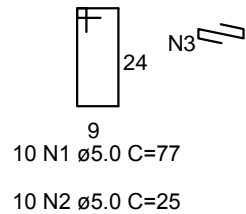
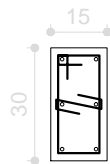


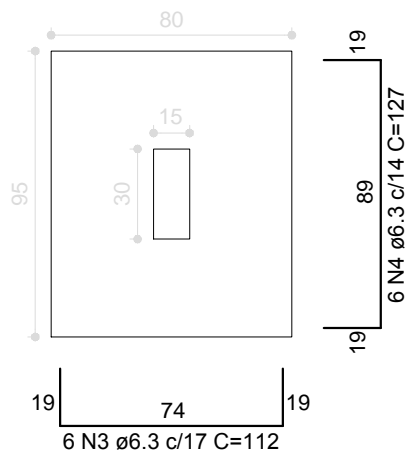
P13

Cinta Inferior - L1  
ESC 1:20



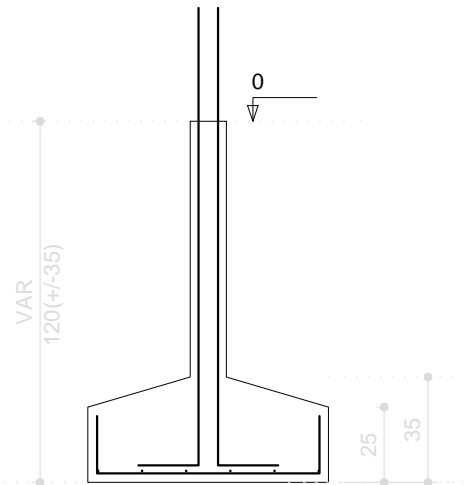
S13

Planta  
ESC 1:25



Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

Corte  
ESC 1:25



RELAÇÃO DO AÇO

AÇO	N	DIAM	Q	UNIT (cm)	C.TOTAL (cm)
B1	1	5.0	161	77	12397
BD4	2	5.0	161	25	4025
B7	3	6.3	6	112	672
B10	4	6.3	6	127	762
B13	5	6.3	54	92	4968
	6	6.3	54	97	5238
	7	6.3	30	92	2760
	8	6.3	30	97	2910
	9	10.0	6	178	1068
	10	10.0	54	178	9612
	11	10.0	20	178	3560

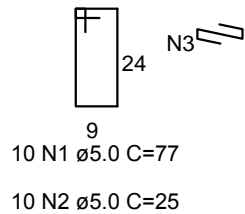
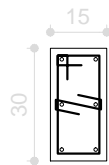
RESUMO DO AÇO

AÇO	DIAM	C.TOTAL (m)	PESO+10% (kg)
CA50	6.3	173.1	46.6
CA60	10.0	142.4	96.6
CA60	5.0	164.2	27.8
PESO TOTAL			
CA50	143.2		
CA60	27.8		

Vol. de concreto total = 3.63 m³  
Área de forma total = 25.65 m²  
Taxa Terreno >= 1.70 Kg/cm²

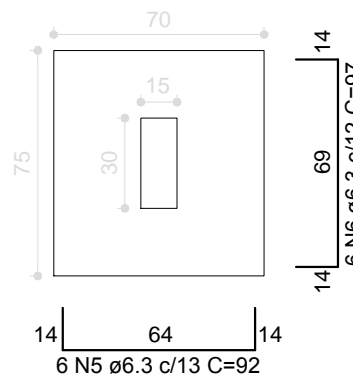
P1=P2=P4=P5=P6=P9=P10  
P14=15 (9x)

Cinta Inferior - L1  
ESC 1:20



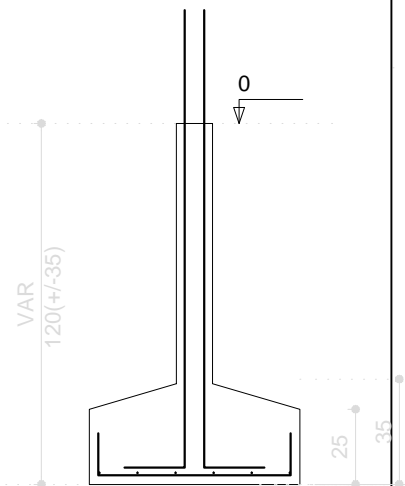
S1=S2=S4=P5=P6=S9=S10  
S11=S14=S15 (9x)

Planta  
ESC 1:25



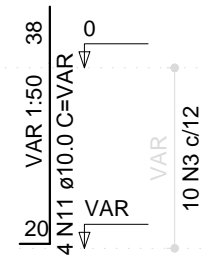
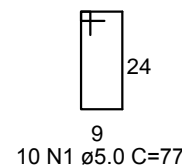
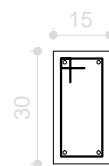
Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

Corte  
ESC 1:25



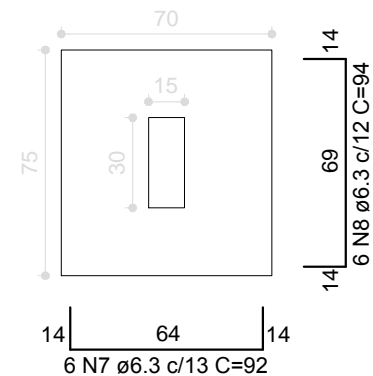
P3=P7=P8=P11=P12 (5x)

Cinta Inferior - L1  
ESC 1:20



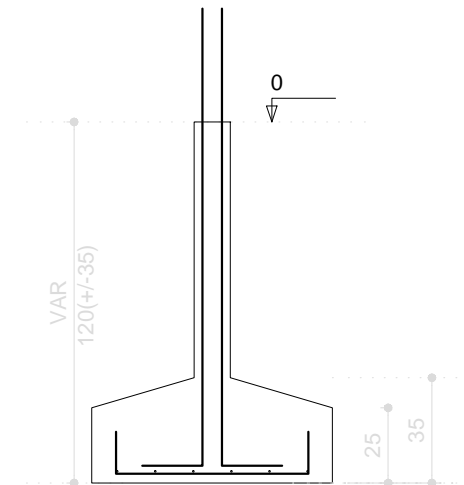
S3=S7=S8=S11=S12 (5x)

Planta  
ESC 1:25



Solo compactado sobre a sapata  
peso específico > 1600.00 kgf/m³

Corte  
ESC 1:25



Características dos Materiais

Fck (kgf/cm²)	Ecs (kgf/cm²)
200	212874



EMPRESA MARANHENSE DE ADMINISTRAÇÃO PORTUÁRIA  
E M A P

GOVERNO DO ESTADO DO MARANHÃO

TÍTULO: Construção da unidade de segurança pública e Estrutura Metálica do Prédio da Receita Estadual  
no Terminal de Ferry Boat da Ponta da Espera, São Luís – MA.

LOGO:

Nº CONTRATADA:

RESP. TÉCNICO:

PROJETO:

FORMA E ARMAÇÃO - SAPATAS E ESPERAS

Nº EMAP:  
DS-PE-2107-0018-R00

ESCALA :  
1/100

DATA:  
NOVEMBRO 2015

REVISÃO:  
01

Nº PRANCHA:

04  
19

PENA	ESP.
7	0.10
7	0.20
7	0.30
7	0.40
7	0.50
7	0.60
7	0.10
7	0.05
252	0.10
253	0.10