K´ANCHAY YACHAYWASI

LEGAJO TECNICO

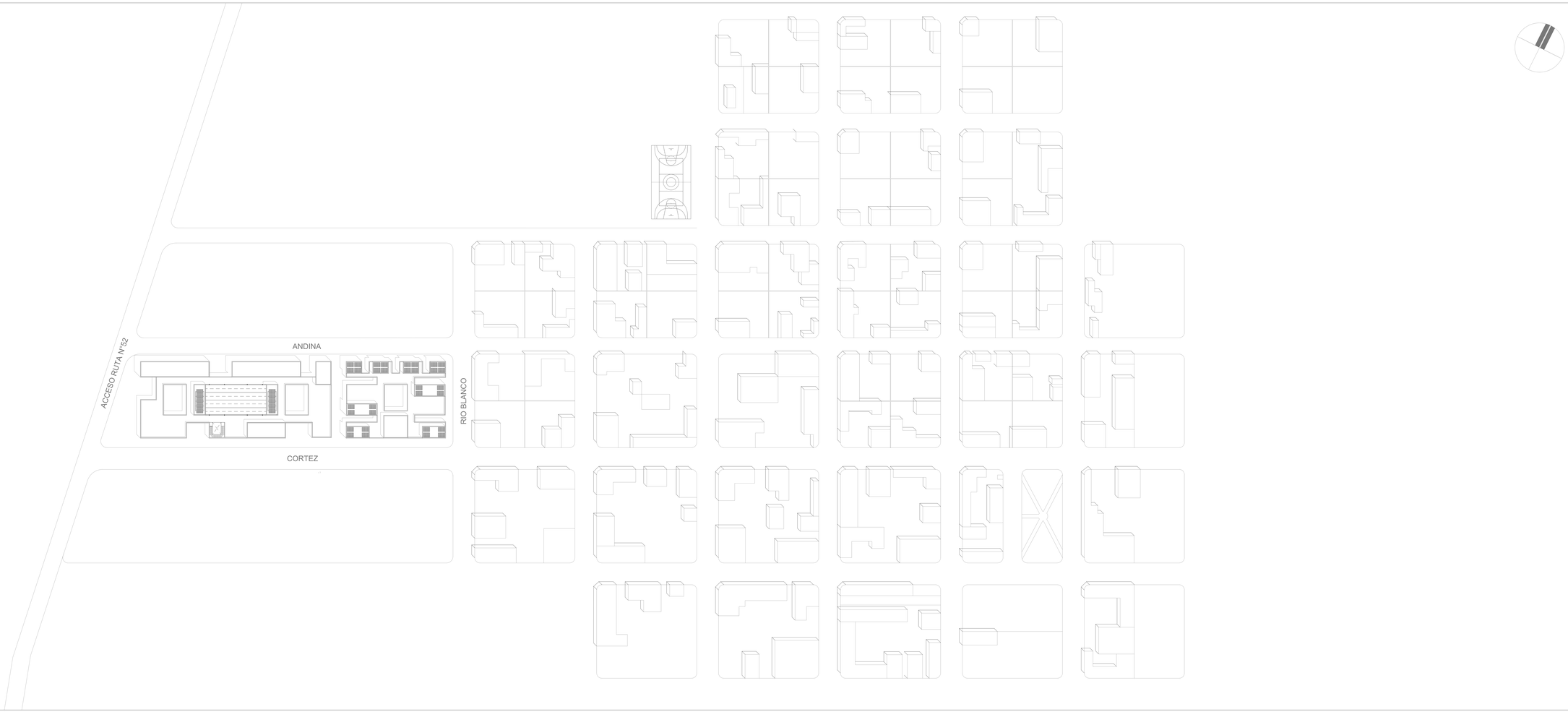
MARTINA, CAROCIO TRILLINI
GINA, PICCO
SOFIA, ZARIF

PROFESOR ASISTENTE:: ADRIAN, MALLOL

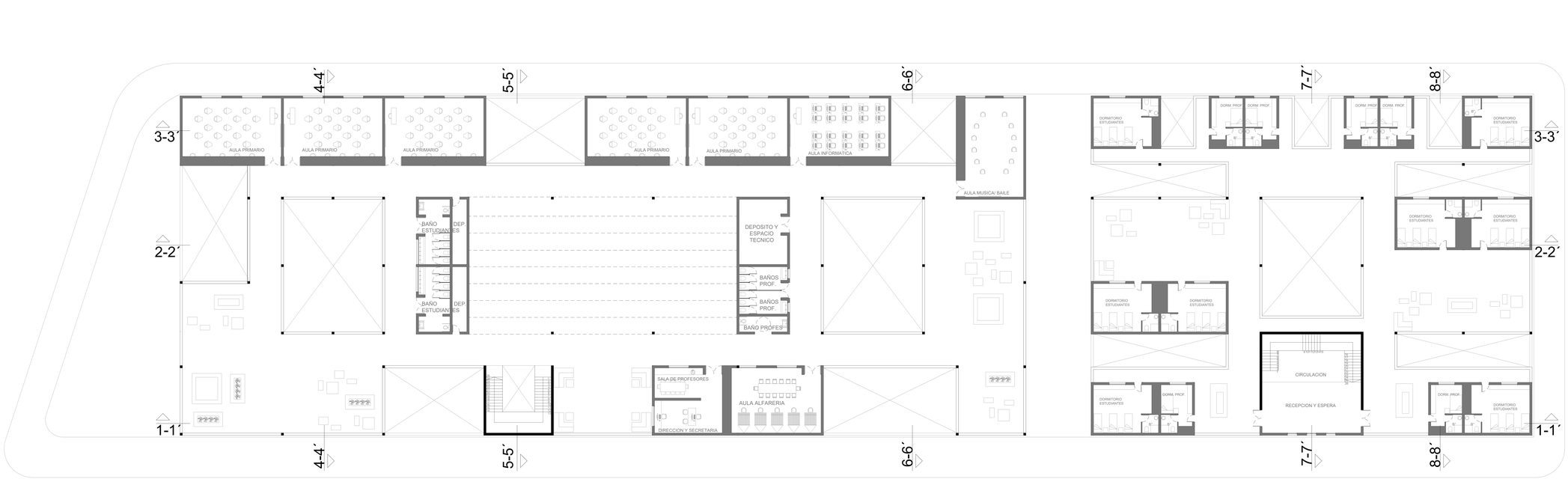
A6B

UNC Universidad Nacional de Córdoba

FAUD Facultad de Arquitectura, Urbanismo y Diseño


ACCESO RUTA N°52
ANDINA
RIO BLANCO
CORTEZ

PLANTA BAJA ESC 1.100



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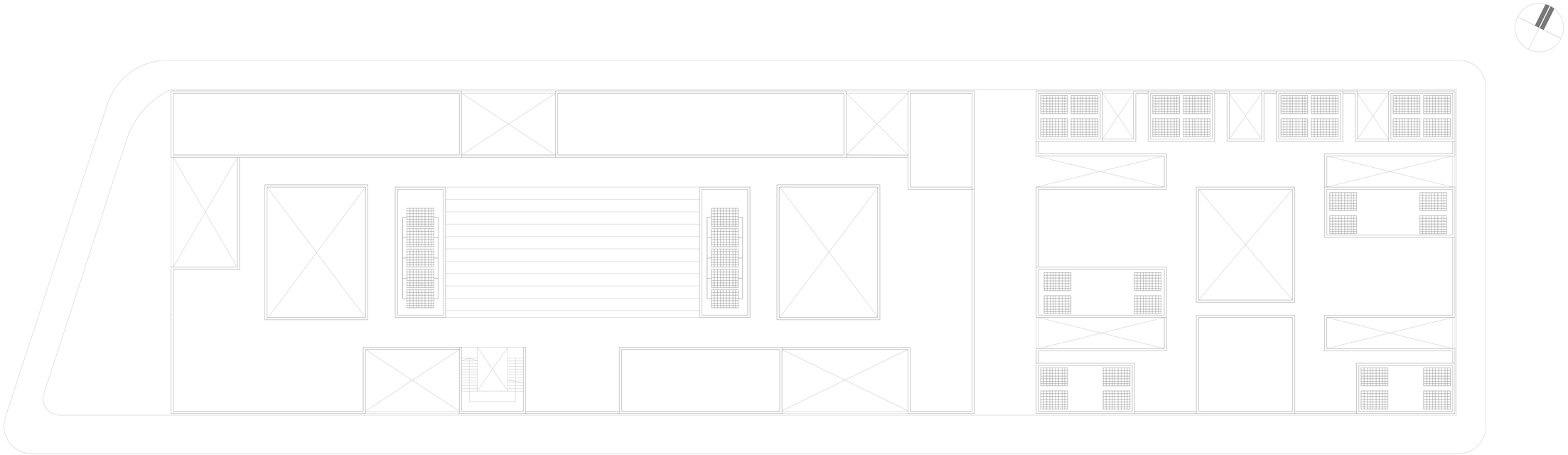

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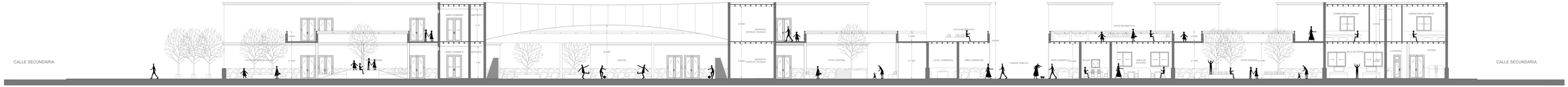

CORTE 2-2´
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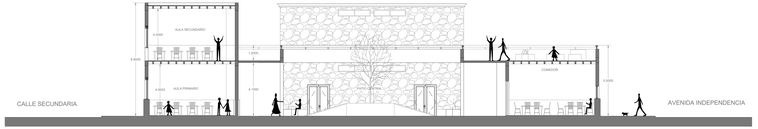
CORTE 3-3´
ESC 1.100



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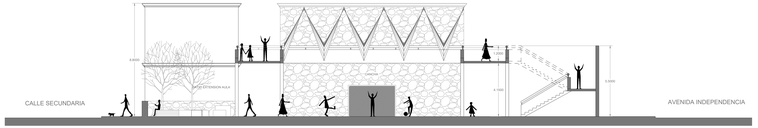

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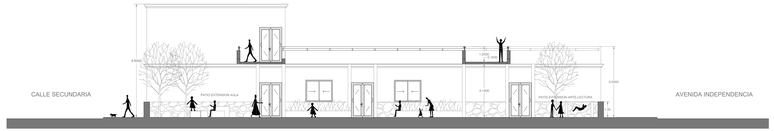

CORTE 6-6'
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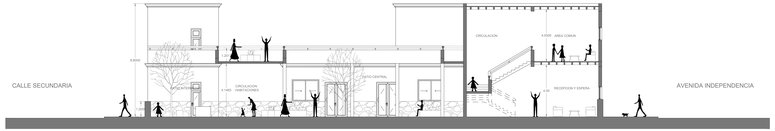

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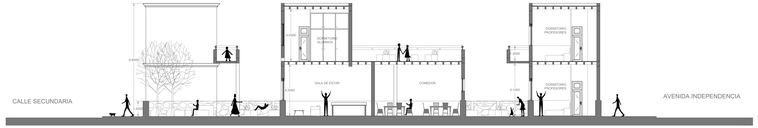
ESC 1.100



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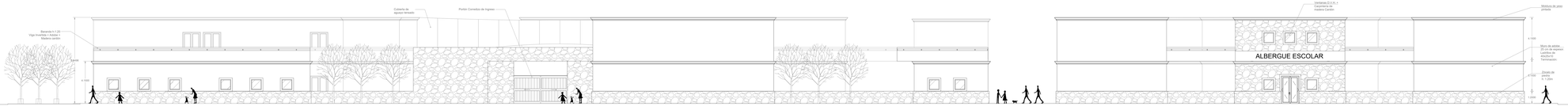
ESC 1.100



VISTA FACHADA SUR ESC 1.100

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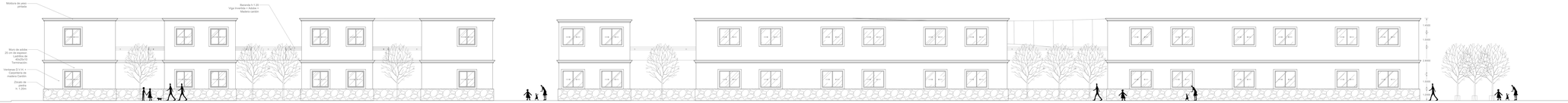

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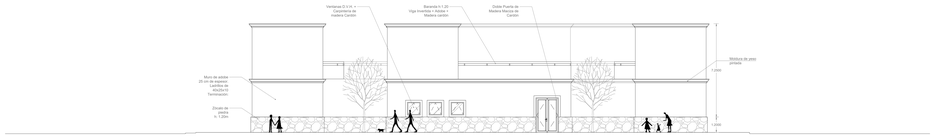

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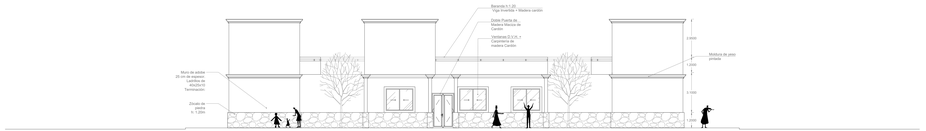

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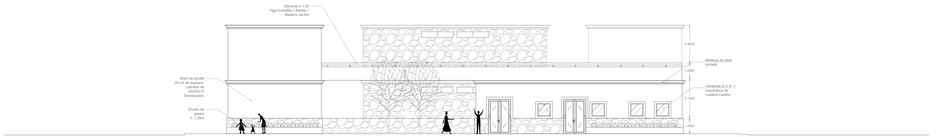

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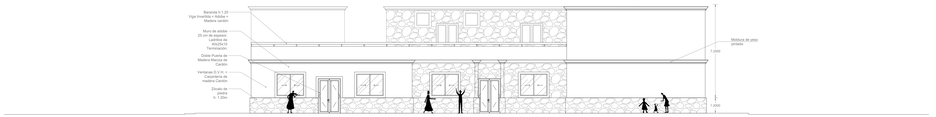

VISTA FACHADA PASAJE ESTE (ESCUELA) ESC 1.100

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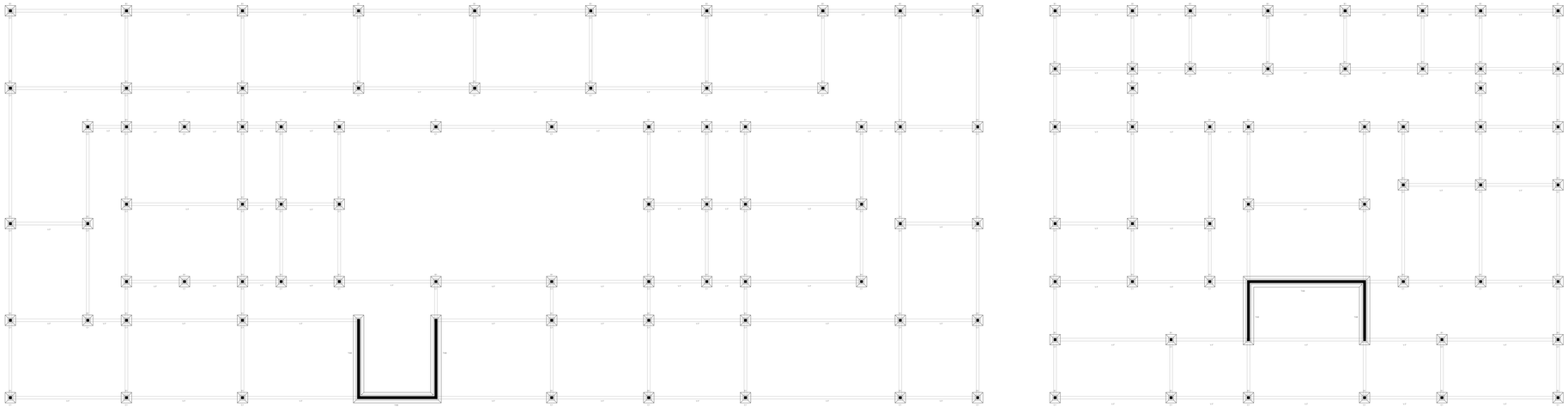

PLANTA FUNDACION ESC 1.100

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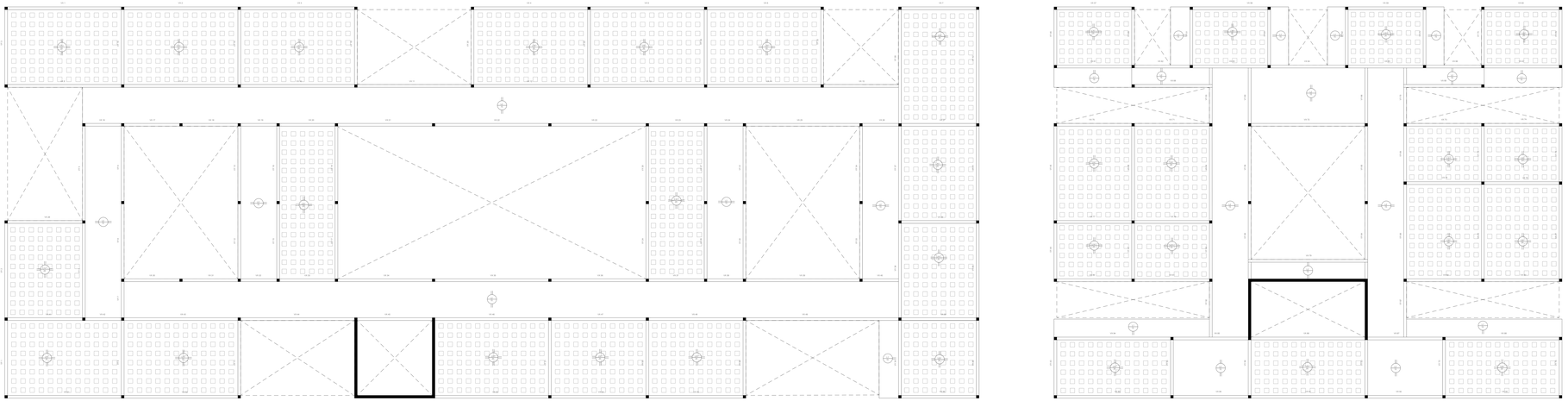
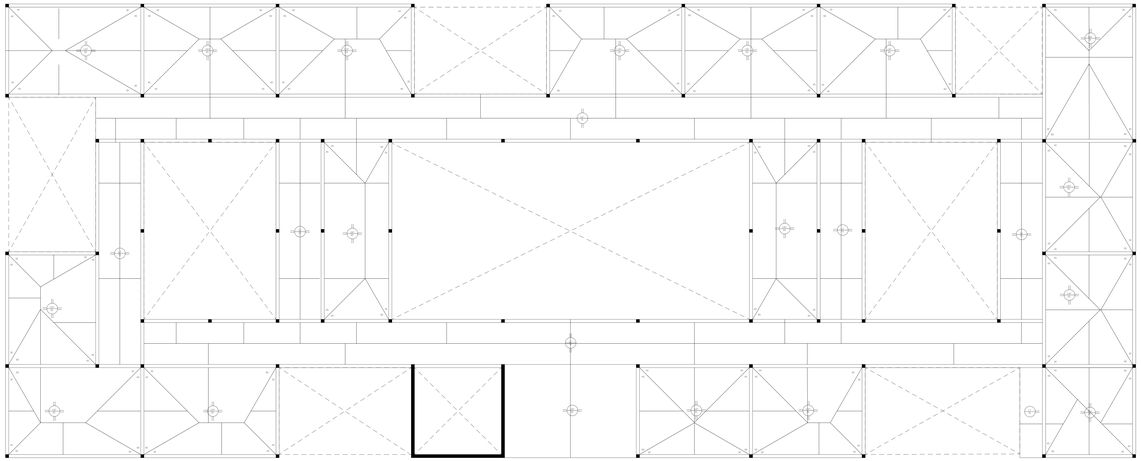
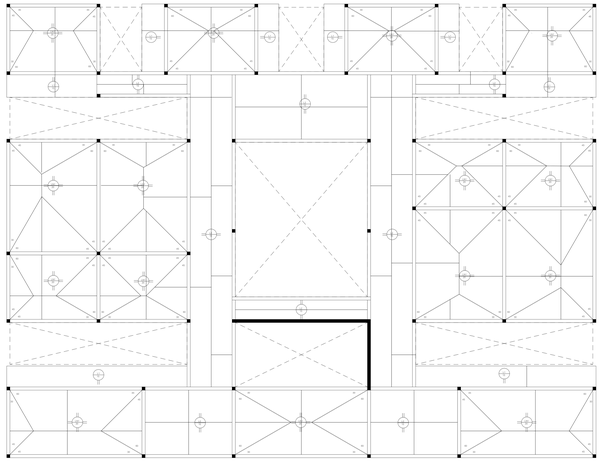


PLANTA LOSAS PB ESC 1.100





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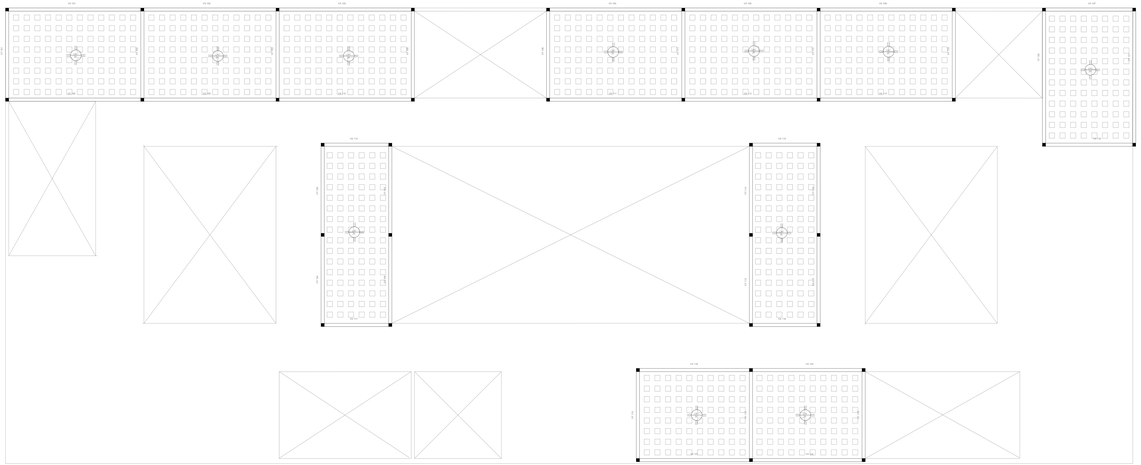

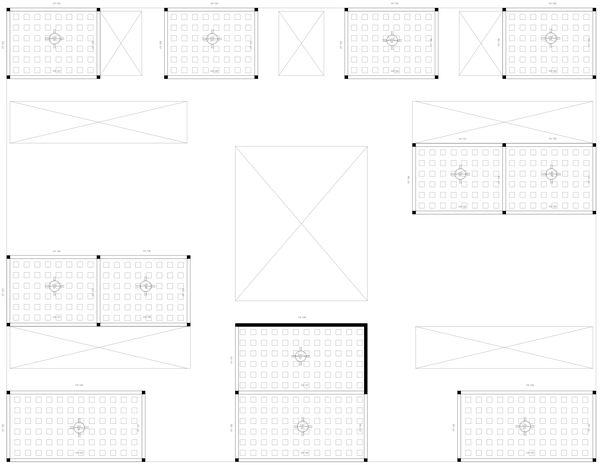

PLANTA LOSAS PA ESC 1.100

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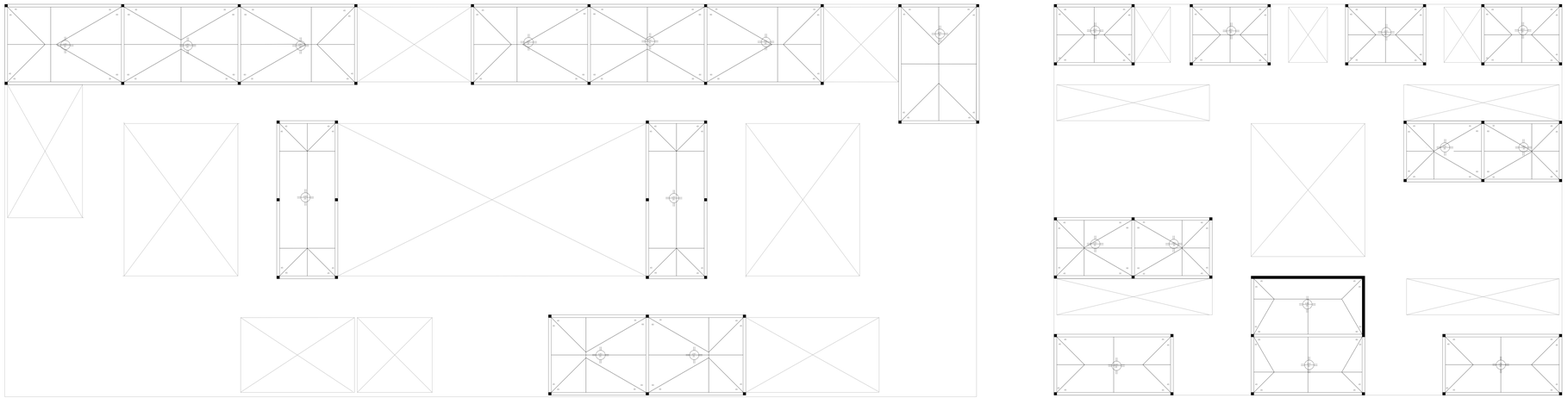

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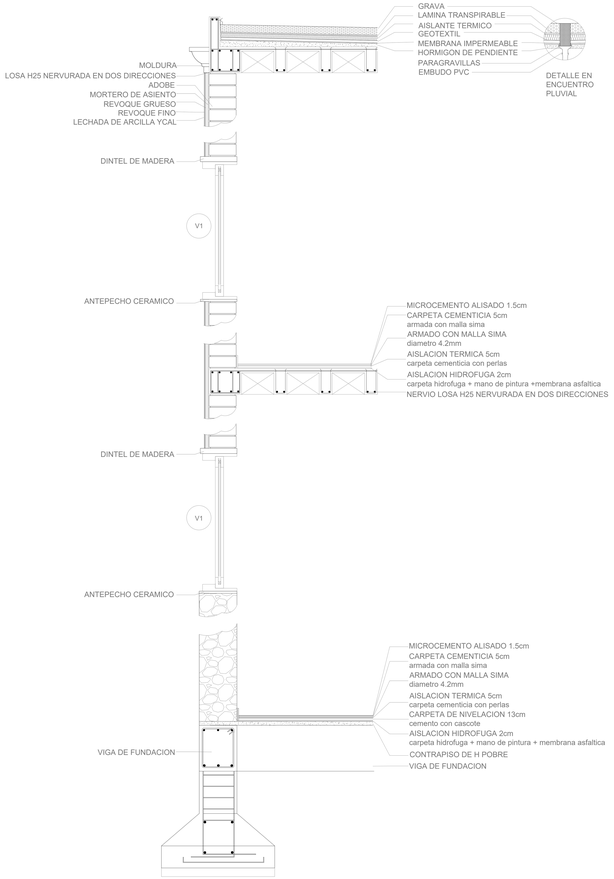
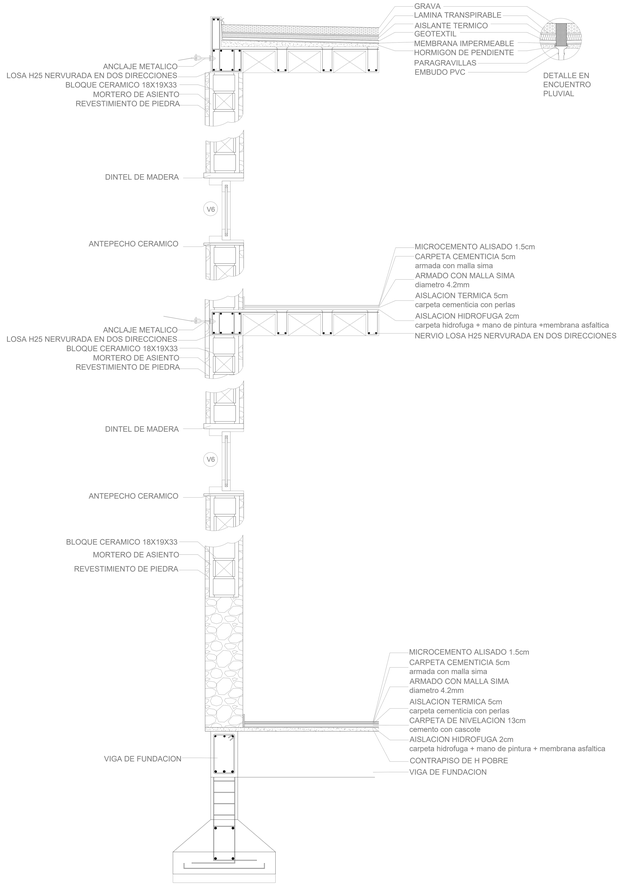
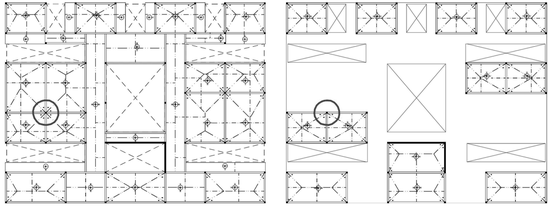


CORTE CONSTRUCTIVO MURO DE ADOBE
ESC. 1:20



CORTE CONSTRUCTIVO MURO DE PIEDRA
ESC. 1:20

PREDIMENSIONADO COLUMNAS



Calculo columna mas desfavorable: en albergue PB+PA

-Area col PB: 70 m2
-Area col PA: 25 m2
Area total col: 95 m2

-Calculo qU: (qD x 1.2 x %peso propio) + (qL x 1.6)
qU sobre PB: (400 kg/m2 x 1.2 x 1.2) + (300 kg/m2 x 1.6) = 1056 kg/m2
qU sobre PA: (350 kg/m2 x 1.2 x 1.2) + (100 kg/m2 x 1.6) = 664 kg/m2

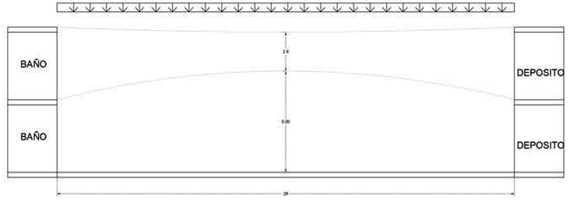
-Calculo pu: qU x sup x niveles iguales
Calculo PU sobre PB: 1056 kg/m2 x 70 m2 x 1 = 73920 kg
Calculo PU sobre PA: 664 kg/m2 x 25 m2 x 1 = 16600 kg
Total PESO ULTIMO: 90520 kg

- Ag: PU / tension H25
Ag: 90520 kg / 153 kg/cm2 = 591.63 cm2

-Dimension: raiz Ag
Raiz 591.63 cm2 = 24.32 cm = 25 cm de lado

SE ADOPATN COLUMNAS DE 25x25cm

PREDIMENSIONADO CERCHA JAWERT



ESTADO G: Cargas permanentes g= -20 Kg/m²
ESTADO V: Cargas de viento Lw=60 Kg/m2 (3 veces g)
ESTADO N: Cargas de nieve Ln=-50 Kg/m2 (2.5 veces g)

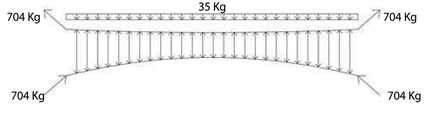
Punto mas alto g+v
Punto mas bajo g+n

Estado g: qg= g x sep= -20 Kg/m2 x 1.75 m= -35 Kg/m

V= 245 Kg = Va=Vb= q x l= 35 Kgx 28 m = 245 Kg
2 2 2 2

H= 660 Kg = Ha=Hb= q x l² = 35 Kgx (28 m)²= 659.61 Kg
2 (8xf) 2 (8x2.6)

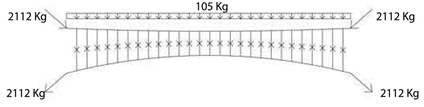
R= 704 Kg = Ra=Rb= √ 245 ²+660²= 704 Kg



Estado v: la carga de v es el triple de carga permanente pero en sentido contrario.

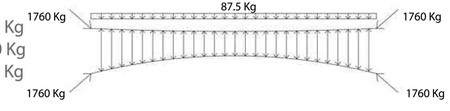
gv= -3 x qg= -3 x 35 Kg/ m= 105 Kg/m

V= 245 Kg x 3= 734 Kg
H= 660 Kg x 3 = 1980 Kg
R= 704 Kg x 3 = 2112 Kg



Estado n: la carga de vn es 2.5 de carga permanente
gv= 2.5 x qg= 2.5x 35 Kg/ m= 87.5 Kg/m

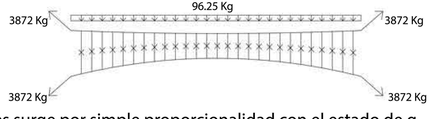
V= 245 Kg x 2.5= 612.5 Kg
H= 660 Kg x 2.5 = 1650 Kg
R= 704 Kg x 2.5 = 1760 Kg



Estado 0 se concidera que ningun cable debe aflojarse 1.5: coeficiente de seguridad.

-El cable inferior tiende a aflojarse para el estado g+n
R= RG+1.5 Rn= 704 Kg+1.5x 1760Kg= 3344 Kg

-El cable superior tiende a aflojarse con g+v
R= RG+1.5 Rv= 704 Kg+1.5x 2112Kg= 3872 Kg
Tomo la mayor 3872 Kg = TP



Esfuerzo de los pendolones surge por simple proporcionalidad con el estado de g
17.5 Kg/m produce.....R de 704 kg
x Kg/m produce.....R de 3872kg= 96.25 Kg

DIMENSIONADO:
Para verificar resistencia de los cables se dimensionan con cargas de servicio afectada con un coeficiente de seguridad de rotura igaul a 2

-Estado 0+g+v max levantamiento:

-Cable superiror: Ns: 3872 Kg+ 704 Kg -2112 Kg= 2464
-Cable inferior: Ni: 3872 Kg - 704 Kg +2112 Kg= 5280
en el cable inferior se produce la max solicitacion a traccion
-Pendolones: Qp: 96.25 Kg/m-17.5Kg/m+52.5 Kg/m= 131.25 Kg/m

-Estado 0+g+n max descenso:

-Cable superiror: Ns: 3872 Kg+ 704 Kg +1760 Kg= 6336
-Cable inferior: Ni: 3872 Kg - 704 Kg -1760 Kg= 1468
-Pendolones: Qp: 96.25 Kg/m-17.5Kg/m-43.75Kg/m= 35 Kg/m

-Para dimensionar cable se concidera 0+g+n max descenso
-Cable superior Ns= 6336 Kg
-Carga de rotura 2 xNs= 12672 kg

15770kg > 12672 Kg verifica

- Para dimensionar pendolones se concidera entonces 0+g+v
QP= 96.25 Kg/m-17.5Kg/m-43.7+52 Kg= 131.25 Kg/m
separacion de pendolones 2 m NP=2mx 131.25 kg= 262.5
Nr= 2 x 262.5= 525 Kg
1000 kg > 525 kg verifica

Diámetro del cable (mm.)	Peso aprox. (kg/m)	Cargas de rotura en kilogramos					
		115 kg/mm2	125 kg/mm2	140 kg/mm2	160 kg/mm2	175 kg/mm2	190 kg/mm2
5.5	0.013	1.000	1.040	1.280	1.460	1.600	1.740
6.00	0.135	1.570	1.780	2.000	2.280	2.500	2.710
6.35	0.150	1.720	1.960	2.190	2.510	2.740	2.980
7.00	0.177	2.070	2.360	2.640	3.020	3.300	3.590
8.00	0.236	2.750	3.130	3.510	4.010	4.380	4.760
9.00	0.300	2.540	4.020	4.500	5.150	5.630	6.110
9.53	0.340	3.900	4.430	4.970	5.680	6.210	6.740
11.00	0.450	5.230	5.950	6.660	7.610	8.330	9.040
12.00	0.530	6.290	7.150	8.000	9.150	10.010	10.860
12.70	0.580	6.770	7.700	8.620	9.850	10.780	11.700
14.00	0.690	7.970	9.060	10.150	11.600	12.680	13.770
16.00	0.815	10.860	12.360	12.800	15.770	7.250	18.730
17.00	1.000	11.910	13.530	15.160	17.320	18.950	20.570
19.00	1.310	15.370	17.470	19.570	22.360	24.460	26.560
21.00	1.620	18.300	21.930	24.570	24.080	30.710	33.340
22.00	1.780	20.700	23.520	26.340	30.110	32.930	35.750

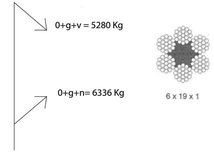



Tabla Nº 1
Cable flexible
6 Cordones – 19 Alambres – 1 Alma textil