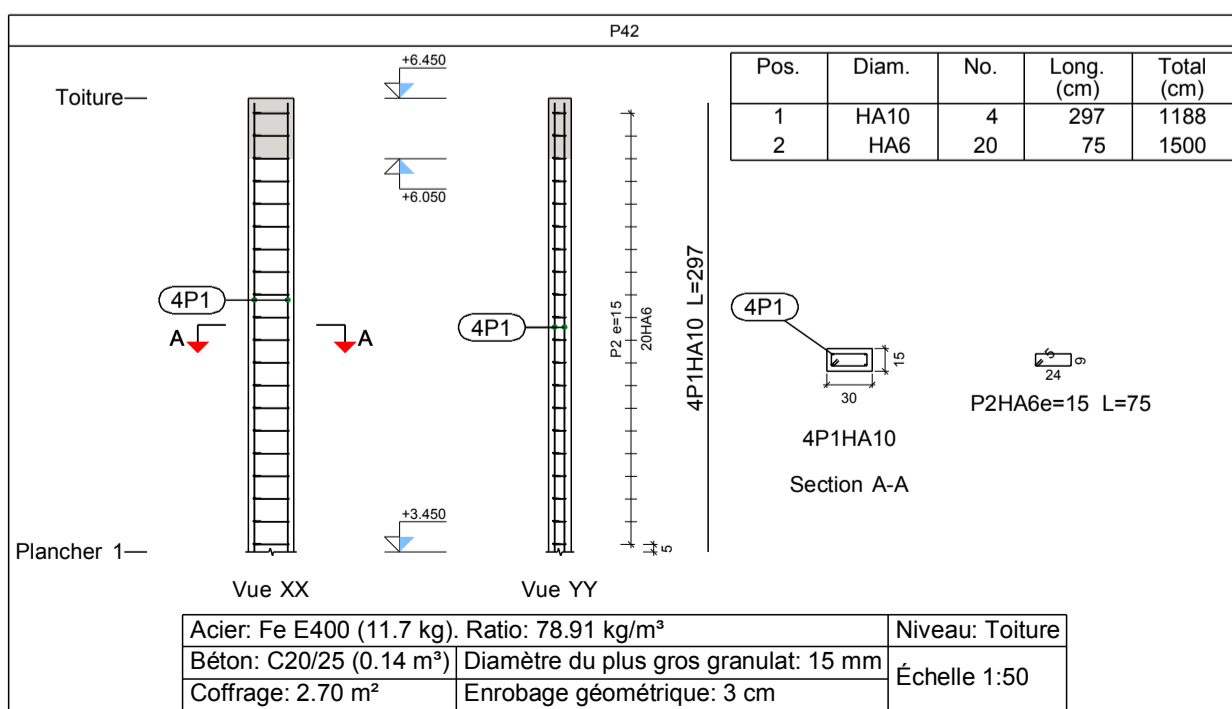




Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
P6	1	HA10	4	297	297	1188	7.3
	2	HA6	20		75	1500	3.3
Total+10%:							11.7
P36	1	HA6	20		55	1100	2.4
	Total+10%:						
P42	1	HA10	4	297	297	1188	7.3
	2	HA6	20		75	1500	3.3
Total+10%:							11.7
HA6:							10.0
HA10:							16.0
Total:							26.0



Niveau: Toiture
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400



Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
P48	1	HA10	6	297	297	1782	11.0	
	2	HA6	20		125	2500	5.5	
	3	HA6	20		21	420	0.9	
Total+10%:							19.1	
							HA6:	7.0
							HA10:	12.1
							Total:	19.1

Niveau: Toiture
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400

Récapitulatif Acier Poteaux		Long. total (m)	Poids+10% (kg)	Total
Fe E400	HA6	134.4	33	
	HA10	95.0	64	97

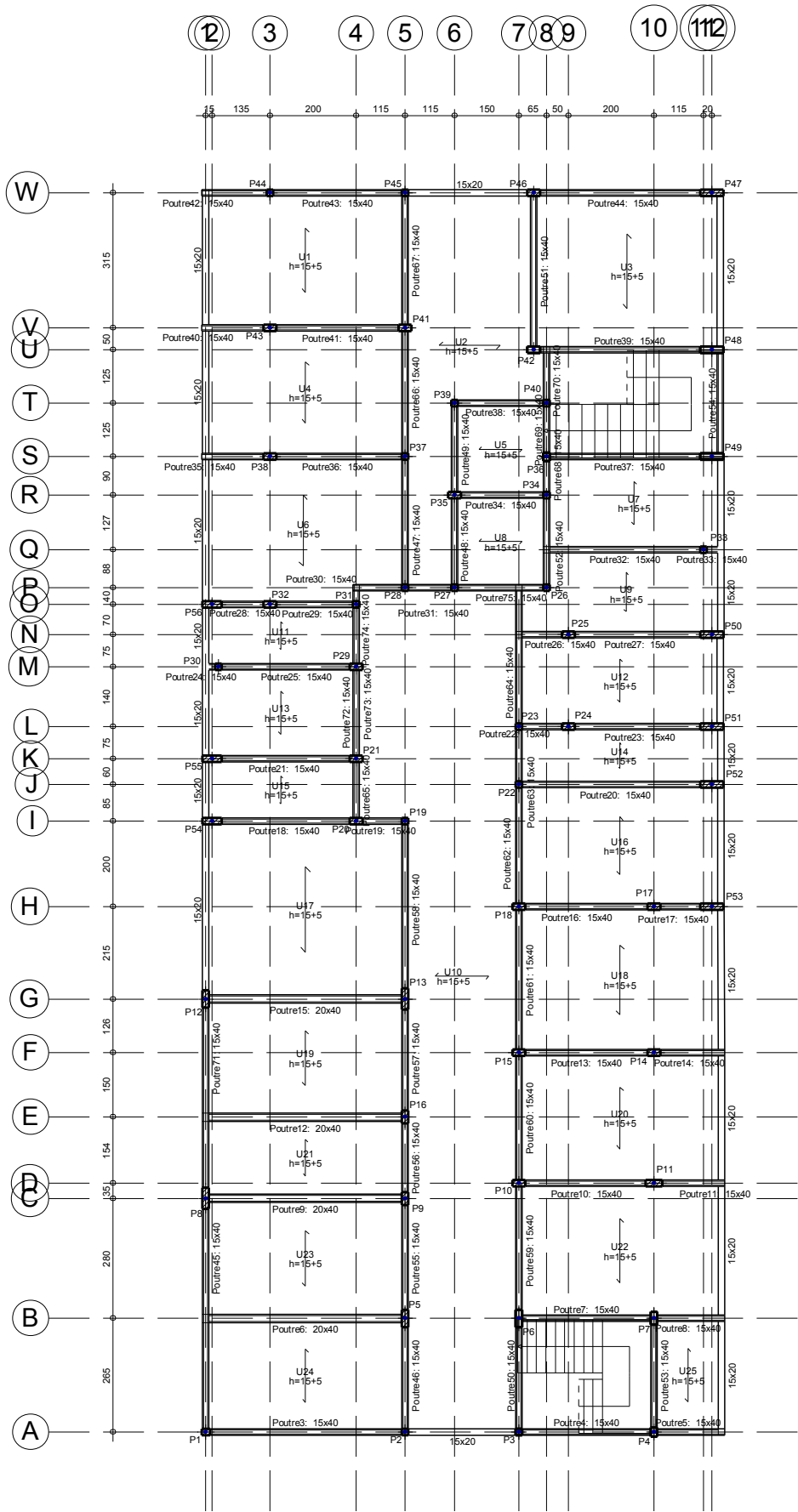
P48

Section A-A

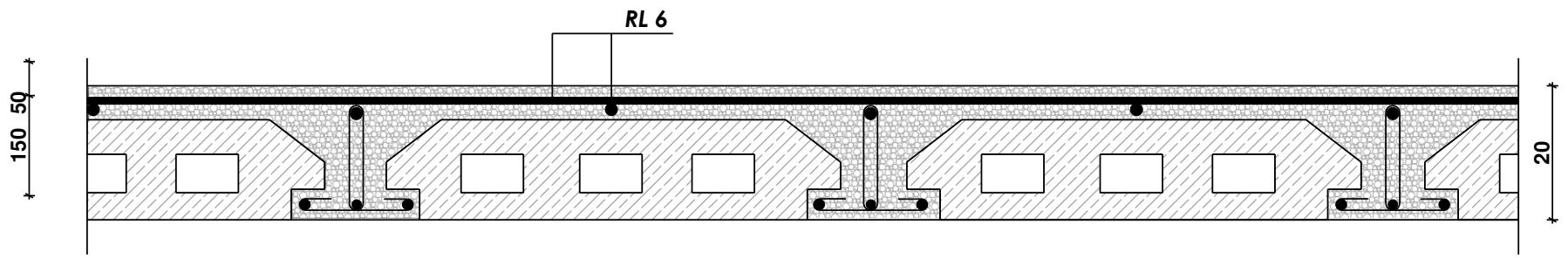
Pos.	Diam.	No.	Long. (cm)	Total (cm)
1	HA10	6	297	1782
2	HA6	20	125	2500
3	HA6	20	21	420

Acier: Fe E400 (19.2 kg). Ratio: 70.57 kg/m ³	Niveau: Toiture
Béton: C20/25 (0.25 m ³)	Diamètre du plus gros granulat: 15 mm
Coffrage: 4.20 m ²	Enrobage géométrique: 3 cm
Échelle 1:50	

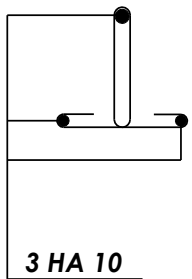
PLAN DE COFFRAGE DU PLANCHER 1



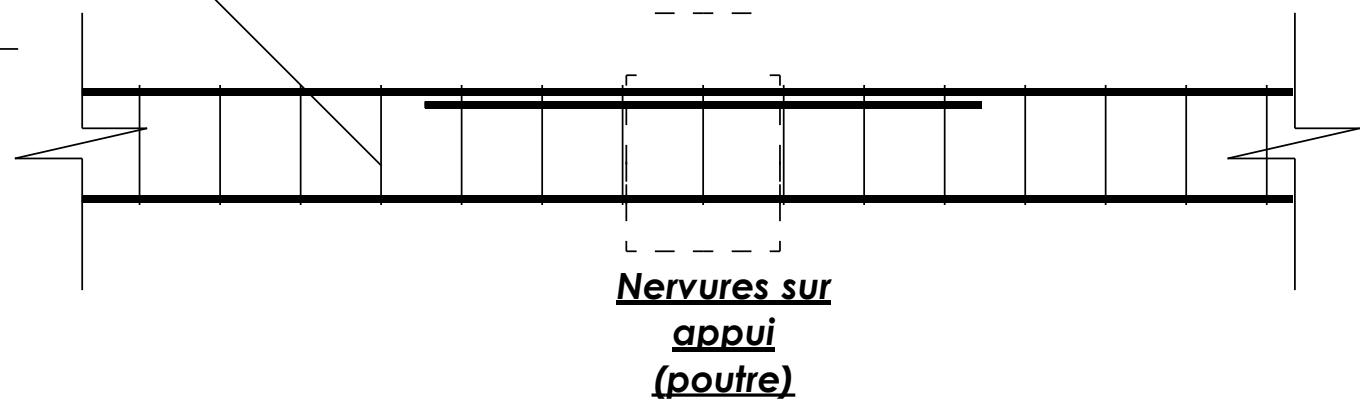
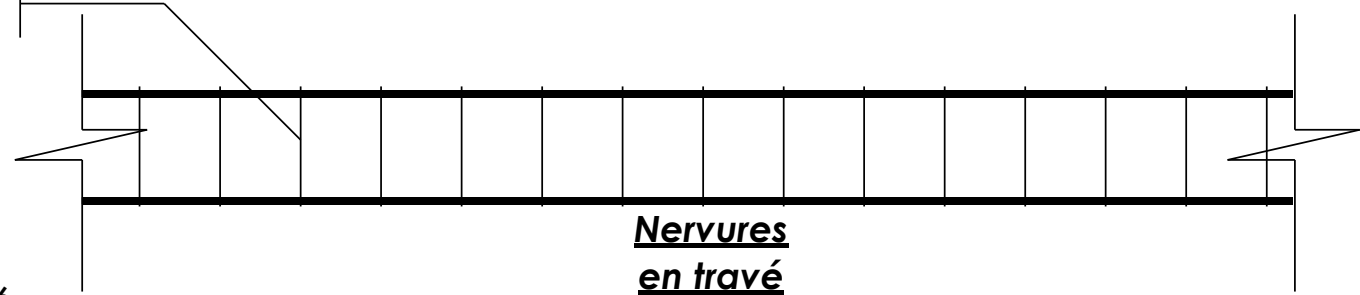
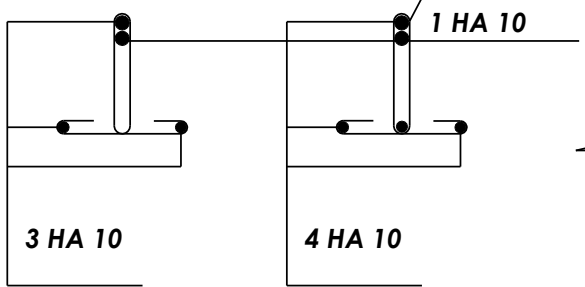
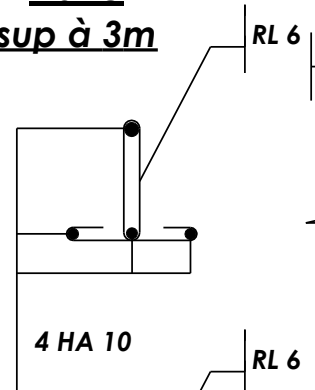
Plancher 1
Coffrage
Échelle: 1:150



Travé inf
ou égal
à 3m



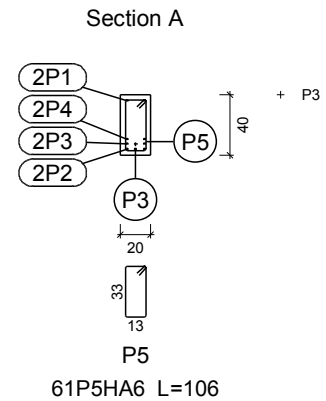
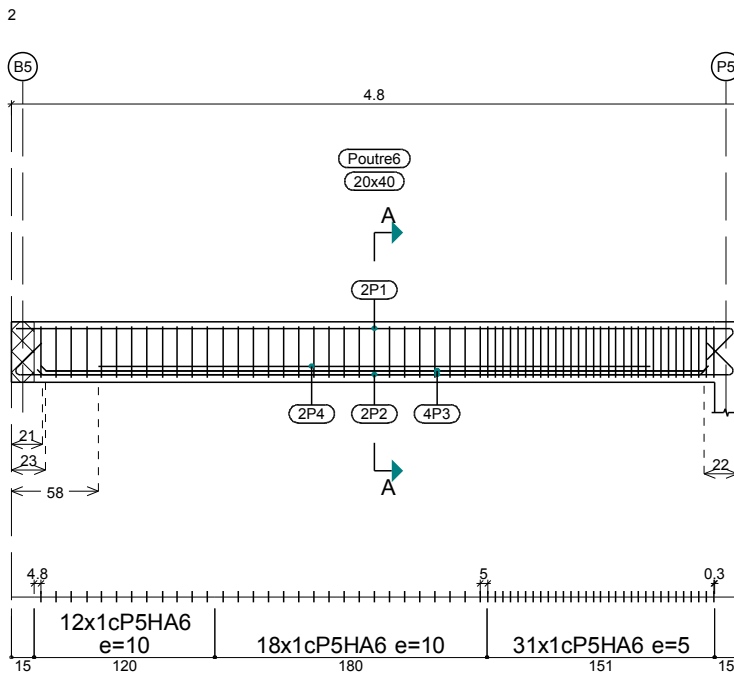
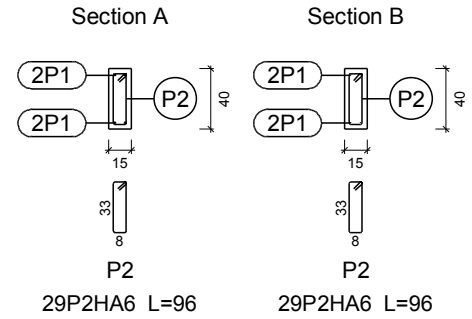
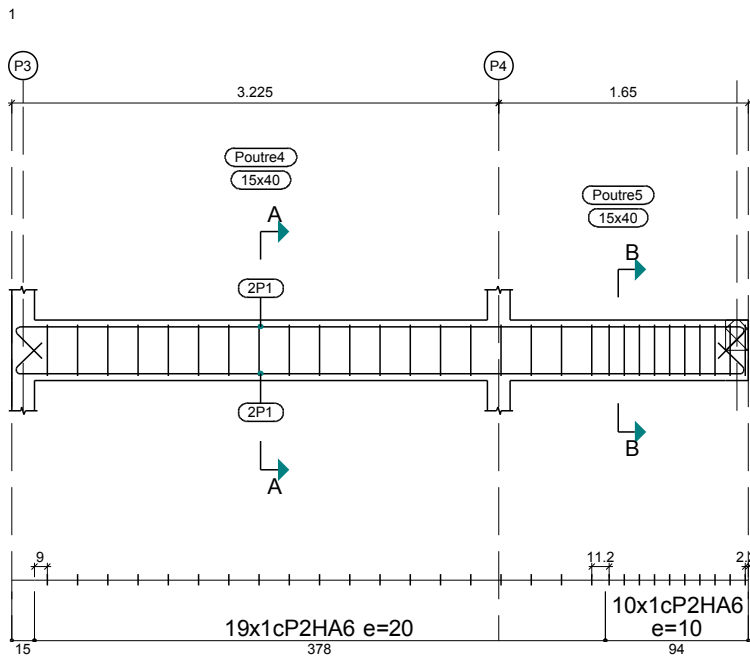
Travé
sup à 3m



**PLAN DE FERRAILLAGE DES POUTRES DU
PLANCHER 1**

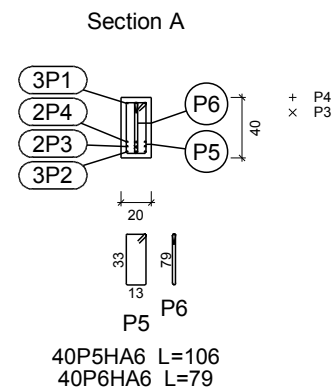
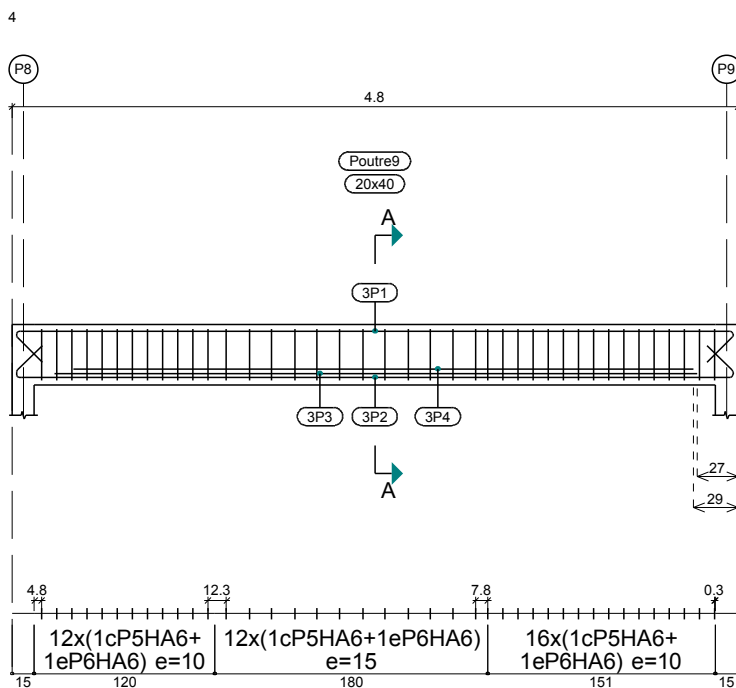
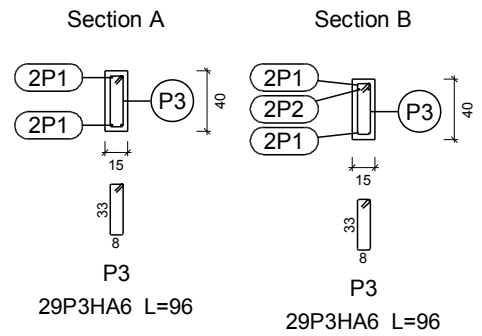
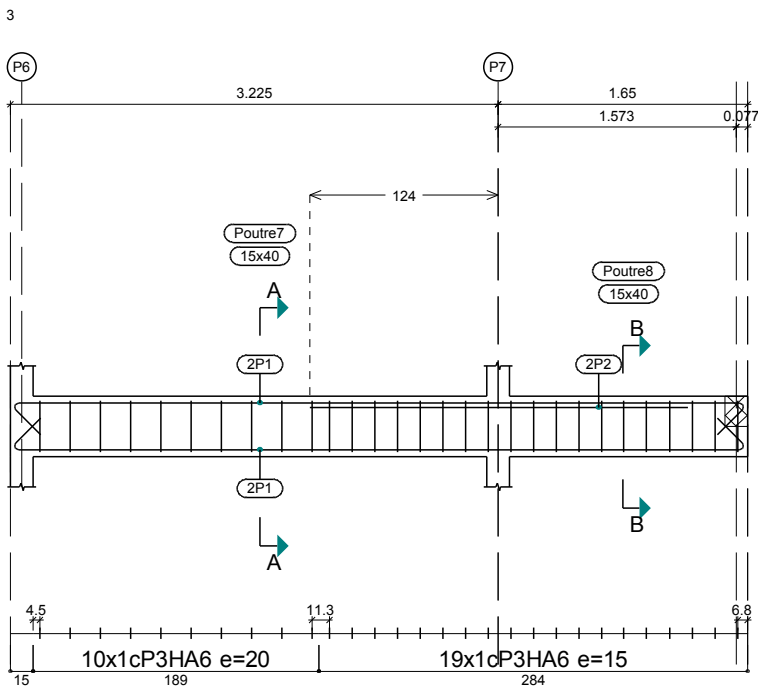
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
1	1	HA10	4		531	2124	13.1
	2	HA6	29		96	2784	6.2
Total+10%:							21.2
2	1	HA10	2		499	998	6.2
	2	HA12	2		524	1048	9.3
	3	HA12	4		435	1740	15.4
	4	HA12	2		365	730	6.5
	5	HA6	61		106	6466	14.3
Total+10%:							56.9
							HA6: 22.6
							HA10: 21.2
							HA12: 34.3
							Total: 78.1



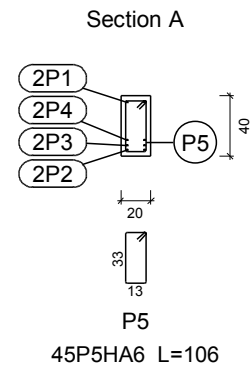
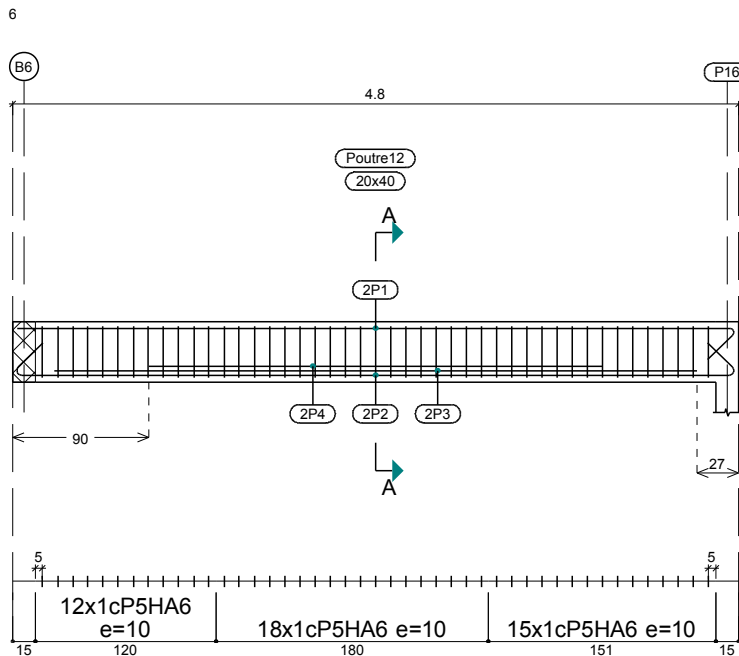
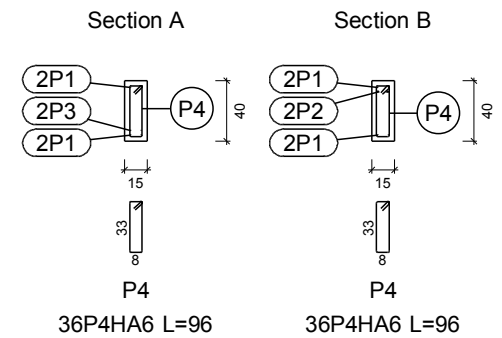
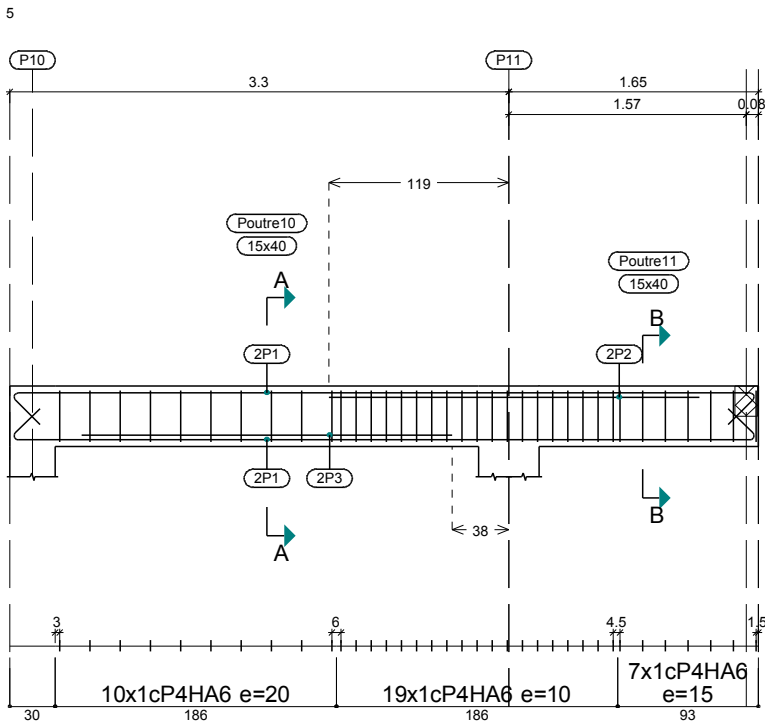
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
3	1	HA10	4		532	2128	13.1	
	2	HA12	2		250	500	4.4	
	3	HA6	29		96	2784	6.2	
Total+10%:							26.1	
4	1	HA10	3		524	1572	9.7	
	2	HA12	3		524	1572	14.0	
	3	HA12	3		425	1275	11.3	
	4	HA12	3		410	1230	10.9	
	5	HA6	40		106	4240	9.4	
	6	HA6	40		79	3160	7.0	
Total+10%:							68.5	
							HA6:	24.8
							HA10:	25.1
							HA12:	44.7
							Total:	94.6



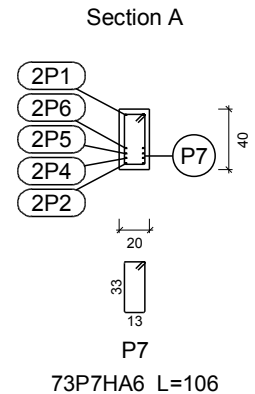
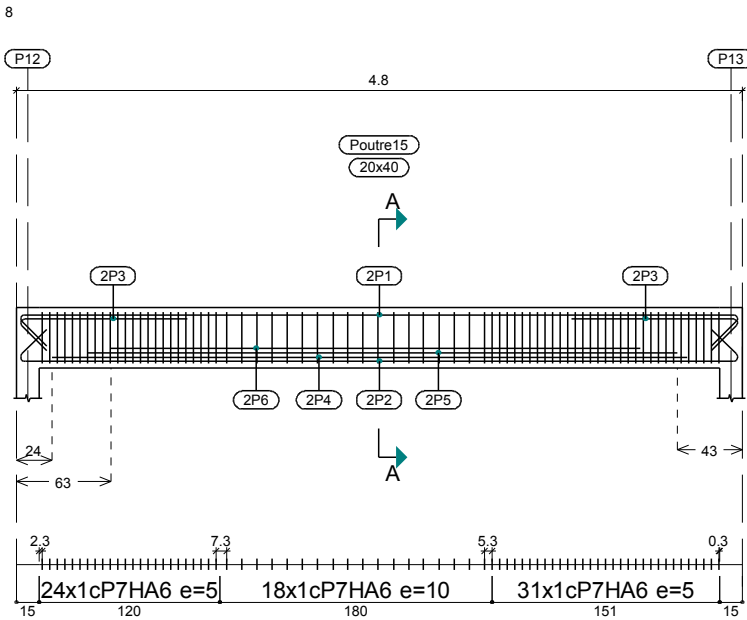
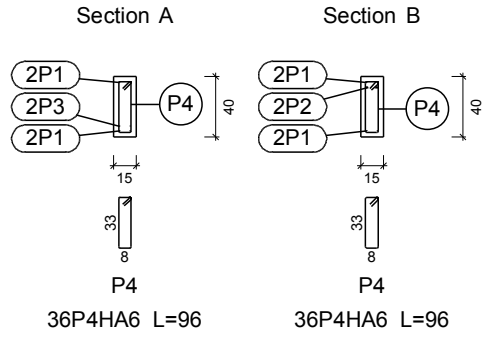
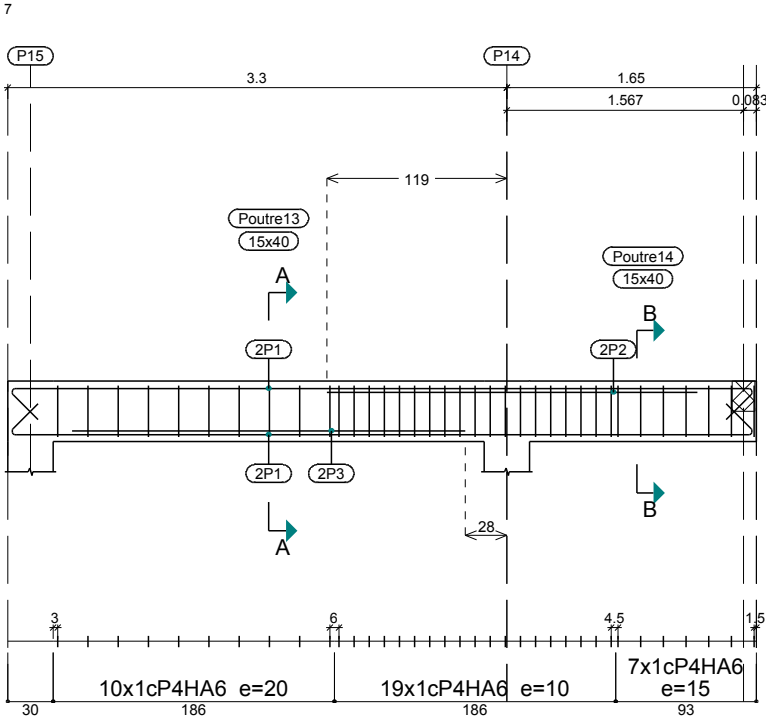
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
5	1	HA10	4		539	2156	13.3
	2	HA12	2		245	490	4.4
	3	HA10	2		245	490	3.0
	4	HA6	36		96	3456	7.7
Total+10%:							31.2
6	1	HA10	2		499	998	6.2
	2	HA12	2		524	1048	9.3
	3	HA12	2		425	850	7.5
	4	HA12	2		300	600	5.3
	5	HA6	45		106	4770	10.6
Total+10%:							42.8
							HA6: 20.1
							HA10: 24.7
							HA12: 29.2
							Total: 74.0



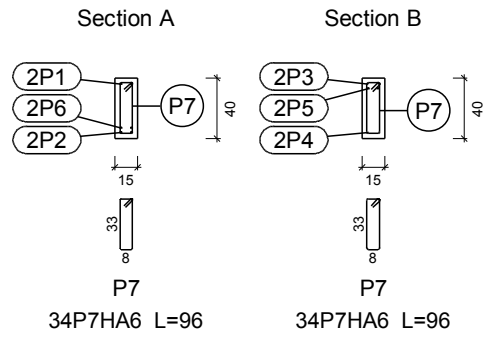
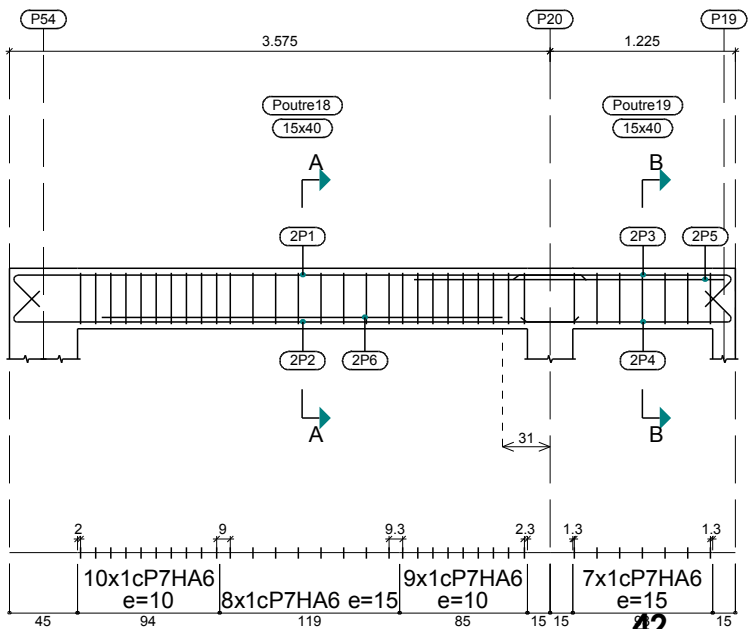
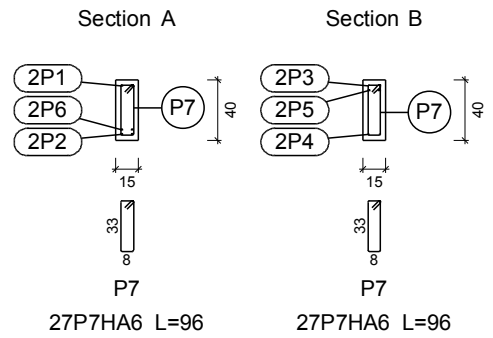
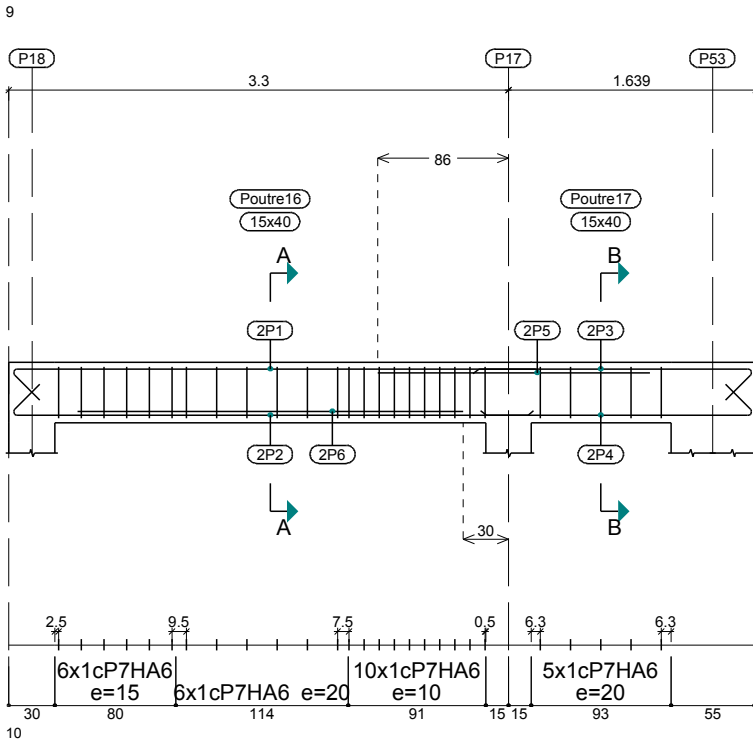
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
7	1	HA10	4		539	2156	13.3	
	2	HA12	2		245	490	4.4	
	3	HA10	2		260	520	3.2	
	4	HA6	36		96	3456	7.7	
Total+10%:							31.5	
8	1	HA10	2		524	1048	6.5	
	2	HA12	2		524	1048	9.3	
	3	HA10	4		135	540	3.3	
	4	HA12	2		420	840	7.5	
	5	HA12	2		390	780	6.9	
	6	HA12	2		350	700	6.2	
	7	HA6	73		106	7738	17.2	
Total+10%:							62.6	
							HA6:	27.4
							HA10:	29.0
							HA12:	37.7
							Total:	94.1



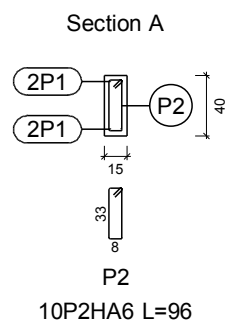
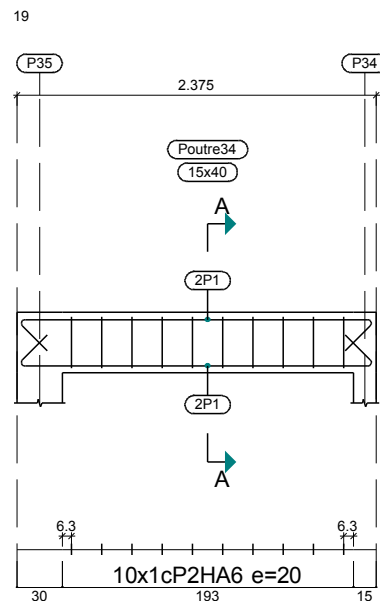
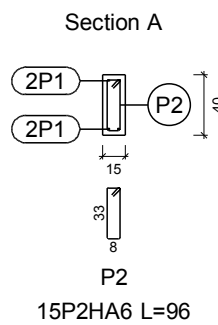
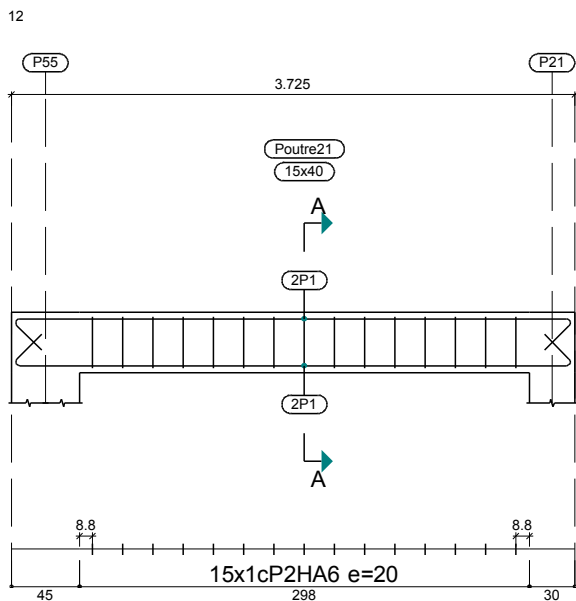
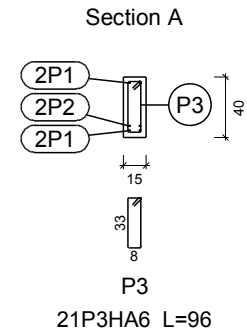
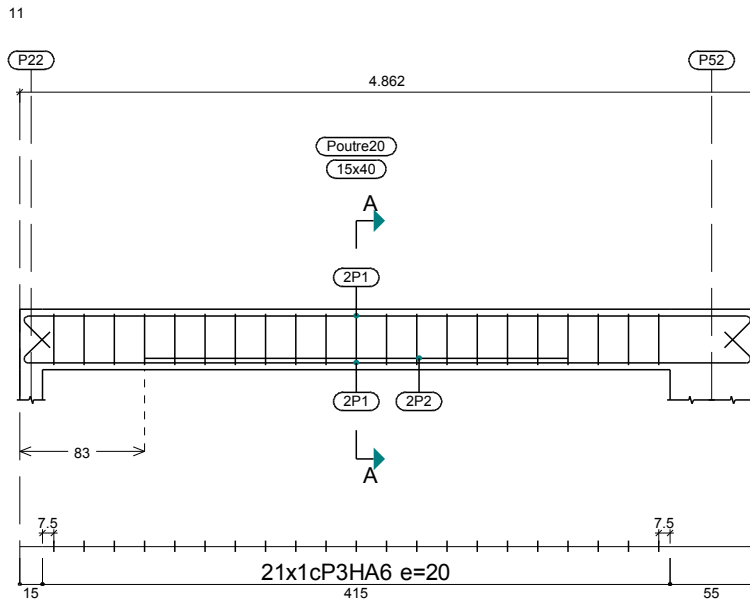
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
9	1	HA10	2		370	740	4.6
	2	HA10	2		365	730	4.5
	3	HA10	2		205	410	2.5
	4	HA10	2		200	400	2.5
	5	HA12	2		180	360	3.2
	6	HA10	2		255	510	3.1
	7	HA6	27		96	2592	5.8
Total+10%:							28.8
10	1	HA10	2		400	800	4.9
	2	HA10	2		395	790	4.9
	3	HA10	2		165	330	2.0
	4	HA10	2		160	320	2.0
	5	HA12	2		205	410	3.6
	6	HA10	2		265	530	3.3
	7	HA6	34		96	3264	7.2
Total+10%:							30.7
HA6:							14.3
HA10:							37.7
HA12:							7.5
Total:							59.5



Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

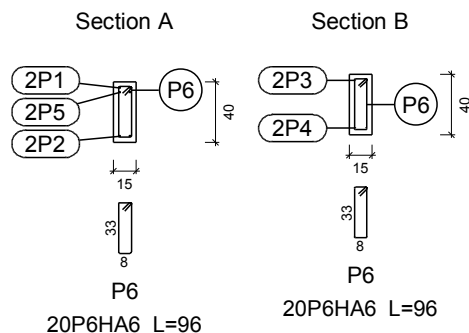
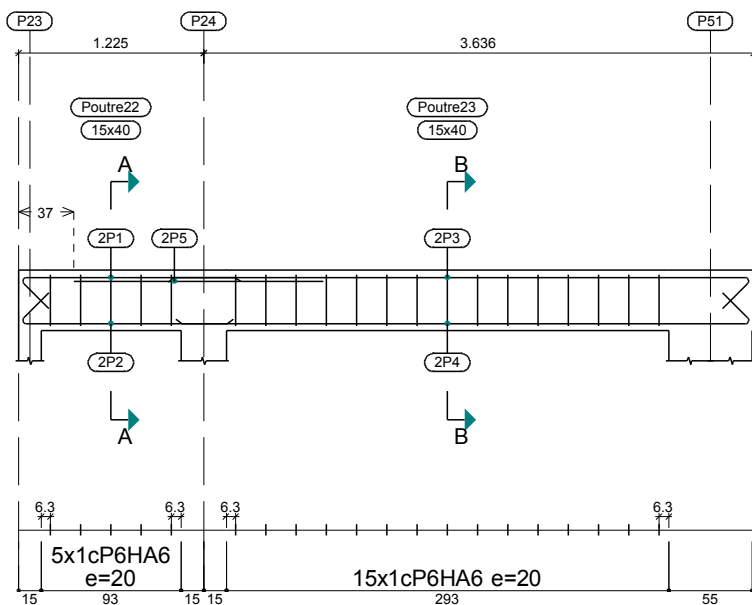
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
11	1	HA10	4		530	2120	13.1
	2	HA10	2		280	560	3.5
	3	HA6	21		96	2016	4.5
Total+10%:							23.2
12	1	HA10	4		417	1668	10.3
	2	HA6	15		96	1440	3.2
Total+10%:							14.9
19	1	HA10	4		282	1128	7.0
	2	HA6	10		96	960	2.1
Total+10%:							10.0
							HA6: 10.8
							HA10: 37.3
							Total: 48.1



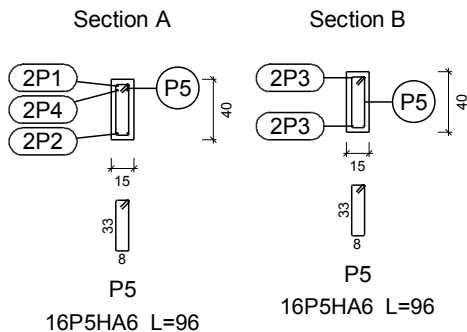
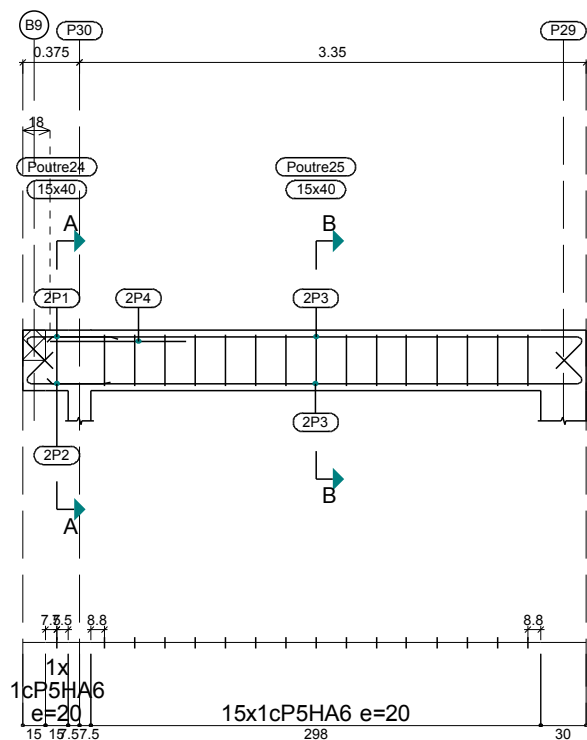
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
13	1	HA10	2		165	330	2.0
	2	HA10	2		160	320	2.0
	3	HA10	2		405	810	5.0
	4	HA10	2		400	800	4.9
	5	HA10	2		165	330	2.0
	6	HA6	20		96	1920	4.3
Total+10%:							22.2
14	1	HA10	2		80	160	1.0
	2	HA10	2		75	150	0.9
	3	HA10	4		375	1500	9.2
	4	HA10	2		90	180	1.1
	5	HA6	16		96	1536	3.4
Total+10%:							17.2
							HA6: 8.5
							HA10: 30.9
							Total: 39.4

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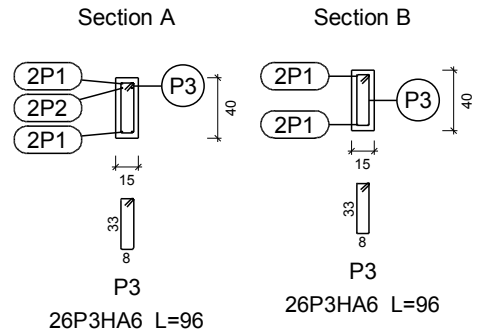
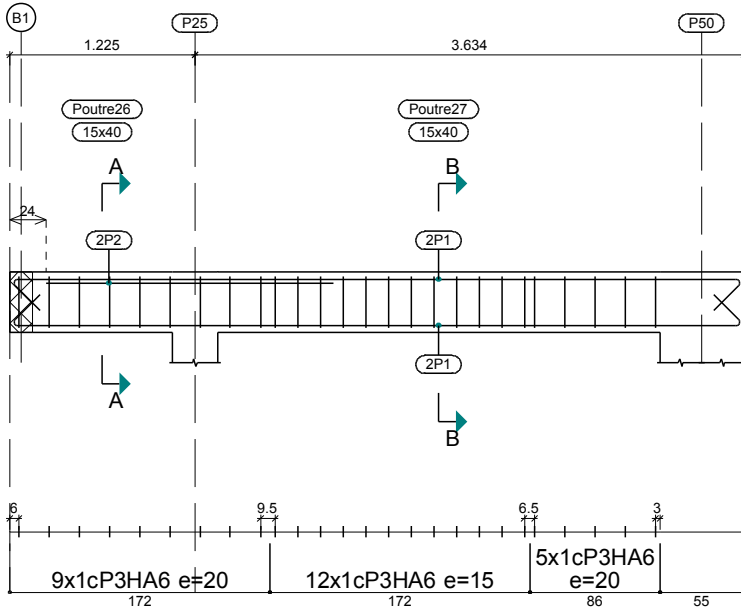
14



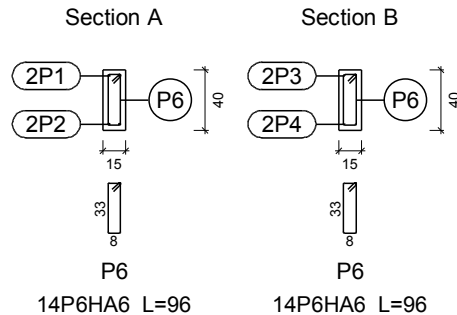
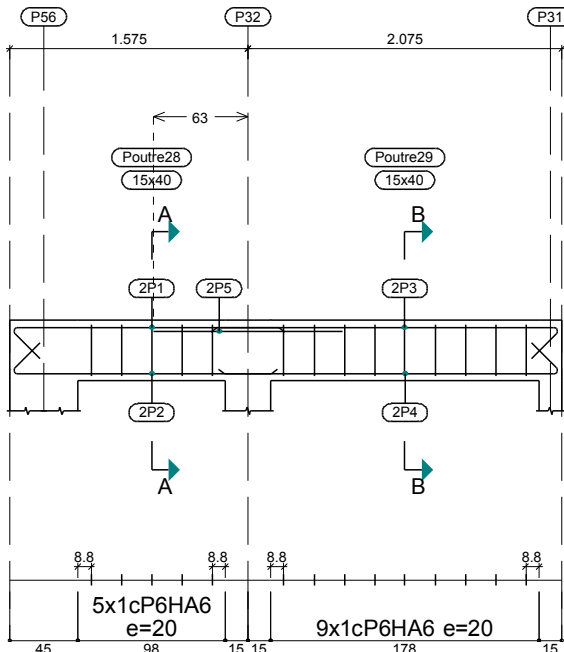
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
15	1	HA10	4		530	2120	13.1	
	2	HA10	2		190	380	2.3	
	3	HA6	26		96	2496	5.5	
Total+10%:							23.0	
16	1	HA10	2		200	400	2.5	
	2	HA10	2		195	390	2.4	
	3	HA10	2		250	500	3.1	
	4	HA10	2		245	490	3.0	
	5	HA10	2		125	250	1.5	
	6	HA6	14		96	1344	3.0	
Total+10%:							17.1	
							HA6: 9.4	
							HA10: 30.7	
							Total: 40.1	

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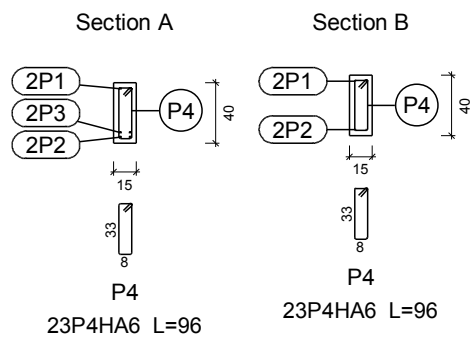
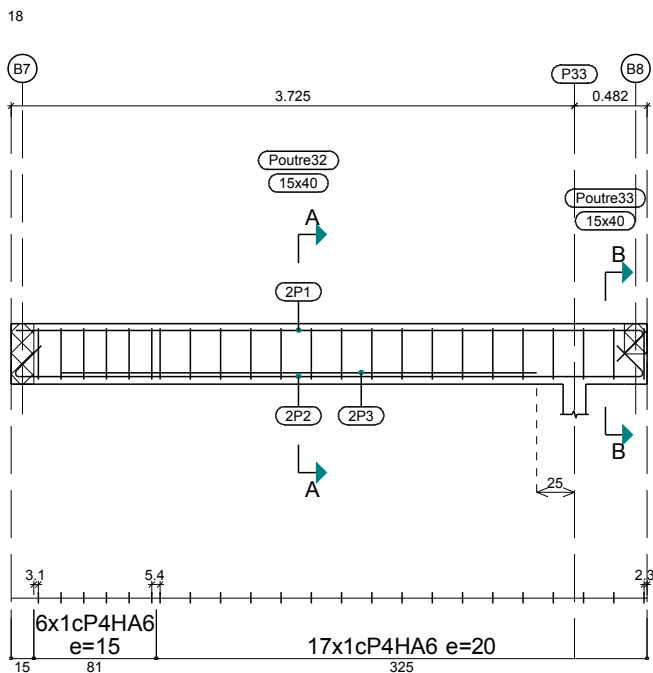
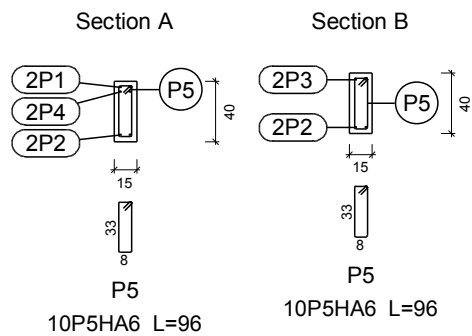
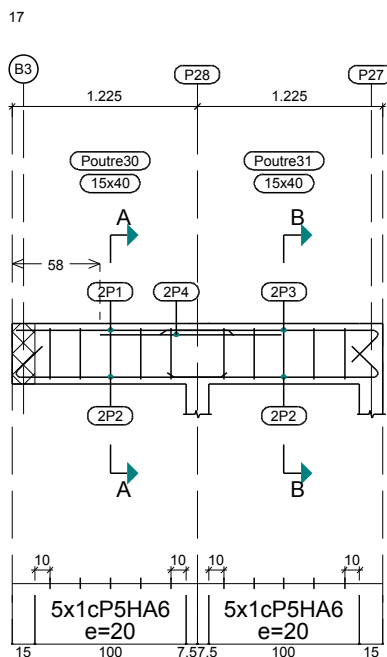


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Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

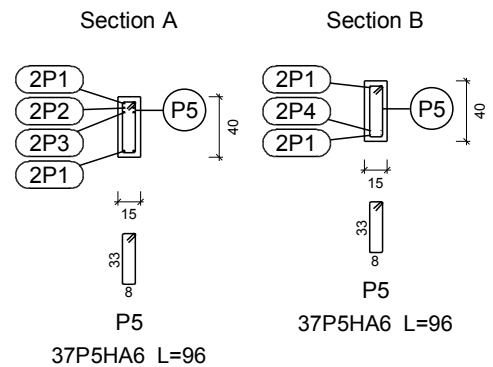
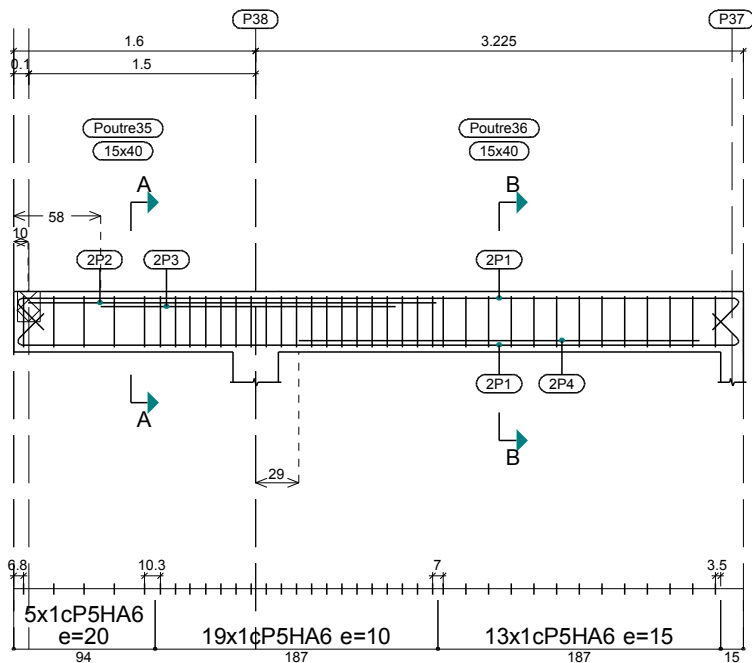
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
17	1	HA10	2		140	280	1.7
	2	HA10	4		160	640	3.9
	3	HA10	2		165	330	2.0
	4	HA10	2		120	240	1.5
	5	HA6	10		96	960	2.1
Total+10%:							12.3
18	1	HA10	2		440	880	5.4
	2	HA10	2		465	930	5.7
	3	HA10	2		315	630	3.9
	4	HA6	23		96	2208	4.9
Total+10%:							21.9
							HA6: 7.7
							HA10: 26.5
							Total: 34.2



Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
20	1	HA10	4		527	2108	13.0	
	2	HA10	2		270	540	3.3	
	3	HA10	2		195	390	2.4	
	4	HA10	2		265	530	3.3	
	5	HA6	37		96	3552	7.9	
Total+10%:							32.9	
							HA6:	8.7
							HA10:	24.2
							Total:	32.9

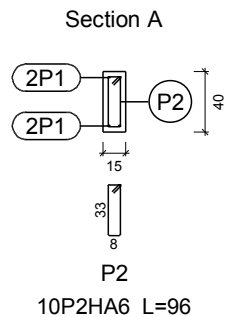
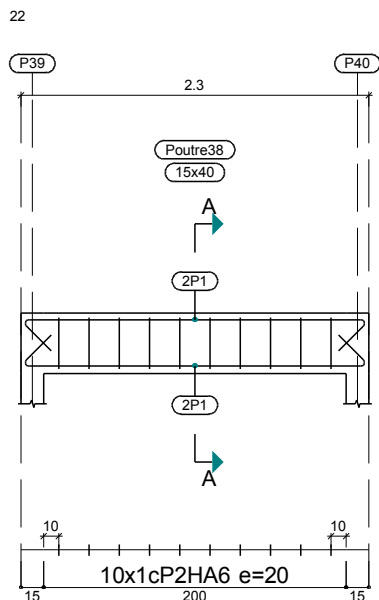
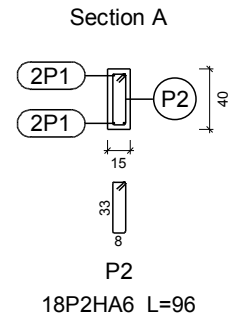
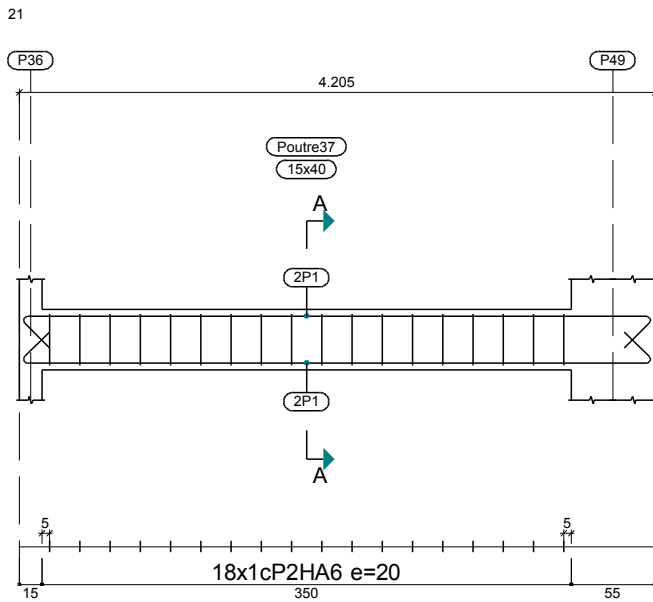
Plancher 1
Plan de ferrailage des poutres
Béton: C20/25
Acier des barres: Fe E400
Acier des cadres: Fe E400
Échelle portiques 1:50
Échelle sections 1:50
Échelle réservation 1:50

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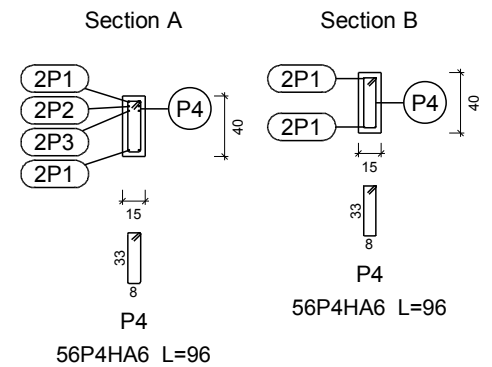
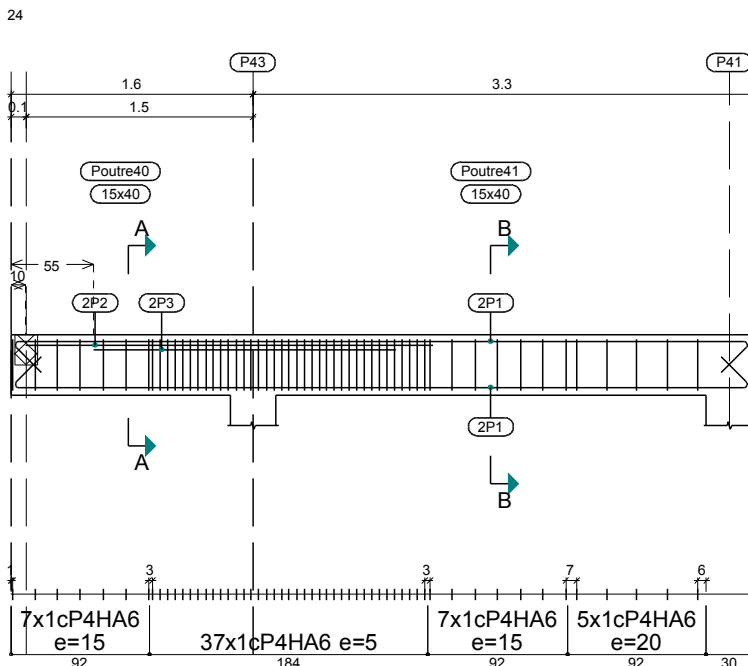
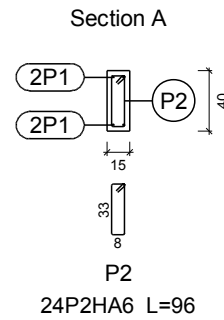
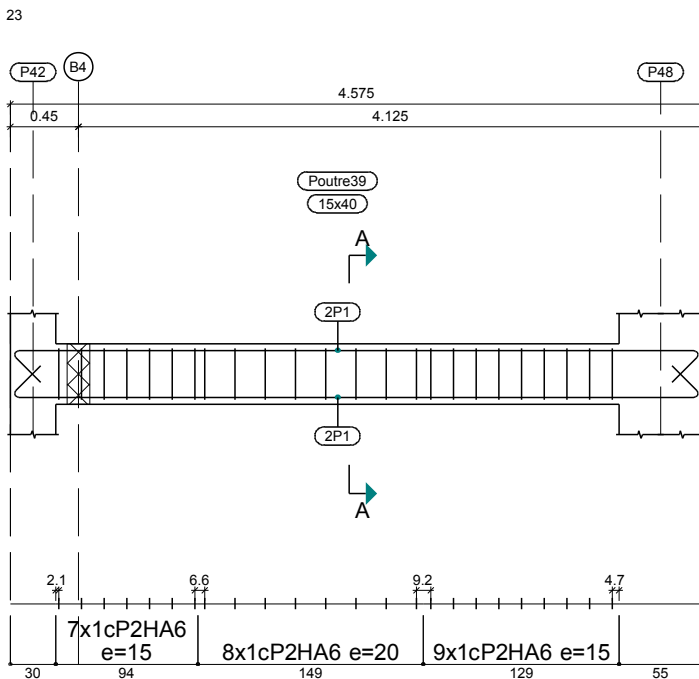
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
21	1	HA10	4		465	1860	11.5	
	2	HA6	18		96	1728	3.8	
Total+10%:							16.8	
22	1	HA10	4		274	1096	6.8	
	2	HA6	10		96	960	2.1	
Total+10%:							9.8	
							HA6:	6.4
							HA10:	20.2
							Total:	26.6



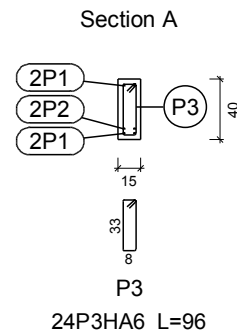
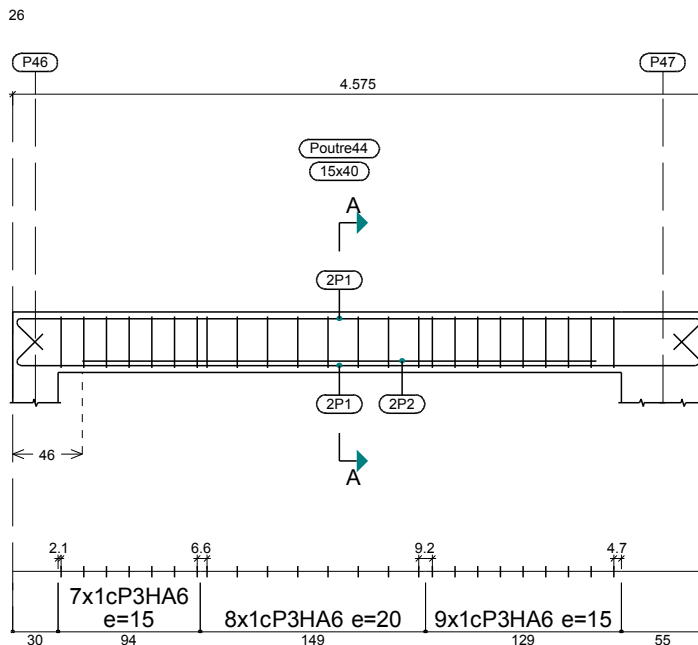
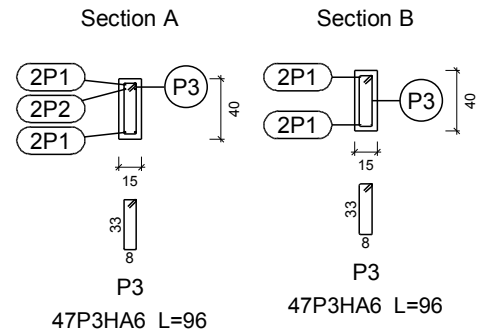
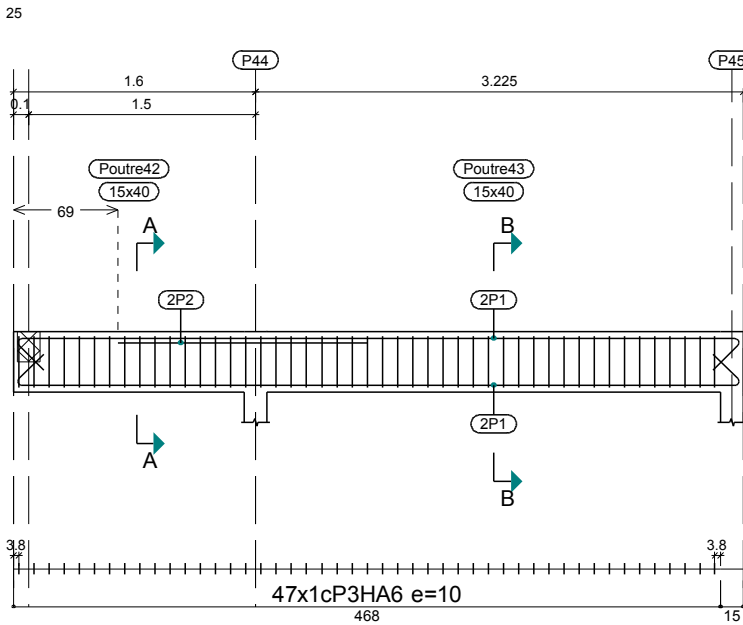
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
23	1	HA10	4		502	2008	12.4
	2	HA6	24		96	2304	5.1
	Total+10%:						19.3
24	1	HA10	4		534	2136	13.2
	2	HA10	2		270	540	3.3
	3	HA10	2		200	400	2.5
	4	HA6	56		96	5376	11.9
	Total+10%:						34.0
						HA6:	18.8
						HA10:	34.5
						Total:	53.3



Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

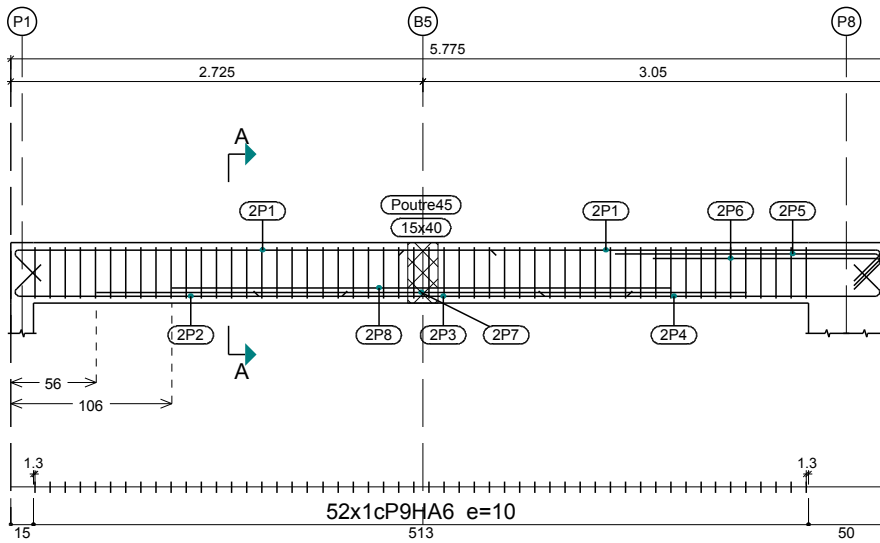
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
25	1	HA10	4		527	2108	13.0
	2	HA10	2		165	330	2.0
	3	HA6	47		96	4512	10.0
	Total+10%:						
26	1	HA10	4		502	2008	12.4
	2	HA10	2		340	680	4.2
	3	HA6	24		96	2304	5.1
	Total+10%:						
							HA6: 16.6
							HA10: 34.8
							Total: 51.4



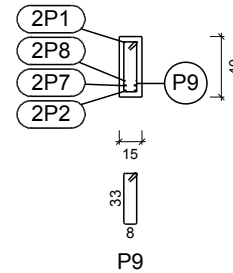
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
27	1	HA10	4		340	1360	8.4
	2	HA12	2		245	490	4.4
	3	HA12	2		245	490	4.4
	4	HA12	2		250	500	4.4
	5	HA10	2		200	400	2.5
	6	HA10	2		175	350	2.2
	7	HA12	2		430	860	7.6
	8	HA10	2		330	660	4.1
	9	HA6	52		96	4992	11.1
Total+10%:							54.0
28	1	HA10	4		337	1348	8.3
	2	HA6	12		96	1152	2.6
	Total+10%:						
							HA6: 15.1
							HA10: 28.0
							HA12: 22.9
							Total: 66.0

27

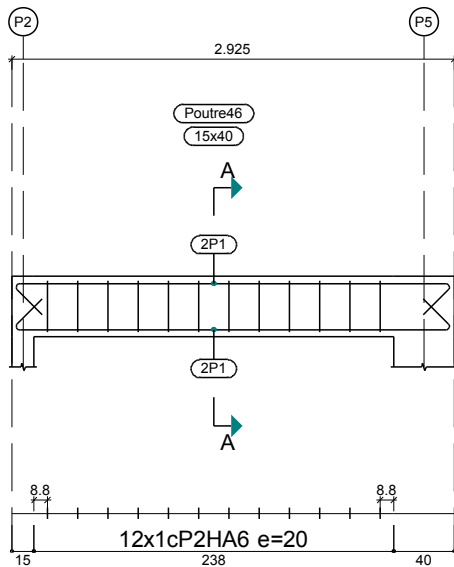


Section A

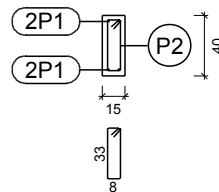


52P9HA6 L=96

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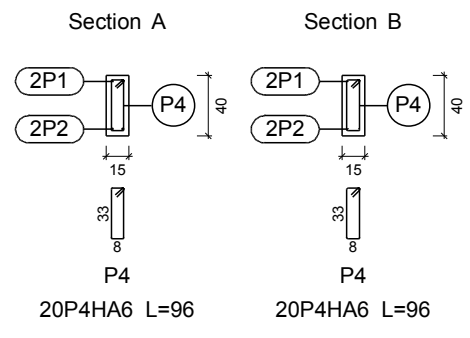
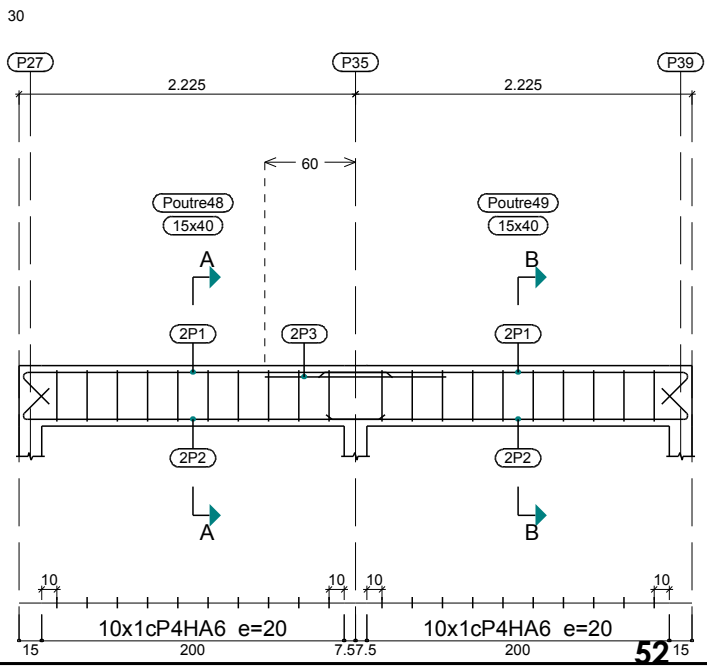
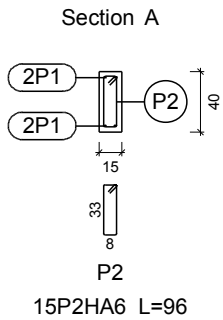
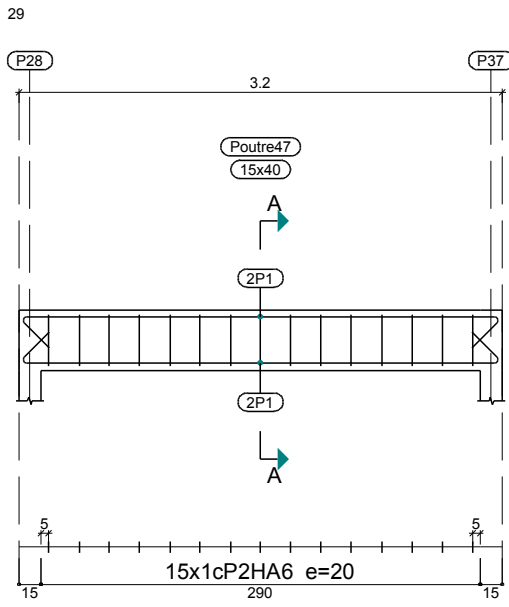
Section A



12P2HA6 L=96

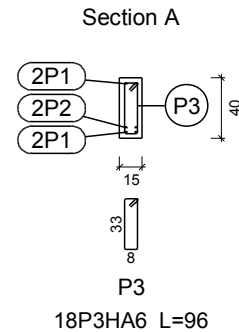
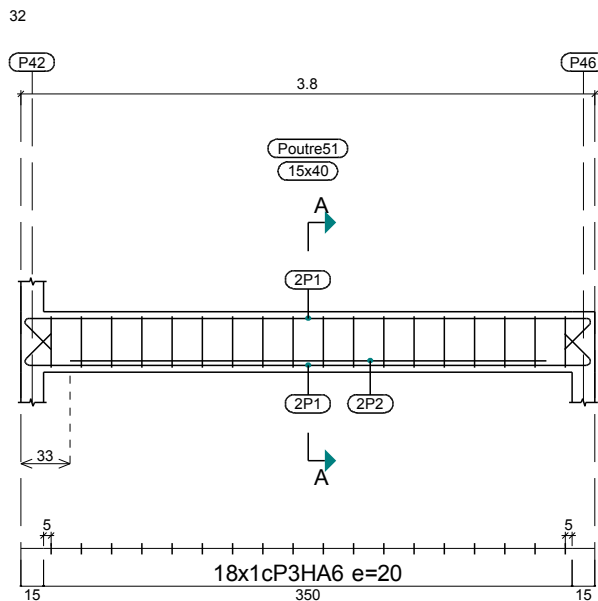
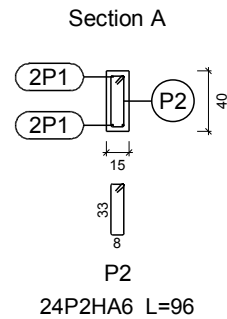
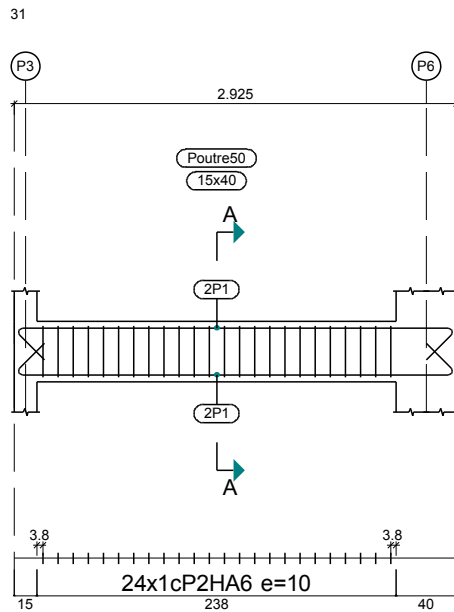
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
29	1	HA10	4		364	1456	9.0
	2	HA6	15		96	1440	3.2
	Total+10%:						
30	1	HA10	4		265	1060	6.5
	2	HA10	4		260	1040	6.4
	3	HA10	2		120	240	1.5
	4	HA6	20		96	1920	4.3
	Total+10%:						
						HA6:	8.3
						HA10:	25.7
						Total:	34.0

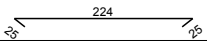

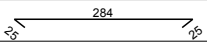



Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

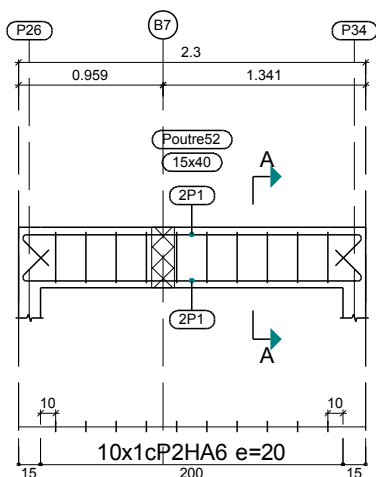
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
31	1	HA10	4		337	1348	8.3
	2	HA6	24		96	2304	5.1
	Total+10%:						14.7
32	1	HA10	4		424	1696	10.5
	2	HA10	2		315	630	3.9
	3	HA6	18		96	1728	3.8
	Total+10%:						20.0
						HA6:	9.8
						HA10:	24.9
						Total:	34.7



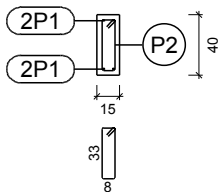
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
33	1	HA10	4		274	1096	6.8
	2	HA6	10		96	960	2.1
	Total+10%:						9.8
34	1	HA10	4		334	1336	8.2
	2	HA6	12		96	1152	2.6
	Total+10%:						11.9
						HA6:	5.2
						HA10:	16.5
						Total:	21.7

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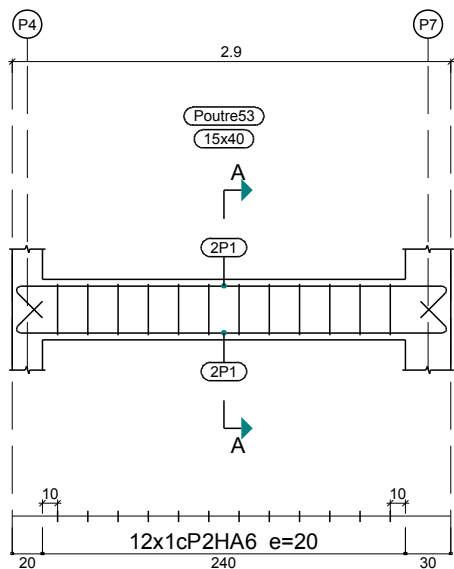
Section A



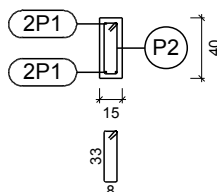
P2

10P2HA6 L=96

34



Section A

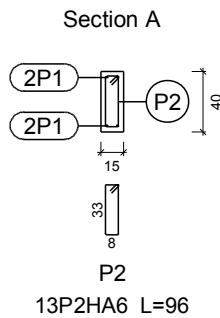
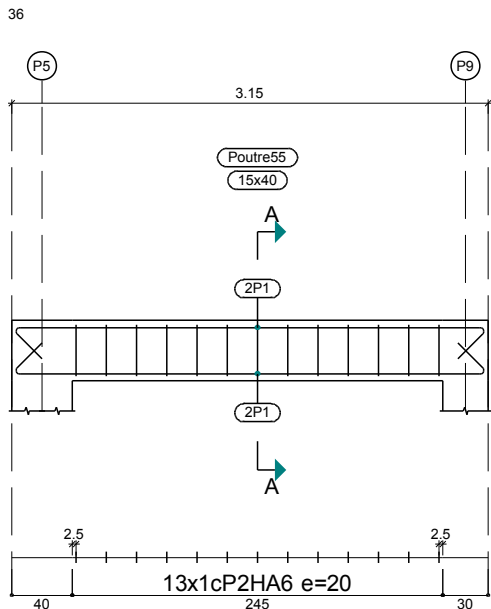
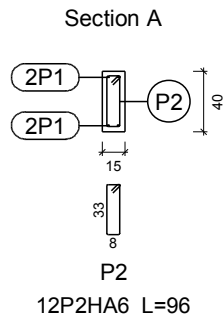
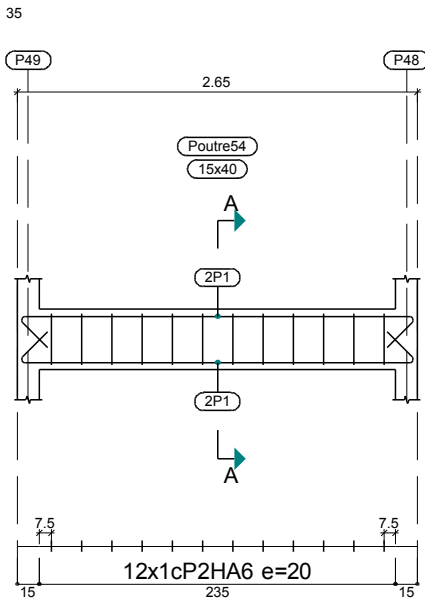


P2

12P2HA6 L=96

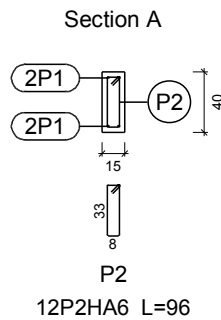
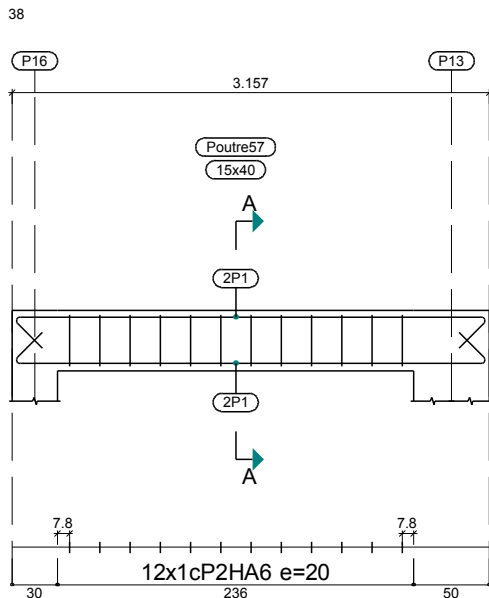
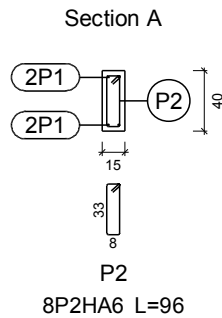
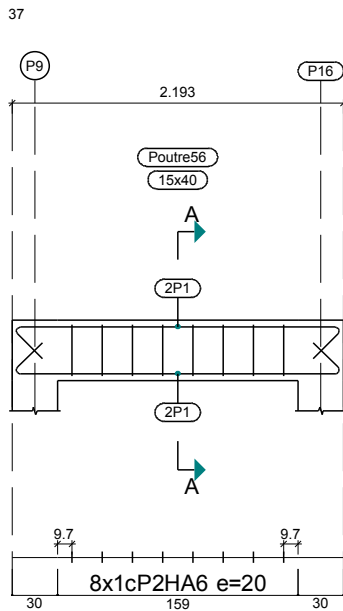
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
35	1	HA10	4		309	1236	7.6
	2	HA6	12		96	1152	2.6
	Total+10%:						
36	1	HA10	4		359	1436	8.9
	2	HA6	13		96	1248	2.8
	Total+10%:						
							HA6: 5.9
							HA10: 18.2
							Total: 24.1



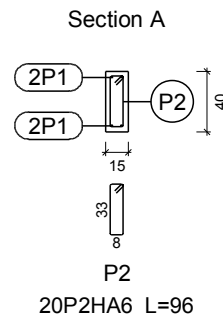
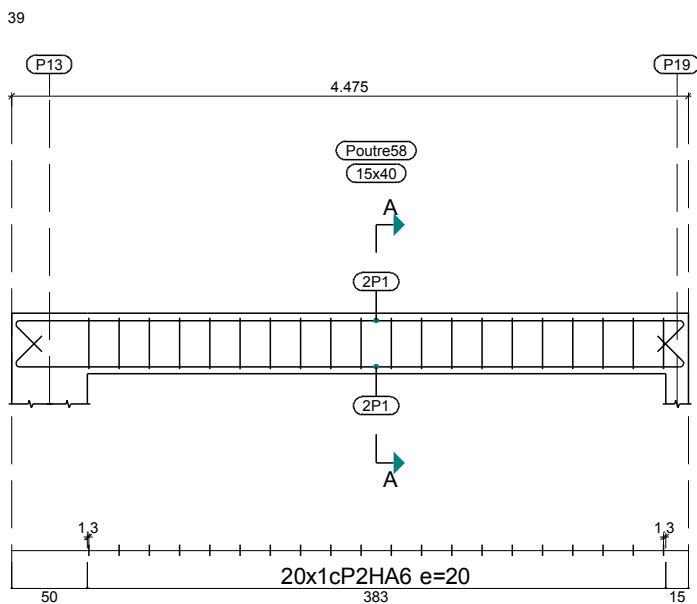
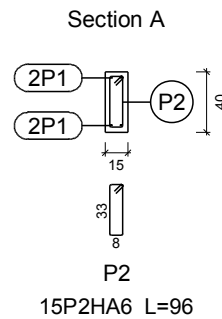
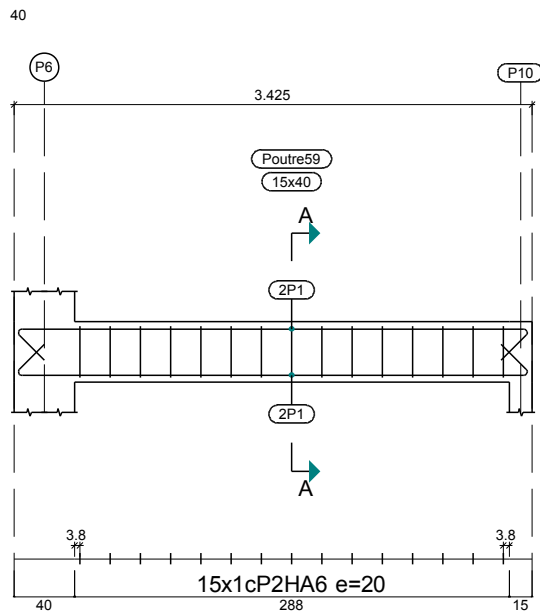
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
37	1	HA10	4		263	1052	6.5	
	2	HA6	8		96	768	1.7	
	Total+10%:							9.0
38	1	HA10	4		360	1440	8.9	
	2	HA6	12		96	1152	2.6	
	Total+10%:							12.7
							HA6:	4.7
							HA10:	17.0
							Total:	21.7



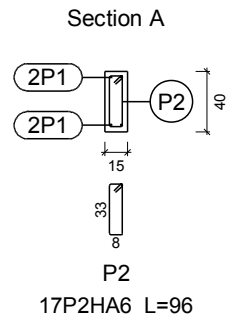
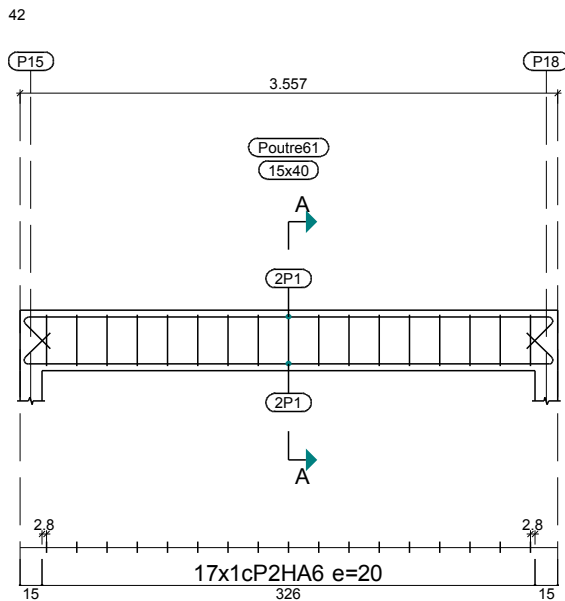
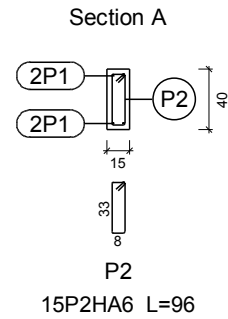
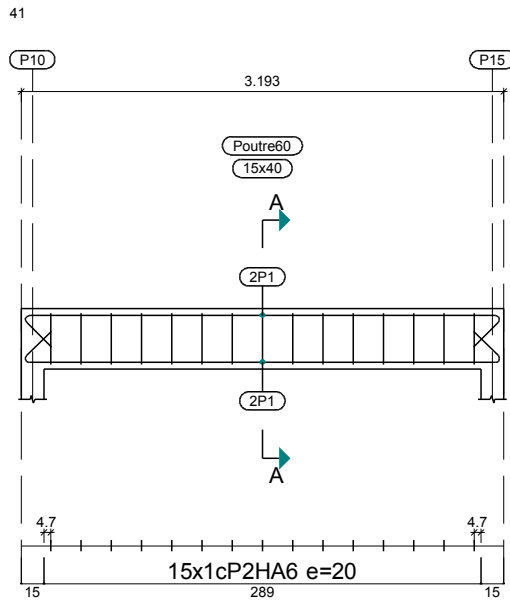
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
40	1	HA10	4		387	1548	9.5
	2	HA6	15		96	1440	3.2
	Total+10%:						14.0
39	1	HA10	4		492	1968	12.1
	2	HA6	20		96	1920	4.3
	Total+10%:						18.0
						HA6:	8.2
						HA10:	23.8
						Total:	32.0



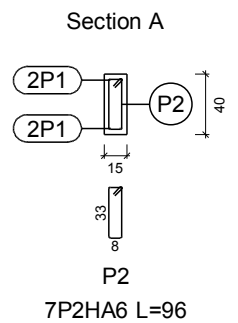
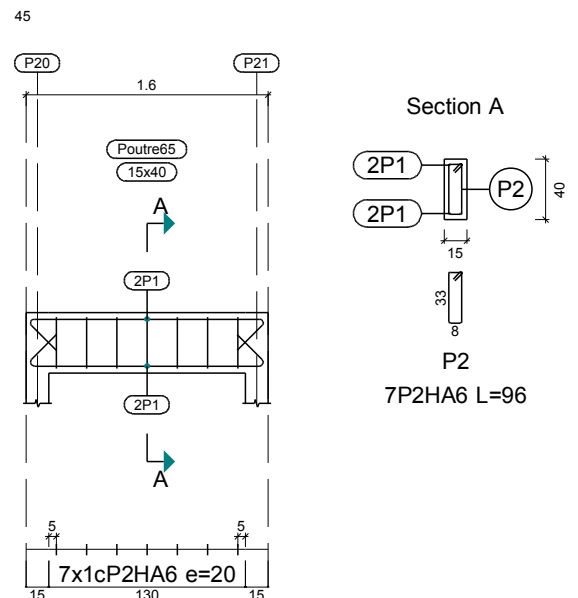
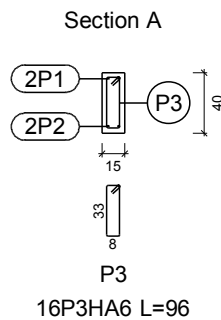
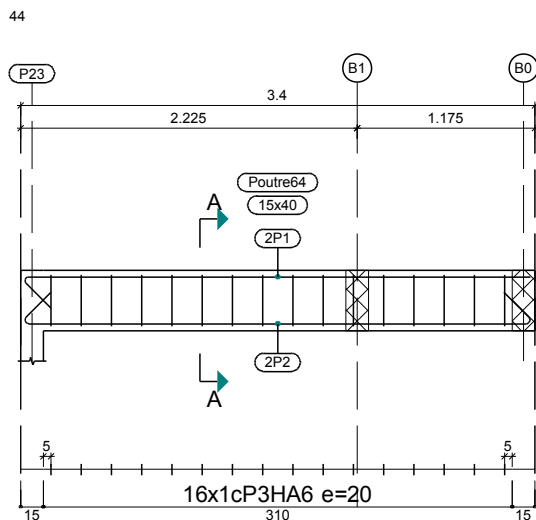
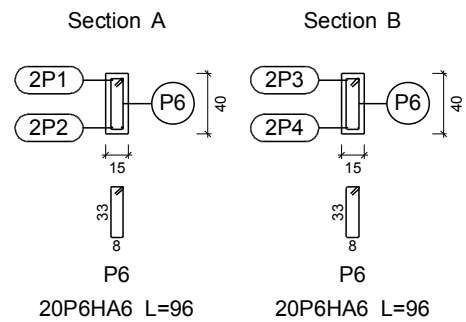
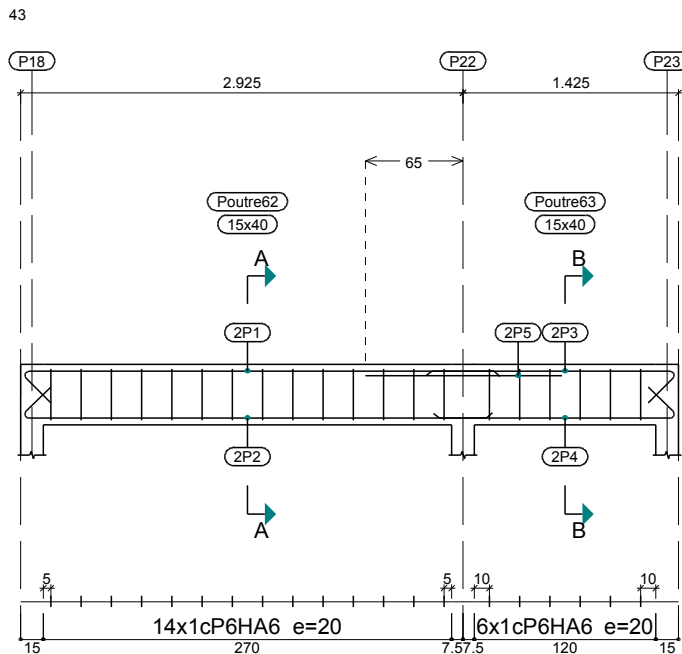
Plancher 1
Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
41	1	HA10	4		363	1452	9.0	
	2	HA6	15		96	1440	3.2	
	Total+10%:							13.4
42	1	HA10	4		400	1600	9.9	
	2	HA6	17		96	1632	3.6	
	Total+10%:							14.9
							HA6:	7.5
							HA10:	20.8
							Total:	28.3



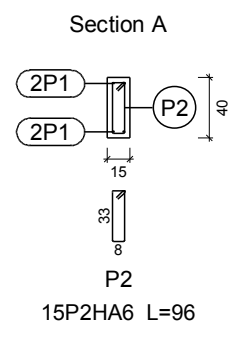
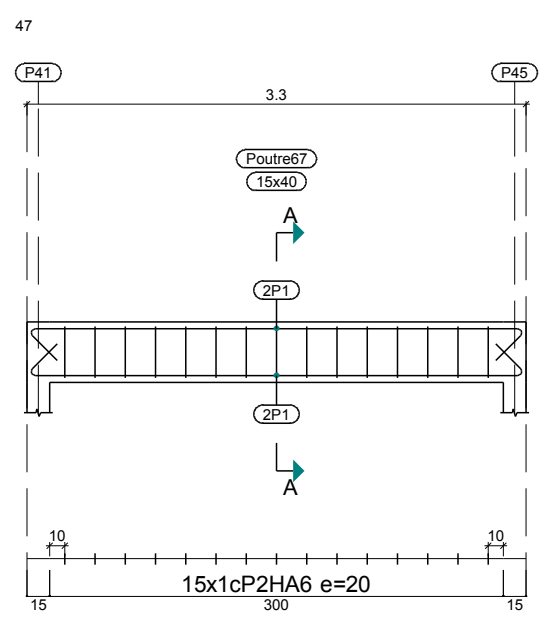
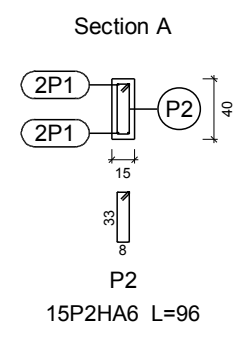
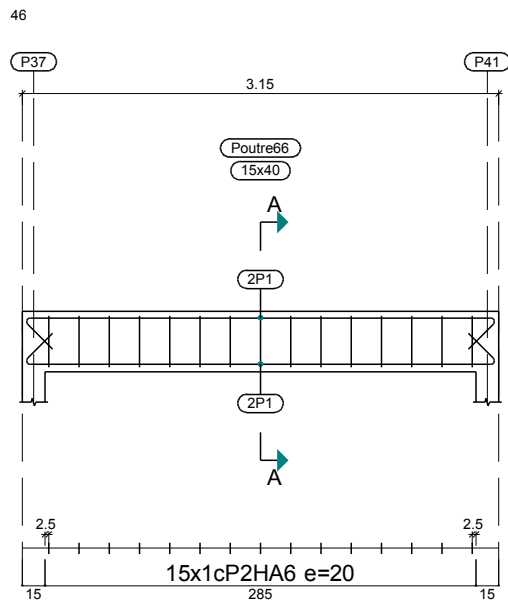
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
43	1	HA10	2		335	670	4.1
	2	HA10	2		330	660	4.1
	3	HA10	2		185	370	2.3
	4	HA10	2		180	360	2.2
	5	HA10	2		130	260	1.6
	6	HA6	20		96	1920	4.3
Total+10%:							20.5
44	1	HA10	2		359	718	4.4
	2	HA10	2		384	768	4.7
	3	HA6	16		96	1536	3.4
Total+10%:							13.8
45	1	HA10	4		204	816	5.0
	2	HA6	7		96	672	1.5
Total+10%:							7.2
							HA6: 10.3
							HA10: 31.2
							Total: 41.5



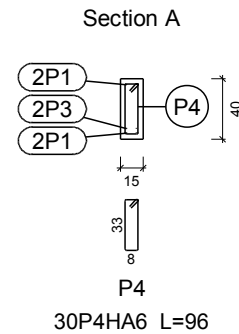
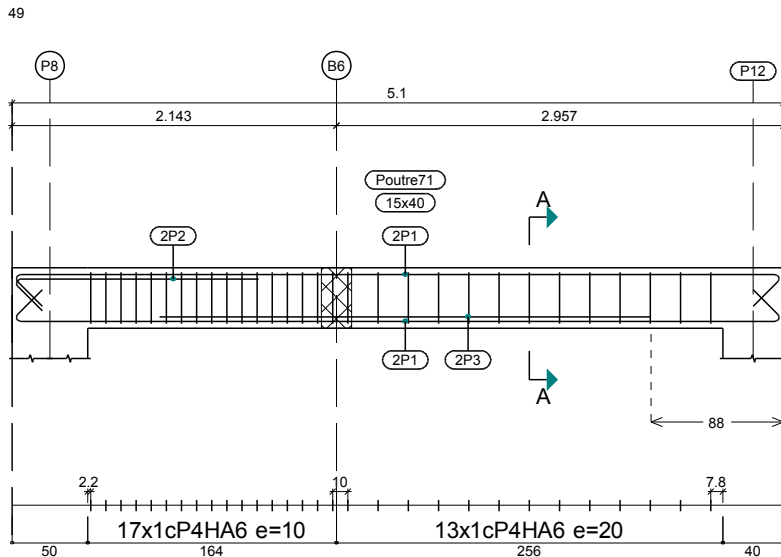
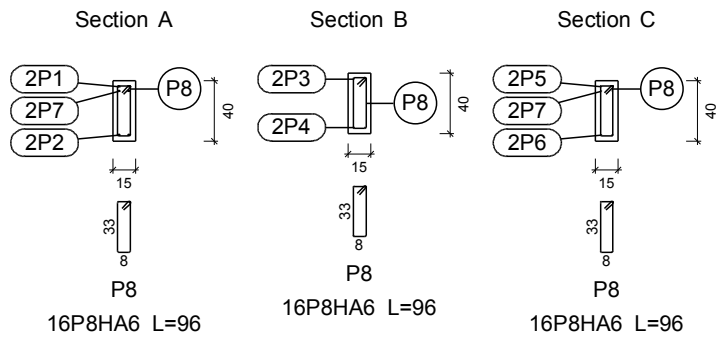
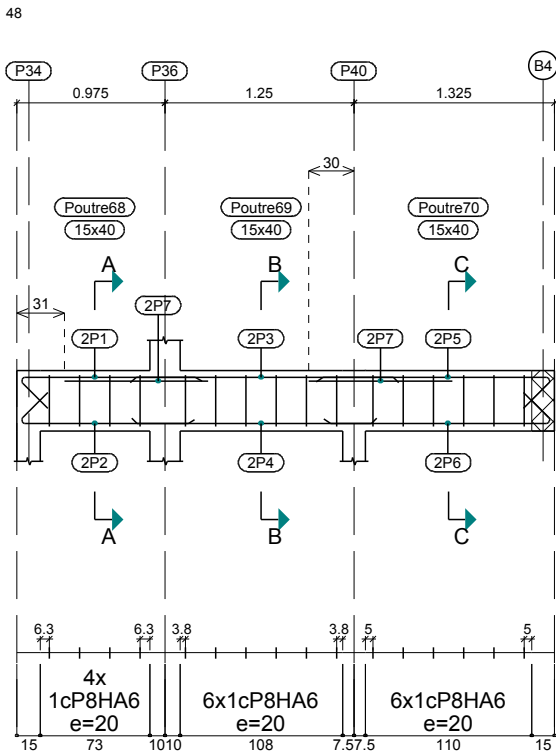
Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
46	1	HA10	4		359	1436	8.9
	2	HA6	15		96	1440	3.2
	Total+10%:						
47	1	HA10	4		374	1496	9.2
	2	HA6	15		96	1440	3.2
	Total+10%:						
							HA6: 7.0
							HA10: 19.9
							Total: 26.9



Plancher 1
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

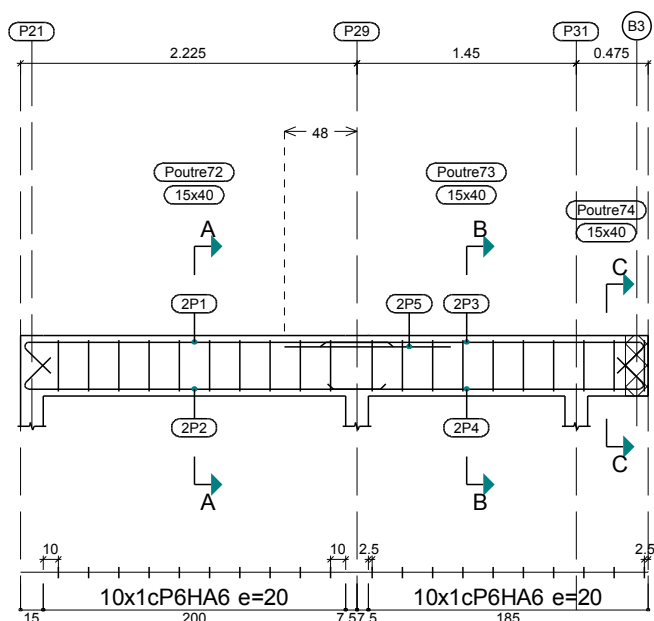
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
48	1	HA10	2		140	280	1.7
	2	HA10	2		135	270	1.7
	3	HA10	2		170	340	2.1
	4	HA10	2		155	310	1.9
	5	HA10	2		175	350	2.2
	6	HA10	2		170	340	2.1
	7	HA10	4		95	380	2.3
	8	HA6	16		96	1536	3.4
Total+10%:							19.1
49	1	HA10	4		554	2216	13.7
	2	HA12	2		185	370	3.3
	3	HA10	2		325	650	4.0
	4	HA6	30		96	2880	6.4
Total+10%:							30.1
							HA6: 10.7
							HA10: 34.9
							HA12: 3.6
							Total: 49.2



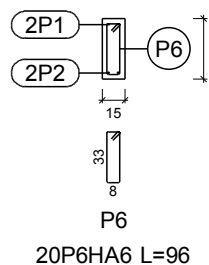
Plancher 1
Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
50	1	HA10	2		265	530	3.3
	2	HA10	2		260	520	3.2
	3	HA10	2		235	470	2.9
	4	HA10	2		230	460	2.8
	5	HA10	2		110	220	1.4
	6	HA6	20		96	1920	4.3
Total+10%:							19.7
51	1	HA10	4		274	1096	6.8
	2	HA6	10		96	960	2.1
	Total+10%:						
HA6:							7.0
HA10:							22.5
Total:							29.5

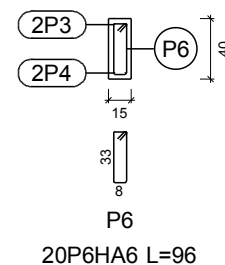
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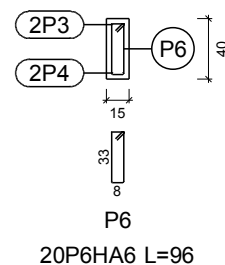
Section A



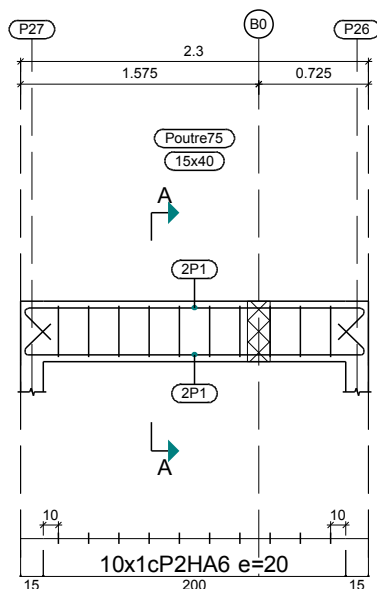
Section B



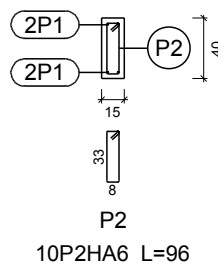
Section C



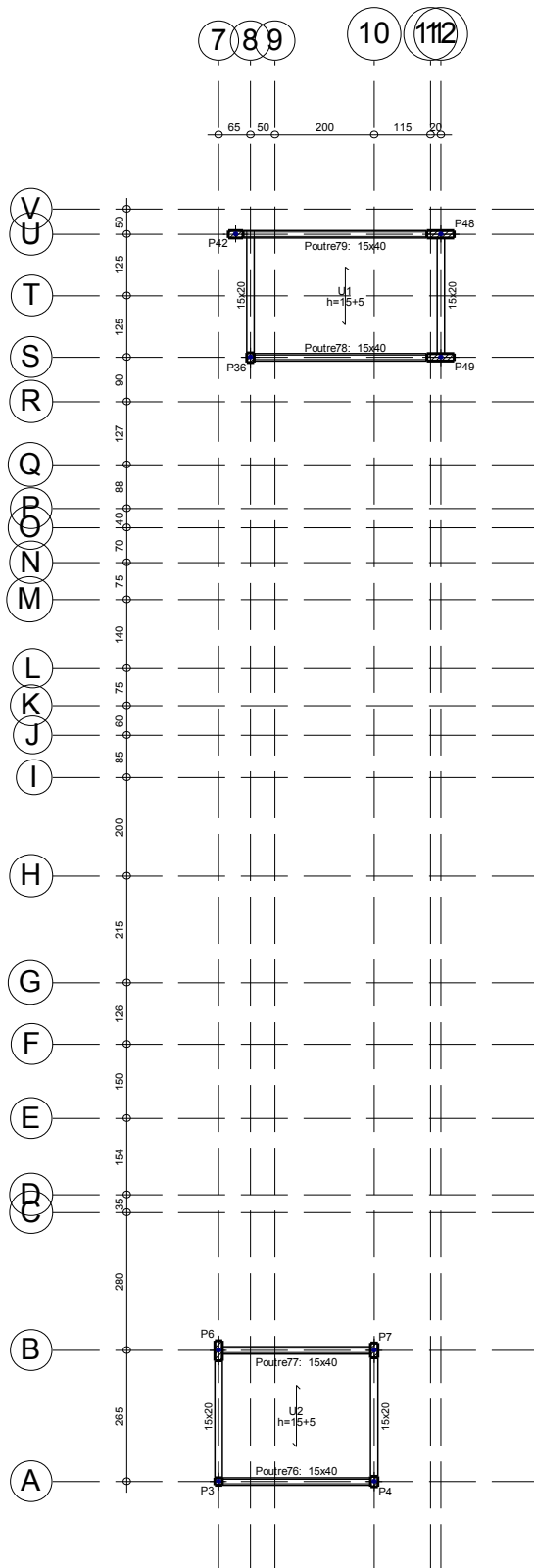
51



Section A



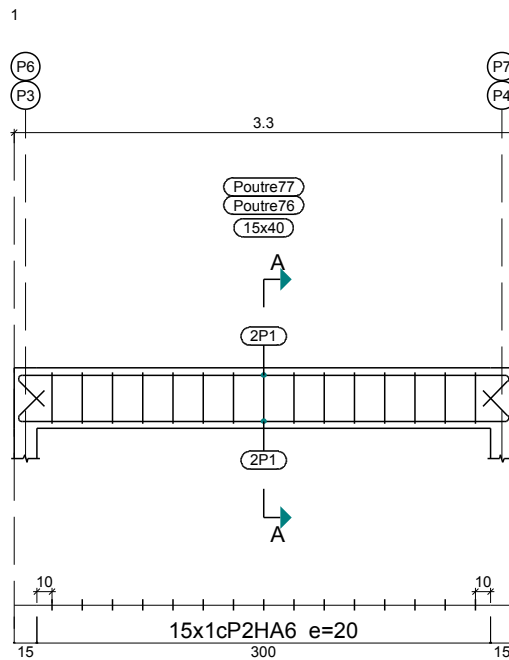
PLAN DE COFFRAGE DE LA TOITURE



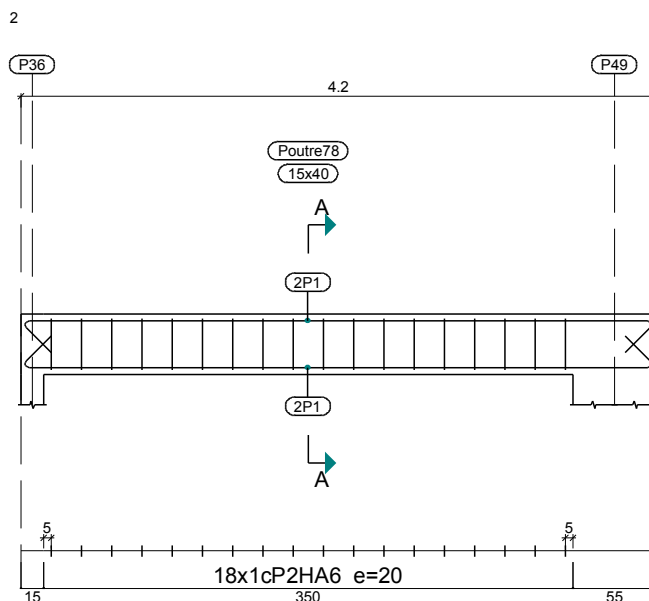
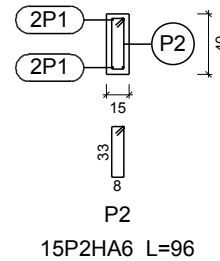
Toiture
Coffrage
Échelle: 1:150

Toiture
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

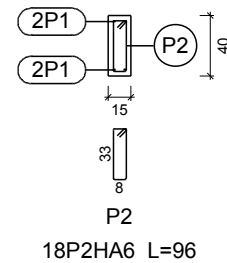
Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)
1	1	HA10	4		374	1496	9.2
	2	HA6	15		96	1440	3.2
	Total+10%: (x2):						13.6 27.2
2	1	HA10	4		464	1856	11.4
	2	HA6	18		96	1728	3.8
	Total+10%:						16.7
						HA6:	11.2
						HA10:	32.7
						Total:	43.9



Section A

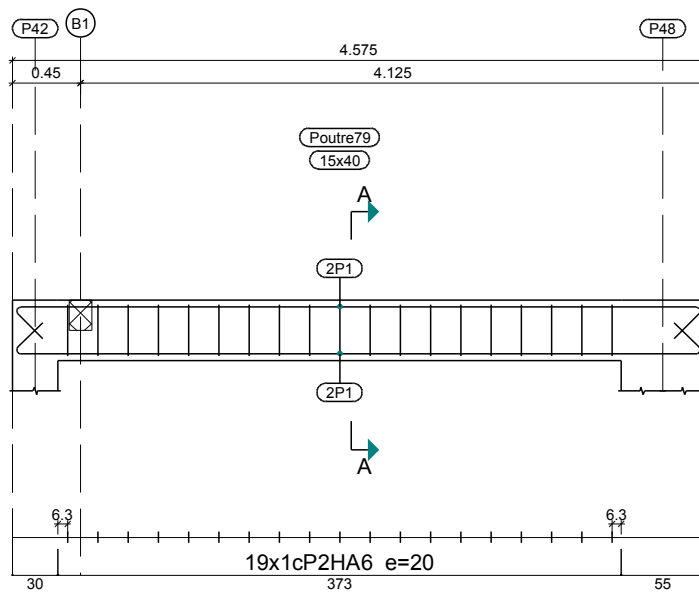


Section A

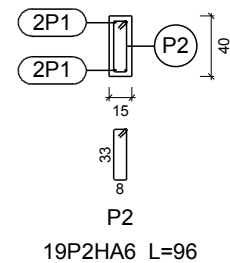


Élément	Pos.	Diam.	No.	Schéma (cm)	Long. (cm)	Total (cm)	Fe E400 (kg)	
3	1	HA10	4		502	2008	12.4	
	2	HA6	19		96	1824	4.0	
Total+10%:							18.0	
							HA6:	4.4
							HA10:	13.6
							Total:	18.0

3



Section A

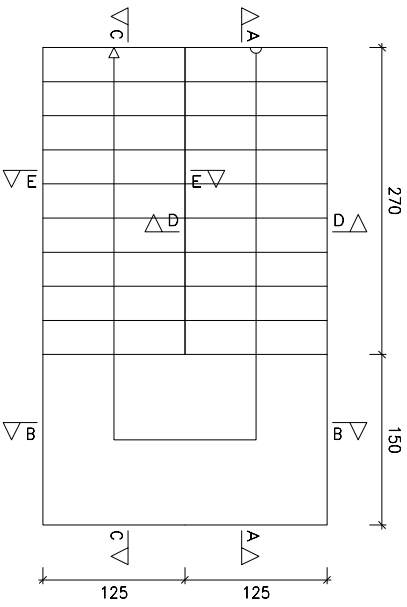


Toiture
 Plan de ferrailage des poutres
 Béton: C20/25
 Acier des barres: Fe E400
 Acier des cadres: Fe E400
 Échelle portiques 1:50
 Échelle sections 1:50
 Échelle réservation 1:50

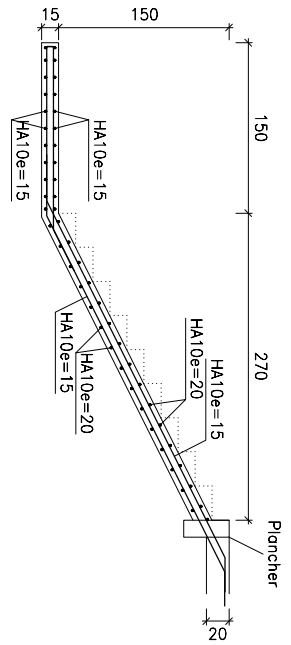
PLAN DES ESCALIERS

Escalier 1

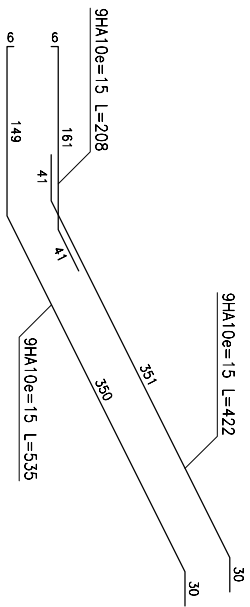
Tronçon 1	
Emmarchement	1,250 m
Épaisseur	0,15 m
Marche	0,300 m
Contremarche	0,150 m
Franchissement de dénivellé	3,00 m
Nb de marches	20
Niveau final	Plancher 1
Niveau initial	RDC
Poids propre	3,68 kN/m ²
Marches (Réalisé en brique)	1,05 kN/m ²
Revêtement	1,00 kN/m ²
Rampes	3,00 kN/m
Charge d'exploitation	2,50 kN/m ²
Béton	C20/25
Acier	Fe E400
Enc. géométrique	3,0 cm



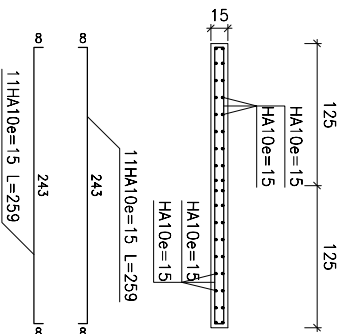
Section C-C



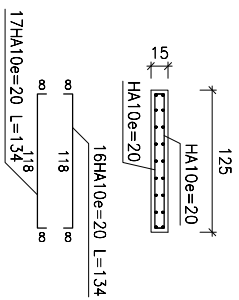
Section A-A



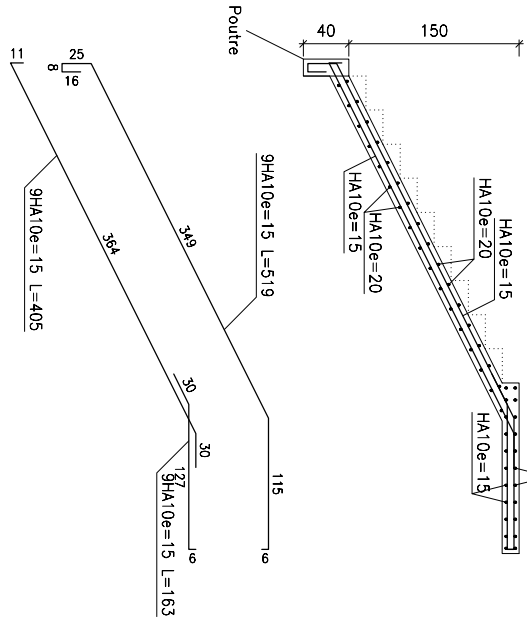
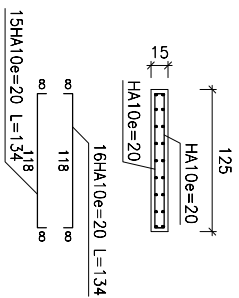
Section B-B



Section D-D



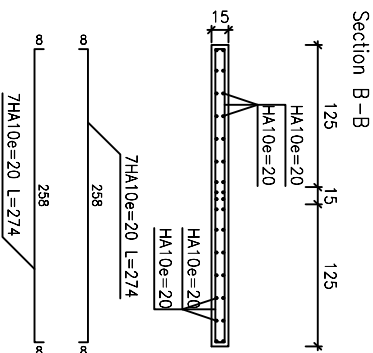
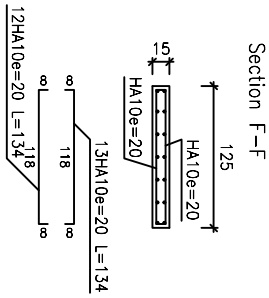
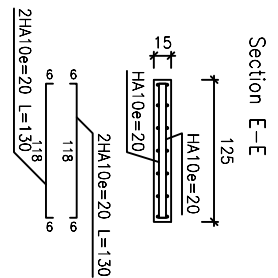
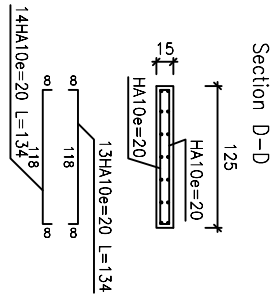
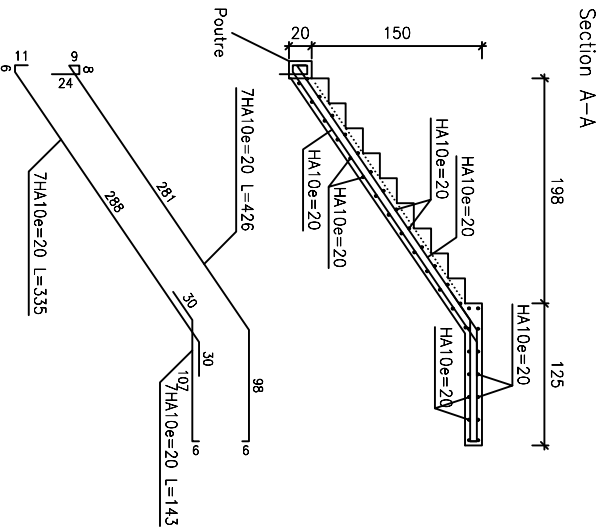
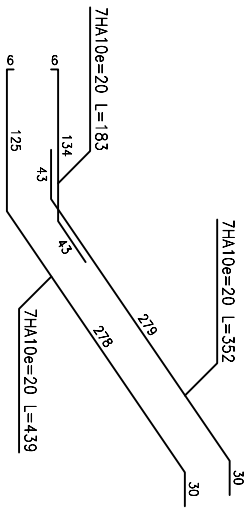
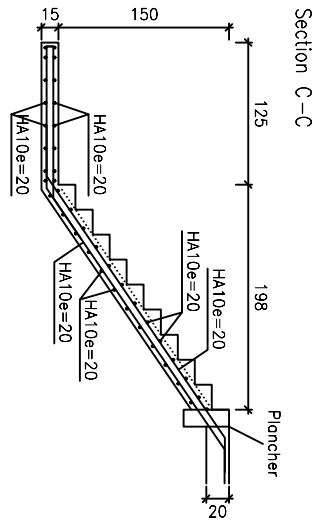
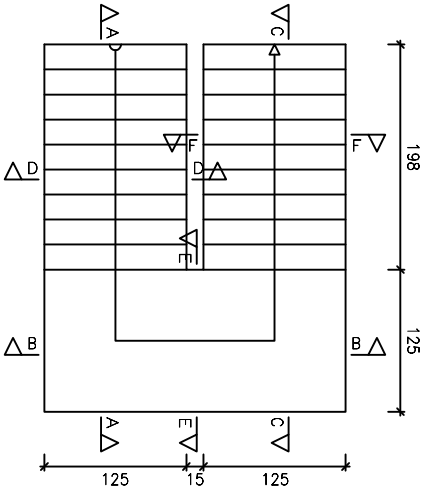
Section E-E



Échelle 1:50

Escalier 2

Tronçon 1	
Emmarchement	1,250 m
Epaisseur	0,15 m
Marche	0,220 m
Contremarche	0,150 m
Franchissement de dénivelle	3,00 m
Nb de marches	20
Niveau final	Plancher 1
Niveau initial	RDC
Poids propre	3,68 kN/m ²
Marches (Bétonné avec la dalle)	1,52 kN/m ²
Revêtement	1,00 kN/m ²
Rampes	3,00 kN/m
Charge d'exploitation	2,50 kN/m ²
Béton	C20/25
Acier	Fe E400
Err. géométrique	3,0 cm



Echelle 1:50