ALCANTARILLAS CELULARES

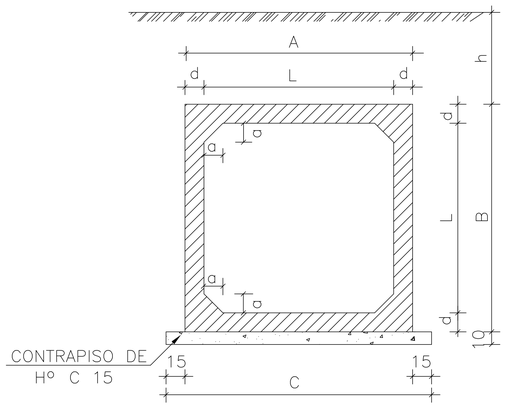
TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

ALCANTARILLA CELULAR DE 1.00 x 1.00

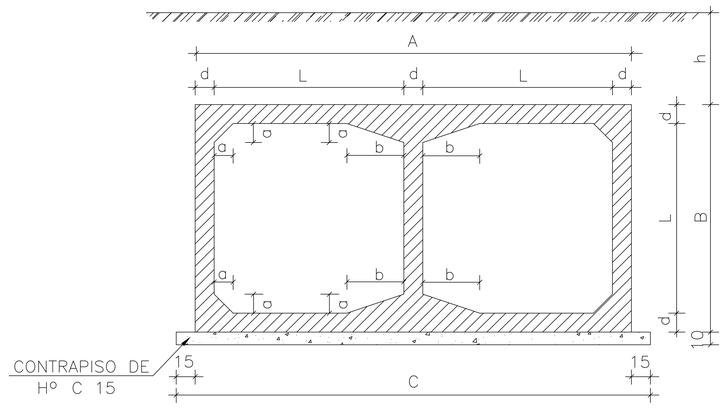
fs ⩾ MPa		0.09	0.10	0.10
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	130	245	360
B	cm.	130	130	130
C	cm.	160	275	390
a	cm.	10	10	10
b	cm.	—	20	20
d	cm.	15	15	15
CONTRAPISO	m^3	0.16	0.28	0.39
ENCOFRADO	m^2	6.24	7.80	13.75
HORMIGON	m^3	0.71	1.305	1.78

DETALLE DE ENCOFRADOS

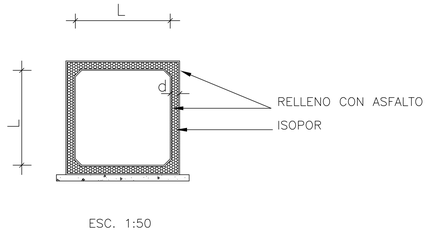
ALCANTARILLA SIMPLE



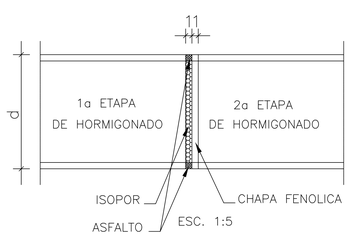
ALCANTARILLA DOBLE



DETALLES DE LA JUNTA DE DILATACION



ESC. 1:50



ESC. 1:5

NOTA:

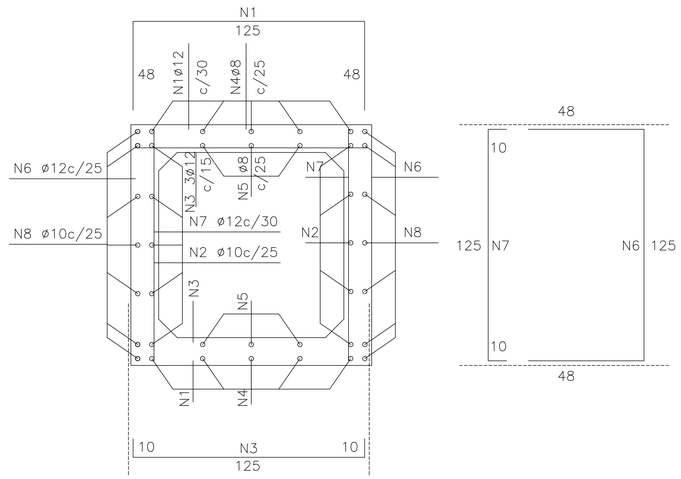
DESPUES DEL HORMIGONADO DE LA 1a ETAPA DEBERAN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

OBSERVACIONES:

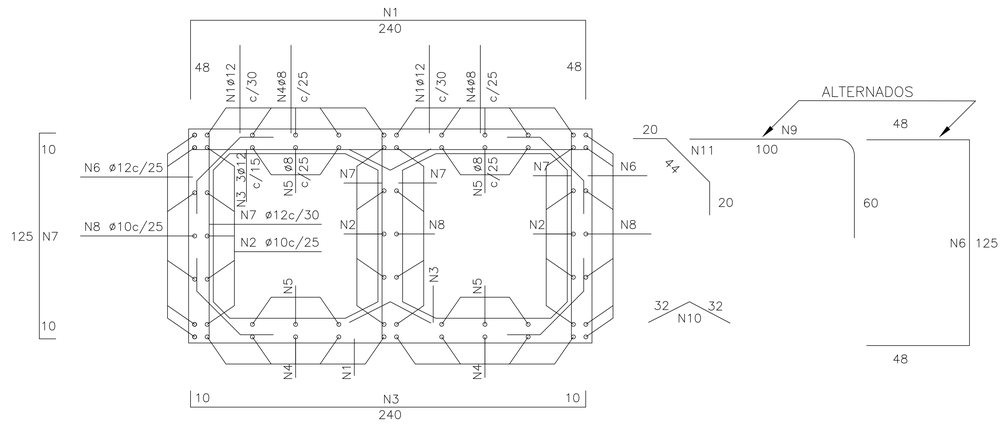
1- HORMIGON TIPO D=20.6 Mpa (210KG/CM2)
2- CONTRAPISO DE HORMIGON TIPO F= 13.7 Mpa (140KG/CM2)
3- VEHICULO TIPO TB 36
4- NOMENCLATURA: h = ALTURA DEL TERRAPLEN SOBRE LA GALERIA
fs = TENSION ADMISIBLE DEL SUELO BAJO LA GALERIA
5- REALIZAR JUNTA DE DILATACION EN ALCANTARILLAS CON LONGITUD MAYOR A 40 m.

ALCANTARILLAS CELULARES DE 1.00 x 1.00

SECCION TRANSVERSAL SIMPLE



SECCION TRANSVERSAL DOBLE



TABLAS DE ARMADURAS
POR METRO DE GALERIA

0 ⩽ h ⩽ 1,00 fs ⩾ 0,09 Mpa				
N°	ø	C	LONG	SEP.
1	12	6	221	30
2	10	10	CORR.	25
3	12	13	145	15
4	8	10	CORR.	25
5	8	6	CORR.	25
6	12	8	221	25
7	12	6	145	25
8	10	14	CORR.	25

RESUMEN

ø	KG./m.	PESO(Kg)
8.0	0.416	7
10.0	0.624	15
12.0	0.988	59
	TOTAL	81 Kg.

0 ⩽ h ⩽ 1,00 fs ⩾ 0,09 Mpa				
N°	ø	C	LONG	SEP.
1	12	6	336	30
2	10	10	CORR.	25
3	12	13	260	15
4	8	10	CORR.	25
5	8	6	CORR.	25
6	12	8	221	25
7	12	6	145	25
8	10	14	CORR.	25
9	12	10	160	20
10	6	10	0.64	20
11	6	20	0.84	20

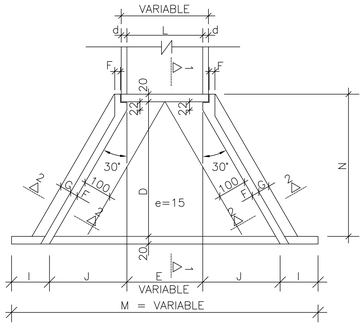
RESUMEN

ø	KG./m.	PESO(Kg)
6.0	0.247	6
8.0	0.416	7
10.0	0.624	15
12.0	0.988	96
	TOTAL	124 Kg

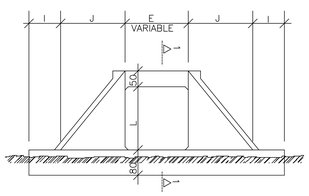
CABECERAS NORMALES PARA ALCANTARILLAS CELULARES

ALCANTARILLA SIMPLE

PLANTA

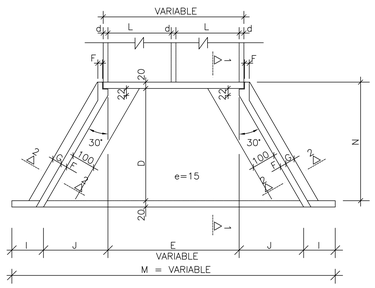


VISTA FRONTAL



ALCANTARILLA DOBLE

PLANTA



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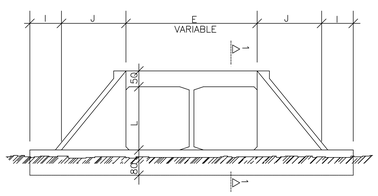
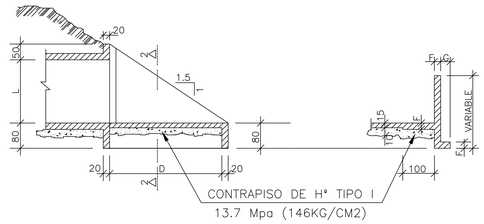
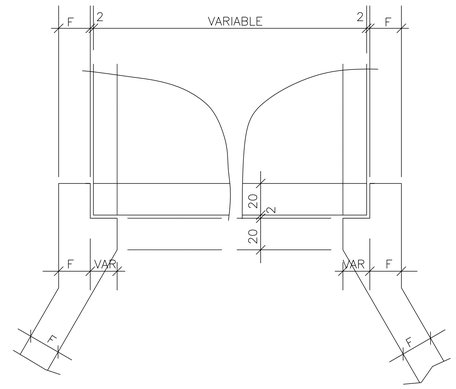


CORTE 1–1



CORTE 2–2



DETALLE DE VISTA EN PLANTA

OBSERVACIONES:

1– EL PROYECTO DE LAS CABECERAS SE APLICA A TODOS LOS TIPOS DE ALCANTARILLAS CELULARES NORMALES.

2– LAS CANTIDADES INDICADAS EN LAS TABLAS SON PARA DOS CABECERAS COMPLETAS, ESTANDO COMPUTADAS: LAS ALAS (4x); LOSA DE PISO ENTREALAS (2x); VIGA DE BORDE INFERIOR DEL CUERPO DE LA ALC. (2x).

3– EL CONTRAPISO BAJO LA LOSA DE PISO ENTREALAS ES DE H° TIPO F =13.7 Mpa (140 KG/CM2) DE UN ESPESOR DE 10 cm.

4– HORMIGON PARA CABECERAS TIPO D.

5– NOMENCLATURA: fs = TENSION ADMISIBLE DEL SUELO BAJO LA GALERIA.

TABLA DE DIMENSIONES Y CANTIDAD DE MATERIALES PARA AMBAS CABECERAS

MEDIDAS (cm)	ALCANTARILLA SIMPLE				
	1.00x1.00m. fs ⩾ 0.09 MPa	1.50x1.50m. fs ⩾ 0.09 MPa	2.00x2.00m. fs ⩾ 0.09 MPa	2.50x2.50m. fs ⩾ 0.10 MPa	3.00x3.00m. fs ⩾ 0.12 MPa
D	190.0	280.0	355.0	430.0	505.0
E	100.0	150.0	200.0	250.0	300.0
F	15.0	15.0	20.0	20.0	25.0
G	30.0	30.0	30.0	50.0	50.0
I	100.0	100.0	100.0	100.0	100.0
J	127.0	160.5	204.0	247.0	290.5
L	100.0	150.0	200.0	250.0	300.0
M	554.0	671.0	808.0	944.0	1081.0
N	225.0	320.0	395.0	470.0	545.0

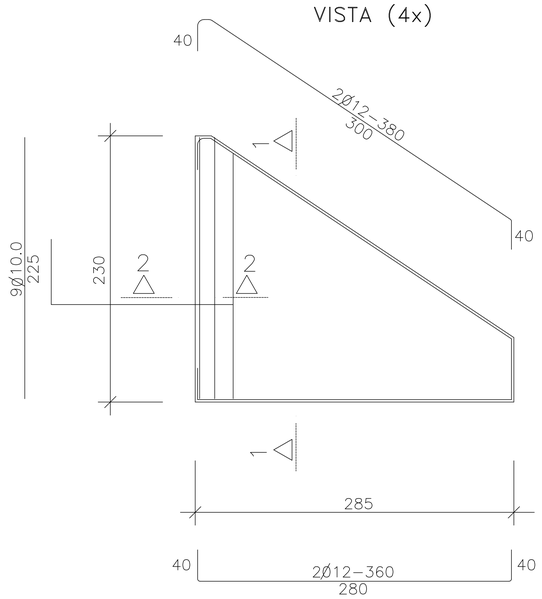
MEDIDAS (cm)	ALCANTARILLA DOBLE				
	1.00x1.00m. fs ⩾ 0.10 MPa	1.50x1.50m. fs ⩾ 0.10 MPa	2.00x2.00m. fs ⩾ 0.13 MPa	2.50x2.50m. fs ⩾ 0.21 MPa	3.00x3.00m. fs ⩾ 0.21 MPa
D	190.0	280.0	355.0	430.0	505.0
E	3L + 2d (VER LAMINA DD–03)				
F	15.0	15.0	20.0	20.0	25.0
G	30.0	30.0	30.0	50.0	50.0
I	100.0	100.0	100.0	100.0	100.0
J	127.0	160.5	204.0	247.0	290.5
L	100.0	150.0	200.0	250.0	300.0
M	200 + 2J + E				
N	225.0	320.0	395.0	470.0	545.0

DESCRIPCION	UNID	ALCANTARILLA SIMPLE				
		1.00x1.00m.	1.50x1.50m.	2.00x2.00m.	2.50x2.50m.	3.00x3.00m.
CONTRAPISO	m^3	1.37	2.46	4.35	6.30	8.70
ENCOFRADO	m^2	54.00	83.50	113.00	144.00	181.00
HORMIGON	m^3	5.70	10.85	17.86	24.35	36.53

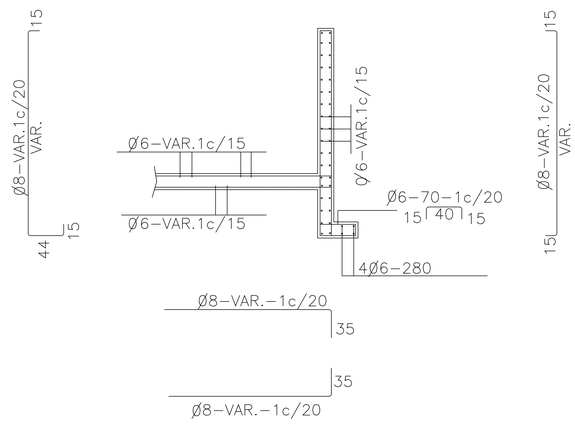
DESCRIPCION	UNID	ALCANTARILLA DOBLE				
		1.00x1.00m.	1.50x1.50m.	2.00x2.00m.	2.50x2.50m.	3.00x3.00m.
CONTRAPISO	m^3	1.68	3.93	6.45	9.75	13.65
ENCOFRADO	m^2	63.20	92.00	120.80	155.00	193.00
HORMIGON	m^3	6.92	12.35	20.86	30.05	44.43

ARMADURAS DE CABECERAS – ALCANTARILLA CELULAR DE 1.00x1.00

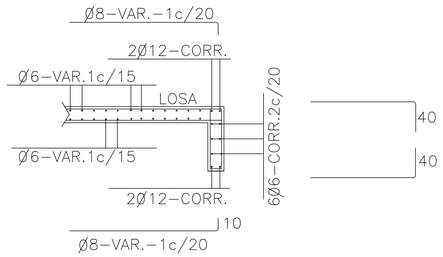
VISTA (4x)



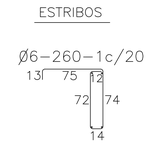
CORTE 1–1 (4x)



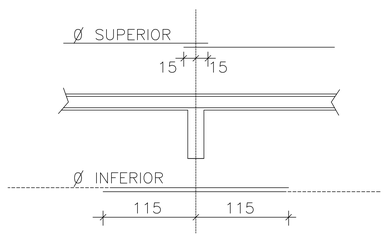
CORTE DE VIGA DE BORDE DE LA LOSA (2x)



ESTRIBOS

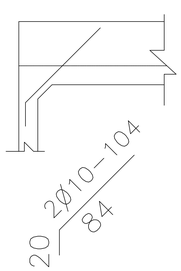


EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)

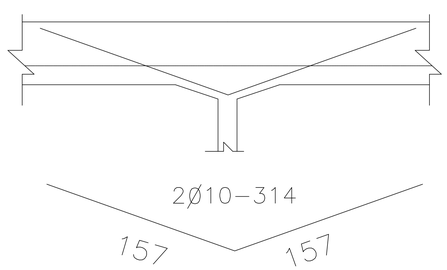


MENSULAS

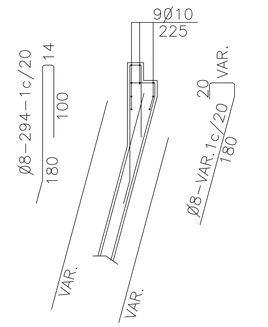
VISTA



VISTA



CORTE 2–2 (4x)



ALCANTARILLAS CELULARES DE 2.00 x 2.00

OBSERVACIONES:

1- HORMIGON TIPO D=20.6 Mpa (210KG/CM2)
2- CONTRAPISO DE HORMIGON TIPO F= 13.7 Mpa (140KG/CM2)
3- VEHICULO TIPO TB 36
4- NOMENCLATURA: h = ALTURA DEL TERRAPLEN SOBRE LA GALERIA
fs = TENSION ADMISIBLE DEL SUELO BAJO LA GALERIA
5- REALIZAR JUNTA DE DILATACION EN ALCANTARILLAS CON LONGITUD MAYOR A 40 m.

ALCANTARILLAS CELULARES

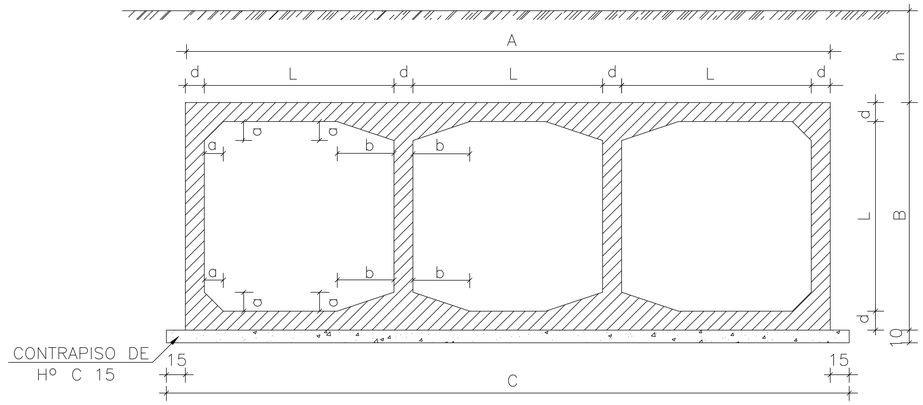
TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

ALCANTARILLA CELULAR DE 2.00 x 2.00

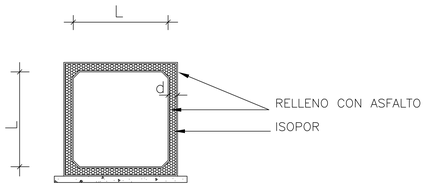
fs ≥ MPa		0.09	0.13	0.13
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	230	445	660
B	cm.	230	230	230
C	cm.	260	475	690
a	cm.	10	10	10
b	cm.	—	30	30
d	cm.	15	15	15
CONTRAPISO	m^3	0.26	0.48	0.69
ENCOFRADO	m^2	10.60	16.60	22.00
HORMIGON	m^3	1.31	2.32	3.32

DETALLE DE ENCOFRADOS

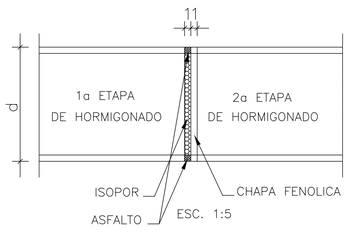
ALCANTARILLA TRIPLE



DETALLES DE LA JUNTA DE DILATACION



ESC. 1:50

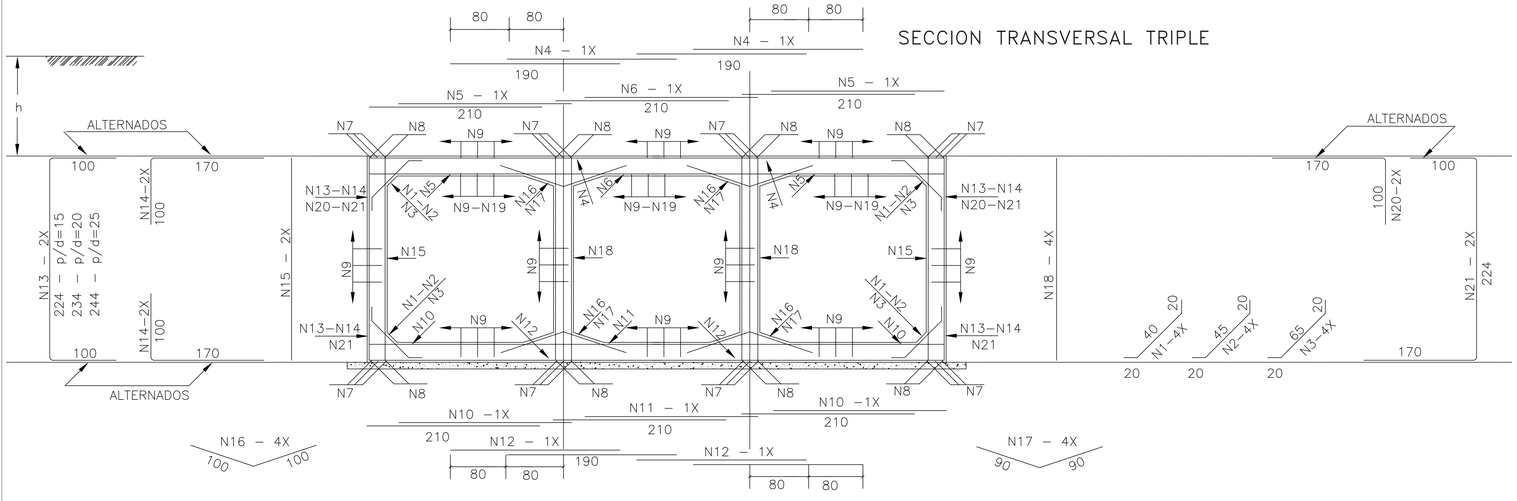


ESC. 1:5

NOTA:

DESPUES DEL HORMIGONADO DE LA 1a ETAPA DEBERAN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

SECCION TRANSVERSAL TRIPLE



TABLAS DE ARMADURAS POR METRO DE GALERIA

0 < h < 100					100 < h < 250					250 < h < 500					500 < h < 750				
fs ≥ 0.21 MPa					fs ≥ 0.21 MPa					fs ≥ 0.23 MPa					fs ≥ 0.28 MPa				
No.	Ø	C	LONG.	SEP.	No.	Ø	C	LONG.	SEP.	No.	Ø	C	LONG.	SEP.	No.	Ø	C	LONG.	SEP.
1	6.3	20	80	c/20cm	1	6.3	20	80	c/20cm	1	—	—	—	—	1	—	—	—	—
2	—	—	—	—	2	—	—	—	—	2	6.3	20	85	c/20cm	2	6.3	20	85	c/20cm
3	—	—	—	—	3	—	—	—	—	3	—	—	—	—	3	—	—	—	—
4	12.5	20	190	c/10cm	4	10.0	12	190	c/15cm	4	10.0	20	190	c/10cm	4	12.5	18	190	c/11cm
5	12.5	14	210	c/14cm	5	12.5	12	210	c/15cm	5	12.5	14	210	c/13cm	5	16.0	14	210	c/14cm
6	10.0	6	210	c/17cm	6	10.0	7	210	c/13cm	6	10.0	8	210	c/12cm	6	12.5	7	210	c/13cm
7	—	—	—	—	7	—	—	—	—	7	12.5	24	CORR.	—	7	16.0	24	CORR.	—
8	12.5	16	CORR.	—	8	12.5	16	CORR.	—	8	—	—	—	—	8	—	—	—	—
9	6.3	204	CORR.	c/20cm	9	6.3	240	CORR.	c/20cm	9	6.3	240	CORR.	c/20cm	9	6.3	240	CORR.	c/20cm
10	10.0	14	210	c/14cm	10	12.5	12	210	c/15cm	10	12.5	14	210	c/13cm	10	16.0	12	210	c/15cm
11	10.0	6	210	c/16cm	11	10.0	9	210	c/11cm	11	10.0	10	210	c/10cm	11	12.5	9	210	c/11cm
12	10.0	12	240	c/15cm	12	10.0	12	240	c/15cm	12	10.0	20	240	c/10cm	12	12.5	18	240	c/11cm
13	—	—	—	—	13	10.0	8	424	c/25cm	13	10.0	8	234	c/26cm	13	12.5	8	234	c/24cm
14	—	—	—	—	14	10.0	16	270	c/26cm	14	10.0	16	270	c/26cm	14	12.5	16	270	c/24cm
15	6.3	20	275	c/10cm	15	6.3	16	275	c/12cm	15	6.3	14	285	c/13cm	15	6.3	14	285	c/13cm
16	—	—	—	—	16	—	—	—	—	16	6.3	20	200	c/20cm	16	6.3	20	200	c/20cm
17	6.3	20	180	c/20cm	17	6.3	20	180	c/20cm	17	—	—	—	—	17	—	—	—	—
18	6.3	20	275	c/20cm	18	6.3	20	275	c/20cm	18	6.3	24	285	c/15cm	18	6.3	24	285	c/15cm
19	10.0	48	CORR.	c/15cm	19	—	—	—	—	19	—	—	—	—	19	—	—	—	—
20	12.5	12	270	c/16cm	20	—	—	—	—	20	—	—	—	—	20	—	—	—	—
21	12.5	12	294	c/16cm	21	—	—	—	—	21	—	—	—	—	21	—	—	—	—

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	98
10.0	0.624	94
12.5	0.988	198
TOTAL		390 Kg

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	105
10.0	0.624	113
12.5	0.988	79
TOTAL		297 Kg

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	109
10.0	0.624	141
12.5	0.988	96
TOTAL		348 Kg

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	109
10.0	0.624	141
12.5	0.988	208
16.0	1.570	148
TOTAL		465 Kg