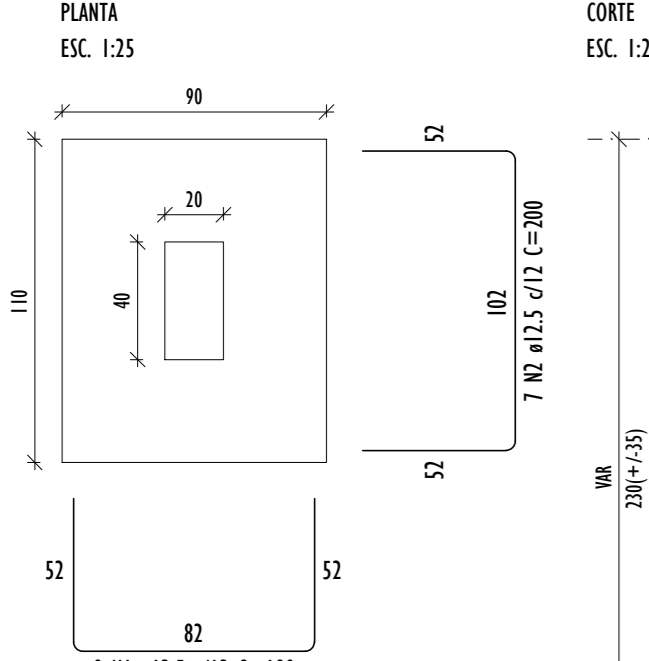
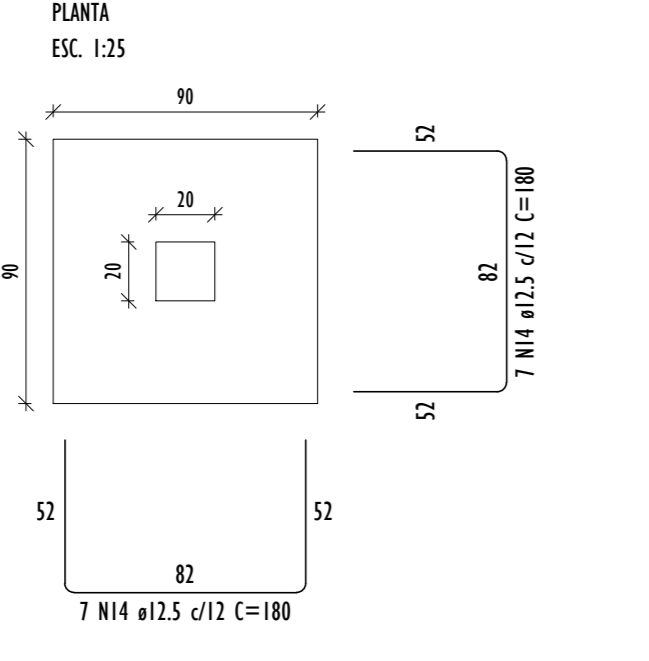


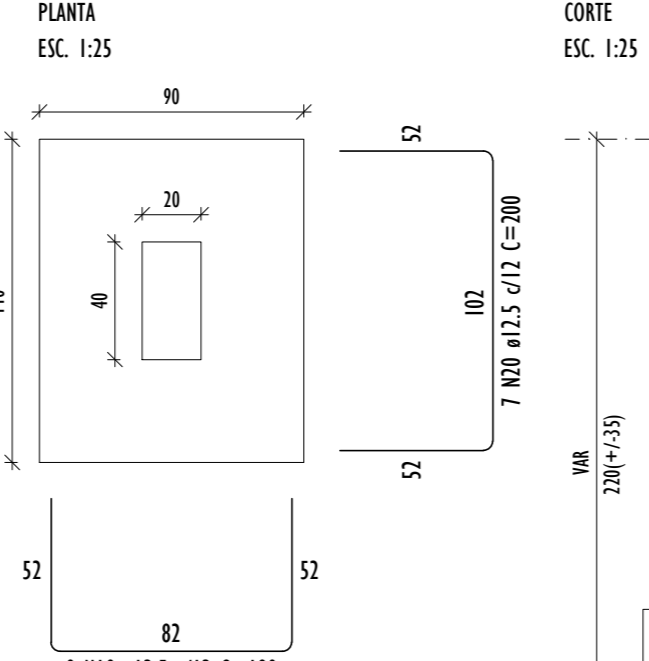
S1=S3=S48=S49



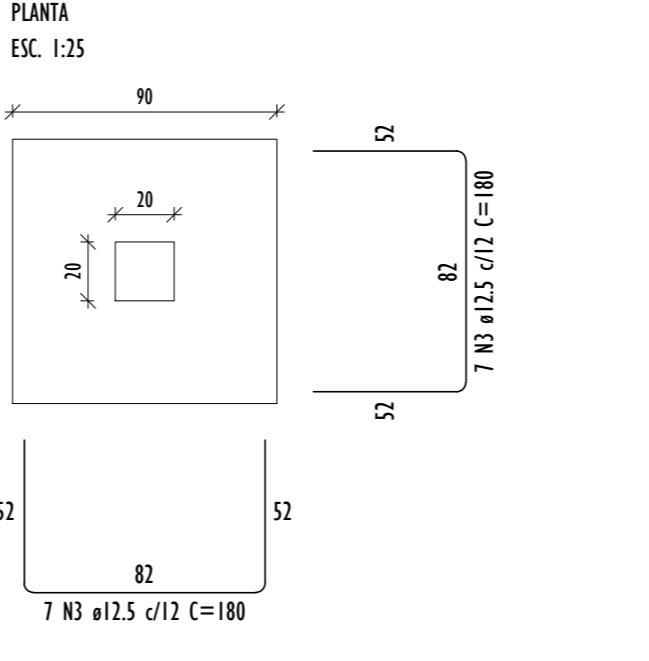
S2=S4=S19=S24=S27=S31=S50=S52



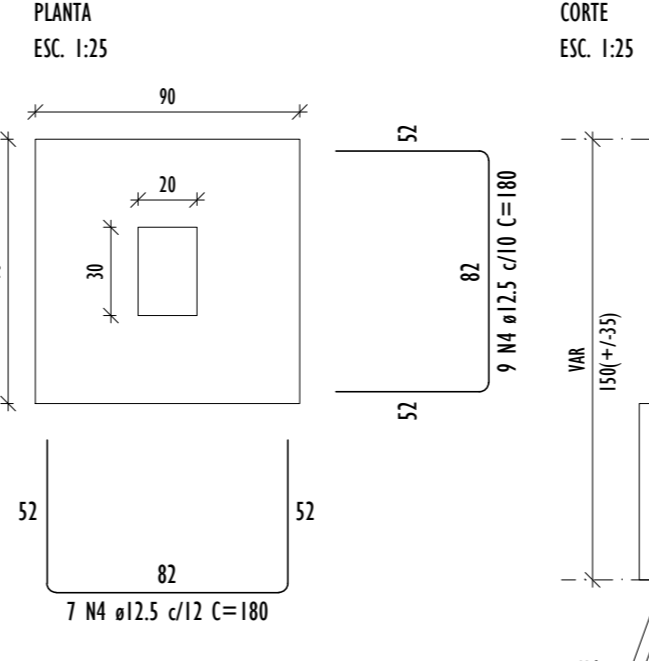
S5=S7=S23=S32=S51=S61



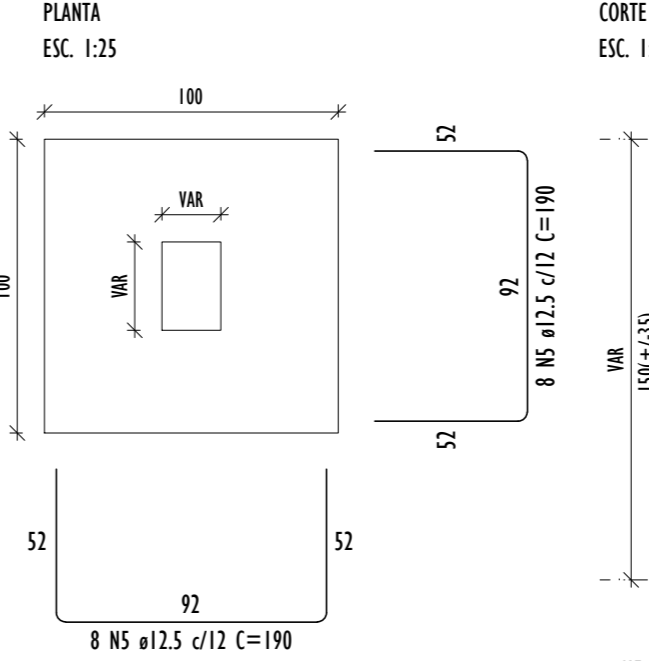
S6=S10=S25=S30=S35=S45=S62=S65



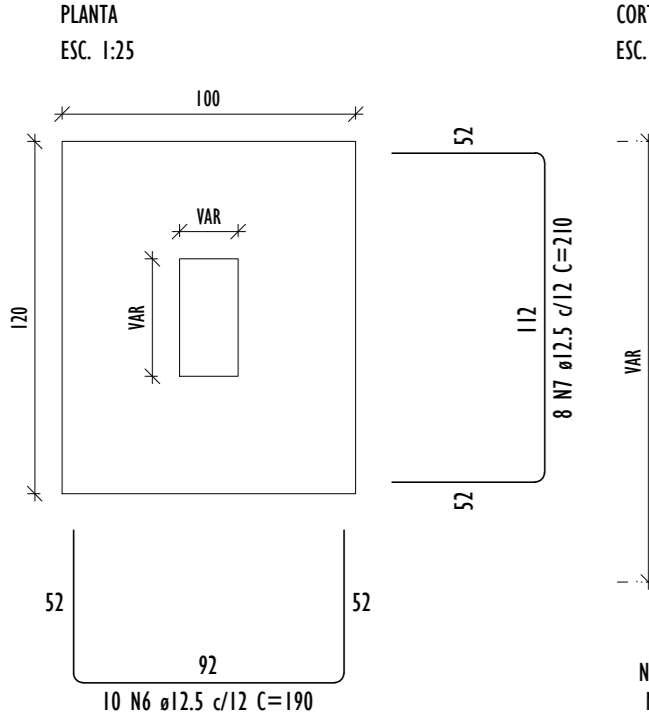
S11=S53=S68



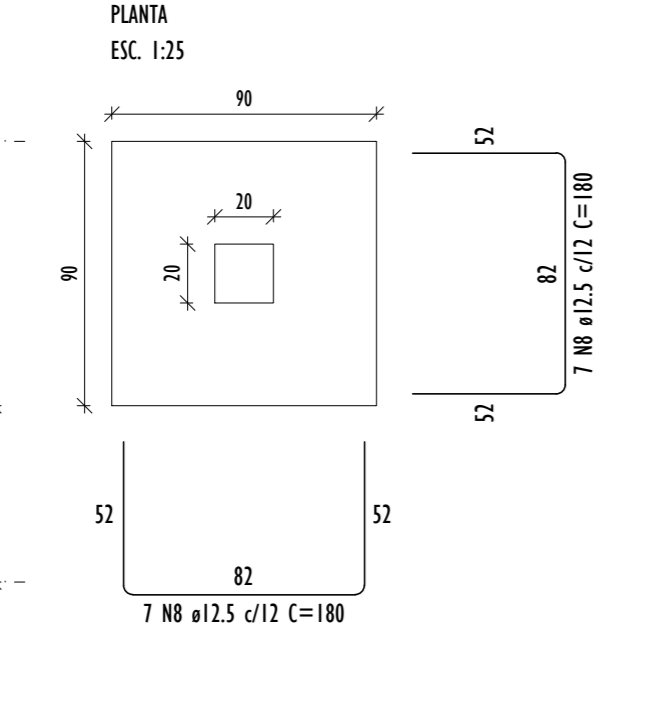
S12=S38=S56=S58=S59



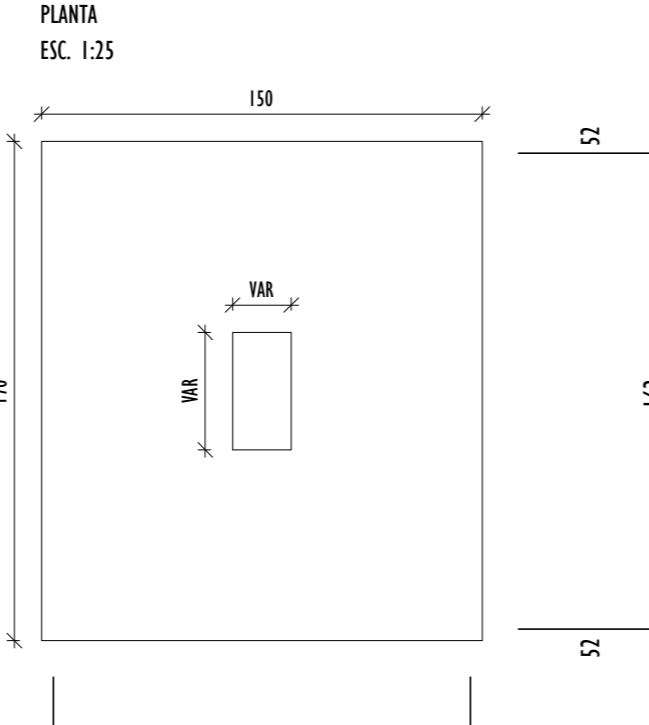
S13=S15=S20=S36=S67



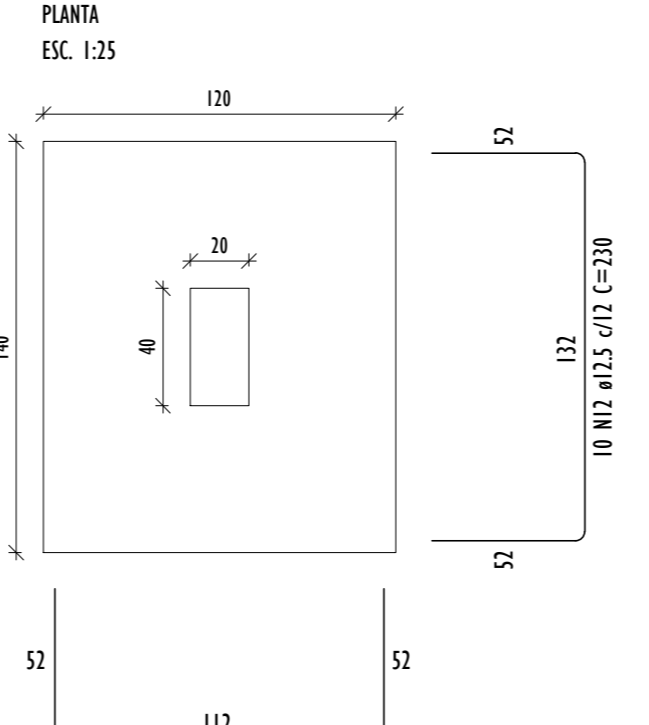
S14=S54=S55=S57=S70=S71=S72=S73=S74



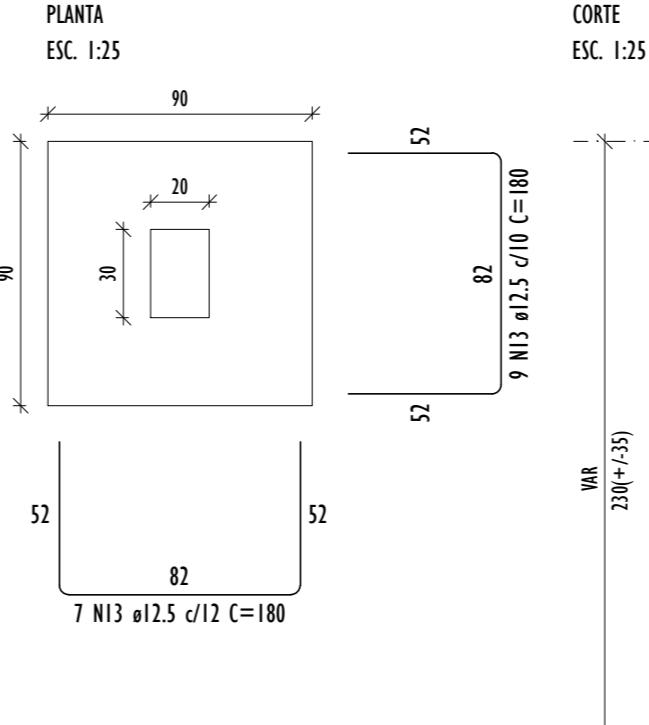
S16=S34=S47=S66



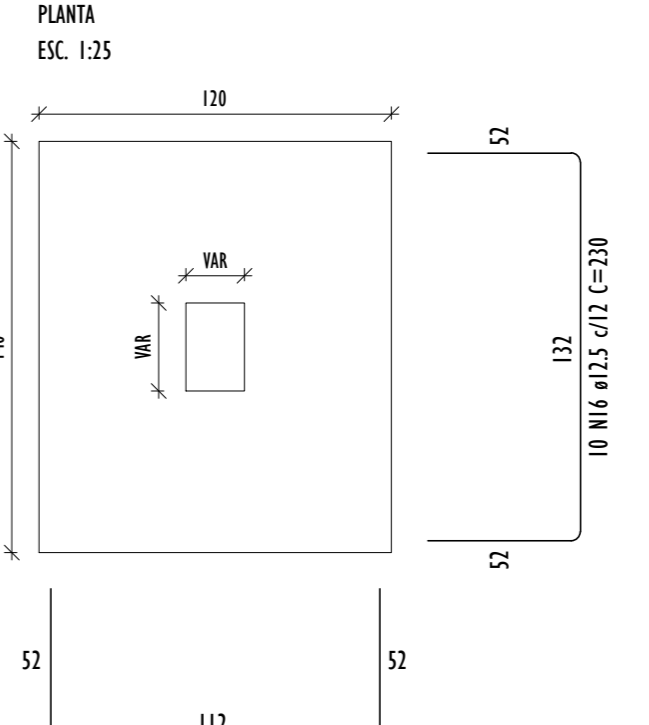
S17=S33



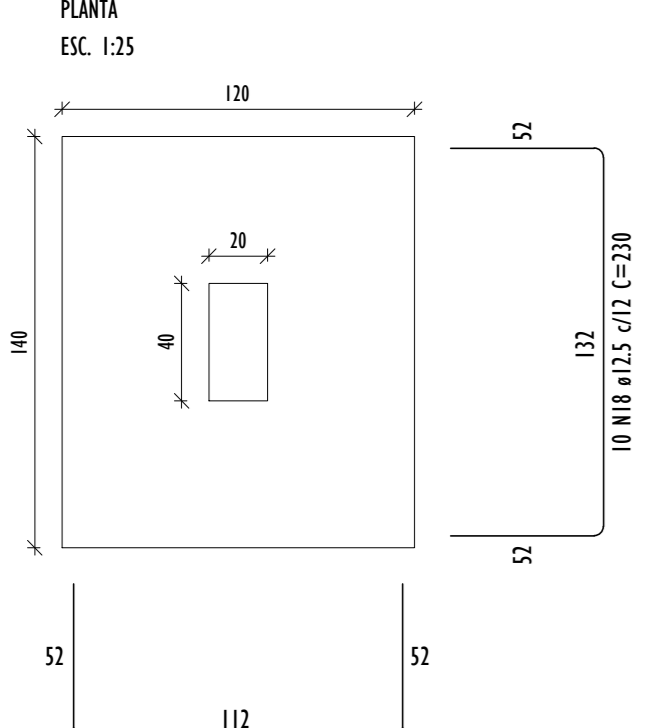
S18=S26



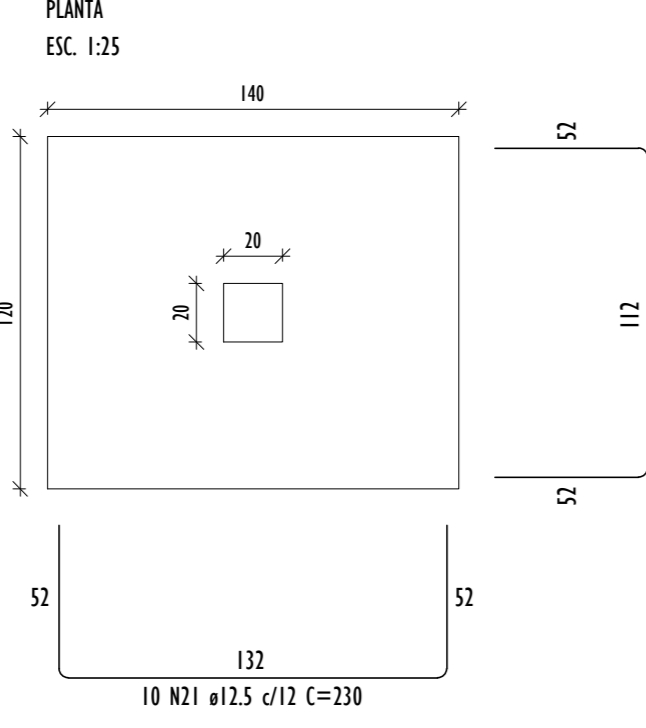
S21=S37=S39=S42



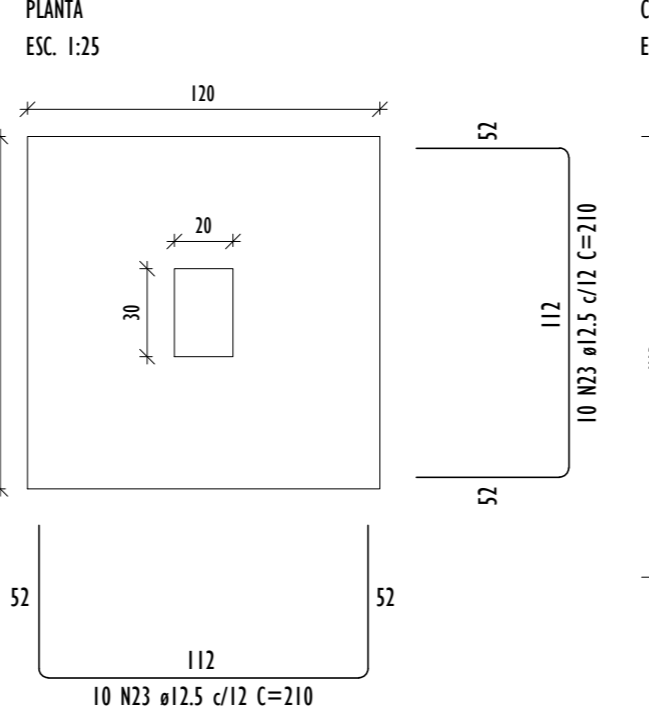
S22



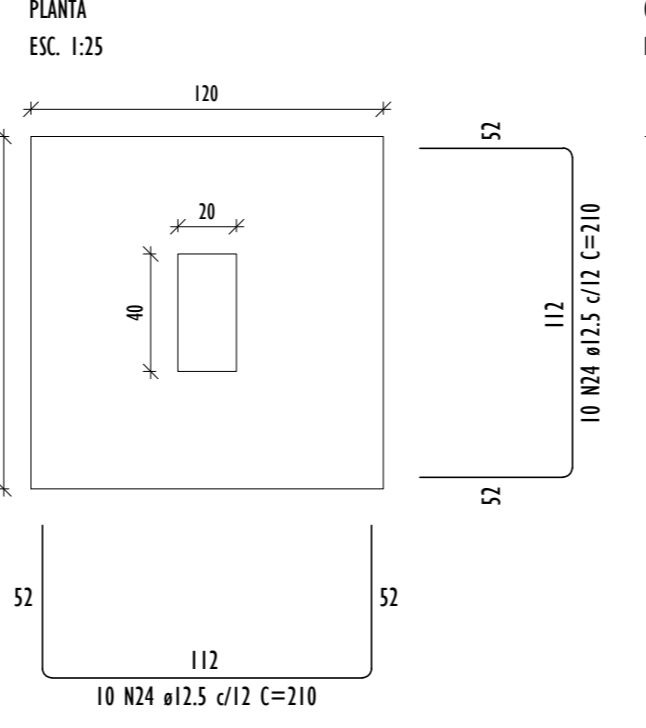
S40



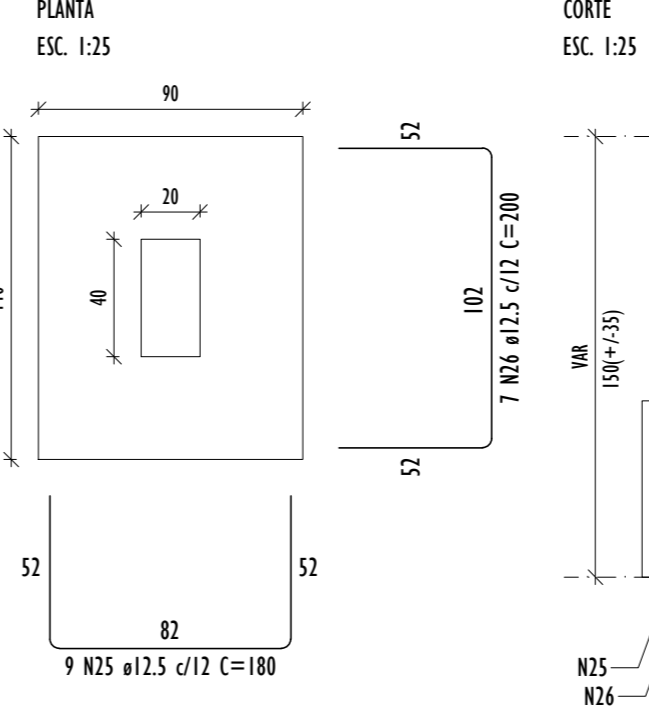
S41=S60



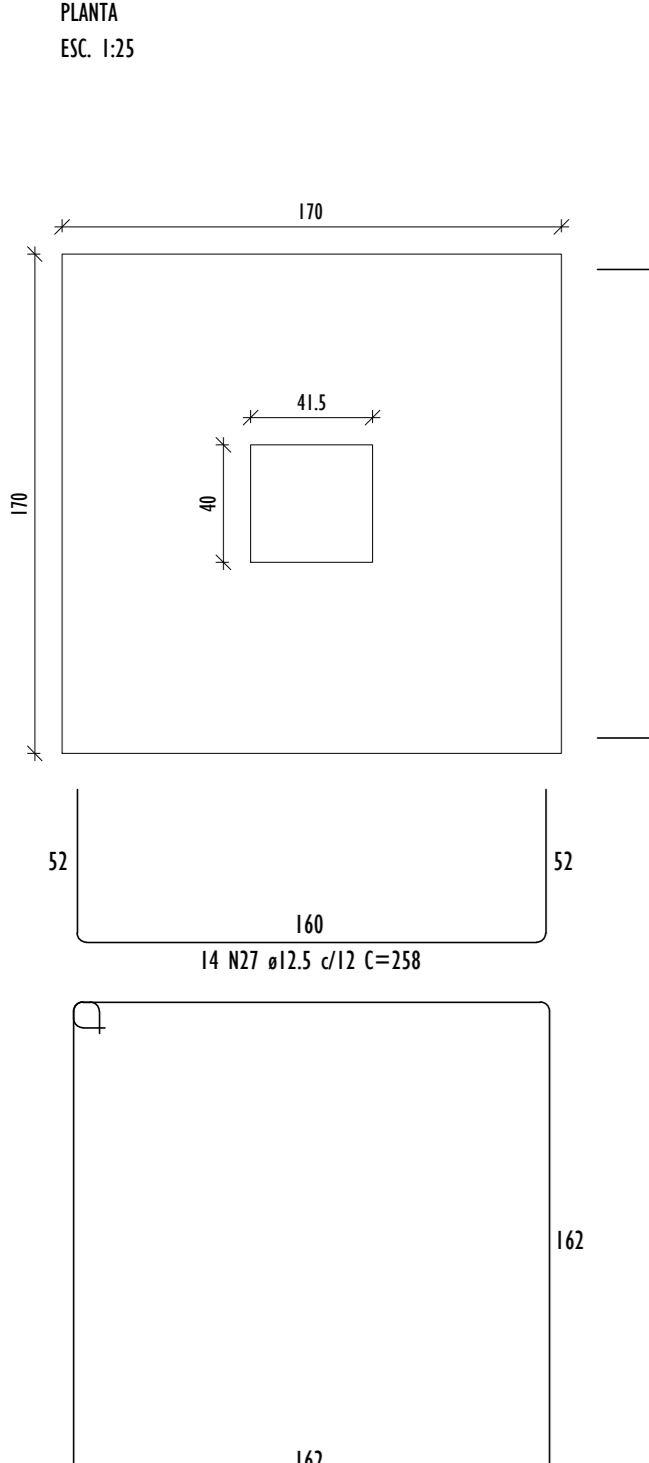
S46



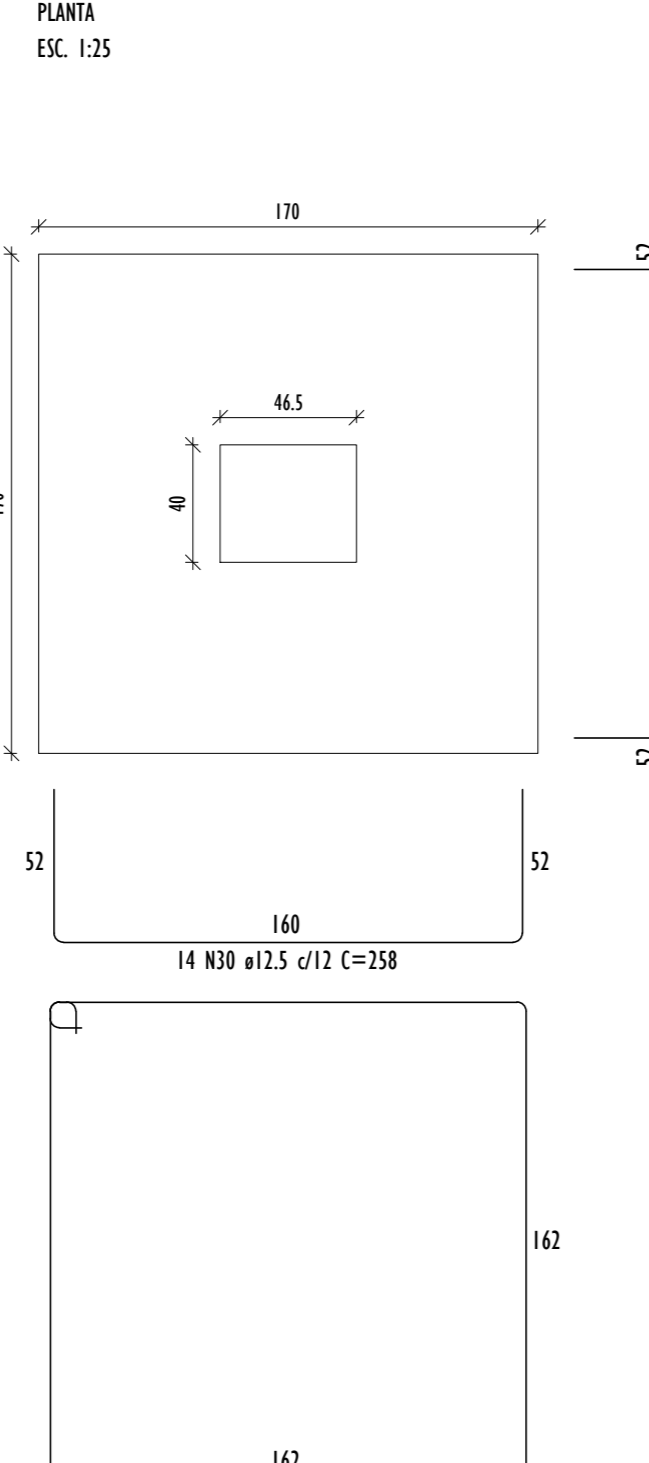
S69



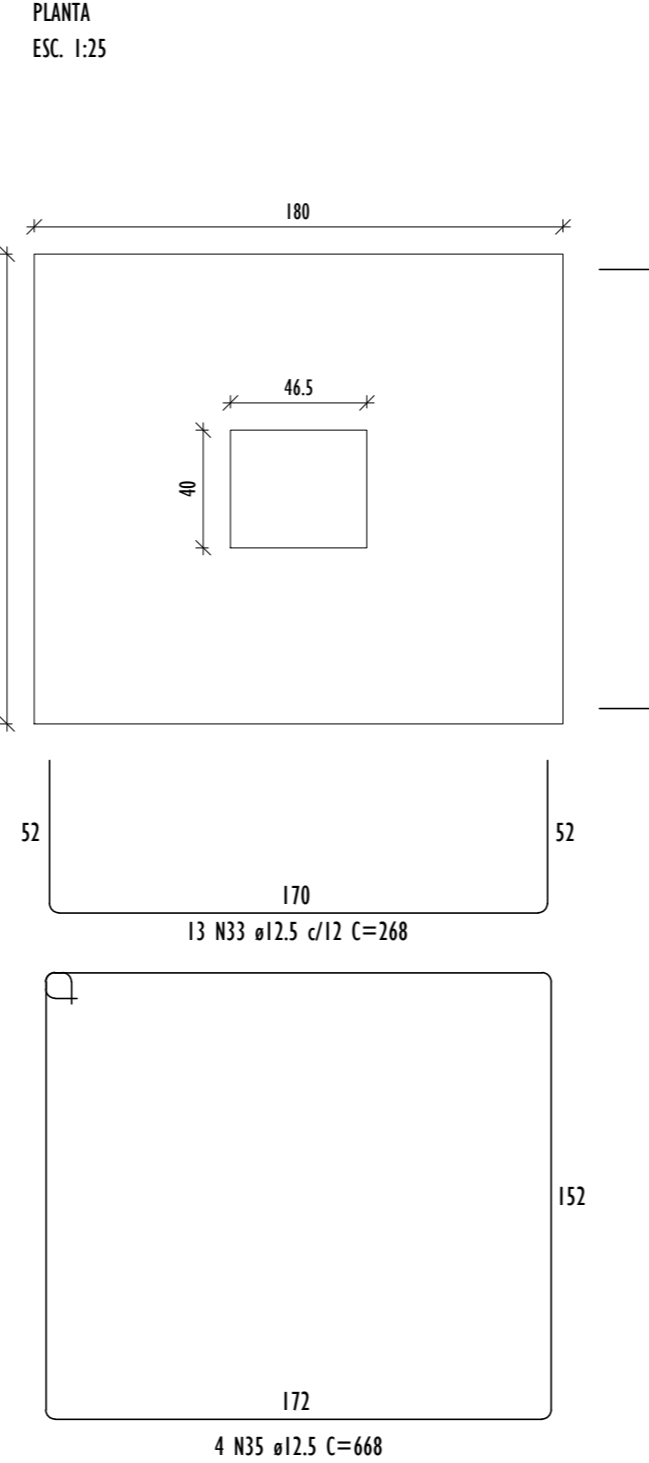
S8-9



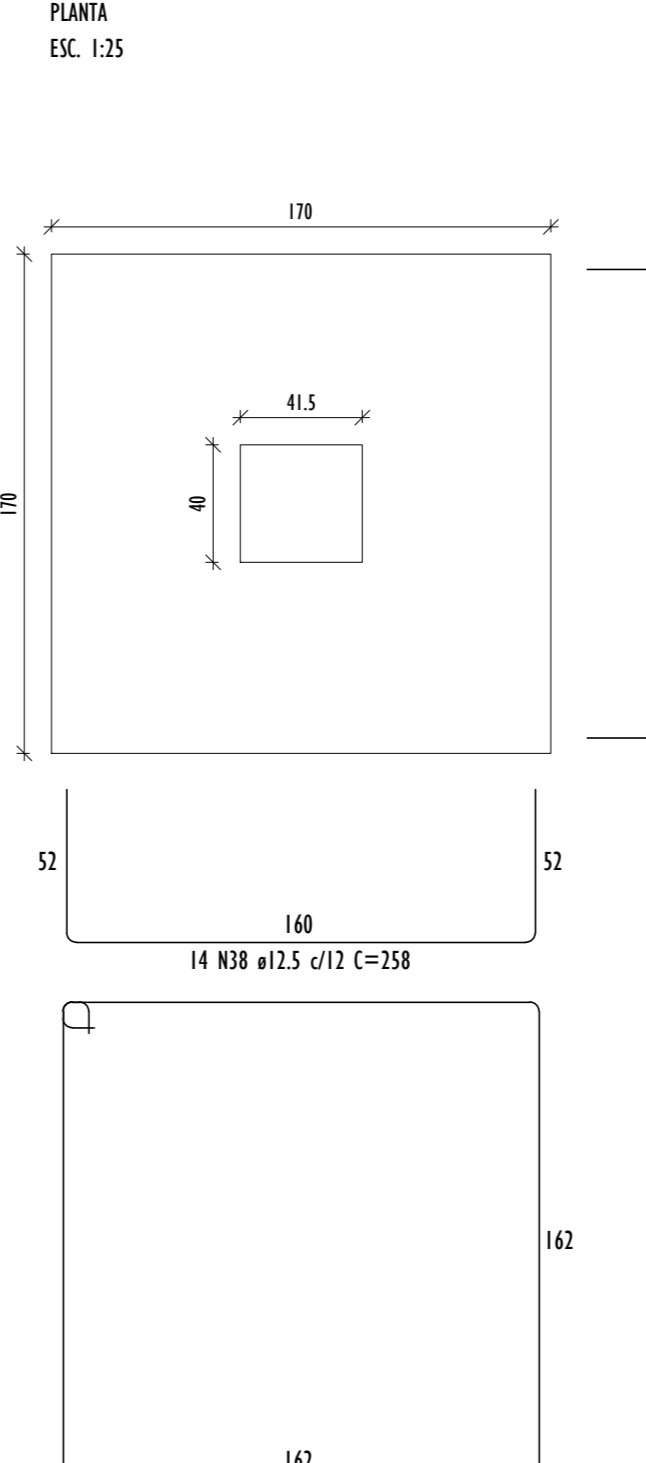
S28-29



S43-44



S63-64



RELAÇÃO DO AÇO

ELEMENTO	AÇO	N	DIAM (mm)	QUANT	COUNT (cm)	C.TOTAL (cm)
4451	GA50	1	12,5	34	180	4480
4451	GA50	2	12,5	28	200	5600
4451	GA50	3	12,5	112	180	20160
4451	GA50	4	12,5	48	180	8640
4451	GA50	5	12,5	80	190	15200
4451	GA50	6	12,5	56	190	9500
4451	GA50	7	12,5	40	210	8400
4451	GA50	8	12,5	126	180	22680
4451	GA50	9	12,5	54	240	13040
4451	GA50	10	12,5	40	240	12800
4451	GA50	11	12,5	22	210	4620
4451	GA50	12	12,5	20	220	4400
4451	GA50	13	12,5	32	180	5760
4451	GA50	14	12,5	112	180	20160
4451	GA50	15	12,5	44	210	9240
4451	GA50	16	12,5	40	230	9200
4451	GA50	17	12,5	11	210	2310
4451	GA50	18	12,5	10	230	2300
4451	GA50	19	12,5	54	180	9720
4451	GA50	20	12,5	42	200	8400
4451	GA50	21	12,5	10	230	2300
4451	GA50	22	12,5	11	210	2310
4451	GA50	23	12,5	40	210	8400
4451	GA50	24	12,5	20	210	4200
4451	GA50	25	12,5	9	180	1620
4451	GA50	26	12,5	7	200	1400
4451	GA50	27	12,5	28	250	7234
4451	GA50	28	12,5	4	648	2672
4451	GA50	29	12,5	24	182	4368
4451	GA50	30	12,5	28	258	7224
4451	GA50	31	12,5	4	648	2672
4451	GA50	32	12,5	24	182	4368
4451	GA50	33	12,5	13	248	3484
4451	GA50	34	12,5	15	248	3720
4451	GA50	35	12,5	4	648	2672
4451	GA50	36	12,5	11	192	2112
4451	GA50	37	12,5	13	172	2236
4451	GA50	38	12,5	28	248	7234
4451	GA50	39	12,5	4	648	2672
4451	GA50	40	12,5	24	182	4368

RESUMO DO AÇO

AÇO	DIAM (mm)	C.TOTAL (m)	QUANT + 0% (Barras)	UNID	PESO + 0% (kg)
CASO	12,5	27414	231	12 m	2460,1
PESO TOTAL (kg)					2460,1
CASO		2669,1			

Volume de concreto (Vc) = 51,42 m³
Área de forma = 181,68 m²

- NOTAS:
- MEDIDAS EM CENTÍMETROS (cm), ELEVÇÕES EM METROS (m).
 - TODAS AS MEDIDAS DEVERÃO SER VERIFICADAS NO LOCAL ANTES DO INÍCIO DA EXECUÇÃO.
 - FUNDAÇÃO ADOTADA DO TIPO SAPATA COM COTA DE ASSENTAMENTO MÍNIMA DE 150CM.
 - CONCRETO:
fck = 30 MPa (sapatas);
fck = 20 MPa (restante da estrutura);
Eci = 24,7 GPa;
FATOR A/C = 0,60.
 - AÇO: Ca-50 (fy=210000 MPa e ftk=500MPa);
Ca-60 (fy=210000 MPa e ftk=600MPa);
 - CLASSE DE AGRESSIVIDADE AMBIENTAL II.
 - COBRIMENTO DAS ARMADURAS:
EM CONTATO COM SOLO > SAPATAS=4cm; VIGAS=2,5cm; PILARES=4cm;
LAJES=3cm;
DRENOS = VIGAS (ext/inf)=2,5cm/2cm; PILARES (ext/inf)=2,5cm/2cm;
LAJES=2cm.
 - IMPERMEABILIZAR AS ESTRUTURAS EM CONTATO COM O SOLO.
 - O TEMPO DE ESCORRIMENTO DAS ESTRUTURAS DE CONCRETO DEVE SER NO MÍNIMO DE 28 DIAS. OS DISPOSITIVOS UTILIZADOS DEEM FACILITAR A REMOÇÃO DAS FORMAS DE MANEIRA A NÃO SUBMETER A ESTRUTURA A IMPACTOS, SOBRECARGAS E OUTROS DANOS. NENHUMA CARGA DEVE SER IMPOSTA E NENHUM ESCORRIMENTO DEVE SER REMOVIDO ANTES DO TEMPO MÍNIMO DE 28 DIAS.
 - OS NÍVEIS LANÇADOS NO PROJETO ESTRUTURAL FORAM DETERMINADOS A PARTIR DOS NÍVEIS PRESENTES NO PROJETO ARQUITETÔNICO.

ProSen Projetos & Serviços de Engenharia Ltda.

Prefeitura Municipal Santa Cruz do Escalvado
ESTADO DE MINAS GERAIS
Administração 2021-2024

PROJETO ESTRUTURAL ESCOLA MUNICIPAL INFANTIL Detalhamento sapatas - NÍVEL +0,20

Eng. Cívil WILSON DIAS DA FONSECA JR. 61.924 / D

GILMAR DE PAULA LIMA 697.293.526-15

Santa Cruz do Escalvado (MG)

RENOVA

05/20