

34

2 N45 ø12.5 C=1198  
1167

1 N44 ø12.5 C=295 (2c)  
120

2 N46 ø12.5 C=275  
86 244

650

r A

707.5

V6 V5 450

700

47 N1 c/15

435

29 N1 c/15

165

11 N1 c/15

172.5

V4 V3

2 N9 ø10.0 C=1159

174

2 N10 ø10.0 C=182

10

**SEÇÃO A-A**  
ESC 1:25

**ESPERA P28**  
ESC 1:25

2 N18 ø10.0 C=359  
327  
1 N17 ø10.0 C=165  
34  
70  
650  
2 N3 ø8.0 C=278  
Espera P28  
V4  
V3  
L A  
V2  
P3  
V30  
555  
40  
70  
540  
36 N1 c/15  
5N1 c/15  
2 N15 ø10.0 C=659  
20  
75  
40  
15  
41 N1 ø5.0 C=97  
85  
37  
25  
14  
9  
7 N47 ø12.5 C=107  
3 N2 ø5.0 c/15 C=56

[illegible]

2 N31 ø10.0 C=188

30

129

650

3d

Espera P34

P21

LA

V17

120

120

8 N1 ø5.0 C=97

129

10

2 N30 ø10.0 C=137

40

15

9

34

8 N1 ø5.0 C=97

4 N1 ø5.0 C=97

76

4 N14 ø10.0 C=69

37

25

9

14

4 N2 ø5.0 c/12 C=56

2 N40  $\phi$ 10.0 C=88

20 70

2 N6  $\phi$ 8.0 C=305

650

2 N41  $\phi$ 10.0 C=280

150

2 N7  $\phi$ 8.0 C=240

70 20

2 N40  $\phi$ 10.0 C=88

SEÇÃO A-A

ESC 1:25

40

34

9

59 N1  $\phi$ 5.0 C=97

15

V11

487.5

V23

442.5

V17

465

31 N1 c/15

420

28 N1 c/15

2 N39  $\phi$ 10.0 C=924

Technical drawing of a reinforced concrete slab (L.A.) showing dimensions and reinforcement details.

**Dimensions (m):**

- Overall width: 494
- Central section width: 390
- Overall length: 650
- Section width: 34
- Section height: 40

**Reinforcement Details:**

- 2 N13 ø10.0 C=557
- 1 N12 ø10.0 C=210
- 31 N1 ø5.0 C=97
- 6 N1 ø10.0 C=99
- 2 N11 ø10.0 C=502
- 4 N2 ø5.0 C=12 C=12

**Labels:**

- Espera P29
- V3
- L A
- P2
- V30

Technical drawing of a reinforced concrete slab (L.A.) showing longitudinal and cross-sectional views.

**Longitudinal View:**

- Top reinforcement: 2 N21  $\phi$ 10.0 C=1200
- Bottom reinforcement: 2 N22  $\phi$ 10.0 C=605
- Internal reinforcement: 2 N19  $\phi$ 10.0 C=944, 2 N20  $\phi$ 10.0 C=848
- Section markers: P24, P21, P18, P15, P12, V5, V4
- Dimensions: 650, 48, 587, 40, 15, 40, 105, 34, 9, 105 N1  $\phi$ 5.0 C=97

**Cross-sectional View:**

- Slab thickness: 40 cm
- Width: 105 cm
- Reinforcement bar diameter: 9 mm
- Spacing: 5.0 cm

Technical drawing of a reinforced concrete beam (V6) showing its cross-section and longitudinal reinforcement details. The beam has a total length of 1124 cm. The cross-section is rectangular with a width of 34 cm and a height of 80 cm. The longitudinal reinforcement consists of 2 N29 bars at the top (C=1187) and 2 N27 bars at the bottom (C=1132). The beam is divided into several segments with different reinforcement configurations: 150 cm (10 N1 c/15), 300 cm (20 N1 c/15), 300 cm (20 N1 c/15), 250 cm (17 N1 c/15), and 70 cm (5 N1 c/15). The beam is supported by V30 columns. The drawing includes a section line A-A and a scale of 1:25.

**SEÇÃO A-A**

ESC 1:25

2 N36 ø10.0 C=188  
129  
1 N35 ø10.0 C=150  
34

Espera P32

P15 A V17

120 129 10

2 N30 ø10.0 C=137

8 N1 e5.0 C=97

9 34

**ESPERA P32**

ESC 1:25

4 N14 ø10.0 C=99  
76  
37  
25

4 N2 ø5.0 c/12 C=57

14 9

2 N38  $\phi 10.0$  C=125

34 84 12

650 12 84 512

L A P23

70 5N1 15

5N1 + 15

2 N37  $\phi 10.0$  C=84

ESC 1:20

34 34 84

650 12 84 512

L A P23

70 5N1 15

5N1 + 15

SEÇÃO A-A  
ESC 1:25

2 N42 ø10.0 C=88  
20 70  
2 N8 ø8.0 C=300  
650  
2 N43 ø10.0 C=713  
695  
20  
V11 462.5 L A V13 265 V15 322.5 V18  
440 250 300  
30 N1 ø15 17 N1 ø15 20 N1 ø15  
2 N42 ø10.0 C=1044  
40 34  
15 9  
67 N1 ø5.0 C=97

RELAÇÃO DO AÇO						
V12	V13	V15				
V16	V17	V18				
V19	V20	V21				
V23	V25	V30				
ÇO	N	D/AM (mm)	QUANT	C.UNIT (cm)	C.TOTAL (cm)	
CA60	1	5,0	599	97	58103	
CA50	2	5,0	18	55	990	
	3	8,0	2	278	556	
	4	8,0	2	488	488	
	5	8,0	2	360	510	
	6	8,0	2	205	610	
	7	8,0	2	240	480	
	8	8,0	2	350	610	
	9	10,0	2	1159	2318	
	10	10,0	2	182	364	
	11	10,0	2	502	1004	
	12	10,0	1	210	210	
	13	10,0	1	557	1114	
	14	10,0	14	99	1386	
	15	10,0	2	659	1318	
	16	10,0	2	83	186	
	17	10,0	1	165	165	
	18	10,0	2	359	718	
	19	10,0	2	944	1888	
20	10,0	2	848	1696		
21	10,0	2	1200	2400		
22	10,0	2	695	1390		
23	10,0	2	1941	3882		
24	10,0	2	308	726		
25	10,0	2	1049	2098		
26	10,0	2	133	266		
27	10,0	2	1132	2264		
28	10,0	1	155	155		
29	10,0	1	1187	2374		
30	10,0	2	47	94		
31	10,0	2	188	376		
32	10,0	2	469	938		
33	10,0	2	143	286		
34	10,0	2	113	226		
35	10,0	1	150	150		
36	10,0	2	188	376		
37	10,0	2	144	288		
38	10,0	2	125	250		
39	10,0	2	920	1840		
40	10,0	6	28	528		
41	10,0	2	284	568		
42	10,0	2	713	1426		
43	12,5	1	295	298		
44	12,5	2	1198	2396		
45	12,5	2	278	556		
46	12,5	2	1198	2396		
47	12,5	14	107	1498		

AÇO	DIAM (mm)	C.TOTAL (m)	PESO (kg)
CA50	8.0	32.6	12,78
	10.0	357.8	218,43
	12.5	47.4	55,18
CA60	5.0	591.1	90,18

Volume de concreto (C-30) = 5.72 m<sup>3</sup>  
Área de forma = 90.63 m<sup>2</sup>

Administração 2021 / 2024

12/13

## ESTRUTURAL

REFORMA E AMPLIAÇÃO CMEI NONA LUIZA

ÁREA

Área da edificação Existente:	755,65 m²
Área de Reforma:	244,61 m²
Área a Ampliar:	228,80 m²
Área Total:	984,45 m²

SETEMBRO / 2021

DETALHE VIGAS COBERTURA

LOTE	QUADRA
5/6	01

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ESCALA		

RUA PAULO ANTONIO DE GODO  
BAIRRO DA LUZ

ESCALA INDICADA

MUNICIPALITY

ESTADO  
BARANÁ