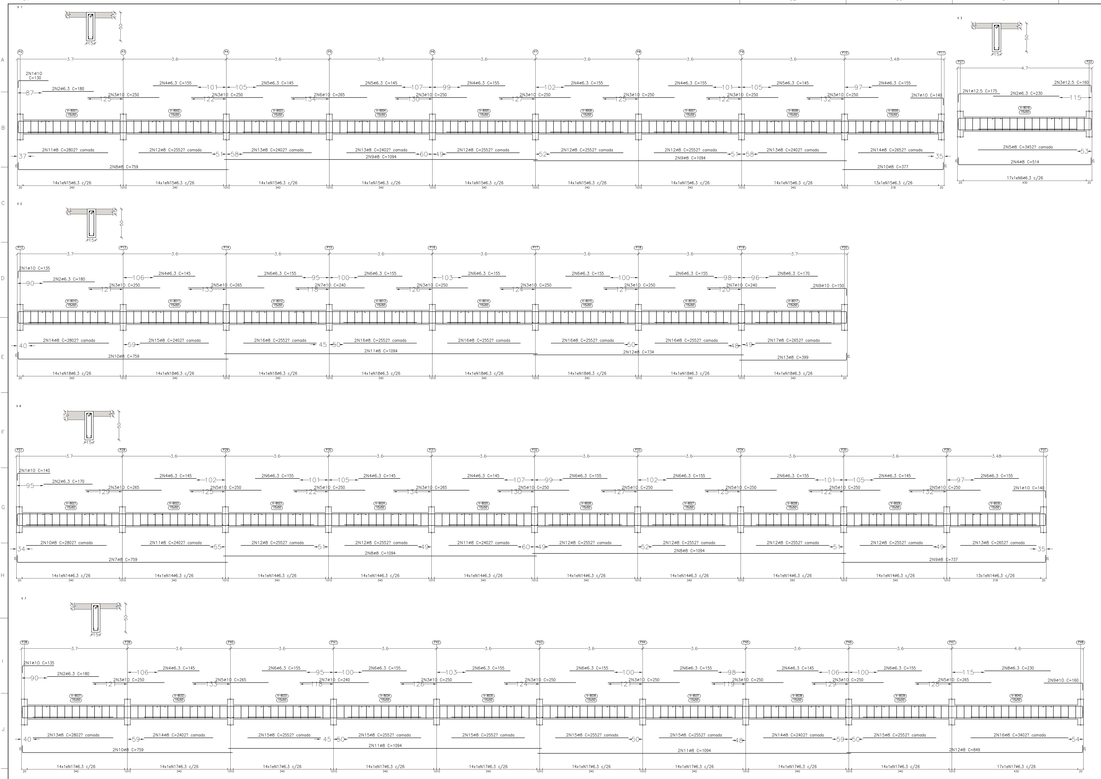
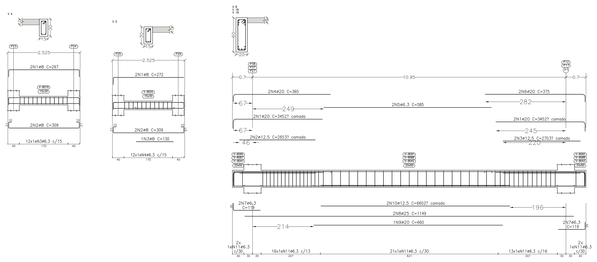
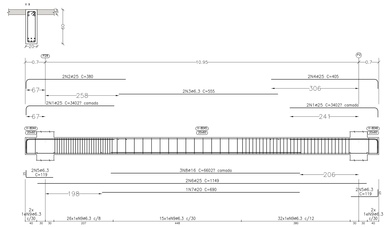
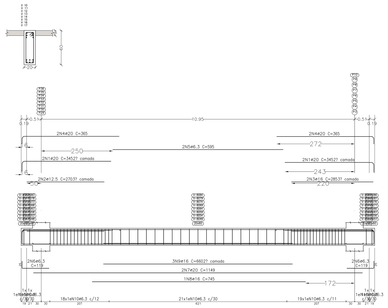
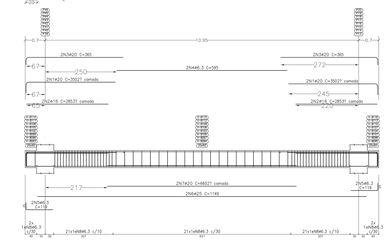
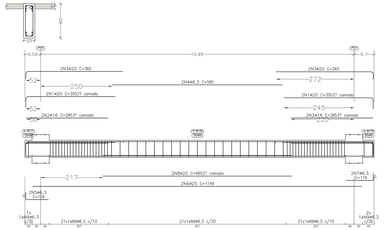


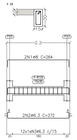


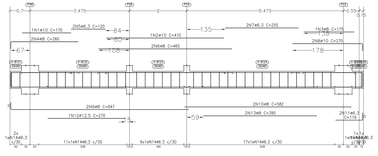






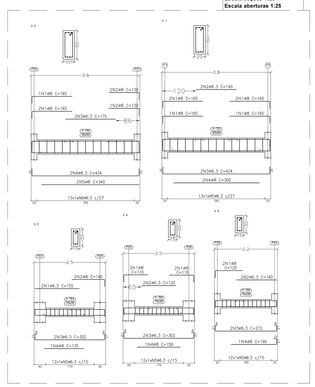






PAV TIPO
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50
Aço dos estribos: CA-60
Escala vigas 1:50
Escala seções 1:25
Escala aberturas 1:25

PAV TIPO - NIVEL INTERMEDIARIO
Desenho de vigas
Concreto: C25, em geral
Aço das barras: CA-50
Aço dos estribos: CA-60
Escala vigas 1:50
Escala seções 1:25
Escala aberturas 1:25



Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (m)	A-50 (kg)
V 30	1	ø10	1	170	170	170	1.0
	2	ø6.3	2	410	410	820	0.3
	3	ø8	1	170	170	170	0.7
	4	ø6.3	2	260	520	1040	2.1
	5	ø6.3	2	120	240	480	0.6
	6	ø8	2	465	930	1860	3.7
	7	ø6.3	2	255	510	1020	1.2
	8	ø10	4	270	540	2160	1.3
	9	ø8	2	647	1294	2588	5.1
	10	ø8	2	582	1164	2328	4.6
	11	ø6.3	2	119	238	476	0.6
	12	ø12.5	2	275	550	1100	2.6
	13	ø8	2	395	790	1580	3.1
	14	ø6.3	38	146	5548	11096	13.6
					Total > 10B:		49.2
					Total > 12B:		0.0
V 28	1	ø20	4	350	1400	5600	34.5
	2	ø16	4	285	1140	1824	18.0
	3	ø20	4	365	1460	5840	36.0
	4	ø6.3	2	595	1190	2380	2.9
	5	ø6.3	2	114	228	456	0.5
	6	ø25	2	1149	2298	4596	88.6
	7	ø6.3	2	119	238	476	0.6
	8	ø20	2	660	1320	2640	32.6
	9	ø6.3	66	146	9636	19272	23.6
					Total > 10B:		260.2
					Total > 12B:		0.0
V 15=V 17=V 22 V 13=V 14=V 19 V 18=V 21	1	ø20	4	345	1380	5520	34.0
	2	ø12.5	2	270	540	1080	5.2
	3	ø16	2	285	570	1140	9.0
	4	ø20	4	365	1460	5840	36.0
	5	ø6.3	2	595	1190	2380	2.9
	6	ø6.3	4	119	476	1904	2.3
	7	ø20	2	1149	2298	4596	56.7
	8	ø16	2	745	1490	2980	11.8
	9	ø16	3	660	1980	5940	37.3
	10	ø6.3	62	146	9052	18104	22.2
					Total > 10B:		257.1
					Total > 12B:		0.0
V 20=V 21=V 23 V 23=V 24=V 25 V 26=V 27	1	ø20	4	350	1400	5600	34.5
	2	ø16	4	285	1140	1824	18.0
	3	ø20	4	365	1460	5840	36.0
	4	ø6.3	2	595	1190	2380	2.9
	5	ø6.3	4	119	476	1904	2.3
	6	ø25	2	1149	2298	4596	88.6
	7	ø20	2	660	1320	2640	32.6
	8	ø6.3	61	146	8912	17824	21.9
					Total > 10B:		261.8
					Total > 12B:		0.0

Elemento	Pos.	Diam.	Q.	Esquema (cm)	Comp. (cm)	Total (m)	A-50 (kg)
V 1	1	ø10	2	130	260	520	0.3
	2	ø6.3	2	180	360	720	0.6
	3	ø10	14	250	3500	21000	12.9
	4	ø6.3	10	150	1500	3000	2.6
	5	ø6.3	6	145	870	1740	1.5
	6	ø10	2	280	560	1120	0.7
	7	ø10	2	140	280	560	0.3
	8	ø6.3	10	159	1590	3180	6.0
	9	ø8	4	1094	4376	17504	17.3
	10	ø8	2	377	754	1508	3.0
	11	ø6.3	2	280	560	1120	2.2
	12	ø8	8	255	2040	8160	8.1
	13	ø8	8	240	1920	7680	7.6
	14	ø8	2	265	530	1060	2.1
	15	ø6.3	126	116	14616	29232	26.5
					Total > 10B:	112.4	
					Total > 12B:	29.2	
V 28	1	ø20	4	350	1400	5600	34.5
	2	ø16	4	285	1140	1824	18.0
	3	ø20	4	365	1460	5840	36.0
	4	ø6.3	2	595	1190	2380	2.9
	5	ø6.3	2	104	208	416	0.5
	6	ø25	2	1149	2298	4596	88.6
	7	ø6.3	2	119	238	476	0.6
	8	ø20	2	660	1320	2640	32.6
	9	ø6.3	66	146	9636	19272	23.6
					Total > 10B:	260.2	
					Total > 12B:	0.0	
V 15=V 17=V 22 V 13=V 14=V 19 V 18=V 21	1	ø20	4	345	1380	5520	34.0
	2	ø12.5	2	270	540	1080	5.2
	3	ø16	2	285	570	1140	9.0
	4	ø20	4	365	1460	5840	36.0
	5	ø6.3	2	595	1190	2380	2.9
	6	ø6.3	4	119	476	1904	2.3
	7	ø20	2	1149	2298	4596	56.7
	8	ø16	2	745	1490	2980	11.8
	9	ø16	3	660	1980	5940	37.3
	10	ø6.3	62	146	9052	18104	22.2
					Total > 10B:	257.1	
					Total > 12B:	0.0	
V 20=V 21=V 23 V 23=V 24=V 25 V 26=V 27	1	ø20	4	350	1400	5600	34.5
	2	ø16	4	285	1140	1824	18.0
	3	ø20	4	365	1460	5840	36.0
	4	ø6.3	2	595	1190	2380	2.9
	5	ø6.3	4	119	476	1904	2.3
	6	ø25	2	1149	2298	4596	88.6
	7	ø20	2	660	1320	2640	32.6
	8	ø6.3	61	146	8912	17824	21.9
					Total > 10B:	261.8	
					Total > 12B:	0.0	
V 2	1	ø10	2	135	270	1.7	
	2	ø6.3	2	180	360	0.6	
	3	ø10	8	250	2000	12.3	
	4	ø6.3	6	145	870	0.7	
	5	ø10	2	265	530	3.3	
	6	ø6.3	10	150	1500	2.6	
	7	ø10	4	240	960	5.9	
	8	ø6.3	2	170	340	0.6	
	9	ø10	2	150	300	1.8	
	10	ø8	2	759	1518	4.6	
	11	ø8	2	1094	2188	6.6	
	12	ø8	2	734	1468	5.8	
	13	ø8	2	399	798	3.2	
	14	ø8	2	280	560	2.2	
	15	ø8	2	240	480	1.9	
	16	ø8	10	255	2550	10.1	
	17	ø8	2	265	530	2.1	
	18	ø6.3	112	116	12992	31.8	
					Total > 10B:	112.2	
					Total > 12B:	0.0	
V 3	1	ø12.5	2	175	350	3.4	
	2	ø6.3	2	230	460	1.1	
	3	ø12.5	2	160	320	3.1	
	4	ø8	2	514	1028	4.1	
	5	ø8	2	345	690	2.7	
	6	ø6.3	17	116	1972	4.8	
					Total > 10B:	21.1	
					Total > 12B:	0.0	
V 4	1	ø8	2	297	594	2.3	
	2	ø8	2	309	618	2.4	
	3	ø6.3	12	76	912	2.2	
					Total > 10B:	7.9	
					Total > 12B:	0.0	
V 5	1	ø8	2	272	544	2.1	
	2	ø8	2	309	618	2.4	
	3	ø6.3	2	130	130	0.5	
	4	ø6.3	12	76	912	2.2	
					Total > 10B:	7.2	
					Total > 12B:	0.0	
V 6	1	ø10	4	140	560	3.5	
	2	ø6.3	2	170	340	0.8	
	3	ø10	4	265	1060	6.5	
	4	ø6.3	6	145	870	2.8	
	5	ø10	14	250	3500	21.6	
	6	ø6.3	10	150	1500	3.6	
	7	ø8	2	759	1518	4.6	
	8	ø8	4	1094	4376	17.3	
	9	ø8	2	737	1474	5.8	
	10	ø8	2	280	560	2.2	
	11	ø8	4	240	960	3.8	
	12	ø8	12	255	3060	12.1	
	13	ø8	2	265	530	2.1	
	14	ø6.3	136	116	15104	39.5	
					Total > 10B:	140.8	
					Total > 12B:	0.0	
V 7	1	ø10	2	135	270	1.7	
	2	ø6.3	2	180	360	0.9	
	3	ø10	12	250	3000	18.5	
	4	ø6.3	6	145	870	1.4	
	5	ø10	4	265	1060	6.5	
	6	ø6.3	12	155	1860	4.6	
	7	ø10	2	240	480	3.0	
	8	ø6.3	2	230	460	1.1	
	9	ø10	2	160	320	2.0	
	10	ø8	2	759	1518	4.6	
	11	ø8	4	1094	4376	17.3	
	12	ø8	2	849	1698	6.7	
	13	ø8	2	280	560	2.2	
	14	ø8	4	240	960	3.8	
	15	ø8	12	255	3060	12.1	
	16	ø8	2	342	684	2.7	
	17	ø6.3	145	116	16820	42.6	
					Total > 10B:	144.2	
					Total > 12B:	0.0	
V 8=V 18=V 19	1	ø20	4	345	1380	34.0	
	2	ø12.5	2	265	530	5.1	
	3	ø12.5	2	270	540	5.2	
	4	ø20	2	360	720	18.0	
	5	ø6.3	2	585	1170	2.9	
	6	ø20	2	375	750	18.5	
	7	ø6.3	4	119	476	1.2	
	8	ø25	2	1149	2298	88.6	
	9	ø20	1	660	660	16.3	
	10	ø12.5	2	660	1320	12.7	
	11	ø6.3	54	146	7884	19.3	
					Total > 10B:	244.0	
					Total > 12B:	170.0	
V 9	1	ø25	4	340	1360	52.4	
	2	ø25	2	380	760	29.3	
	3	ø6.3	2	555	1110	2.7	
	4	ø25	2	400	800	31.2	
	5	ø6.3	4	119	476	1.2	
	6	ø25	2	1149	2298	88.6	
	7	ø20	1	660	660	16.3	
	8	ø16	3	660	1980	37.3	
	9	ø6.3	77	146	11242	27.5	
					Total > 10B:	309.3	
					Total > 12B:	0.0	
V 1	1	ø8	6	165	990	3.9	
	2	ø6.3	2	140	280	0.1	
	3	ø6.3	2	424	848	2.1	
	4	ø8	2	300	600	2.4	
	5	ø6.3	13	126	1638	4.0	
					Total > 10B:	14.4	
					Total > 12B:	0.0	
V 5	1	ø8	2	120	240	0.9	
	2	ø6.3	2	140	280	0.7	
	3	ø6.3	2	272	544	1.3	
	4	ø8	1	190	190	0.8	
	5	ø6.3	12	76	912	2.2	
					Total > 10B:	6.0	
					Total > 12B:	0.0	
V 2	1	ø8	2	165	495	2.0	
	2	ø8	2	130	390	1.5	
	3	ø6.3	2	175	350	0.9	
	4	ø6.3	2	424	848	2.1	
	5	ø8	2	340	680	2.7	
	6	ø6.3	13	126	1638	4.0	
					Total > 10B:	14.3	
					Total > 12B:	0.0	
V 3	1	ø6.3	2	155	310	0.8	
	2	ø6.3	2	140	280	0.7	
	3	ø6.3	2	302	604	1.5	
	4	ø8	1	130	130	0.5	
	5	ø6.3	12	76	912	2.2	
					Total > 10B:	5.7	
					Total > 12B:	0.0	
V 4	1	ø8	6	110	440	1.7	
	2	ø6.3	2	140	280	0.7	
	3	ø6.3	2	302	604	1.5	
	4	ø8	1	130	130	0.5	
	5	ø6.3	12	76	912	2.2	
					Total > 10B:	7.3	
					Total > 12B:	0.0	
V 29	1	ø8	2	264	528	2.1	
	2	ø6.3	2	272	544	1.3	
	3	ø6.3	12	76	912	2.2	
					Total > 10B:	5.6	
					Total > 12B:	0.0	

ø6.3:	876.1
ø8:	284.3
ø10:	135.1
ø12.5:	20.6
ø16:	411.0
ø20:	2441.0
ø25:	1149.2
Total:	5317.3

Formas: 428.84 m2
Concreto C-25: 44.44 m3
OBS: Quantidades referentes a um pavimento apenas.

Configuração de Perfis	
Linear em 1000:1	
Área em 1:1	
Espessura e Nº Pontos de Grau/Grau/Ø	
Um acima de 360 graus	
Raio / Segmento	
1	0.25
2	0.50
3	0.75
4	1.00
5	1.25
6	1.50

Nº	Comentário	Data	Autor
00	EMISSÃO INICIAL	20/04/20	Marcelo

UNIVERSIDADE FEDERAL DO AMAZONAS — Prefeitura da UFAM

CAMPUS: CAMPUS UNIVERSITÁRIO – SETOR NORTE

USP: FES – FACULDADE DE ESTUDOS SOCIAIS

TÍTULO: PROJETO DE ESTRUTURA EM CONCRETO ARMADO
DETALHES DAS VIGAS PAVIMENTO TIPO (2, 3 e 4)

ARQUIVO: 01-EC-042.DWG

DATA	DESENHO	ESCALA	CÓDIGO
20/04/20	AM20200208122	INDICADA	01-EC-042.DWG

DESENHISTA: Marcelo Monteiro, Sherron
Eng. Civil — CREA: 111.929-D - AM

01.EC.042

NOTAS GERAIS
Concreto a usar: fck = 25,0 MPa
Medidas expressas em centímetros. Escalas indicadas no desenho.
Não tomar medidas do desenho com régua (escala).
Observar comprimentos mínimos de traspasse (emendas e esperas) exigidos.
Obedecer cobrimentos das armaduras segundo as normas da ABNT e o projeto.
Dispor armaduras de pele (costela) quando se indicar no desenho da ferragem.
Jamais alterar a distribuição das maduras de pilares nas respectivas seções.
Projeto de fundações conforme RELATÓRIO DE SONDAGEM N. 145.SO.2009, fornecido por PROSONDA FUNDAÇÕES LTDA, em 24/11/2009.
No caso de dúvidas, ou na suspeita de engano no desenho, contatar o calculista.