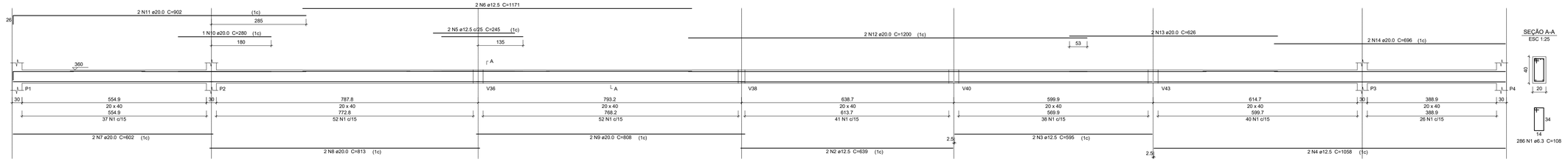
V1

ESC 1:50



SEÇÃO A-A

ESC 1:25

Relação do aço

V1

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	286	108	30888
	2	12.5	2	639	1278
	3	12.5	2	595	1190
	4	12.5	2	1058	2116
	5	12.5	2	245	490
	6	12.5	2	1171	2342
	7	20.0	2	602	1204
	8	20.0	2	813	1626
	9	20.0	2	808	1616
	10	20.0	1	280	280
	11	20.0	2	902	1804
	12	20.0	2	1200	2400
	13	20.0	2	626	1252
	14	20.0	2	696	1392

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	308.9	75.6
	12.5	74.2	71.4
	20.0	115.8	285.4
PESO TOTAL (kg)			
CA50	432.5		

Volume de concreto (C-40) = 3.6 m³
Área de forma = 44.98 m²

V25

ESC 1:50

SEÇÃO A-A

ESC 1:25

Relação do aço

V25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	289	108	31212
	2	20.0	2	602	1204
	3	20.0	2	814	1628
	4	20.0	2	807	1614
	5	20.0	2	659	1318
	6	20.0	2	620	1240
	7	20.0	2	1071	2142
	8	20.0	1	275	275
	9	20.0	2	892	1784
	10	20.0	2	1161	2322
	11	20.0	2	1024	2048
	12	20.0	2	780	1560
	13	20.0	2	696	1392

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	312.2	76.4
	20.0	185.3	456.9
PESO TOTAL (kg)			
CA50	533.3		

Volume de concreto (C-40) = 3.6 m³
Área de forma = 44.98 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO: Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

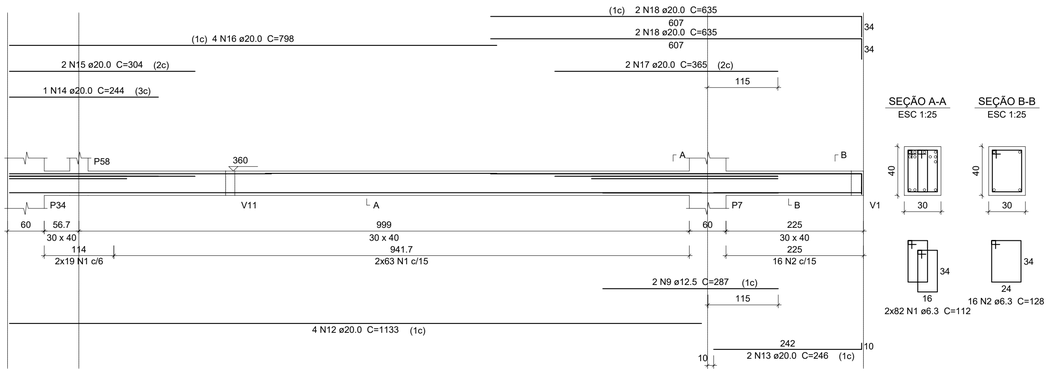
DESENHO:

PRANCHA: C-36

stca.engenharia@gmail.com
(54) 98108 0303

A1

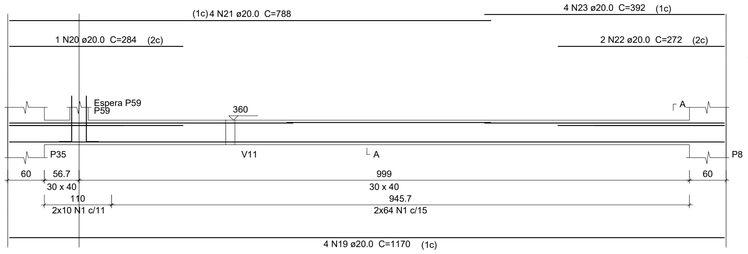
V40
ESC 1:50



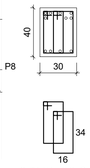
SEÇÃO A-A
ESC 1:25

SEÇÃO B-B
ESC 1:25

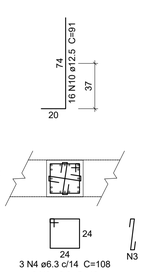
V41
ESC 1:50



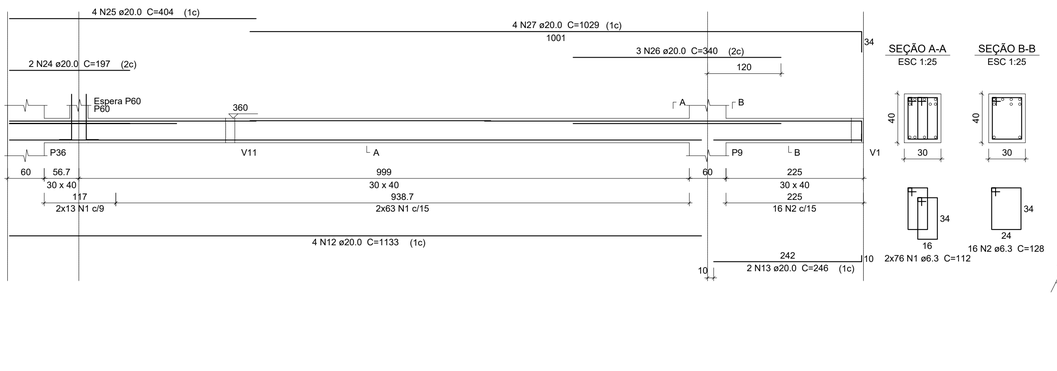
SEÇÃO A-A
ESC 1:25



ESPERA P59
ESC 1:25



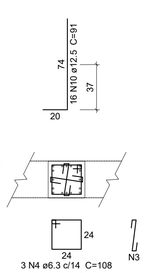
V43
ESC 1:50



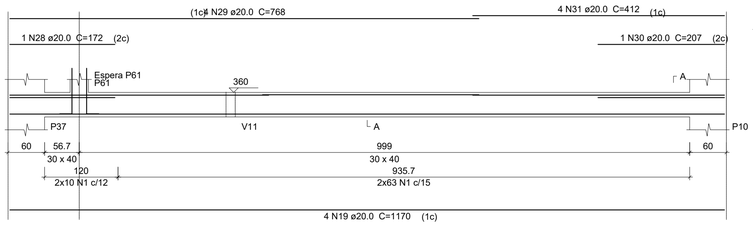
SEÇÃO A-A
ESC 1:25

SEÇÃO B-B
ESC 1:25

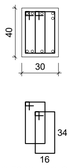
ESPERA P60
ESC 1:25



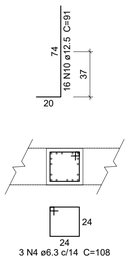
V44
ESC 1:50



SEÇÃO A-A
ESC 1:25



ESPERA P61
ESC 1:25



Relação do aço

V40 V41 V43
V44 V45 V46

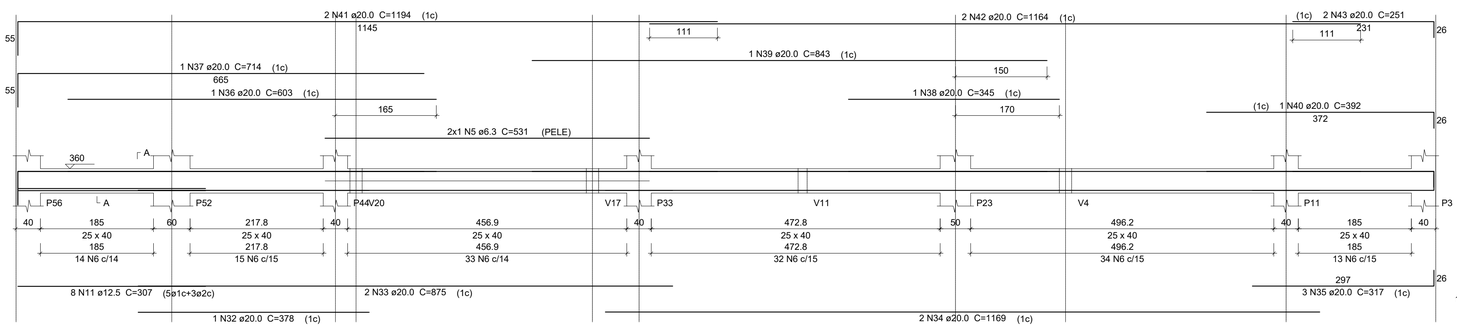
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	610	112	68320
	2	6.3	32	128	4096
	3	6.3	12	40	480
	4	6.3	9	108	972
	5	6.3	2	531	1062
	6	6.3	141	118	16638
	7	6.3	6	331	1986
	8	6.3	139	108	15012
	9	12.5	2	287	574
	10	12.5	48	91	4368
	11	12.5	8	307	2456
	12	20.0	8	1133	9064
	13	20.0	4	246	984
	14	20.0	1	244	244
	15	20.0	2	304	608
	16	20.0	4	798	3192
	17	20.0	2	365	730
	18	20.0	4	635	2540
	19	20.0	8	1170	9360
	20	20.0	1	284	284
	21	20.0	4	788	3152
	22	20.0	2	272	544
	23	20.0	4	392	1568
	24	20.0	2	197	394
	25	20.0	4	404	1616
	26	20.0	3	340	1020
	27	20.0	4	1029	4116
	28	20.0	1	172	172
	29	20.0	4	768	3072
	30	20.0	1	207	207
	31	20.0	4	412	1648
	32	20.0	1	378	378
	33	20.0	2	875	1750
	34	20.0	2	1169	2338
	35	20.0	3	317	951
	36	20.0	1	603	603
	37	20.0	1	714	714
	38	20.0	1	345	345
	39	20.0	1	843	843
	40	20.0	1	392	392
	41	20.0	2	1194	2388
	42	20.0	2	1164	2328
	43	20.0	2	251	502
	44	20.0	1	317	317
	45	20.0	2	872	1744
	46	20.0	2	1079	2158
	47	20.0	2	587	1174
	48	20.0	1	655	655
	49	20.0	1	300	300
	50	20.0	1	275	275
	51	20.0	1	280	280
	52	20.0	2	1200	2400
	53	20.0	2	1099	2198
	54	20.0	2	241	482

Resumo do aço

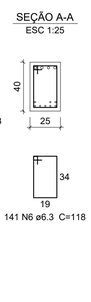
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1085.7	265.7
	12.5	74	71.3
	20.0	700.3	1727
PESO TOTAL (kg)			
CA50	2064		

Volume de concreto (C-40) = 10.37 m³
Área de forma = 104.31 m²

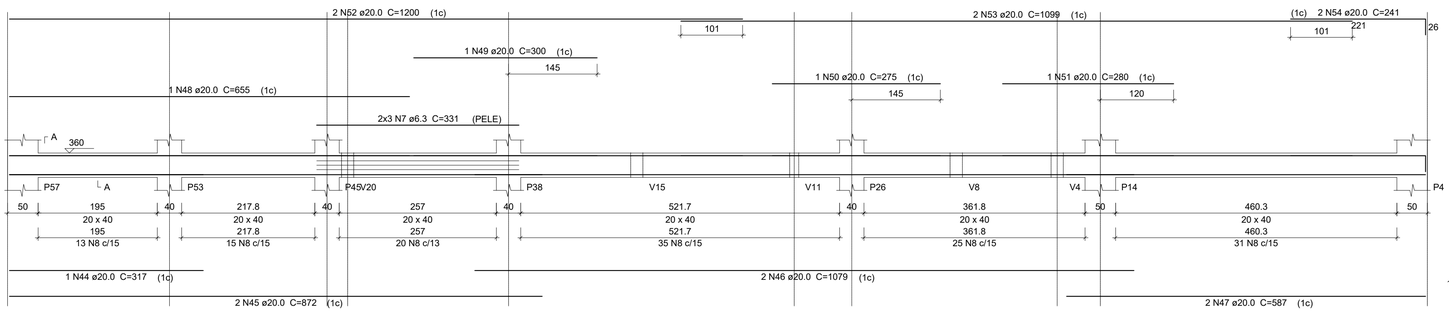
V45
ESC 1:50



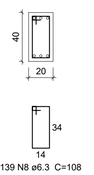
SEÇÃO A-A
ESC 1:25



V46
ESC 1:50



SEÇÃO A-A
ESC 1:25



REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV. 06

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-35

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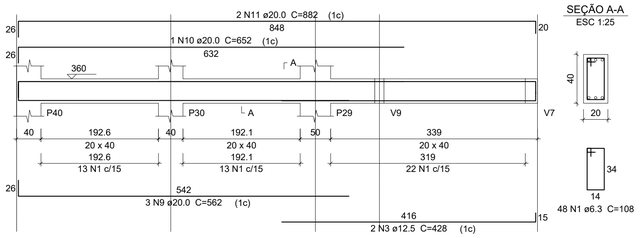
A 1

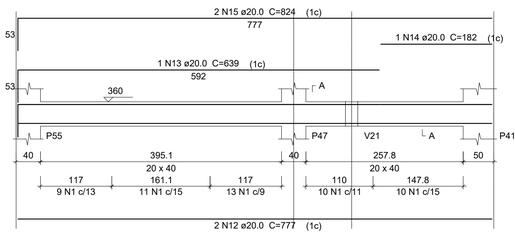
V29
ESC 1:50



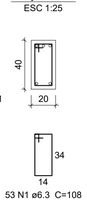
SEÇÃO A-A
ESC 1:25

48 N1 ø6.3 C=108

V32
ESC 1:50

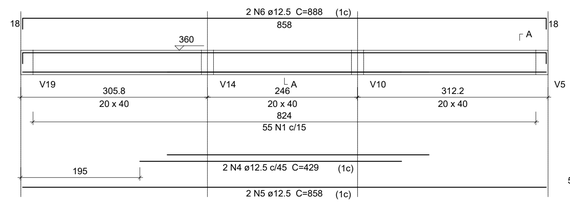


SEÇÃO A-A
ESC 1:25

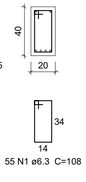


53 N1 ø6.3 C=108

V34
ESC 1:50

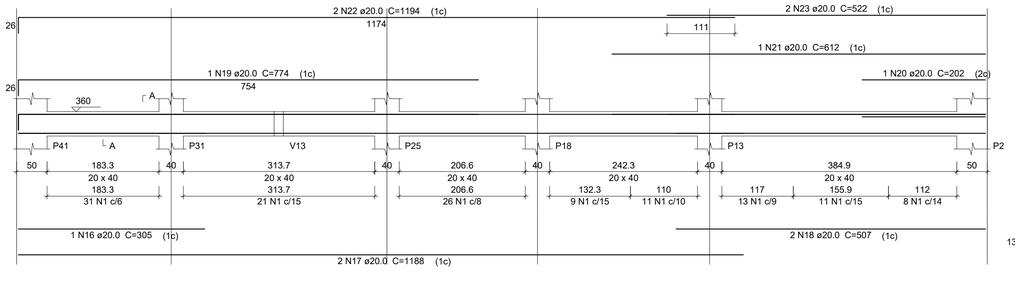


SEÇÃO A-A
ESC 1:25

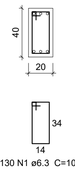


55 N1 ø6.3 C=108

V33
ESC 1:50

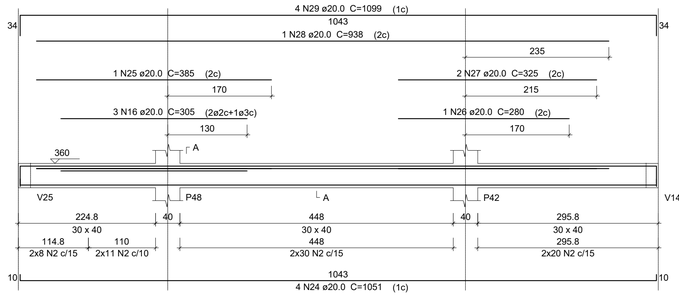


SEÇÃO A-A
ESC 1:25

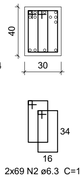


130 N1 ø6.3 C=108

V35
ESC 1:50

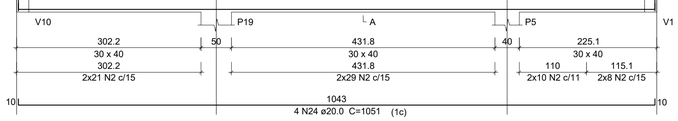


SEÇÃO A-A
ESC 1:25

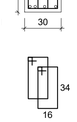


2x69 N2 ø6.3 C=112

V36
ESC 1:50

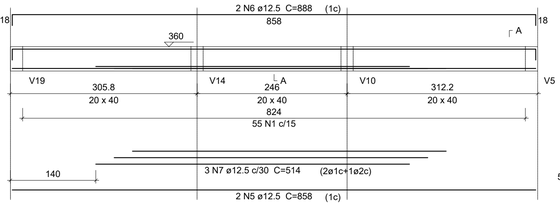


SEÇÃO A-A
ESC 1:25

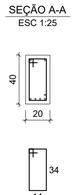


2x68 N2 ø6.3 C=112

V37
ESC 1:50

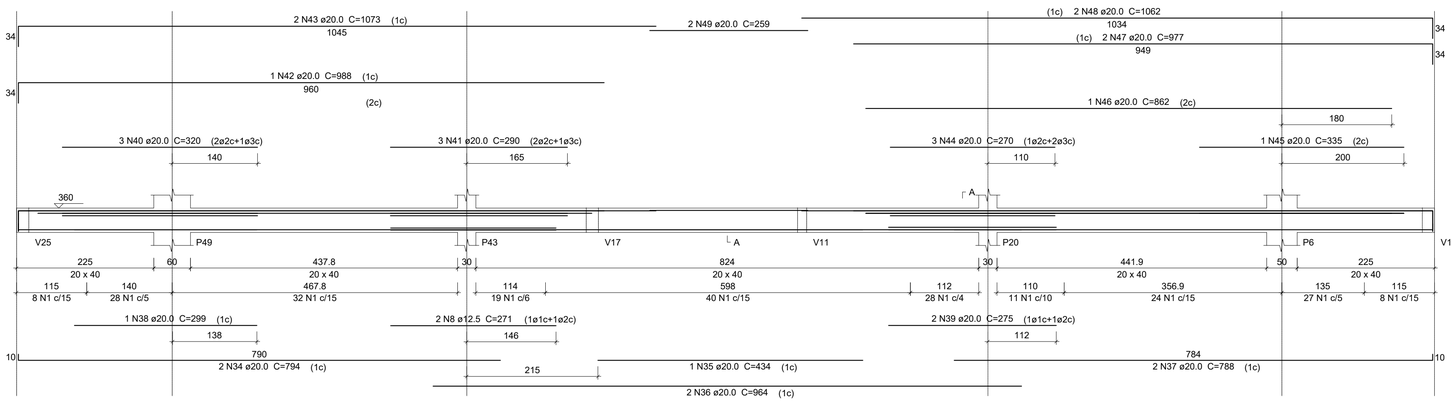


SEÇÃO A-A
ESC 1:25



55 N1 ø6.3 C=108

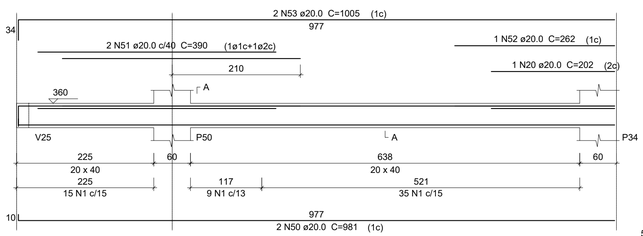
V38
ESC 1:50



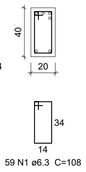
SEÇÃO A-A
ESC 1:25

225 N1 ø6.3 C=108

V39
ESC 1:50

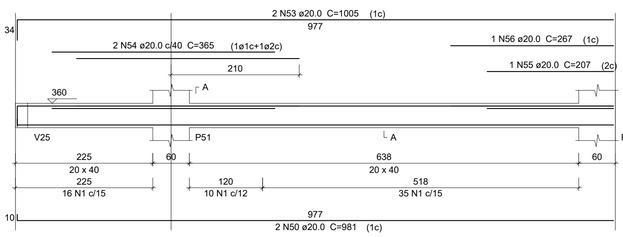


SEÇÃO A-A
ESC 1:25

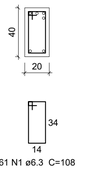


59 N1 ø6.3 C=108

V42
ESC 1:50



SEÇÃO A-A
ESC 1:25



61 N1 ø6.3 C=108

Relação do aço

V29 V32 V33
V34 V35 V36
V37 V38 V39
V42

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	686	108	74088
	2	6.3	274	112	30688
	3	12.5	2	428	856
	4	12.5	2	429	858
	5	12.5	4	858	3432
	6	12.5	4	888	3552
	7	12.5	3	514	1542
	8	12.5	2	271	542
	9	20.0	3	562	1686
	10	20.0	1	652	652
	11	20.0	2	882	1764
	12	20.0	2	777	1554
	13	20.0	1	639	639
	14	20.0	1	182	182
	15	20.0	2	824	1648
	16	20.0	4	305	1220
	17	20.0	2	1188	2376
	18	20.0	2	507	1014
	19	20.0	1	774	774
	20	20.0	2	202	404
	21	20.0	1	612	612
	22	20.0	2	1194	2388
	23	20.0	2	522	1044
	24	20.0	8	1051	8408
	25	20.0	1	385	385
	26	20.0	1	280	280
	27	20.0	2	325	650
	28	20.0	1	938	938
	29	20.0	8	1099	8792
	30	20.0	3	345	1035
	31	20.0	1	265	265
	32	20.0	2	310	620
	33	20.0	1	937	937
	34	20.0	2	794	1588
	35	20.0	1	434	434
	36	20.0	2	964	1928
	37	20.0	2	788	1576
	38	20.0	1	299	299
	39	20.0	2	275	550
	40	20.0	3	320	960
	41	20.0	3	290	870
	42	20.0	1	988	988
	43	20.0	2	1073	2146
	44	20.0	3	270	810
	45	20.0	1	335	335
	46	20.0	1	862	862
	47	20.0	2	977	1954
	48	20.0	2	1062	2124
	49	20.0	2	259	518
	50	20.0	4	981	3924
	51	20.0	2	390	780
	52	20.0	1	262	262
	53	20.0	4	1005	4020
	54	20.0	2	365	730
	55	20.0	1	207	207
	56	20.0	1	267	267

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1047.8	256.4
	12.5	107.9	103.9
	20.0	684	1686.8
PESO TOTAL (kg)			
CA50	2047.1		

Volume de concreto (C-40) = 9.91 m³
Área de forma = 115.53 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV. 06

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

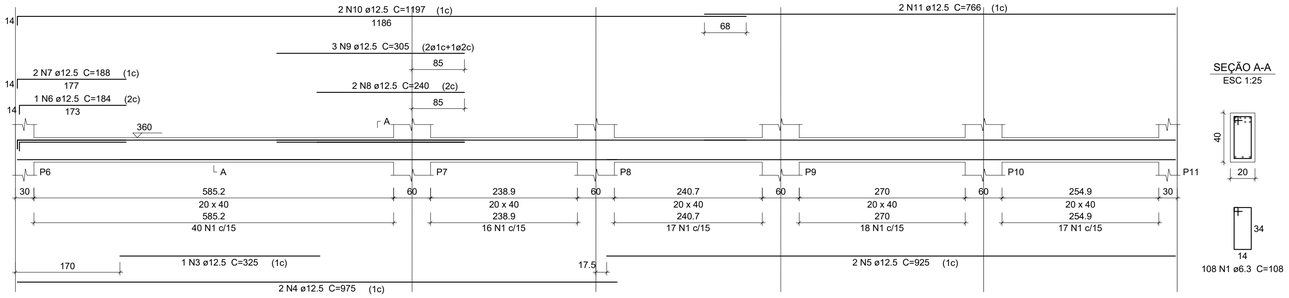
PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25 | ESCALA: 1:50
DESENHO | PRANCHA: C-34

stca.engenharia@gmail.com
(54) 98108 0303

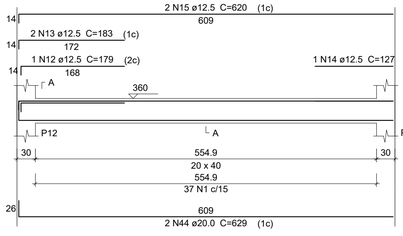
V2
ESC 1:50



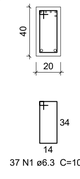
SEÇÃO A-A
ESC 1:25

108 N1 ø6.3 C=108

V3
ESC 1:50

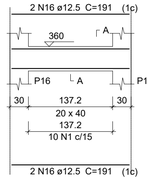


SEÇÃO A-A
ESC 1:25

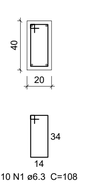


37 N1 ø6.3 C=108

V6
ESC 1:50



SEÇÃO A-A
ESC 1:25



10 N1 ø6.3 C=108

Relação do aço

V2	V3	V4
V5	V6	V7
V8	V9	V10
V11	V12	V13
V14	V15	V30
V31		

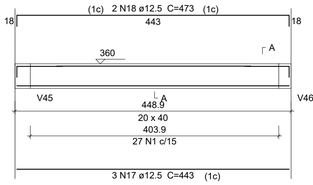
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	511	108	55188
	2	6.3	226	98	22148
	3	12.5	1	325	325
	4	12.5	2	975	1950
	5	12.5	2	925	1850
	6	12.5	1	184	184
	7	12.5	2	188	376
	8	12.5	2	240	480
	9	12.5	3	305	915
	10	12.5	2	1197	2394
	11	12.5	2	766	1532
	12	12.5	1	179	179
	13	12.5	2	183	366
	14	12.5	1	127	127
	15	12.5	2	620	1240
	16	12.5	4	191	764
	17	12.5	6	443	2658
	18	12.5	2	473	946
	19	12.5	1	107	107
	20	12.5	2	458	916
	21	12.5	2	448	896
	22	12.5	2	458	916
	23	12.5	4	987	3948
	24	12.5	2	275	550
	25	12.5	4	993	3972
	26	12.5	4	352	1408
	27	12.5	2	143	286
	28	12.5	2	149	298
	29	12.5	3	949	2847
	30	12.5	3	963	2889
	31	12.5	3	433	1299
	32	12.5	2	138	276
	33	12.5	2	1189	2378
	34	12.5	1	165	165
	35	12.5	2	1041	2082
	36	12.5	2	190	380
	37	12.5	2	222	444
	38	12.5	2	245	490
	39	12.5	2	455	910
	40	12.5	1	123	123
	41	12.5	2	469	938
	42	12.5	2	356	712
	43	12.5	2	358	716
	44	20.0	4	629	2516
	45	20.0	4	841	3364
	46	20.0	4	833	3332
	47	20.0	1	263	263
	48	20.0	1	267	267
	49	20.0	2	576	1152
	50	20.0	2	385	770
	51	20.0	2	237	474
	52	20.0	2	1123	2246
	53	20.0	2	692	1384

Resumo do aço

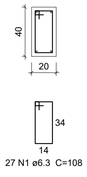
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	773.4	189.2
	12.5	462.4	445.4
	20.0	157.7	388.9
PESO TOTAL (kg)			
CA50	1023.5		

Volume de concreto (C-40) = 8.89 m³
Área de forma = 118.49 m²

V4
ESC 1:50

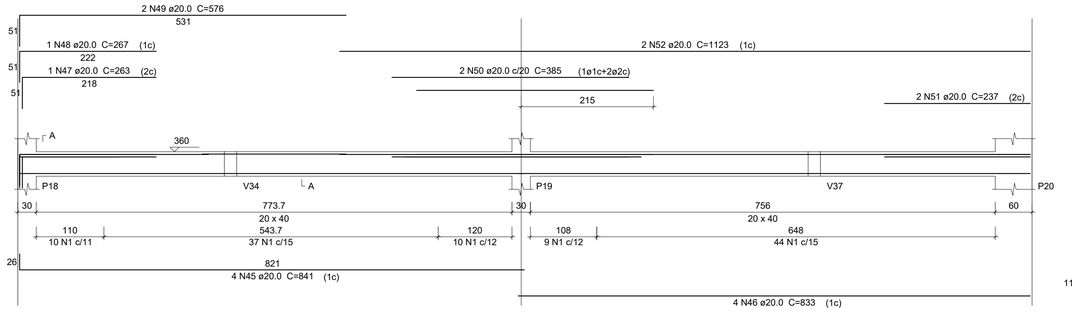


SEÇÃO A-A
ESC 1:25

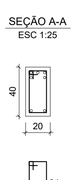


27 N1 ø6.3 C=108

V5
ESC 1:50

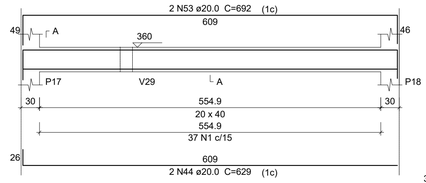


SEÇÃO A-A
ESC 1:25

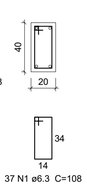


110 N1 ø6.3 C=108

V7
ESC 1:50

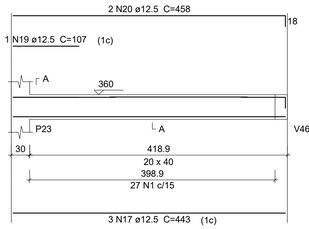


SEÇÃO A-A
ESC 1:25

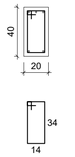


37 N1 ø6.3 C=108

V8
ESC 1:50

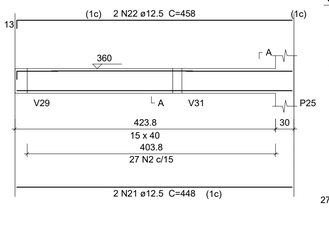


SEÇÃO A-A
ESC 1:25

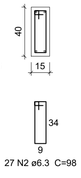


27 N1 ø6.3 C=108

V9
ESC 1:50

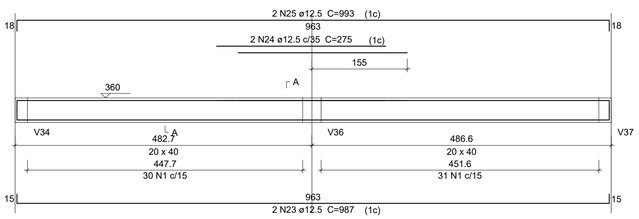


SEÇÃO A-A
ESC 1:25

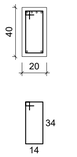


27 N2 ø6.3 C=98

V10
ESC 1:50

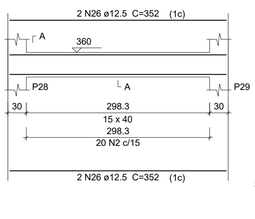


SEÇÃO A-A
ESC 1:25

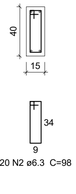


61 N1 ø6.3 C=108

V12
ESC 1:50

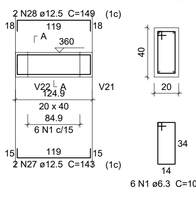


SEÇÃO A-A
ESC 1:25

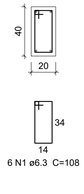


20 N2 ø6.3 C=98

V30
ESC 1:50

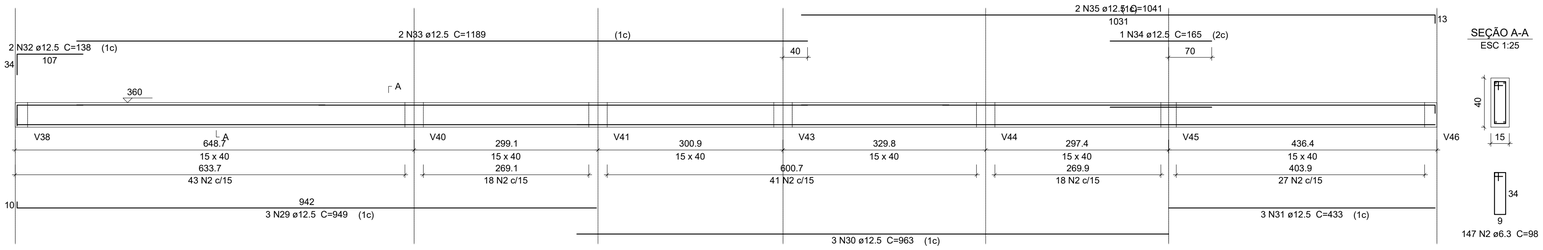


SEÇÃO A-A
ESC 1:25



6 N1 ø6.3 C=108

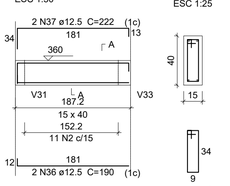
V11
ESC 1:50



SEÇÃO A-A
ESC 1:25

147 N2 ø6.3 C=98

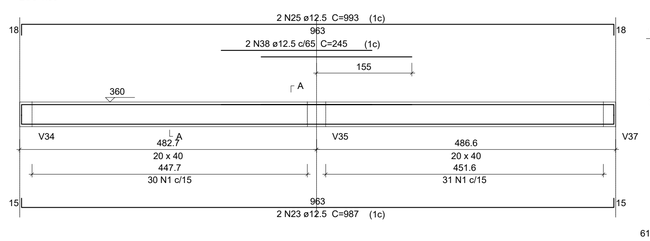
V13
ESC 1:50



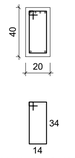
SEÇÃO A-A
ESC 1:25

11 N2 ø6.3 C=98

V14
ESC 1:50

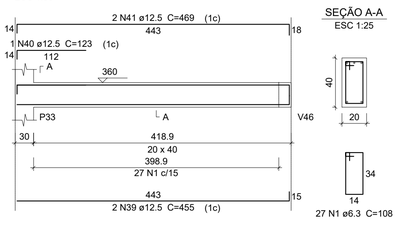


SEÇÃO A-A
ESC 1:25



61 N1 ø6.3 C=108

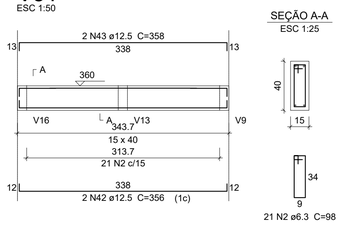
V15
ESC 1:50



SEÇÃO A-A
ESC 1:25

27 N1 ø6.3 C=108

V31
ESC 1:50



SEÇÃO A-A
ESC 1:25

21 N2 ø6.3 C=98

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-32

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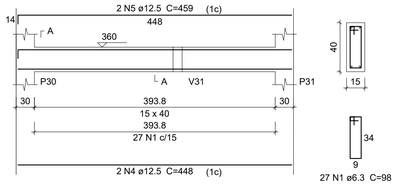
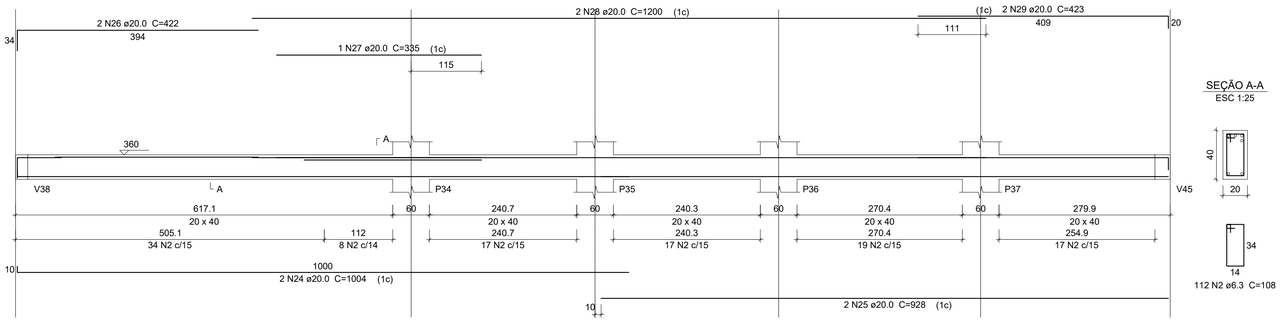
A1

V16
ESC 1:50



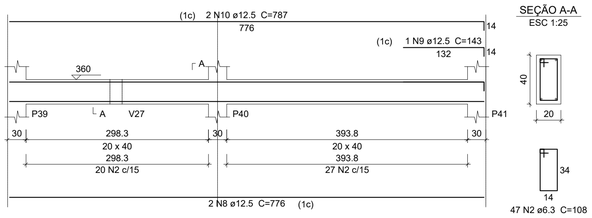
SEÇÃO A-A
ESC 1:25

V17
ESC 1:50



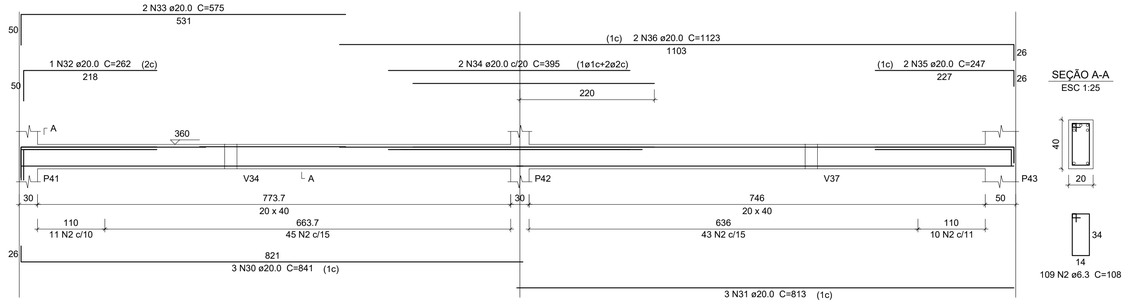
SEÇÃO A-A
ESC 1:25

V18
ESC 1:50



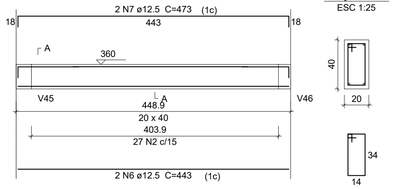
SEÇÃO A-A
ESC 1:25

V19
ESC 1:50



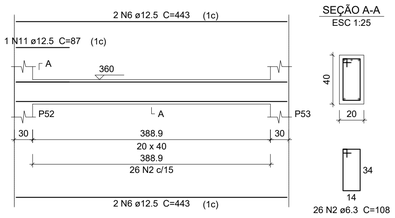
SEÇÃO A-A
ESC 1:25

V20
ESC 1:50



SEÇÃO A-A
ESC 1:25

V23
ESC 1:50



SEÇÃO A-A
ESC 1:25

Relação do aço

V16	V17	V18
V19	V20	V21
V22	V23	V24
V26	V27	V28

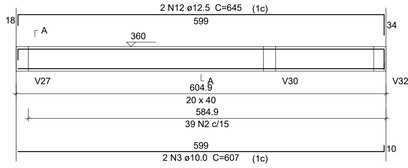
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	27	98	2646
	2	6.3	655	108	70740
	3	10.0	2	607	1214
	4	12.5	2	448	896
	5	12.5	2	459	918
	6	12.5	6	443	2658
	7	12.5	2	473	946
	8	12.5	2	776	1552
	9	12.5	1	143	143
	10	12.5	2	787	1574
	11	12.5	1	87	87
	12	12.5	2	645	1290
	13	12.5	3	609	1827
	14	12.5	2	158	316
	15	12.5	1	107	107
	16	12.5	2	620	1240
	17	12.5	1	338	338
	18	12.5	2	650	1300
	19	12.5	1	325	325
	20	12.5	2	595	1190
	21	12.5	1	331	331
	22	12.5	2	653	1306
	23	12.5	2	362	724
	24	20.0	2	1004	2008
	25	20.0	2	928	1856
	26	20.0	2	422	844
	27	20.0	1	335	335
	28	20.0	2	1200	2400
	29	20.0	2	423	846
	30	20.0	3	841	2523
	31	20.0	3	813	2439
	32	20.0	1	262	262
	33	20.0	2	575	1150
	34	20.0	2	395	790
	35	20.0	2	247	494
	36	20.0	2	1123	2246
	37	20.0	2	873	1746
	38	20.0	2	922	1844
	39	20.0	2	484	968
	40	20.0	1	305	305
	41	20.0	1	295	295
	42	20.0	2	1025	2050
	43	20.0	2	492	984
	44	20.0	2	507	1014
	45	20.0	2	810	1620
	46	20.0	2	771	1542
	47	20.0	1	157	157
	48	20.0	2	820	1640

Resumo do aço

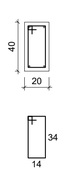
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	733.9	179.6
	10.0	12.2	7.5
	12.5	190.7	183.7
	20.0	323.6	798
PESO TOTAL (kg)			
CA50	1168.7		

Volume de concreto (C-40) = 8.81 m³
Área de forma = 111.07 m²

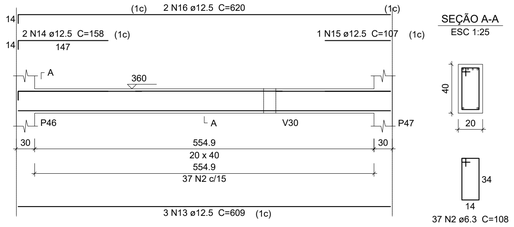
V21
ESC 1:50



SEÇÃO A-A
ESC 1:25

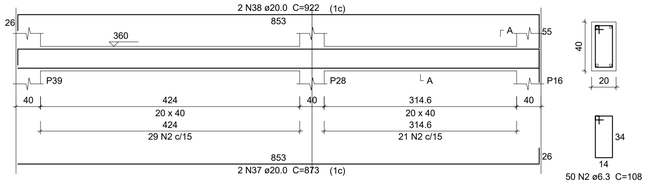


V22
ESC 1:50



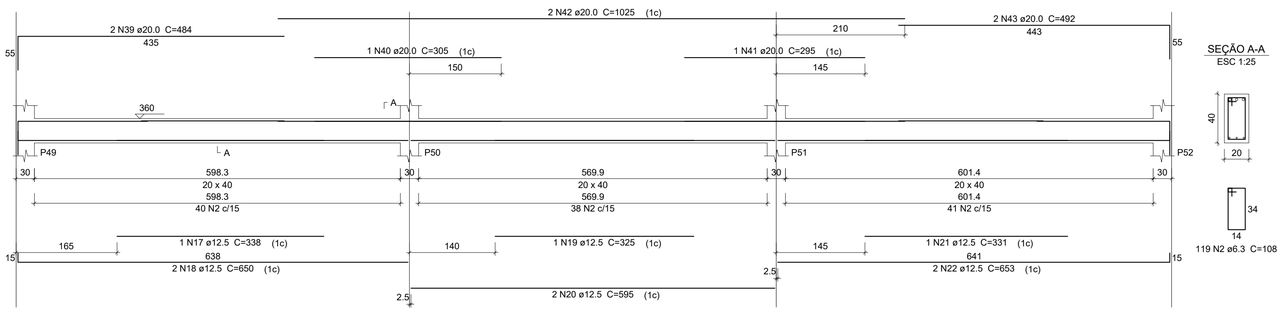
SEÇÃO A-A
ESC 1:25

V26
ESC 1:50



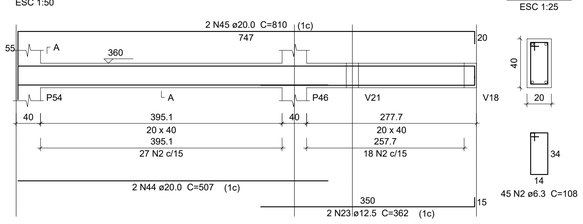
SEÇÃO A-A
ESC 1:25

V24
ESC 1:50



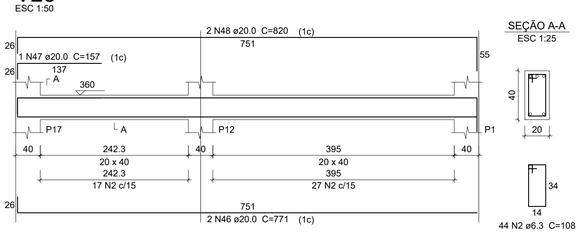
SEÇÃO A-A
ESC 1:25

V27
ESC 1:50



SEÇÃO A-A
ESC 1:25

V28
ESC 1:50



SEÇÃO A-A
ESC 1:25

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV.06

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
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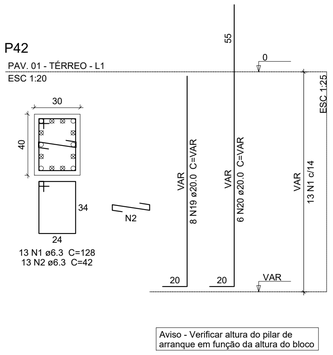
P42

PAV. 01 - TÉRREO - L1
ESC 1:20

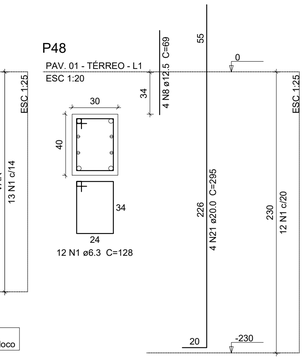


13 N1 ø6.3 C=128
13 N2 ø6.3 C=42

Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P48

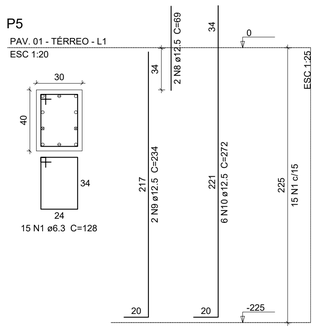
PAV. 01 - TÉRREO - L1
ESC 1:20



12 N1 ø6.3 C=128

P5

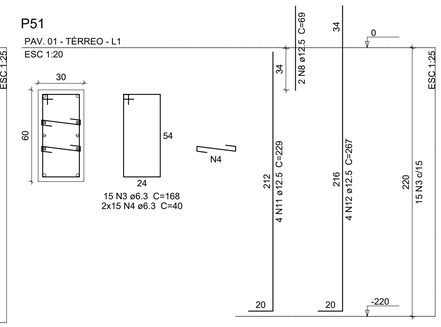
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N1 ø6.3 C=128

P51

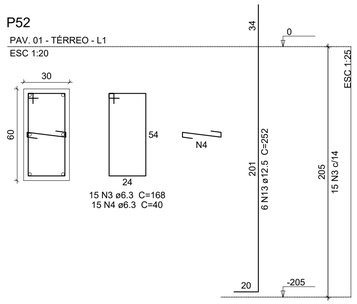
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N3 ø6.3 C=168
2x15 N4 ø6.3 C=40

P52

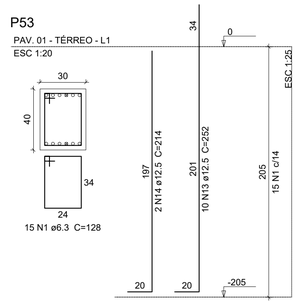
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N3 ø6.3 C=168
15 N4 ø6.3 C=40

P53

PAV. 01 - TÉRREO - L1
ESC 1:20



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P55

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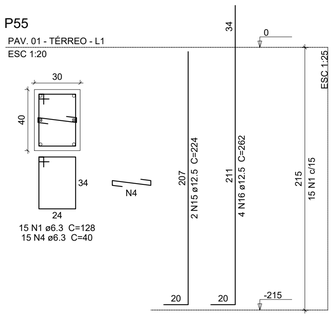
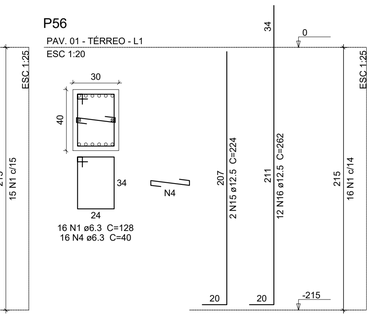
ESC 1:20



15 N1 ø6.3 C=128
15 N4 ø6.3 C=40

P56

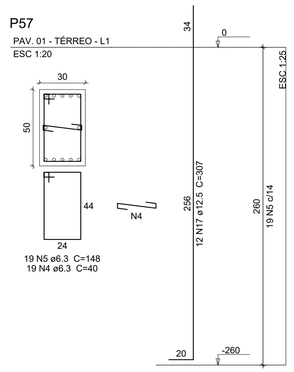
PAV. 01 - TÉRREO - L1
ESC 1:20



16 N1 ø6.3 C=128
16 N4 ø6.3 C=40

P57

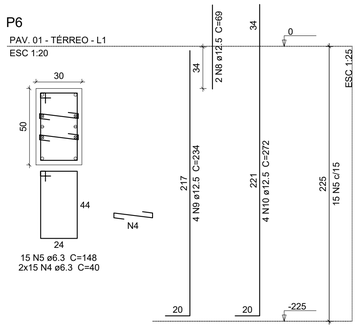
PAV. 01 - TÉRREO - L1
ESC 1:20



19 N5 ø6.3 C=148
19 N4 ø6.3 C=40

P6

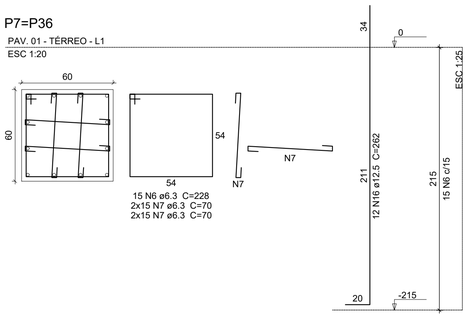
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N5 ø6.3 C=148
2x15 N4 ø6.3 C=40

P7=P36

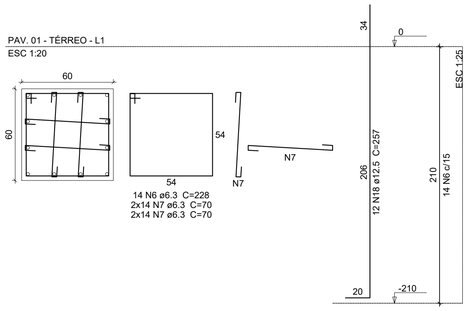
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N6 ø6.3 C=228
2x15 N7 ø6.3 C=70
2x15 N7 ø6.3 C=70

P8=P9=P10=P35=P37

PAV. 01 - TÉRREO - L1
ESC 1:20



14 N6 ø6.3 C=228
2x14 N7 ø6.3 C=70
2x14 N7 ø6.3 C=70

Relação do aço

P5	P6	2xP7	
5xP8	P42	P48	
P51	P52	P53	
P55	P56	P57	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	86	128	11008
	2	6.3	13	42	546
	3	6.3	30	168	5040
	4	6.3	125	40	5000
	5	6.3	34	148	5032
	6	6.3	100	228	22800
	7	6.3	400	70	28000
	8	12.5	10	69	690
	9	12.5	6	234	1404
	10	12.5	10	272	2720
	11	12.5	4	229	916
	12	12.5	4	267	1068
	13	12.5	16	252	4032
	14	12.5	2	214	428
	15	12.5	4	224	896
	16	12.5	40	262	10480
	17	12.5	12	307	3684
	18	12.5	60	257	15420
	19	20.0	8	VAR	VAR
	20	20.0	6	VAR	VAR
	21	20.0	4	295	1180

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	774.3	189.5
	12.5	417.4	402.1
	20.0	41.4	102
PESO TOTAL (kg)			
CA50	693.6		

Volume de concreto (C-40) = 8.34 m³
Área de forma = 68.71 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS PILARES PAV. 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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CREA-RS 73.831

DATA: Março/25
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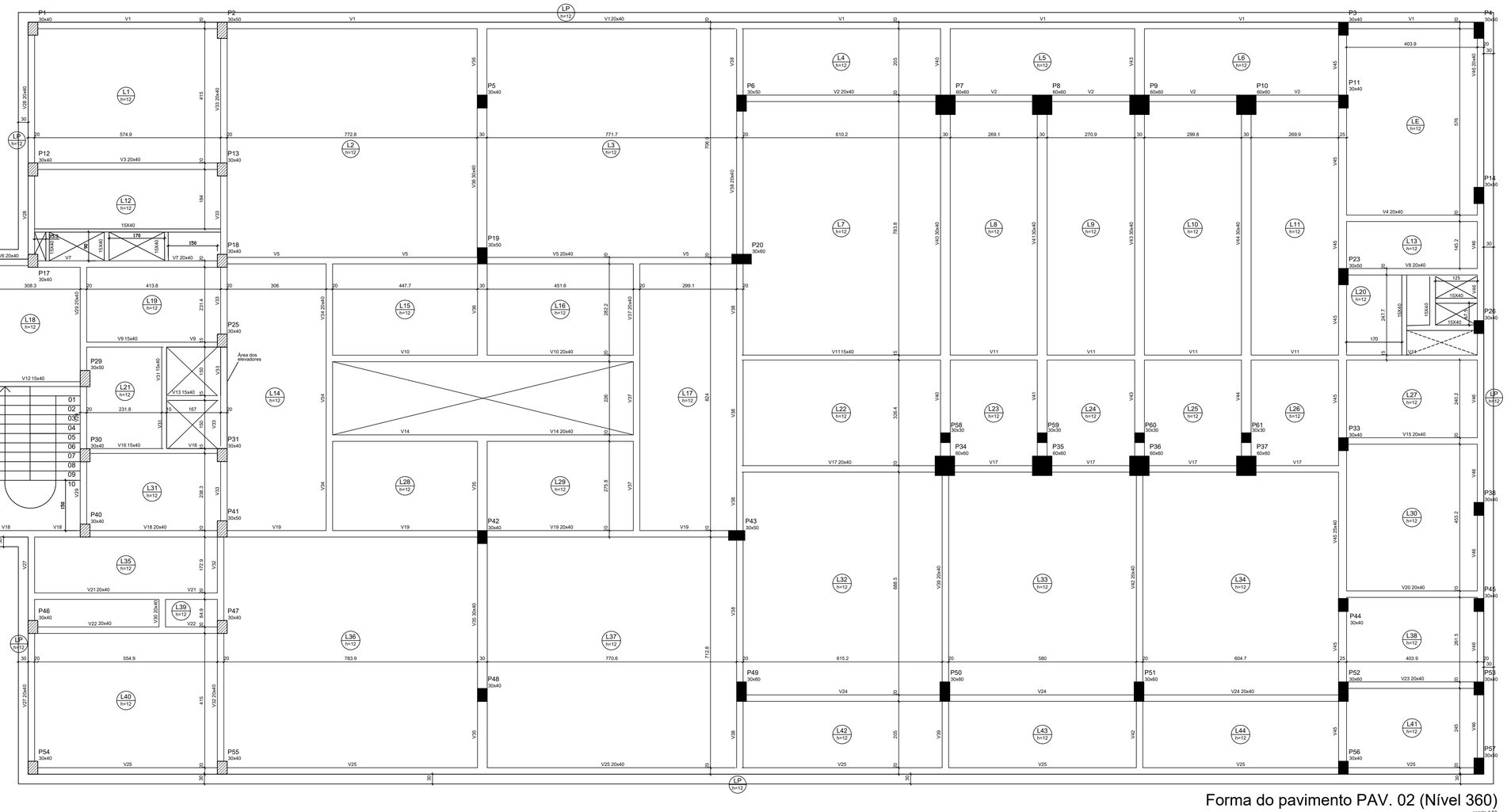
A1



Forma do pavimento PAV. 02 (Nível 360)

escala 1:50

Lajes

Nome	Tipo	Altura (cm)	Elevação (cm)	Nível (cm)	Dados Peso próprio (kgf/m²)	Sobrecarga (kgf/m²) Adicional	Acidental	Localizada
L1	Maciça	12	0	360	300	100	200	-
L2	Maciça	12	0	360	300	100	200	-
L3	Maciça	12	0	360	300	100	200	-
L4	Maciça	12	0	360	300	100	200	-
L5	Maciça	12	0	360	300	100	200	-
L6	Maciça	12	0	360	300	100	200	-
L7	Maciça	12	0	360	300	100	200	-
L8	Maciça	12	0	360	300	100	200	-
L9	Maciça	12	0	360	300	100	200	-
L10	Maciça	12	0	360	300	100	200	-
L11	Maciça	12	0	360	300	100	200	-
L12	Maciça	12	0	360	300	100	200	-
L13	Maciça	12	0	360	300	100	200	-
L14	Maciça	12	0	360	300	100	200	-
L15	Maciça	12	0	360	300	100	200	-
L16	Maciça	12	0	360	300	100	200	-
L17	Maciça	12	0	360	300	100	200	-
L18	Maciça	12	0	360	300	100	200	-
L19	Maciça	12	0	360	300	100	200	-
L20	Maciça	12	0	360	300	100	200	-
L21	Maciça	12	0	360	300	100	200	-
L22	Maciça	12	0	360	300	100	200	-
L23	Maciça	12	0	360	300	100	200	-
L24	Maciça	12	0	360	300	100	200	-
L25	Maciça	12	0	360	300	100	200	-
L26	Maciça	12	0	360	300	100	200	-
L27	Maciça	12	0	360	300	100	200	-
L28	Maciça	12	0	360	300	100	200	-
L29	Maciça	12	0	360	300	100	200	-
L30	Maciça	12	0	360	300	100	200	-
L31	Maciça	12	0	360	300	100	200	-
L32	Maciça	12	0	360	300	100	200	-
L33	Maciça	12	0	360	300	100	200	-
L34	Maciça	12	0	360	300	100	200	-
L35	Maciça	12	0	360	300	100	200	-
L36	Maciça	12	0	360	300	100	200	-
L37	Maciça	12	0	360	300	100	200	-
L38	Maciça	12	0	360	300	100	200	-
L39	Maciça	12	0	360	300	100	200	-
L40	Maciça	12	0	360	300	100	200	-
L41	Maciça	12	0	360	300	100	200	-
L42	Maciça	12	0	360	300	100	200	-
L43	Maciça	12	0	360	300	100	200	-
L44	Maciça	12	0	360	300	100	200	-
LE	Maciça	12	0	360	300	100	200	-
LP	Maciça	12	0	360	300	100	200	-

Área de lajes			
Tipo	Altura (cm)	Bloco de Enchimento	Área (m²)
Maciça	12	-	885.47

Características dos materiais

fck (kgf/cm²)	Abatimento (cm)
400	5.00

Dimensão máxima do agregado = 19 mm

Legenda dos Pilares

- Pilar que morre
- Pilar que passa
- Pilar que nasce
- Pilar com mudança de seção

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: PLANTA DE FORMAS PAV. 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-29

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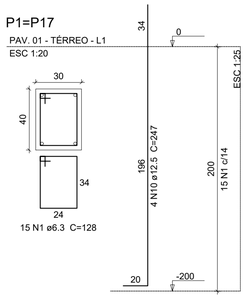
A 1

P1=P17



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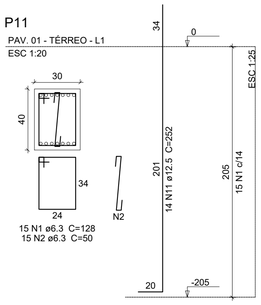

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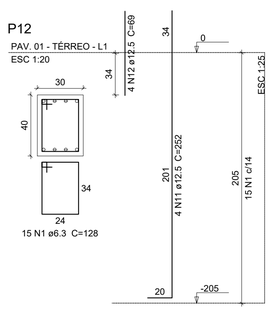

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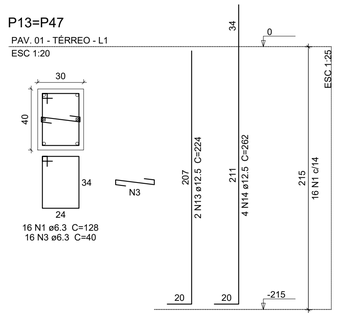

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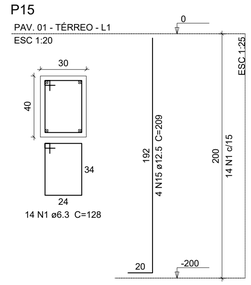

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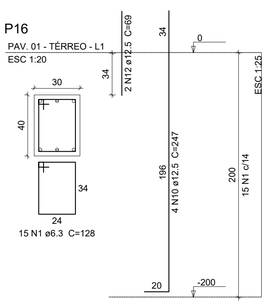

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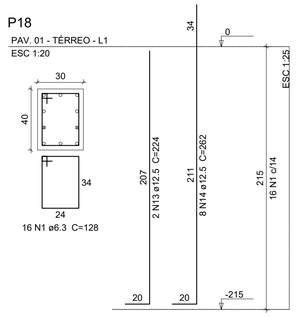

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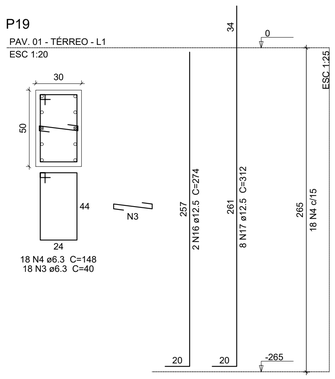

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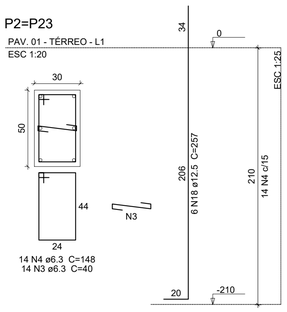

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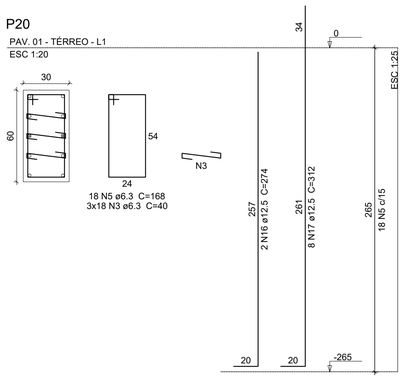

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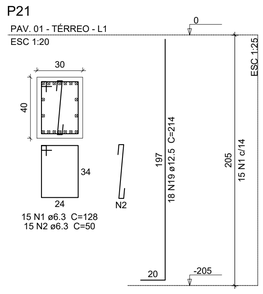

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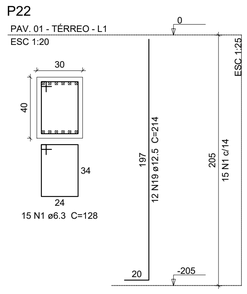

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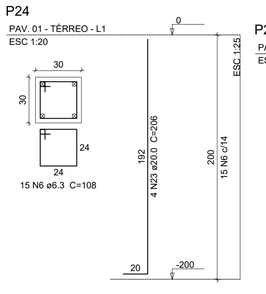

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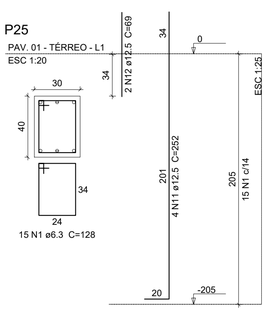

Relação do aço

2xP1	2xP2	P3
2xP4	P11	P12
2xP13	P15	P16
P18	P19	P20
P21	P22	P24
P25	3xP26	P27
2xP28	P29	P30
P31	P32	P33
P34	P38	P39
P41	P43	P44
P45	2xP49	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	424	128	54272
	2	6.3	30	50	1500
	3	6.3	306	40	12240
	4	6.3	119	148	17612
	5	6.3	48	168	8064
	6	6.3	30	108	3240
	7	6.3	31	42	1302
	8	6.3	12	228	2736
	9	6.3	48	70	3360
	10	12.5	36	247	8892
	11	12.5	74	252	18648
	12	12.5	22	69	1518
	13	12.5	6	224	1344
	14	12.5	28	262	7336
	15	12.5	20	209	4180
	16	12.5	4	274	1096
	17	12.5	16	312	4992
	18	12.5	18	257	4626
	19	12.5	42	214	8988
	20	12.5	30	VAR	VAR
	21	12.5	2	VAR	VAR
	22	12.5	16	267	4272
	23	20.0	4	206	824
	24	20.0	4	110	440
	25	20.0	6	270	1620
	26	20.0	14	221	3094

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1043.3	255.3
	12.5	730.8	704
	20.0	59.8	147.4
PESO TOTAL (kg)			
CA50	1106.7		

Volume de concreto (C-40) = 11.22 m³
Área de forma = 123.66 m²

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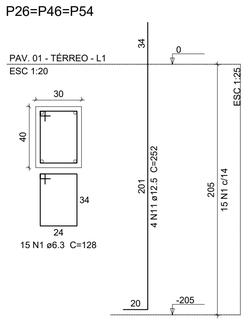

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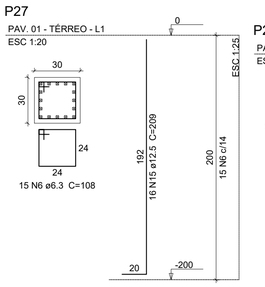

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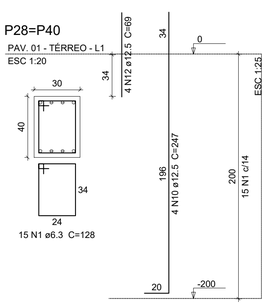

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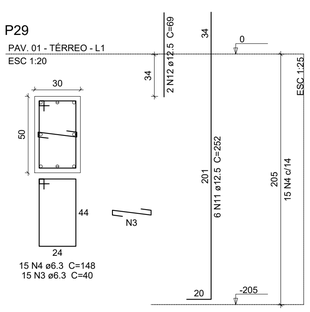

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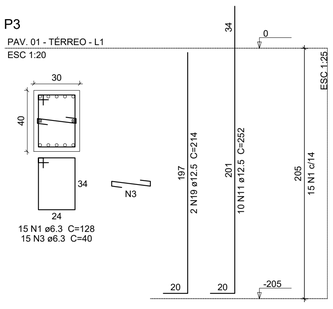

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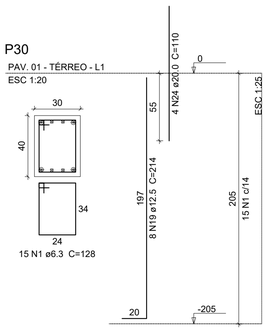

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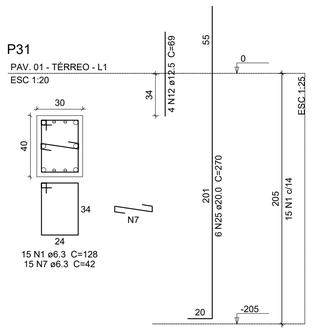

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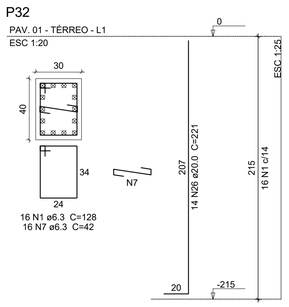

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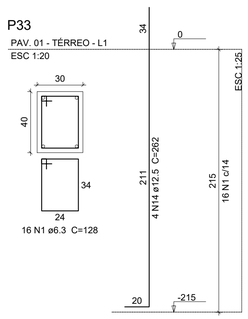

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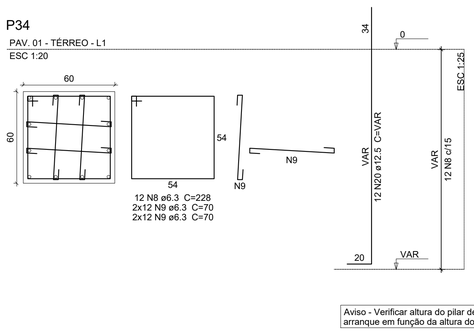
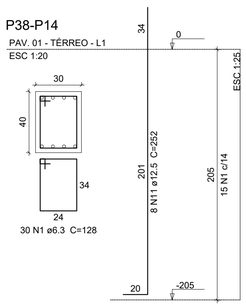


Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P38-P14



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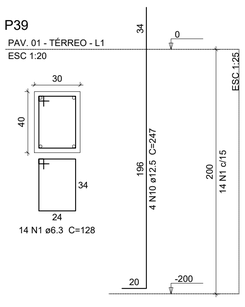

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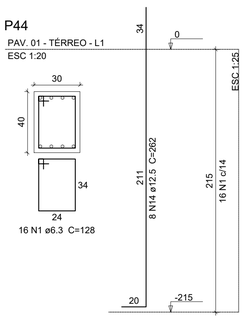

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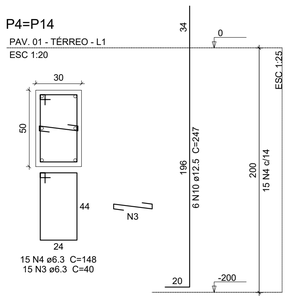

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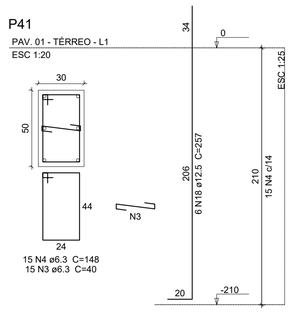

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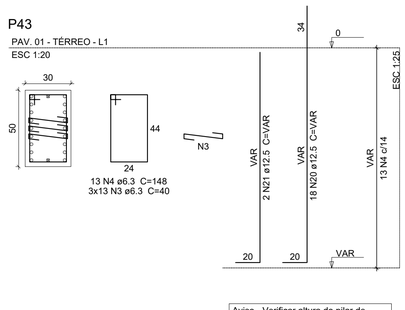
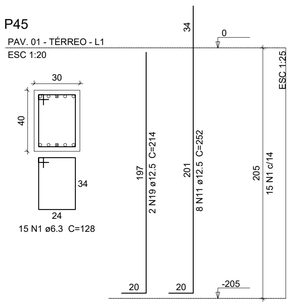


Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P45



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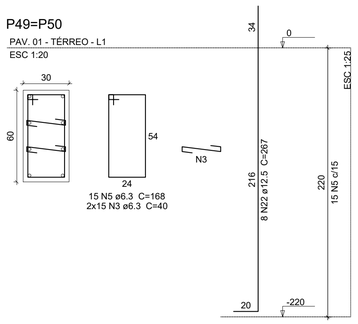

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS PILARES PAV.06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25 | ESCALA: 1:50

DESENHO | PRANCHA: C-30

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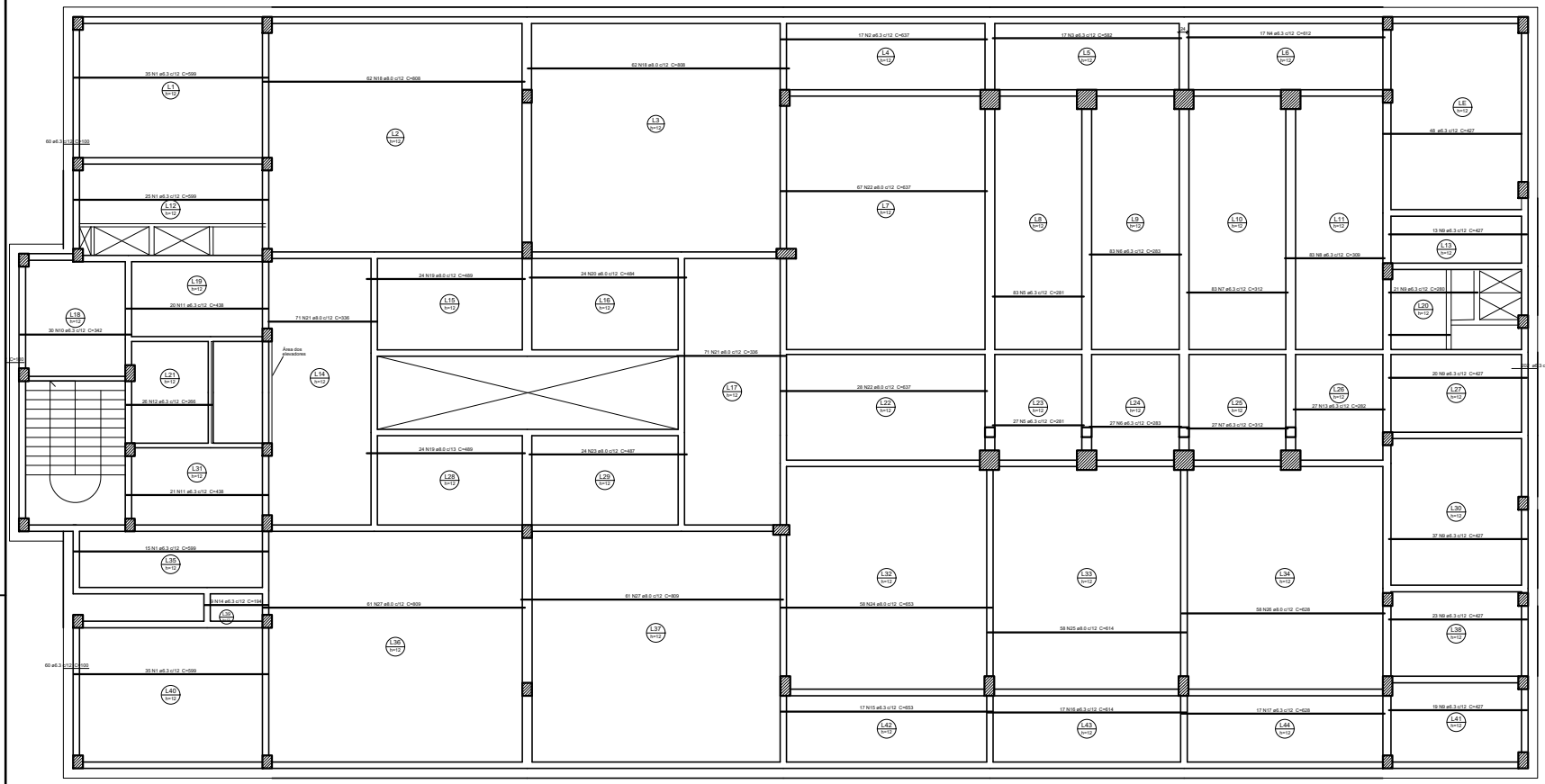
A1



Armação positiva das lajes do pavimento PAV. 02 (Eixo X)

escala 1:50

Relação do aço

Positivos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	110	599	65890
	2	6.3	17	637	10829
	3	6.3	17	582	9894
	4	6.3	17	612	10404
	5	6.3	110	281	30910
	6	6.3	110	283	31130
	7	6.3	110	312	34320
	8	6.3	63	399	25047
	9	6.3	133	427	56791
	10	6.3	30	342	10260
	11	6.3	41	438	17958
	12	6.3	26	266	6916
	13	6.3	27	282	7614
	14	6.3	9	194	1746
	15	6.3	17	653	11101
	16	6.3	17	614	10438
	17	6.3	17	628	10676
	18	8.0	124	808	100192
	19	8.0	48	489	23472
	20	8.0	24	494	11856
	21	8.0	142	336	47712
	22	8.0	95	637	60515
	23	8.0	24	487	11688
	24	8.0	58	653	37874
	25	8.0	58	614	35612
	26	8.0	58	639	36624
	27	8.0	122	809	98698

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	3958.3	1552.4
	8.0	4638.1	1830.1
PESO TOTAL (kg)			
CA50	2752.7		

Volume de concreto (C-40) = 106.73 m³
Área da forma = 889.46 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA POSITIVA LAJES PAV. 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO

PRANCHA: C-37

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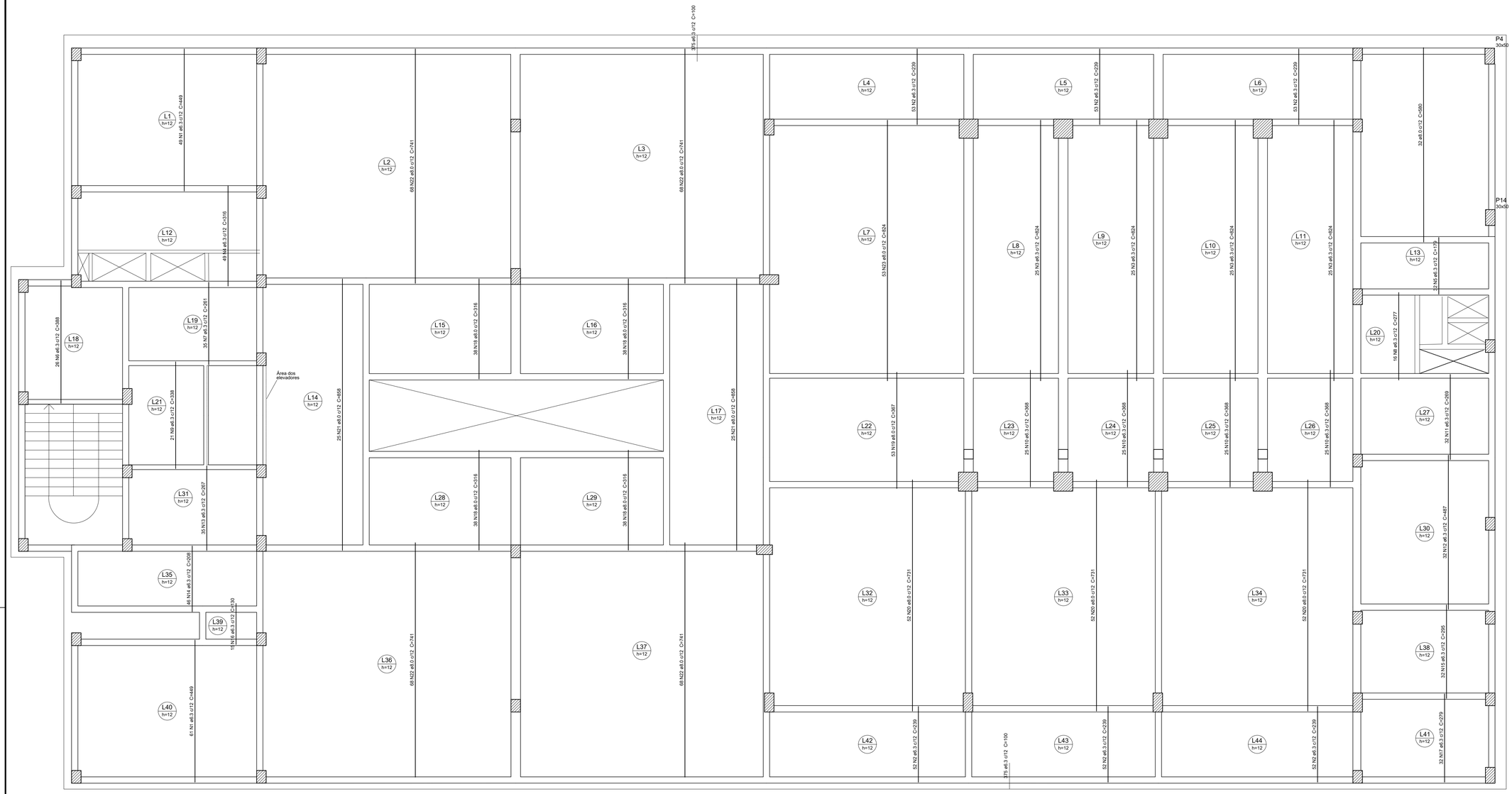
A1



Armação positiva das lajes do pavimento PAV. 02 (Eixo Y)

escala 1:50

Relação do aço

Positivos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	110	449	49390
	2	6.3	315	239	75285
	3	6.3	100	824	82400
	4	6.3	49	316	15484
	5	6.3	32	179	5728
	6	6.3	26	388	10088
	7	6.3	35	261	9135
	8	6.3	32	277	8864
	9	6.3	21	338	7098
	10	6.3	100	368	36800
	11	6.3	32	269	8608
	12	6.3	32	487	15584
	13	6.3	35	267	9345
	14	6.3	46	208	9568
	15	6.3	32	295	9440
	16	6.3	15	130	1950
	17	6.3	32	279	8928
	18	8.0	152	316	48032
	19	8.0	53	367	19451
	20	8.0	156	731	114036
	21	8.0	50	858	42900
	22	8.0	272	741	201552
	23	8.0	53	824	43672

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	3798	945
	8.0	4696.5	1853.1
PESO TOTAL (kg)			
CA50	2798.1		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
ARMADURA POSITIVA LAJES PAV. 06

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA
Março/25

ESCALA
1:50

DESENHO

PRANCHA
C-38

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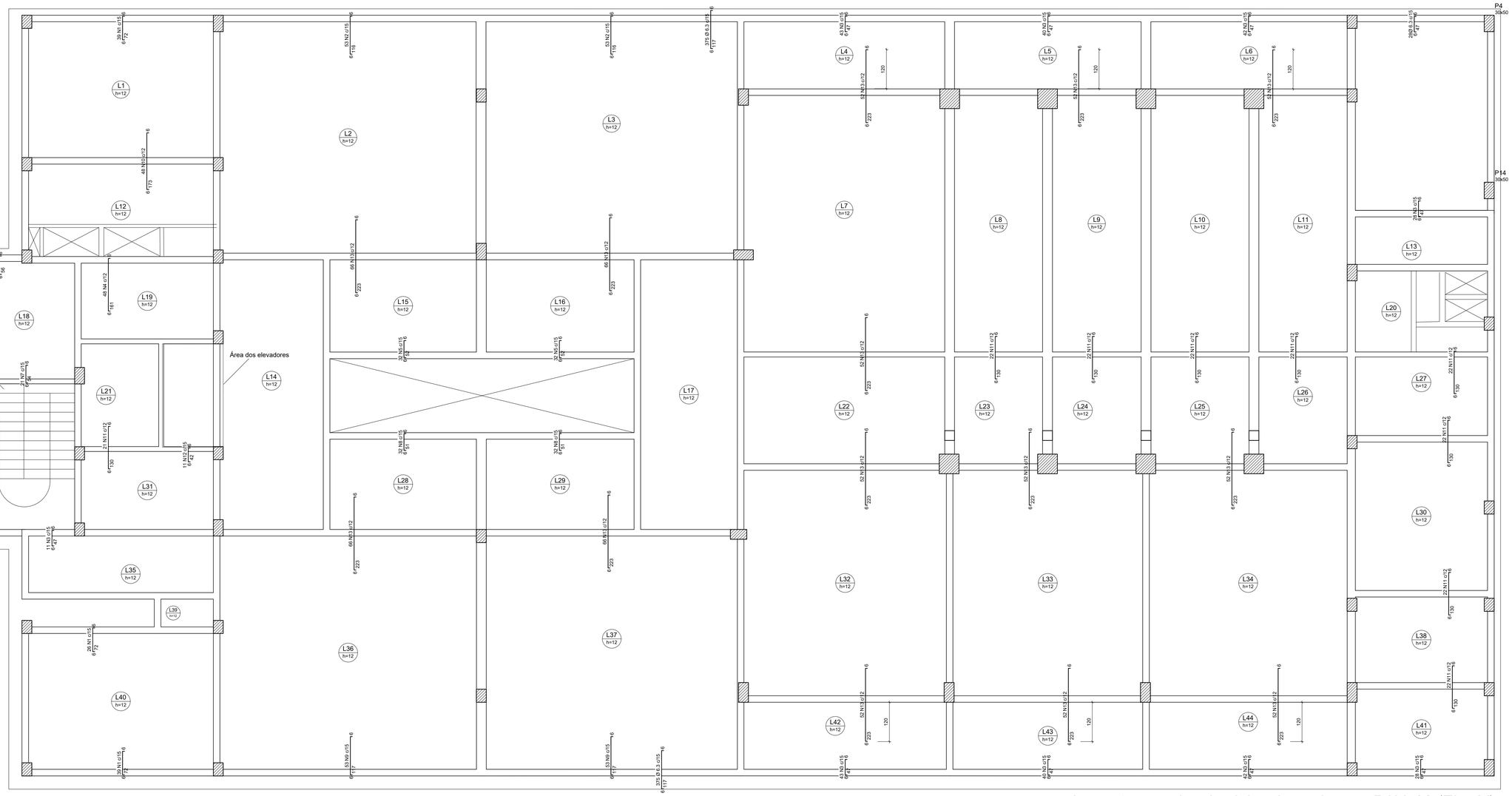

Armação negativa das lajes do pavimento PAV. 02 (Eixo Y)

escala 1:50

Relação do aço

Negativos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	104	81	8424
	2	6.3	106	125	13250
	3	6.3	317	56	17752
	4	6.3	48	170	8160
	5	6.3	64	61	3904
	6	6.3	11	65	715
	7	6.3	21	63	1323
	8	6.3	64	60	3840
	9	6.3	106	126	13356
	10	6.3	48	182	8736
	11	6.3	197	139	27383
	12	6.3	11	51	561
	13	8.0	784	231	181104

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1074.1	562.8
	8.0	1811.1	714.6
PESO TOTAL (kg)			
CA50	1277.40		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA NEGATIVA LAJES PAV. 06

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-40

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(54) 98108 0303

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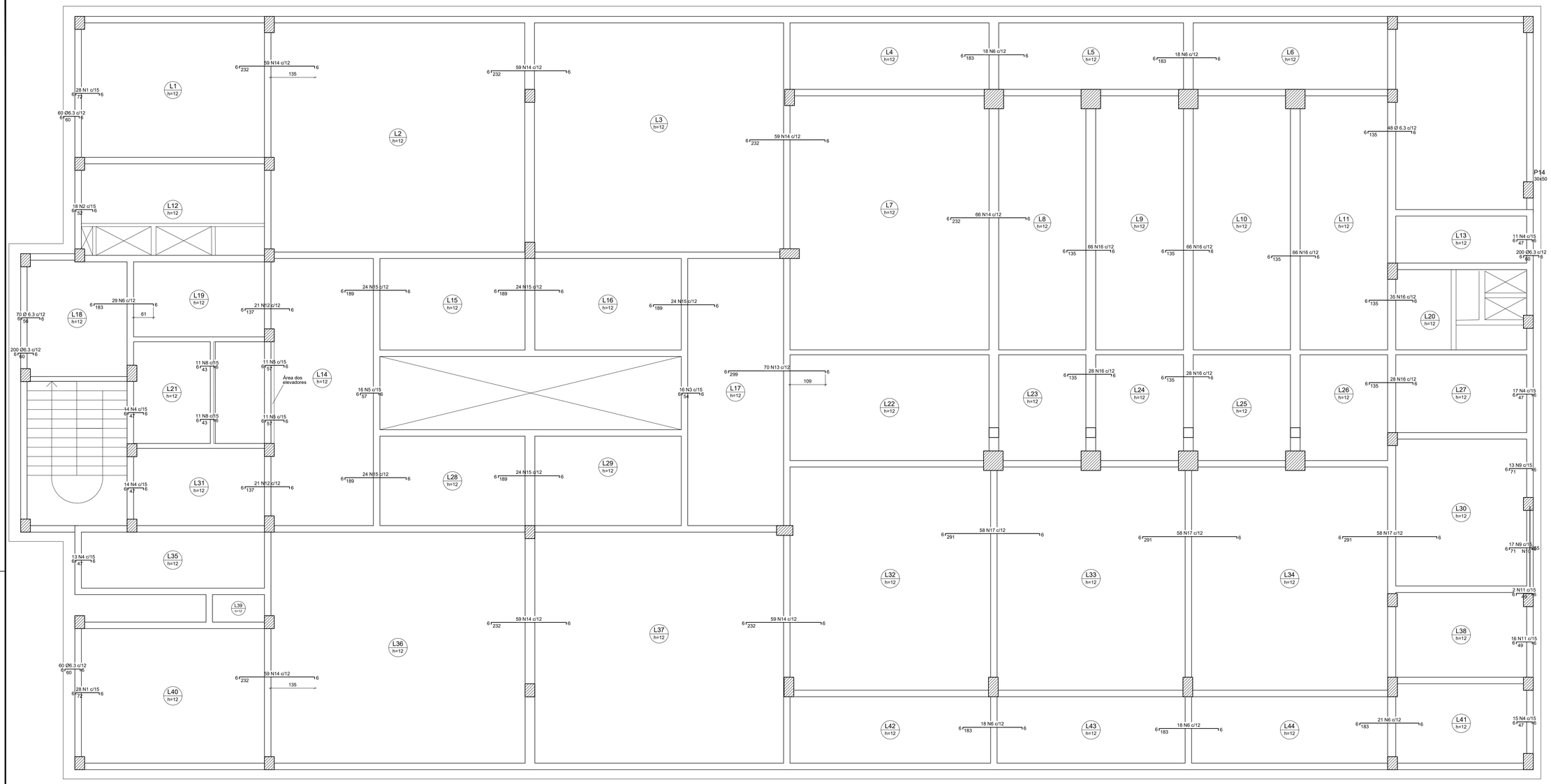

Armação negativa das lajes do pavimento PAV. 02 (Eixo X)

escala 1:50

Relação do aço

Negativos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	56	81	4536
	2	6.3	32	61	1952
	3	6.3	40	63	2520
	4	6.3	101	56	5656
	5	6.3	38	66	2508
	6	6.3	122	192	23424
	7	6.3	23	65	1495
	8	6.3	22	52	1144
	9	6.3	30	80	2400
	10	6.3	5	255	1275
	11	6.3	18	58	1044
	12	8.0	42	145	6090
	13	8.0	70	307	21490
	14	8.0	420	240	100800
	15	8.0	120	197	23640
	16	8.0	317	143	45331
	17	8.0	174	299	52026

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	479.6	157.3
	8.0	2493.8	984

PESO TOTAL (kg)	
CA50	1141.3

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
ARMADURA NEGATIVA LAJES PAV. 06

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-39

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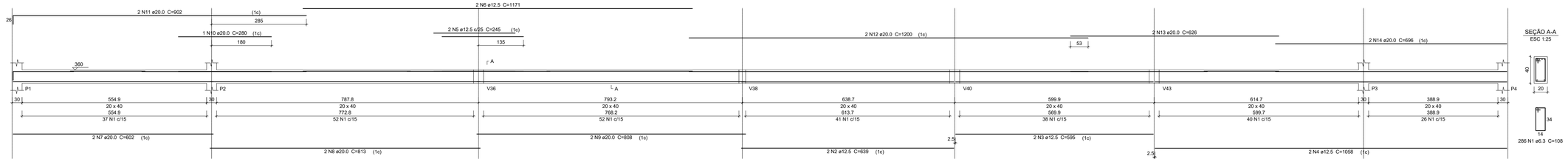
A1

V1

ESC 1:50



Relação do aço

V1

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	286	108	30888
	2	12.5	2	639	1278
	3	12.5	2	595	1190
	4	12.5	2	1058	2116
	5	12.5	2	245	490
	6	12.5	2	1171	2342
	7	20.0	2	602	1204
	8	20.0	2	813	1626
	9	20.0	2	808	1616
	10	20.0	1	280	280
	11	20.0	2	902	1804
	12	20.0	2	1200	2400
	13	20.0	2	626	1252
	14	20.0	2	696	1392

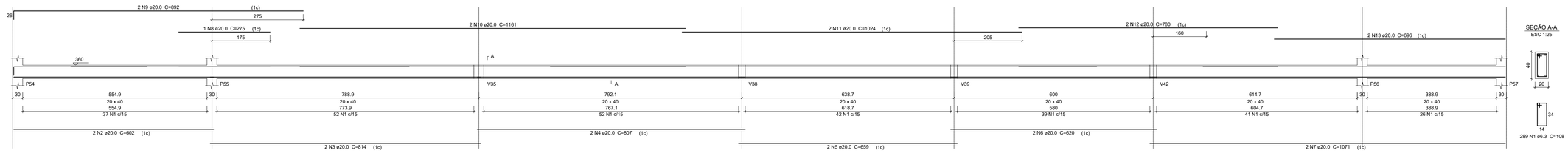
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	308.9	75.6
	12.5	74.2	71.4
	20.0	115.8	285.4
PESO TOTAL (kg)			
CA50	432.5		

Volume de concreto (C-40) = 3.6 m³
Área de forma = 44.98 m²

V25

ESC 1:50



Relação do aço

V25

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	289	108	31212
	2	20.0	2	602	1204
	3	20.0	2	814	1628
	4	20.0	2	807	1614
	5	20.0	2	659	1318
	6	20.0	2	620	1240
	7	20.0	2	1071	2142
	8	20.0	1	275	275
	9	20.0	2	892	1784
	10	20.0	2	1161	2322
	11	20.0	2	1024	2048
	12	20.0	2	780	1560
	13	20.0	2	696	1392

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	312.2	76.4
	20.0	185.3	456.9
PESO TOTAL (kg)			
CA50	533.3		

Volume de concreto (C-40) = 3.6 m³
Área de forma = 44.98 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO: Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-24

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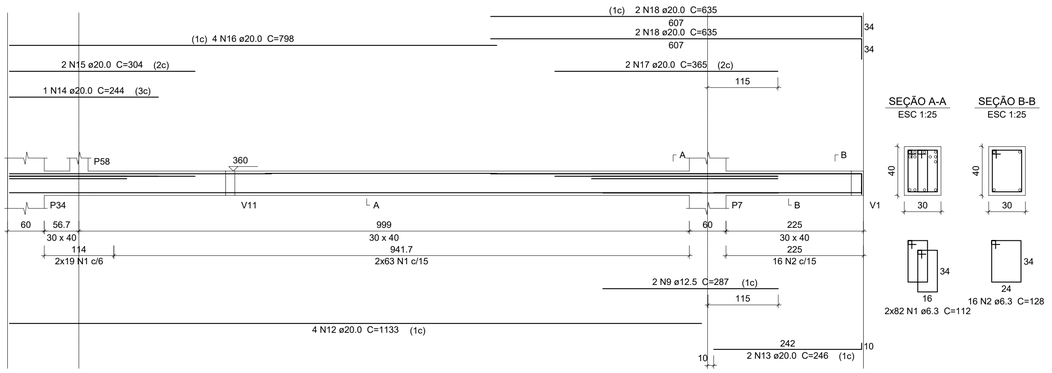
A1

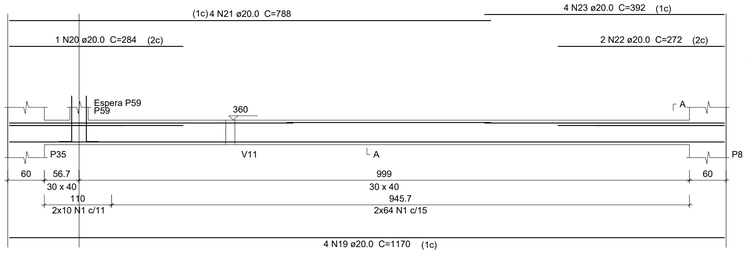
V40
ESC 1:50



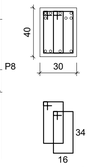
SEÇÃO A-A
ESC 1:25

SEÇÃO B-B
ESC 1:25

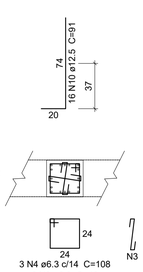
V41
ESC 1:50



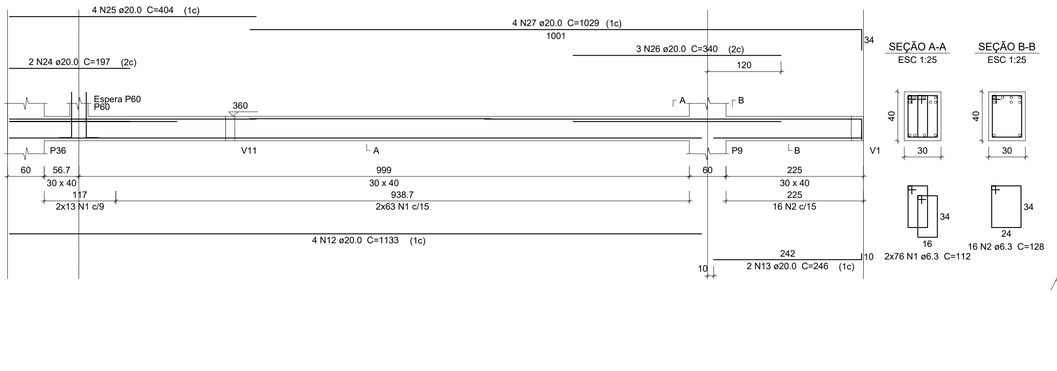
SEÇÃO A-A
ESC 1:25



ESPERA P59
ESC 1:25



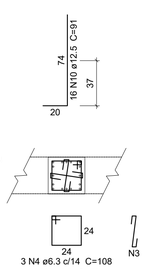
V43
ESC 1:50



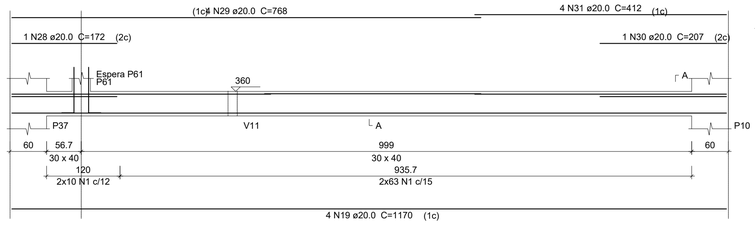
SEÇÃO A-A
ESC 1:25

SEÇÃO B-B
ESC 1:25

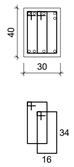
ESPERA P60
ESC 1:25



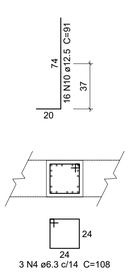
V44
ESC 1:50



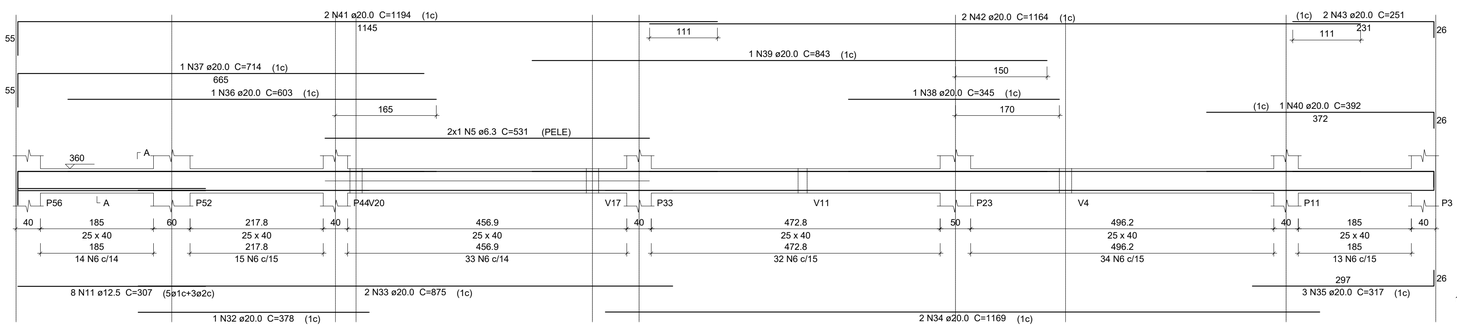
SEÇÃO A-A
ESC 1:25



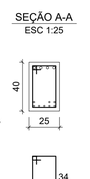
ESPERA P61
ESC 1:25



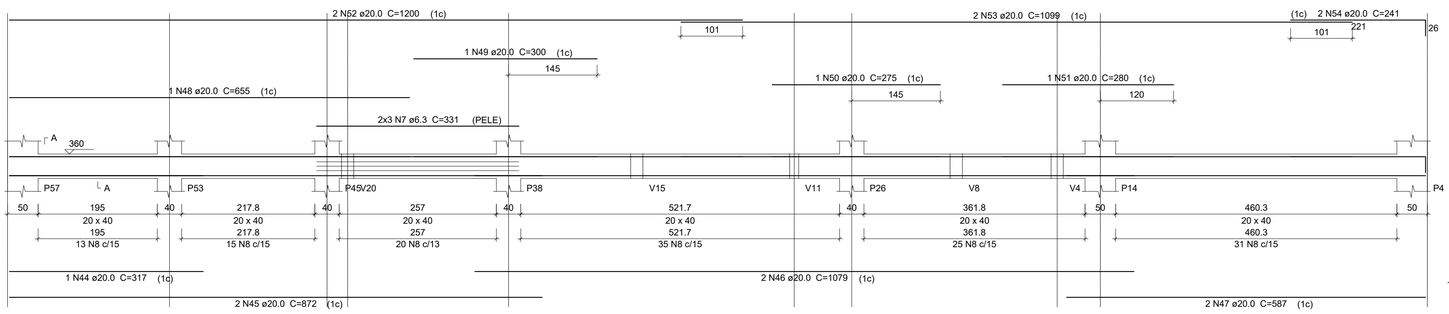
V45
ESC 1:50



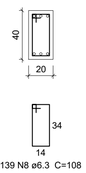
SEÇÃO A-A
ESC 1:25



V46
ESC 1:50



SEÇÃO A-A
ESC 1:25



Relação do aço

V40 V41 V43
V44 V45 V46

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	610	112	68320
	2	6.3	32	128	4096
	3	6.3	12	40	480
	4	6.3	9	108	972
	5	6.3	2	531	1062
	6	6.3	141	118	16638
	7	6.3	6	331	1986
	8	6.3	139	108	15012
	9	12.5	2	287	574
	10	12.5	48	91	4368
	11	12.5	8	307	2456
	12	20.0	8	1133	9064
	13	20.0	4	246	984
	14	20.0	1	244	244
	15	20.0	2	304	608
	16	20.0	4	798	3192
	17	20.0	2	365	730
	18	20.0	4	635	2540
	19	20.0	8	1170	9360
	20	20.0	1	284	284
	21	20.0	4	788	3152
	22	20.0	2	272	544
	23	20.0	4	392	1568
	24	20.0	2	197	394
	25	20.0	4	404	1616
	26	20.0	3	340	1020
	27	20.0	4	1029	4116
	28	20.0	1	172	172
	29	20.0	4	768	3072
	30	20.0	1	207	207
	31	20.0	4	412	1648
	32	20.0	1	378	378
	33	20.0	2	875	1750
	34	20.0	2	1169	2338
	35	20.0	3	317	951
	36	20.0	1	603	603
	37	20.0	1	714	714
	38	20.0	1	345	345
	39	20.0	1	843	843
	40	20.0	1	392	392
	41	20.0	2	1194	2388
	42	20.0	2	1164	2328
	43	20.0	2	251	502
	44	20.0	1	317	317
	45	20.0	2	872	1744
	46	20.0	2	1079	2158
	47	20.0	2	587	1174
	48	20.0	1	655	655
	49	20.0	1	300	300
	50	20.0	1	275	275
	51	20.0	1	280	280
	52	20.0	2	1200	2400
	53	20.0	2	1099	2198
	54	20.0	2	241	482

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1085.7	265.7
	12.5	74	71.3
	20.0	700.3	1727
PESO TOTAL (kg)			
CA50	2064		

Volume de concreto (C-40) = 10.37 m³
Área de forma = 104.31 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-23

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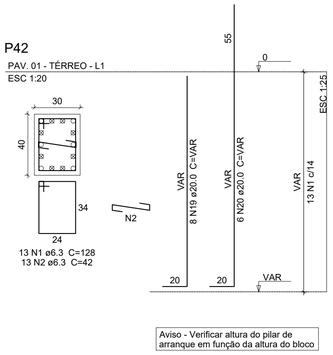
(54) 98108 0303

A 1

P42

PAV. 01 - TÉRREO - L1
ESC 1:20

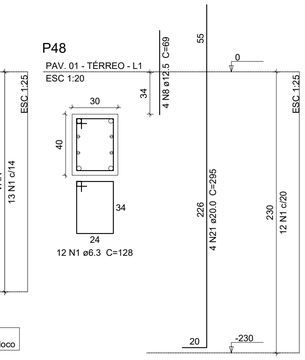


13 N1 ø6.3 C=128
13 N2 ø6.3 C=42

Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P48

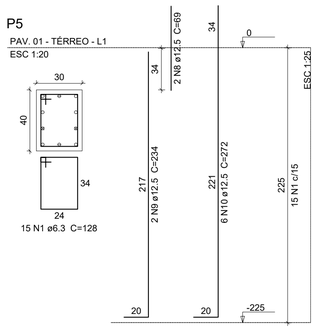
PAV. 01 - TÉRREO - L1
ESC 1:20



12 N1 ø6.3 C=128

P5

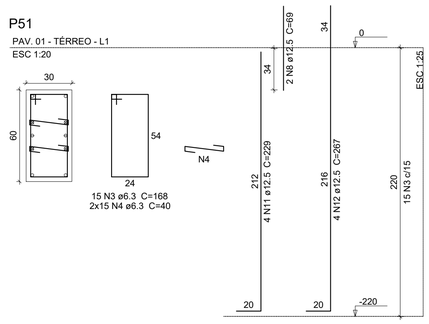
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N1 ø6.3 C=128

P51

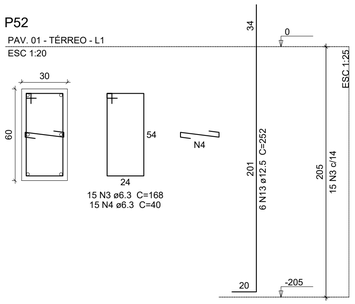
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N3 ø6.3 C=168
2x15 N4 ø6.3 C=40

P52

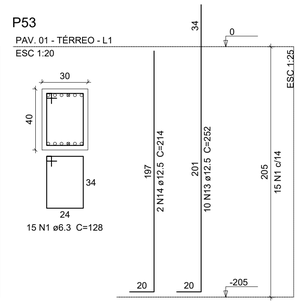
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N3 ø6.3 C=168
15 N4 ø6.3 C=40

P53

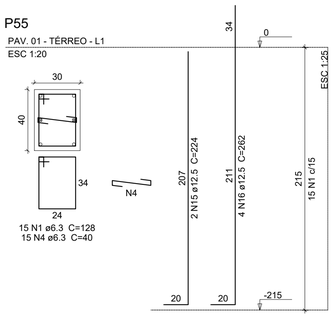
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N1 ø6.3 C=128

P55

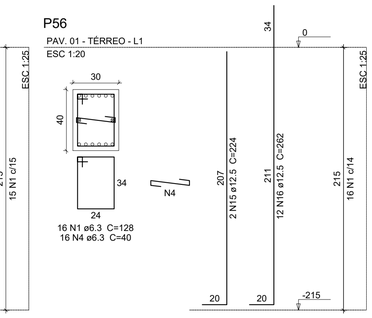
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N1 ø6.3 C=128
15 N4 ø6.3 C=40

P56

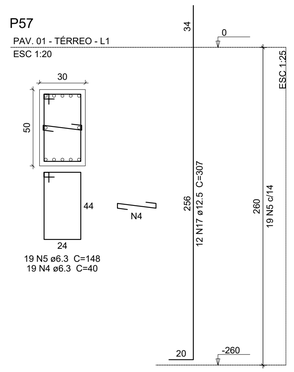
PAV. 01 - TÉRREO - L1
ESC 1:20



16 N1 ø6.3 C=128
16 N4 ø6.3 C=40

P57

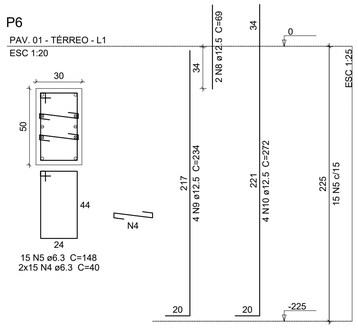
PAV. 01 - TÉRREO - L1
ESC 1:20



19 N5 ø6.3 C=148
19 N4 ø6.3 C=40

P6

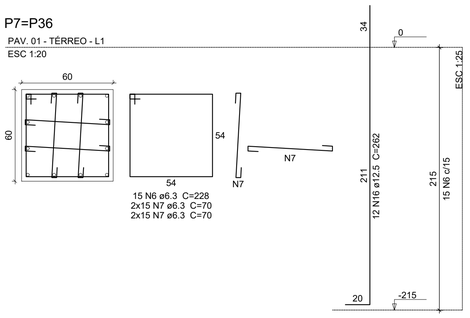
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N5 ø6.3 C=148
2x15 N4 ø6.3 C=40

P7=P36

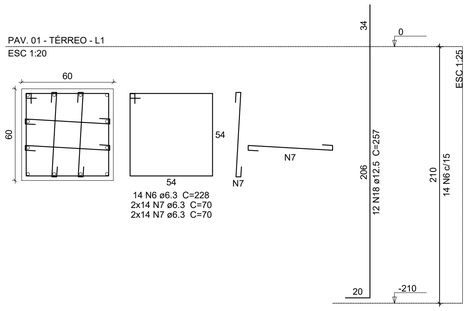
PAV. 01 - TÉRREO - L1
ESC 1:20



15 N6 ø6.3 C=228
2x15 N7 ø6.3 C=70
2x15 N7 ø6.3 C=70

P8=P9=P10=P35=P37

PAV. 01 - TÉRREO - L1
ESC 1:20



14 N6 ø6.3 C=228
2x14 N7 ø6.3 C=70
2x14 N7 ø6.3 C=70

Relação do aço

P5	P6	2xP7	
5xP8	P42	P48	
P51	P52	P53	
P55	P56	P57	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	86	128	11008
	2	6.3	13	42	546
	3	6.3	30	168	5040
	4	6.3	125	40	5000
	5	6.3	34	148	5032
	6	6.3	100	228	22800
	7	6.3	400	70	28000
	8	12.5	10	69	690
	9	12.5	6	234	1404
	10	12.5	10	272	2720
	11	12.5	4	229	916
	12	12.5	4	267	1068
	13	12.5	16	252	4032
	14	12.5	2	214	428
	15	12.5	4	224	896
	16	12.5	40	262	10480
	17	12.5	12	307	3684
	18	12.5	60	257	15420
	19	20.0	8	VAR	VAR
	20	20.0	6	VAR	VAR
	21	20.0	4	295	1180

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	774.3	189.5
	12.5	417.4	402.1
	20.0	41.4	102
PESO TOTAL (kg)			
CA50	693.6		

Volume de concreto (C-40) = 8.34 m³
Área de forma = 68.71 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS PILARES PAV. TIPO (PAV.02-PAV.03-PAV.04-PAV.05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:20
DESENHO:
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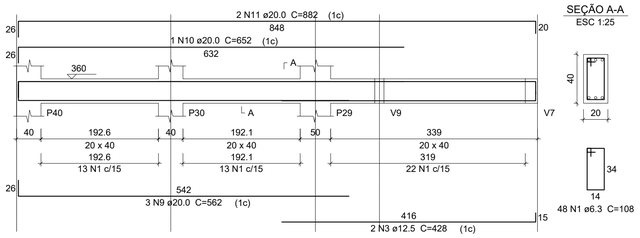
A1

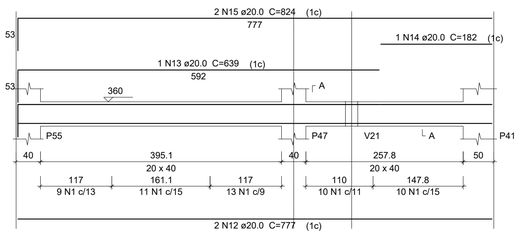
V29
ESC 1:50



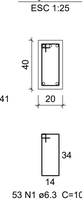
SEÇÃO A-A
ESC 1:25

48 N1 ø6.3 C=108

V32
ESC 1:50

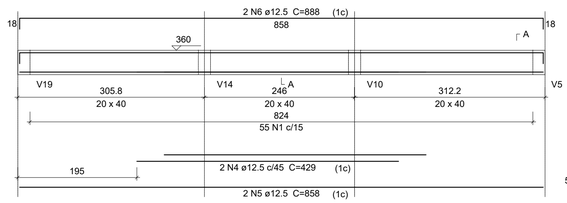


SEÇÃO A-A
ESC 1:25

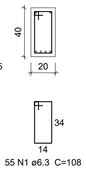


53 N1 ø6.3 C=108

V34
ESC 1:50

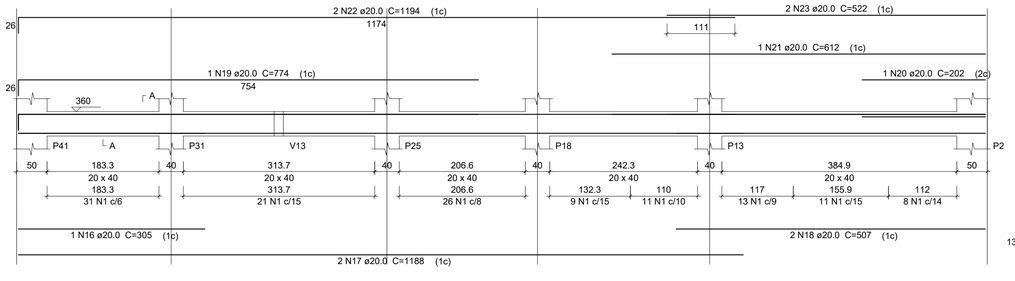


SEÇÃO A-A
ESC 1:25

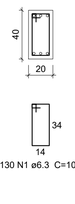


55 N1 ø6.3 C=108

V33
ESC 1:50

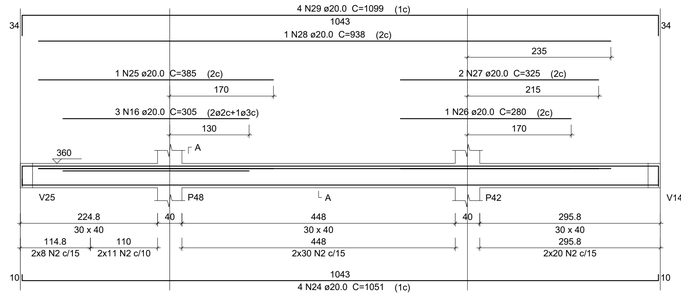


SEÇÃO A-A
ESC 1:25

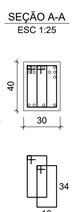


130 N1 ø6.3 C=108

V35
ESC 1:50

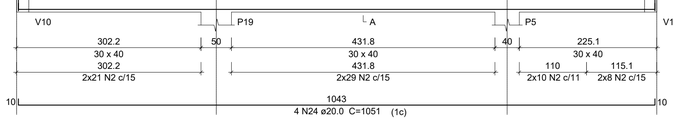


SEÇÃO A-A
ESC 1:25

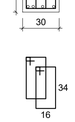


2x69 N2 ø6.3 C=112

V36
ESC 1:50

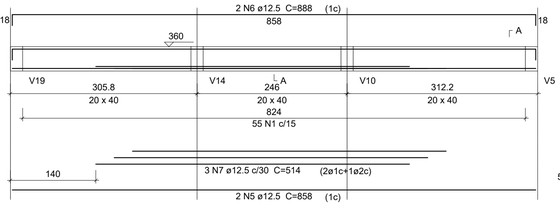


SEÇÃO A-A
ESC 1:25

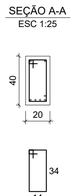


2x68 N2 ø6.3 C=112

V37
ESC 1:50

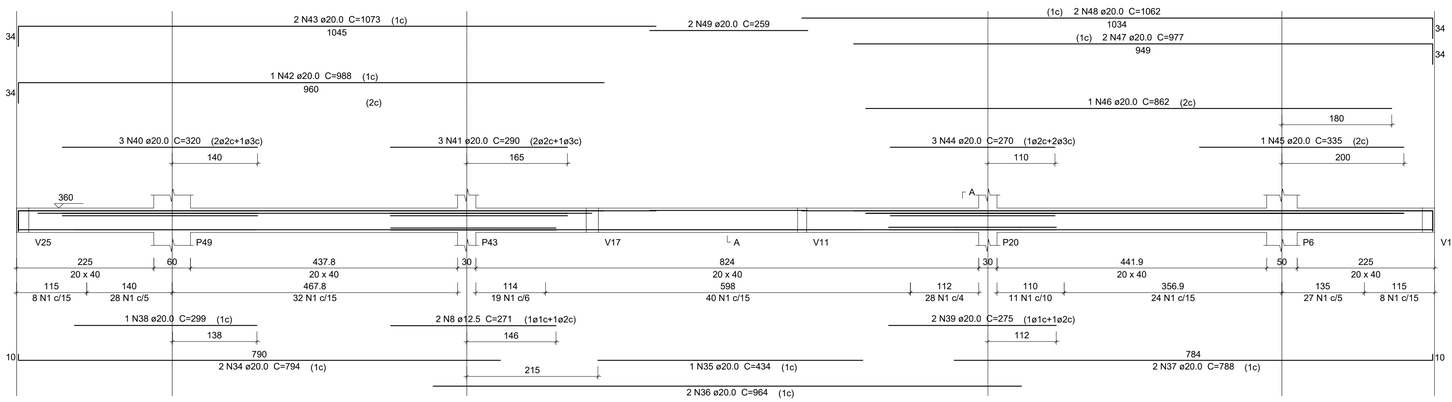


SEÇÃO A-A
ESC 1:25



55 N1 ø6.3 C=108

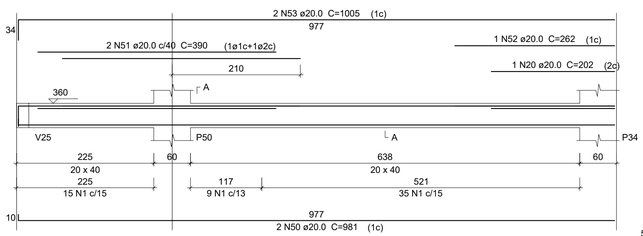
V38
ESC 1:50



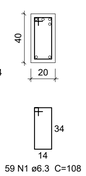
SEÇÃO A-A
ESC 1:25

225 N1 ø6.3 C=108

V39
ESC 1:50

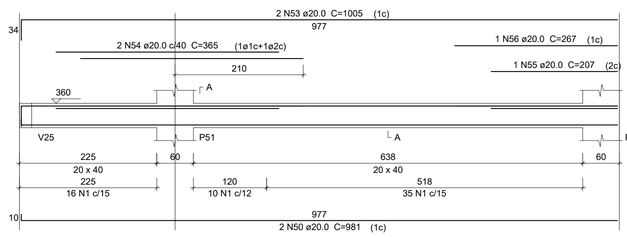


SEÇÃO A-A
ESC 1:25

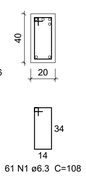


59 N1 ø6.3 C=108

V42
ESC 1:50



SEÇÃO A-A
ESC 1:25



61 N1 ø6.3 C=108

Relação do aço

V29 V32 V33
V34 V35 V36
V37 V38 V39
V42

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	686	108	74088
	2	6.3	274	112	30688
	3	12.5	2	428	856
	4	12.5	2	429	858
	5	12.5	4	858	3432
	6	12.5	4	888	3552
	7	12.5	3	514	1542
	8	12.5	2	271	542
	9	20.0	3	562	1686
	10	20.0	1	652	652
	11	20.0	2	882	1764
	12	20.0	2	777	1554
	13	20.0	1	639	639
	14	20.0	1	182	182
	15	20.0	2	824	1648
	16	20.0	4	305	1220
	17	20.0	2	1188	2376
	18	20.0	2	507	1014
	19	20.0	1	774	774
	20	20.0	2	202	404
	21	20.0	1	612	612
	22	20.0	2	1194	2388
	23	20.0	2	522	1044
	24	20.0	8	1051	8408
	25	20.0	1	385	385
	26	20.0	1	280	280
	27	20.0	2	325	650
	28	20.0	1	938	938
	29	20.0	8	1099	8792
	30	20.0	3	345	1035
	31	20.0	1	265	265
	32	20.0	2	310	620
	33	20.0	1	937	937
	34	20.0	2	794	1588
	35	20.0	1	434	434
	36	20.0	2	964	1928
	37	20.0	2	788	1576
	38	20.0	1	299	299
	39	20.0	2	275	550
	40	20.0	3	320	960
	41	20.0	3	290	870
	42	20.0	1	988	988
	43	20.0	2	1073	2146
	44	20.0	3	270	810
	45	20.0	1	335	335
	46	20.0	1	862	862
	47	20.0	2	977	1954
	48	20.0	2	1062	2124
	49	20.0	2	259	518
	50	20.0	4	981	3924
	51	20.0	2	390	780
	52	20.0	1	262	262
	53	20.0	4	1005	4020
	54	20.0	2	365	730
	55	20.0	1	207	207
	56	20.0	1	267	267

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1047.8	256.4
	12.5	107.9	103.9
	20.0	684	1686.8
PESO TOTAL (kg)			
CA50	2047.1		

Volume de concreto (C-40) = 9.91 m³
Área de forma = 115.53 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA Março/25 | ESCALA 1:50
DESENHO | PRANCHA C-22

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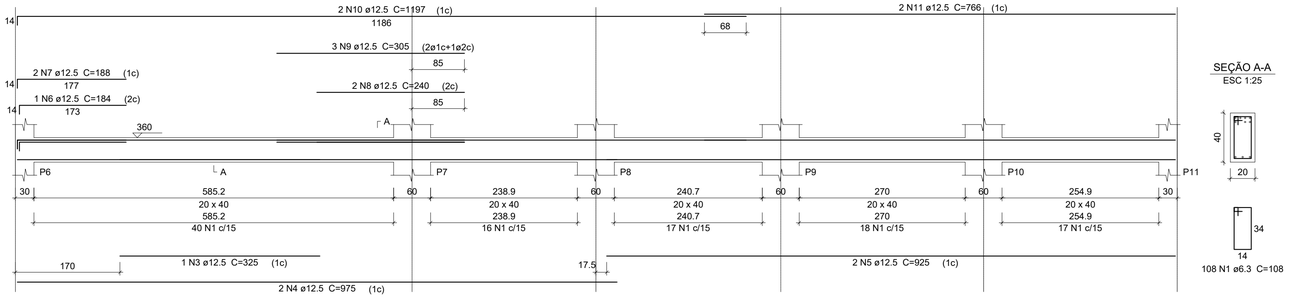
(54) 98108 0303

A1

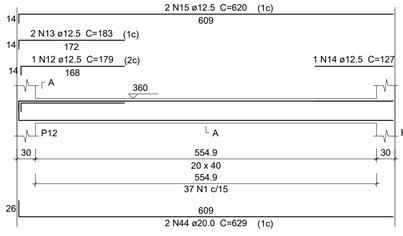
V2
ESC 1:50



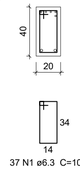
SEÇÃO A-A
ESC 1:25

108 N1 ø6.3 C=108

V3
ESC 1:50

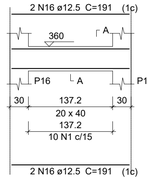


SEÇÃO A-A
ESC 1:25

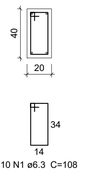


37 N1 ø6.3 C=108

V6
ESC 1:50



SEÇÃO A-A
ESC 1:25



10 N1 ø6.3 C=108

Relação do aço

V2	V3	V4
V5	V6	V7
V8	V9	V10
V11	V12	V13
V14	V15	V30
V31		

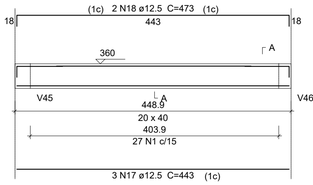
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	511	108	55188
	2	6.3	226	98	22148
	3	12.5	1	325	325
	4	12.5	2	975	1950
	5	12.5	2	925	1850
	6	12.5	1	184	184
	7	12.5	2	188	376
	8	12.5	2	240	480
	9	12.5	3	305	915
	10	12.5	2	1197	2394
	11	12.5	2	766	1532
	12	12.5	1	179	179
	13	12.5	2	183	366
	14	12.5	1	127	127
	15	12.5	2	620	1240
	16	12.5	4	191	764
	17	12.5	6	443	2658
	18	12.5	2	473	946
	19	12.5	1	107	107
	20	12.5	2	458	916
	21	12.5	2	448	896
	22	12.5	2	458	916
	23	12.5	4	987	3948
	24	12.5	2	275	550
	25	12.5	4	993	3972
	26	12.5	4	352	1408
	27	12.5	2	143	286
	28	12.5	2	149	298
	29	12.5	3	949	2847
	30	12.5	3	963	2889
	31	12.5	3	433	1299
	32	12.5	2	138	276
	33	12.5	2	1189	2378
	34	12.5	1	165	165
	35	12.5	2	1041	2082
	36	12.5	2	190	380
	37	12.5	2	222	444
	38	12.5	2	245	490
	39	12.5	2	455	910
	40	12.5	1	123	123
	41	12.5	2	469	938
	42	12.5	2	356	712
	43	12.5	2	358	716
	44	20.0	4	629	2516
	45	20.0	4	841	3364
	46	20.0	4	833	3332
	47	20.0	1	263	263
	48	20.0	1	267	267
	49	20.0	2	576	1152
	50	20.0	2	385	770
	51	20.0	2	237	474
	52	20.0	2	1123	2246
	53	20.0	2	692	1384

Resumo do aço

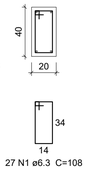
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	773.4	189.2
	12.5	462.4	445.4
	20.0	157.7	388.9
PESO TOTAL (kg)			
CA50	1023.5		

Volume de concreto (C-40) = 8.89 m³
Área de forma = 118.49 m²

V4
ESC 1:50

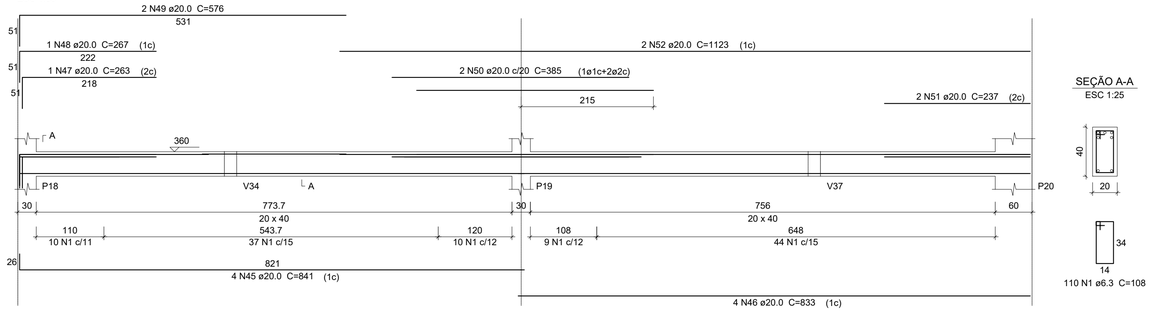


SEÇÃO A-A
ESC 1:25



27 N1 ø6.3 C=108

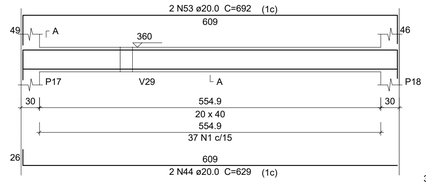
V5
ESC 1:50



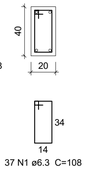
SEÇÃO A-A
ESC 1:25

110 N1 ø6.3 C=108

V7
ESC 1:50

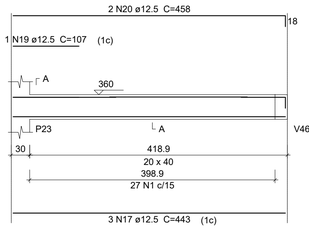


SEÇÃO A-A
ESC 1:25

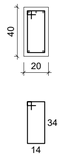


37 N1 ø6.3 C=108

V8
ESC 1:50

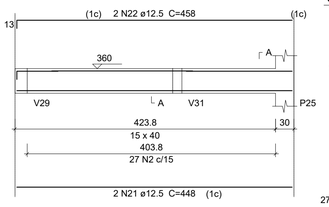


SEÇÃO A-A
ESC 1:25

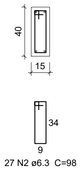


27 N1 ø6.3 C=108

V9
ESC 1:50

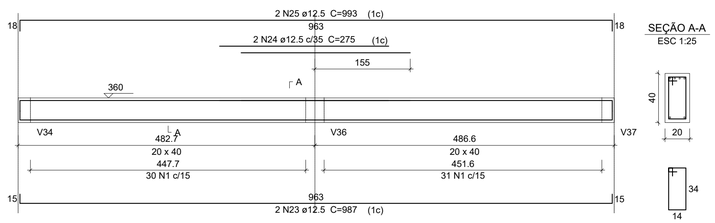


SEÇÃO A-A
ESC 1:25



27 N2 ø6.3 C=98

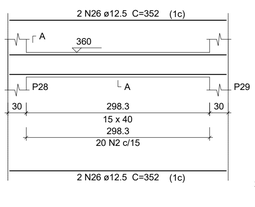
V10
ESC 1:50



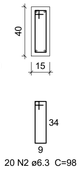
SEÇÃO A-A
ESC 1:25

61 N1 ø6.3 C=108

V12
ESC 1:50

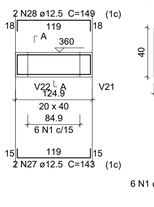


SEÇÃO A-A
ESC 1:25

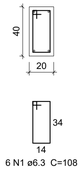


20 N2 ø6.3 C=98

V30
ESC 1:50

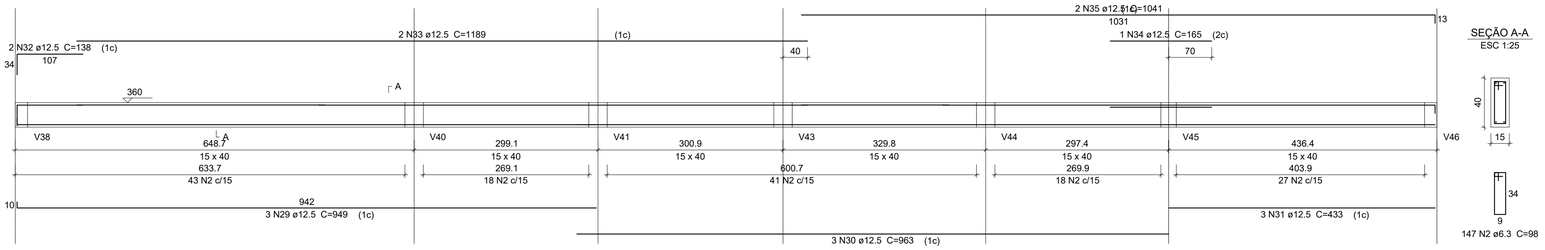


SEÇÃO A-A
ESC 1:25



6 N1 ø6.3 C=108

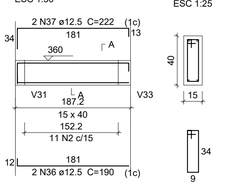
V11
ESC 1:50



SEÇÃO A-A
ESC 1:25

147 N2 ø6.3 C=98

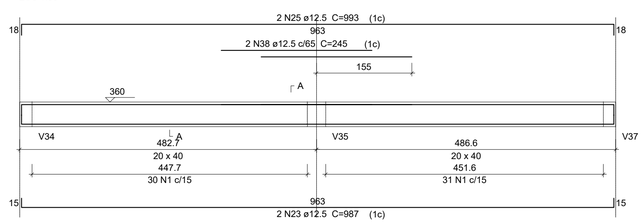
V13
ESC 1:50



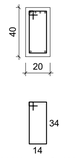
SEÇÃO A-A
ESC 1:25

11 N2 ø6.3 C=98

V14
ESC 1:50

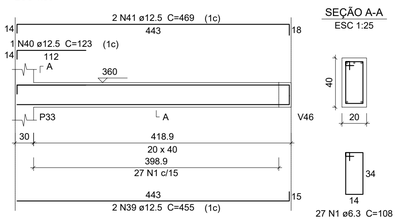


SEÇÃO A-A
ESC 1:25



61 N1 ø6.3 C=108

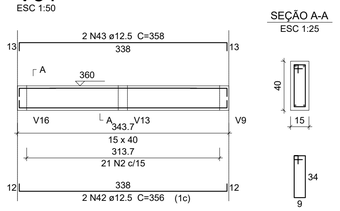
V15
ESC 1:50



SEÇÃO A-A
ESC 1:25

27 N1 ø6.3 C=108

V31
ESC 1:50



SEÇÃO A-A
ESC 1:25

21 N2 ø6.3 C=98

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS A PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
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DESENHO:
PRANCHA: C-20

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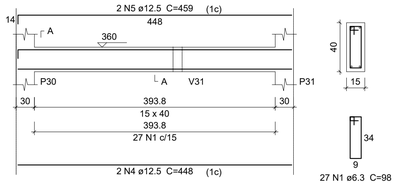
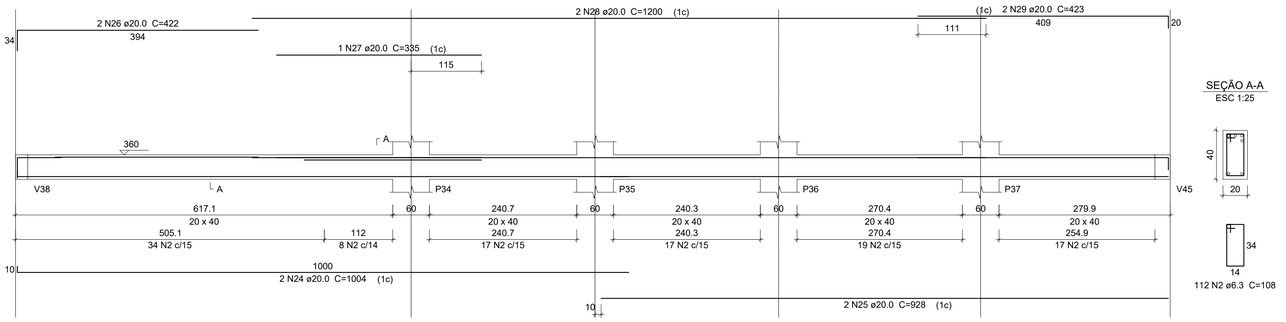
A1

V16
ESC 1:50



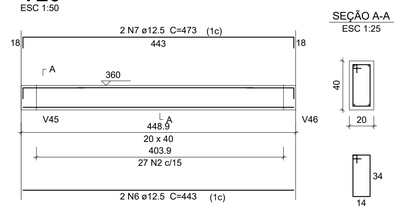
SEÇÃO A-A
ESC 1:25

V17
ESC 1:50



SEÇÃO A-A
ESC 1:25

V20
ESC 1:50



SEÇÃO A-A
ESC 1:25

Relação do aço

V16	V17	V18
V19	V20	V21
V22	V23	V24
V26	V27	V28

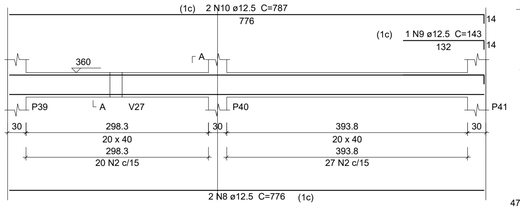
AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	27	98	2646
	2	6.3	655	108	70740
	3	10.0	2	607	1214
	4	12.5	2	448	896
	5	12.5	2	459	918
	6	12.5	6	443	2658
	7	12.5	2	473	946
	8	12.5	2	776	1552
	9	12.5	1	143	143
	10	12.5	2	787	1574
	11	12.5	1	87	87
	12	12.5	2	645	1290
	13	12.5	3	609	1827
	14	12.5	2	158	316
	15	12.5	1	107	107
	16	12.5	2	620	1240
	17	12.5	1	338	338
	18	12.5	2	650	1300
	19	12.5	1	325	325
	20	12.5	2	595	1190
	21	12.5	1	331	331
	22	12.5	2	653	1306
	23	12.5	2	362	724
	24	20.0	2	1004	2008
	25	20.0	2	928	1856
	26	20.0	2	422	844
	27	20.0	1	335	335
	28	20.0	2	1200	2400
	29	20.0	2	423	846
	30	20.0	3	841	2523
	31	20.0	3	813	2439
	32	20.0	1	262	262
	33	20.0	2	575	1150
	34	20.0	2	395	790
	35	20.0	2	247	494
	36	20.0	2	1123	2246
	37	20.0	2	873	1746
	38	20.0	2	922	1844
	39	20.0	2	484	968
	40	20.0	1	305	305
	41	20.0	1	295	295
	42	20.0	2	1025	2050
	43	20.0	2	492	984
	44	20.0	2	507	1014
	45	20.0	2	810	1620
	46	20.0	2	771	1542
	47	20.0	1	157	157
	48	20.0	2	820	1640

Resumo do aço

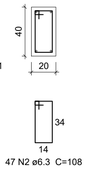
AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	733.9	179.6
	10.0	12.2	7.5
	12.5	190.7	183.7
	20.0	323.6	798
PESO TOTAL (kg)			
CA50	1168.7		

Volume de concreto (C-40) = 8.81 m³
Área de forma = 111.07 m²

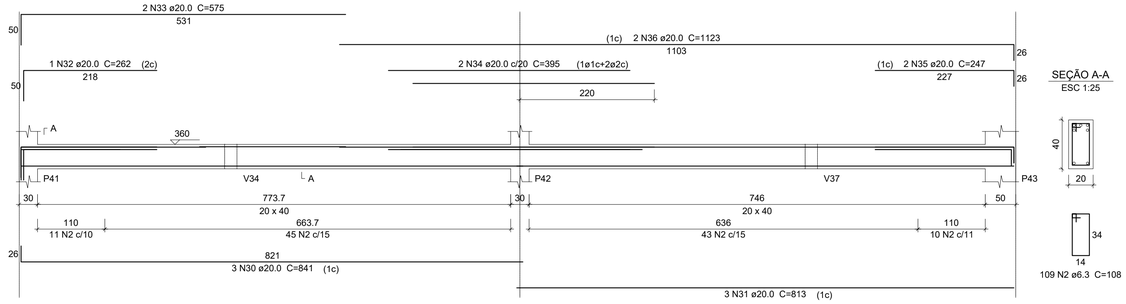
V18
ESC 1:50



SEÇÃO A-A
ESC 1:25

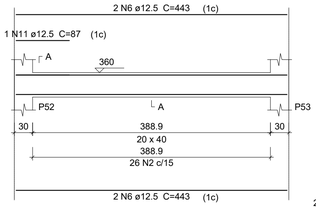


V19
ESC 1:50



SEÇÃO A-A
ESC 1:25

V23
ESC 1:50



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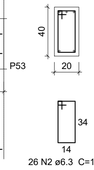
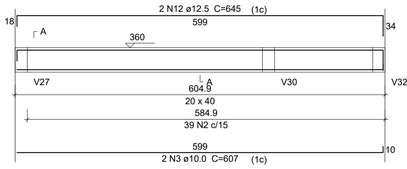
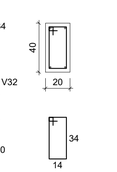


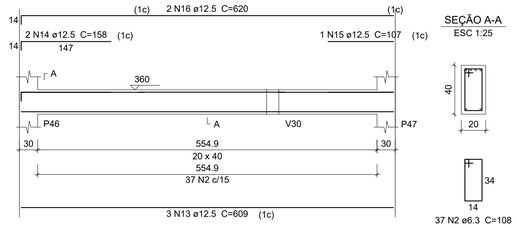
V21
ESC 1:50



SEÇÃO A-A
ESC 1:25

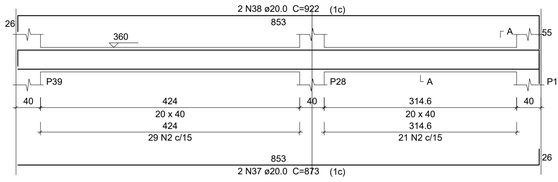


V22
ESC 1:50

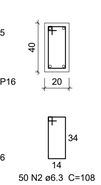


SEÇÃO A-A
ESC 1:25

V26
ESC 1:50



SEÇÃO A-A
ESC 1:25



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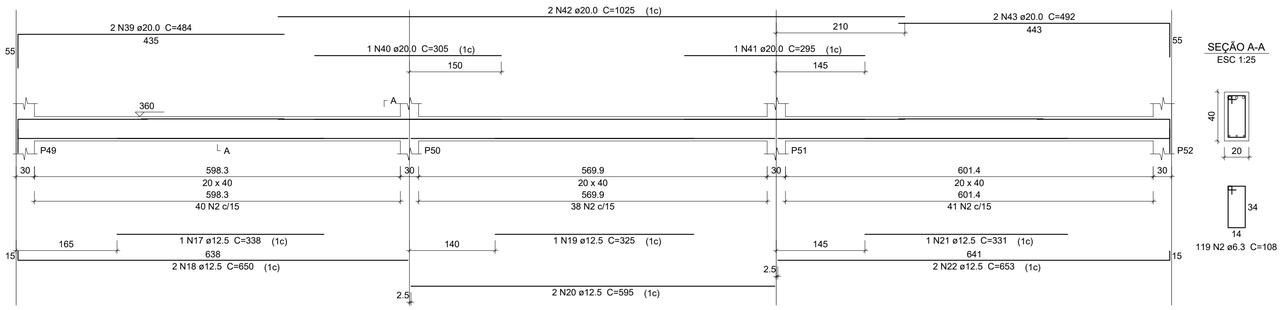
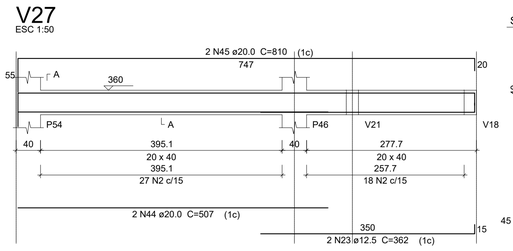
ESC 1:50



SEÇÃO A-A
ESC 1:25

V27
ESC 1:50



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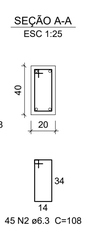
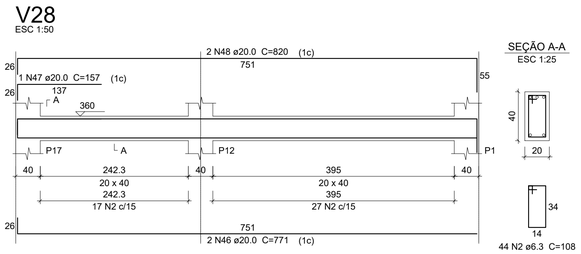


V28
ESC 1:50



SEÇÃO A-A
ESC 1:25

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DAS VIGAS PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA	ESCALA
Março/25	1:50
DESENHO	PRANCHA
	C-21

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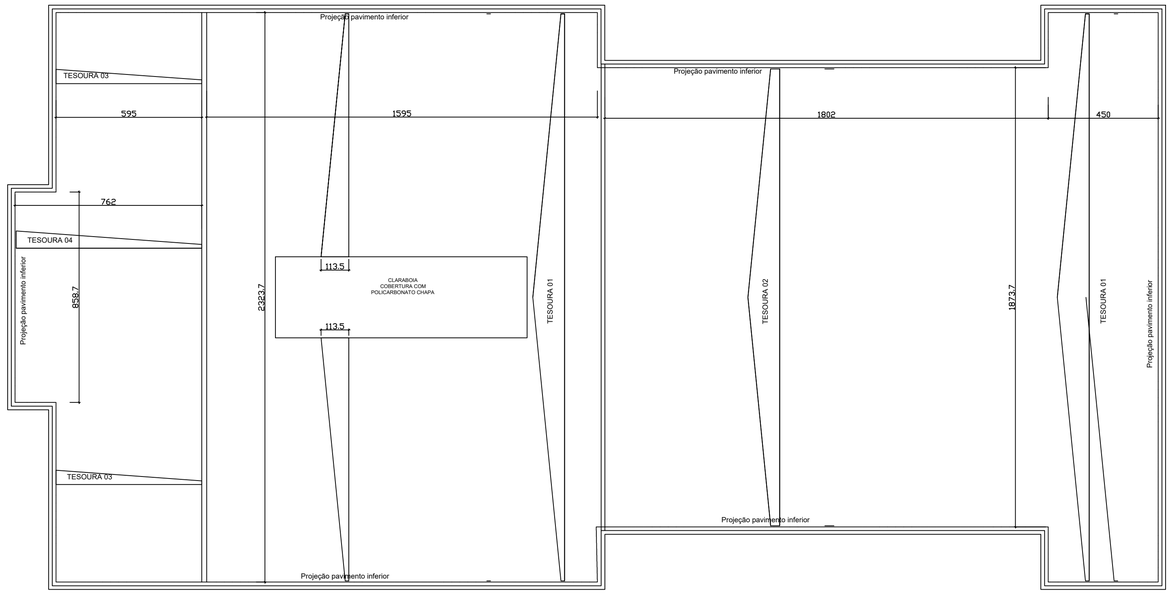
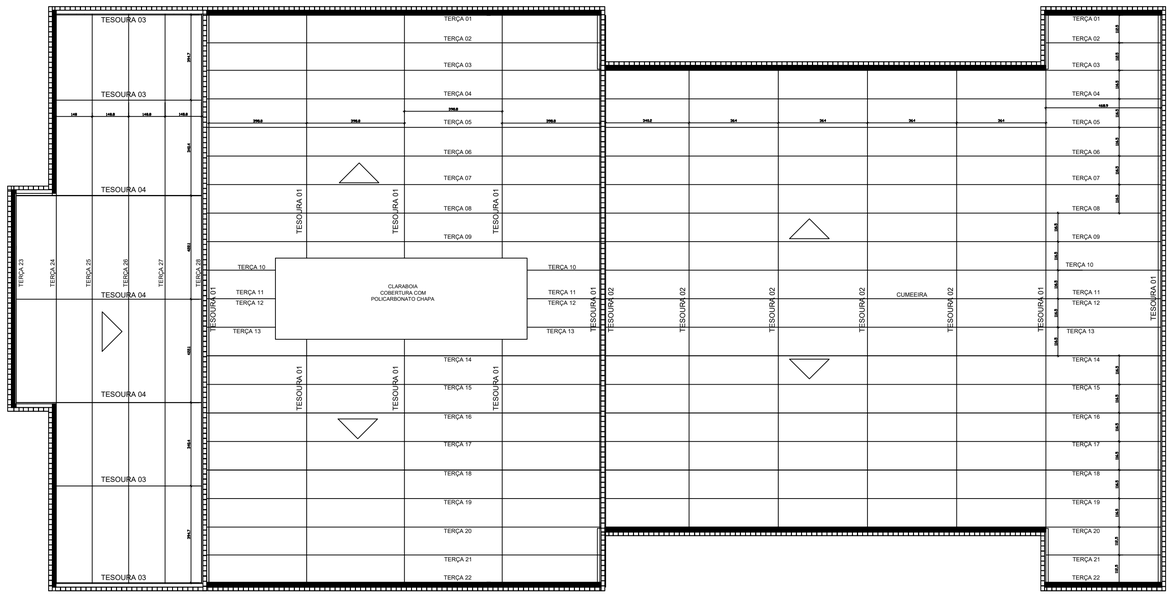
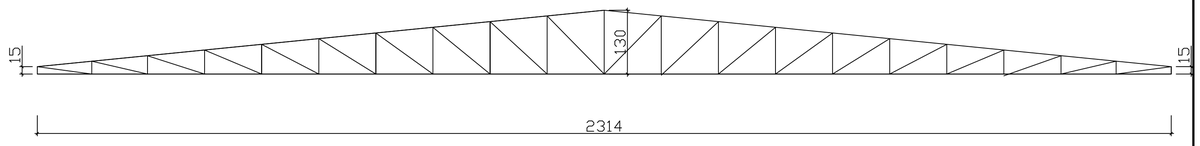
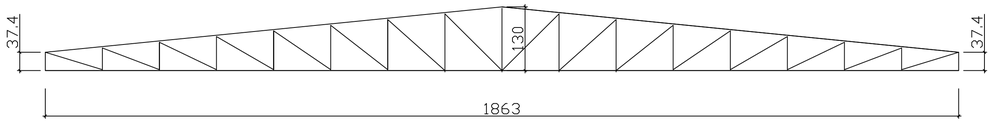


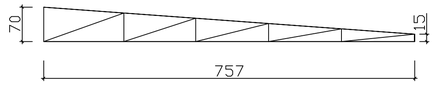




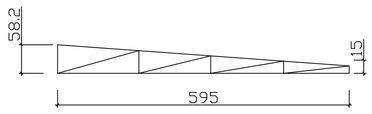
TESOURA 01



TESOURA 02



TESOURA 04



TESOURA 03

PERFIS PARA TESOURAS

BANZO SUPERIOR E INFERIOR
U_CD 90X25X2.65

MONTANTES E DIAGONAOS
U_CD 75X25X2.65

PERFIS PARA TERÇAS
Ue_CD 75X40X20X2.65

TESOURAS 1 e 2 FIXADAS NA LAJE DE COBERTURA COM CHAPA BASE E PARAFUSO TIPO PARABOLT Ø 3/8",(03 PLACAS POR TESOURA
E 4 PARAFUSOS POR PLACA).

CONFIRMAR COTAS NO LOCAL PARA FABRICAÇÃO DA ESTRUTURA METÁLICA

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ESTRUTURA METÁLICA DA COBERTURA

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
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CREA-RS 73.831

DATA: Março/25

ESCALA: 1:250

DESENHO:

PRANCHA: C-41

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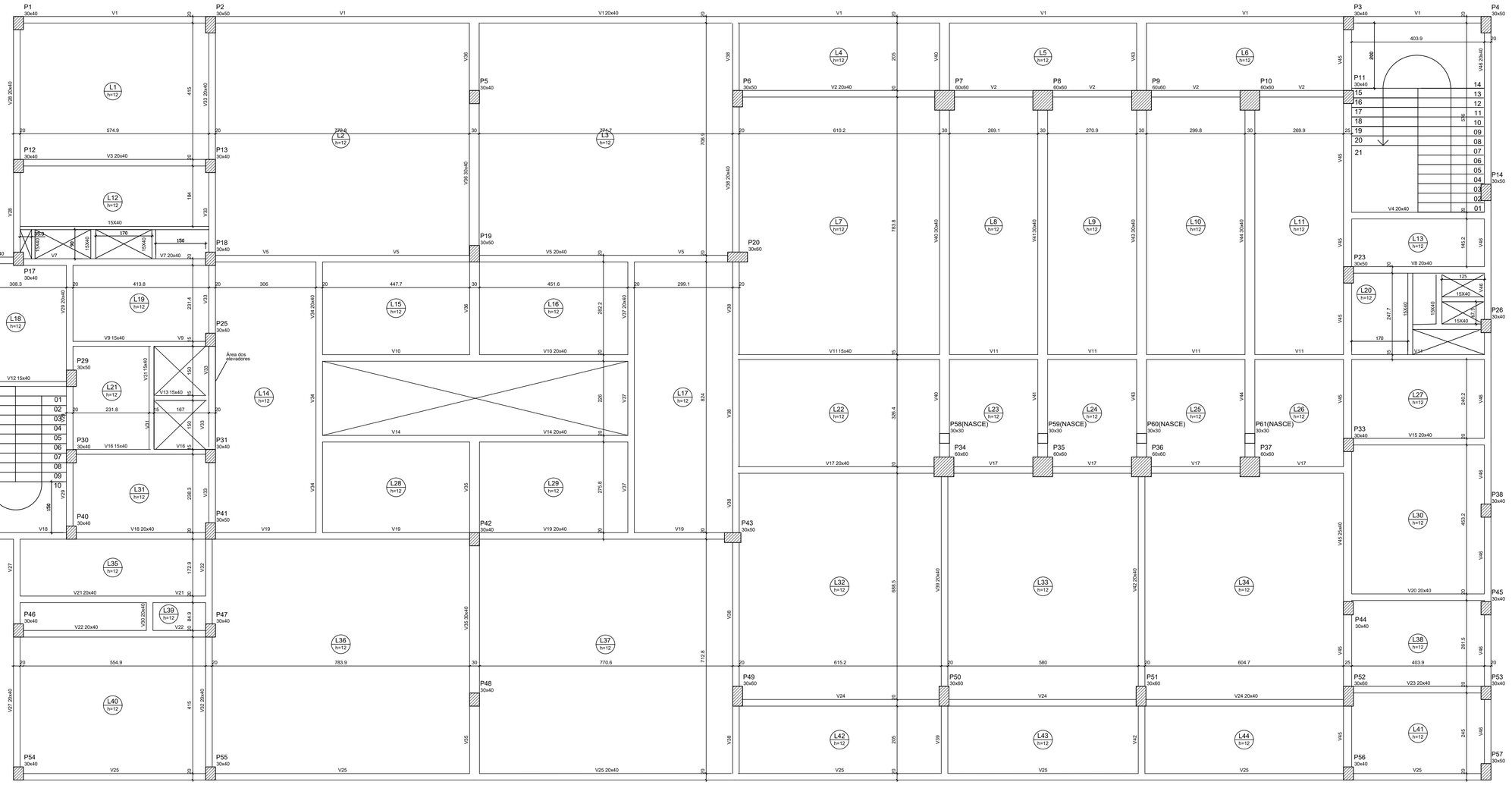
A1



Forma do pavimento PAV. 02 (Nível 360)

escala 1:50

Lajes

Nome	Tipo	Dados: Altura (cm)	Elevação (cm)	Nivel (cm)	Peso próprio (kgf/m²)	Sobrecarga (kgf/m²): Adicional	Acidental	Localizada
L1	Maciça	12	0	360	300	100	200	-
L2	Maciça	12	0	360	300	100	200	-
L3	Maciça	12	0	360	300	100	200	-
L4	Maciça	12	0	360	300	100	200	-
L5	Maciça	12	0	360	300	100	200	-
L6	Maciça	12	0	360	300	100	200	-
L7	Maciça	12	0	360	300	100	200	-
L8	Maciça	12	0	360	300	100	200	-
L9	Maciça	12	0	360	300	100	200	-
L10	Maciça	12	0	360	300	100	200	-
L11	Maciça	12	0	360	300	100	200	-
L12	Maciça	12	0	360	300	100	200	-
L13	Maciça	12	0	360	300	100	200	-
L14	Maciça	12	0	360	300	100	200	-
L15	Maciça	12	0	360	300	100	200	-
L16	Maciça	12	0	360	300	100	200	-
L17	Maciça	12	0	360	300	100	200	-
L18	Maciça	12	0	360	300	100	200	-
L19	Maciça	12	0	360	300	100	200	-
L20	Maciça	12	0	360	300	100	200	-
L21	Maciça	12	0	360	300	100	200	-
L22	Maciça	12	0	360	300	100	200	-
L23	Maciça	12	0	360	300	100	200	-
L24	Maciça	12	0	360	300	100	200	-
L25	Maciça	12	0	360	300	100	200	-
L26	Maciça	12	0	360	300	100	200	-
L27	Maciça	12	0	360	300	100	200	-
L28	Maciça	12	0	360	300	100	200	-
L29	Maciça	12	0	360	300	100	200	-
L30	Maciça	12	0	360	300	100	200	-
L31	Maciça	12	0	360	300	100	200	-
L32	Maciça	12	0	360	300	100	200	-
L33	Maciça	12	0	360	300	100	200	-
L34	Maciça	12	0	360	300	100	200	-
L35	Maciça	12	0	360	300	100	200	-
L36	Maciça	12	0	360	300	100	200	-
L37	Maciça	12	0	360	300	100	200	-
L38	Maciça	12	0	360	300	100	200	-
L39	Maciça	12	0	360	300	100	200	-
L40	Maciça	12	0	360	300	100	200	-
L41	Maciça	12	0	360	300	100	200	-
L42	Maciça	12	0	360	300	100	200	-
L43	Maciça	12	0	360	300	100	200	-
L44	Maciça	12	0	360	300	100	200	-

Área de lajes

Tipo	Altura (cm)	Bloco de Enchimento	Área (m²)
Maciça	12	-	885.47

Características dos materiais

fck (kgf/cm²)	Abatimento (cm)
400	5.00

Dimensão máxima do agregado = 19 mm

Legenda dos Pilares

- Pilar que morre
- Pilar que passa
- Pilar que nasce
- Pilar com mudança de seção

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: PLANTA DE FORMAS PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-17

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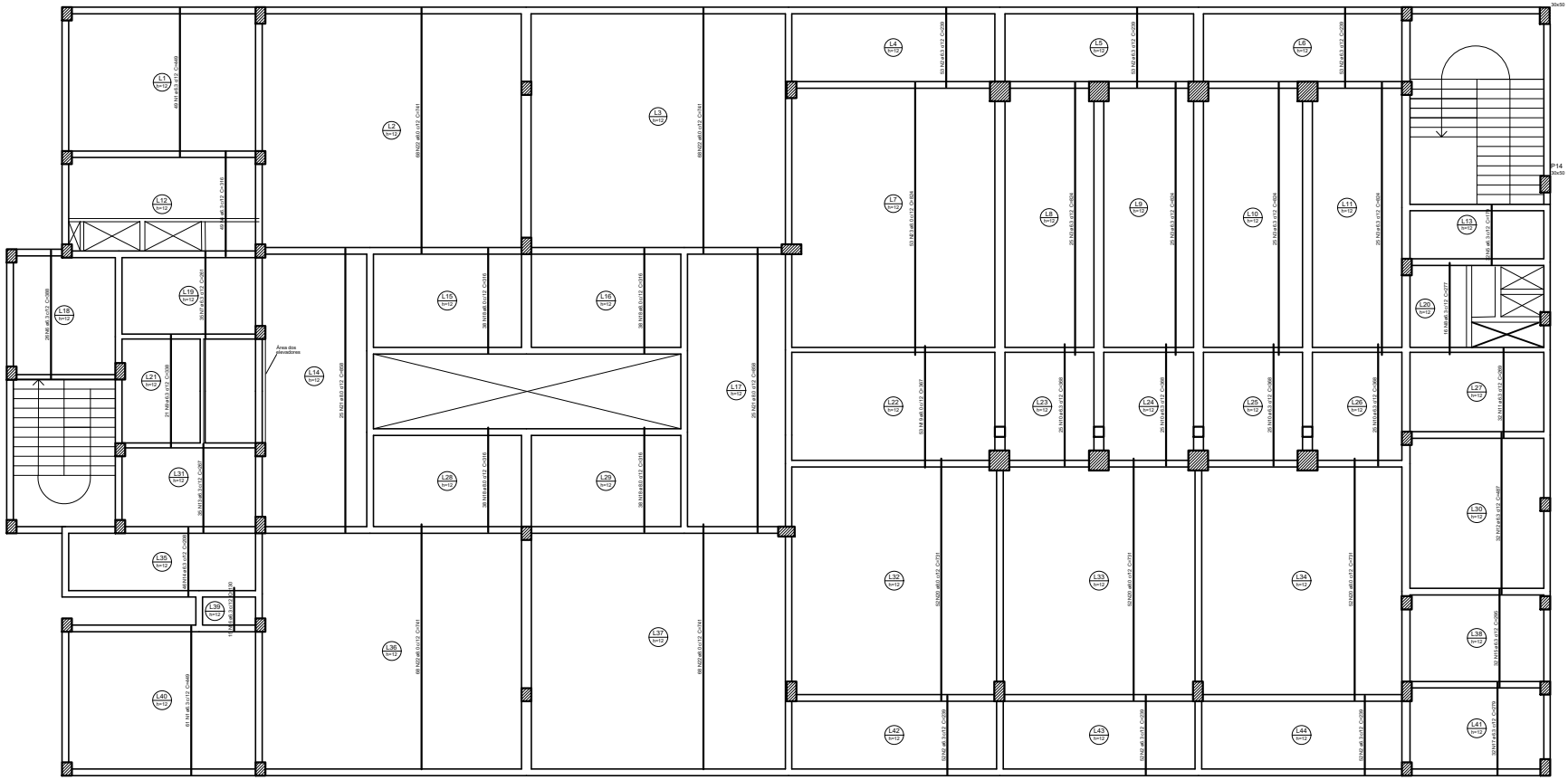
A 1



Armação positiva das lajes do pavimento PAV. 02 (Eixo Y)

escala 1:50

Relação do aço

Positivos Y

AÇO	N.	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	110	449	49390
	2	6.3	315	239	75285
	3	6.3	100	824	82400
	4	6.3	49	316	15484
	5	6.3	32	179	5728
	6	6.3	26	388	10088
	7	6.3	35	261	9135
	8	6.3	32	277	8864
	9	6.3	21	338	7098
	10	6.3	100	368	36800
	11	6.3	32	259	8608
	12	6.3	32	487	15584
	13	6.3	35	267	9345
	14	6.3	46	208	9568
	15	6.3	32	295	9440
	16	6.3	15	130	1950
	17	6.3	32	279	8928
	18	8.0	152	316	48032
	19	8.0	53	367	19451
	20	8.0	156	731	114036
	21	8.0	50	858	42900
	22	8.0	272	741	201552
	23	8.0	53	824	43672

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	3637	890
	8.0	4696.5	1853.1
PESO TOTAL (kg)			
CA50	2743.1		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA POSITIVA LAJES PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-26

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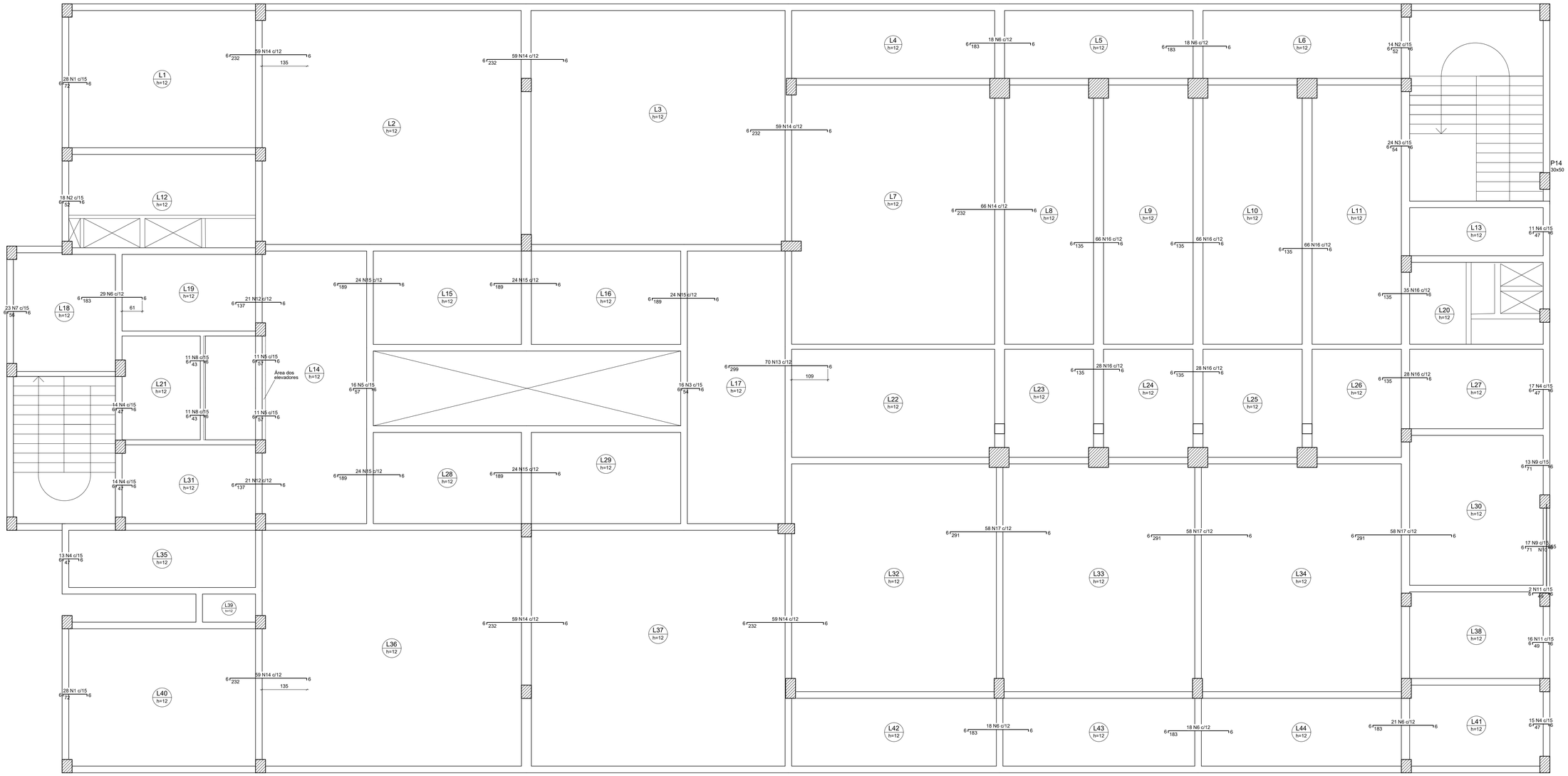
A1



Armação negativa das lajes do pavimento PAV. 02 (Eixo X)

escala 1:50

Relação do aço

Negativos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	56	81	4536
	2	6.3	32	61	1952
	3	6.3	40	63	2520
	4	6.3	101	56	5656
	5	6.3	38	66	2508
	6	6.3	122	192	23424
	7	6.3	23	65	1495
	8	6.3	22	52	1144
	9	6.3	30	80	2400
	10	6.3	5	255	1275
	11	6.3	18	58	1044
	12	8.0	42	145	6090
	13	8.0	70	307	21490
	14	8.0	420	240	100800
	15	8.0	120	197	23640
	16	8.0	317	143	45331
	17	8.0	174	299	52026

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	479.6	117.3
	8.0	2493.8	984

PESO TOTAL (kg)	
CA50	1101.3

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
ARMADURA NEGATIVA LAJES PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
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CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-27

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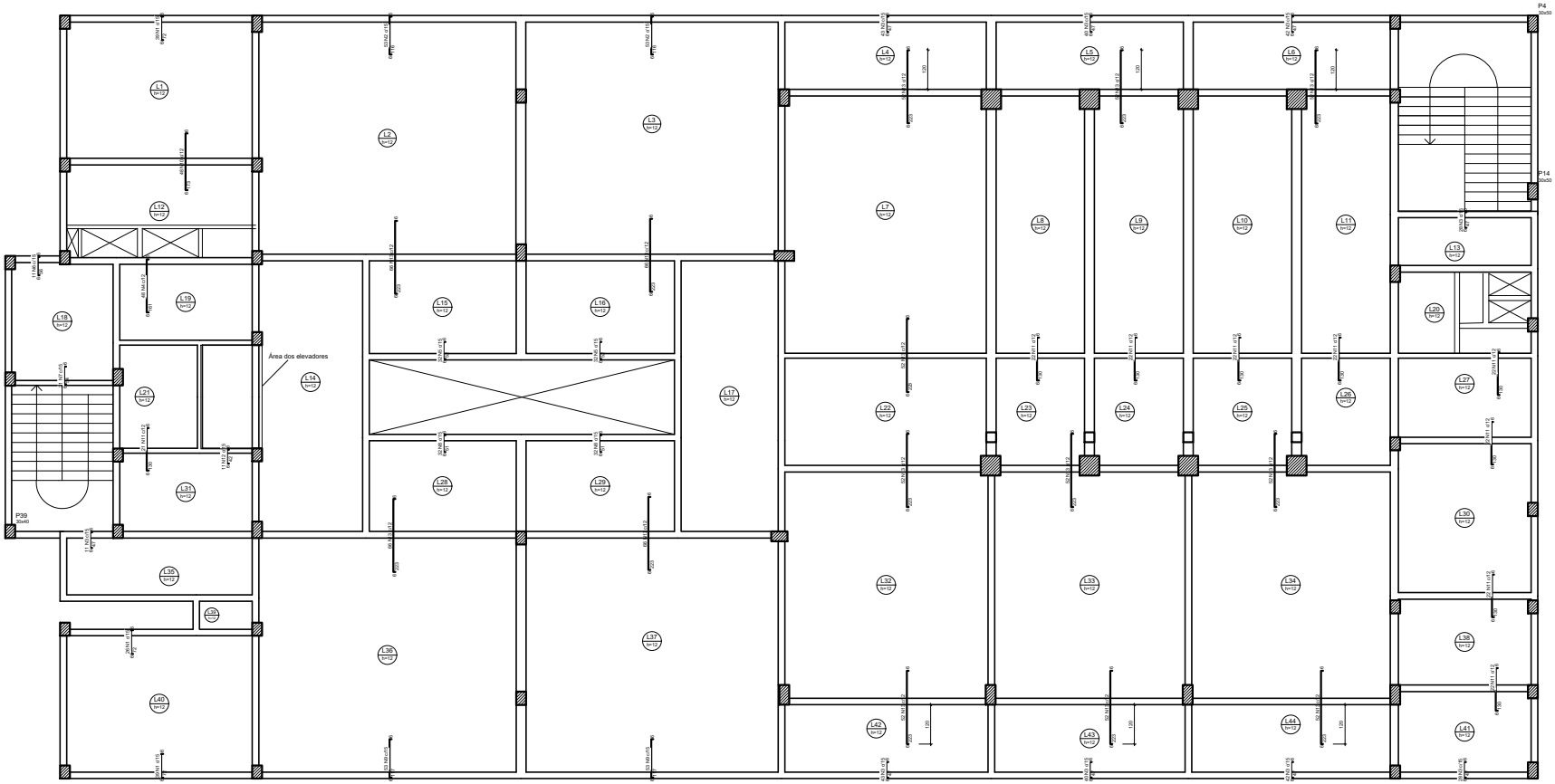
(54) 98108 0303

A1



Armação negativa das lajes do pavimento PAV. 02 (Eixo Y)

escala 1:50

Relação do aço

Negativos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	104	81	8424
	2	6.3	106	125	13250
	3	6.3	317	56	17752
	4	6.3	48	170	8160
	5	6.3	64	63	3904
	6	6.3	11	65	715
	7	6.3	21	63	1323
	8	6.3	64	60	3840
	9	6.3	106	126	13356
	10	6.3	48	182	8736
	11	6.3	197	139	27383
	12	6.3	14	51	561
	13	8.0	784	231	181104

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1074.1	262.8
	8.0	1811.1	714.6
PESO TOTAL (Kg)			
CA50	977.4		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA NEGATIVA LAJES PAV. TIPO (PAV.02-PAV.03-PAV. 04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-28

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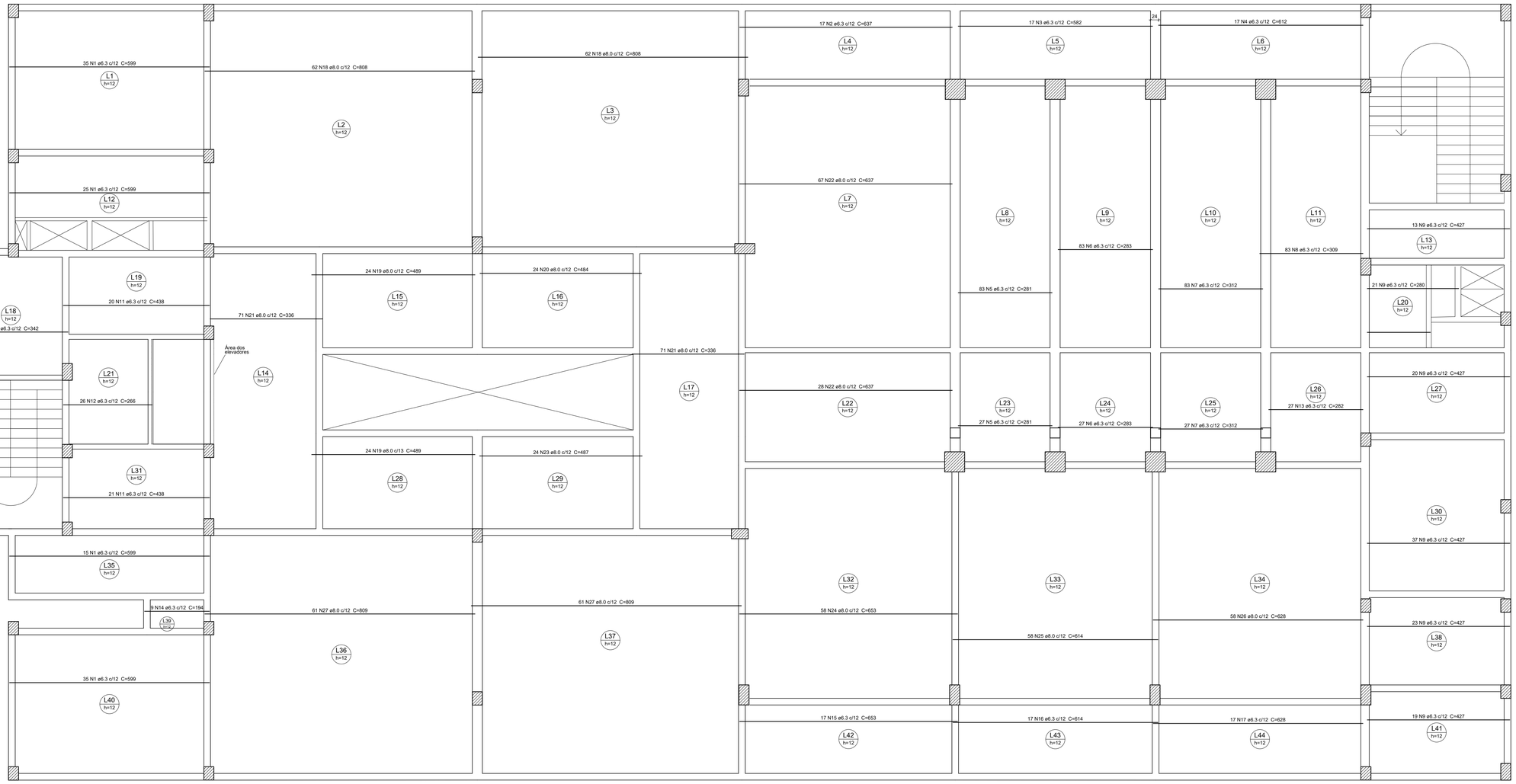

Armação positiva das lajes do pavimento PAV. 02 (Eixo X)

escala 1:50

Relação do aço

Positivos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	110	599	65890
	2	6.3	17	637	10829
	3	6.3	17	582	9894
	4	6.3	17	612	10404
	5	6.3	110	281	30910
	6	6.3	110	283	31130
	7	6.3	110	312	34320
	8	6.3	83	309	25647
	9	6.3	133	427	56791
	10	6.3	30	342	10260
	11	6.3	41	438	17958
	12	6.3	26	266	6916
	13	6.3	27	282	7614
	14	6.3	9	194	1746
	15	6.3	17	653	11101
	16	6.3	17	614	10438
	17	6.3	17	628	10676
	18	8.0	124	808	100192
	19	8.0	48	489	23472
	20	8.0	24	484	11616
	21	8.0	142	336	47712
	22	8.0	95	637	60515
	23	8.0	24	487	11688
	24	8.0	58	653	37874
	25	8.0	58	614	35612
	26	8.0	58	628	36424
	27	8.0	122	809	98698

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	3625.3	862.6
	8.0	4638.1	1830.1
PESO TOTAL (kg)			
CA50	2692.7		

Volume de concreto (C-40) = 106.73 m³
Área de forma = 889.46 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA POSITIVA LAJES PAV. TIPO (PAV. 02-PAV.03-PAV.04-PAV. 05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-25

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A 1

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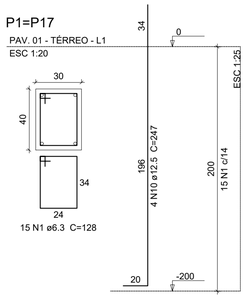

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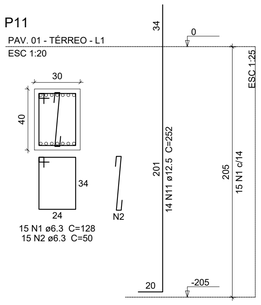

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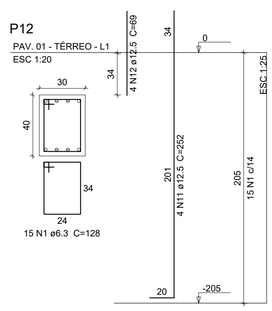

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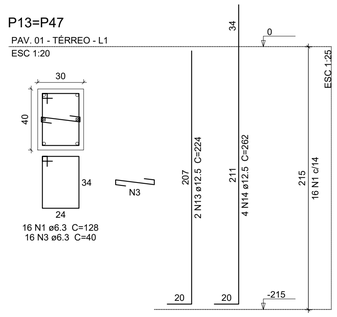

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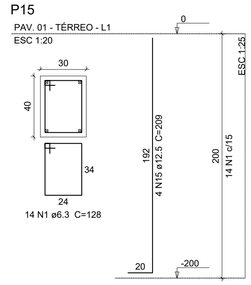

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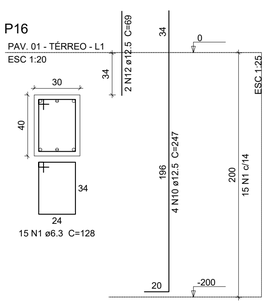

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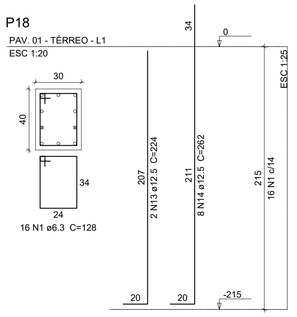

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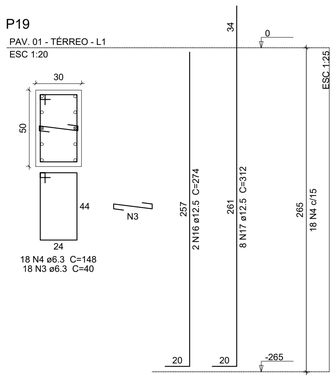

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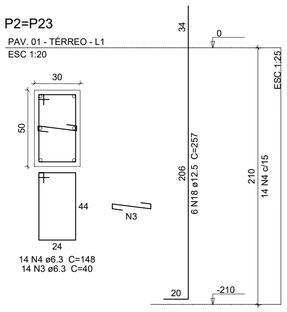

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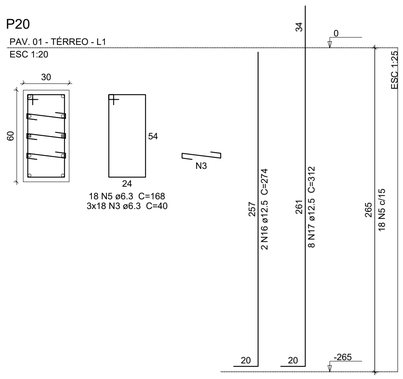

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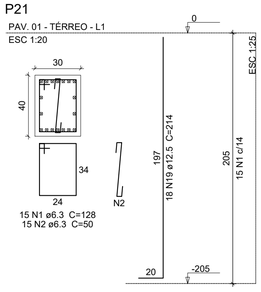

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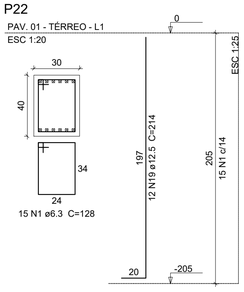

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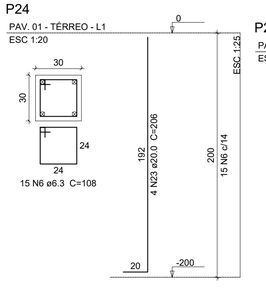

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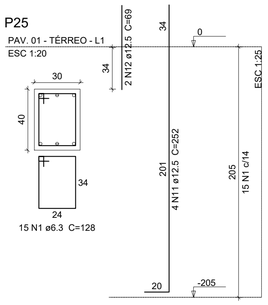

Relação do aço

2xP1	2xP2	P3
2xP4	P11	P12
2xP13	P15	P16
P18	P19	P20
P21	P22	P24
P25	3xP26	P27
2xP28	P29	P30
P31	P32	P33
P34	P38	P39
P41	P43	P44
P45	2xP49	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	424	128	54272
	2	6.3	30	50	1500
	3	6.3	306	40	12240
	4	6.3	119	148	17612
	5	6.3	48	168	8064
	6	6.3	30	108	3240
	7	6.3	31	42	1302
	8	6.3	12	228	2736
	9	6.3	48	70	3360
	10	12.5	36	247	8892
	11	12.5	74	252	18648
	12	12.5	22	69	1518
	13	12.5	6	224	1344
	14	12.5	28	262	7336
	15	12.5	20	209	4180
	16	12.5	4	274	1096
	17	12.5	16	312	4992
	18	12.5	18	257	4626
	19	12.5	42	214	8988
	20	12.5	30	VAR	VAR
	21	12.5	2	VAR	VAR
	22	12.5	16	267	4272
	23	20.0	4	206	824
	24	20.0	4	110	440
	25	20.0	6	270	1620
	26	20.0	14	221	3094

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1043.3	255.3
	12.5	730.8	704
	20.0	59.8	147.4
PESO TOTAL (kg)			
CA50	1106.7		

Volume de concreto (C-40) = 11.22 m³
Área de forma = 123.66 m²

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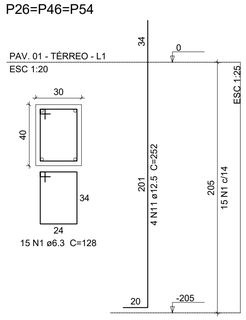

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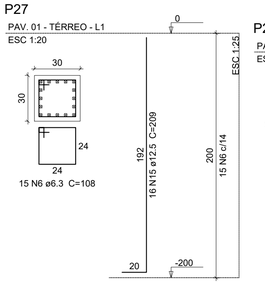

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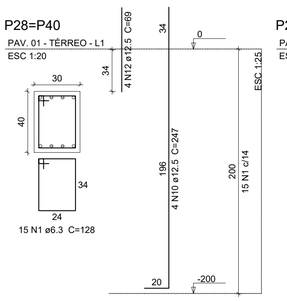

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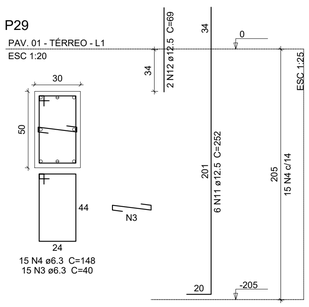

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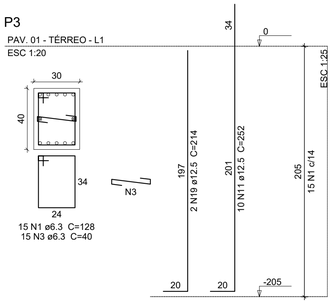

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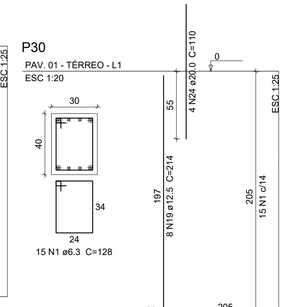

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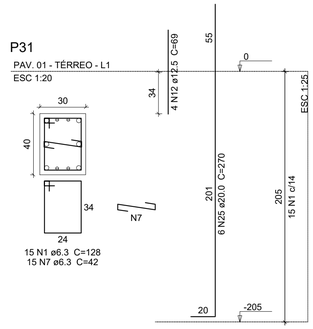

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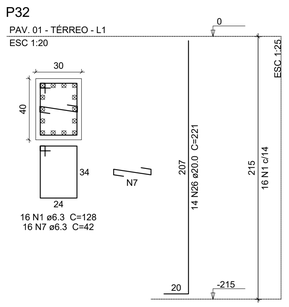

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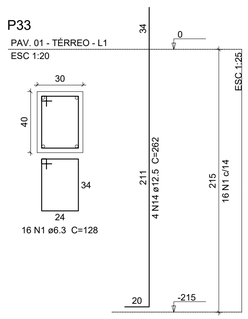

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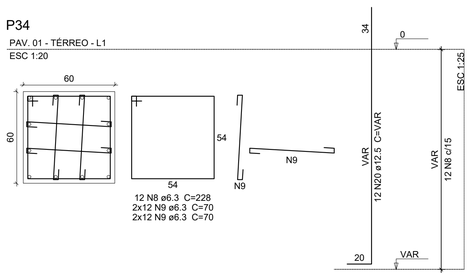
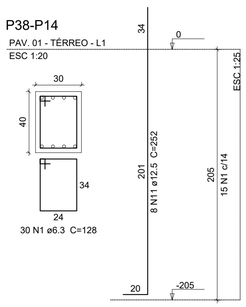


Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P38-P14



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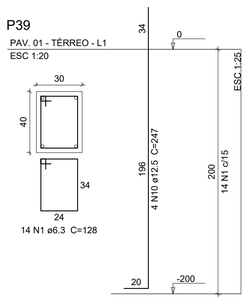

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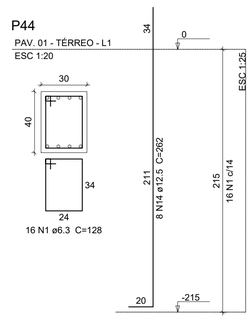

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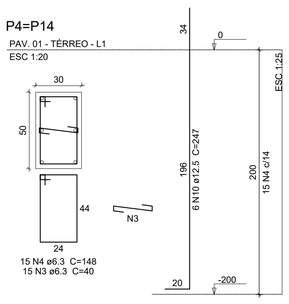

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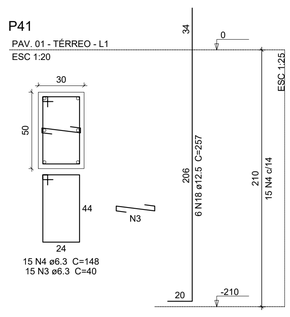

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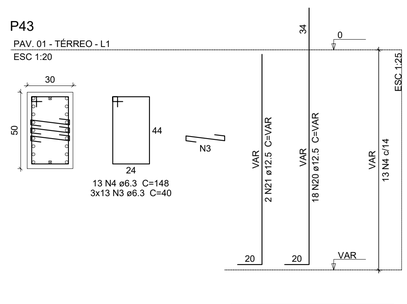

Aviso - Verificar altura do pilar de arranque em função da altura do bloco

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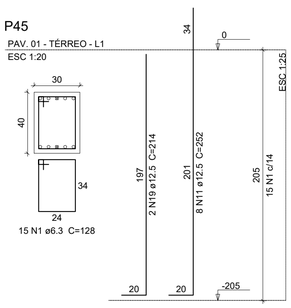

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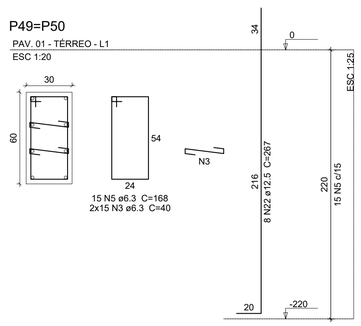

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS PILARES PAV.TIPO (PAV.02-PAV.03-PAV.04-PAV.05)

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
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CREA-RS 73.831

DATA: Março/25 | ESCALA: 1:50

DESENHO | PRANCHA: C-18

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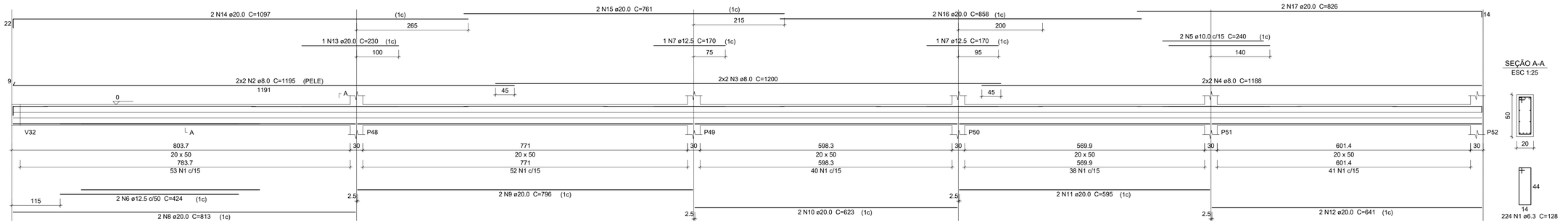
A1

V24
ESC 1:50



Relação do aço

V24

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	224	128	28672
	2	8.0	4	1195	4780
	3	8.0	4	1200	4800
	4	8.0	4	1188	4752
	5	10.0	2	240	480
	6	12.5	2	424	848
	7	12.5	2	170	340
	8	20.0	2	813	1626
	9	20.0	2	796	1592
	10	20.0	2	623	1246
	11	20.0	2	595	1190
	12	20.0	2	641	1282
	13	20.0	1	230	230
	14	20.0	2	1097	2194
	15	20.0	2	761	1522
	16	20.0	2	858	1716
	17	20.0	2	826	1652

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	286.8	70.2
	8.0	143.4	56.6
	10.0	4.8	3
	12.5	11.9	11.4
	20.0	142.5	351.4

PESO TOTAL (kg)	
CA50	492.5

Volume de concreto (C-40) = 3.49 m³
Área de forma = 41.93 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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ESCALA: 1:50
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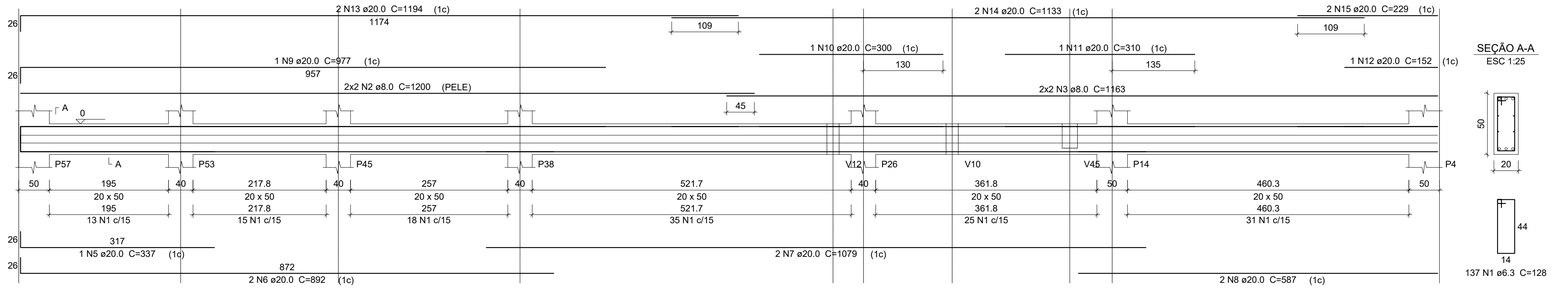
V40
ESC 1:50



SEÇÃO A-A
ESC 1:25

137 N1 ø6.3 C=128

V43
ESC 1:50

SEÇÃO A-A
ESC 1:25

67 N1 ø6.3 C=128

V44
ESC 1:50

SEÇÃO A-A
ESC 1:25

68 N1 ø6.3 C=128

Relação do aço

V40 V43 V44

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	272	128	34816
	2	8.0	4	1200	4800
	3	8.0	4	1163	4652
	4	8.0	8	1170	9360
	5	20.0	1	337	337
	6	20.0	2	892	1784
	7	20.0	2	1079	2158
	8	20.0	2	587	1174
	9	20.0	1	977	977
	10	20.0	1	300	300
	11	20.0	1	310	310
	12	20.0	1	152	152
	13	20.0	2	1194	2388
	14	20.0	2	1133	2266
	15	20.0	2	229	458
	16	20.0	8	1170	9360
	17	20.0	2	162	324
	18	20.0	1	315	315
	19	20.0	1	232	232
	20	20.0	1	686	686

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	348.2	85.2
	8.0	188.2	74.2
	20.0	232.3	572.7
PESO TOTAL (kg)			
CA50	732.1		

Volume de concreto (C-40) = 4.68 m³
Área de forma = 56.1 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-11

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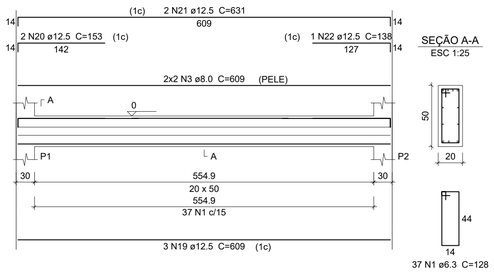
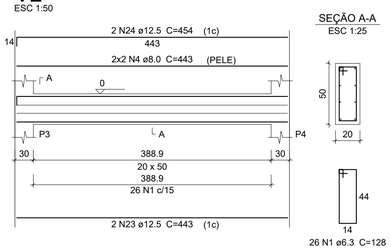
A1

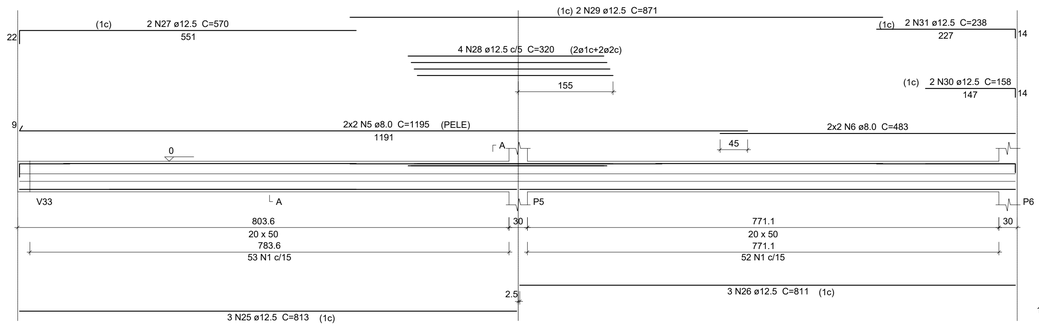
V1
ESC 1:50



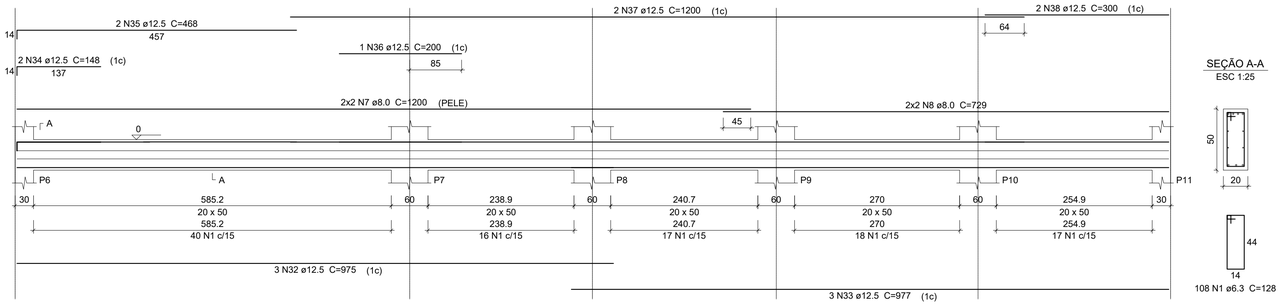
V2
ESC 1:50



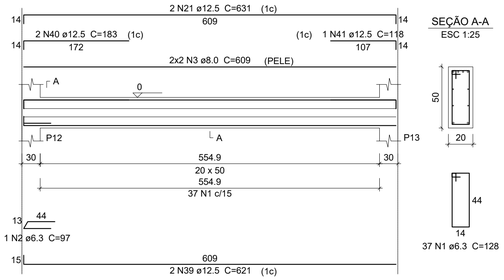
V3
ESC 1:50



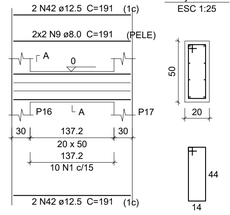
V4
ESC 1:50



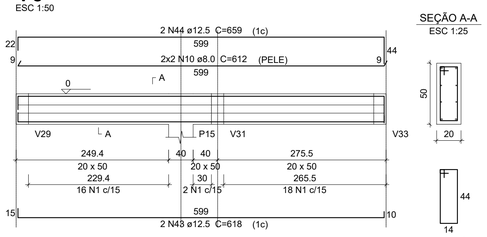
V5
ESC 1:50



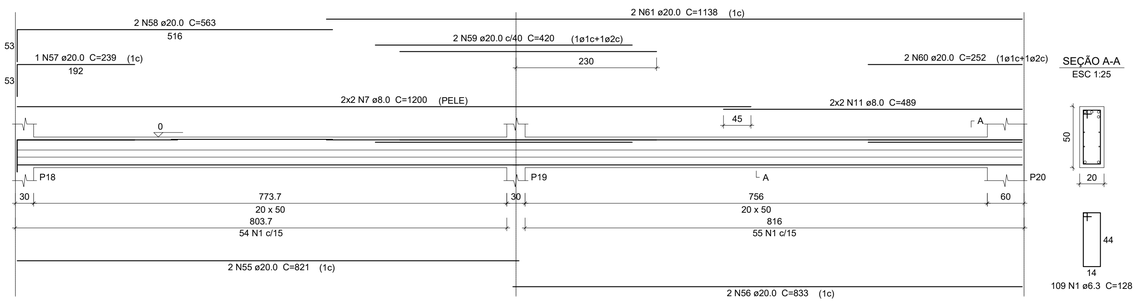
V8
ESC 1:50



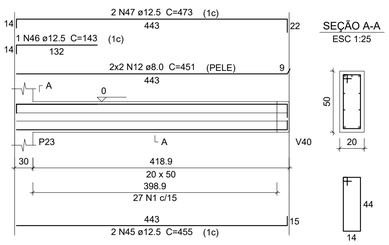
V6
ESC 1:50



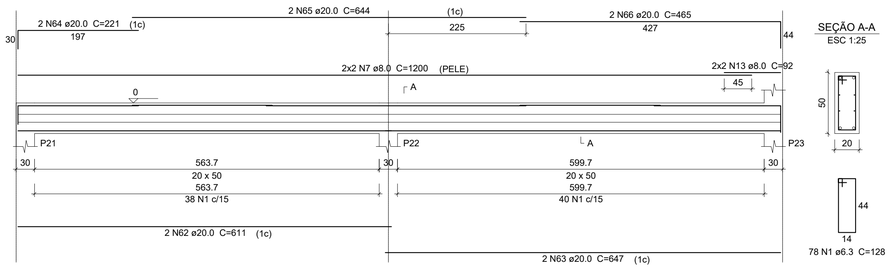
V7
ESC 1:50



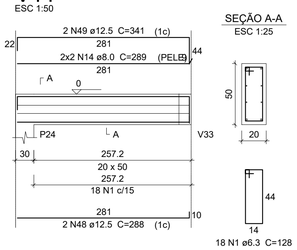
V10
ESC 1:50



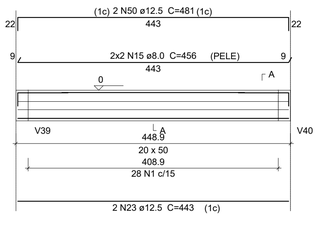
V9
ESC 1:50



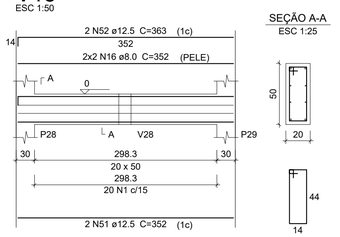
V11
ESC 1:50



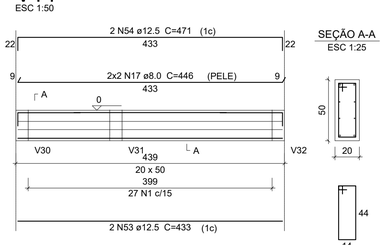
V12
ESC 1:50



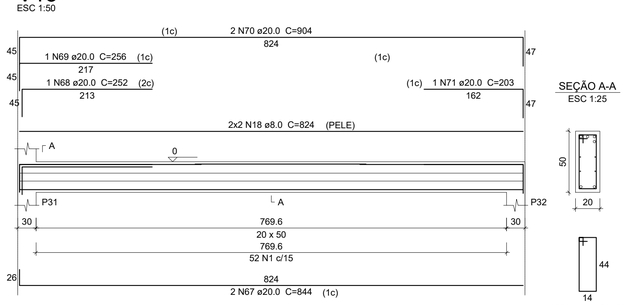
V13
ESC 1:50



V14
ESC 1:50



V15
ESC 1:50



Relação do aço

V1	V2	V3
V4	V5	V6
V7	V8	V9
V10	V11	V12
V13	V14	V15

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	718	128	91904
	2	6.3	1	97	97
	3	8.0	8	609	4872
	4	8.0	4	443	1772
	5	8.0	4	1195	4780
	6	8.0	4	483	1932
	7	8.0	12	1200	14400
	8	8.0	4	729	2916
	9	8.0	4	191	764
	10	8.0	4	612	2448
	11	8.0	4	489	1956
	12	8.0	4	451	1804
	13	8.0	4	92	368
	14	8.0	4	289	1156
	15	8.0	4	456	1824
	16	8.0	4	352	1408
	17	8.0	4	446	1784
	18	8.0	4	824	3296
	19	12.5	3	609	1827
	20	12.5	2	153	306
	21	12.5	4	631	2524
	22	12.5	1	138	138
	23	12.5	4	443	1772
	24	12.5	2	454	908
	25	12.5	3	813	2439
	26	12.5	3	811	2433
	27	12.5	2	570	1140
	28	12.5	4	320	1280
	29	12.5	2	871	1742
	30	12.5	2	158	316
	31	12.5	2	238	476
	32	12.5	3	975	2925
	33	12.5	3	977	2931
	34	12.5	2	148	296
	35	12.5	2	468	936
	36	12.5	1	200	200
	37	12.5	2	1200	2400
	38	12.5	2	300	600
	39	12.5	2	621	1242
	40	12.5	2	183	366
	41	12.5	1	118	118
	42	12.5	4	191	764
	43	12.5	2	618	1236
	44	12.5	2	659	1318
	45	12.5	2	455	910
	46	12.5	1	143	143
	47	12.5	2	473	946
	48	12.5	2	288	576
	49	12.5	2	341	682
	50	12.5	2	481	962
	51	12.5	2	352	704
	52	12.5	2	363	726
	53	12.5	2	433	866
	54	12.5	2	471	942
	55	20.0	2	821	1642
	56	20.0	2	833	1666
	57	20.0	1	239	239
	58	20.0	2	563	1126
	59	20.0	2	420	840
	60	20.0	2	252	504
	61	20.0	2	1138	2276
	62	20.0	2	611	1222
	63	20.0	2	647	1294
	64	20.0	2	221	442
	65	20.0	2	644	1288
	66	20.0	2	465	930
	67	20.0	2	844	1688
	68	20.0	1	252	252
	69	20.0	1	256	256
	70	20.0	2	904	1808
	71	20.0	1	203	203

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	920.1	225.1
	8.0	474.8	187.3
	12.5	400.9	386.2
	20.0	176.8	435.9
PESO TOTAL (kg)			
CA50	1234.6		

Volume de concreto (C-40) = 11.72 m³
Área de forma = 140.64 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-08

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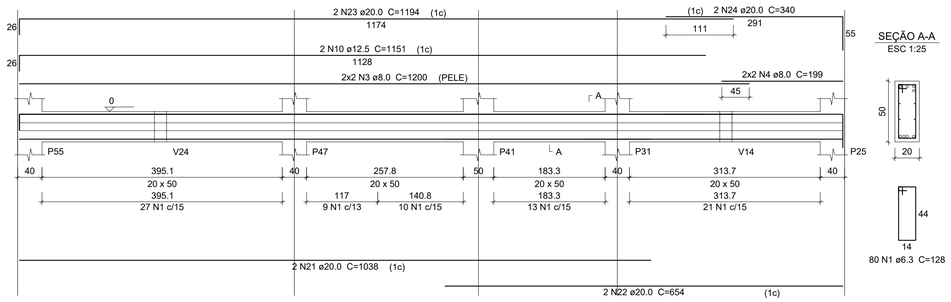
A 1

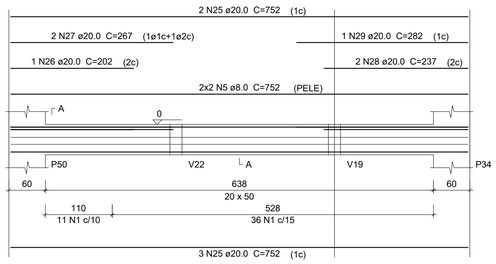
V32
ESC 1:50



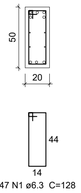
SEÇÃO A-A
ESC 1:25

80 N1 ø6.3 C=128

V36
ESC 1:50

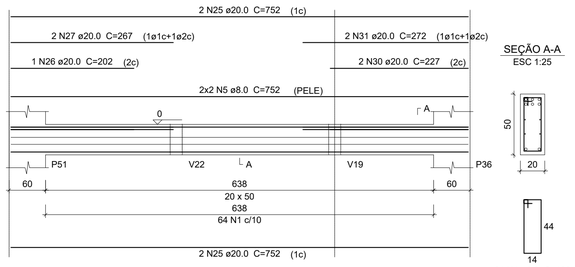


SEÇÃO A-A
ESC 1:25



47 N1 ø6.3 C=128

V37
ESC 1:50



SEÇÃO A-A
ESC 1:25

64 N1 ø6.3 C=128

Relação do aço

V32 V34 V35
V36 V37 V39
V41 V42 V45

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	669	128	85632
	2	6.3	28	118	3304
	3	8.0	16	1200	19200
	4	8.0	4	199	796
	5	8.0	8	752	6016
	6	8.0	8	713	5704
	7	8.0	4	609	2436
	8	8.0	4	673	2692
	9	8.0	4	1163	4652
	10	12.5	2	1151	2302
	11	12.5	1	325	325
	12	12.5	1	931	931
	13	12.5	1	365	365
	14	12.5	1	727	727
	15	12.5	1	385	385
	16	12.5	2	310	620
	17	12.5	2	330	660
	18	12.5	1	633	633
	19	12.5	1	405	405
	20	12.5	1	440	440
	21	20.0	2	1038	2076
	22	20.0	2	654	1308
	23	20.0	4	1194	4776
	24	20.0	2	340	680
	25	20.0	9	752	6768
	26	20.0	2	202	404
	27	20.0	4	267	1068
	28	20.0	2	237	474
	29	20.0	1	282	282
	30	20.0	2	227	454
	31	20.0	2	272	544
	32	20.0	2	833	1666
	33	20.0	2	1165	2330
	34	20.0	2	812	1624
	35	20.0	2	609	1218
	36	20.0	2	629	1258
	37	20.0	2	565	1130
	38	20.0	1	459	459
	39	20.0	2	964	1928
	40	20.0	2	559	1118
	41	20.0	1	735	735
	42	20.0	2	1868	3736
	43	20.0	1	749	749
	44	20.0	3	665	1995
	45	20.0	1	212	212
	46	20.0	2	681	1362
	47	20.0	1	595	595
	48	20.0	2	1092	2184
	49	20.0	2	1169	2338
	50	20.0	3	317	951
	51	20.0	1	739	739
	52	20.0	1	888	888
	53	20.0	2	1194	2388
	54	20.0	2	1164	2328
	55	20.0	2	251	502
	56	20.0	2	443	886
	57	20.0	2	471	942

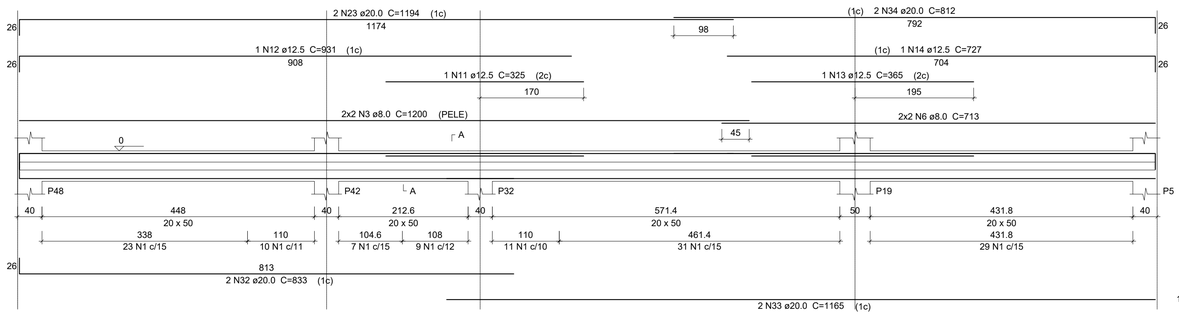
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	889.4	217.6
	8.0	415	163.7
	12.5	78	75.1
	20.0	551	1358.7

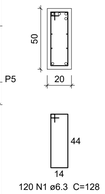
PESO TOTAL (kg)
CA50 1815.2

Volume de concreto (C-40) = 10.68 m³
Área de forma = 127.51 m²

V34
ESC 1:50

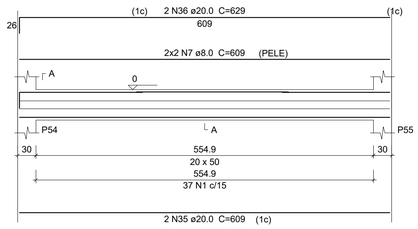


SEÇÃO A-A
ESC 1:25

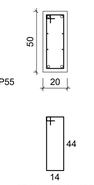


120 N1 ø6.3 C=128

V41
ESC 1:50

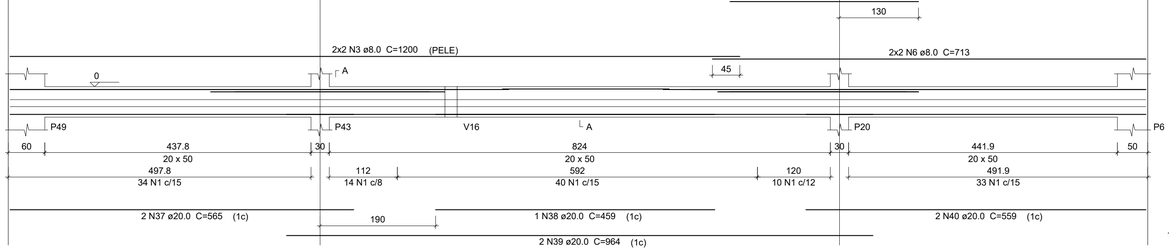


SEÇÃO A-A
ESC 1:25

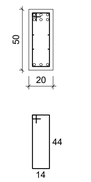


37 N1 ø6.3 C=128

V35
ESC 1:50

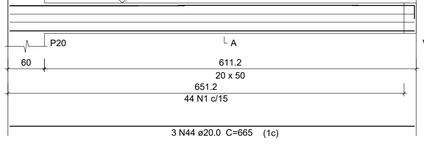


SEÇÃO A-A
ESC 1:25

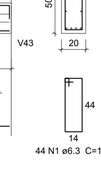


131 N1 ø6.3 C=128

V42
ESC 1:50

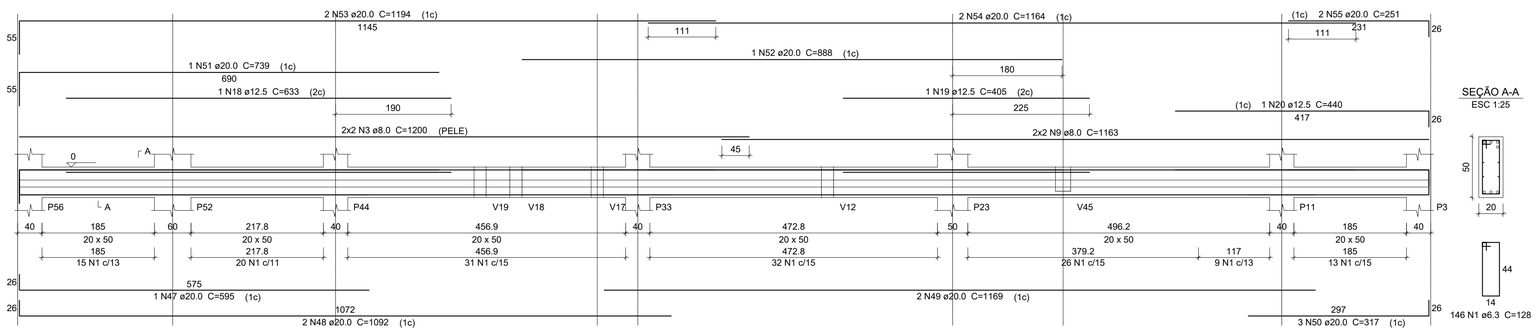


SEÇÃO A-A
ESC 1:25

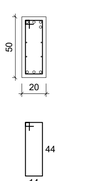


44 N1 ø6.3 C=128

V39
ESC 1:50

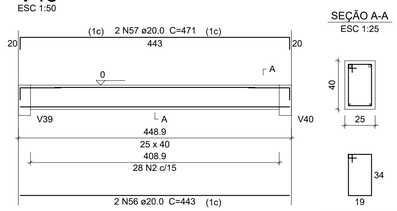


SEÇÃO A-A
ESC 1:25



146 N1 ø6.3 C=128

V45
ESC 1:50



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ESC 1:25

28 N2 ø6.3 C=118

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO: Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:50
DESENHO:
PRANCHA: C-10

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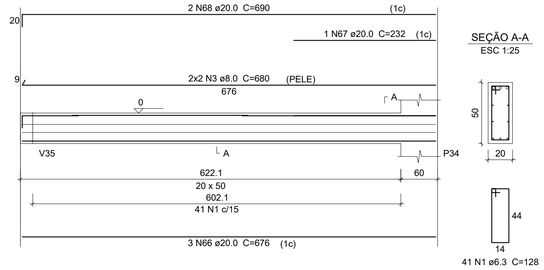
A 1

V16
ESC 1:50



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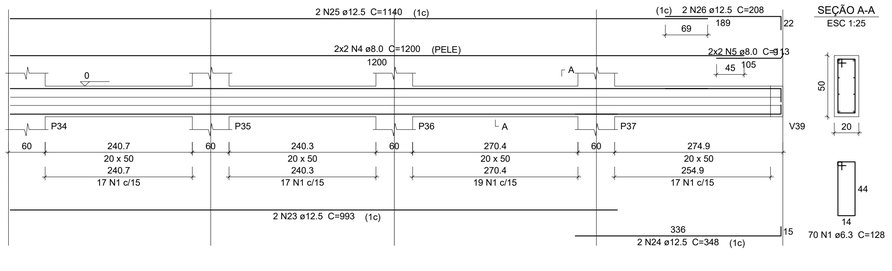
ESC 1:50



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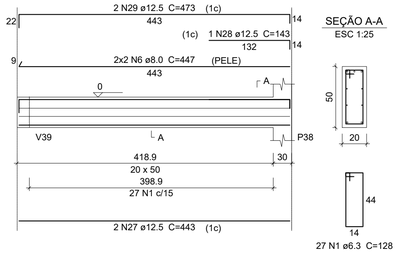

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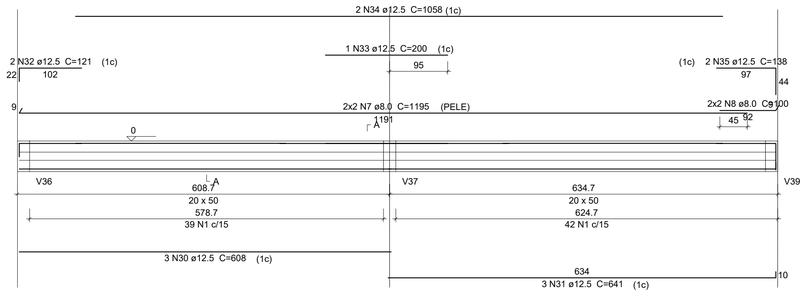

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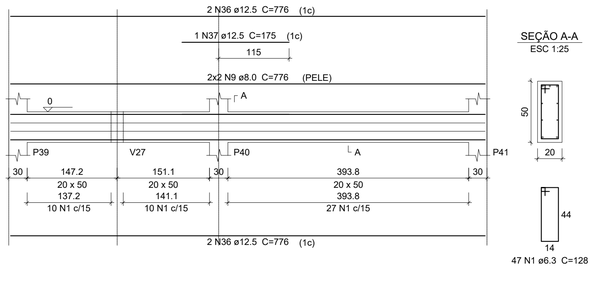

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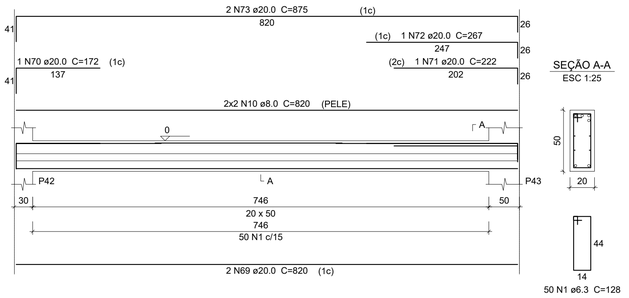

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ESC 1:50

V23
ESC 1:50

V25
ESC 1:50

V26
ESC 1:50

V27
ESC 1:50

V28
ESC 1:50

V29
ESC 1:50

V31
ESC 1:50

V41
ESC 1:50

V42
ESC 1:50

Relação do aço

V16 V17 V18
V19 V20 V21
V22 V23 V25
V26 V27 V28
V29 V31 V41
V42

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	701	128	89728
	2	6.3	1	97	97
	3	8.0	4	680	2720
	4	8.0	4	1200	4800
	5	8.0	4	113	452
	6	8.0	4	447	1788
	7	8.0	4	1195	4780
	8	8.0	4	100	400
	9	8.0	4	776	3104
	10	8.0	4	820	3280
	11	8.0	4	626	2504
	12	8.0	8	609	4872
	13	8.0	4	443	1772
	14	8.0	4	853	3412
	15	8.0	4	755	3020
	16	8.0	4	401	1604
	17	8.0	4	751	3004
	18	8.0	4	553	2212
	19	8.0	4	673	2692
	20	10.0	4	619	2476
	21	10.0	2	205	410
	22	10.0	2	606	1212
	23	12.5	2	993	1986
	24	12.5	2	348	696
	25	12.5	2	1140	2280
	26	12.5	2	208	416
	27	12.5	6	443	2658
	28	12.5	2	143	286
	29	12.5	2	473	946
	30	12.5	3	608	1824
	31	12.5	3	641	1923
	32	12.5	2	121	242
	33	12.5	1	200	200
	34	12.5	2	1058	2116
	35	12.5	2	138	276
	36	12.5	4	776	3104
	37	12.5	1	175	175
	38	12.5	1	498	498
	39	12.5	2	620	1240
	40	12.5	2	673	1346
	41	12.5	1	179	179
	42	12.5	2	183	366
	43	12.5	1	118	118
	44	12.5	2	631	1262
	45	12.5	2	87	174
	46	12.5	1	399	399
	47	12.5	8	853	6824
	48	12.5	1	157	157
	49	12.5	1	487	487
	50	12.5	1	480	480
	51	12.5	3	756	2268
	52	12.5	1	572	572
	53	12.5	4	766	3064
	54	12.5	3	406	1218
	55	12.5	1	127	127
	56	12.5	2	416	832
	57	12.5	2	564	1128
	58	12.5	1	315	315
	59	12.5	2	609	1218
	60	12.5	1	117	117
	61	12.5	3	620	1860
	62	12.5	4	665	2660
	63	12.5	2	182	364
	64	12.5	2	242	484
	65	12.5	4	689	2756
	66	20.0	3	676	2028
	67	20.0	1	232	232
	68	20.0	2	690	1380
	69	20.0	2	820	1640
	70	20.0	1	172	172
	71	20.0	1	222	222
	72	20.0	1	267	267
	73	20.0	2	875	1750
	74	20.0	2	327	654
	75	20.0	3	751	2253
	76	20.0	2	820	1640

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	898.3	219.8
	8.0	464.2	183.2
	10.0	41	25.3
	12.5	516.5	497.5
	20.0	122.4	301.8
PESO TOTAL (kg)			
CA50	1227.5		

Volume de concreto (C-40) = 11.54 m³
Área de forma = 138.42 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DAS VIGAS PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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DATA: Março/25 | ESCALA: 1:50

DESENHO | PRANCHA: C-09

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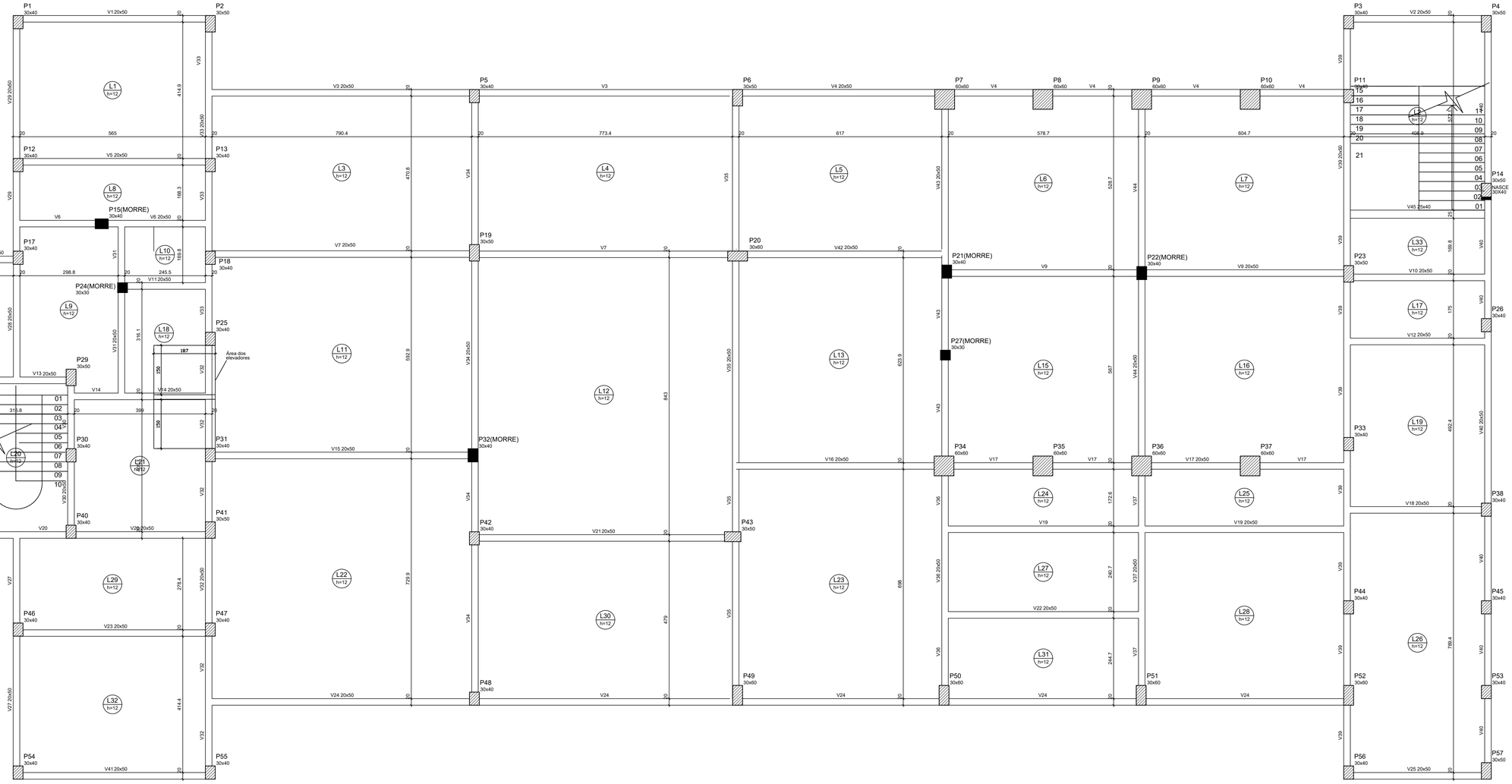

Forma do pavimento PAV. 01 - TÉRREO (Nível 0)

escala 1:50

Lajes

Nome	Tipo	Altura (cm)	Dados Elevação (cm)	Nível (cm)	Peso próprio (kgf/m²)	Sobrecarga (kgf/m²) Adicional	Acidental	Localizada
L1	Maciça	12	0	0	300	150	200	-
L2	Maciça	12	0	0	300	150	200	-
L3	Maciça	12	0	0	300	150	200	-
L4	Maciça	12	0	0	300	150	200	-
L5	Maciça	12	0	0	300	150	200	-
L6	Maciça	12	0	0	300	150	200	-
L7	Maciça	12	0	0	300	150	200	-
L8	Maciça	12	0	0	300	150	200	-
L9	Maciça	12	0	0	300	150	200	-
L10	Maciça	12	0	0	300	150	200	-
L11	Maciça	12	0	0	300	150	200	-
L12	Maciça	12	0	0	300	150	200	-
L13	Maciça	12	0	0	300	150	200	-
L14	Maciça	12	0	0	300	150	200	-
L15	Maciça	12	0	0	300	150	200	-
L16	Maciça	12	0	0	300	150	200	-
L17	Maciça	12	0	0	300	150	200	-
L18	Maciça	12	0	0	300	150	200	-
L19	Maciça	12	0	0	300	150	200	-
L20	Maciça	12	0	0	300	150	200	-
L21	Maciça	12	0	0	300	150	200	-
L22	Maciça	12	0	0	300	150	200	-
L23	Maciça	12	0	0	300	150	200	-
L24	Maciça	12	0	0	300	150	200	-
L25	Maciça	12	0	0	300	150	200	-
L26	Maciça	12	0	0	300	150	200	-
L27	Maciça	12	0	0	300	150	200	-
L28	Maciça	12	0	0	300	150	200	-
L29	Maciça	12	0	0	300	150	200	-
L30	Maciça	12	0	0	300	150	200	-
L31	Maciça	12	0	0	300	150	200	-
L32	Maciça	12	0	0	300	150	200	-
L33	Maciça	12	0	0	300	150	200	-

Área de lajes

Tipo	Altura (cm)	Bloco de Enchimento	Área (m²)
Maciça	12	-	823.55

Características dos materiais

fck (kgf/cm²)	Abatimento (cm)
400	6.00

Dimensão máxima do agregado = 19 mm

Legenda dos Pilares

- Pilar que morre
- Pilar que passa
- Pilar que nasce
- Pilar com mudança de seção

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: PLANTA DE FORMA PAV. 01

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-05

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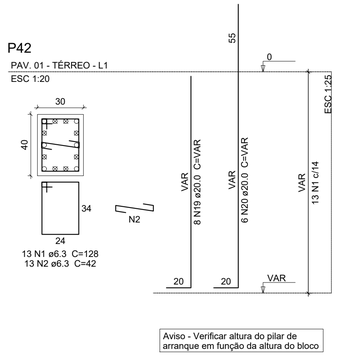
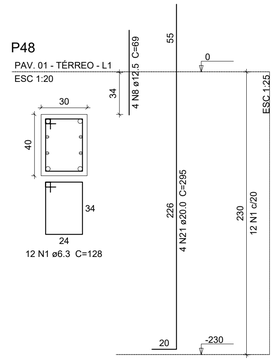
A1

P42



Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P48



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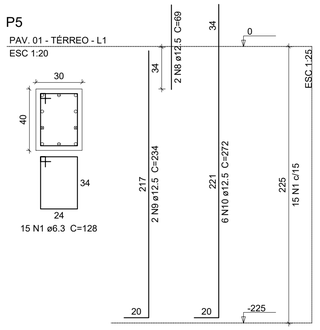

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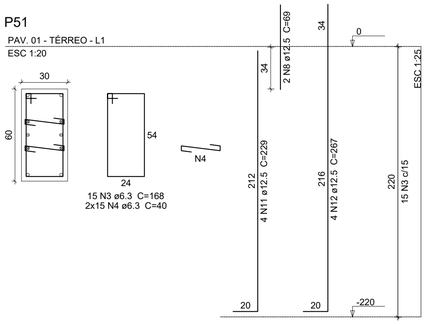

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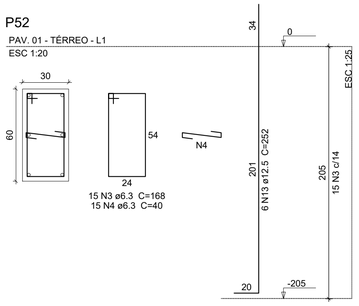

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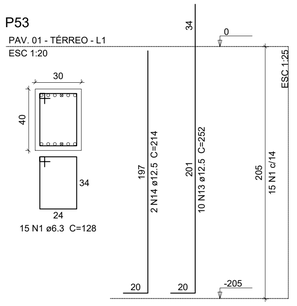

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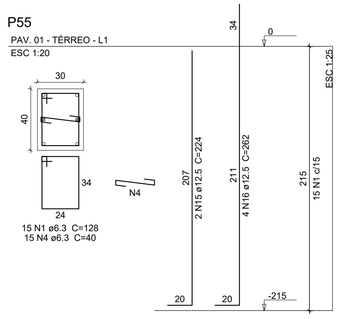

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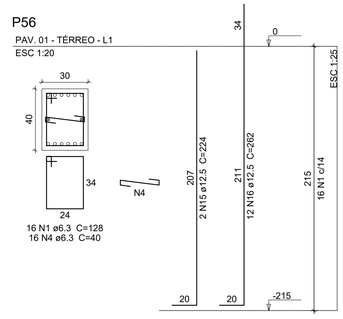

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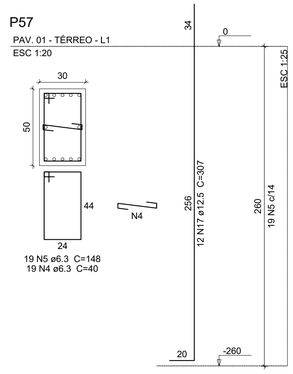

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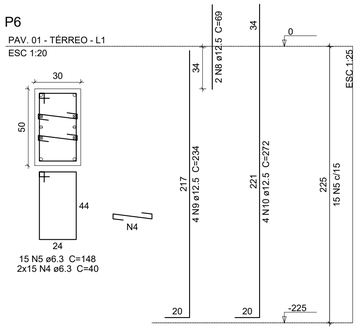

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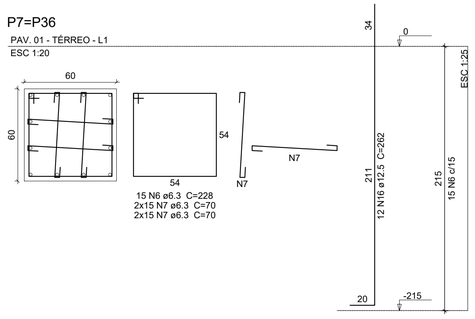

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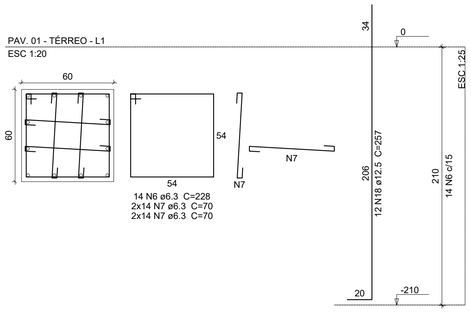

Relação do aço

P5	P6	2xP7
5xP8	P42	P48
P51	P52	P53
P55	P56	P57

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	86	128	11008
	2	6.3	13	42	546
	3	6.3	30	168	5040
	4	6.3	125	40	5000
	5	6.3	34	148	5032
	6	6.3	100	228	22800
	7	6.3	400	70	28000
	8	12.5	10	69	690
	9	12.5	6	234	1404
	10	12.5	10	272	2720
	11	12.5	4	229	916
	12	12.5	4	267	1068
	13	12.5	16	252	4032
	14	12.5	2	214	428
	15	12.5	4	224	896
	16	12.5	40	262	10480
	17	12.5	12	307	3684
	18	12.5	60	257	15420
	19	20.0	8	VAR	VAR
	20	20.0	6	VAR	VAR
	21	20.0	4	295	1180

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	774.3	189.5
	12.5	417.4	402.1
	20.0	41.4	102

PESO TOTAL (kg)	
CA50	693.6

Volume de concreto (C-40) = 8.34 m³
Área de forma = 68.71 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DOS PILARES PAV. 01

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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DATA: Março/25
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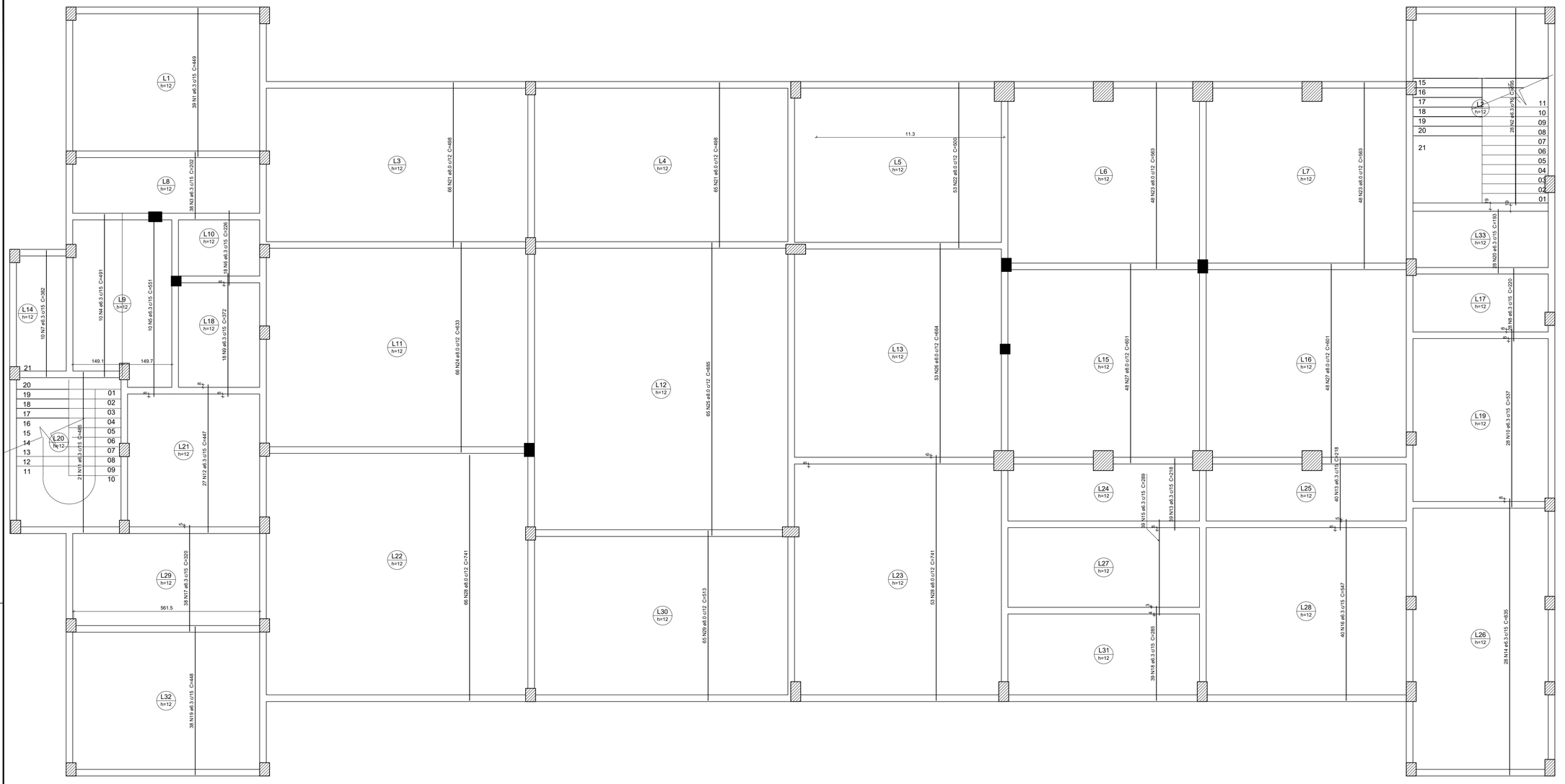
A1



Armação positiva das lajes do pavimento PAV. 01 - TÉRREO (Eixo Y)

escala 1:50

Relação do aço

Positivos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	39	449	17511
	2	6.3	28	595	16660
	3	6.3	38	202	7676
	4	6.3	10	491	4910
	5	6.3	10	551	5510
	6	6.3	18	226	4068
	7	6.3	10	382	3820
	8	6.3	28	220	6160
	9	6.3	18	372	6696
	10	6.3	28	537	15036
	11	6.3	21	485	10185
	12	6.3	27	447	12069
	13	6.3	79	218	17222
	14	6.3	28	835	23380
	15	6.3	39	289	11271
	16	6.3	40	547	21880
	17	6.3	38	320	12160
	18	6.3	39	285	11115
	19	6.3	38	448	17024
	20	6.3	28	193	5404
	21	8.0	131	498	65238
	22	8.0	53	500	26500
	23	8.0	96	563	54048
	24	8.0	66	633	41778
	25	8.0	65	885	57525
	26	8.0	53	664	35192
	27	8.0	96	601	57696
	28	8.0	119	741	88179
	29	8.0	65	513	33345

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	2297.6	562.2
	8.0	4595.1	1813.1
PESO TOTAL (kg)			
CA50	2375.3		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA POSITIVA LAJES PAV. 01 - Y

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
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DATA: Março/25

ESCALA: 1:50

DESENHO:

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A1

P1=P17

PAV. 01 - TÉRREO - L1
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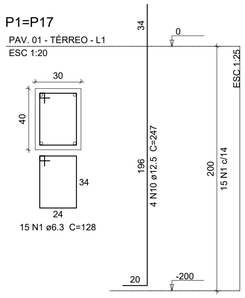

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PAV. 01 - TÉRREO - L1
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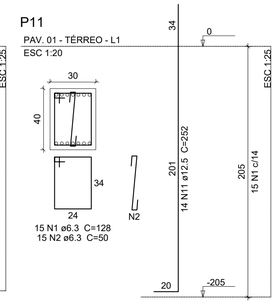
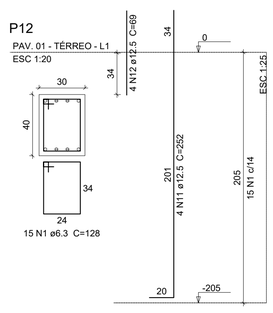


P12

PAV. 01 - TÉRREO - L1
ESC 1:20



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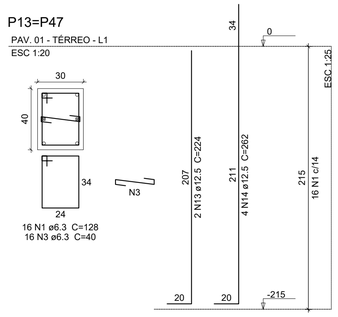

P15

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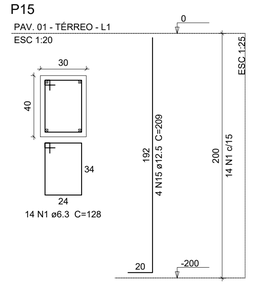

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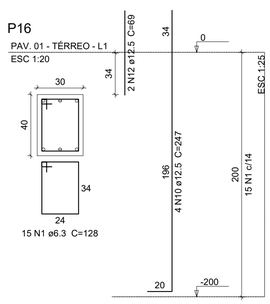

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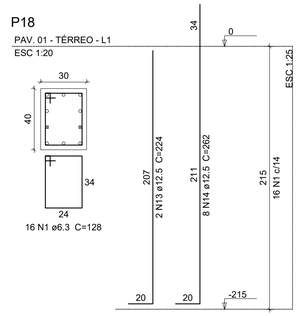

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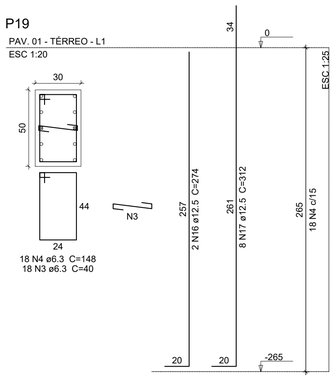

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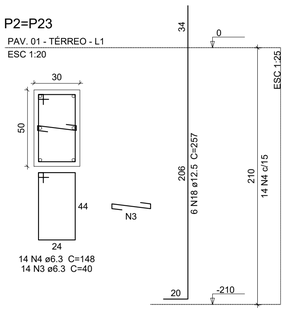

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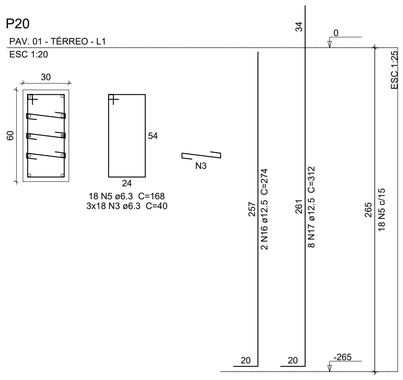

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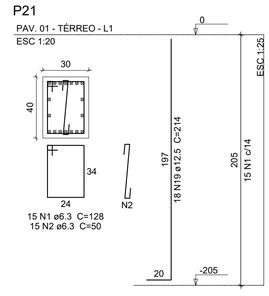

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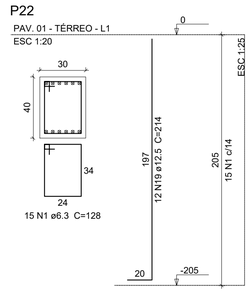

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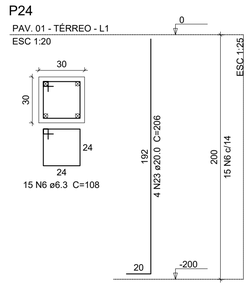

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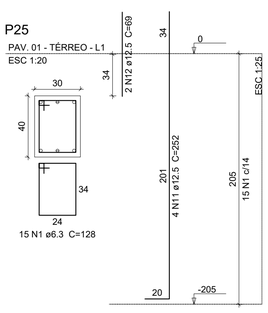
PAV. 01 - TÉRREO - L1
ESC 1:20



Relação do aço

2xP1	2xP2	P3
2xP4	P11	P12
2xP13	P15	P16
P18	P19	P20
P21	P22	P24
P25	3xP26	P27
2xP28	P29	P30
P31	P32	P33
P34	P38	P39
P41	P43	P44
P45	2xP49	

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	394	128	50432
	2	6.3	30	50	1500
	3	6.3	306	40	12240
	4	6.3	119	148	17612
	5	6.3	48	168	8064
	6	6.3	30	108	3240
	7	6.3	31	42	1302
	8	6.3	12	228	2736
	9	6.3	48	70	3360
	10	12.5	36	247	8892
	11	12.5	66	252	16632
	12	12.5	22	69	1518
	13	12.5	6	224	1344
	14	12.5	28	262	7336
	15	12.5	20	209	4180
	16	12.5	4	274	1096
	17	12.5	16	312	4992
	18	12.5	18	257	4626
	19	12.5	42	214	8988
	20	12.5	30	VAR	VAR
	21	12.5	2	VAR	VAR
	22	12.5	16	267	4272
	23	20.0	4	206	824
	24	20.0	4	110	440
	25	20.0	6	270	1620
	26	20.0	14	221	3094

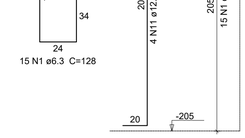
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1004.9	245.9
	12.5	710.7	684.6
	20.0	59.8	147.4
PESO TOTAL (kg)			
CA50	1077.9		

Volume de concreto (C-40) = 11.22 m³
Área de forma = 123.66 m²

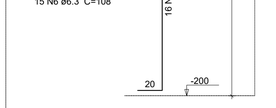
P26=P46=P54

PAV. 01 - TÉRREO - L1
ESC 1:20



P27

PAV. 01 - TÉRREO - L1
ESC 1:20



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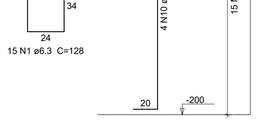
PAV. 01 - TÉRREO - L1
ESC 1:20



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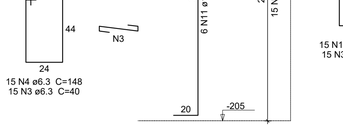
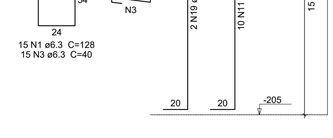
ESC 1:20



P3

PAV. 01 - TÉRREO - L1
ESC 1:20



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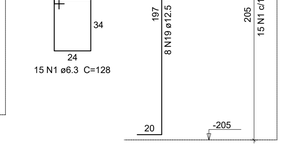
ESC 1:20



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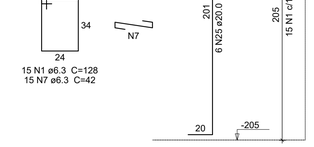

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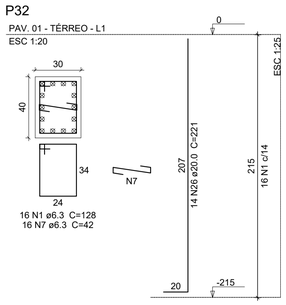

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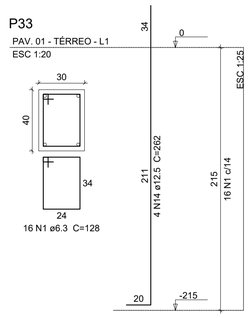
ESC 1:20



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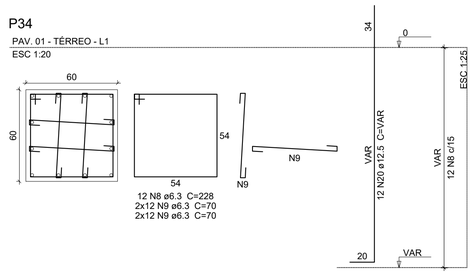
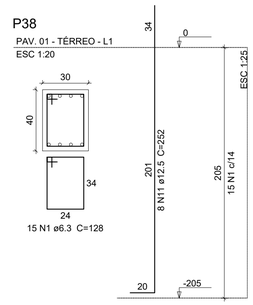


Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P38

PAV. 01 - TÉRREO - L1
ESC 1:20



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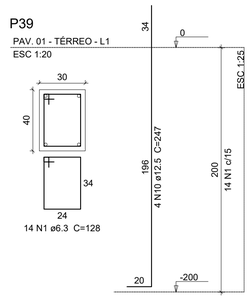

P44

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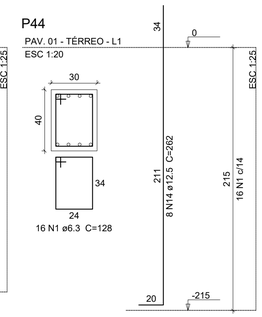
ESC 1:20



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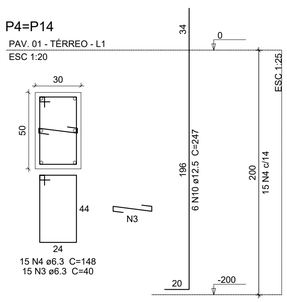
ESC 1:20



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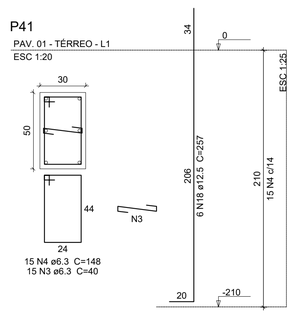

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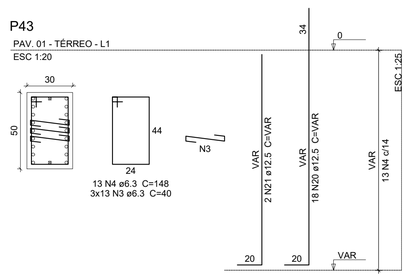
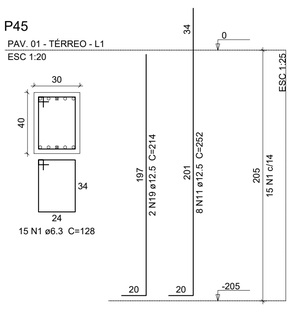
ESC 1:20



Aviso - Verificar altura do pilar de arranque em função da altura do bloco

P45

PAV. 01 - TÉRREO - L1
ESC 1:20



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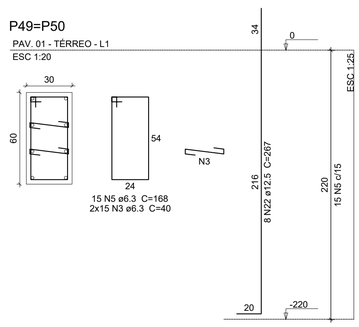

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DOS PILARES PAV. 01

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:20
DESENHO:
PRANCHA: C-06

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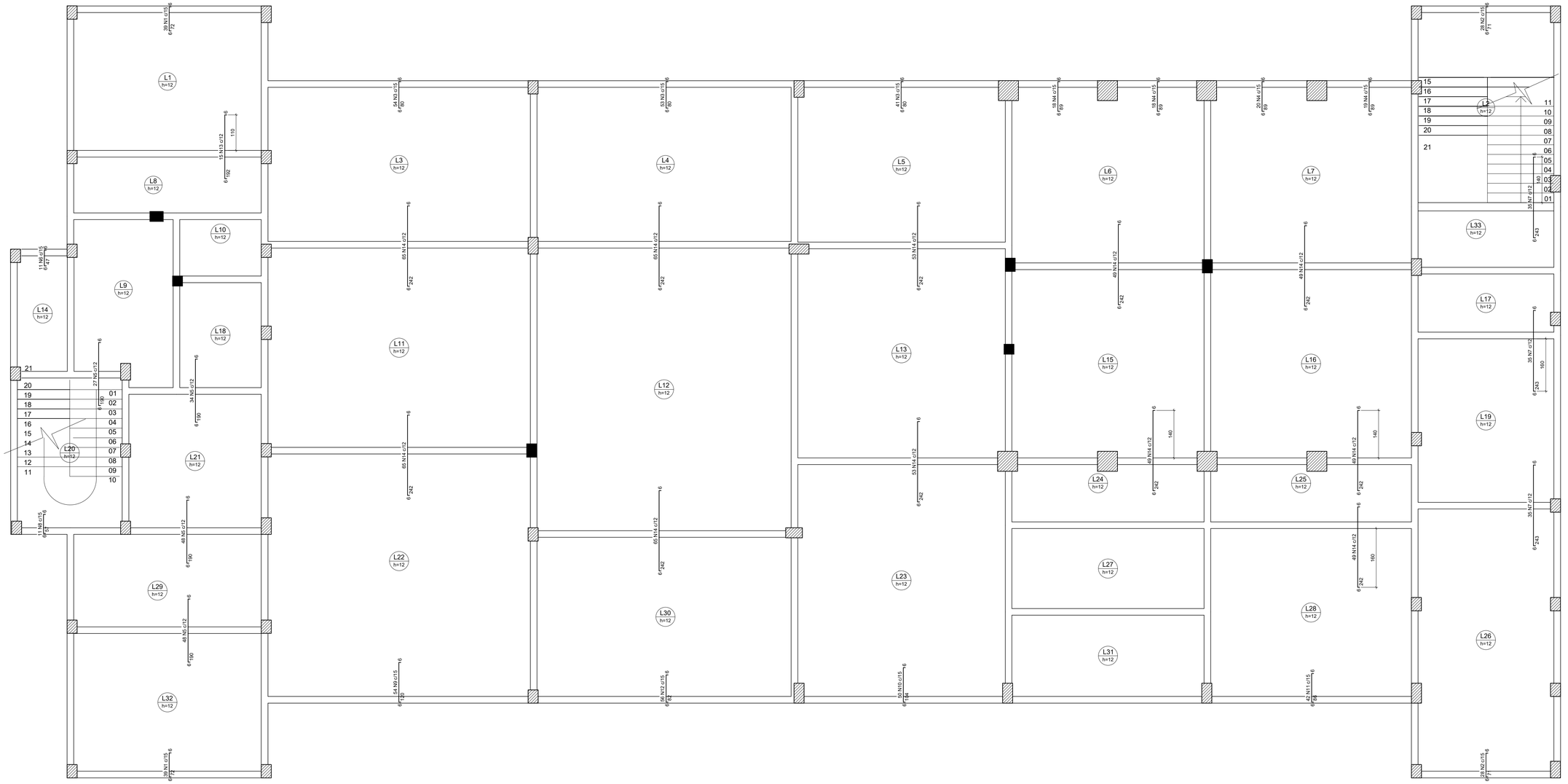
(54) 98108 0303

A1



Armação negativa das lajes do pavimento PAV. 01 - TÉRREO (Eixo Y)

escala 1:50

Relação do aço

Negativos Y

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	78	81	6318
	2	6.3	56	80	4480
	3	6.3	148	89	13172
	4	6.3	75	98	7350
	5	6.3	157	199	31243
	6	6.3	11	56	616
	7	6.3	105	252	26460
	8	6.3	11	66	726
	9	6.3	54	129	6966
	10	6.3	50	113	5650
	11	6.3	42	95	3990
	12	6.3	56	91	5096
	13	6.3	15	201	3015
	14	8.0	611	250	152750

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	1150.9	281.6
	8.0	1527.5	602.7
PESO TOTAL (kg)			
CA50	884.3		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA NEGATIVA LAJES PAV. 01 - Y

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-16

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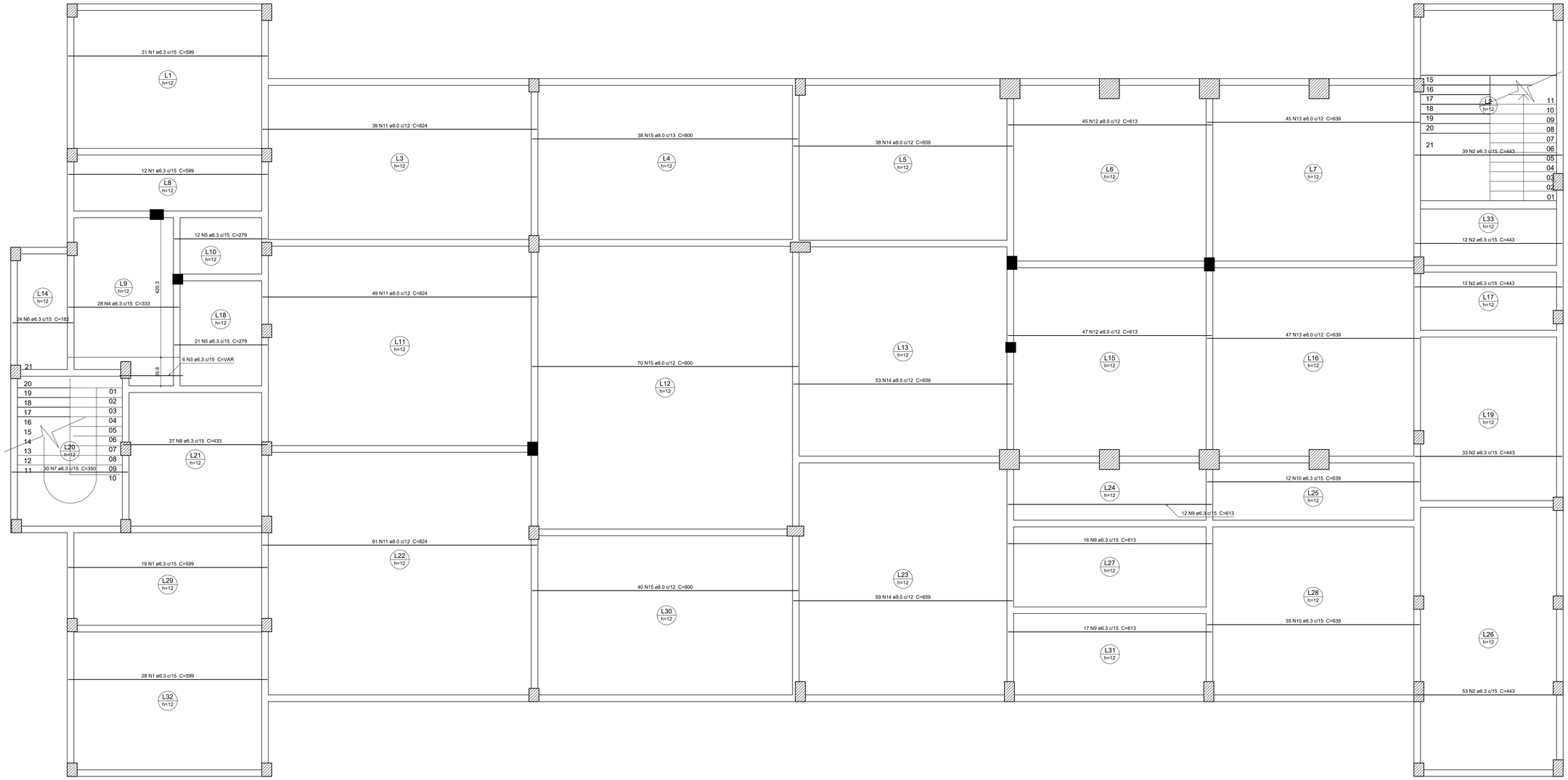

Armação positiva das lajes do pavimento PAV. 01 - TÉRREO (Eixo X)

escala 1:50

Relação do aço

Positivos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	90	599	53910
	2	6.3	149	443	66007
	3	6.3	6	VAR	VAR
	4	6.3	28	333	9324
	5	6.3	33	279	9207
	6	6.3	24	182	4368
	7	6.3	30	350	10500
	8	6.3	27	433	11691
	9	6.3	45	613	27585
	10	6.3	47	639	30033
	11	8.0	149	824	122776
	12	8.0	92	613	56396
	13	8.0	92	639	58788
	14	8.0	150	659	98850
	15	8.0	148	800	118400

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	2237.7	547.6
	8.0	4552.1	1796.2

PESO TOTAL (kg)	
CA50	2343.7

Volume de concreto (C-40) = 99.12 m³
Área de forma = 826.01 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA POSITIVA DAS LAJES PAV. 01- X

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

PRANCHA: C-13

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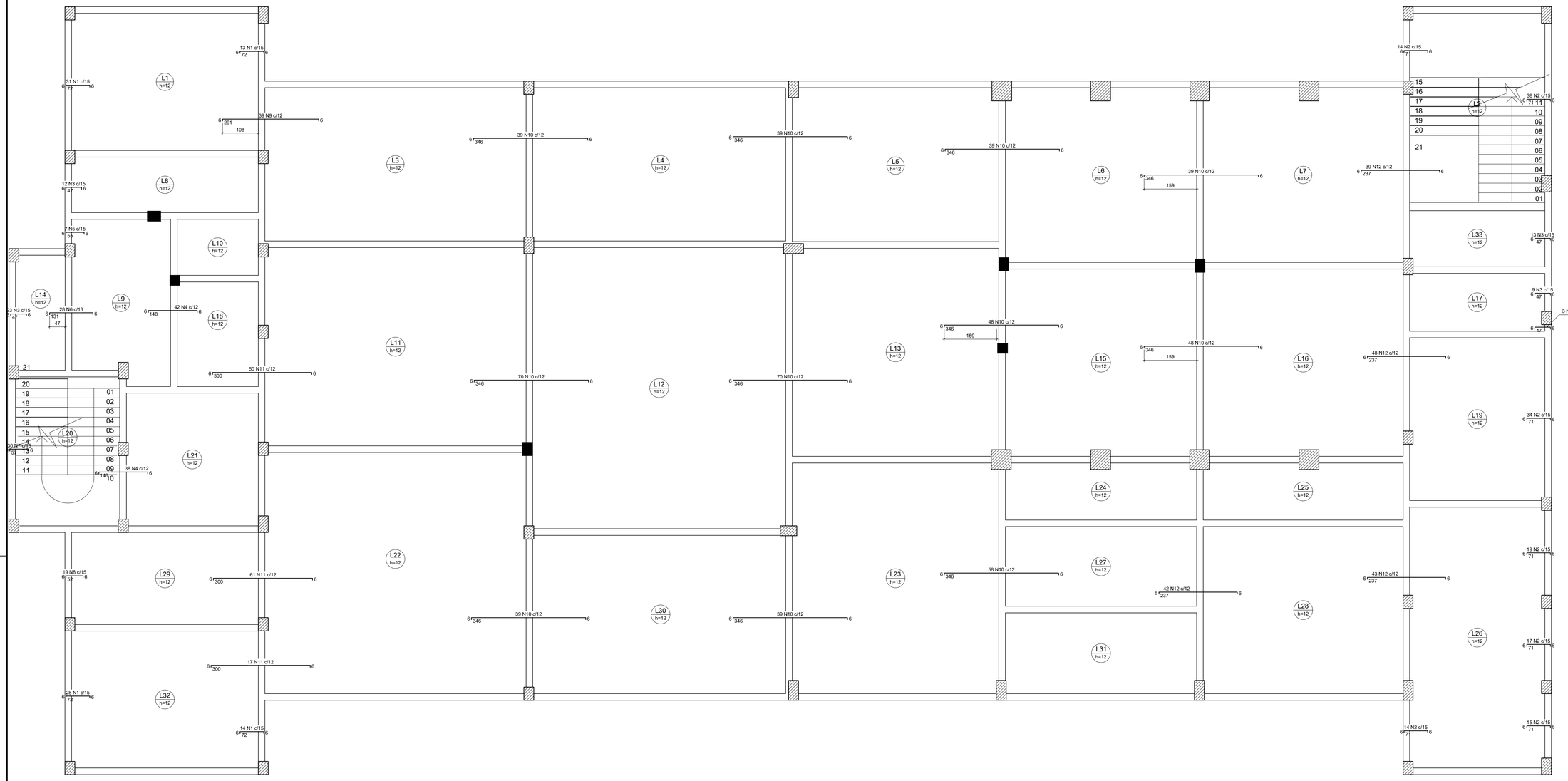


Armação negativa das lajes do pavimento PAV. 01 - TÉRREO (Eixo X)

escala 1:50

Relação do aço

Negativos X

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	86	81	6966
	2	6.3	151	80	12080
	3	6.3	60	56	3360
	4	6.3	80	157	12560
	5	6.3	7	64	448
	6	6.3	28	140	3920
	7	6.3	30	66	1980
	8	6.3	19	61	1159
	9	8.0	39	299	11661
	10	8.0	528	354	186912
	11	8.0	128	308	39424
	12	8.0	172	245	42140

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	424.8	103.9
	8.0	2801.4	1105.4
PESO TOTAL (kg)			
CA50	1209.3		

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: ARMADURA NEGATIVA LAJES PAV. 01 - X

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50

DESENHO:

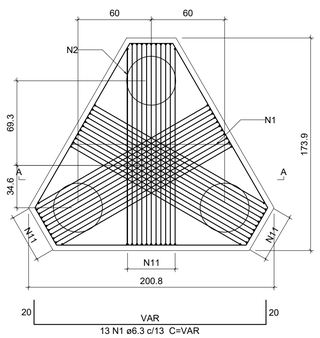
PRANCHA: C-15

stca.engenharia@gmail.com
(54) 98108 0303

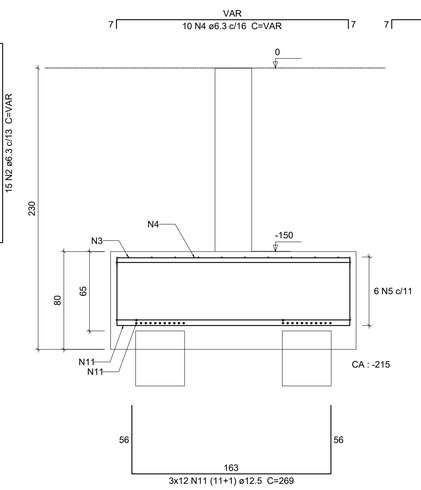
A1

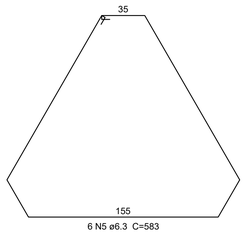
B13=B18=B32=B33=B44=B47=B55
3xC30

PLANTA
ESC 1:25



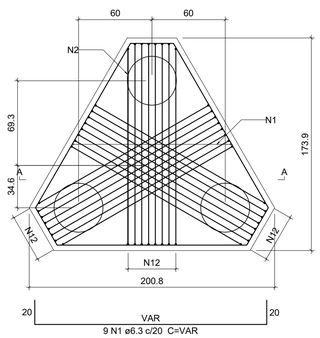
CORTE A-A
ESC 1:25



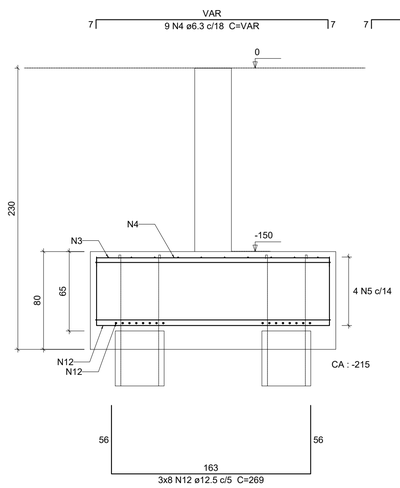


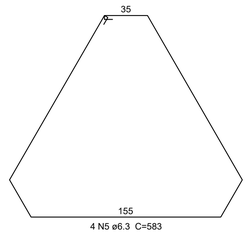
B56
3xC30

PLANTA
ESC 1:25



CORTE A-A
ESC 1:25





Relação do aço

16xB31 3xB40 7xB47
B56

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	100	VAR	VAR
	2	6.3	115	VAR	VAR
	3	6.3	80	VAR	VAR
	4	6.3	79	VAR	VAR
	5	6.3	46	583	26818
	6	6.3	76	216	16416
	7	6.3	184	190	34960
	8	6.3	127	496	62992
	9	6.3	128	222	28416
	10	6.3	24	212	5088
	11	12.5	252	269	67788
	12	12.5	24	269	6456
	13	12.5	208	265	55120
	14	12.5	30	255	7650

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	2501.9	612.2
	12.5	1370.2	1319.9

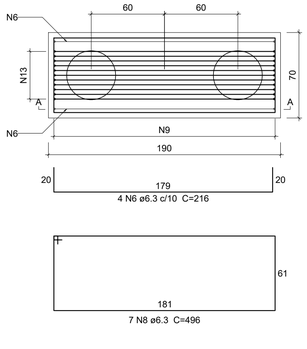
PESO TOTAL (kg)	
CA50	1932.1

Aviso - Bloco com estaca tracionada: Prever armaduras das estacas ancoradas na face superior do bloco.

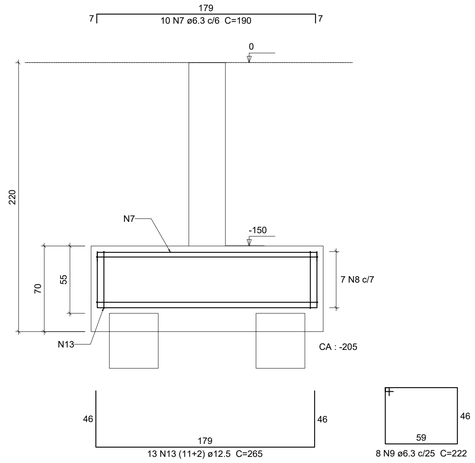
Volume de concreto (C-40) = 31.09 m³
Área de forma = 106.94 m²

B3=B11=B12=B21=B22=B25=B26=B29=B30=B31 =B38=B45=B46=B52=B53=B54
2xC30

PLANTA
ESC 1:25

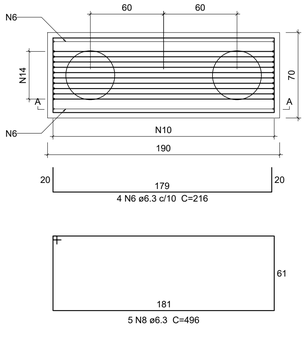


CORTE A-A
ESC 1:25

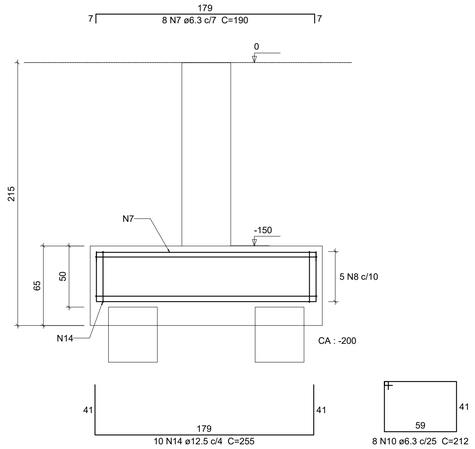


B1=B17=B40
2xC30

PLANTA
ESC 1:25



CORTE A-A
ESC 1:25



REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS BLOCOS SOBRE ESTACAS

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

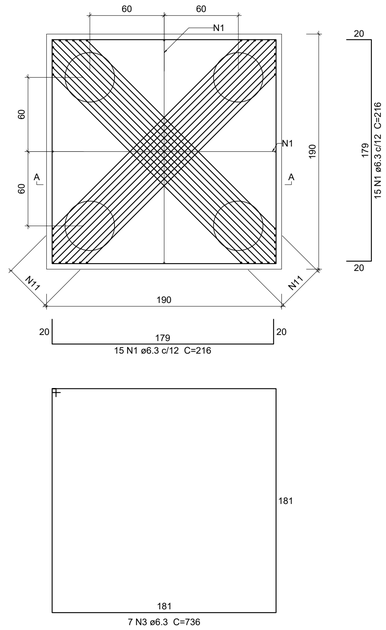
DATA: Março/25
ESCALA: 1:25
DESENHO:
PRANCHA: C-04

stca.engenharia@gmail.com
(54) 98108 0303

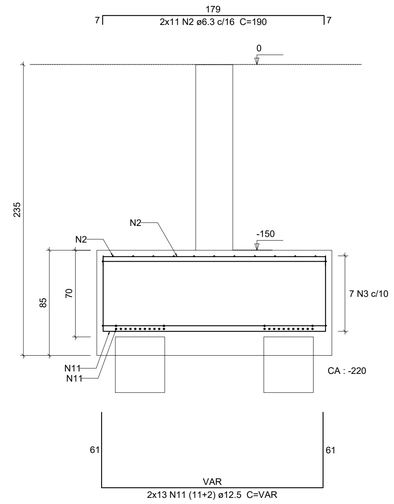
A 1

B49=B50=B51
4xC30

PLANTA
ESC 1:25

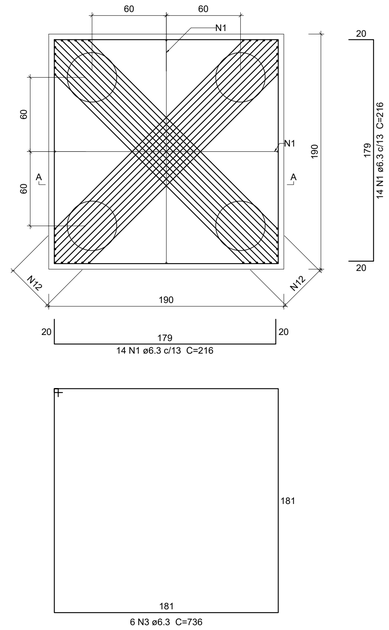


CORTE A-A
ESC 1:25

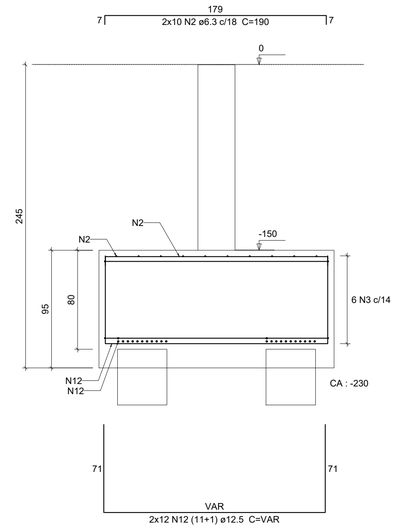


B48
4xC30

PLANTA
ESC 1:25

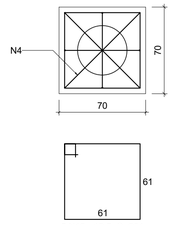


CORTE A-A
ESC 1:25

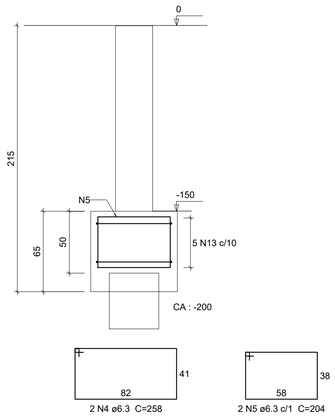


B4=B14=B15=B16=B24=B27=B28=B39
1xC30

PLANTA
ESC 1:25



CORTE
ESC 1:25



Relação do aço

2xB5 8xB14 8xB23
B48 3xB51

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	174	216	37584
	2	6.3	126	190	23940
	3	6.3	39	736	28704
	4	6.3	16	258	4128
	5	6.3	16	204	3264
	6	6.3	112	VAR	VAR
	7	6.3	128	VAR	VAR
	8	6.3	88	VAR	VAR
	9	6.3	88	VAR	VAR
	10	6.3	56	583	32648
	11	12.5	78	VAR	VAR
	12	12.5	24	VAR	VAR
	13	12.5	40	264	10560
	14	12.5	48	VAR	VAR
	15	12.5	312	259	80808

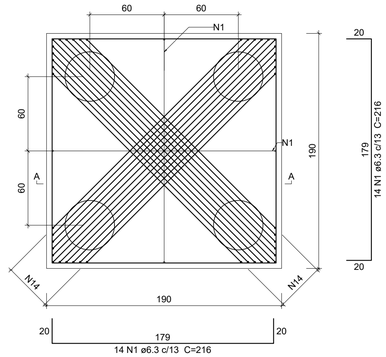
Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	2143	524.4
	12.5	1365.8	1315.7
PESO TOTAL (kg)			
CA50	1840.1		

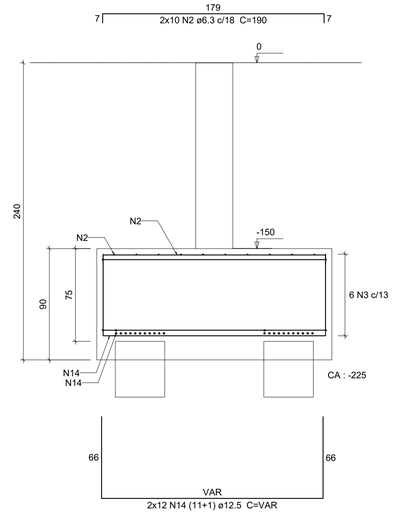
Volume de concreto (C-40) = 34.47 m³
Área de forma = 90.99 m²

B5=B6
4xC30

PLANTA
ESC 1:25

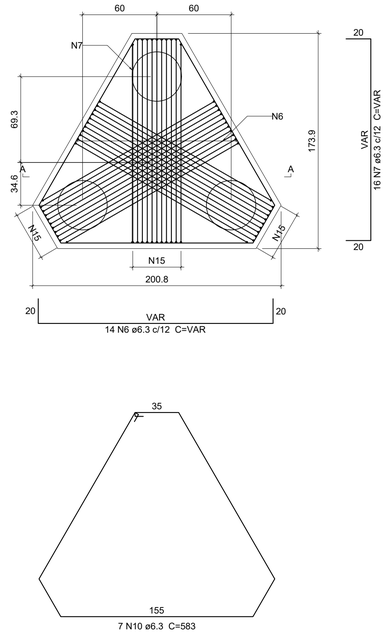


CORTE A-A
ESC 1:25

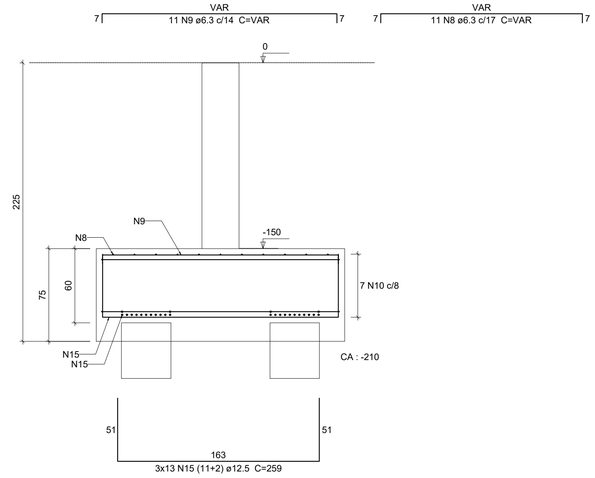


B2=B8=B9=B10=B23=B35=B37=B41
3xC30

PLANTA
ESC 1:25



CORTE A-A
ESC 1:25



REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO
DETALHAMENTO DOS BLOCOS SOBRE ESTACAS

OBRA
IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS
Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:25
DESENHO:
PRANCHA: C-03

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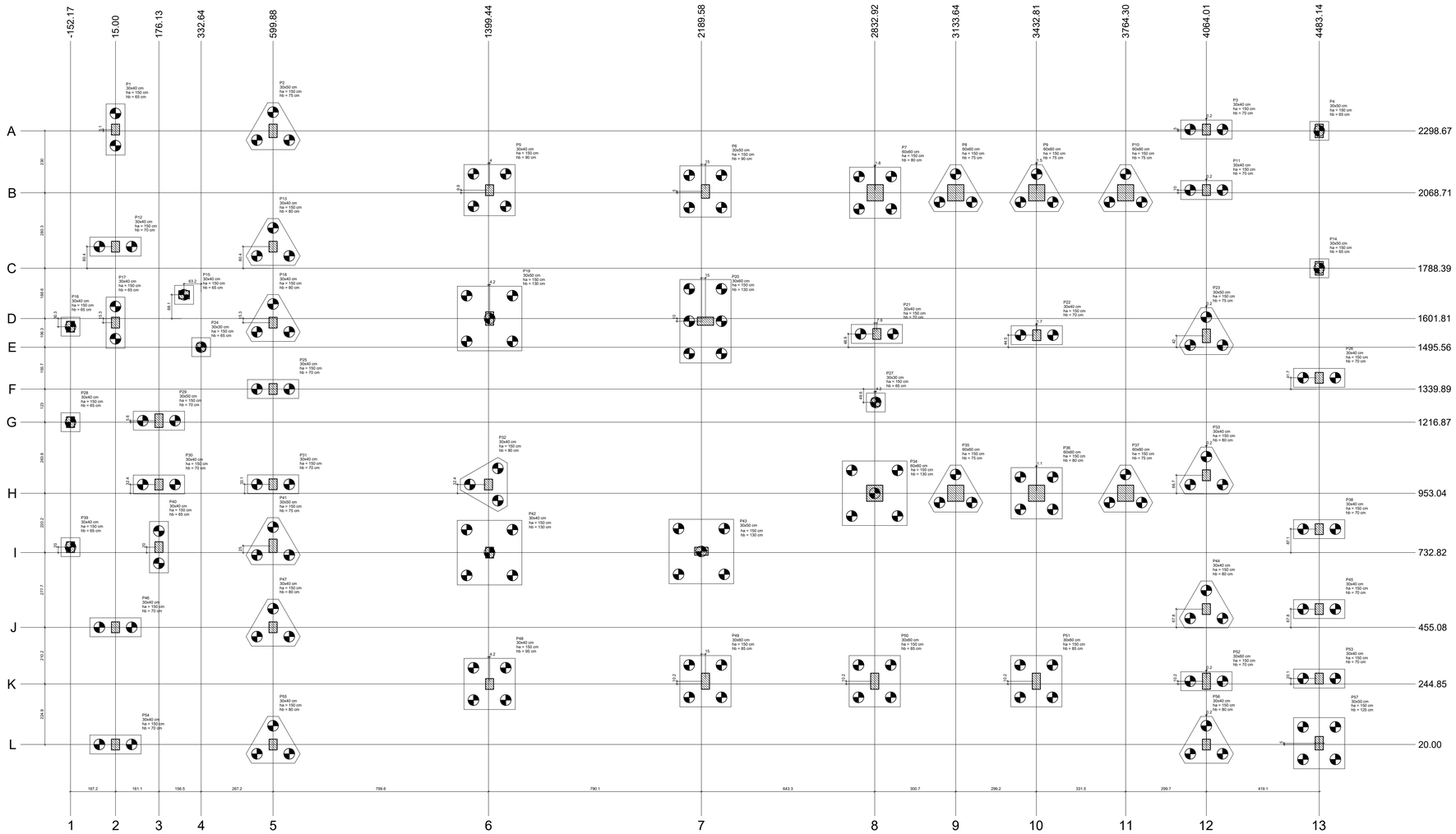
(54) 98108 0303



PLANTA DE LOCAÇÃO

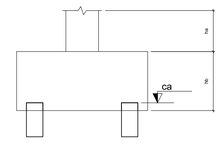
escala 1:50

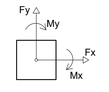
Nome	Seção (cm)	X (cm)	Y (cm)	Pilar Carga Máx. (tf)	Pilar Carga Mín. (tf)	Pilar Mx (kgf.m)	Pilar My (kgf.m)	Pilar Fx (tf)	Pilar Fy (tf)	Fundação Lado B (cm)	Fundação Lado H (cm)	Fundação H0 / ha (cm)	Fundação h1 / hb (cm)	Bloco hw	Bloco Estaca	Bloco ca
P1	30x40	15.00	2303.72	54.1	30.8	0	0	2.1	1.8	190	70	150	65	2	C40	-200
P2	30x50	599.88	2298.69	107.8	72.1	0	0	2.5	2.1	201	174	150	75	3	C40	-210
P3	30x40	4064.22	2303.67	65.9	0.3	0	0	1.4	3.7	190	70	150	70	2	C40	-205
P4	30x50	4483.14	2298.67	39.0	19.5	0	0	1.0	3.1	70	70	150	65	1	C40	-200
P5	30x40	1403.47	2078.60	174.3	116.5	0	0	1.0	4.0	190	190	150	90	4	C40	-225
P6	60x40	2189.58	2078.71	187.6	108.6	0	0	1.6	3.4	190	190	150	80	4	C40	-215
P7	60x60	2834.75	2068.71	187.6	108.1	0	0	1.6	3.4	190	190	150	80	4	C40	-215
P8	60x60	3133.64	2068.71	114.9	86.6	0	0	1.6	6.0	201	174	150	75	3	C40	-210
P9	60x60	3434.35	2068.71	141.4	106.6	0	0	1.6	3.1	201	174	150	75	3	C40	-210
P10	60x60	3764.30	2068.71	109.3	84.7	0	0	1.3	5.1	201	174	150	75	3	C40	-210
P11	30x40	4064.24	2078.71	63.9	15.0	0	0	0.4	7.2	190	70	150	70	2	C40	-205
P12	30x40	15.00	1668.77	76.4	46.4	0	0	2.4	4.1	190	70	150	70	2	C40	-205
P13	30x40	599.88	1668.77	122.3	81.1	0	0	1.8	4.7	201	174	150	80	3	C40	-215
P14	30x50	4483.16	1788.39	47.6	37.2	0	0	0.2	5.0	70	70	150	65	1	C40	-200
P15	30x40	-152.17	1571.51	32.5	16.9	0	0	0.9	1.9	70	70	150	65	1	C40	-200
P16	30x40	-152.17	1571.51	32.5	16.9	0	0	0.9	1.9	70	70	150	65	1	C40	-200
P17	30x40	15.00	1586.51	61.4	35.1	0	0	0.5	3.6	190	70	150	65	2	C40	-200
P18	30x40	599.88	1586.51	118.8	84.8	0	0	4.4	4.7	201	174	150	80	3	C40	-215
P19	30x50	1403.60	1601.81	229.4	196.7	0	0	0.4	2.1	240	240	150	130	5	C40	-265
P20	30x50	2204.58	1591.81	233.5	183.7	0	0	1.9	5.1	310	190	150	130	6	C40	-265
P21	30x40	2840.81	1544.50	20.7	13.8	0	0	2.4	8.1	190	70	150	70	2	C40	-205
P22	30x40	3434.53	1540.05	26.8	16.4	0	0	1.1	6.1	190	70	150	70	2	C40	-205
P23	30x50	4064.22	1537.55	133.6	100.3	0	0	1.5	3.5	201	174	150	75	3	C40	-210
P24	30x20	332.64	1536.99	82.7	50.1	0	0	0.2	4.5	190	70	150	70	2	C40	-205
P25	30x40	599.88	1536.99	82.7	50.1	0	0	0.2	4.5	190	70	150	70	2	C40	-205
P26	30x40	1483.14	1381.61	65.4	44.7	0	0	0.1	4.6	190	70	150	70	2	C40	-205
P27	30x50	2837.12	1296.27	9.6	5.7	0	0	0.1	4.9	70	70	150	65	1	C40	-200
P28	30x40	-152.17	1216.87	42.4	29.1	0	0	1.2	3.6	70	70	150	65	1	C40	-200
P29	30x40	176.13	1222.51	75.8	19.5	0	0	0.6	3.3	190	70	150	70	2	C40	-205
P30	30x40	176.13	985.44	37.0	26.5	0	0	0.3	5.3	190	70	150	70	2	C40	-205
P31	30x40	599.88	986.16	89.4	43.4	0	0	0.7	5.0	190	70	150	70	2	C40	-205
P32	30x40	1399.44	985.44	30.6	15.5	0	0	0.3	9.5	201	174	150	80	3	C40	-215
P33	30x40	3764.30	953.04	120.8	86.7	0	0	1.7	5.0	201	174	150	75	3	C40	-210
P34	60x60	2832.92	953.04	211.4	158.4	0	0	4.2	2.6	240	240	150	115	5	C40	-260
P35	60x60	3133.64	953.04	125.1	92.6	0	0	1.8	5.9	201	174	150	75	3	C40	-210
P36	60x60	3433.92	953.04	161.1	120.3	0	0	1.7	5.7	190	190	150	80	4	C40	-220
P37	60x60	3764.30	953.04	120.8	86.7	0	0	1.7	5.0	201	174	150	75	3	C40	-210
P38	30x40	4483.14	819.87	64.6	31.8	0	0	1.9	1.9	190	70	150	70	2	C40	-205
P39	30x40	-152.17	752.85	34.2	21.4	0	0	0.8	1.9	70	70	150	65	1	C40	-200
P40	30x40	176.13	752.82	72.0	21.7	0	0	2.5	1.9	190	70	150	65	1	C40	-200
P41	30x50	599.88	757.86	117.1	74.4	0	0	1.3	5.8	201	174	150	75	3	C40	-210
P42	30x40	1403.60	752.82	207.1	149.8	0	0	4.4	4.7	240	240	150	115	5	C40	-260
P43	30x50	2189.58	737.82	213.7	153.9	0	0	0.5	6.7	240	240	150	135	5	C40	-270
P44	30x40	4064.01	737.82	119.2	85.1	0	0	0.6	5.5	201	174	150	75	3	C40	-210
P45	30x40	4483.15	522.83	41.1	28.1	0	0	0.2	5.5	190	70	150	70	2	C40	-205
P46	30x40	15.00	455.08	70.4	55.2	0	0	2.9	3.1	190	70	150	70	2	C40	-205
P47	30x40	599.88	455.08	139.9	83.3	0	0	2.1	4.4	201	174	150	80	3	C40	-215
P48	30x40	1403.60	244.85	180.4	124.3	0	0	1.3	4.7	190	190	150	95	4	C40	-230
P49	30x50	2204.58	255.01	177.6	126.2	0	0	1.5	3.7	190	190	150	85	4	C40	-220
P50	30x60	2832.92	255.01	179.9	131.3	0	0	0.9	7.6	190	190	150	85	4	C40	-220
P51	30x60	3432.81	255.01	177.9	130.8	0	0	0.4	7.5	190	190	150	85	4	C40	-220
P52	30x40	4064.34	255.01	69.2	51.9	0	0	1.2	6.6	190	70	150	70	2	C40	-205
P53	30x40	4483.15	244.85	41.2	28.2	0	0	0.2	5.5	190	70	150	70	2	C40	-205
P54	30x40	15.00	20.00	56.6	33.1	0	0	2.0	1.8	190	70	150	70	2	C40	-205
P55	30x40	599.89	20.02	107.2	73.7	0	0	2.2	2.2	201	174	150	80	3	C40	-215
P56	30x40	4064.22	20.05	70.6	11.4	4.2	201	174	150	80	3	C40	-215			
P57	30x50	4483.15	25.00	55.4	-9.1	0	0	1.1	4.2	240	240	150	125	5	C40	-260

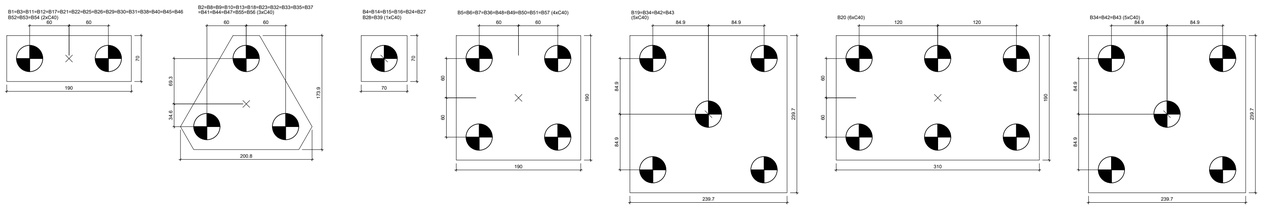
Locação no eixo X	
Coordenadas (cm)	Nome
-152.17	P7, P28, P39
15.00	P1, P12, P17, P46, P54
176.13	P29, P30, P40
269.43	P13
332.64	P24
599.88	P2, P18, P13, P18, P25, P31, P41, P47
599.89	P53
1399.44	P32
1403.47	P5
1403.60	P19, P42, P48
2189.58	P43
2204.58	P6, P20, P49
2832.92	P34, P50
2834.75	P7
2837.12	P27
2840.81	P21
3133.64	P8, P35
3432.81	P51
3433.92	P36
3434.35	P9
3434.53	P10, P37
3764.30	P10, P37
4064.01	P44
4064.22	P4, P23, P56
4064.24	P11, P33, P52
4483.14	P26
4483.15	P45, P57
4483.16	P4, P14, P38, P53

Locação no eixo Y	
Coordenadas (cm)	Nome
2303.72	P1
2303.67	P3
2298.69	P2
2298.67	P4
2078.71	P11
2078.60	P5
2073.71	P6
2068.71	P7, P8, P9, P10
1668.77	P12, P13
1788.39	P14
1689.94	P15
1601.81	P19
1591.81	P20
1586.51	P17, P18
1571.51	P16
1544.50	P21
1540.05	P22
1537.55	P23
1536.99	P24, P25
1381.61	P26
1296.27	P27
1222.51	P29
1216.87	P28
1016.73	P33
986.16	P31
985.44	P30, P32
963.04	P34, P35, P36, P37
819.87	P38
757.86	P41
752.85	P39
752.82	P40
737.82	P43
732.82	P42
522.83	P44, P45
455.08	P46, P47
264.89	P53
255.01	P48, P50, P51, P52
244.85	P48
25.00	P57
20.05	P56
20.02	P55
20.00	P54

Estacas			
Simbologia	Nome	d (cm)	Quantidade
	C40	40.00	151







Legenda dos blocos

escala 1:25

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: PLANTA DE LOCAÇÃO

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25

ESCALA: 1:50 1:25

DESENHO:

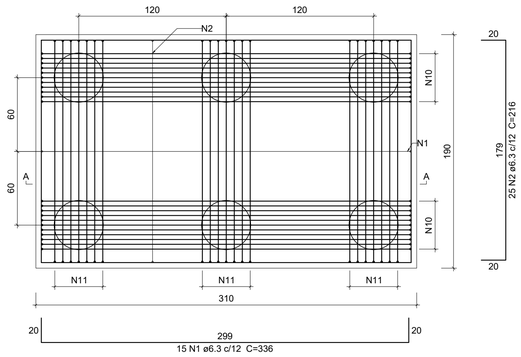
PRANCHA: C-01

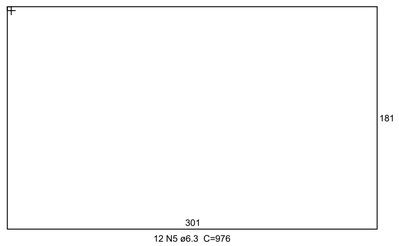
stca.engenharia@gmail.com
(54) 98108 0303

A1

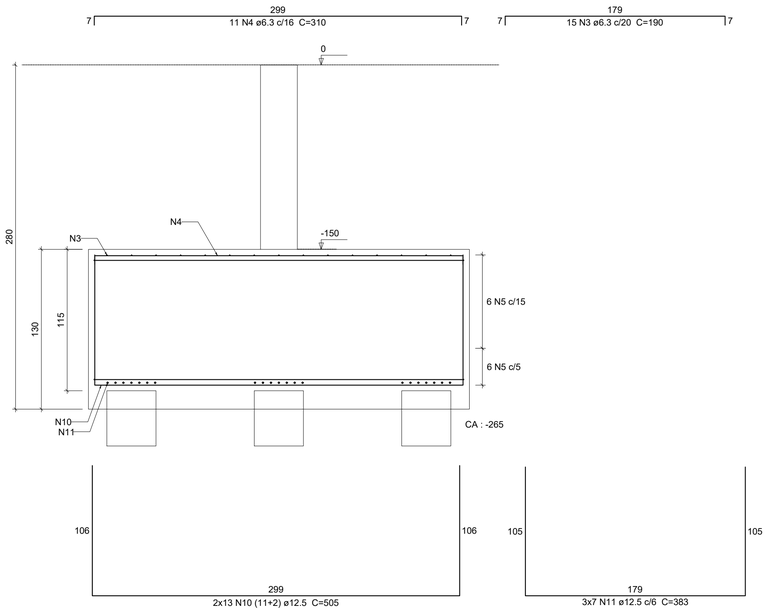
B20
6xC30

PLANTA
ESC 1:25



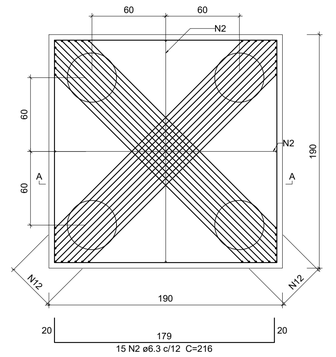


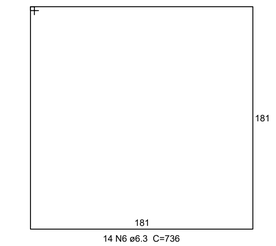
CORTE A-A
ESC 1:25



B7=B36
4xC30

PLANTA
ESC 1:25





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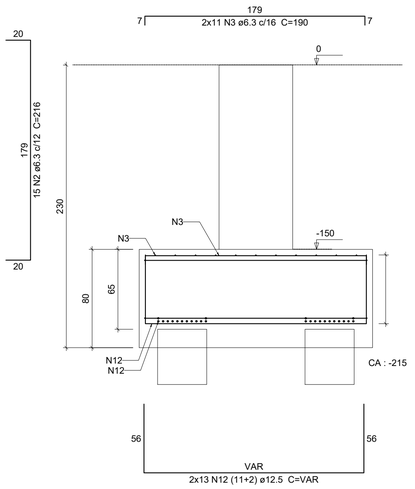
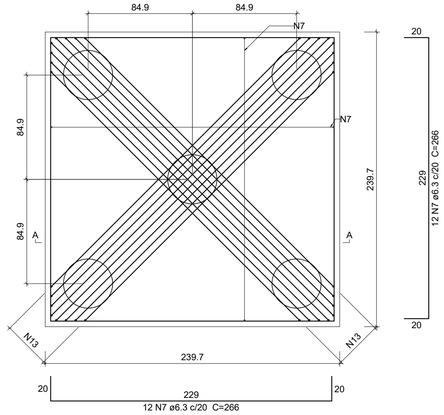
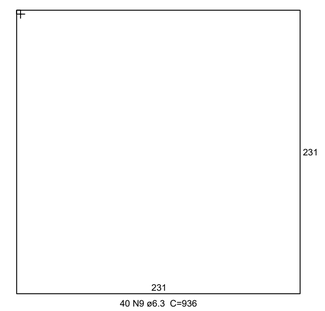


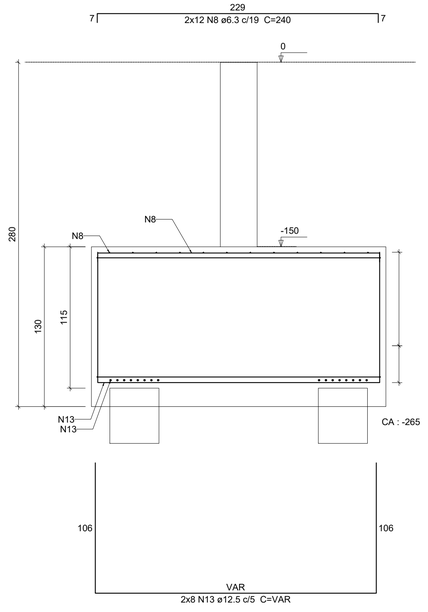
B19
5xC40

PLANTA
ESC 1:25



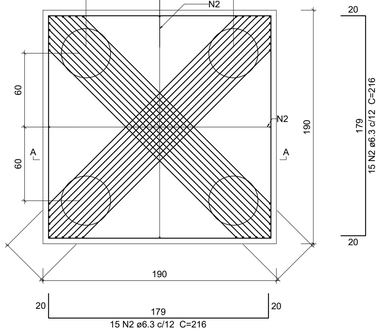


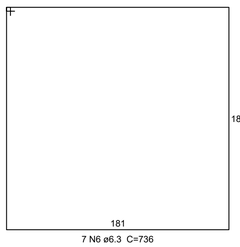
CORTE A-A
ESC 1:25



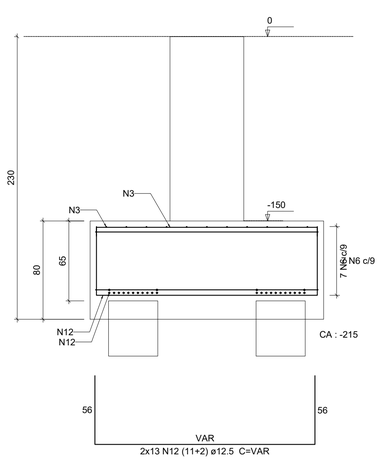
B57
4xC30

PLANTA
ESC 1:25





CORTE A-A
ESC 1:25



Relação do aço

2xB7 B19 B20

AÇO	N	DIAM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)
CA50	1	6.3	15	336	5040
	2	6.3	145	216	31320
	3	6.3	103	190	19570
	4	6.3	11	310	3410
	5	6.3	12	976	11712
	6	6.3	42	736	30912
	7	6.3	96	266	25536
	8	6.3	96	240	23040
	9	6.3	100	936	93600
	10	12.5	26	505	13130
	11	12.5	21	383	8043
	12	12.5	104	VAR	VAR
	13	12.5	64	VAR	VAR

Resumo do aço

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	6.3	2441.4	597.4
	12.5	786.6	757.7
PESO TOTAL (kg)			
CA50	1355.1		

Volume de concreto (C-40) = 20.54 m³
Área de forma = 37.62 m²

REVISÃO	DESCRIÇÃO	RESPONSÁVEL	DATA

STCA ENGENHARIA

PROJETO ESTRUTURAL

ASSUNTO: DETALHAMENTO DOS BLOCOS SOBRE ESTACAS

OBRA: IFRS CAMPUS ZONA NORTE - PORTO ALEGRE/RS

PROPRIETÁRIOS: Instituto Federal de Educação, Ciência e Tecnologia do Rio Grande do Sul

RESPONSÁVEL TÉCNICO
Vanderlei Augusto Segat
Engenheiro Civil
CREA-RS 73.831

DATA: Março/25
ESCALA: 1:25
DESENHO:
PRANCHA: C-02

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A1