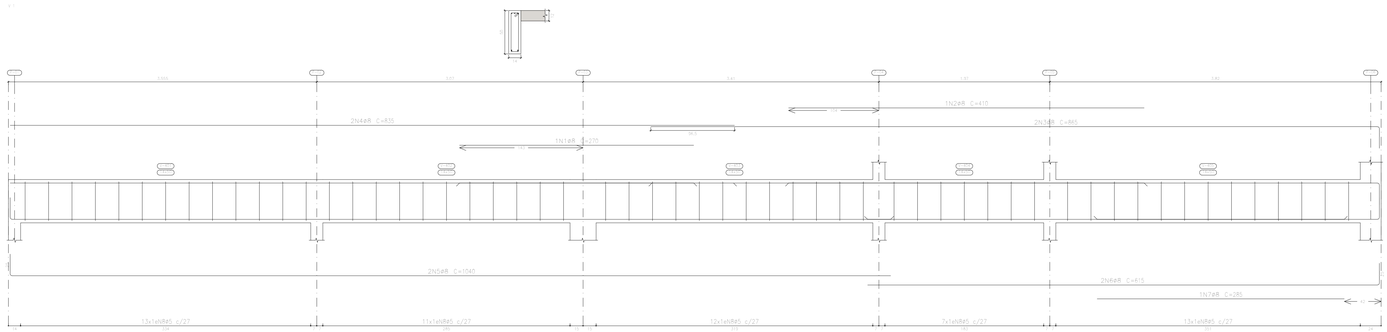
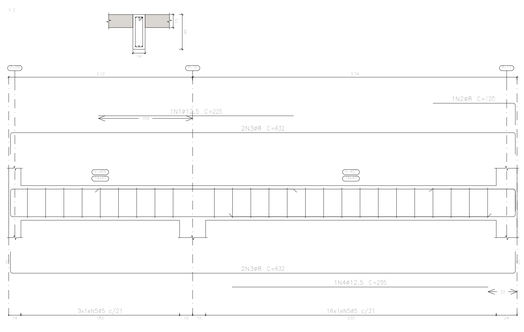
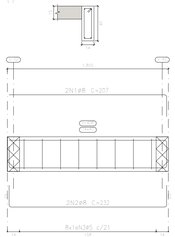
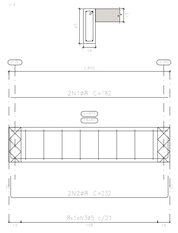
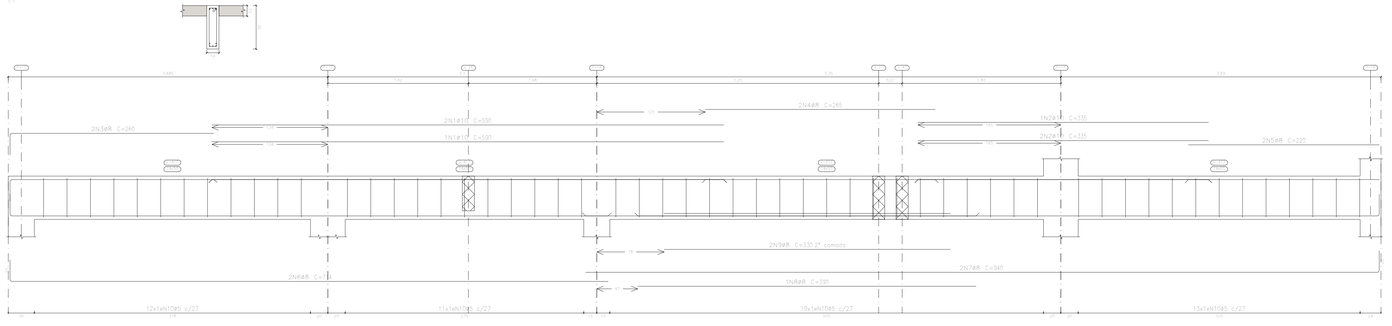


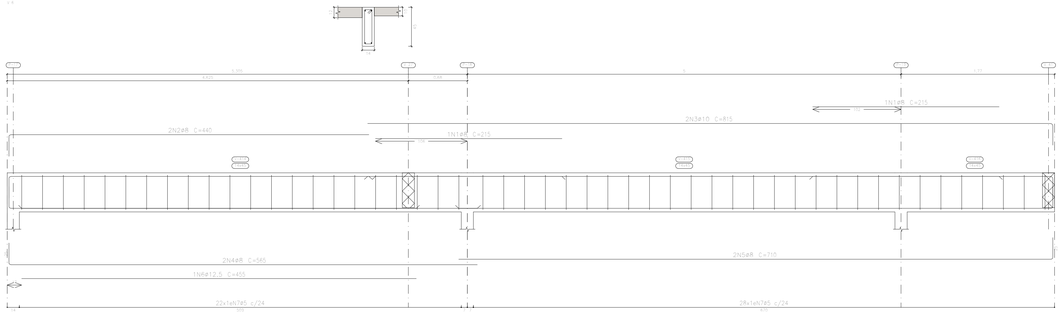


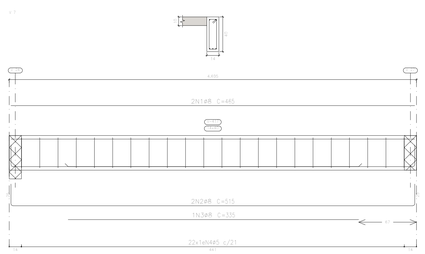


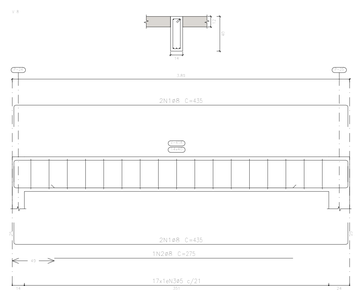


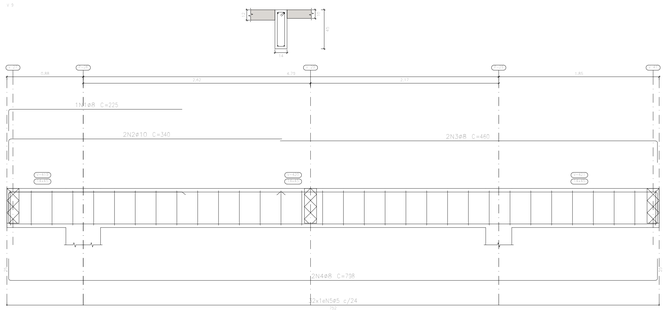


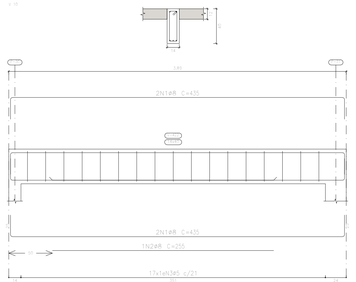
Cobertura
Desenho de vigas
Concretos: C25, con.desfav.
Aço das barras: CA-50 e CA-60
Aço dos estribos: CA-50 e CA-60
Escala vigas 1:25
Escala seções 1:25
Escala aberturas 1:25

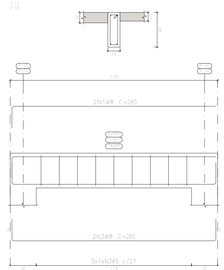


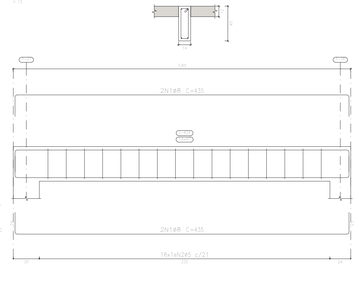


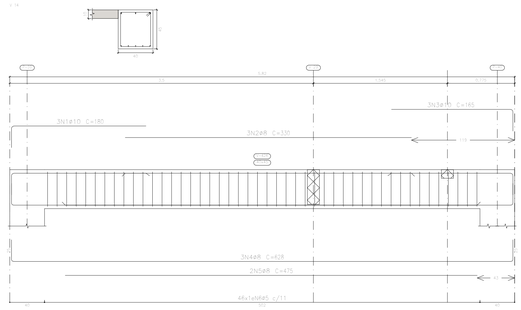


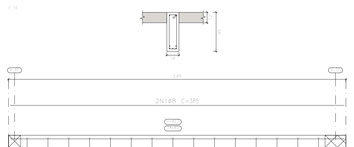


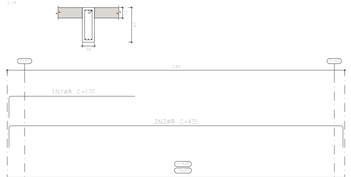


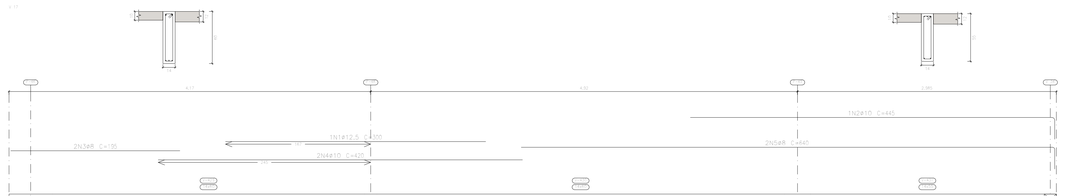












Elemento	Pos.	Diam.	Q.	Esquema	Comp. (cm)	Total (cm)	CA-50 (kg)	CA-60 (kg)
V.1	1	ø8	4	270	270	1.1		
	2	ø8	4	410	410	1.6		
	3	ø8	4	865	1730	6.8		
	4	ø8	4	835	1670	6.6		
	5	ø8	4	1040	2080	8.2		
	6	ø8	4	615	1230	4.9		
	7	ø8	4	285	285	1.1		
	8	ø5	56	116	6496		10.2	
					Total+10%:		33.3	41.2
V.2	1	ø12.5	1	225	225	2.2		
	2	ø8	1	120	120	0.5		
	3	ø8	4	632	2528	10.0		
	4	ø12.5	1	295	295	2.8		
	5	ø5	25	96	2400		3.8	
					Total+10%:		17.3	4.2
V.3	1	ø8	2	207	414	1.6		
	2	ø8	2	232	464	1.8		
	3	ø5	A	96	768		1.2	
					Total+10%:		3.3	1.3
V.4	1	ø8	2	182	364	1.4		
	2	ø8	2	232	464	1.8		
	3	ø5	A	96	768		1.2	
					Total+10%:		3.5	1.3
V.5	1	ø10	4	590	1180	10.9		
	2	ø10	2	535	1070	9.2		
	3	ø8	2	260	520	2.1		
	4	ø8	2	265	530	2.1		
	5	ø8	2	220	440	1.7		
	6	ø8	2	714	1428	5.6		
	7	ø8	2	940	1880	7.4		
	8	ø8	2	390	390	1.5		
	9	ø8	2	530	890	2.8		
	10	ø5	56	116	6380		10.0	
					Total+10%:		44.1	11.8
V.6	1	ø8	2	218	436	1.7		
	2	ø8	2	440	880	3.5		
	3	ø10	2	515	1030	8.1		
	4	ø8	2	582	1164	4.5		
	5	ø8	2	370	1420	5.6		
	6	ø12.5	1	355	405	4.4		
	7	ø5	56	106	5300		8.3	
					Total+10%:		32.7	9.1
V.7	1	ø8	2	466	932	3.7		
	2	ø8	2	515	1030	4.1		
	3	ø8	2	335	670	1.3		
	4	ø5	22	96	2112		3.3	
					Total+10%:		10.0	3.6
V.8	1	ø8	4	435	1740	6.9		
	2	ø8	1	275	275	1.1		
	3	ø5	11	96	1632		2.6	
					Total+10%:		8.8	2.9
V.9	1	ø8	4	225	225	0.9		
	2	ø10	2	540	890	4.2		
	3	ø8	2	680	520	3.6		
	4	ø8	4	398	1596	6.3		
	5	ø5	33	106	5390		5.3	
					Total+10%:		16.5	5.8
V.10	1	ø8	4	435	1740	6.9		
	2	ø8	1	255	255	1.0		
	3	ø5	11	96	1632		2.6	
					Total+10%:		8.7	2.9
V.11=V.13	1	ø8	4	280	520	2.1		
	2	ø8	2	285	570	2.3		
	3	ø5	9	96	864		1.4	
					Total+10%:	(x2)	4.8 9.6	1.5 3.0
V.12	1	ø8	4	435	1740	6.9		
	2	ø5	16	96	1536		2.4	
					Total+10%:		7.6	2.6
V.14	1	ø10	3	180	540	3.3		
	2	ø8	2	330	660	2.6		
	3	ø10	2	165	330	2.7		
	4	ø8	4	628	1884	7.4		
	5	ø8	2	475	950	3.8		
	6	ø5	44	158	7268		11.4	
					Total+10%:		23.7	12.5
V.15	1	ø8	4	385	770	3.0		
	2	ø8	2	435	870	3.4		
	3	ø8	2	410	410	1.6		
	4	ø8	2	115	630	2.5		
	5	ø5	11	106	1590		2.5	
					Total+10%:		11.6	2.8
V.16	1	ø8	4	170	1170	6.9		
	2	ø8	2	435	1740	6.9		
	3	ø8	2	260	260	1.0		
	4	ø5	11	96	1536		2.4	
					Total+10%:		15.5	2.8
V.17	1	ø12.5	1	300	300	2.9		
	2	ø10	2	445	445	2.7		
	3	ø8	2	195	390	1.5		
	4	ø10	2	420	840	5.2		
	5	ø8	2	440	1280	5.1		
	6	ø8	2	945	1890	7.5		
	7	ø8	2	334	668	2.6		
	8	ø8	2	255	255	1.0		
	9	ø10	2	355	355	2.2		
	10	ø5	28	136	3808		6.0	
	11	ø5	5	126	1134		1.8	
					Total+10%:		33.8	8.6
					ø5:		7.0	85.4
					ø8:		208.1	0.0
					ø10:		52.5	0.0
					ø12.5:		13.6	0.0
					Total:		274.2	85.4

PROJETO ESTRUTURAL

ENG. CIVIL VICTOR EMANUEL SANTOS
Av. Cesário Alvim, n°139, Centro, Serra Azul de Minas - MG
CONSTRUTORA TOTVALE CONSTRUÇÕES E COMÉRCIO LTDA
CNPJ 23.236.832/0001-70 - Rua Adelzita Francisco Melo, 52, Centro, Casa de Magistrado de Minas/MG
Tel.: 38 3539 3068 - Email: construtivale@outlook.com

VICTOR SANTOS
Engenharia de Projetos

CONTEM:
Vigas cobertura

FOLHA
21/24

OBRA:
Sede Administrativa do Município de Serra Azul de Minas – MG
Avenida Geraldo Gomes de Brito, N 94, Centro, Serra Azul de Minas–MG CEP: 39.165–000