

Plano Fundaciones: Hospital de Segundo Nivel San Lorenzo

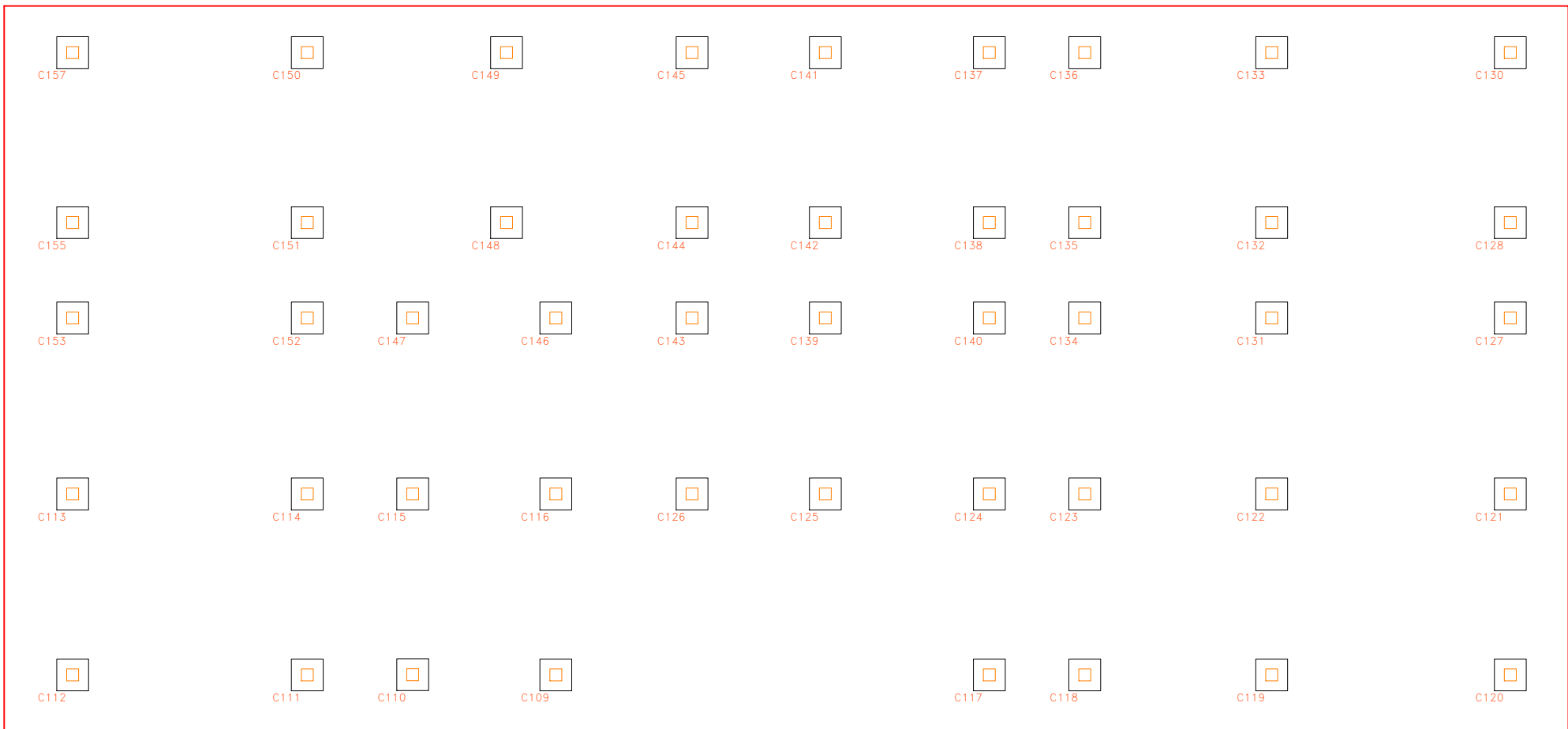
Esc. 1:150

Resumen Acero Fundación Despiece fundación		Long. total (m)	Peso+10% (kg)	Total
AH-400CN	∅6	1295.7	316	8284
	∅12	5011.5	4894	
	∅16	1567.4	2721	
	∅20	130.0	353	

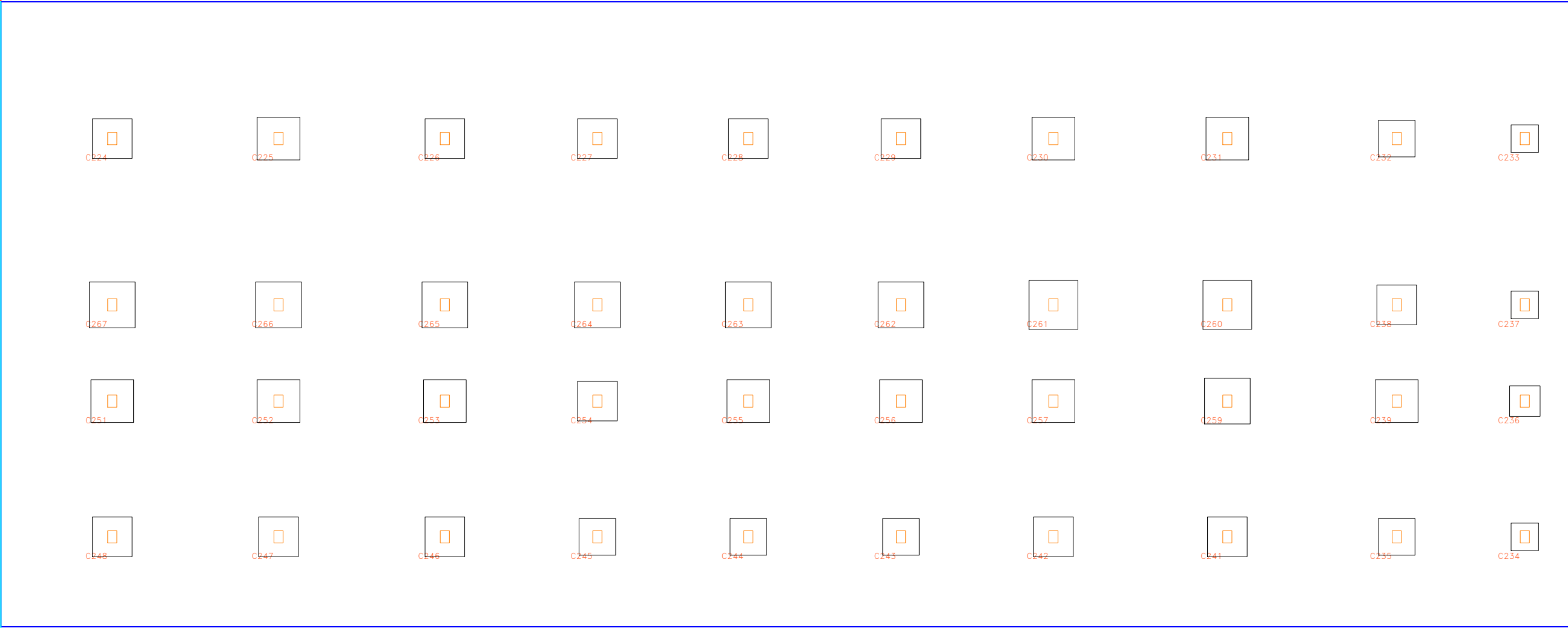
BLOQUE B



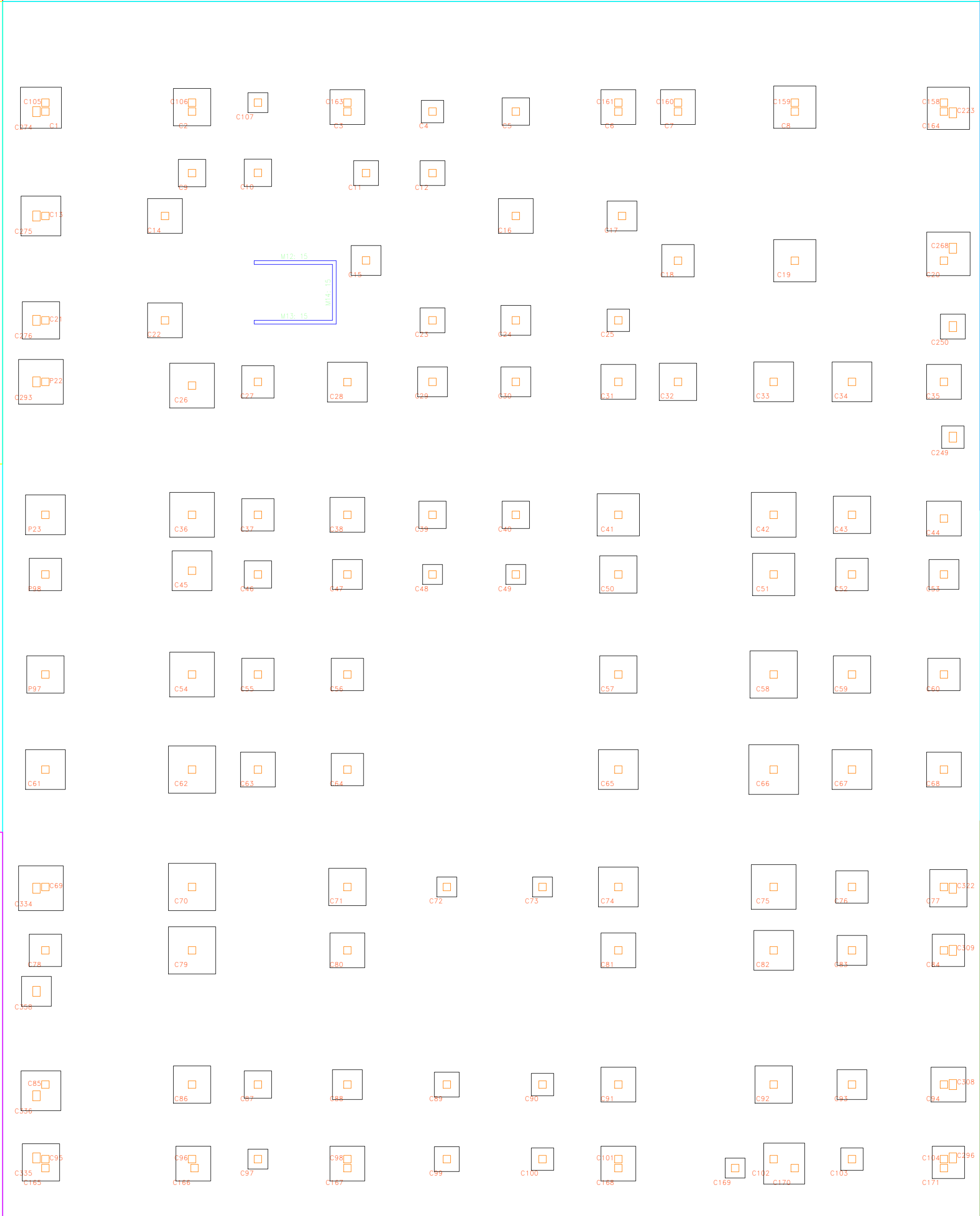
BLOQUE A



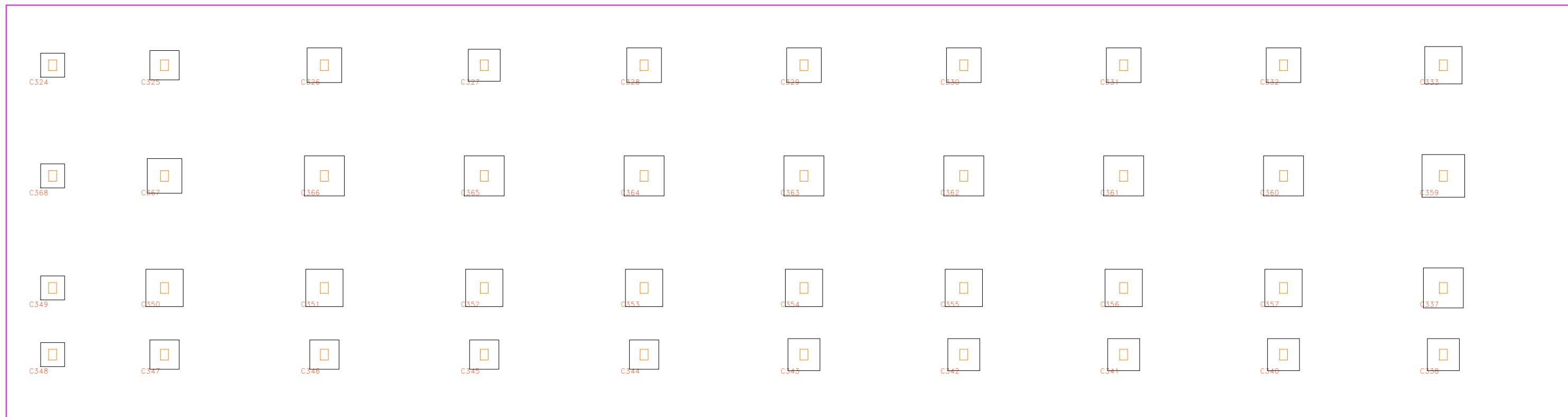
BLOQUE D



BLOQUE C



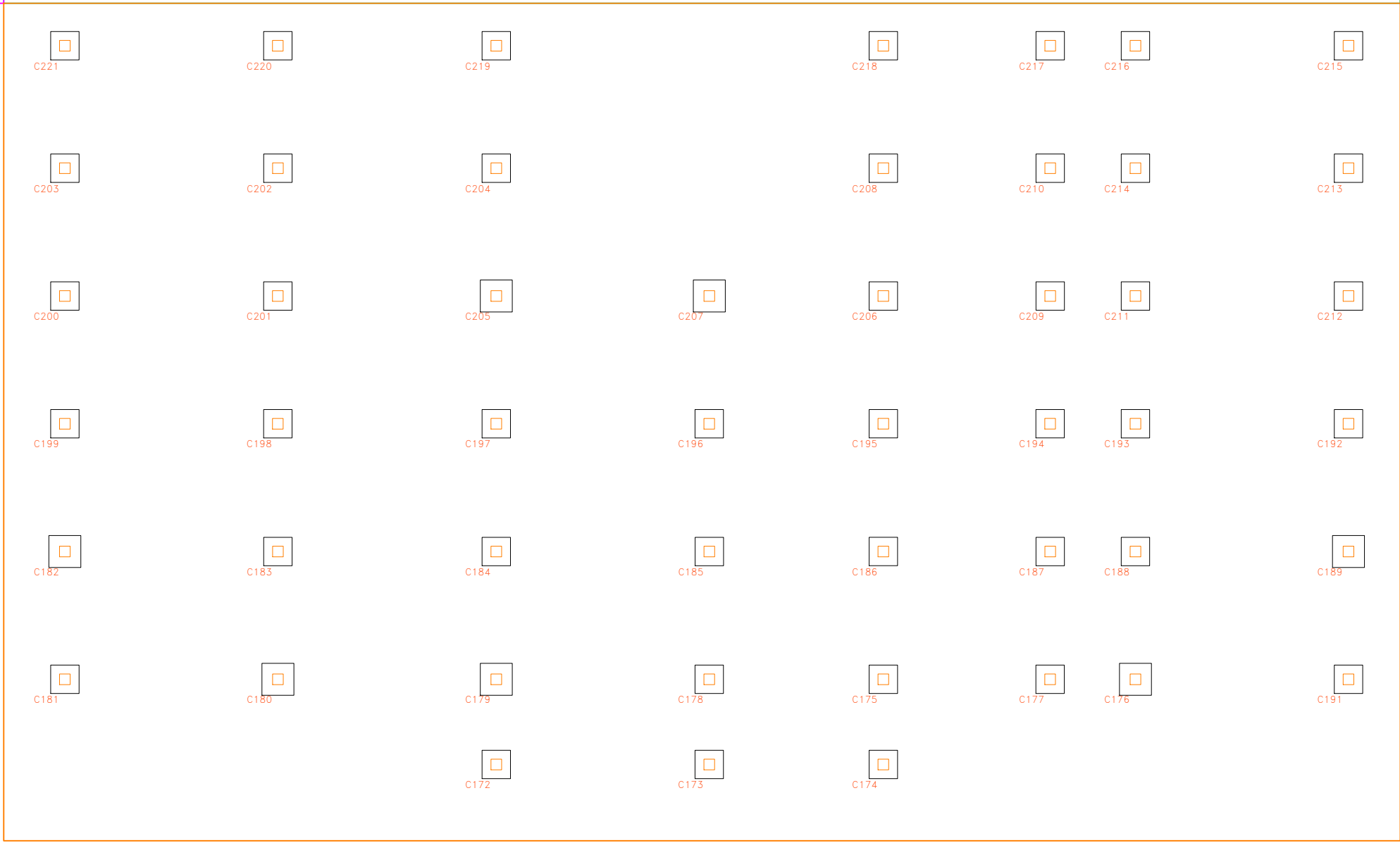
BLOQUE E



BLOQUE F



BLOQUE G



UNIVERSIDAD AUTÓNOMA
JUAN MISAEL SARACHO
TARIJA

FACULTAD DE CIENCIAS
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CARRERA DE
INGENIERÍA CIVIL

UNIVERSITARIO:
JOSE DANIEL
CAMACHO CAMPERO

PROYECTO:
DISEÑO ESTRUCTURAL DEL HOSPITAL
DE SEGUNDO NIVEL SAN LORENZO

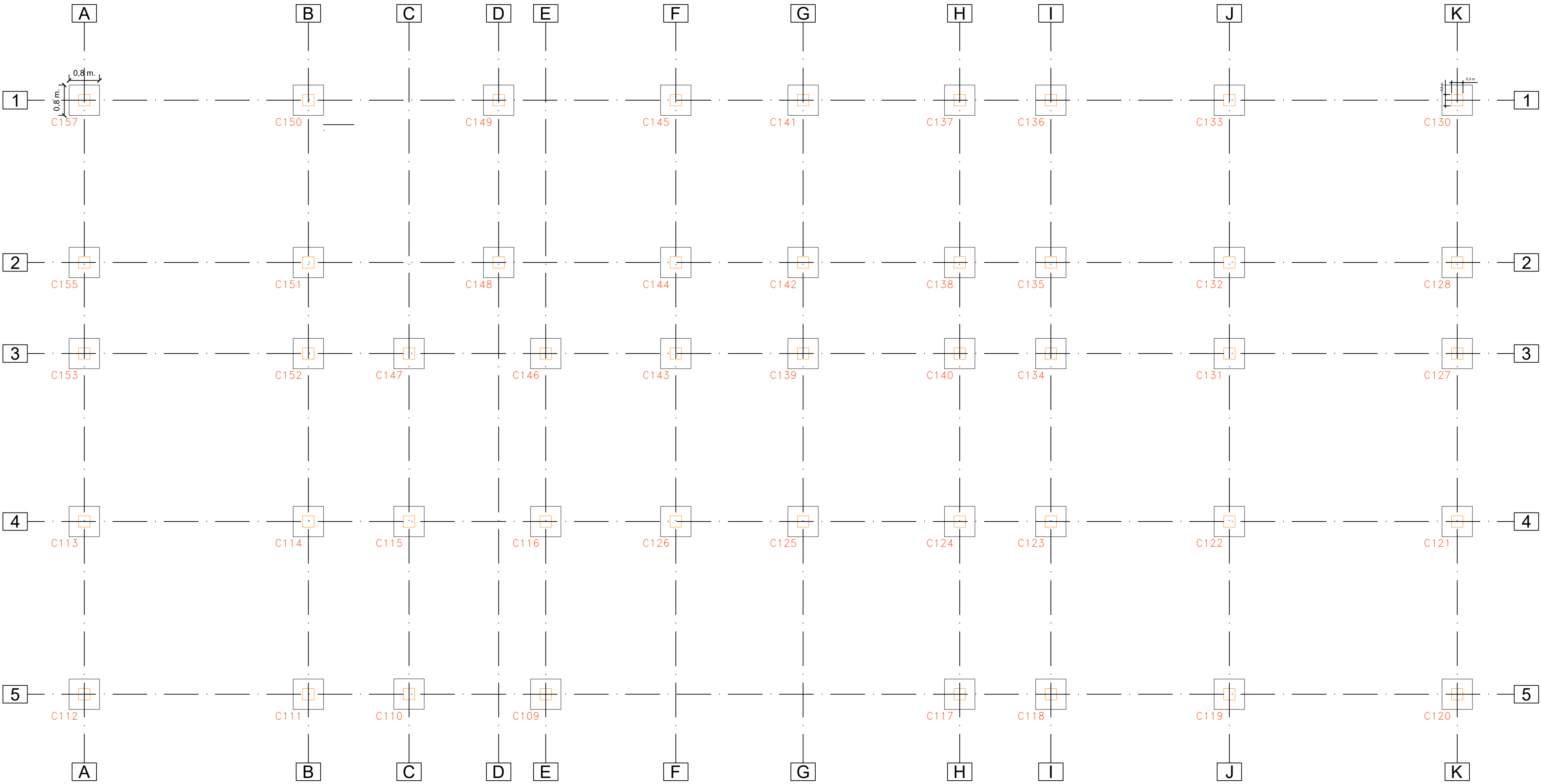
REGION: URBANO
PROVINCIA: MENDEZ
MUNICIPIO: SAN LORENZO

FUNDACIONES
FUNDACIÓN PLANO GENERAL
ESCALA : INDICADAS

PLANO
ESTRUTURALES
LAMINA
1/18

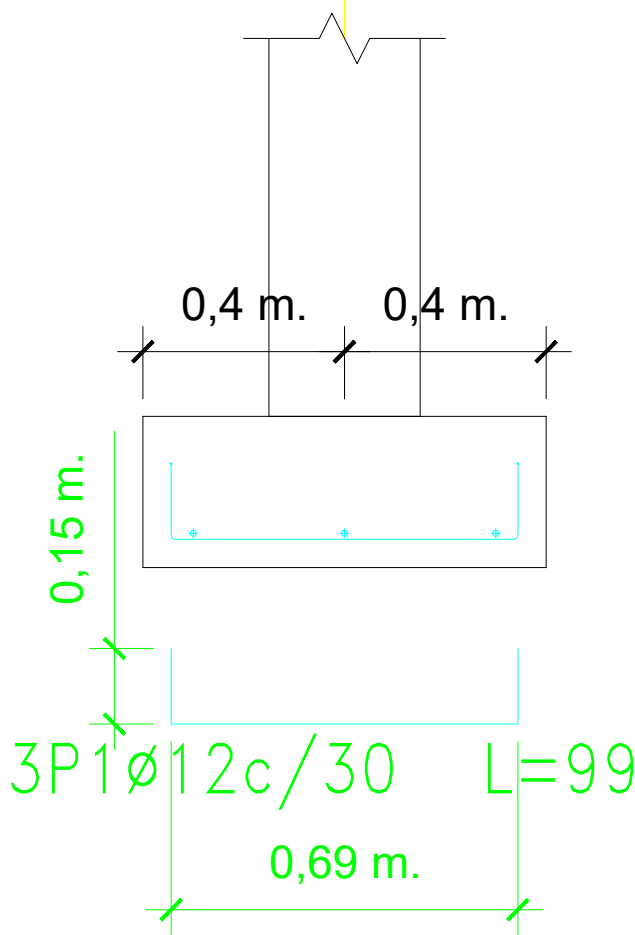
Esc. 1:75

Plano Fundaciones Bloque A

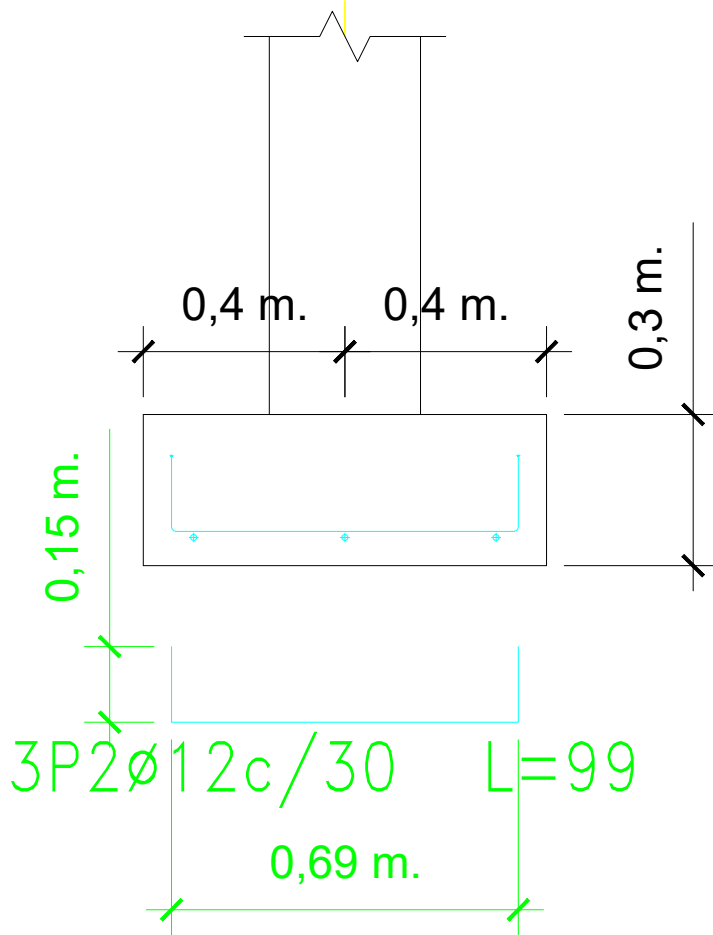


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
C49=C109=C110=C111=C112	1	ø12	3	99	297	2.6
C113=C114=C115=C117=C119	2	ø12	3	99	297	2.6
C120=C121=C122=C123=C124	3	ø12	6	77	462	4.1
C127=C128=C130=C131=C132	4	ø6	3	114	342	0.8
C144=C147=C148=C149=C152						
C153=C155=C157=C169=C172						
C174=C181=C183=C185=C186						
C187=C188=C191=C192=C193						
C194=C198=C199=C200=C201						
C202=C203=C204=C208=C209						
C210=C211=C212=C213=C214						
C215=C216=C217=C218=C219						
C220=C221						
Total+10%: (x62):					11.1 688.2	
					ø6:	55.8
					ø12:	632.4
					Total:	688.2

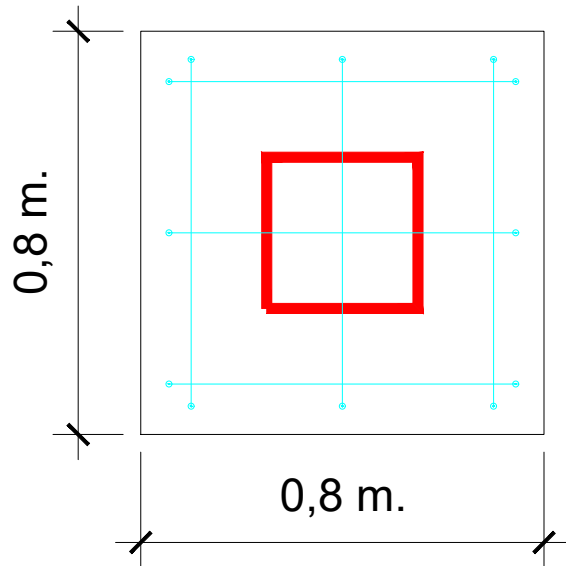
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4-5
ESCALA 1:15



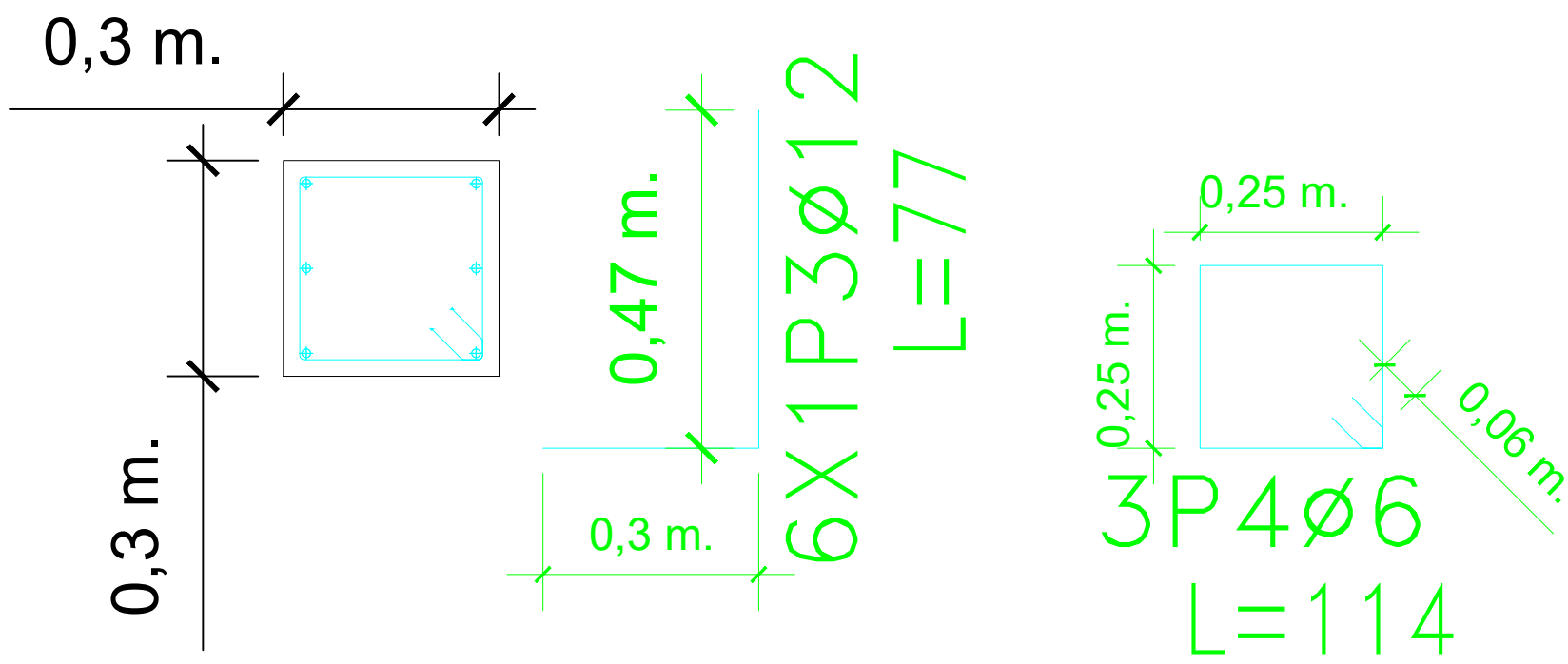
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E-F-G-H-I-J-K
ESCALA 1:15



DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:15



DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:10



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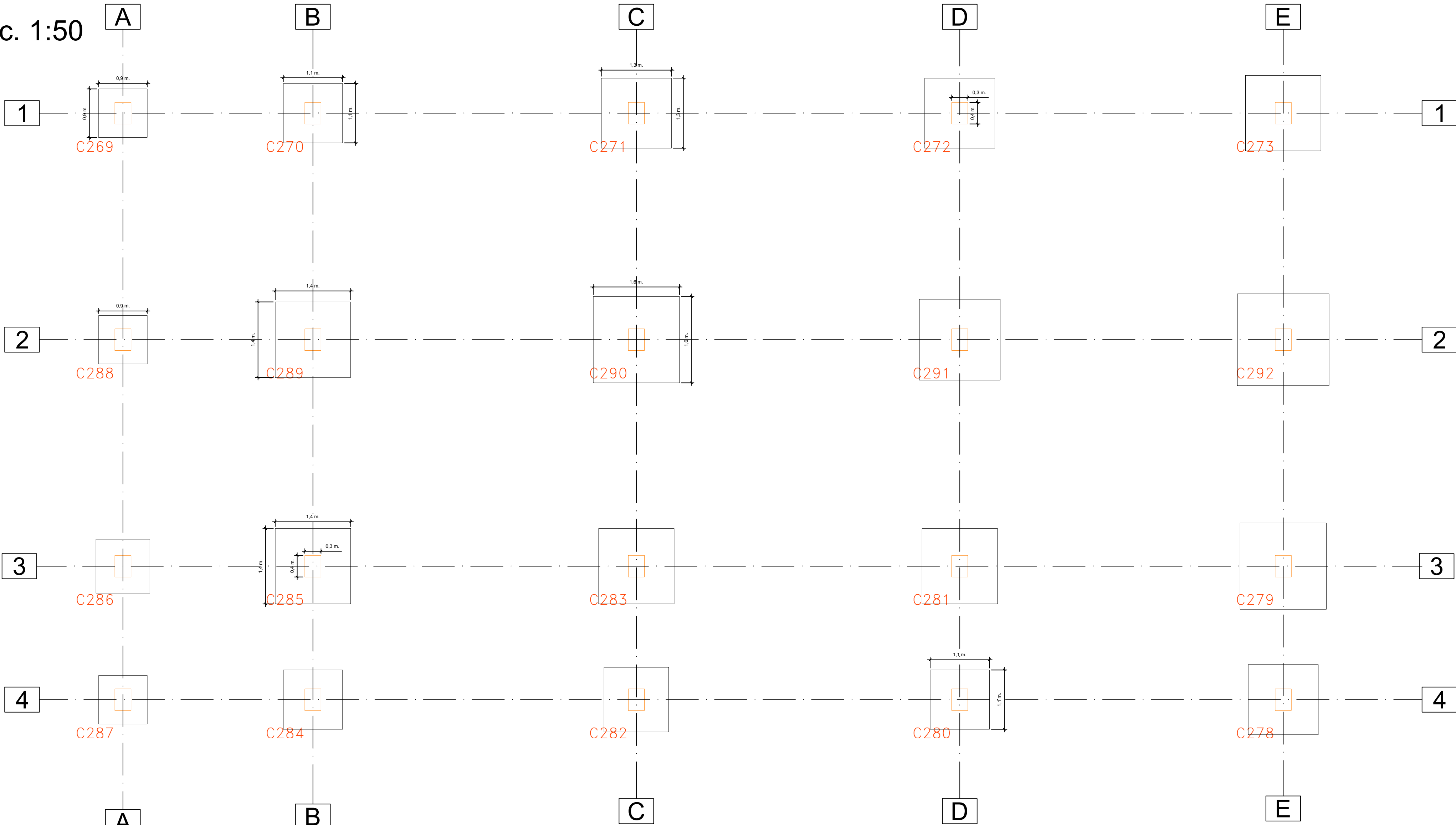
FUNDACIONES
FUNDACION BLOQUE A
ESCALA : INDICADAS

PLANO
ESTRUCTURALES
LAMINA
2/18

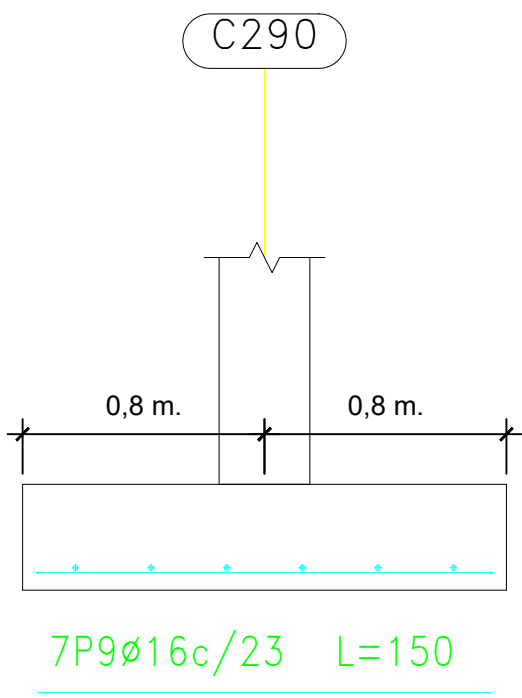
Esc. 1:50

Plano Fundaciones Bloque B

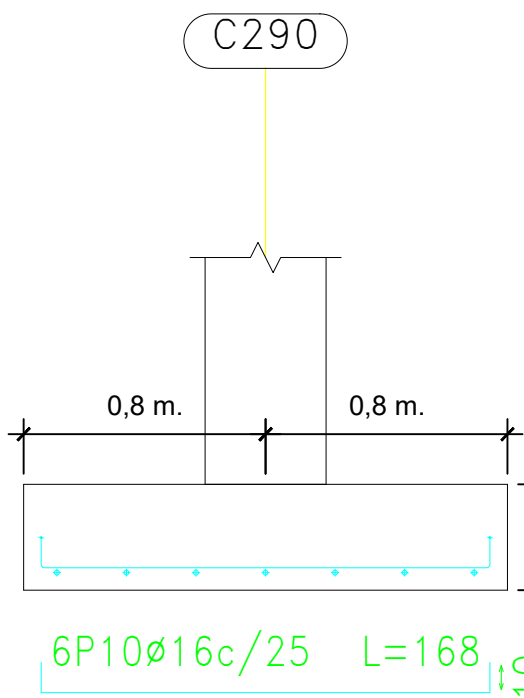
Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
C286	1	ø12	4	105	420	3.7
	2	ø12	3	105	315	2.8
	3	ø12	8	77	616	5.5
	4	ø6	3	134	402	0.9
Total+10%:						14.2
C289	5	ø16	5	148	740	11.7
	6	ø12	8	130	1040	9.2
	7	ø12	8	77	616	5.5
	8	ø6	3	134	402	0.9
Total+10%:						30.0
C290	9	ø16	7	150	1050	16.6
	10	ø16	6	168	1008	15.9
	11	ø12	8	81	648	5.8
	12	ø6	3	134	402	0.9
Total+10%:						43.1
C291=C366	13	ø16	6	158	948	15.0
	14	ø16	5	158	790	12.5
	15	ø12	8	81	648	5.8
	16	ø6	3	134	402	0.9
Total+10%:						37.6
(x2):						75.2
					ø6:	5.0
					ø12:	48.2
					ø16:	109.3
					Total:	162.5



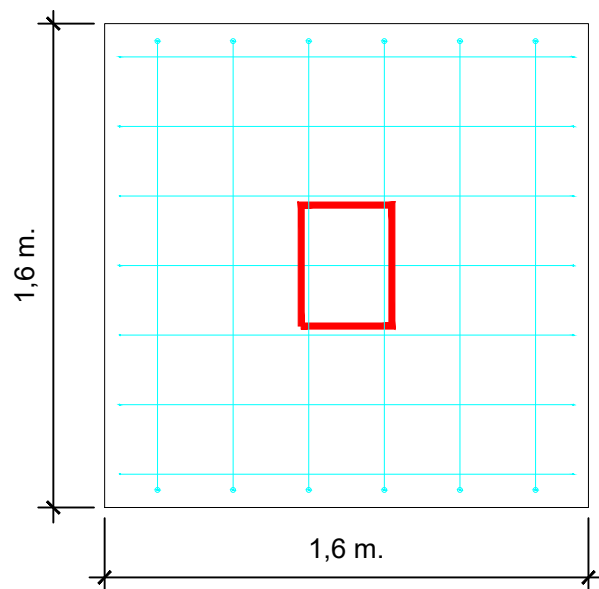
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4
ESCALA 1:25



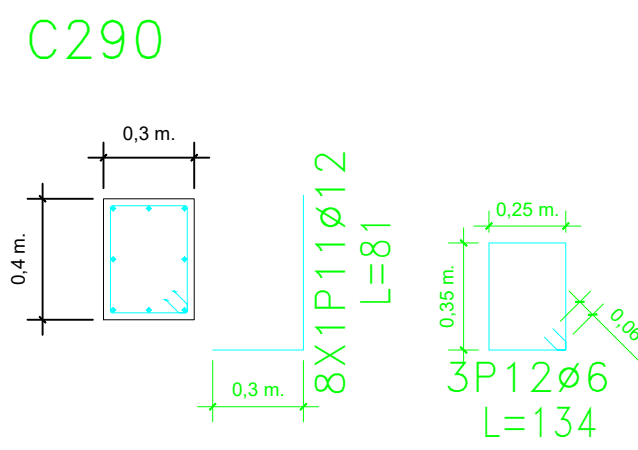
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



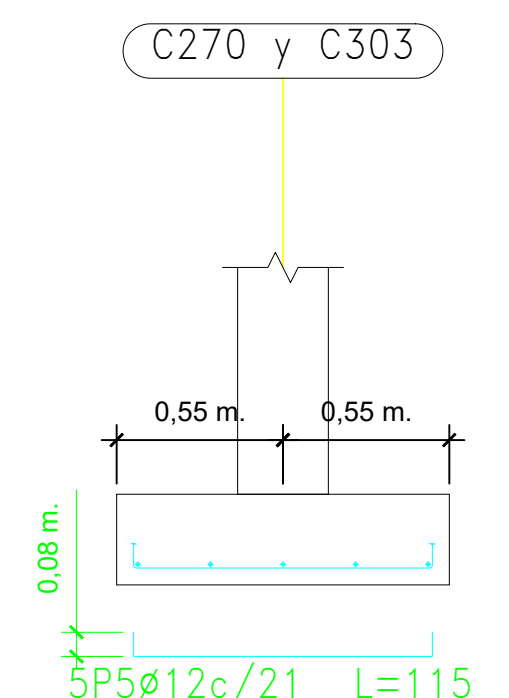
DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25



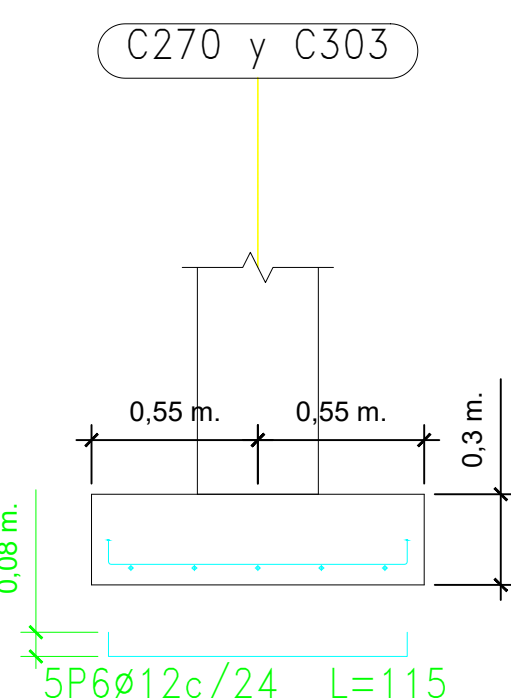
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25



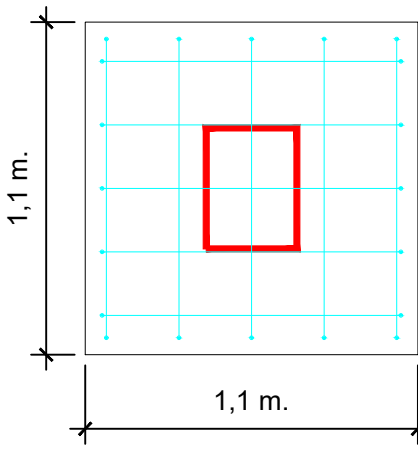
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SECCIONES TRANSVERSALES
EJE 1-2-3-4-4
ESCALA 1:25



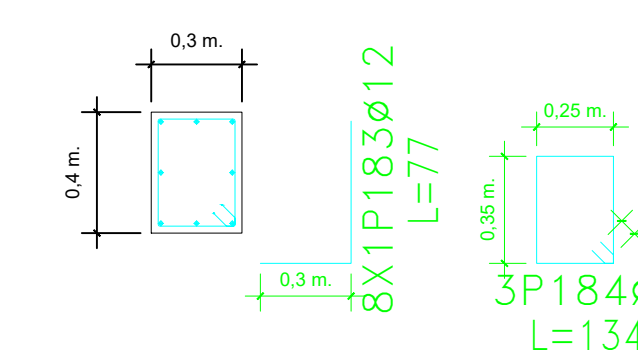
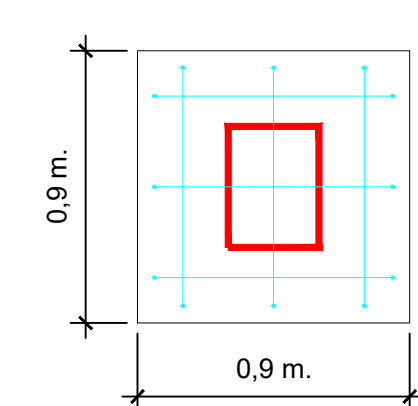
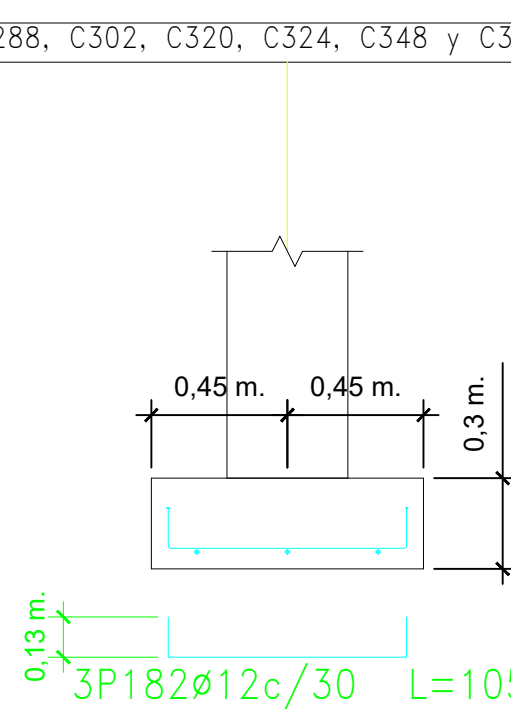
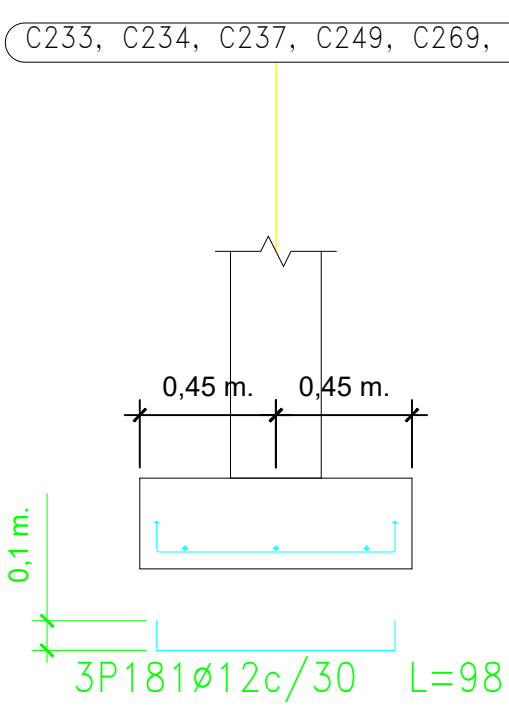
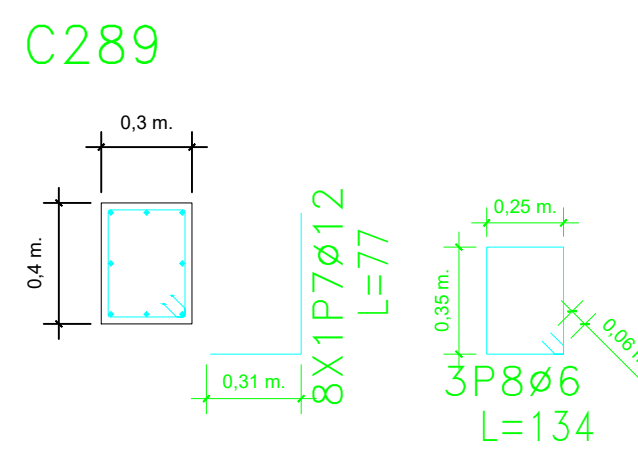
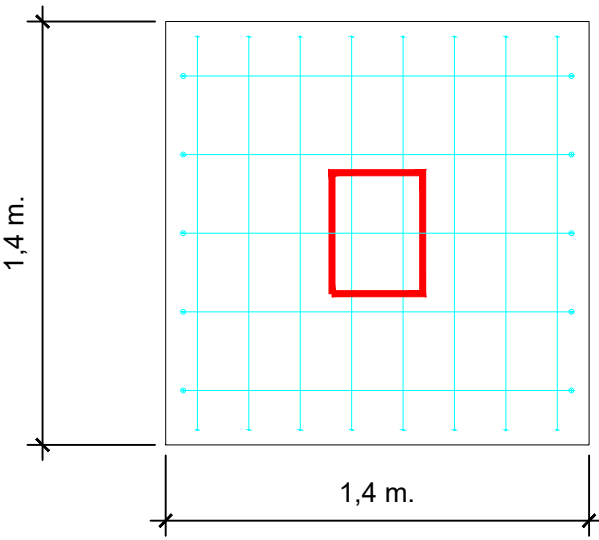
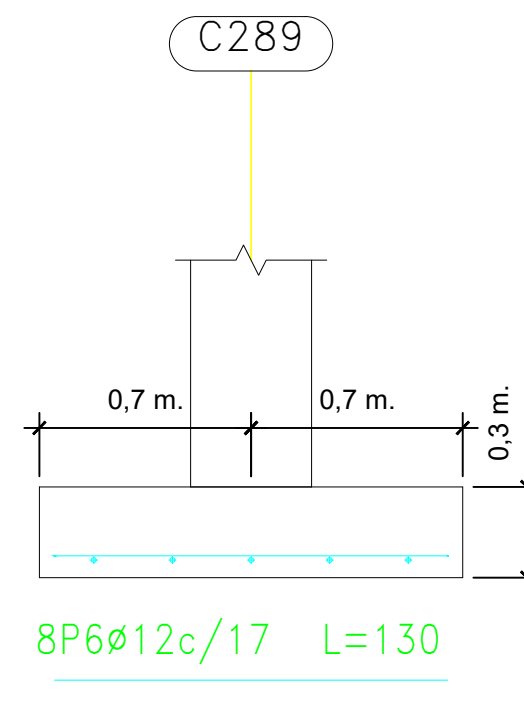
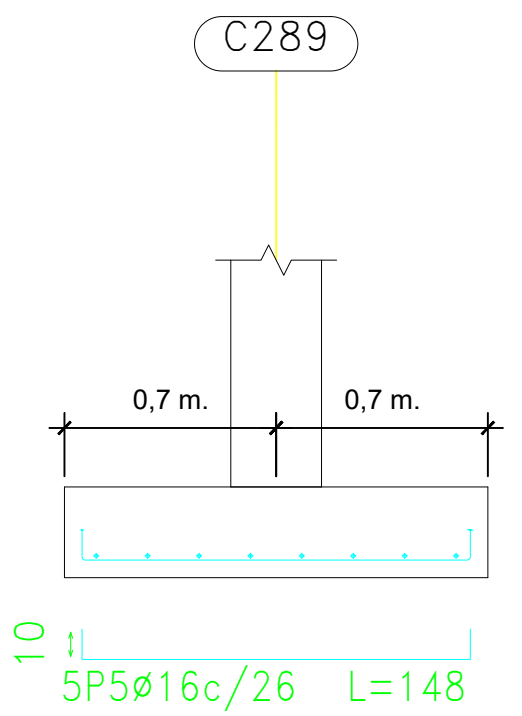
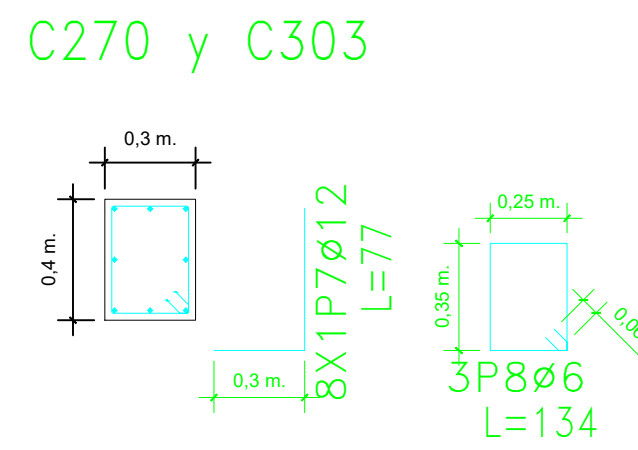
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25



DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25



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FUNDACIONES

FUNDACION BLOQUE B

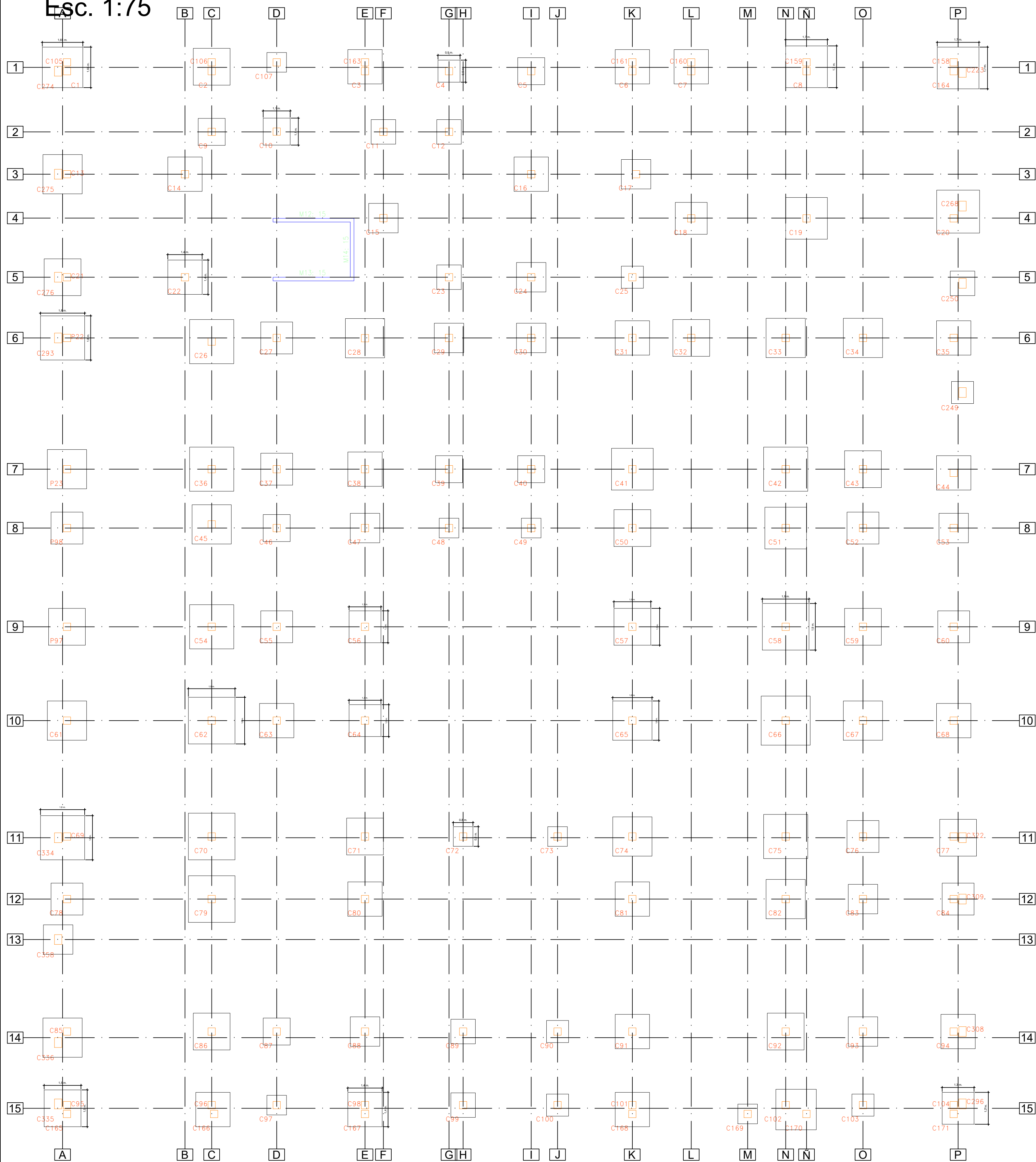
ESCALA : INDICADAS

PLANO
ESTRUCTURALES

LAMINA
3/18

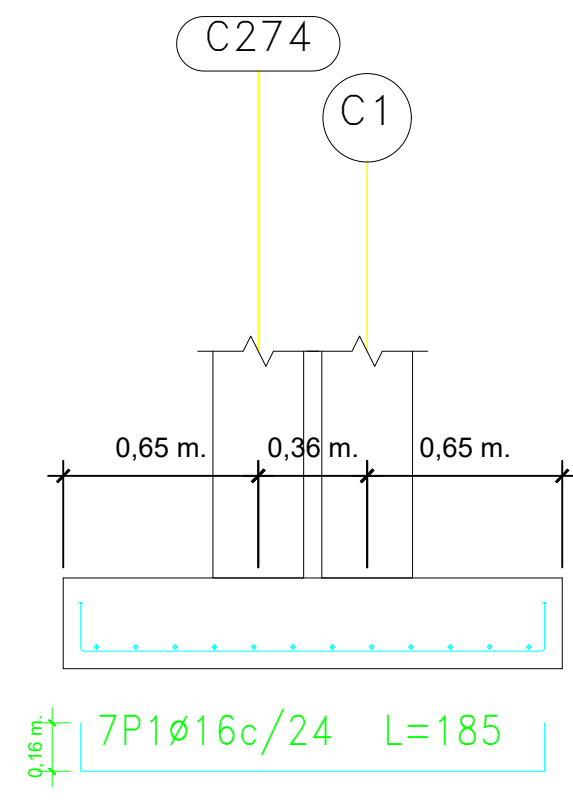
Plano Fundaciones
Bloque C

Esc. 1:75

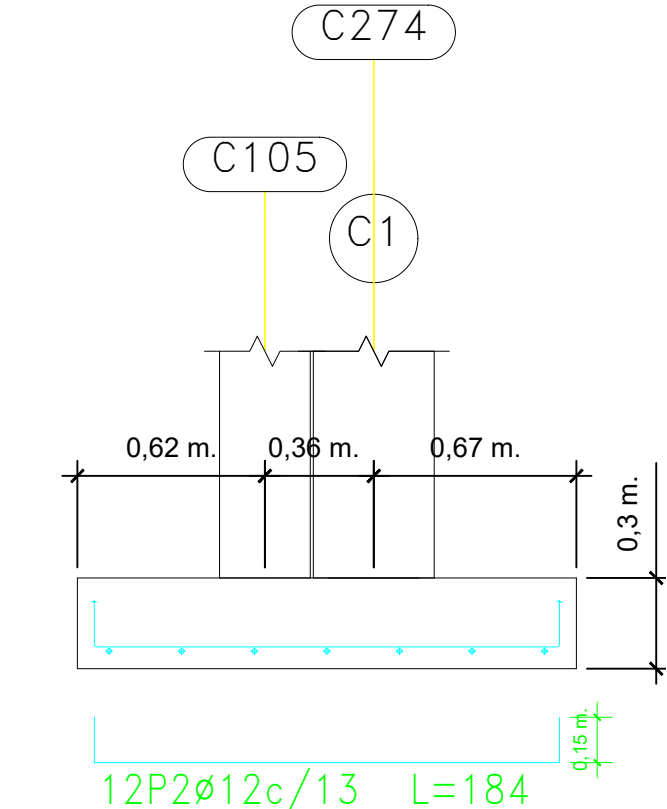


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
(C1-C105-C274)	1	Ø16	7	185	1295	20.4
	2	Ø12	12	184	2208	19.6
	3	Ø12	6	77	462	4.1
	4	Ø6	3	114	342	0.8
	5	Ø12	6	77	462	4.1
	6	Ø6	3	114	342	0.8
	7	Ø12	8	77	616	5.5
	8	Ø6	3	134	402	0.9
Total+10%:						61.8
(C95-C165-C335)	9	Ø12	9	169	1521	13.5
	10	Ø12	8	169	1352	12.0
	11	Ø12	6	77	462	4.1
	12	Ø6	3	114	342	0.8
	13	Ø12	6	77	462	4.1
	14	Ø6	3	114	342	0.8
	15	Ø12	8	77	616	5.5
	16	Ø6	3	134	402	0.9
Total+10%:						45.9
Ø6:						5.5
Ø12:						79.8
Ø16:						22.4
Total:						107.7

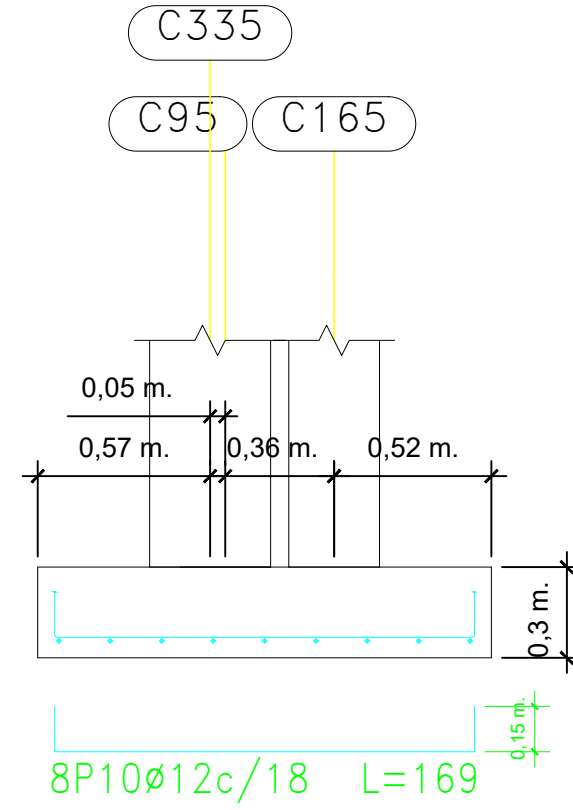
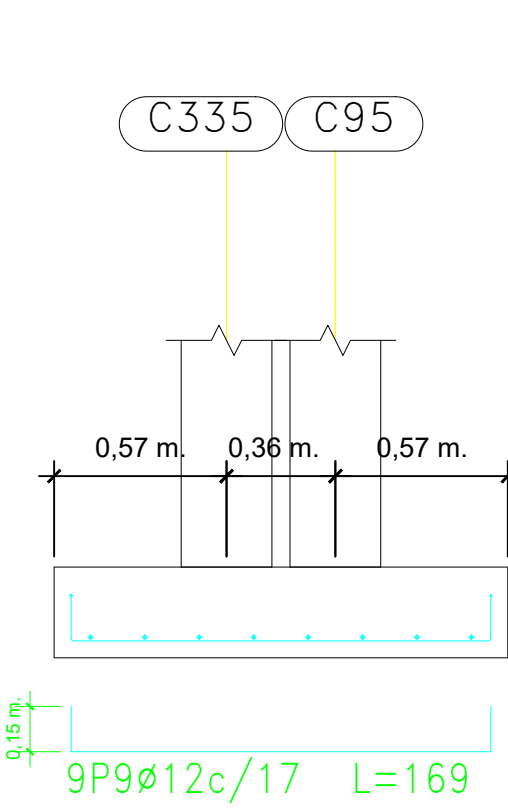
DISPOSICION DE ARMADURAS ZAPATAS SECCIONES TRANSVERSALES EJE 1-2-3-4-4 ESCALA 1:25



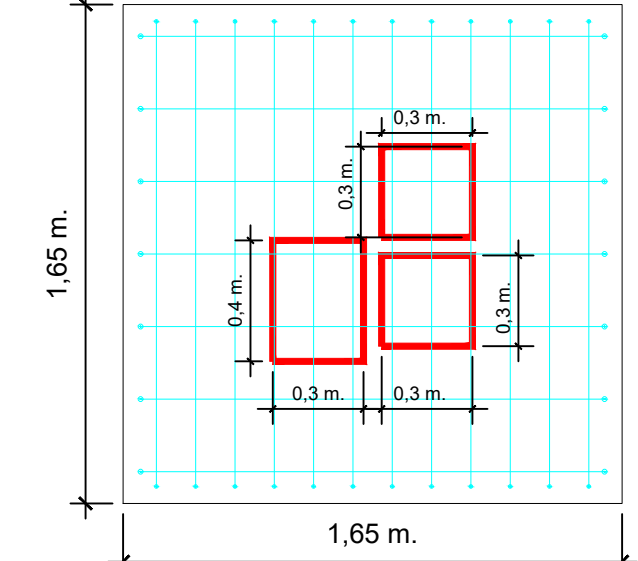
DISPOSICION DE ARMADURAS ZAPATAS SECCIONES TRANSVERSALES EJE A-B-C-D-E ESCALA 1:25



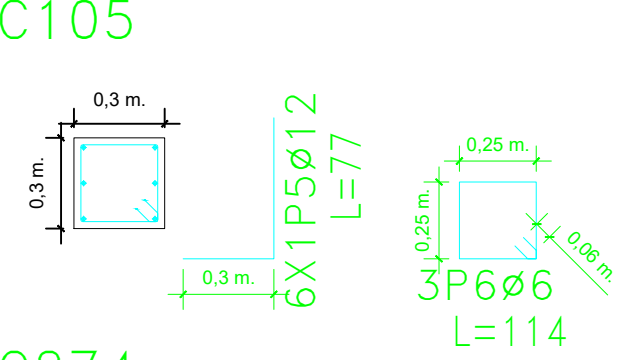
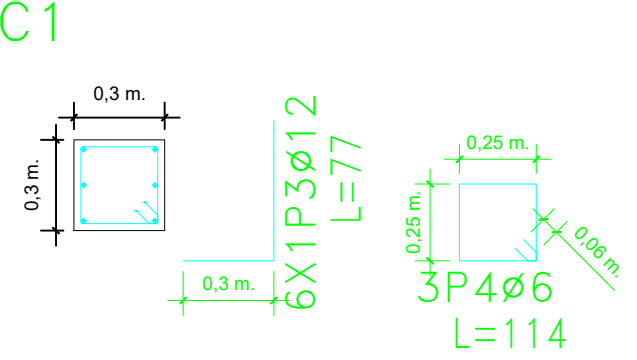
Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
(C85-C336)	1	Ø16	6	180	1080	17.0
	2	Ø16	6	180	1080	17.0
	3	Ø12	2	76	152	1.3
	4	Ø16	4	84	336	5.3
	5	Ø6	3	114	342	0.8
	6	Ø12	8	76	608	5.4
	7	Ø6	3	134	402	0.9
Total+10%:						52.5
(C94-C308)	8	Ø12	6	159	954	8.5
	9	Ø12	8	159	1272	11.3
	10	Ø12	6	77	462	4.1
	11	Ø6	3	114	342	0.8
	12	Ø12	8	77	616	5.5
	13	Ø6	3	134	402	0.9
Total+10%:						34.2
(C96-C166)	14	Ø12	7	159	1113	9.9
	15	Ø12	6	159	954	8.5
	16	Ø12	6	77	462	4.1
	17	Ø6	3	114	342	0.8
	18	Ø12	6	77	462	4.1
	19	Ø6	3	114	342	0.8
Total+10%:						31.0
Ø6:						5.5
Ø12:						69.0
Ø16:						43.2
Total:						117.7



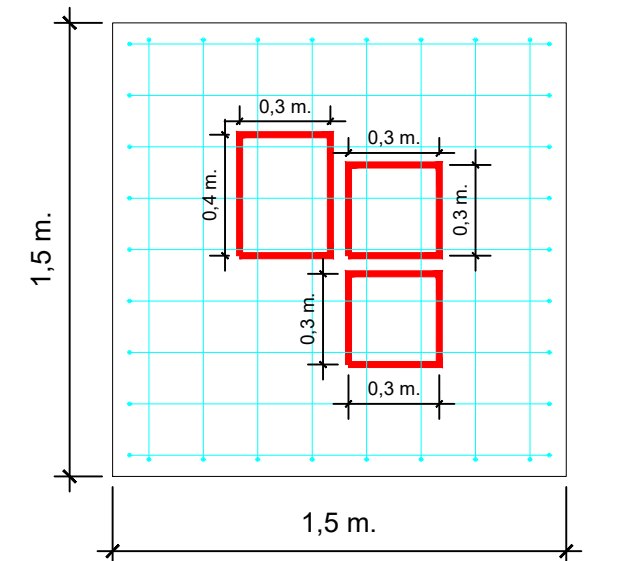
DISPOSICION DE ARMADURAS ZAPATAS VISTA EN PLANTA ESCALA 1:25



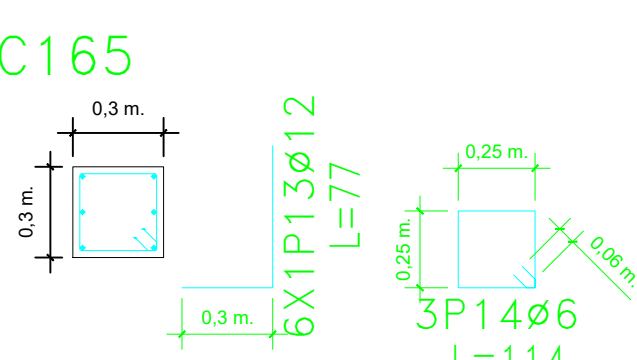
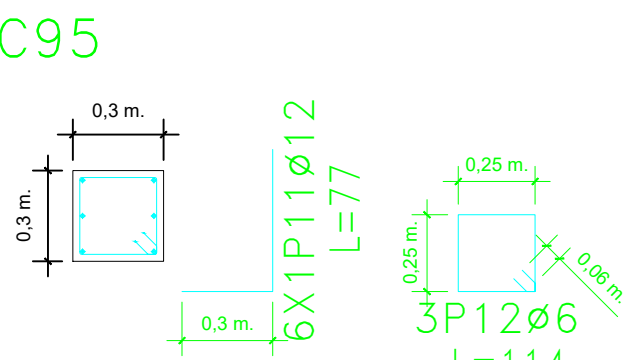
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS VISTA EN PLANTA ESCALA 1:25



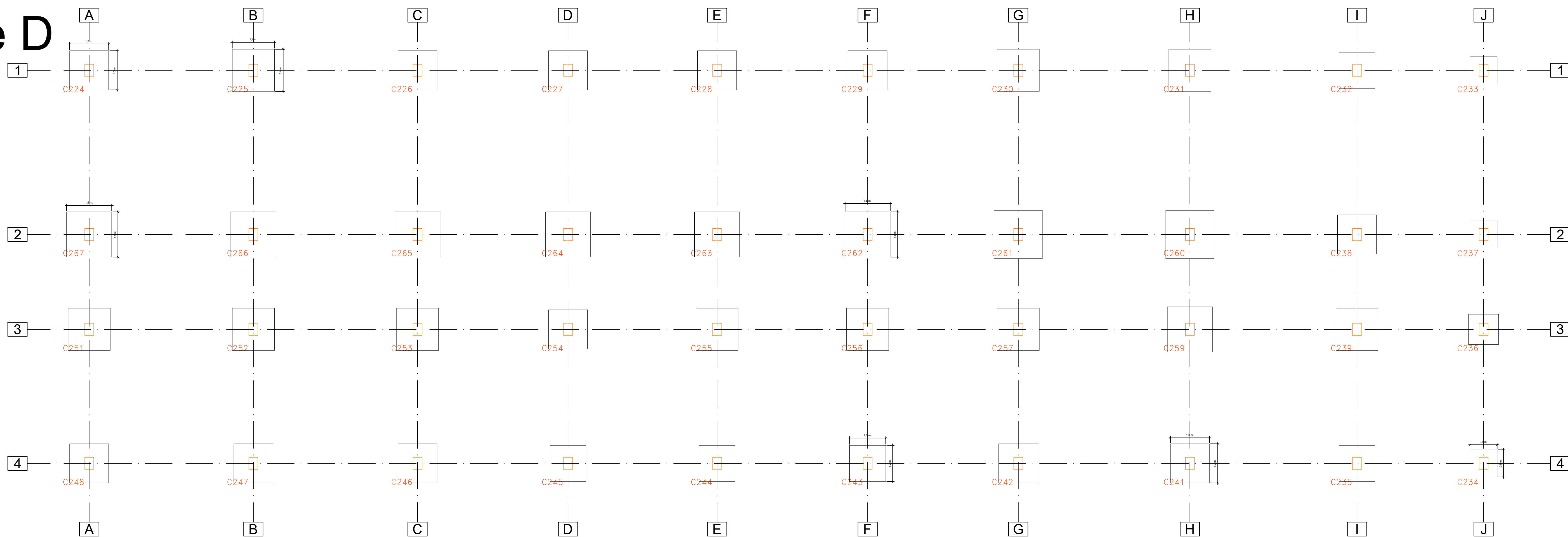
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS ESCALA 1:25



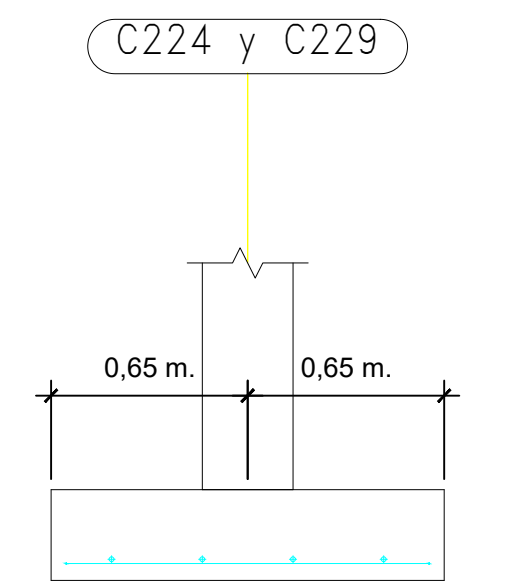
Plano Fundaciones

Bloque D

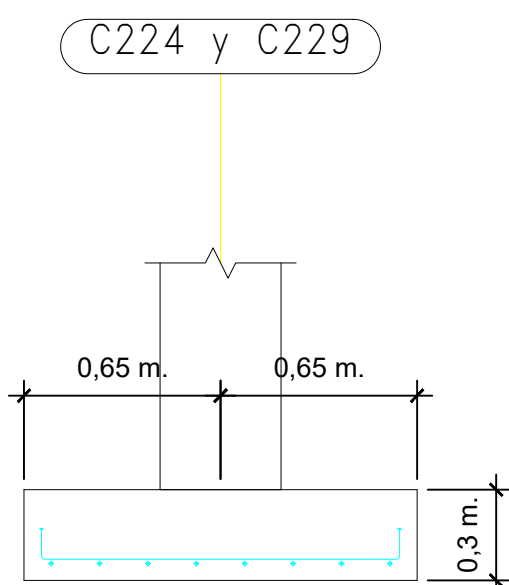
Esc. 1:75



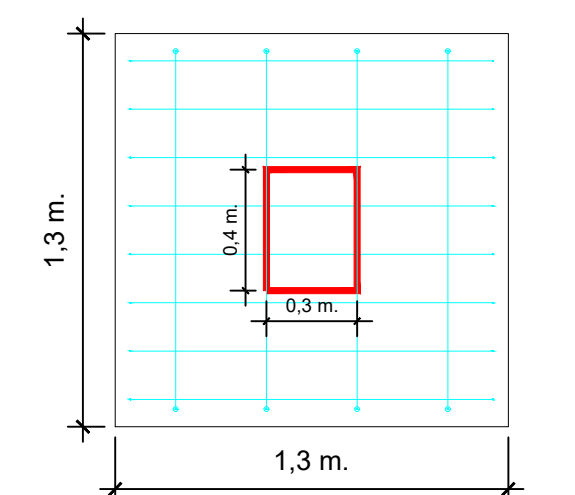
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4
ESCALA 1:25



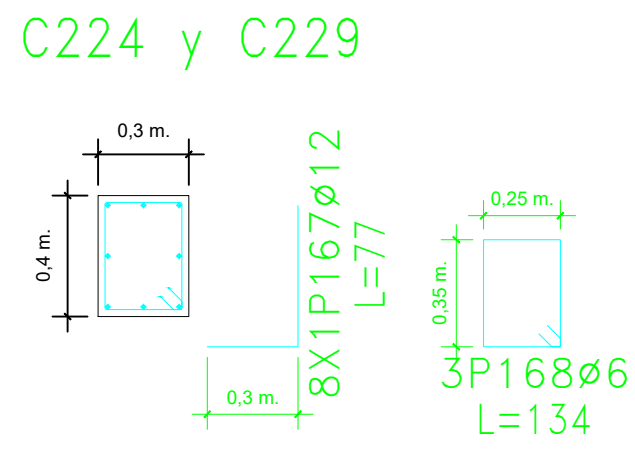
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



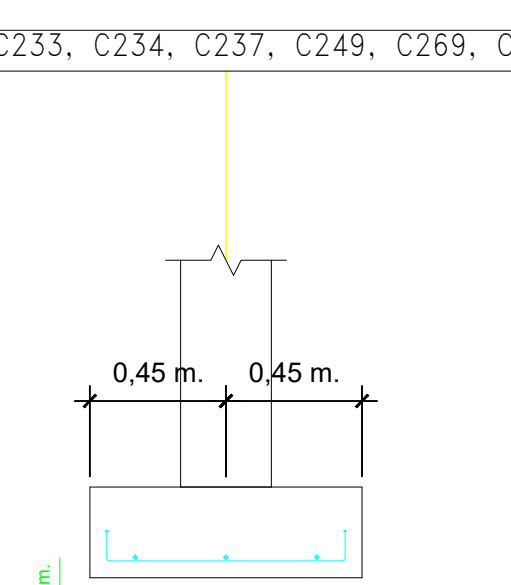
DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25



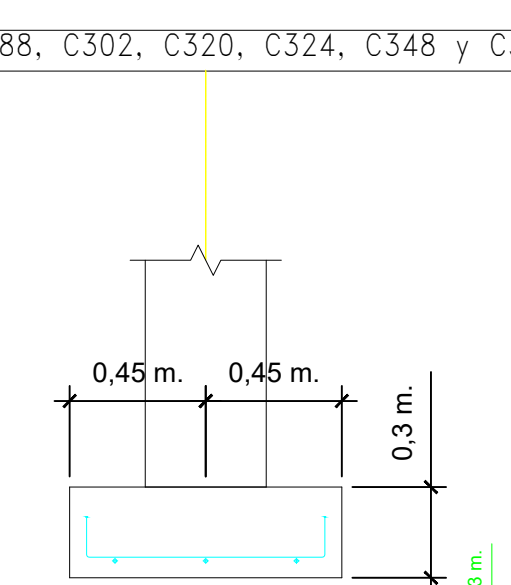
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25



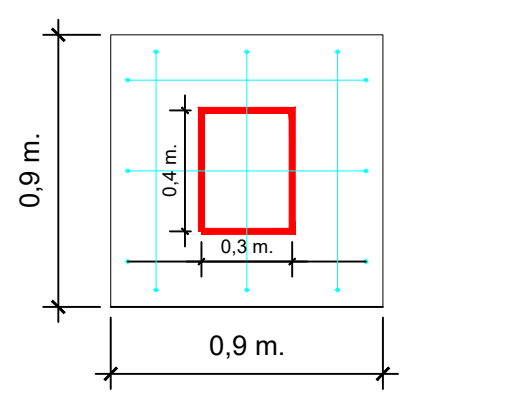
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4-4
ESCALA 1:25



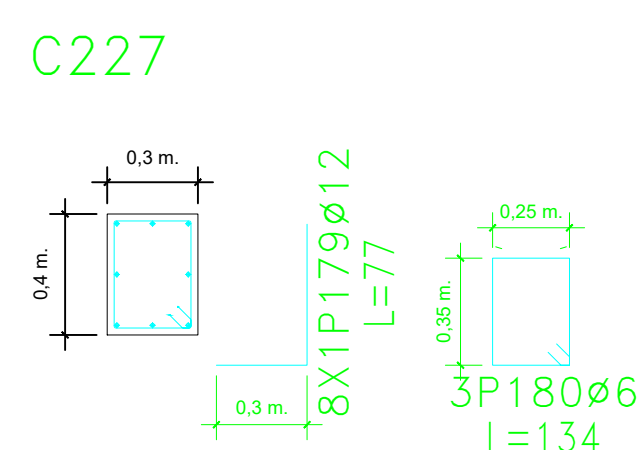
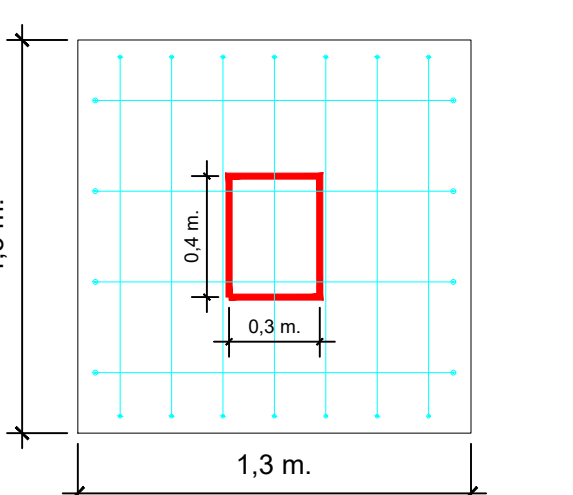
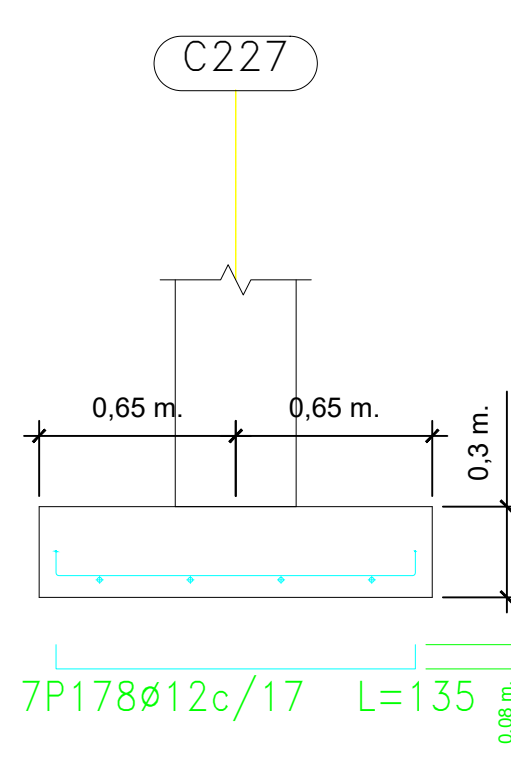
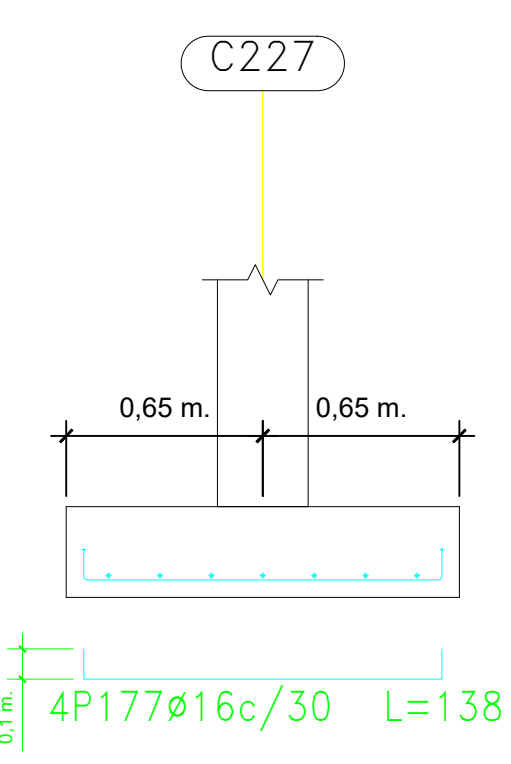
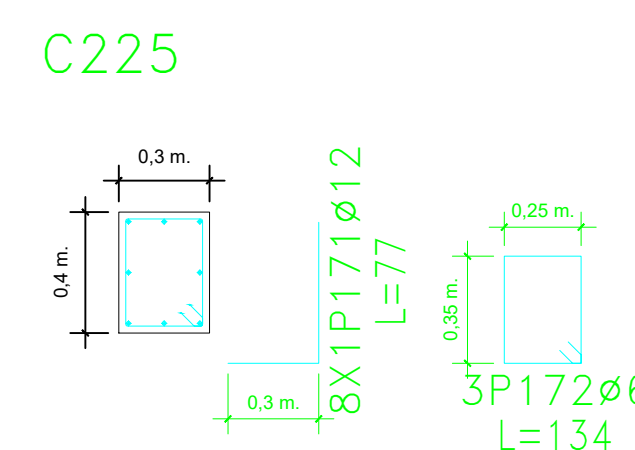
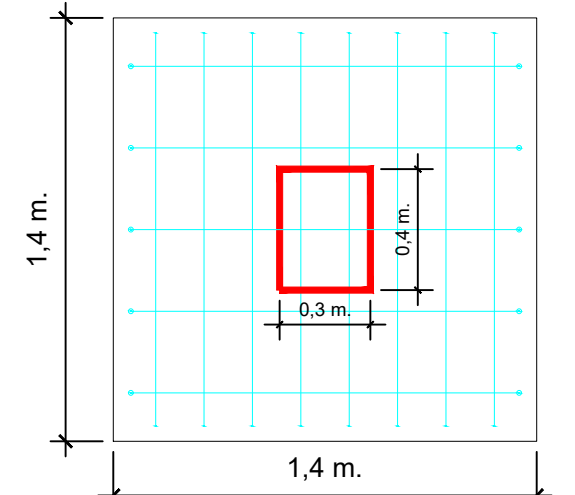
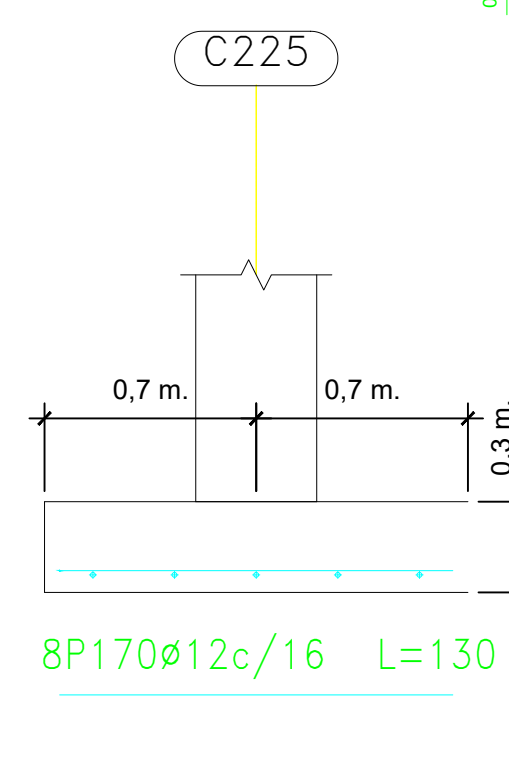
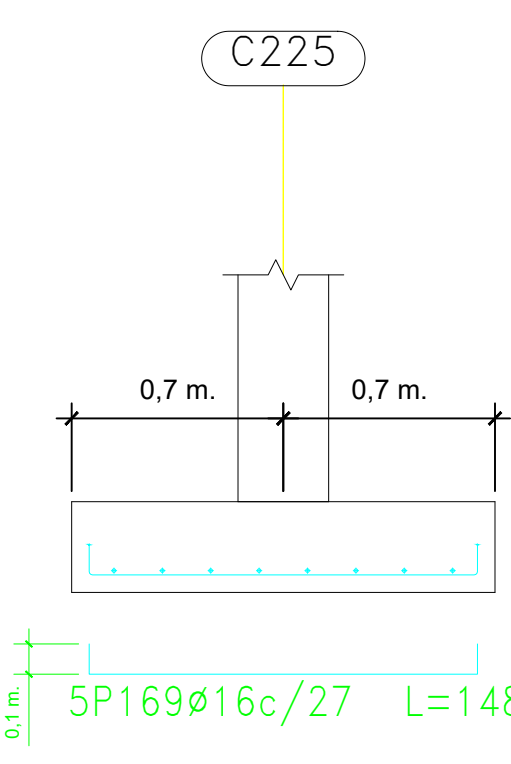
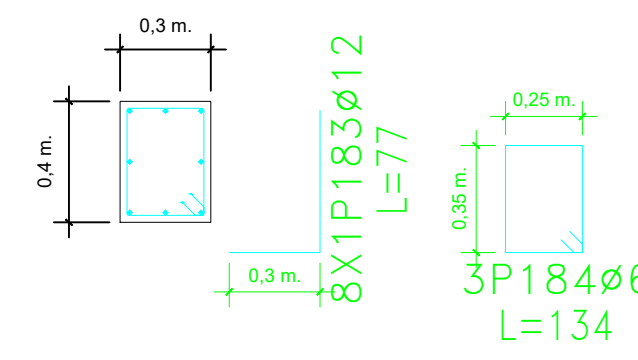
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25



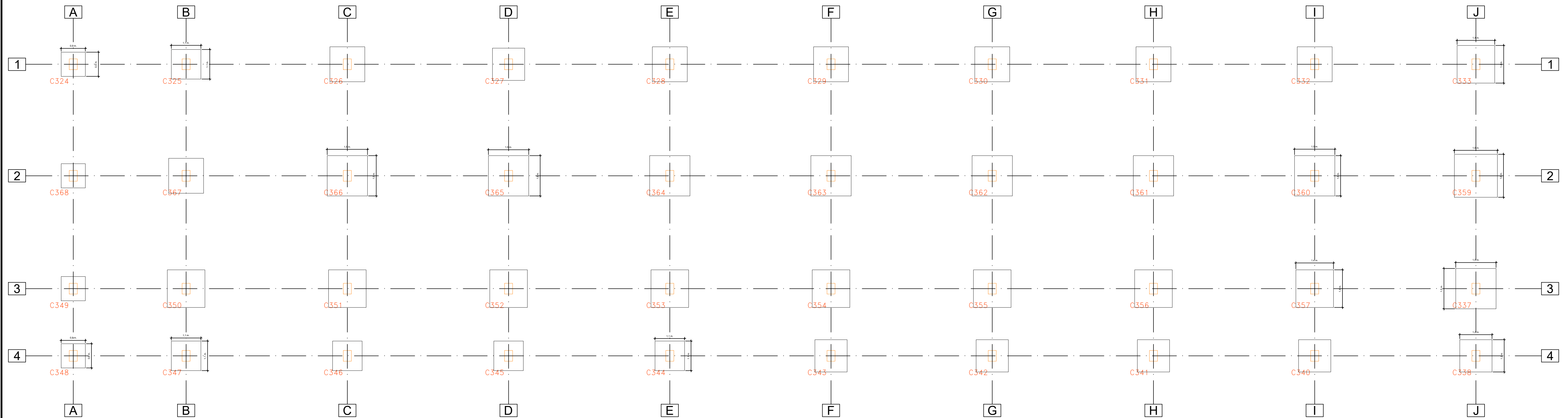
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25



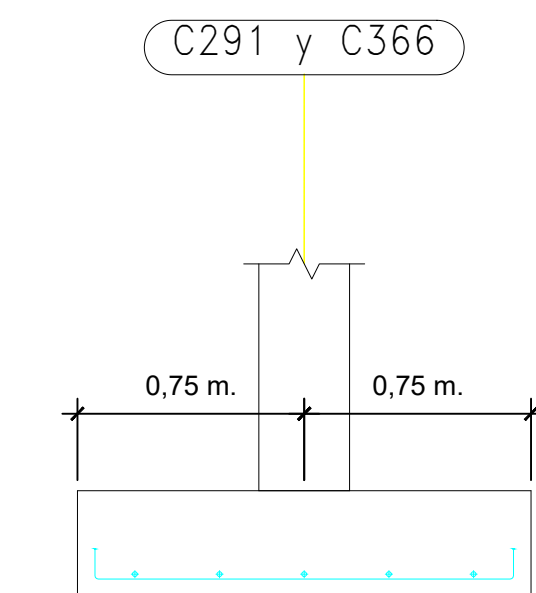
Plano Fundaciones

Bloque E

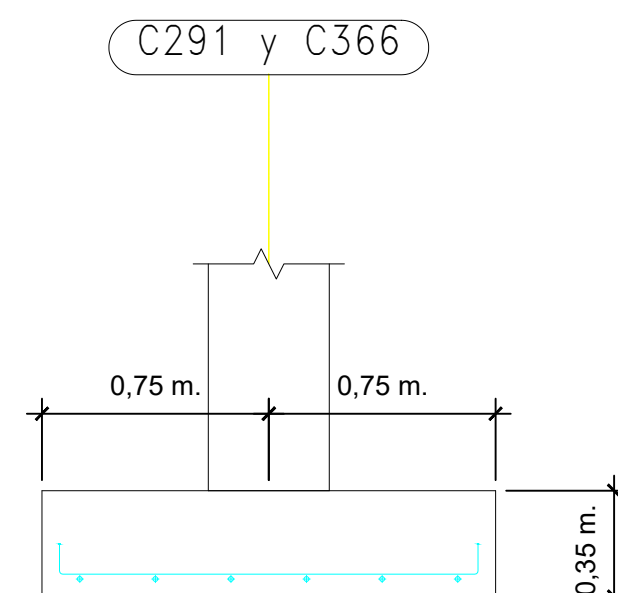
Esc. 1:75



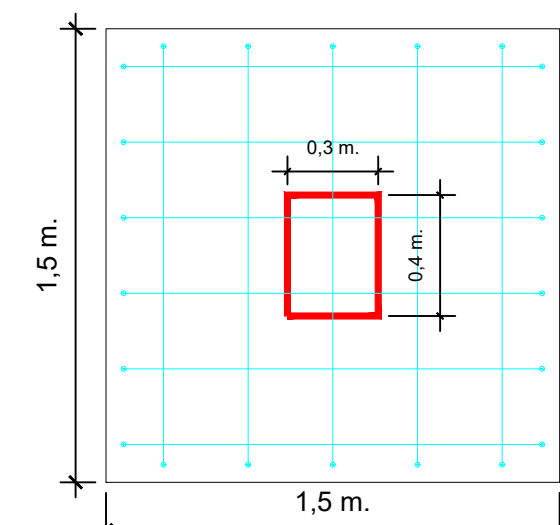
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4
ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25

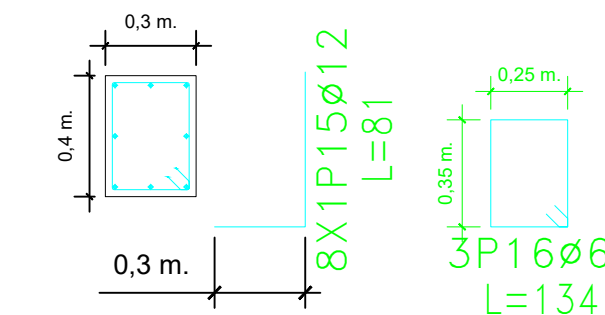


DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25

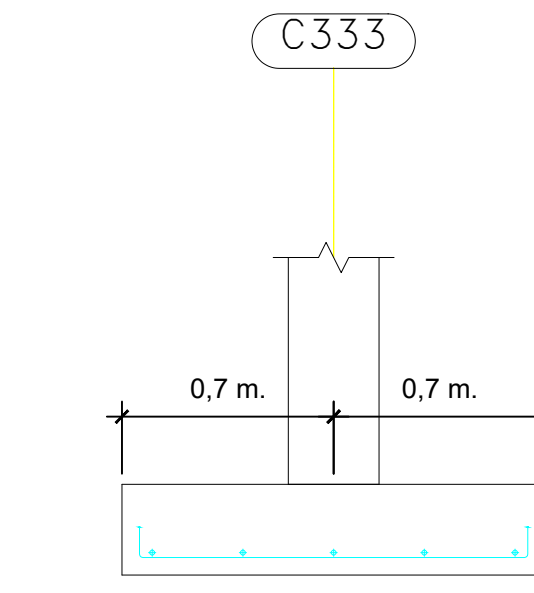


DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25

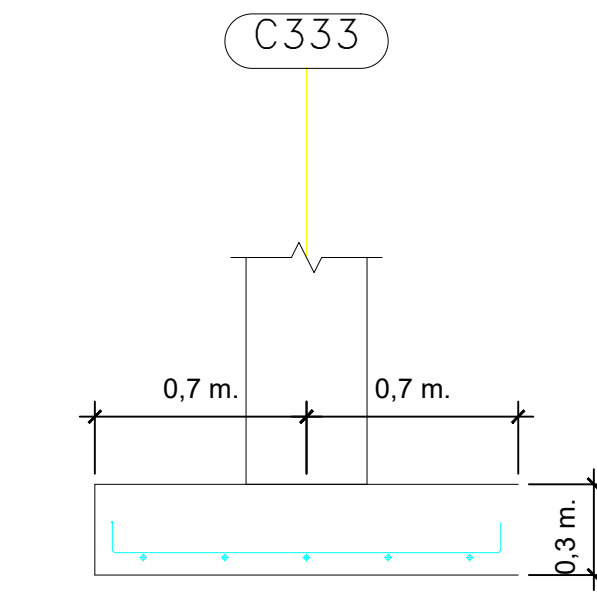
C291 y C366



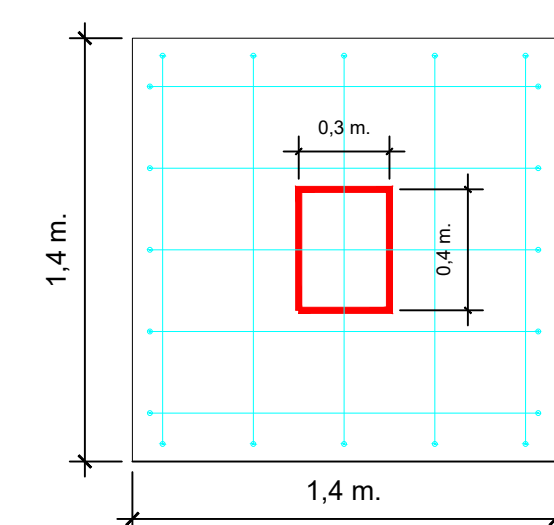
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4-4
ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25

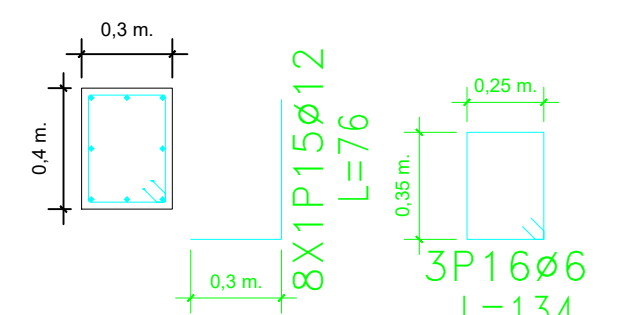


DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25

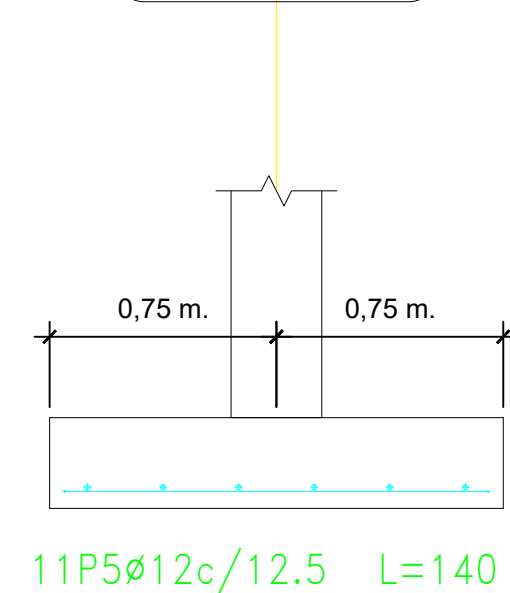


DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25

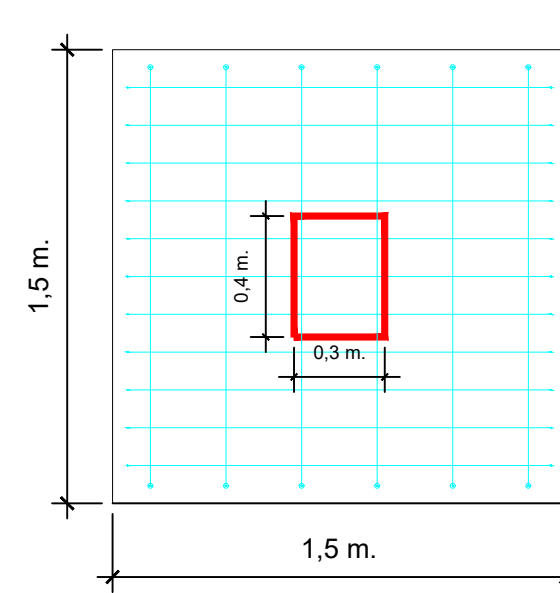
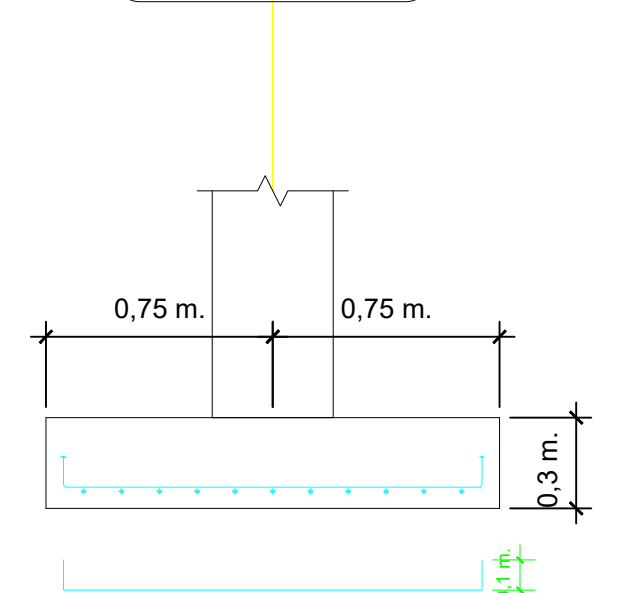
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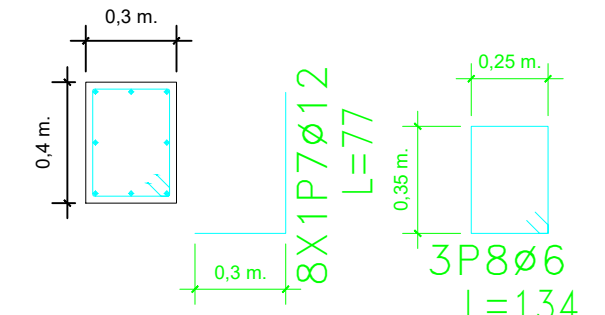
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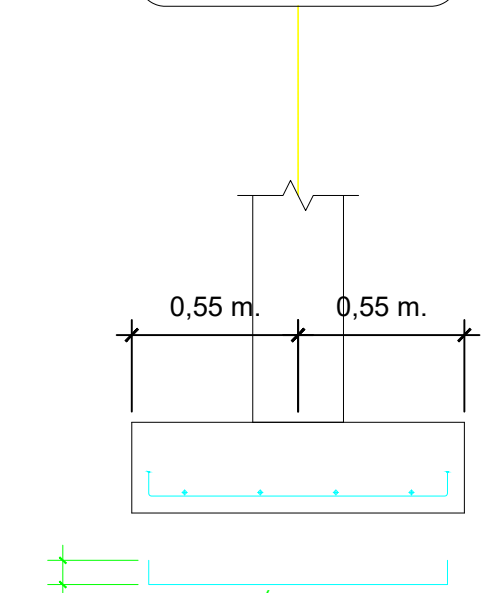
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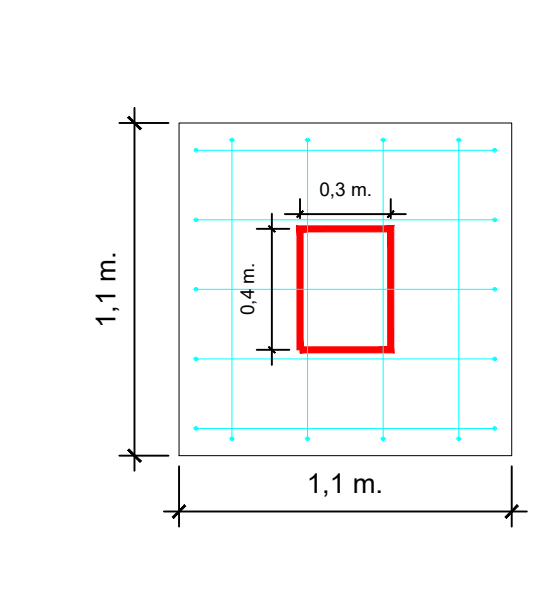
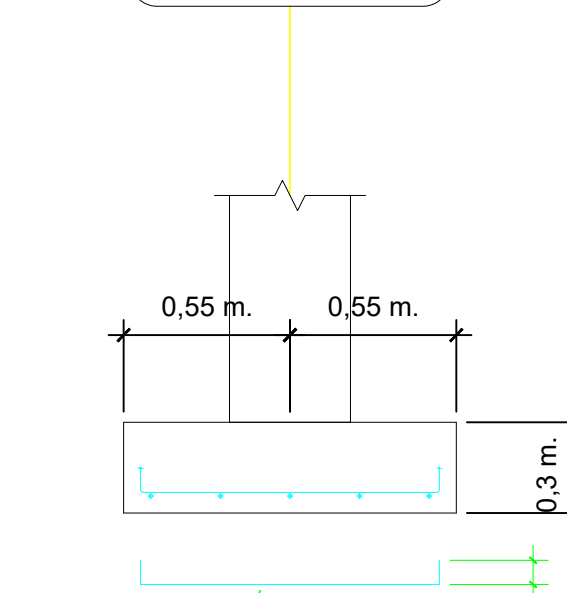
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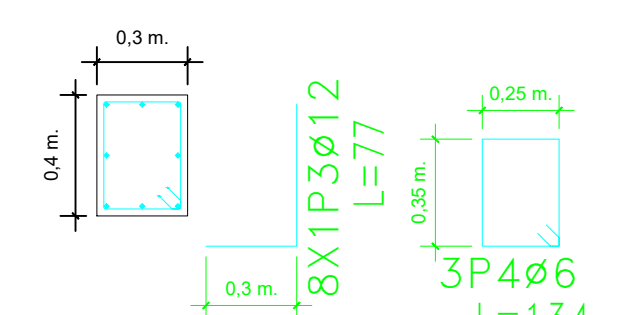
C345 y C346



C345 y C346



C345 y C346



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DISEÑO ESTRUCTURAL DEL HOSPITAL
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PROVINCIA: MENDEZ
MUNICIPIO: SAN LORENZO

FUNDACIONES

FUNDACION BLOQUE E

ESCALA : INDICADAS

PLANO
ESTRUCTURALES

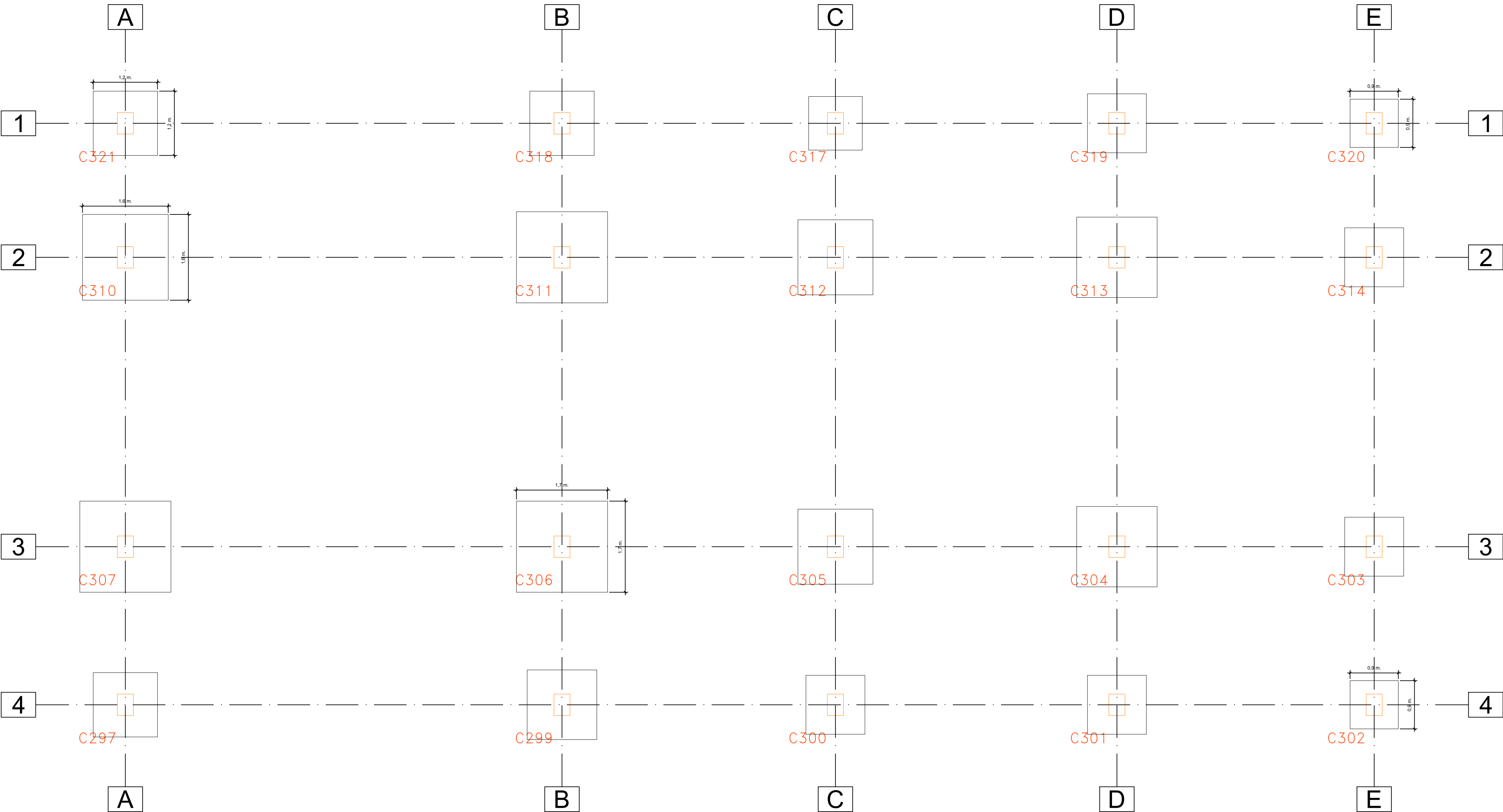
LAMINA
6/18

Plano Fundaciones

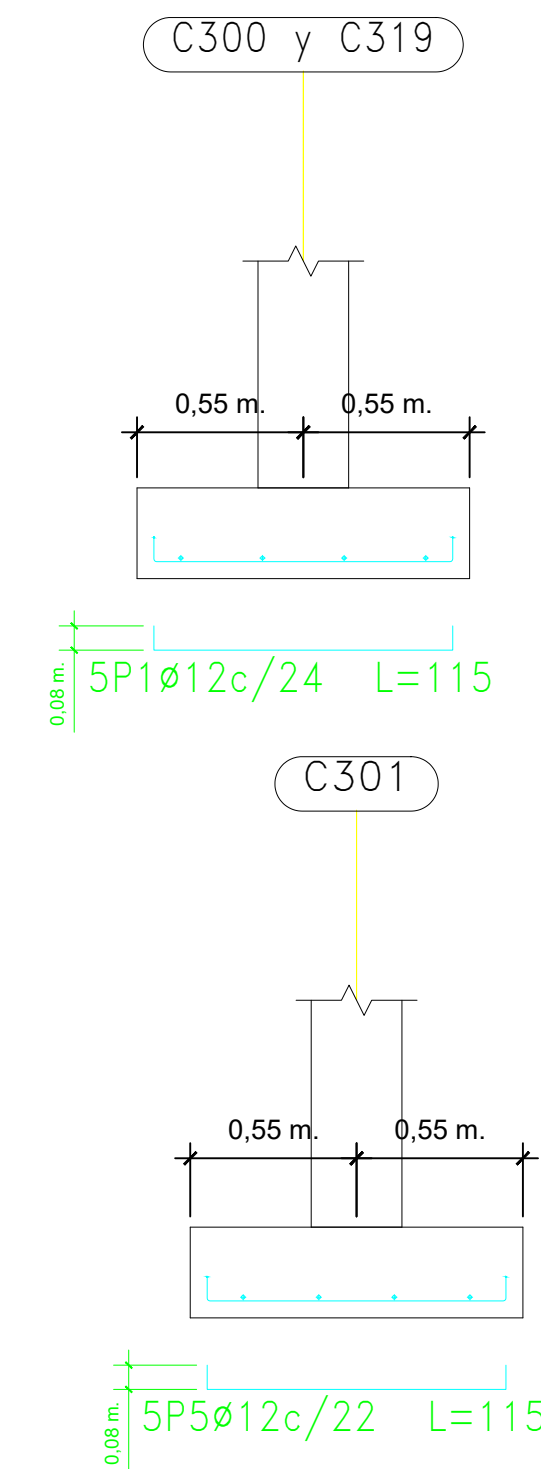
Bloque F

Esc. 1:50

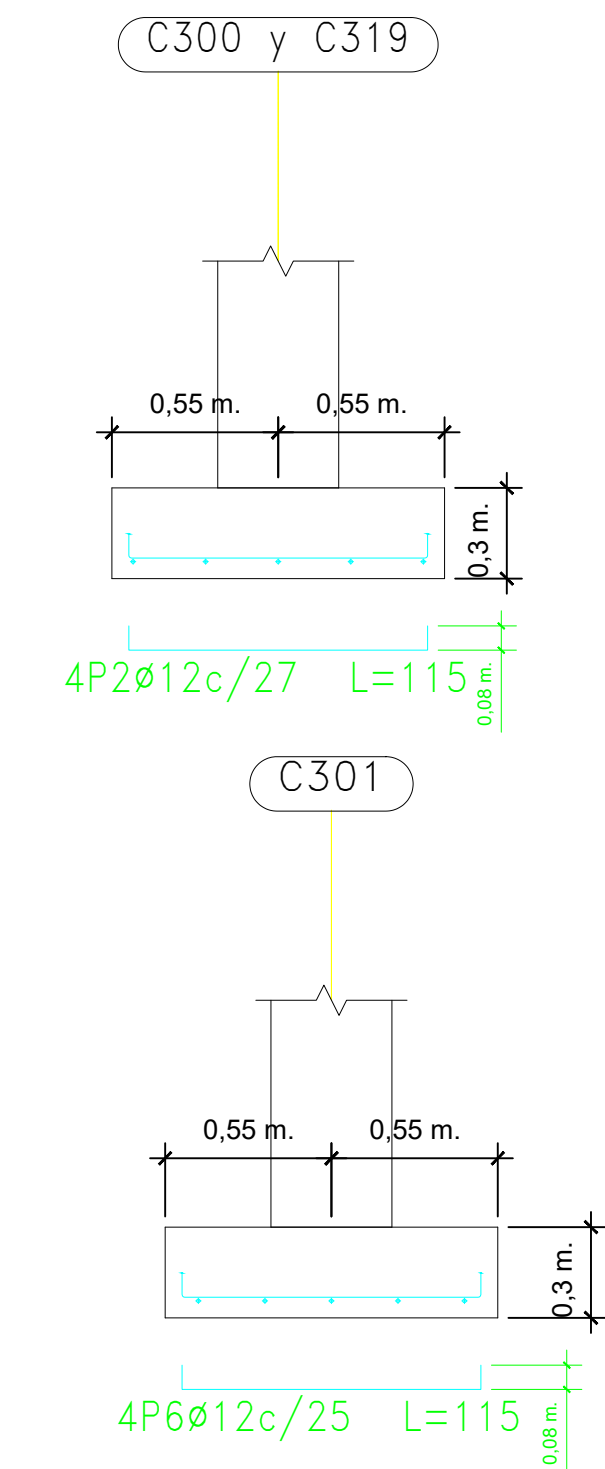
Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
C300=C319	1	ø12	5	115	575	5.1
	2	ø12	4	115	460	4.1
	3	ø12	8	77	616	5.5
	4	ø6	3	134	402	0.9
Total+10%: (x2):						17.2 34.4
C301	5	ø12	5	115	575	5.1
	6	ø12	4	115	460	4.1
	7	ø12	8	77	616	5.5
	8	ø6	3	134	402	0.9
Total+10%:						17.2
C304	9	ø12	11	140	1540	13.7
	10	ø12	10	140	1400	12.4
	11	ø12	8	77	616	5.5
	12	ø6	3	134	402	0.9
Total+10%:						35.8
C306	13	ø20	6	184	1104	27.2
	14	ø12	14	160	2240	19.9
	15	ø12	8	81	648	5.8
	16	ø6	3	134	402	0.9
Total+10%:						59.2
ø6:						5.0
ø12:						111.7
ø20:						29.9
Total:						146.6



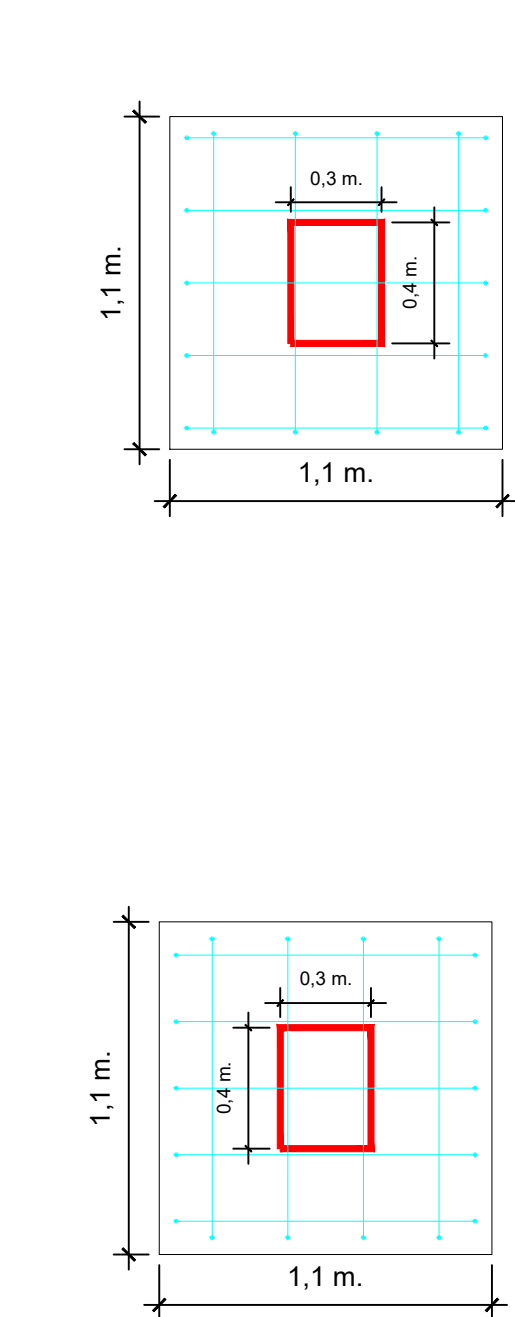
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4
ESCALA 1:25



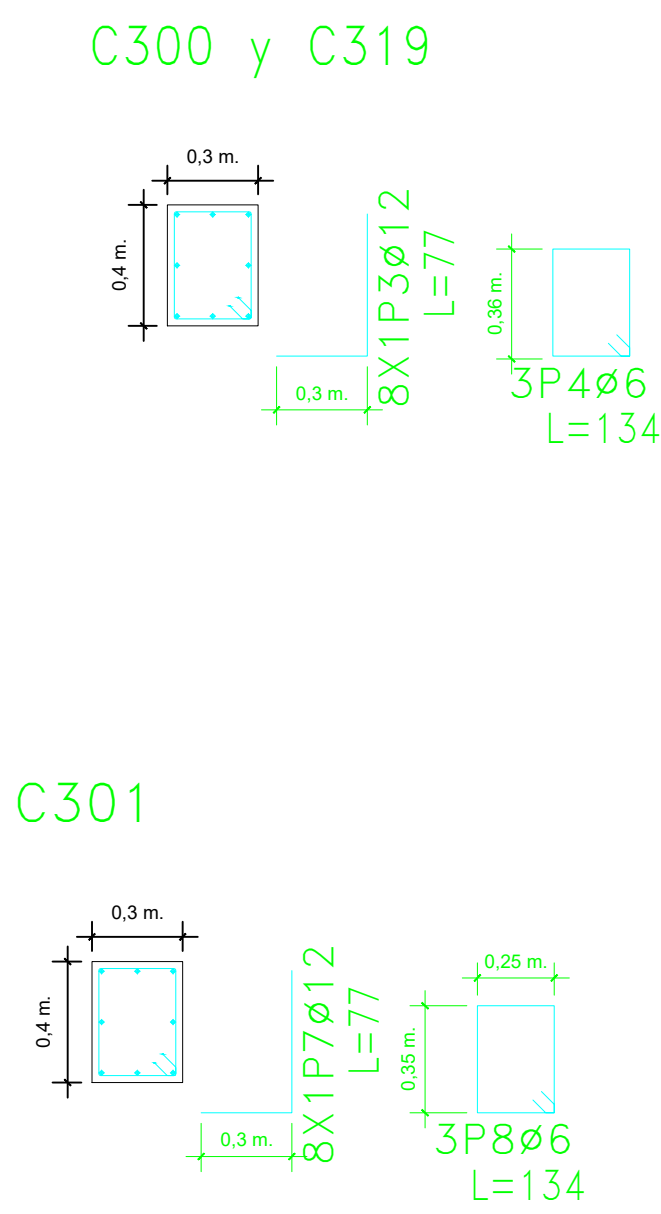
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



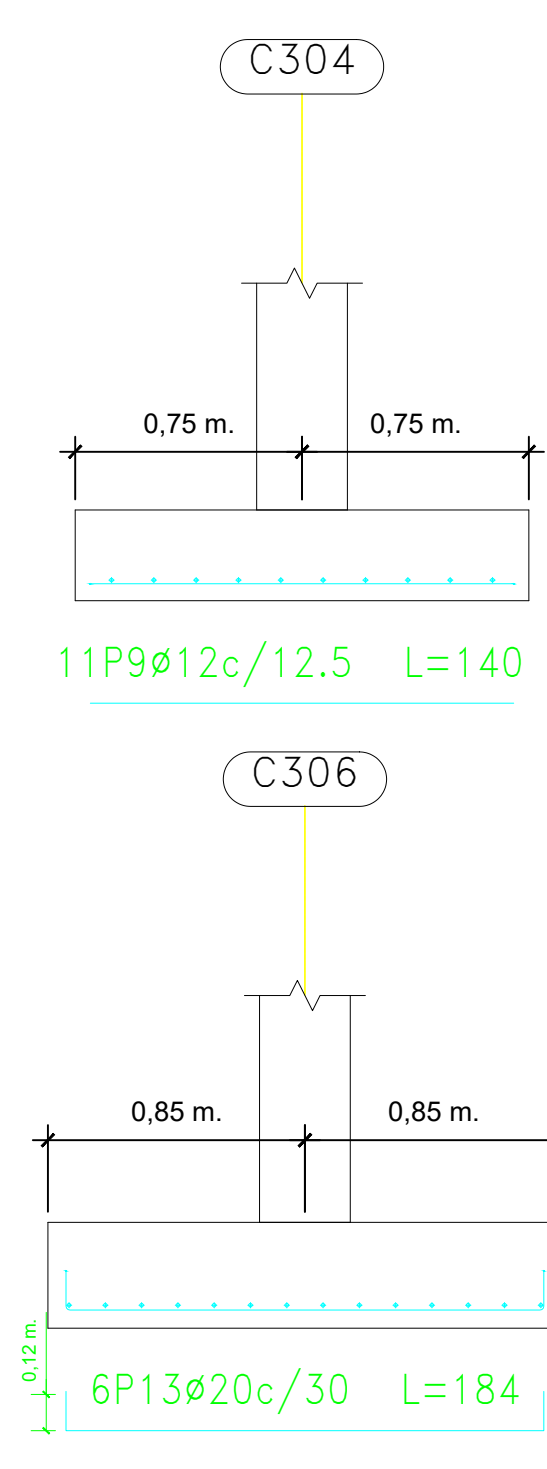
DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25



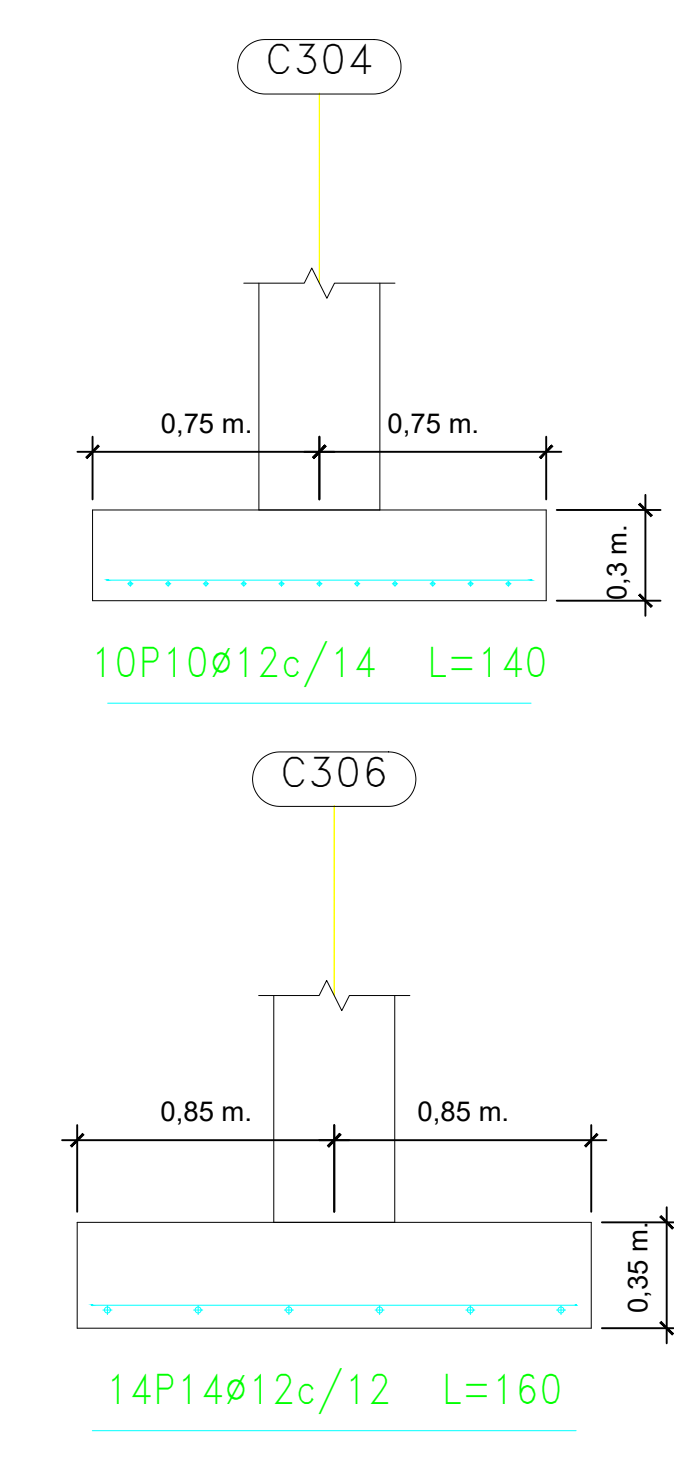
DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25



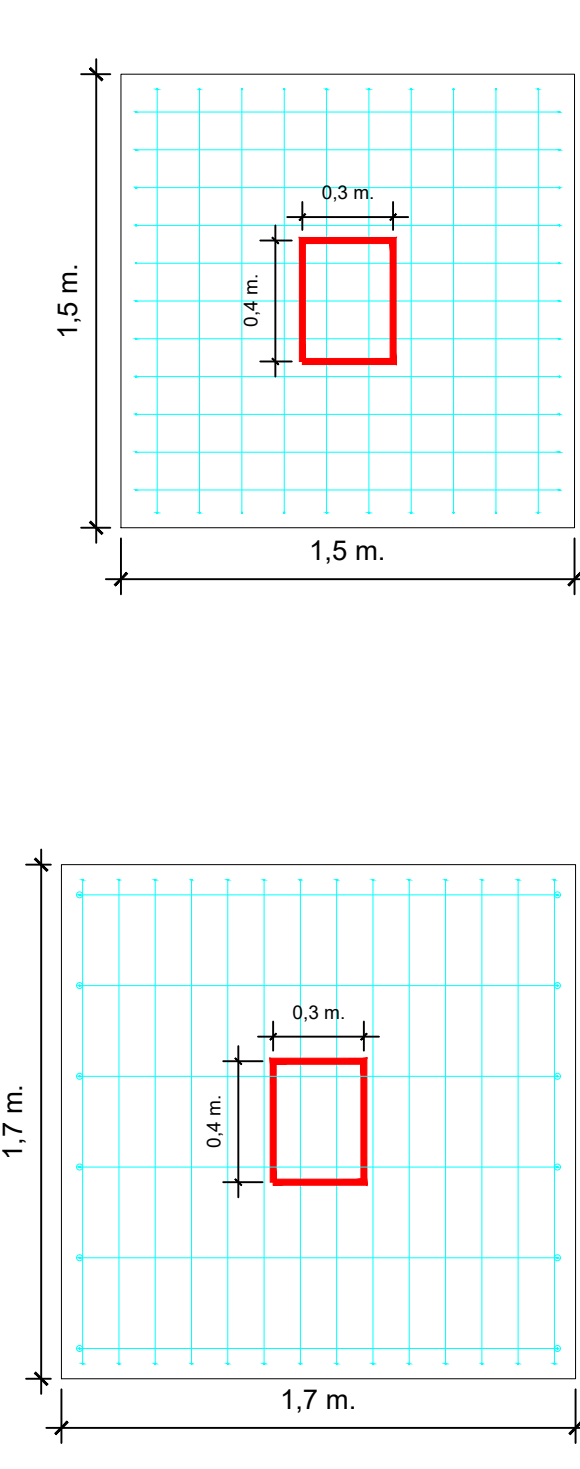
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4-4
ESCALA 1:25



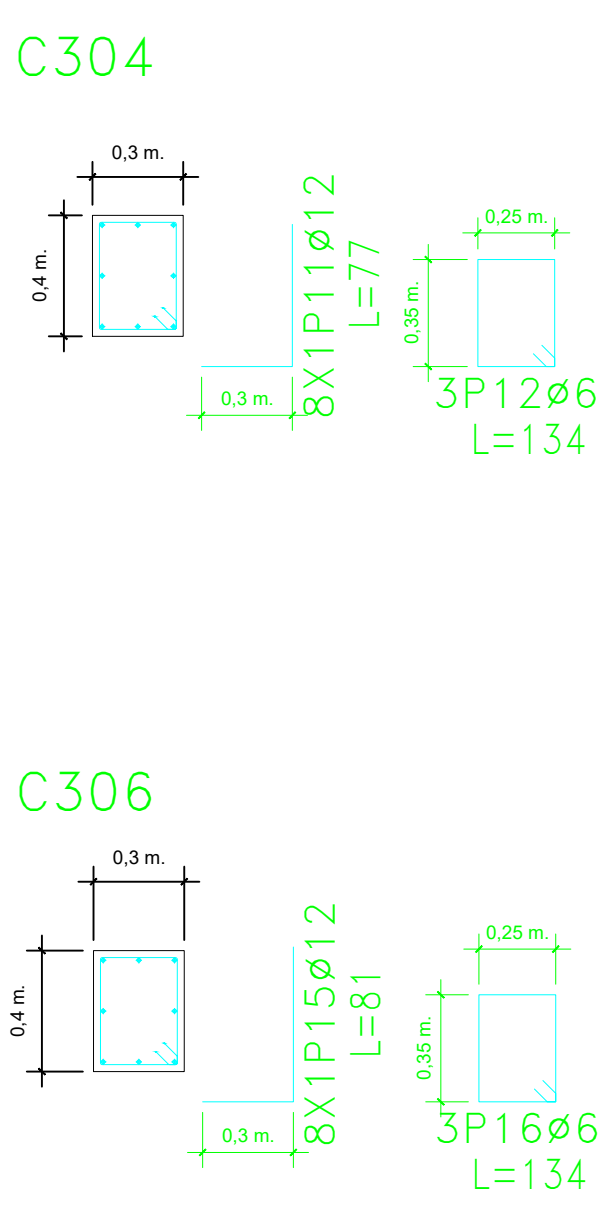
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25



DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
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DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
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LAMINA
7/18

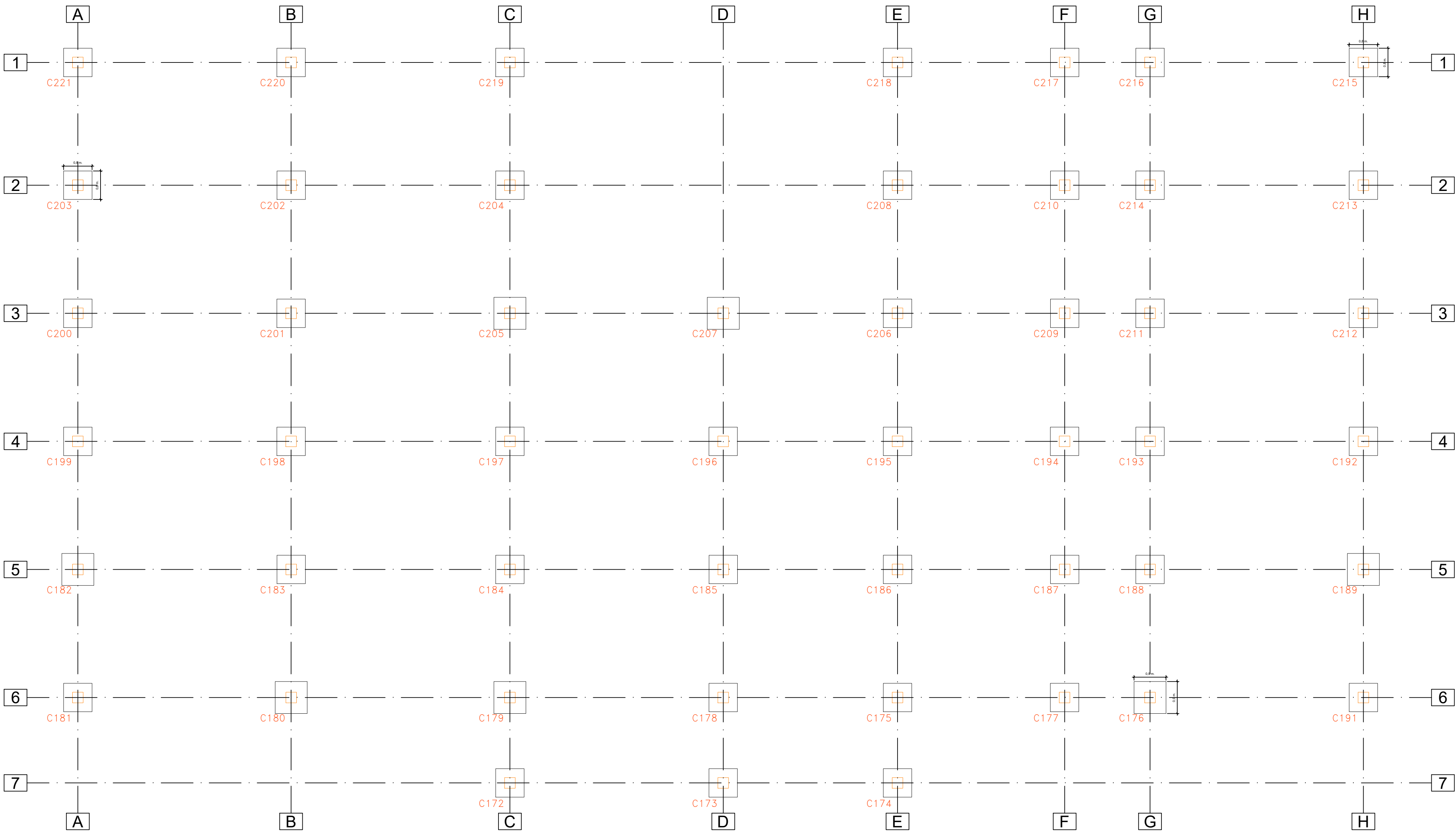
Plano Fundaciones

Bloque G

Esc. 1:75

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
C49=C109=C110=C111=C112	1	ø12	3	99	297	2.6
C113=C114=C115=C117=C119	2	ø12	3	99	297	2.6
C120=C121=C122=C123=C124	3	ø12	6	77	462	4.1
C127=C128=C130=C131=C132	4	ø6	3	114	342	0.8
C144=C147=C148=C149=C152						
C153=C155=C157=C169=C172						
C174=C181=C183=C185=C186						
C187=C188=C191=C192=C193						
C194=C198=C199=C200=C201						
C202=C203=C204=C208=C209						
C210=C211=C212=C213=C214						
C215=C216=C217=C218=C219						
C220=C221						
Total+10%: (x62):					11.1	688.2
ø6:					55.8	
ø12:					632.4	
Total:					688.2	

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
C48=C72=C73=C97=C116	1	ø12	3	99	297	2.6
C118=C125=C126=C133=C134	2	ø12	3	99	297	2.6
C135=C136=C137=C138=C139	3	ø12	6	77	462	4.1
C140=C141=C142=C143=C145	4	ø6	3	114	342	0.8
C146=C150=C151=C173=C175						
C177=C178=C184=C195=C196						
C197=C206						
Total+10%: (x32):					11.1	355.2



DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE 1-2-3-4
ESCALA 1:25

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SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25

DISPOSICION DE ARMADURAS ZAPATAS
VISTA EN PLANTA
ESCALA 1:25

DISPOSICION DE ARMADURAS DE LA COLUMNA PARA ZAPATAS
ESCALA 1:25

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SECCIONES TRANSVERSALES
EJE 1-2-3-4-4
ESCALA 1:25

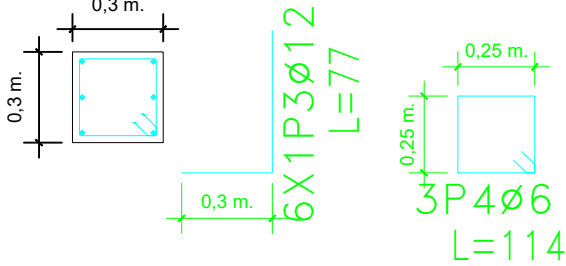
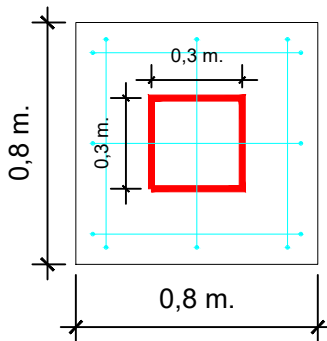
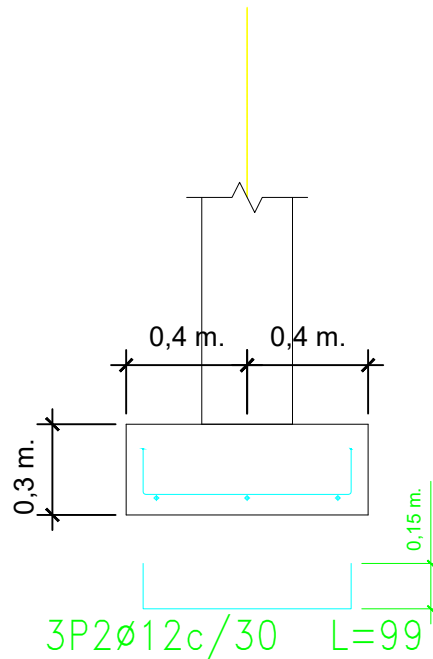
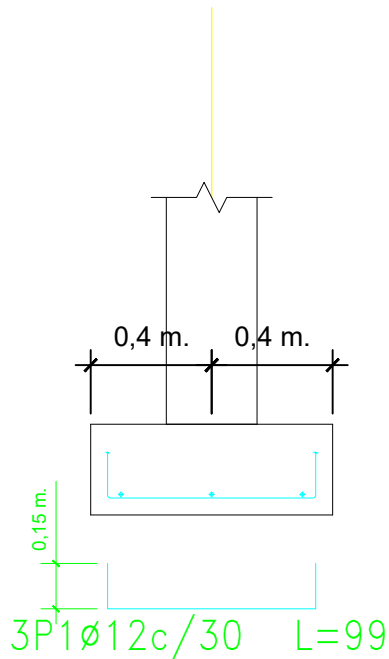
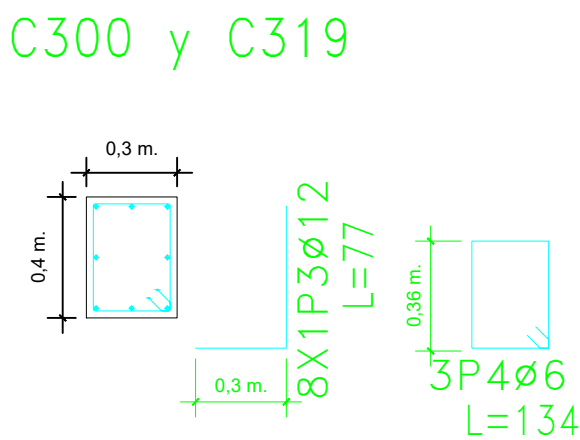
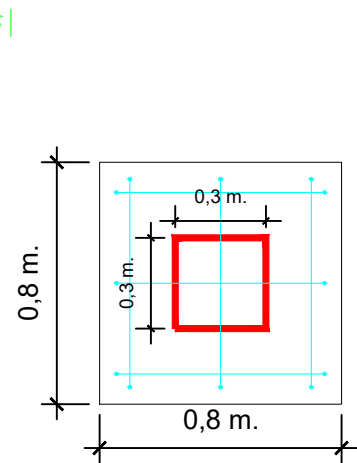
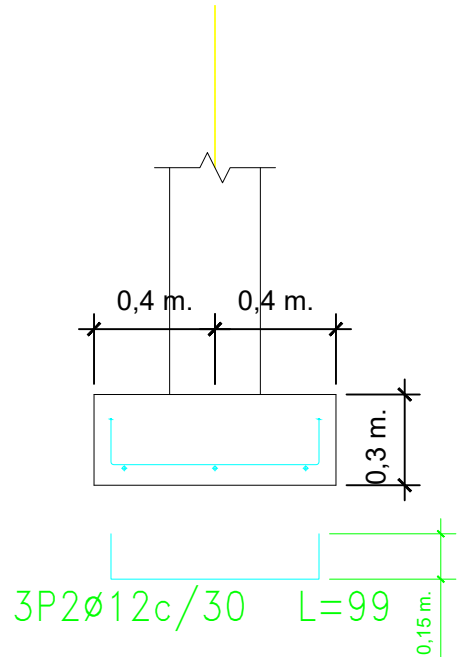
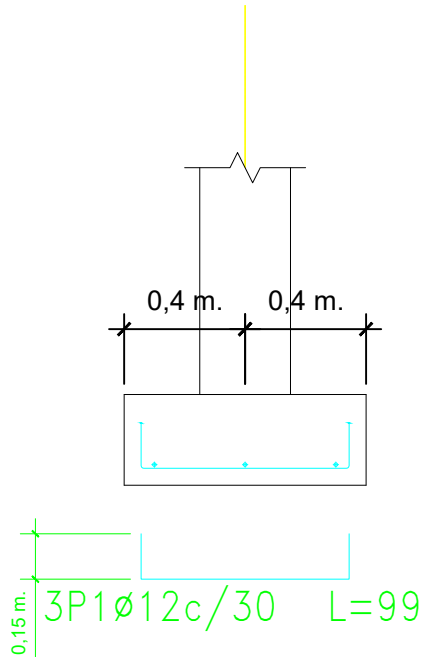
DISPOSICION DE ARMADURAS ZAPATAS
SECCIONES TRANSVERSALES
EJE A-B-C-D-E
ESCALA 1:25

DISPOSICION DE ARMADURAS ZAPATAS
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C48, C72, C73, C97, C116, C118, C125, C126, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C145, C146, C150, C151, C173, C175, C177, C178, C184, C195, C196, C197 y C206

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LAMINA
8/18

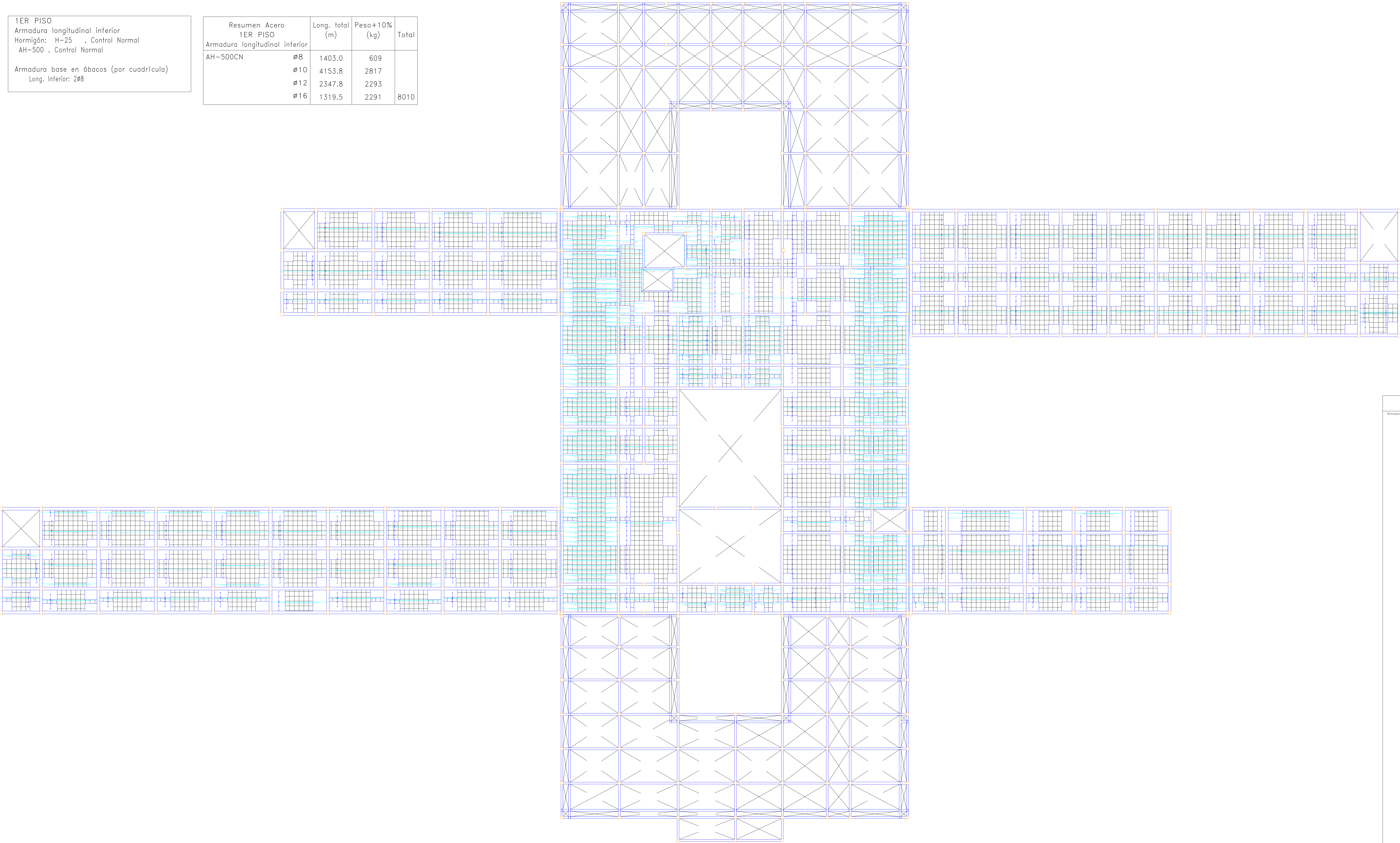
Plano Losa Casetonada: Hospital de Segundo Nivel San Lorenzo Armadura Longitudinal Inferior

Esc. 1:150

1ER PISO
Armadura longitudinal inferior
Hormigón: H=25 , Control Normal
AH=500 , Control Normal

Armadura base en ábacos (por cuadrícula)
Long. Inferior: 2ø8

Resumen Acero 1ER PISO Armadura longitudinal inferior		Long. total (m)	Peso+10% (kg)	Total
AH=500CN	ø8	1403.0	609	
	ø10	4153.8	2817	
	ø12	2347.8	2293	
	ø16	1319.5	2291	



Elemento	Pos.	Díam.	No.	Long. (cm)	Total (cm)	AH=500CN (kg)
Armadura longitudinal inferior						
1	#10	8	350	2800	17.3	
2	#10	15	540	4420	27.5	
3	#10	10	425	4300	26.8	
4	#10	16	460	7360	42.4	
5	#10	5	390	1950	12.0	
6	#10	2	540	890	4.3	
7	#10	5	325	1625	10.0	
8	#10	8	355	2840	17.5	
9	#10	74	370	27380	168.8	
10	#10	26	610	15860	97.8	
11	#10	11	405	4455	27.5	
12	#10	4	410	1640	10.1	
13	#10	5	425	2125	13.1	
14	#8	2	645	1290	5.1	
15	#8	53	450	23850	94.1	
16	#12	2	350	700	6.2	
17	#10	1	300	300	1.8	
18	#8	2	410	820	3.2	
19	#8	8	305	2440	9.6	
20	#8	3	395	1185	4.7	
21	#8	2	295	590	2.3	
22	#10	2	315	630	3.8	
23	#16	79	645	50955	804.2	
24	#10	79	470	37130	228.9	
25	#10	28	415	11620	71.6	
26	#16	2	620	1240	19.8	
27	#8	3	350	1050	4.1	
28	#8	3	255	765	3.0	
29	#12	36	430	15480	117.4	
30	#10	5	250	1250	7.7	
31	#16	22	635	13970	220.5	
32	#16	74	440	32560	519.7	
33	#16	18	615	11070	174.7	
34	#16	54	640	21760	345.4	
35	#12	67	630	42210	374.8	
36	#10	61	640	39040	222.2	
37	#12	19	625	8270	55.5	
38	#12	69	630	43470	385.9	
39	#10	115	495	56925	351.0	
40	#10	60	620	37200	242.0	
41	#10	6	305	1830	11.3	
42	#10	1	700	700	4.3	
43	#8	1	700	700	2.8	
44	#8	1	280	280	1.1	
45	#8	1	400	400	1.8	
46	#8	1	280	280	1.1	
47	#10	1	510	510	3.1	
48	#8	34	455	15470	61.0	
49	#8	48	485	8640	23.9	
50	#8	13	315	4095	16.2	
51	#10	15	315	4725	18.2	
52	#12	23	480	11040	98.0	
53	#8	3	380	830	3.7	
54	#10	23	240	12330	27.7	
55	#10	23	410	9430	38.1	
56	#10	23	515	11845	73.0	
57	#8	3	305	855	3.3	
58	#10	23	480	11270	65.5	
59	#12	25	485	12175	115.4	
60	#12	25	555	12765	115.3	
61	#12	25	400	9000	61.7	
62	#10	4	355	1420	9.0	
63	#10	2	450	900	5.7	
64	#10	31	620	19220	118.5	
65	#8	38	610	23180	141.1	
66	#8	37	440	16280	64.2	
67	#10	79	1500	11850	63.2	
68	#8	18	545	9810	58.7	
69	#10	29	750	21750	67.1	
70	#10	15	420	6300	38.4	
71	#10	29	510	14790	62.9	
72	#10	2	380	760	4.7	
73	#10	1	830	830	5.1	
74	#10	1	385	385	2.4	
75	#10	18	830	14940	91.1	
76	#8	19	620	11780	45.0	
77	#12	19	535	10155	40.2	
78	#12	20	490	9800	47.0	
79	#8	1	815	815	7.2	
80	#8	1	815	815	5.3	
81	#8	1	815	815	2.4	
82	#8	1	525	525	2.1	
83	#10	14	440	6160	36.0	
84	#10	15	450	6750	41.6	
85	#10	26	615	15990	46.6	
86	#10	16	455	7280	16.8	
87	#12	17	600	10200	30.6	
88	#10	18	600	10800	66.6	
89	#8	7	445	3115	13.3	
90	#10	14	625	8750	52.2	
91	#8	14	650	9100	36.9	
92	#8	14	500	7000	27.6	
93	#12	1	610	610	5.5	
94	#12	16	595	9520	84.5	
95	#8	1	610	610	2.4	
96	#12	4	620	2480	22.0	
97	#12	2	470	940	8.3	
98	#8	6	430	2580	10.2	
99	#8	4	620	2500	8.9	
Total+10%						8009.2
						#8: 608.8
						#10: 2817.0
						#12: 2292.8
						#16: 2290.6
						Total: 8009.2



UNIVERSIDAD AUTÓNOMA
JUAN MISAEL SARACHO
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FACULTAD DE CIENCIAS
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CARRERA DE
INGENIERÍA CIVIL

UNIVERSITARIO:
JOSE DANIEL
CAMACHO CAMPERO

PROYECTO:
DISEÑO ESTRUCTURAL DEL HOSPITAL
DE SEGUNDO NIVEL SAN LORENZO

REGION: URBANO
PROVINCIA: MENDEZ
MUNICIPIO: SAN LORENZO

LOSA CASETONADA ARMADURA
LONGITUDINAL INFERIOR
ESCALA : INDICADAS

PLANO
ESTRUTURALES
LAMINA
9/18

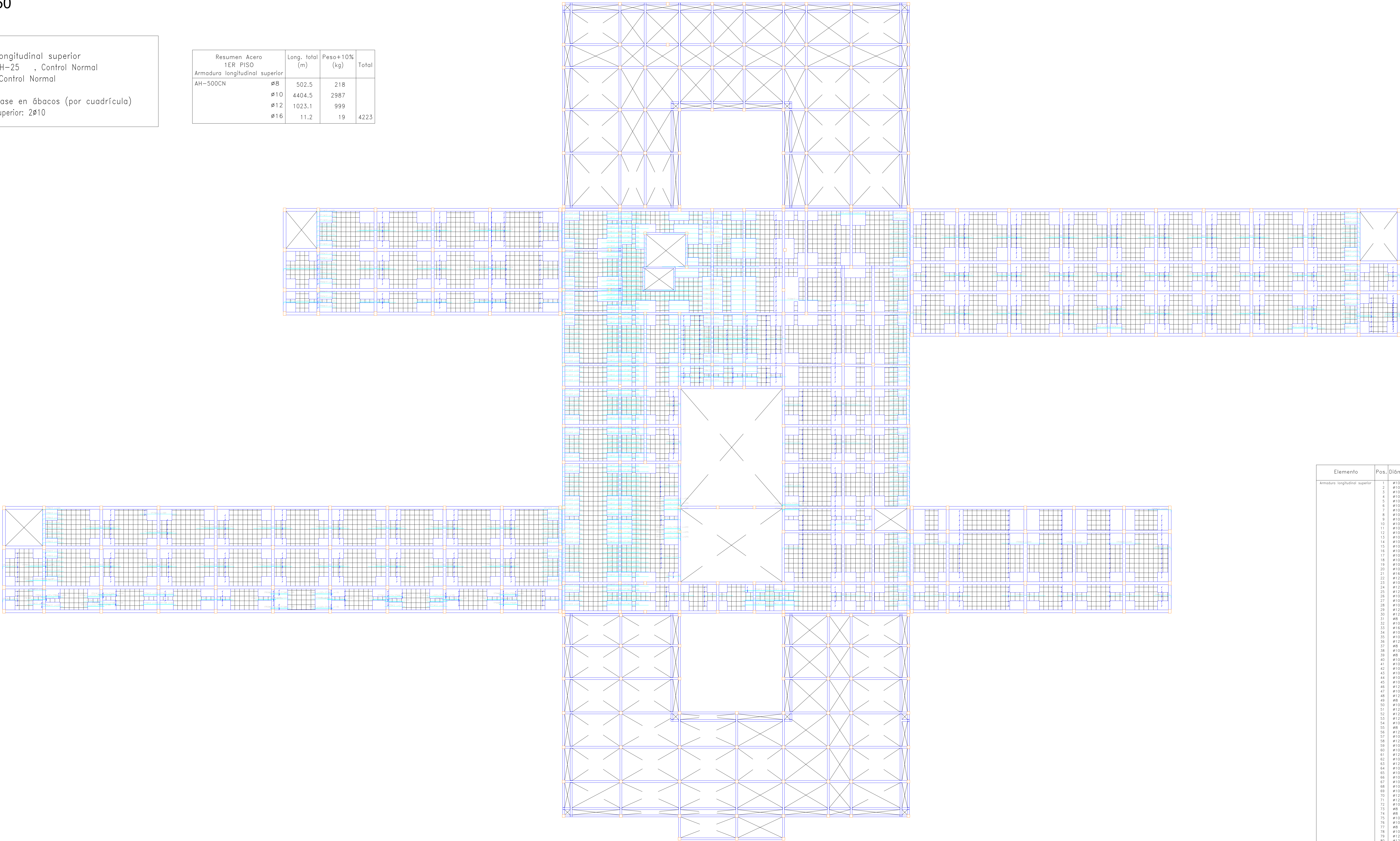
Plano Losa Casetonada:
Hospital de Segundo Nivel San Lorenzo
Armadura Longitudinal Superior

Esc. 1:150

1ER PISO
Armadura longitudinal superior
Hormigón: H-25 , Control Normal
AH-500 , Control Normal

Armadura base en óbacos (por cuadrícula)
Long. Superior: 2ø10

Resumen Acero	Long. total	Peso+10%	Total
1ER PISO			
Armadura longitudinal superior			
AH-500CN	502.5	218	
ø8	4404.5	2987	
ø10	1023.1	999	
ø12	11.2	19	4223



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-500CN (kg)
Armadura longitudinal superior						
1	#10	14	175	2400	15.1	
2	#10	14	300	4200	25.9	
3	#10	89	325	22425	138.3	
4	#10	35	220	7700	47.5	
5	#10	5	610	3050	18.8	
6	#10	17	180	3060	18.9	
7	#10	26	250	6500	40.1	
8	#10	15	240	3675	22.7	
9	#10	8	260	2080	12.8	
10	#10	6	240	1440	8.9	
11	#10	88	235	20680	127.5	
12	#10	79	230	18170	112.0	
13	#10	61	205	12505	77.1	
14	#10	69	495	34155	210.6	
15	#10	79	245	27155	168.0	
16	#10	4	475	1900	11.7	
17	#10	6	490	2940	18.1	
18	#10	26	115	29950	182.7	
19	#10	4	915	3660	22.6	
20	#10	6	790	4740	29.2	
21	#16	1	430	430	6.8	
22	#12	1	295	295	2.8	
23	#10	77	410	31570	194.6	
24	#12	2	625	1250	11.1	
25	#12	2	540	1080	8.6	
26	#10	38	540	19820	121.0	
27	#10	1	605	605	3.7	
28	#10	2	525	1050	6.5	
29	#12	1	605	605	5.4	
30	#12	1	585	585	5.2	
31	#8	14	390	5460	21.5	
32	#10	5	220	1100	6.3	
33	#16	3	235	690	10.9	
34	#10	2	225	450	2.8	
35	#10	3	200	600	3.7	
36	#12	1	230	230	2.0	
37	#8	1	1025	1025	4.2	
38	#10	1	1025	1025	6.2	
39	#8	11	1010	1010	4.2	
40	#10	31	180	5580	36.3	
41	#10	19	210	3970	23.9	
42	#10	8	170	1360	8.4	
43	#10	18	185	4440	27.4	
44	#10	25	180	4500	28.3	
45	#10	215	210	45150	283.8	
46	#12	46	375	17250	153.2	
47	#10	128	275	35200	218.7	
48	#12	25	360	9000	143.8	
49	#10	117	390	45930	283.5	
50	#10	23	385	8855	51.8	
51	#12	25	375	9375	143.8	
52	#12	25	375	9375	143.8	
53	#10	21	385	8085	49.8	
54	#10	21	385	8085	49.8	
55	#12	25	340	7820	69.4	
56	#10	11	390	4290	26.4	
57	#12	11	425	4675	41.5	
58	#10	11	390	4290	26.4	
59	#10	11	210	2310	14.2	
60	#10	34	410	13940	133.8	
61	#10	35	400	14000	81.4	
62	#10	35	400	14000	81.4	
63	#10	20	270	5400	33.3	
64	#10	20	270	5400	33.3	
65	#10	19	210	3990	24.8	
66	#10	20	460	9200	56.7	
67	#10	20	460	9200	56.7	
68	#10	20	460	9200	56.7	
69	#10	20	460	9200	56.7	
70	#12	6	215	1290	11.5	
71	#12	6	215	1290	11.5	
72	#10	10	195	1950	12.0	
73	#10	8	375	3000	18.5	
74	#8	5	195	975	3.8	
75	#10	4	235	940	5.8	
76	#10	4	235	940	5.8	
77	#10	4	235	940	5.8	
78	#10	30	405	12150	74.9	
79	#12	2	390	780	6.9	
80	#12	30	405	12150	107.9	
81	#10	15	395	5925	36.5	
82	#10	15	280	4200	25.9	
83	#8	7	215	1505	5.9	
84	#8	4	220	880	5.7	
85	#10	4	230	920	5.7	
86	#8	2	225	450	1.6	
87	#10	2	180	360	2.3	
88	#8	2	180	360	1.4	
89	#12	2	225	450	4.0	
90	#12	6	230	1380	12.3	
91	#10	6	180	1080	6.8	
92	#8	2	170	340	1.3	
93	#12	1	205	205	1.8	
94	#8	3	225	675	2.7	
95	#8	3	209	603	2.4	
Total+10%						4223.8
#8:						218.0
#10:						2987.2
#12:						999.3
#16:						15.4
Total:						4223.8



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MUNICIPIO: SAN LORENZO

FUNDACIONES
LOSA CASETONADA ARMADURA
LONGITUDINAL SUPERIOR
ESCALA : INDICADAS

PLANO
ESTRUCTURALES
LAMINA
10/18

Plano Losa Casetonada:

Hospital de Segundo Nivel San Lorenzo

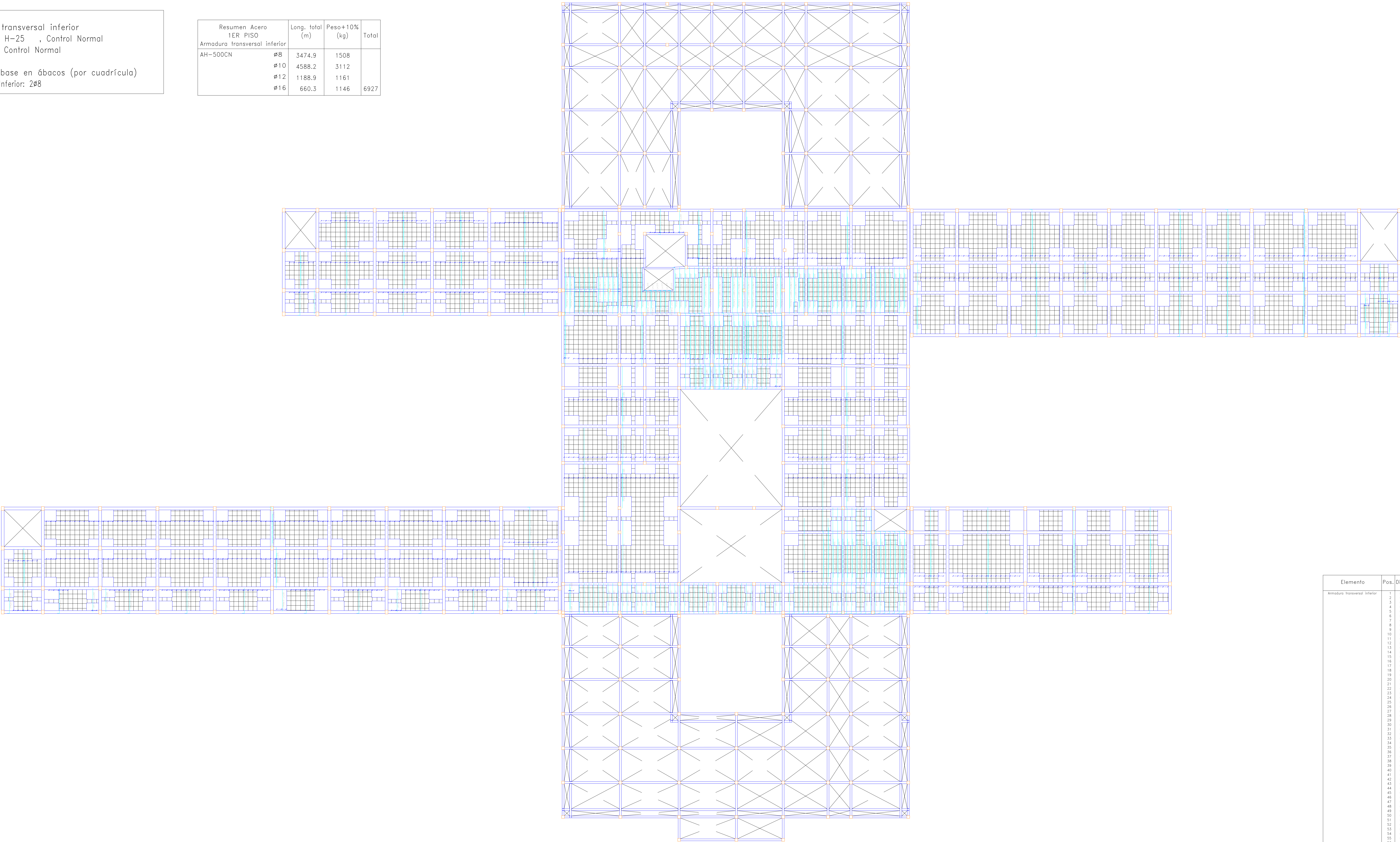
Armadura Transversal Inferior

Esc. 1:150

1ER PISO
Armadura transversal inferior
Hormigón: H-25 , Control Normal
AH-500 , Control Normal

Armadura base en ábacos (por cuadrícula)
Trans. Inferior: 2Ø8

Resumen Acero		Long. total	Peso+10%	Total
1ER PISO		(m)	(kg)	
Armadura transversal inferior				
AH-500CN	Ø8	3474.9	1508	
	Ø10	4588.2	3112	
	Ø12	1188.9	1161	
	Ø16	660.3	1146	6927



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-500CN (kg)
Armadura transversal inferior	1	#10	2	245	490	3.0
	2	#10	56	800	44800	276.2
	3	#10	8	400	3200	22.2
	4	#10	4	825	3300	20.2
	5	#10	5	545	2725	16.4
	6	#10	12	395	4740	29.2
	7	#10	5	550	2750	16.2
	8	#10	4	570	2280	14.1
	9	#10	15	280	4200	25.8
	10	#10	17	255	255	1.6
	11	#10	17	250	4250	26.2
	12	#10	55	320	10560	65.1
	13	#10	24	245	8910	55.2
	14	#10	58	340	19720	121.4
	15	#12	9	805	7200	44.9
	16	#12	18	805	7200	44.9
	17	#12	9	805	7200	44.9
	18	#12	9	805	7200	44.9
	19	#12	9	805	7200	44.9
	20	#8	67	420	28140	172.5
	21	#8	65	225	1950	18.2
	22	#10	2	270	540	3.0
	23	#10	50	485	24250	149.5
	24	#10	50	485	24250	149.5
	25	#12	67	580	37700	235.1
	26	#8	67	420	28140	172.5
	27	#12	65	490	31850	194.0
	28	#10	64	270	17280	104.0
	29	#12	6	270	1620	10.4
	30	#10	6	270	1620	10.4
	31	#12	1	510	510	4.5
	32	#16	62	460	28520	174.0
	33	#16	62	460	28520	174.0
	34	#8	69	300	20700	127.8
	35	#12	51	705	21855	134.0
	36	#8	1	695	695	6.0
	37	#8	52	405	21060	127.8
	38	#8	1	695	695	6.0
	39	#10	1	695	695	6.0
	40	#8	5	485	2425	15.0
	41	#8	5	485	2425	15.0
	42	#8	5	485	2425	15.0
	43	#12	2	455	910	8.1
	44	#8	1	485	485	4.5
	45	#12	1	485	485	4.5
	46	#8	96	800	76800	474.0
	47	#8	96	845	81120	500.0
	48	#10	90	530	47700	294.0
	49	#10	90	435	39150	241.4
	50	#10	1	445	445	3.7
	51	#8	1	330	330	2.5
	52	#10	1	330	330	2.5
	53	#10	2	330	660	4.1
	54	#10	38	285	10830	66.8
	55	#10	39	430	16770	103.4
	56	#10	33	510	16830	103.4
	57	#10	33	510	16830	103.4
	58	#12	33	420	13860	85.1
	59	#8	47	310	14570	90.0
	60	#10	4	300	1200	7.5
	61	#8	126	430	54180	330.0
	62	#10	85	290	24650	152.0
	63	#10	95	455	43225	266.5
	64	#10	102	305	31110	191.8
	65	#10	12	460	5520	34.0
	66	#10	5	230	1150	7.1
Total+10%						6927.4
						#8: 1508.3
						#10: 3111.2
						#12: 1161.0
						#16: 1146.5
						Total: 6927.4



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UNIVERSITARIO:
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REGION: URBANO
PROVINCIA: MENDEZ
MUNICIPIO: SAN LORENZO

FUNDACIONES
LOSA CASETONADA ARMADURA
TRANSVERSAL INFERIOR
ESCALA : INDICADAS

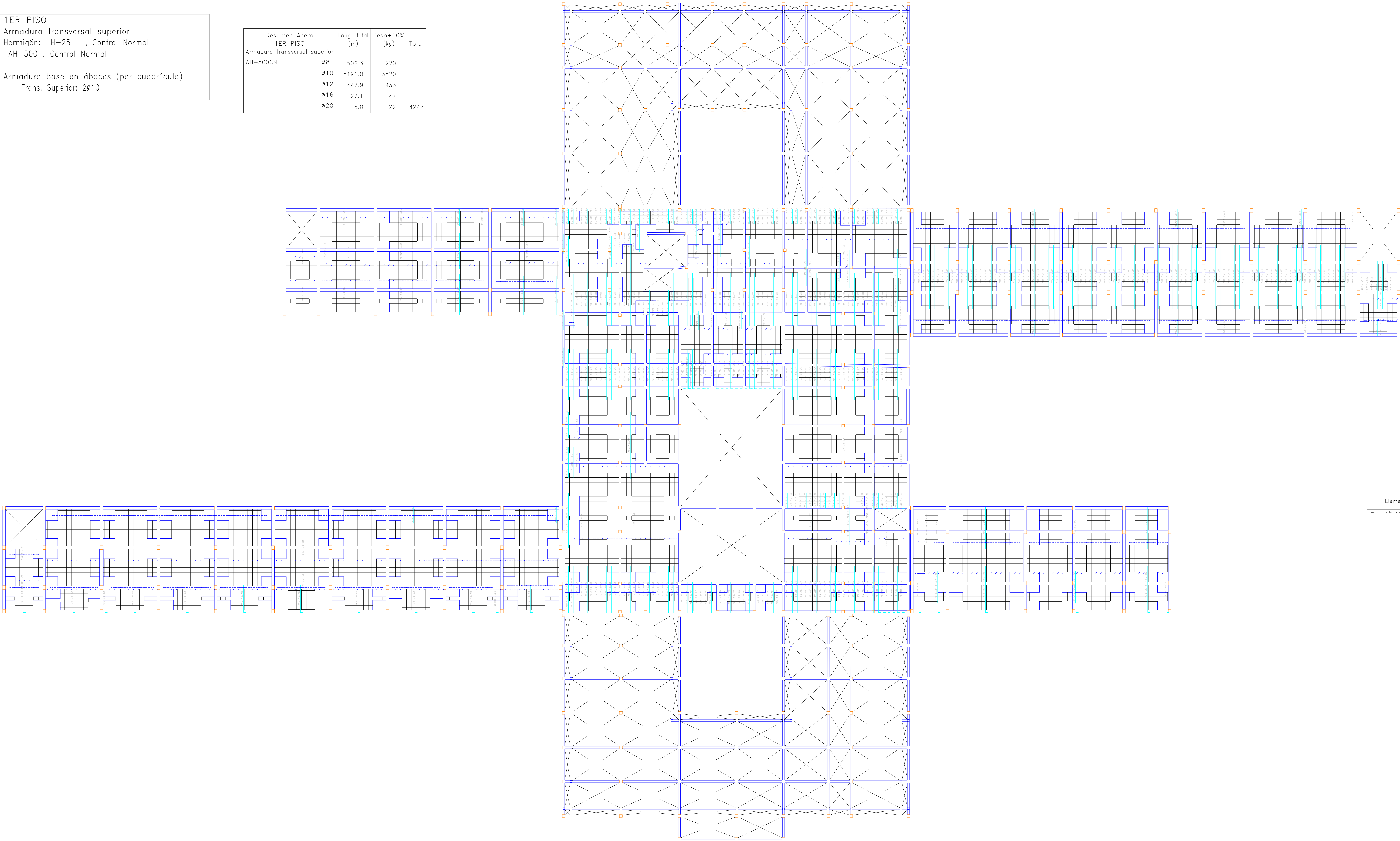
PLANO
ESTRUCTURALES
LAMINA
11/18

Plano Losa Casetonada:
Hospital de Segundo Nivel San Lorenzo
Armadura Transversal Superior
Esc. 1:150

1ER PISO
Armadura transversal superior
Hormigón: H=25 , Control Normal
AH=500 , Control Normal

Armadura base en ábacos (por cuadrícula)
Trans. Superior: 2ø10

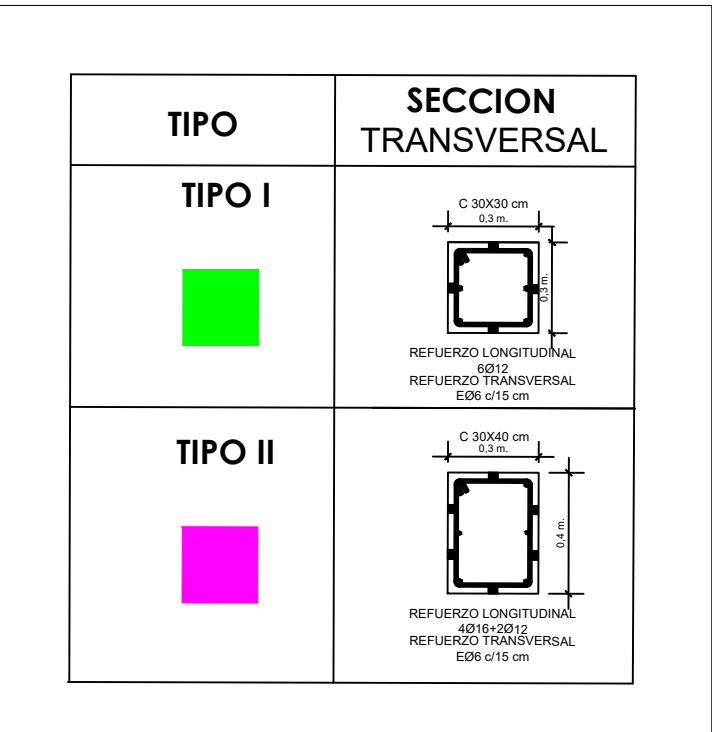
Resumen Acero		Long. total (m)	Peso+10% (kg)	Total
1ER PISO				
Armadura transversal superior				
AH=500CN	ø8	506.3	220	
	ø10	5191.0	3520	
	ø12	442.9	433	
	ø16	27.1	47	
	ø20	8.0	22	4242



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH=500CN (kg)
Armadura transversal superior						
1	#10	38	440	18720	185.3	
2	#8	2	190	380	1.5	
3	#8	2	165	330	1.3	
4	#10	126	195	24370	151.5	
5	#10	1	425	425	2.8	
6	#8	1	440	440	1.7	
7	#8	1	400	400	1.6	
8	#12	1	425	425	3.8	
9	#12	1	190	190	1.7	
10	#10	3	500	1500	9.8	
11	#10	38	450	17100	105.4	
12	#10	37	575	21275	101.2	
13	#10	6	525	3150	19.4	
14	#10	1	680	680	4.2	
15	#10	3	680	2040	12.6	
16	#20	2	400	800	19.7	
17	#16	2	305	610	8.6	
18	#8	5	275	1375	6.8	
19	#8	5	325	1625	10.4	
20	#10	15	210	3150	19.4	
21	#10	15	180	2700	15.2	
22	#10	7	190	1330	8.2	
23	#10	49	540	26460	165.1	
24	#8	2	550	1100	4.4	
25	#10	41	520	21220	131.4	
26	#10	12	371	4452	27.4	
27	#10	7	385	2695	15.9	
28	#10	7	515	3605	22.2	
29	#10	45	695	31275	192.8	
30	#10	12	180	2160	13.3	
31	#10	24	175	4200	25.9	
32	#10	34	135	5220	32.5	
33	#10	4	385	1540	9.3	
34	#10	2	305	610	4.3	
35	#10	6	400	2400	14.8	
36	#10	6	400	2400	14.8	
37	#10	59	355	20945	129.9	
38	#12	60	325	19500	173.1	
39	#10	1	210	210	1.3	
40	#10	1	460	460	2.8	
41	#10	1	460	460	2.8	
42	#10	7	225	1575	1.4	
43	#8	7	225	1575	0.4	
44	#8	7	225	1575	0.5	
45	#8	1	225	225	0.3	
46	#8	1	225	225	0.3	
47	#10	8	325	2600	20.9	
48	#8	1	460	460	1.8	
49	#8	1	460	460	1.8	
50	#10	1	475	475	2.3	
51	#10	1	490	490	2.5	
52	#10	1	490	490	2.5	
53	#10	1	490	490	2.5	
54	#16	1	310	310	13.9	
55	#12	1	725	725	6.4	
56	#12	1	725	725	6.4	
57	#10	1	455	455	2.2	
58	#10	1	385	385	2.3	
59	#10	1	455	455	2.2	
60	#12	1	280	280	2.5	
61	#10	8	180	1440	9.1	
62	#10	254	200	40800	251.5	
63	#10	89	200	17800	108.9	
64	#10	1	230	230	1.4	
65	#10	90	475	42750	263.5	
66	#10	16	445	7120	43.5	
67	#10	15	445	6675	41.5	
68	#10	47	205	9635	59.4	
69	#12	2	345	690	6.1	
70	#10	31	380	11780	72.8	
71	#10	14	435	6090	37.5	
72	#10	14	360	5040	31.1	
73	#10	3	450	1350	8.4	
74	#10	3	500	1500	9.2	
75	#10	3	450	1350	8.4	
76	#12	47	470	22090	136.1	
77	#8	47	510	23970	14.4	
78	#8	47	345	16215	64.0	
79	#8	1	470	470	1.9	
80	#8	1	305	305	1.2	
81	#10	100	320	32000	201.2	
82	#8	2	320	640	2.5	
83	#10	216	320	69120	429.8	
84	#10	7	190	1330	8.2	
Total+10%						4241.2
						#8: 239.9
						#10: 3520.1
						#12: 433.5
						#16: 47.0
						#20: 22.2
						Total: 4241.2

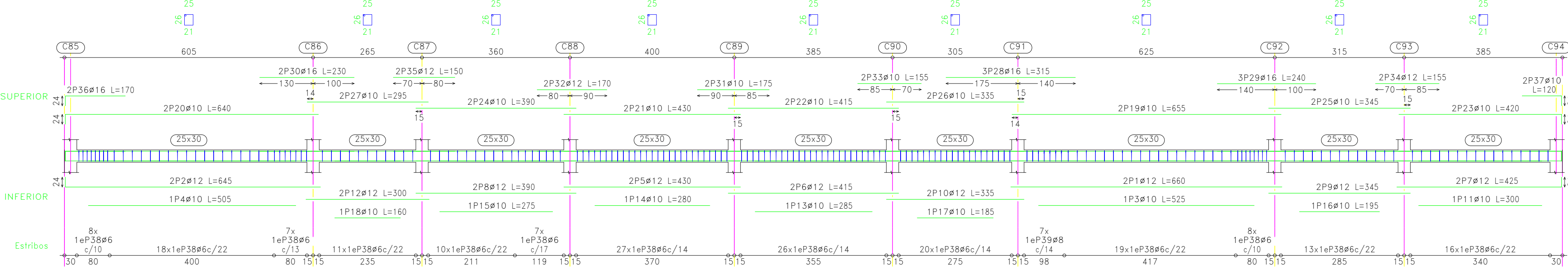
	UNIVERSIDAD AUTÓNOMA JUAN MISAEL SARACHO TARIJA	FACULTAD DE CIENCIAS Y TECNOLOGÍA	CARRERA DE INGENIERÍA CIVIL	UNIVERSITARIO: JOSE DANIEL CAMACHO CAMPERO
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ESC 1:25



Resumen Acero Losas 1 a 4 Columnas	Long. total (m)	Peso+10% (kg)	Total
AH-400CN Ø6	30055.8	7337	30312
Ø12	21203.4	20708	
Ø16	1215.3	2110	
Ø20	57.7	157	

DETALLE ARMADO VIGAS DE BORDE (VB 25x30cm)
PORTICO 19
ESC. 1:75

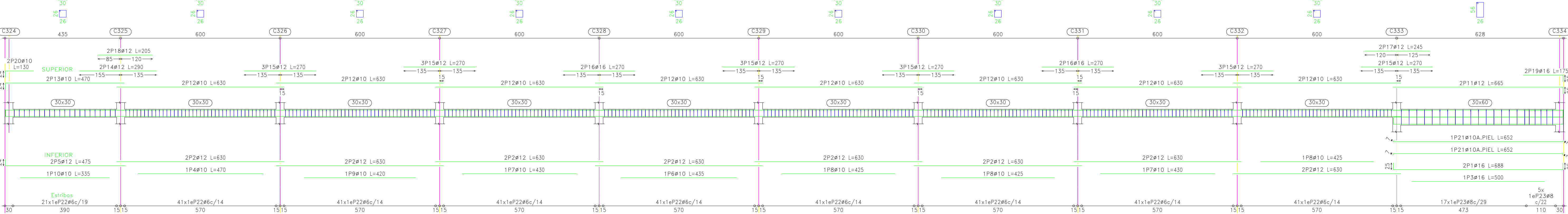


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 19	1	#12	2	660	1320	11.7
	2	#12	2	645	1290	11.5
	3	#10	1	525	525	3.2
	4	#10	1	305	305	3.1
	5	#12	2	430	860	7.6
	6	#12	2	415	830	7.4
	7	#12	2	425	850	7.5
	8	#12	2	390	780	6.9
	9	#12	2	345	690	6.1
	10	#12	2	335	670	5.9
	11	#10	1	300	300	1.8
	12	#12	2	300	600	5.3
	13	#10	1	285	285	1.8
	14	#10	1	280	280	1.7
	15	#10	1	275	275	1.7
	16	#10	1	195	195	1.2
	17	#10	1	185	185	1.1
	18	#10	1	160	160	1.0
	19	#10	2	655	1310	8.1
	20	#10	2	640	1280	7.9
	21	#10	2	430	860	5.3
	22	#10	2	415	830	5.1
	23	#10	2	420	840	5.2
	24	#10	2	390	780	4.8
	25	#10	2	345	690	4.3
	26	#10	2	335	670	4.1
	27	#10	2	295	590	3.6
	28	#16	5	515	2575	14.9
	29	#16	3	240	720	11.4
	30	#16	2	230	460	7.3
	31	#10	2	175	350	2.2
	32	#12	2	170	340	3.0
	33	#10	2	155	310	1.9
	34	#12	2	155	310	2.8
	35	#12	2	150	300	2.7
	36	#16	2	170	340	5.4
	37	#10	2	130	260	1.6
	38	#8	190	106	20140	44.7
	39	#8	7	110	770	3.0
Total #10%:					259.3	
					#6:	49.2
					#8:	3.3
					#10:	77.7
					#12:	66.2
					#16:	49.9
					Total:	259.3

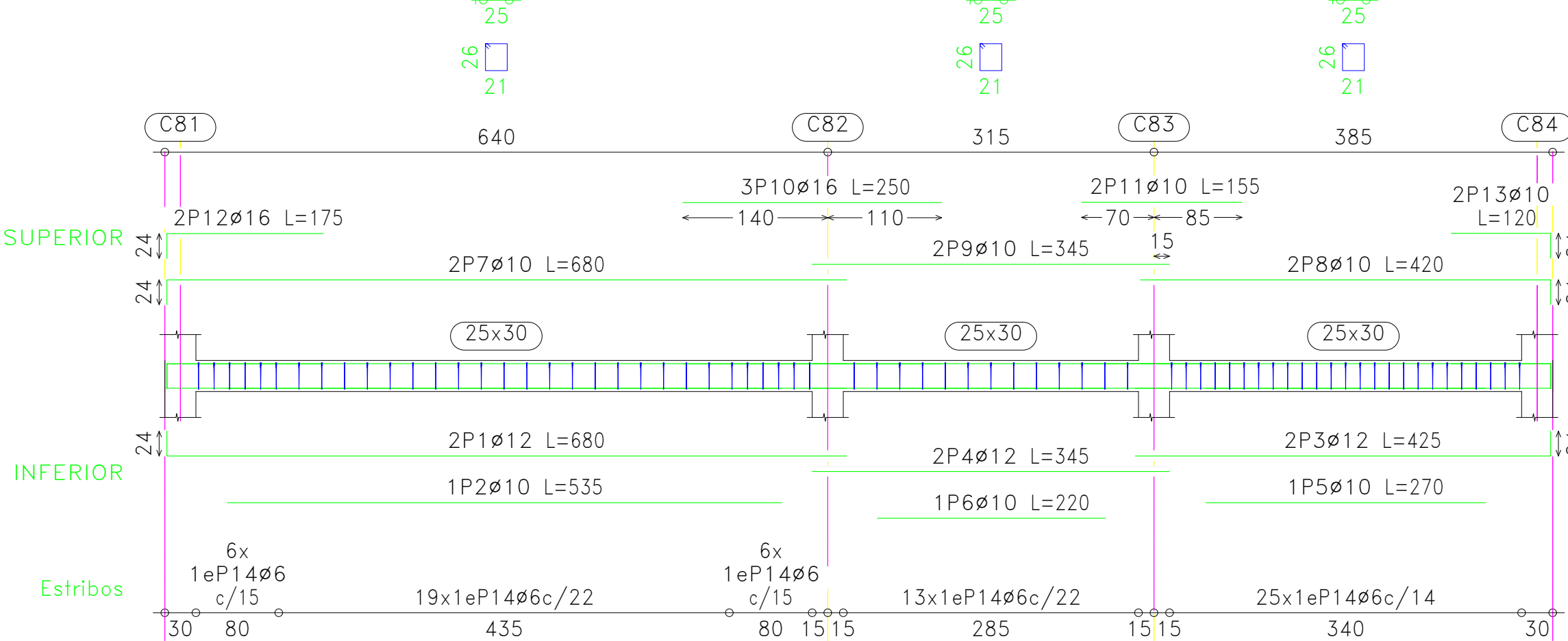
Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 24	1	#16	2	688	1376	21.7
	2	#12	16	630	10080	89.5
	3	#16	1	500	500	7.9
	4	#10	1	470	470	2.9
	5	#12	2	475	950	8.4
	6	#10	1	435	435	2.7
	7	#10	2	430	860	5.3
	8	#10	3	425	1275	7.9
	9	#10	1	420	420	2.6
	10	#10	1	335	335	2.1
	11	#12	2	665	1330	11.8
	12	#10	16	630	10080	62.1
	13	#10	2	470	940	5.8
	14	#12	2	290	580	5.1
	15	#12	17	270	4590	40.8
	16	#16	4	270	1080	17.0
	17	#12	2	245	490	4.4
	18	#12	2	205	410	3.6
	19	#16	2	175	350	5.5
	20	#10	2	130	260	1.6
	21	#10	2	652	1304	8.0
	22	#8	349	116	40484	89.8
	23	#8	22	180	3960	13.6
Total #10%:					464.3	
					#6:	98.8
					#8:	17.1
					#10:	111.1
					#12:	180.0
					#16:	57.3
					Total:	464.3

1ER PISO
Despiece de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

DETALLE ARMADO VIGAS DE BORDE (VB 30x30cm)
PORTICO 24
ESC. 1:75

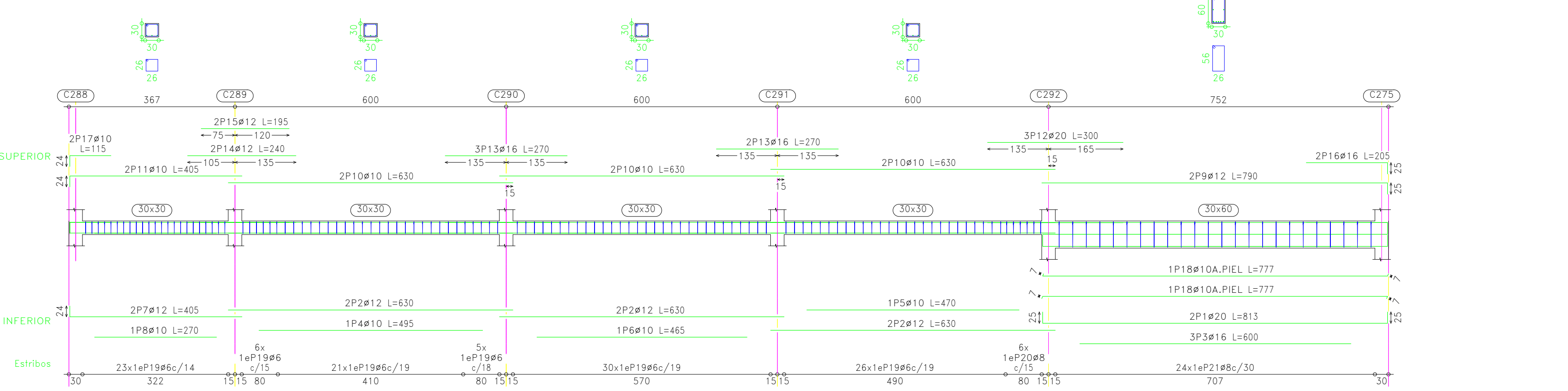


DETALLE ARMADO VIGAS DE BORDE (VB 25x30cm)
PORTICO 22
ESC. 1:50



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 22	1	#12	2	680	1360	12.1
	2	#10	1	535	535	3.3
	3	#12	2	425	850	7.5
	4	#12	2	345	690	6.1
	5	#10	1	270	270	1.7
	6	#10	1	220	220	1.4
	7	#10	2	680	1360	8.4
	8	#10	2	420	840	5.2
	9	#10	2	345	690	4.3
	10	#16	3	250	750	11.8
	11	#10	2	155	310	1.9
	12	#16	2	175	350	5.5
	13	#10	2	120	240	1.5
	14	#8	69	106	7314	16.2
Total #10%:					95.6	
					#6:	17.8
					#10:	30.4
					#12:	28.3
					#16:	19.1
					Total:	95.6

DETALLE ARMADO VIGAS DE BORDE (VB 30x30cm)
PORTICO 43
ESC. 1:75



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 43	1	#20	2	813	1626	40.1
	2	#12	6	630	3780	33.6
	3	#16	3	600	1800	28.4
	4	#10	1	495	495	3.1
	5	#10	1	470	470	2.9
	6	#10	1	465	465	2.9
	7	#12	2	455	910	7.2
	8	#10	1	270	270	1.7
	9	#12	2	790	1580	14.0
	10	#10	6	630	3780	33.3
	11	#10	2	405	810	5.0
	12	#20	3	300	900	22.2
	13	#16	5	270	1350	21.3
	14	#12	2	240	480	4.3
	15	#12	2	195	390	3.5
	16	#16	2	205	410	6.5
	17	#10	2	115	230	1.4
	18	#10	2	777	1554	9.6
	19	#6	111	116	12876	28.6
	20	#8	6	120	720	2.8
	21	#8	24	180	4320	17.0
Total #10%:					307.3	
					#6:	31.5
					#8:	21.7
					#10:	54.9
					#12:	68.9
					#16:	67.8
					#20:	68.5
					Total:	307.3



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UNIVERSITARIO:
JOSE DANIEL
CAMACHO CAMPERO

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DISEÑO ESTRUCTURAL DEL HOSPITAL
DE SEGUNDO NIVEL SAN LORENZO

REGION:
URBANO
PROVINCIA:
MENDEZ
MUNICIPIO: SAN LORENZO

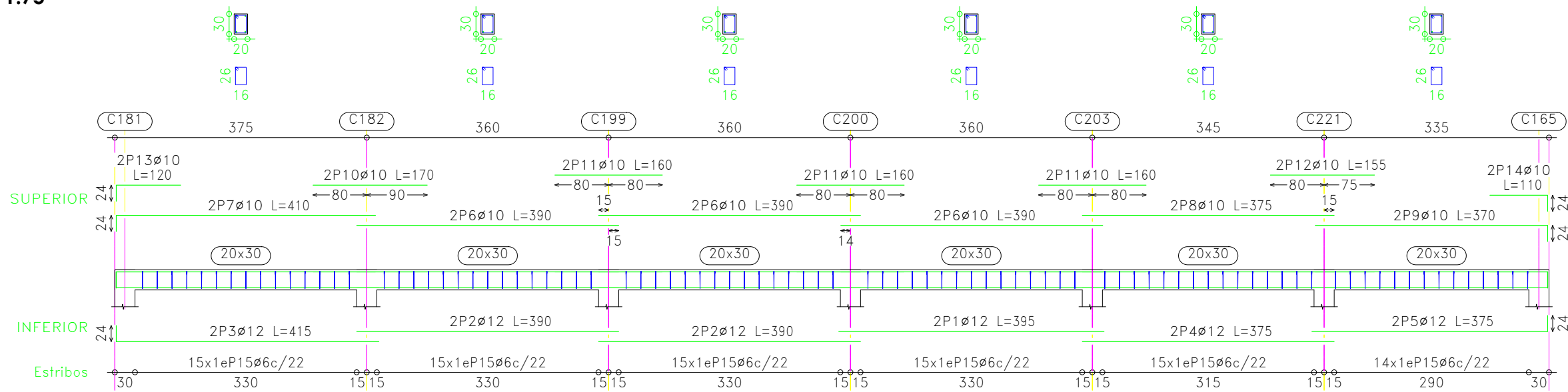
PLANO DE VIGAS

ESCALA : INDICADAS

PLANO
ESTRUCTURALES
LAMINA
14/18

DETALLE ARMADO VIGAS DE BORDE (VB 20x30cm)
PORTICO 77

ESC. 1:75

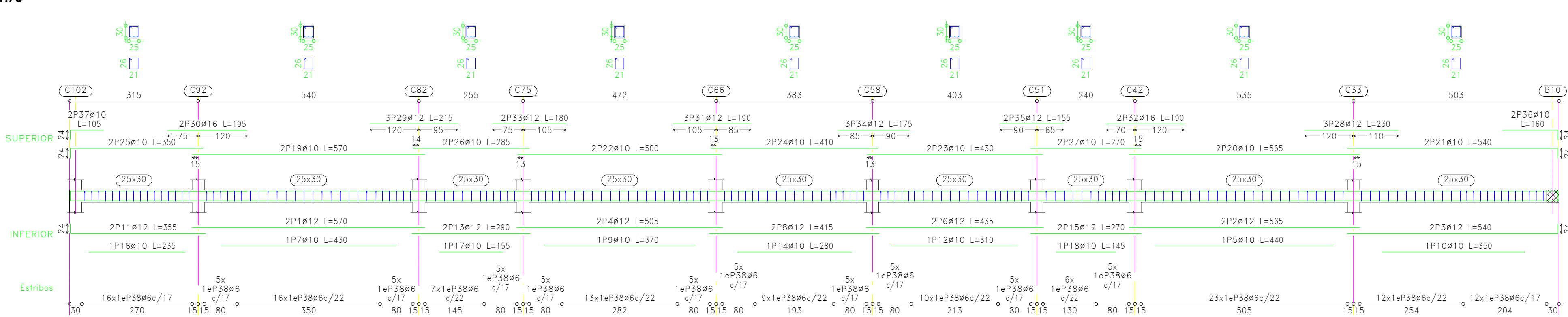


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 77	1	#12	2	395	790	7.0
	2	#12	4	390	1560	13.9
	3	#12	2	415	830	7.4
	4	#12	2	375	750	6.7
	5	#12	2	375	750	6.7
	6	#10	6	390	2340	14.4
	7	#10	2	410	820	5.1
	8	#10	2	375	750	4.6
	9	#10	2	370	740	4.6
	10	#10	2	340	680	2.1
	11	#10	6	160	960	5.9
	12	#10	2	355	710	1.9
	13	#10	2	120	240	1.5
	14	#10	2	110	220	1.4
	15	#6	89	96	8544	19.0
Total+10%:						112.4
#6:						20.9
#10:						45.6
#12:						45.9
Total:						112.4

1ER PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

DETALLE ARMADO VIGAS DE BORDE (VB 25x30cm)
PORTICO 109

ESC. 1:75

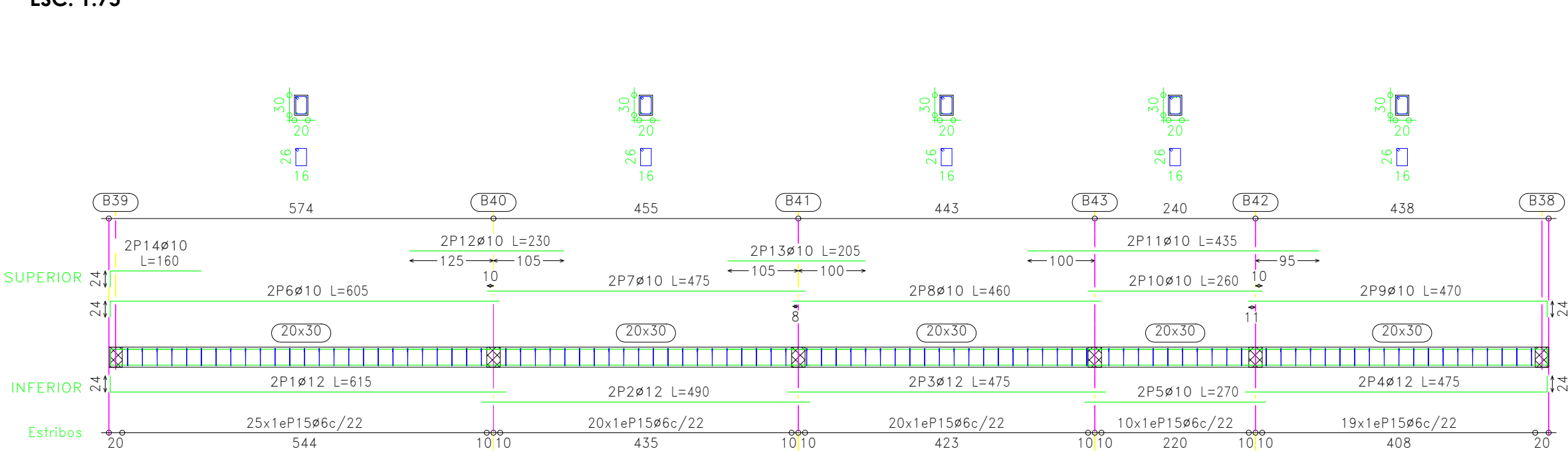


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 109	1	#12	2	570	1140	10.1
	2	#12	2	565	1130	10.0
	3	#12	2	540	1080	9.6
	4	#12	2	555	1110	9.9
	5	#10	1	440	440	2.7
	6	#12	2	435	870	7.7
	7	#10	1	430	430	2.7
	8	#12	2	415	830	7.4
	9	#10	1	370	370	2.3
	10	#10	1	350	350	2.2
	11	#12	2	355	710	6.3
	12	#10	1	310	310	1.9
	13	#12	2	290	580	5.1
	14	#10	1	280	280	1.7
	15	#12	2	270	540	4.8
	16	#10	1	235	235	1.4
	17	#10	1	155	155	1.0
	18	#10	1	145	145	0.9
	19	#10	2	570	1140	7.0
	20	#10	2	565	1130	7.0
	21	#10	2	540	1080	6.7
	22	#10	2	500	1000	6.2
	23	#10	2	450	900	5.2
	24	#10	2	410	820	5.1
	25	#10	2	350	700	4.3
	26	#10	2	285	570	3.5
	27	#10	2	270	540	3.3
	28	#12	3	230	690	6.1
	29	#12	3	215	645	5.7
	30	#16	2	195	390	6.2
	31	#12	3	190	570	5.1
	32	#16	2	190	380	6.0
	33	#12	2	180	360	3.2
	34	#12	3	175	525	4.7
	35	#12	2	155	310	2.8
	36	#10	2	160	320	2.0
	37	#10	2	155	310	1.3
	38	#6	174	106	18444	40.9
Total+10%:						241.1
#6:						45.0
#10:						75.3
#12:						107.4
#16:						13.4
Total:						241.1

1ER PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

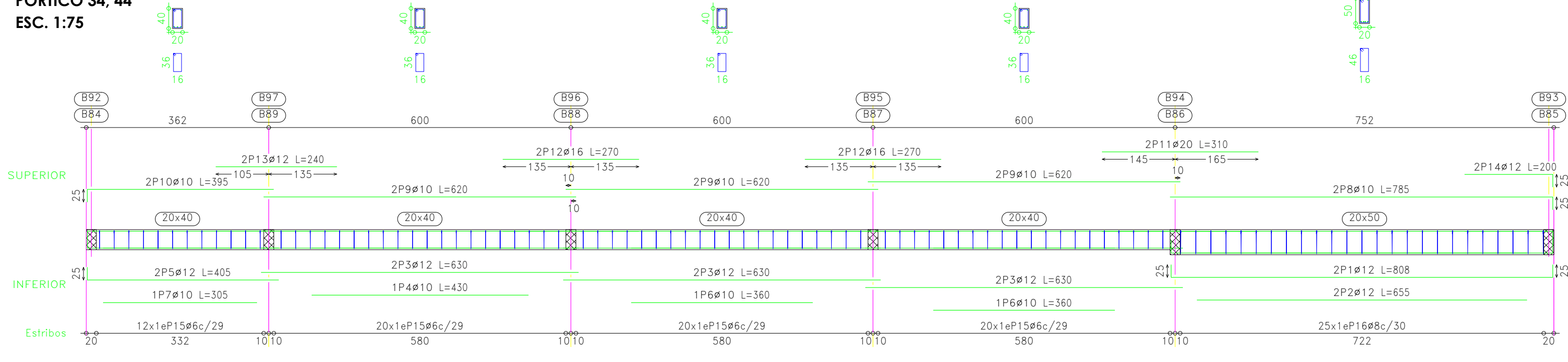
DETALLE ARMADO VIGAS DE BORDE (VB 20x30cm)
PORTICO 114

ESC. 1:75



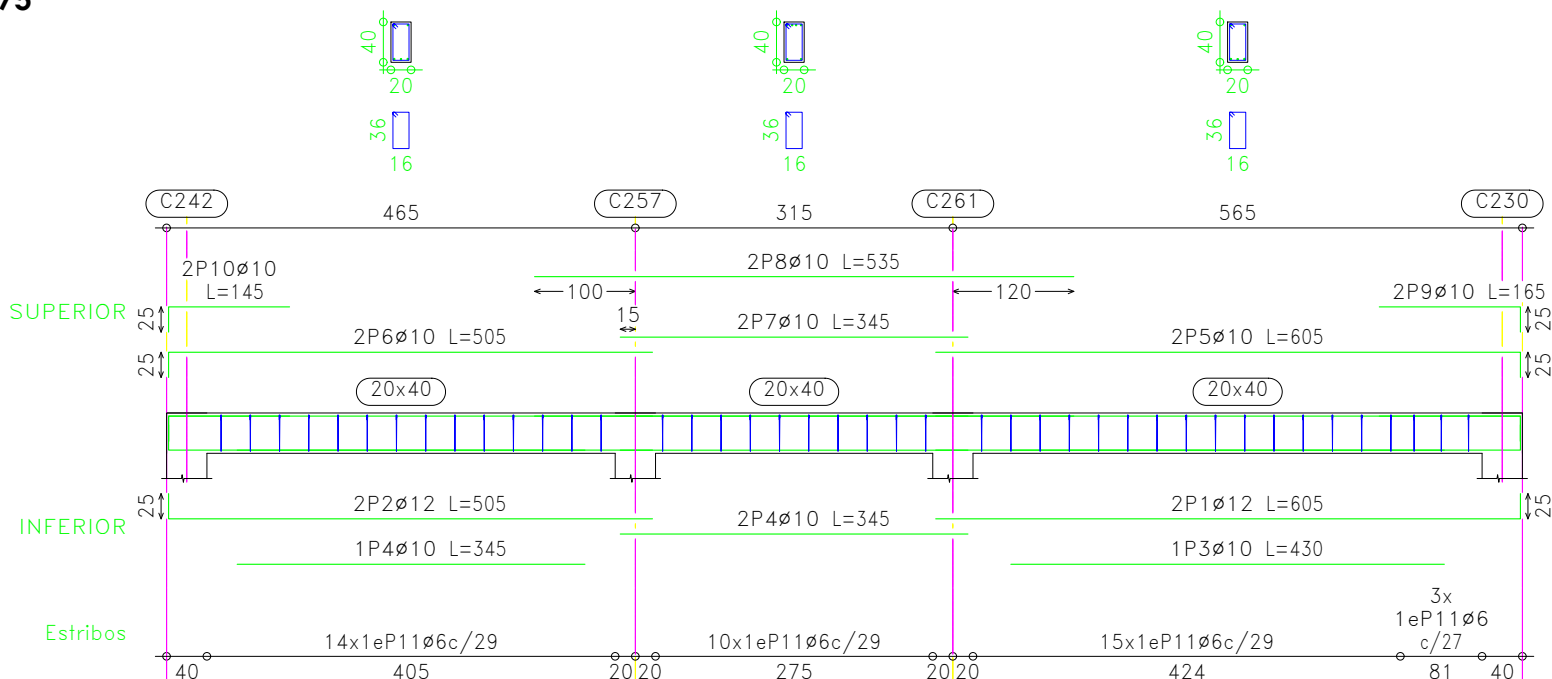
DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)
PORTICO 34, 44

ESC. 1:75



DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)
PORTICO 100

ESC. 1:75



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 100	1	#12	2	605	1210	10.7
	2	#12	2	505	1010	9.0
	3	#10	1	430	430	2.7
	4	#10	3	345	1035	6.4
	5	#10	2	605	1210	7.5
	6	#10	2	305	610	6.2
	7	#10	2	345	690	4.3
	8	#10	2	535	1070	6.6
	9	#10	2	165	330	2.0
	10	#10	2	145	290	1.8
	11	#6	42	116	4872	10.8
Total+10%:						74.8
#6:						11.9
#10:						41.2
#12:						21.7
Total:						74.8

2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 114	1	#12	2	615	1230	10.9
	2	#12	2	490	980	8.7
	3	#12	2	475	950	8.4
	4	#12	4	475	1900	8.4
	5	#10	2	270	540	3.3
	6	#10	2	605	1210	7.5
	7	#10	2	475	950	5.9
	8	#10	2	460	920	5.7
	9	#10	2	470	940	5.8
	10	#10	2	260	520	3.2
	11	#10	2	435	870	5.4
	12	#10	2	230	460	2.8
	13	#10	2	205	410	2.5
	14	#10	2	160	320	2.0
	15	#6	94	96	9024	20.0
Total+10%:						110.6
#6:						22.0
#12:						40.0
Total:						110.6

1ER PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 34+Pórtico 44	1	#12	2	608	1216	14.5
	2	#12	2	605	1210	11.6
	3	#12	6	630	3780	33.6
	4	#10	1	430	430	2.7
	5	#12	2	405	810	7.2
	6	#10	2	380	760	4.4
	7	#10	1	305	305	1.9
	8	#10	2	785	1570	9.7
	9	#10	6	620	3720	22.3
	10	#10	2	395	790	4.9
	11	#20	2	510	1020	15.3
	12	#16	4	270	1080	17.0
	13	#12	2	240	480	4.3
	14	#12	2	200	400	3.6
	15	#6	72	116	8352	18.5
Total+10%:						204.3
#10:						48.6
#8:						30.4
#10:						102.2
#12:						164.2
#16:						37.4
#20:						33.6
Total:						408.6

2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal



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PROVINCIA:
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MUNICIPIO: SAN LORENZO

PLANO DE VIGAS

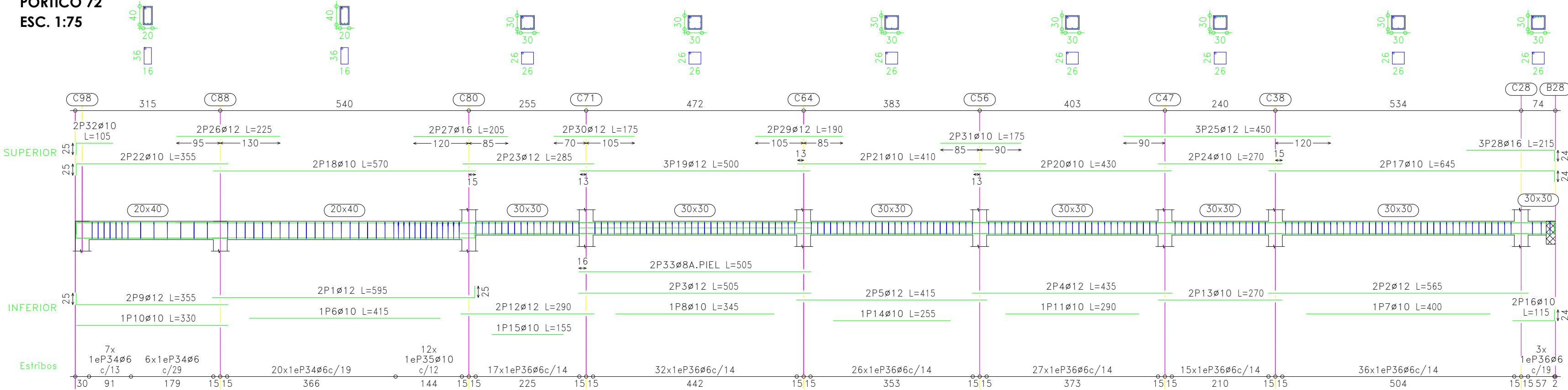
ESCALA : INDICADAS

PLANO
ESTRUCTURALES
LAMINA
15/18

DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)

PORTICO 72

ESC. 1:75



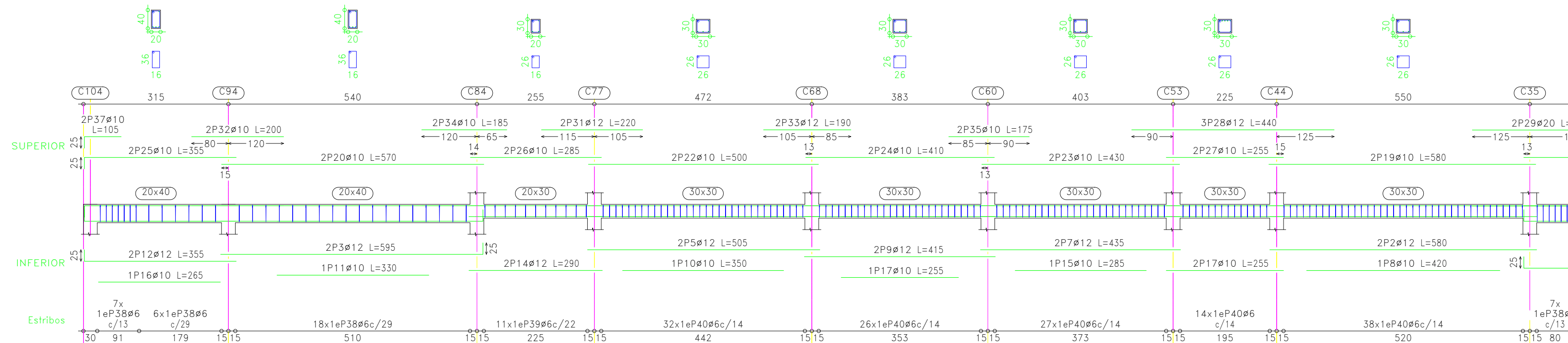
2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 72	1	#12	2	595	1190	10.6
	2	#12	2	565	1130	10.0
	3	#12	2	505	1010	9.0
	4	#12	2	455	910	8.2
	5	#12	2	415	830	7.4
	6	#10	1	415	415	2.6
	7	#10	1	400	400	2.5
	8	#10	1	345	345	2.1
	9	#12	2	355	710	6.3
	10	#10	1	330	330	2.0
	11	#10	1	280	280	1.8
	12	#12	2	290	580	5.1
	13	#10	1	270	270	2.0
	14	#10	1	255	255	1.6
	15	#10	1	155	155	1.0
	16	#10	1	115	115	0.7
	17	#10	2	645	1290	8.0
	18	#10	2	645	1290	8.0
	19	#12	3	500	1500	13.3
	20	#10	2	430	860	5.3
	21	#10	2	410	820	5.1
	22	#10	2	355	710	4.4
	23	#12	2	385	770	6.8
	24	#10	2	270	540	3.3
	25	#12	2	450	900	8.0
	26	#12	2	225	450	4.0
	27	#16	2	205	410	6.5
	28	#16	3	215	645	10.2
	29	#12	2	190	380	3.4
	30	#12	2	175	350	3.1
	31	#10	2	175	350	2.2
	32	#10	2	170	340	2.1
	33	#8	2	505	1010	4.0
	34	#6	35	116	3828	8.5
	35	#10	12	124	1488	9.2
	36	#6	156	116	18096	40.2
Total+10%:						253.6
						#6: 55.6 #10: 70.5 #12: 106.7 #16: 18.4 Total: 253.6

DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)

PORTICO 85

ESC. 1:75



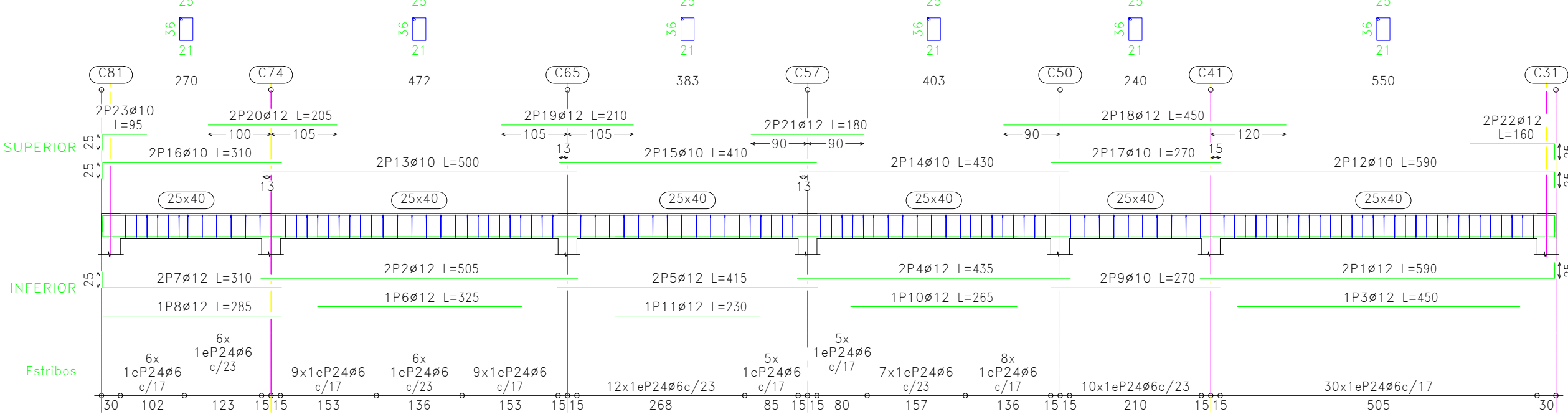
2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 85	1	#12	2	855	1710	11.6
	2	#12	2	580	1160	10.3
	3	#12	2	595	1190	10.6
	4	#12	2	545	1090	9.7
	5	#12	2	505	1010	9.0
	6	#10	1	505	505	4.3
	7	#12	2	435	870	7.7
	8	#10	1	420	420	2.6
	9	#12	2	415	830	7.4
	10	#10	1	350	350	2.2
	11	#10	1	330	330	2.0
	12	#12	2	355	710	6.3
	13	#10	1	285	285	1.8
	14	#12	2	290	580	5.1
	15	#10	1	265	265	1.6
	16	#10	1	165	165	1.1
	17	#10	3	255	765	4.7
	18	#10	2	655	1310	8.1
	19	#10	2	580	1160	7.2
	20	#10	2	570	1140	7.0
	21	#10	2	515	1030	6.4
	22	#10	2	500	1000	6.2
	23	#10	2	430	860	5.3
	24	#10	2	410	820	5.1
	25	#10	2	355	710	4.4
	26	#10	2	285	570	3.5
	27	#10	2	255	510	3.1
	28	#12	3	440	1320	11.7
	29	#20	2	310	620	15.3
	30	#10	2	270	540	3.3
	31	#12	2	220	440	3.9
	32	#12	2	190	380	3.4
	33	#12	2	185	370	3.3
	34	#10	2	175	350	2.2
	35	#10	2	170	340	2.1
	36	#10	2	155	310	1.3
	37	#10	75	116	8700	19.3
	38	#6	11	96	1056	2.3
	39	#6	137	116	15892	35.3
Total+10%:						284.6
						#6: 62.6 #10: 98.8 #12: 106.4 #20: 16.8 Total: 284.6

DETALLE ARMADO VIGAS DE BORDE (VB 25x40cm)

PORTICO 25

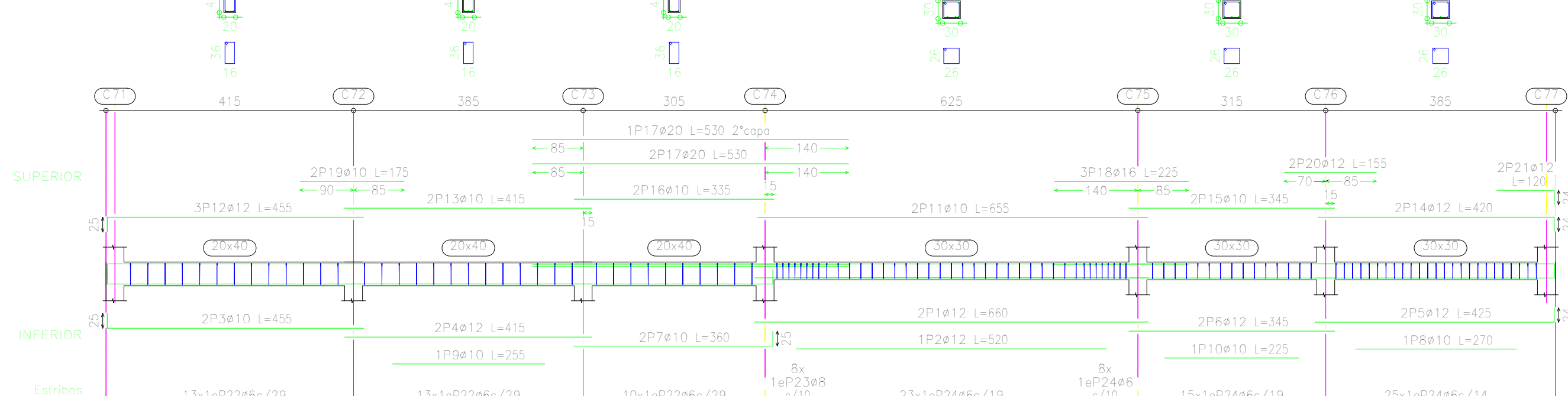
ESC. 1:75



DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)

PORTICO 19

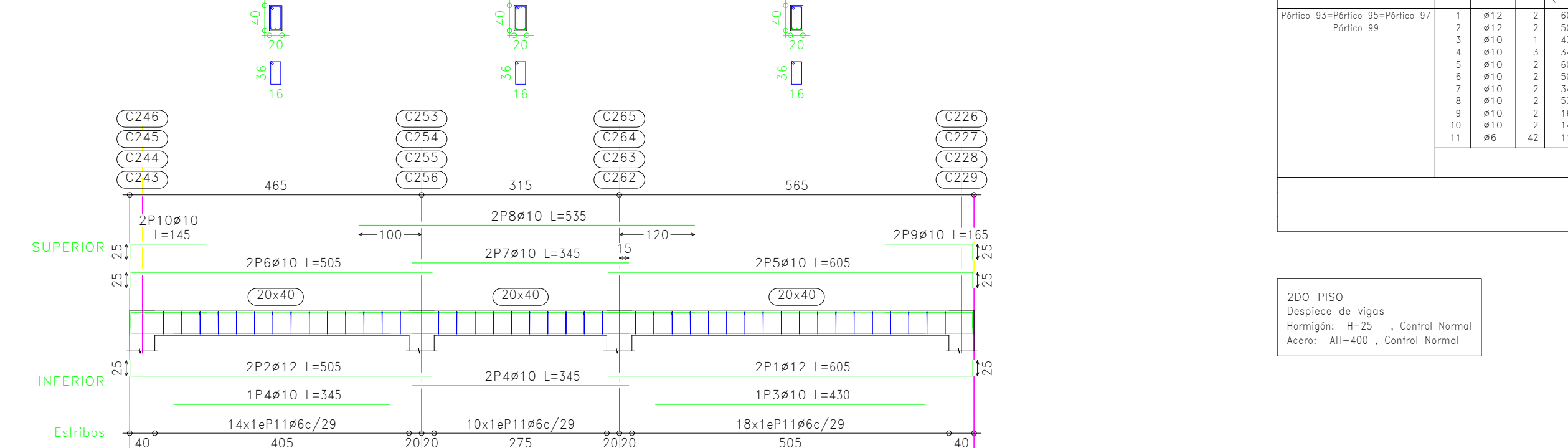
ESC. 1:75



DETALLE ARMADO VIGAS DE BORDE (VB 20x40cm)

PORTICO 93, 95, 97, 99

ESC. 1:75



Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 93+Pórtico 95+Pórtico 97+Pórtico 99	1	#12	2	605	1210	10.7
	2	#12	2	505	1010	9.0
	3	#10	1	430	430	2.7
	4	#12	3	345	1035	6.4
	5	#12	2	605	1210	7.5
	6	#10	1	325	325	2.0
	7	#10	2	345	690	4.3
	8	#10	2	535	1070	6.6
	9	#10	2	165	330	2.0
	10	#10	2	145	290	1.9
	11	#6	42	116	4872	10.8
Total+10%:						74.8
						(v4): 299.2
						#6: 47.6 #10: 164.8 #12: 86.8 Total: 299.2

2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 25	1	#12	2	590	1180	10.5
	2	#12	2	505	1010	9.0
	3	#12	1	450	450	4.0
	4	#12	2	435	870	7.7
	5	#12	2	415	830	7.4
	6	#10	1	325	325	2.0
	7	#10	2	310	620	5.5
	8	#12	1	285	285	2.5
	9	#10	2	270	540	3.3
	10	#12	1	265	265	2.4
	11	#10	1	230	230	2.0
	12	#10	2	590	1180	7.3
	13	#10	2	500	1000	6.2
	14	#10	2	450	900	5.3
	15	#10	2	410	820	5.1
	16	#10	2	310	620	3.8
	17	#10	2	270	540	3.3
	18	#10	2	250	500	3.0
	19	#12	2	210	420	3.7
	20	#12	2	200	400	3.6
	21	#12	2	180	360	3.2
	22	#12	2	160	320	2.8
	23	#10	2	95	190	1.2
	24	#6	113	126	14238	31.6
Total+10%:						156.5
						#6: 34.7 #10: 39.1 #12: 82.7 Total: 156.5

CUBIERTA
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-400CN (kg)
Pórtico 19	1	#12	2	690	1380	11.7
	2	#12	1	620	620	4.6
	3	#10	2	450	910	5.6
	4	#12	2	415	830	7.4
	5	#12	2	425	850	7.5
	6	#12	2	345	690	4.3
	7	#10	2	360	720	4.4
	8	#15	1	270	270	1.7
	9	#10	2	255	510	1.6
	10	#10	1	225	225	1.4
	11	#10	2	655	1310	8.1
	12	#12	3	435	1305	12.1
	13	#10	2	415	830	7.4
	14	#12	2	420	840	7.0
	15	#15	2	345	690	4.3
	16	#10	2	335	670	4.1
	17	#20	3	530	1590	39.3
	18	#16	3	225	675	10.7
	19	#10	2	175	350	2.2
	20	#12	2	155	310	2.4
	21	#12	2	120	240	2.1
	22	#6	36	116	4176	9.3
	23	#6	8	120	960	3.6
	24	#6	71	116	8236	18.3
Total+10%:						199.8
						#6: 30.4 #10: 42.3 #12: 68.0 #16: 11.7 #20: 43.2 Total: 199.8

2DO PISO
Desplce de vigas
Hormigón: H-25 , Control Normal
Acero: AH-400 , Control Normal



UNIVERSIDAD AUTÓNOMA
JUAN MISAEL SARACHO
TARÍJA

FACULTAD DE CIENCIAS
Y TECNOLOGÍA

CARRERA DE
INGENIERÍA CIVIL

UNIVERSITARIO:
JOSE DANIEL
CAMACHO CAMPERO

PROYECTO:
DISEÑO ESTRUCTURAL DEL HOSPITAL
DE SEGUNDO NIVEL SAN LORENZO

REGION:
URBANO
PROVINCIA:
MEÑEZ
MUNICIPIO:
SAN LORENZO

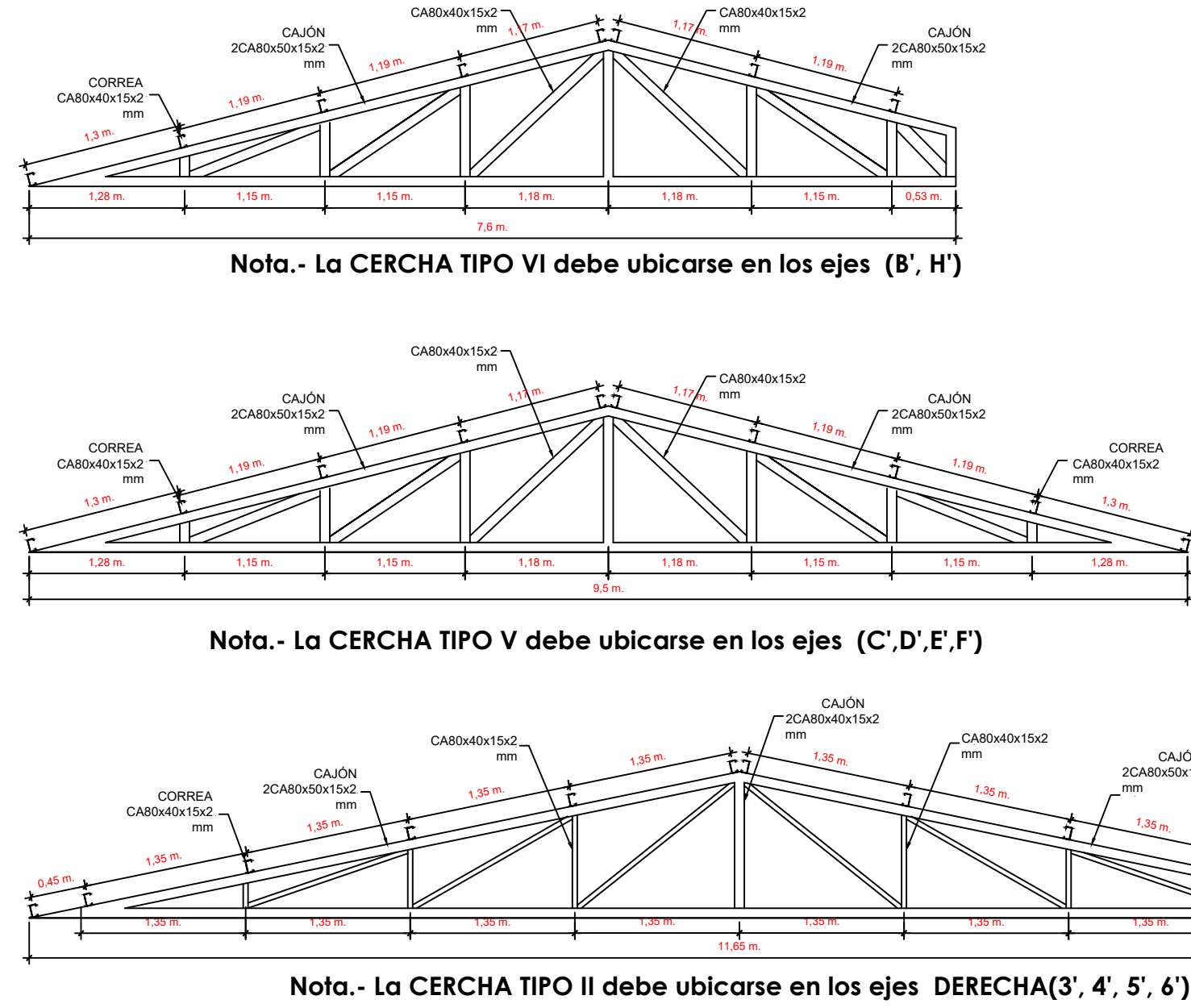
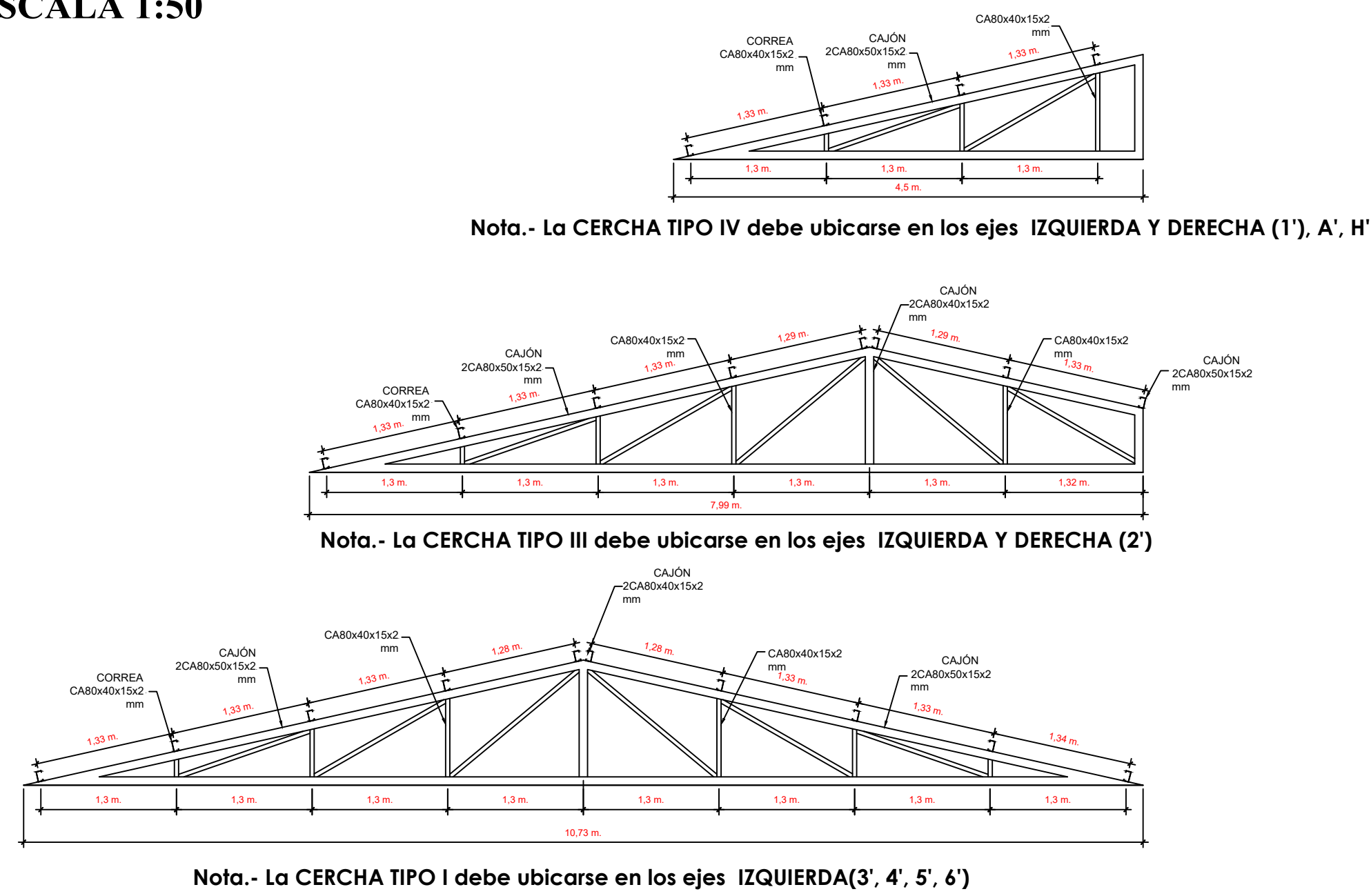
PLANO DE VIGAS

ESCALA : INDICADAS

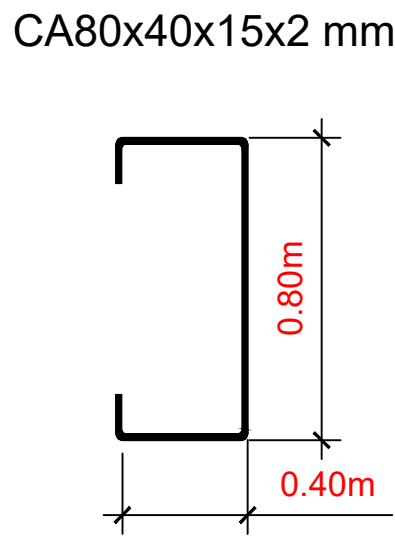
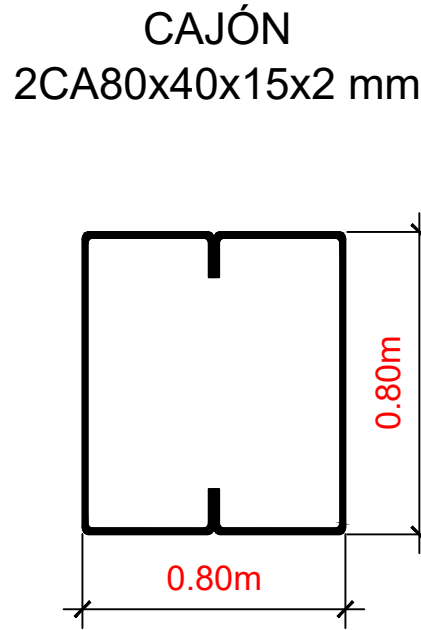
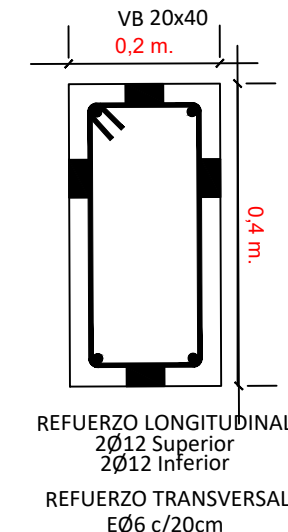
PLANO
ESTRUCTURALES
LAMINA
16/18

DISPOSICION DE CERCHAS METALICAS
NIVEL +4.08 m

ESCALA 1:50

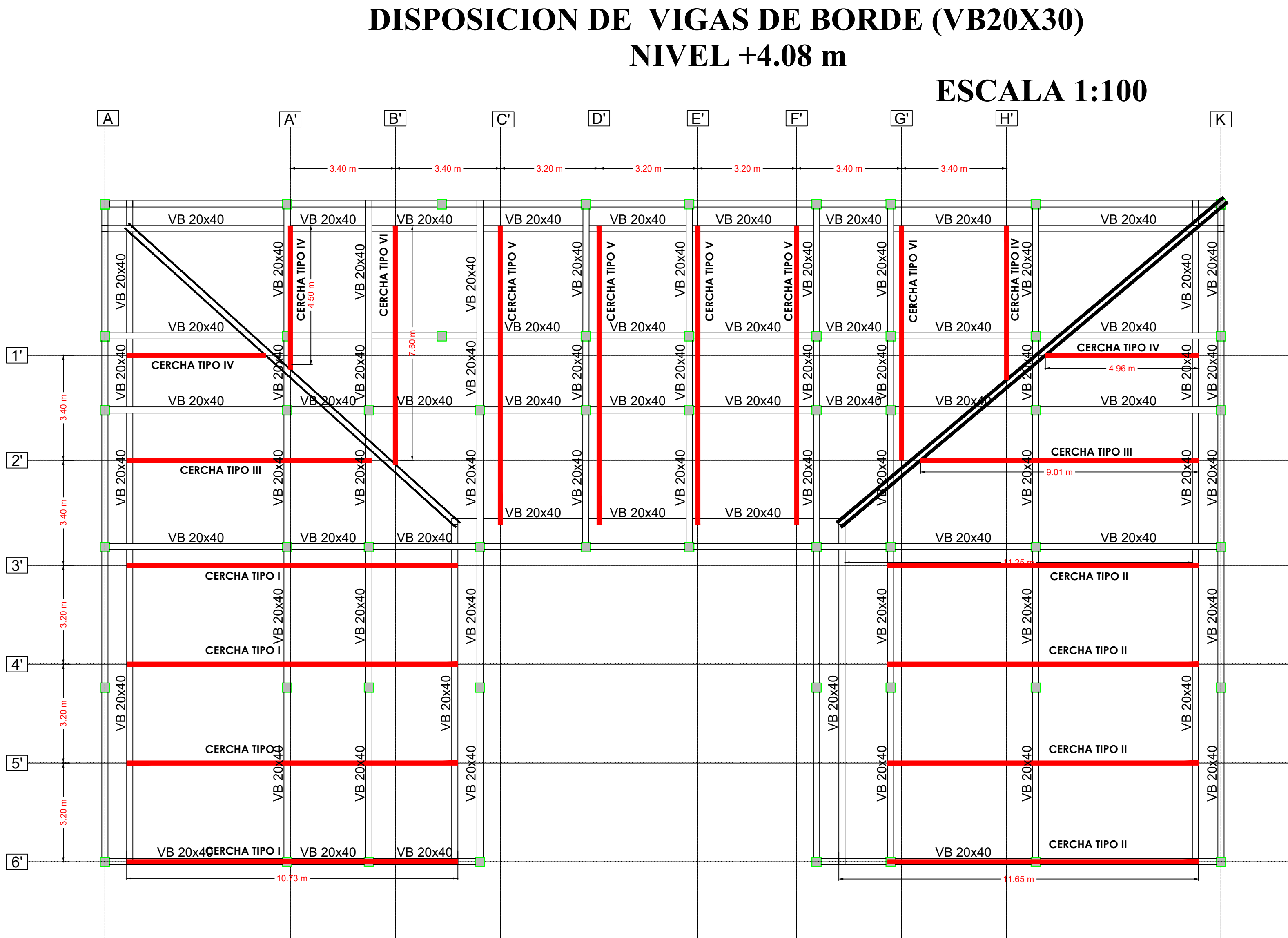


SECCIÓN TRANSVERSAL
VIGAS DE BORDE (VB 20x40)
LONGITUDINALES y TRANSVERSALES
ESCALA 1:10



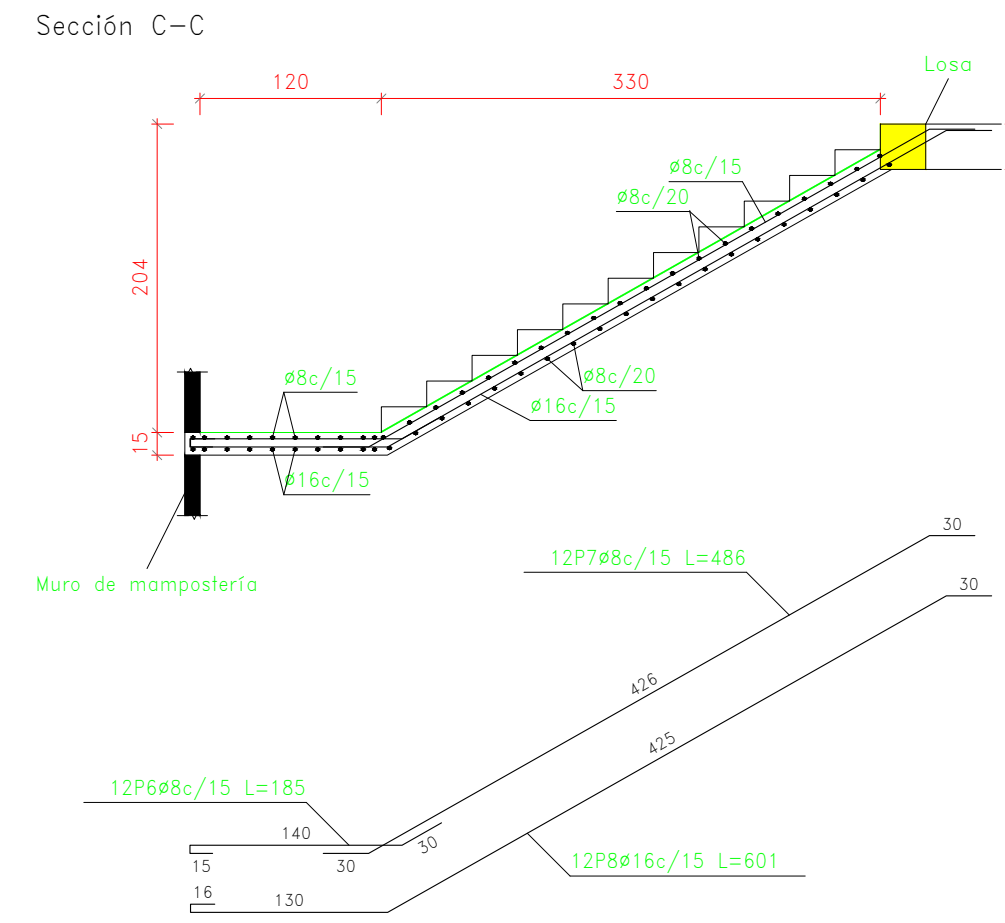
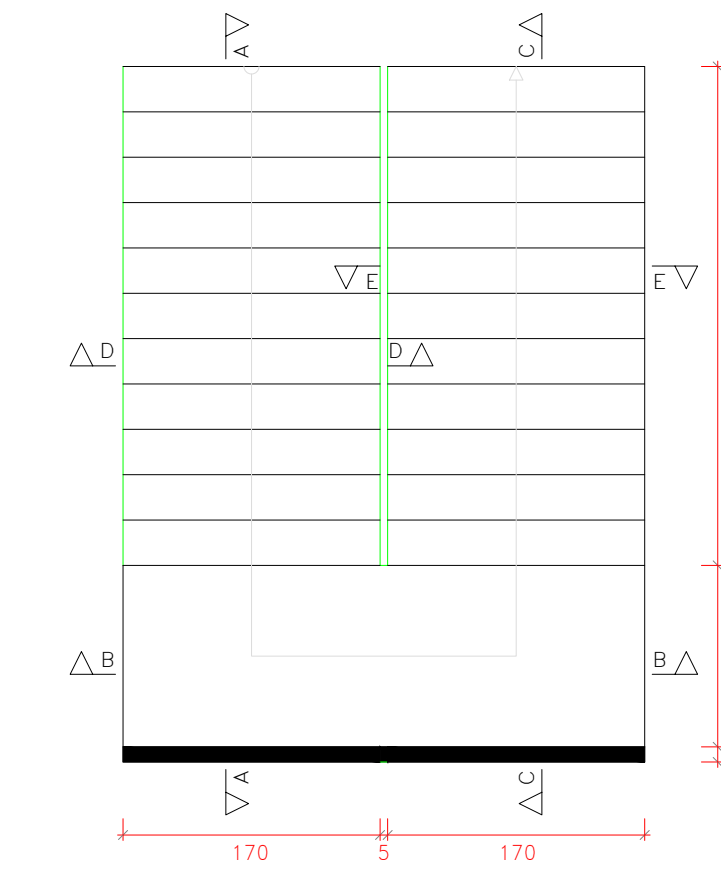
DISTRIBUCIÓN DE ARMADURA EN
ESCALERA TIPO II

ESCALA 1:50
ACOTACIONES EN [Cm]

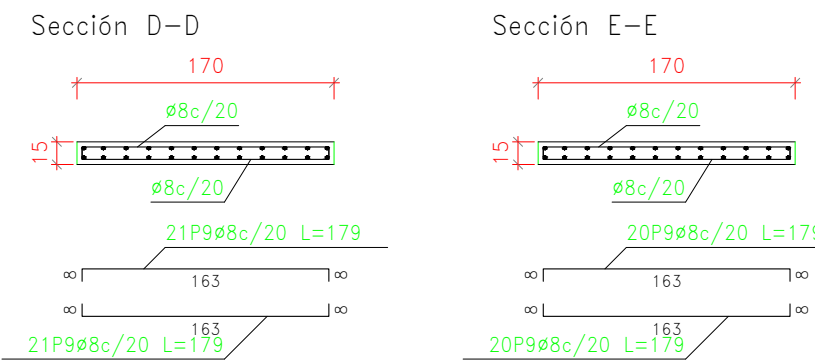


Tramo 1	
Ancho	1.700 m
Espesor	0.15 m
Huella	0.300 m
Contrahuella	0.170 m
Desnivel que salva	4.08 m
N° de escalones	24
Planta final	1ER PISO
Planta inicial	PLANTA BAJA
Peso propio	0.375 t/m2
Peldañeado (Hormigonado con la losa)	0.185 t/m2
Solado	0.102 t/m2
Barandillas	0.051 t/m
Sobrecarga de uso	0.400 t/m2
Hormigón	H-25 , Control Normal
Acero	AH-500 , Control Normal
Rec. geométrico	3.0 cm

Resumen Acero	Long. total (m)	Peso+10% (kg)	Total
AH-500CN - Ø8	329.4	143	472
Ø16	184.6	321	793

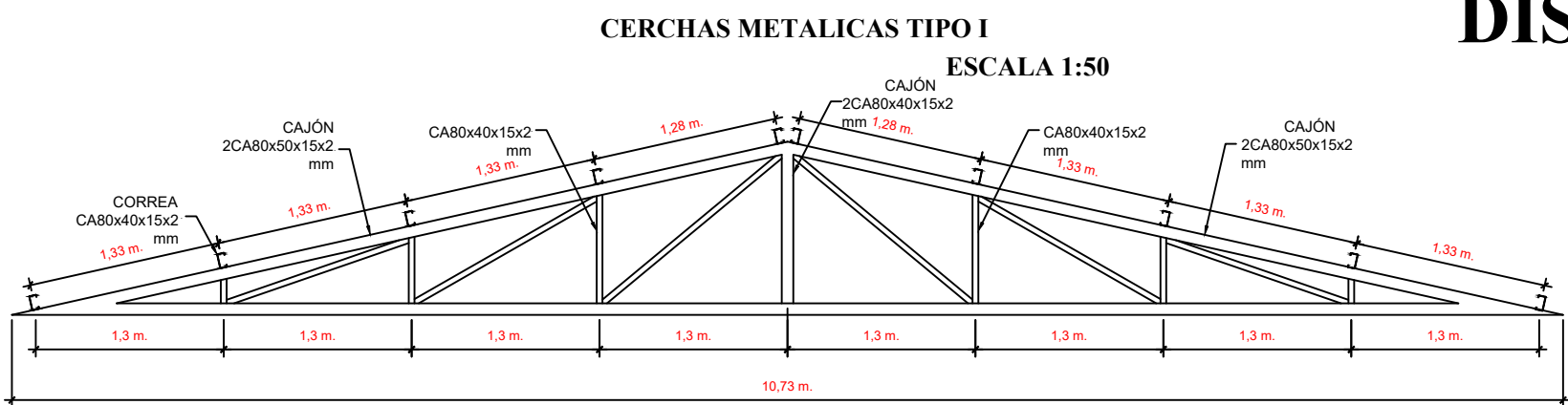


Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-500CN (kg)
Escalera 2-Tramo 1	1	Ø8	12	556	6672	26.3
	2	Ø16	12	494	5928	93.6
	3	Ø16	12	191	2292	28.6
	4	Ø8	10	354	3540	14.0
	5	Ø16	10	353	3530	55.7
	6	Ø8	12	185	2220	8.8
	7	Ø8	12	486	5832	23.0
	8	Ø16	12	601	7212	113.8
	9	Ø8	62	179	11098	67.9
TOTAL=105%						463.9
						Ø8: 143.0
						Ø16: 320.9
						Total: 463.9

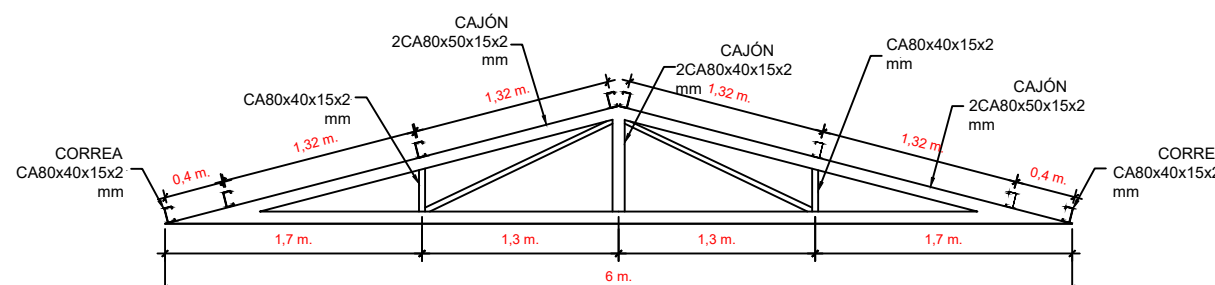


DISPOSICION DE CERCHAS METALICAS
NIVEL +4.08 m

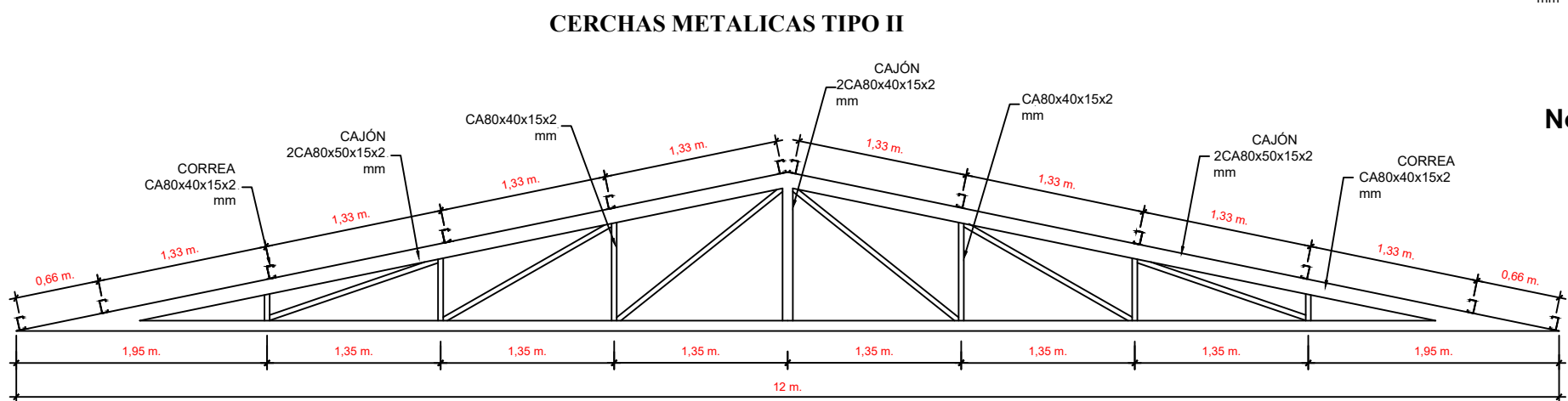
ESCALA 1:50



Nota.- La CERCHA TIPO I debe ubicarse en los ejes IZQUIERDA(6', 7', 8', 9', 10', 11', 12', 13)

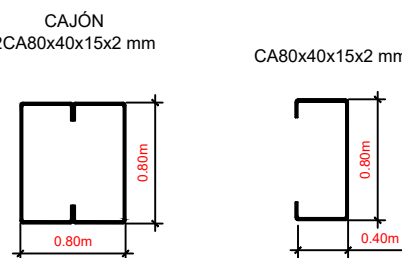


Nota.- La CERCHA TIPO III debe ubicarse en los ejes DERECHA(2', 4', 5')

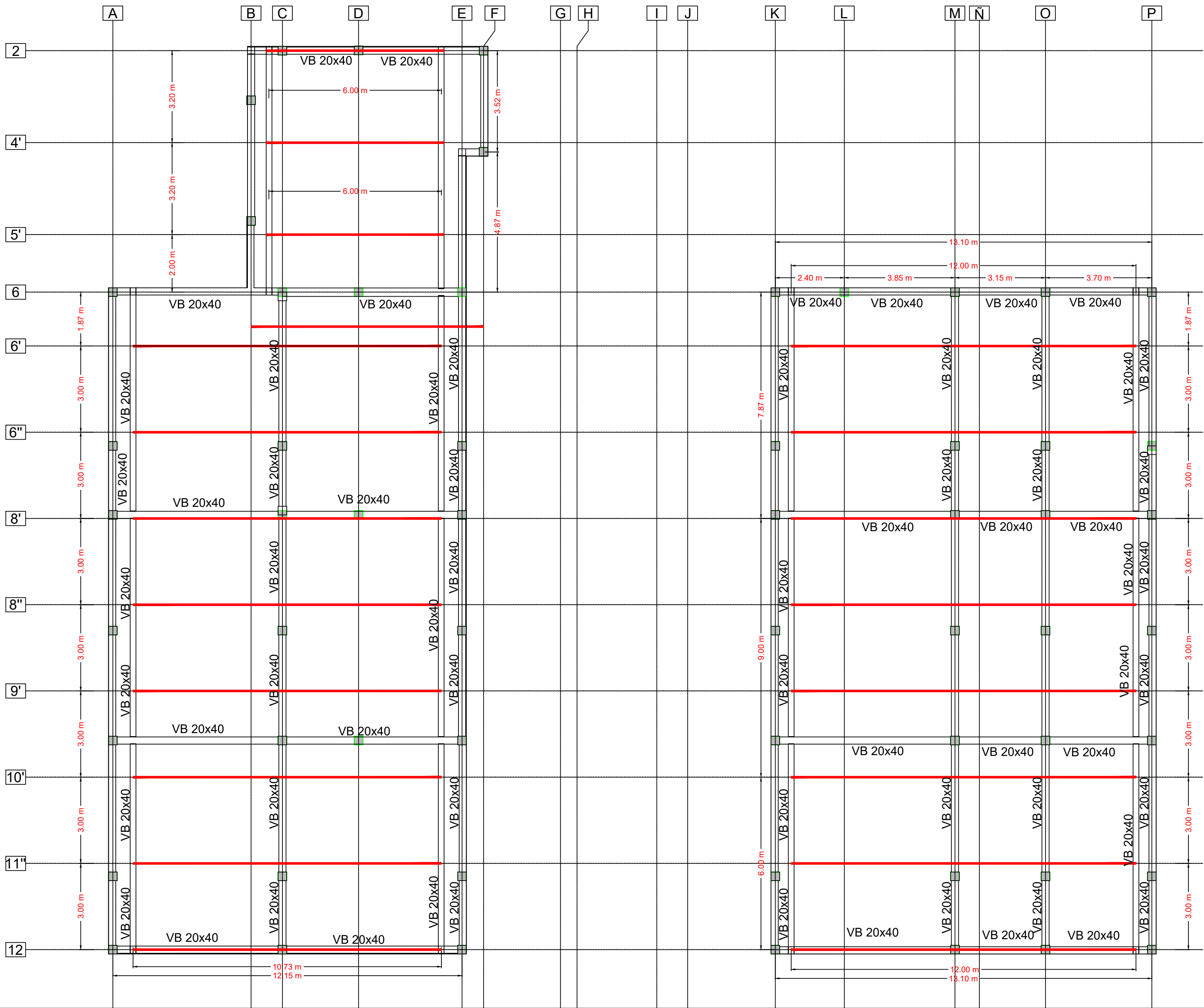


Nota.- La CERCHA TIPO II debe ubicarse en los ejes DERECHA(6', 7', 8', 9', 10', 11', 12', 13)

SECCIONES DE PERFILES
EMPLEADAS (Esc: 1:25)

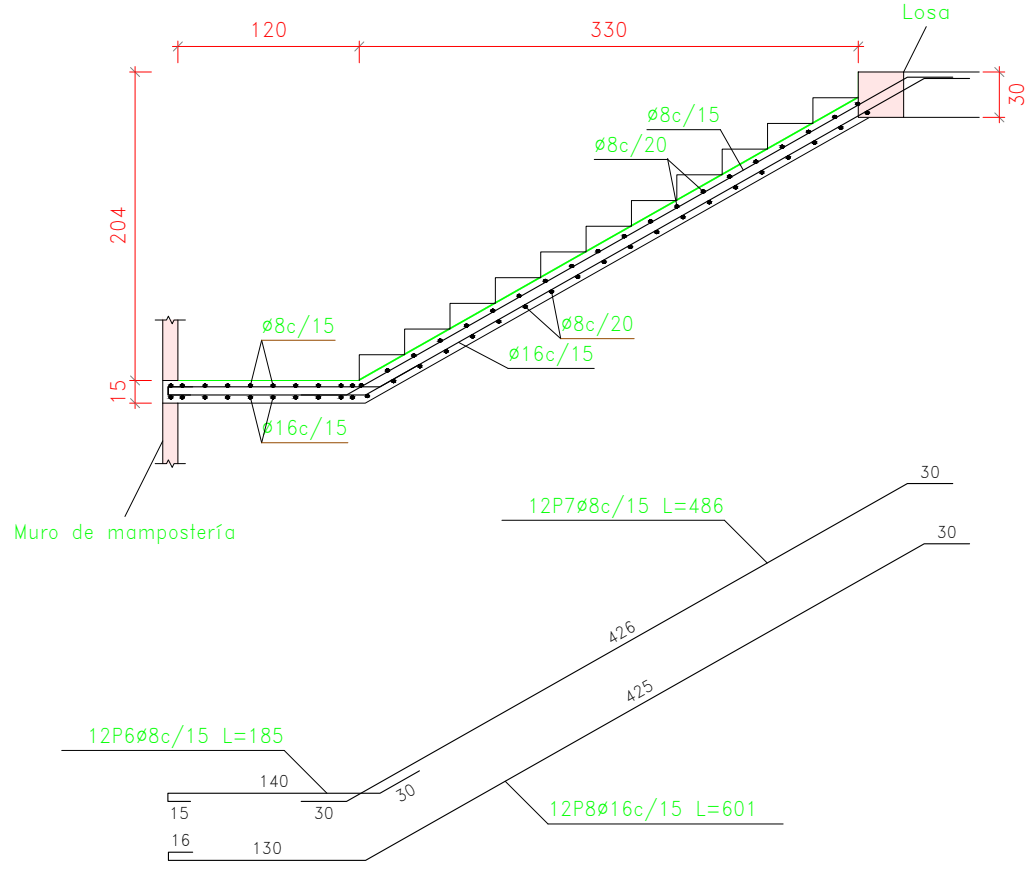


DISPOSICIÓN VIGAS VIGAS DE BORDE (VB20X40)
ESCALA 1:100

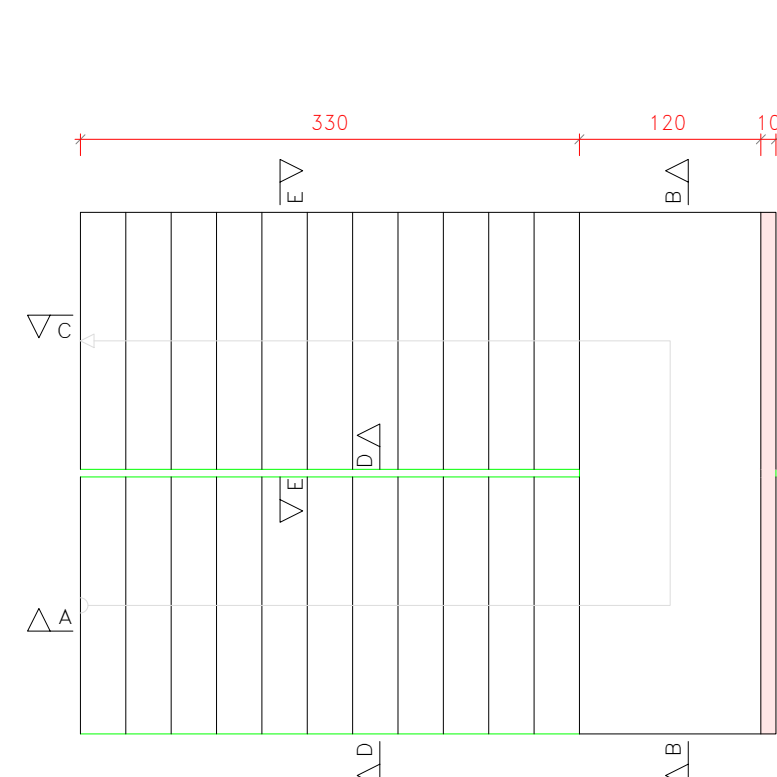


Tramo 1		
Geometría		
Ancho	1.700 m	
Espesor	0.15 m	
Huella	0.300 m	
Contrahuella	0.170 m	
Desnivel que salva	4.08 m	
Nº de escalones	24	
Planta final	1ER PISO	
Planta inicial	PLANTA BAJA	
Peso propio	0.375 t/m2	
Peldaño (Hormigonado con la losa)	0.185 t/m2	
Solado	0.102 t/m2	
Barandillas	0.051 t/m	
Sobrecarga de uso	0.400 t/m2	
Hormigón	H-25 , Control Normal	
Acero	AH-500 , Control Normal	
Rec. geométrico	3.0 cm	

Resumen Acero	Long. total (m)	Peso+10% (kg)	Total
Escalera 7			
AH-500CN Ø8	332.5	144	
Ø16	187.3	325	469

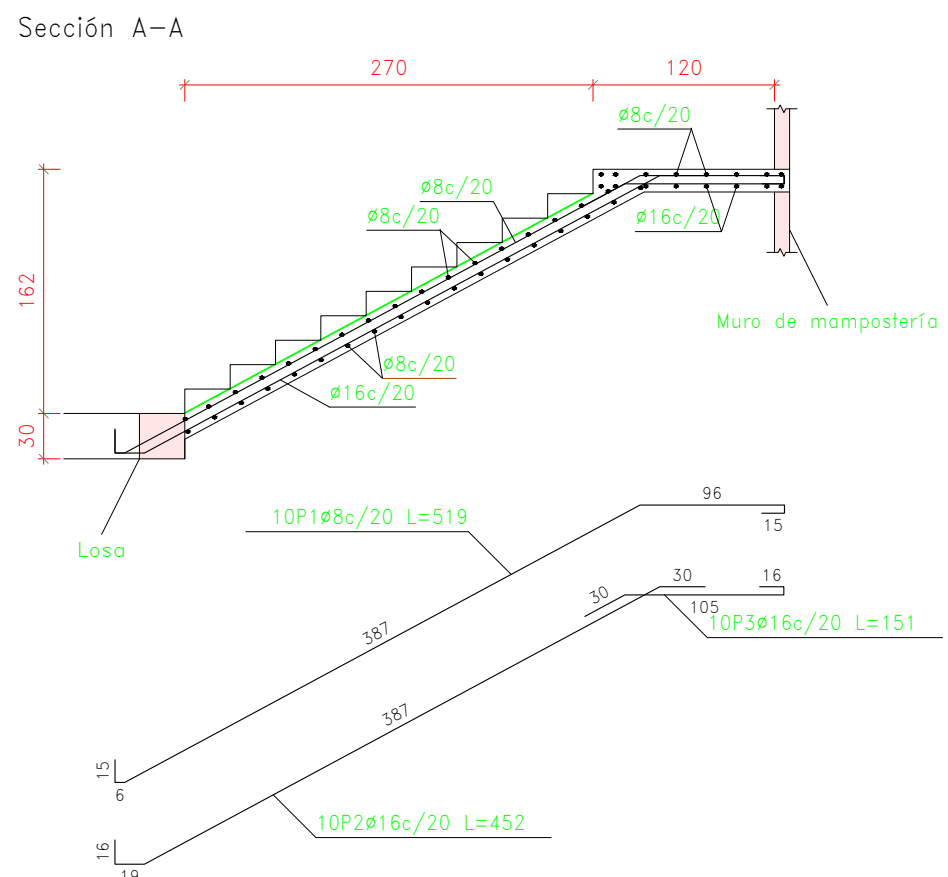
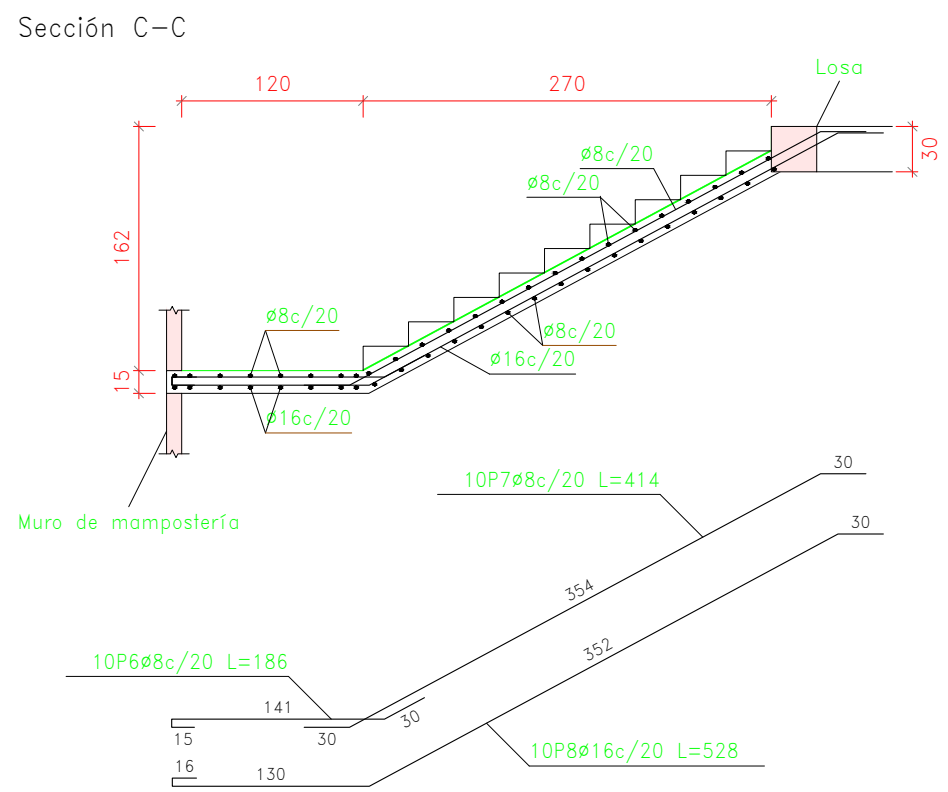


Sección A-A



DISTRIBUCIÓN DE ARMADURA EN
ESCALERA TIPO II

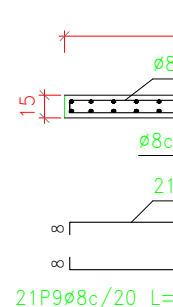
ESCALA 1:50
ACOTACIONES EN [Cm]



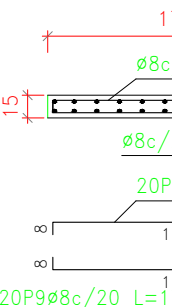
Escalera 7

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-500CN (kg)
Escalera 7-Tramo 1						
1	Ø8	12	582	5884	27.6	
2	Ø16	12	515	5180	97.5	
3	Ø8	12	151	1510	28.6	
4	Ø8	10	354	2540	14.0	
5	Ø16	10	353	3530	25.7	
6	Ø8	12	185	2220	8.8	
7	Ø8	12	486	3832	23.3	
8	Ø16	12	601	7212	115.8	
9	Ø8	82	179	14878	57.3	
Total+10%						469.9
						Ø8: 144.4
						Ø16: 325.2
						Total: 469.9

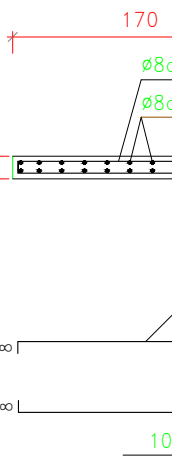
Sección D-D



Sección E-E



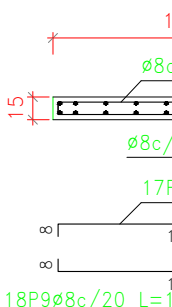
Sección B-B



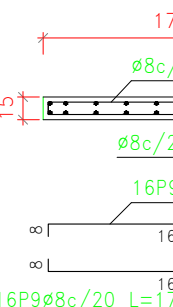
Escalera11

Elemento	Pos.	Diám.	No.	Long. (cm)	Total (cm)	AH-500CN (kg)
Escalera11-ESCALERA 2						
1	Ø8	10	519	5190	20.5	
2	Ø16	10	452	4520	71.3	
3	Ø16	10	151	1510	23.8	
4	Ø8	8	354	2832	11.2	
5	Ø16	8	353	2834	44.6	
6	Ø8	8	186	1860	7.3	
7	Ø8	10	414	4140	16.3	
8	Ø16	10	528	5280	83.3	
9	Ø8	67	179	11993	47.3	
Total+10%						358.2
						Ø8: 112.9
						Ø16: 245.3
						Total: 358.2

Sección D-D



Sección E-E



Sección B-B

