

EDUARDO TORROJA - OFICINA TÉCNICA

SOLUCION F

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CUBICACIONES

FECHA Abril de 1948

N.º 665.122

CIMENTACION

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EXCAVACION.-

4,40x1,00x3,00 = 13,200
Total: 13,200 m3
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RELLENO DE TIERRAS

Excavación - Hormigón = 5,670
Total: 5,670 m3
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HORMIGON

0,30x4,40x1,0 = 1,320
 $\frac{1,9+4,4}{2} \times 1,0 \times 1,0 = 3,150$
1,80x1,0x1,70 = 3,060
Total: 7,530 m3
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INCORPRADO

1,00x1,70x2 = 3,40
Total: 3,40 m2
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ACERO EN REDONDOS

6/20x4,50x2,47	=	66,690
26"10x1,05x0,62	=	16,926
7"20x2,60x2,47	=	44,954
9"25x2,60x3,85	=	90,090
5"8x3,40x0,39	=	<u>6,630</u>
	Suma:	225,290
5% de tolerancia en peso		<u>11,265</u>
	TOTAL:	236,555 kg.
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ESTRUCTURA

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HORMIGON

Soporte	0,65x1,00x8,55	=	<u>5,558</u>	
				5,558
Zona alta de soporte				
	0,35x0,30x3,75x2	=	0,788	
	0,25x0,25x3,80x2	=	0,475	
	0,80x0,50x2,80	=	1,120	
	0,25x0,30x3,20	=	0,240	
	0,25x0,40x2,35	=	<u>0,235</u>	
				<u>2,858</u>
		Total:		<u>8,416 m3</u>
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ACERO EN REDONDOS

Soporte	2/20x3,50x2,47	=	41,990	
	1"20x6,30x2,47	=	15,561	
	1"20x5,00x2,47	=	12,350	
	1"20x3,80x2,47	=	9,386	
	1"20x2,50x2,47	=	6,175	
	1"20x1,30x2,47	=	3,211	
	4"25x8,50x3,85	=	130,900	
	1"25x6,60x3,85	=	25,410	
	1"25x5,35x3,85	=	20,598	
	1"25x4,00x3,85	=	15,400	
	1"25x2,80x3,85	=	10,780	
	1"25x1,55x3,85	=	5,967	
	34" 8x3,40x0,39	=	<u>45,084</u>	
				342,822

Zona alta de soporte

2 1/4" 14x4, 20x2x1, 21	=	20,328
2" 14x4, 40x2x1, 21	=	21,296
1" 14x1, 80x1, 21	=	2,178
2 3/8" 8x1, 40x2x0, 39	=	25,116
4" 35x4, 30x7, 55	=	129,860
2" 25x4, 15x3, 85	=	31,955
14" 12x2, 70x0, 89	=	33,642
2" 14x1, 10x1, 21	=	2,662
2" 14x1, 40x1, 21	=	3,388
3" 22x7, 25x2, 98	=	64,815
3" 22x6, 15x2, 98	=	54,981
22" 8x1, 05x0, 39	=	9,009
3" 25x7, 35x3, 85	=	84,893
3" 25x6, 25x3, 85	=	72,188
22" 8x1, 05x0, 39	=	9,009
4" 14x4, 90x1, 21	=	23,716
22" 8x1, 15x0, 62	=	15,686
6" 14x3, 50x1, 21	=	25,410
13" 8x1, 35x0, 39	=	6,845
13" 8x0, 90x0, 39	=	<u>4,563</u>

Suma: 641,540

Suma: 984,352

5% de tolerancia en peso 49,218

Total: 1.033,570 kg
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ACERO ELECTROSOLDADO, EN PERFILES, EN CO-
RREAS Y ARRIOSTRAMIENTOS

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22 I P 8 x20,00x5,95	=	2.618,000
8 (-30x6)x9,90x1,413	=	111,910
4 ⊥ (30x30x4)x8,50x1,77	=	60,180
4 ⊥ (")x8,10x1,77	=	<u>57,348</u>
Suma		2.847,438
2% de cartelas		<u>56,949</u>
Suma:		2.904,387 kg.
5% de tolerancia en peso		<u>145,219</u>
TOTAL:		<u>3.049,606 kg.</u>

ACERO ELECTROSOLDADO EN PERFILES, EN
CERCHAS

4 I P 20x8,70x26,3	=	915,240
(I P 20x8,60x26,3	=	904,720
4 I P 14x2,50x14,4	=	<u>144,000</u>
Suma:		1.963,960
2% de cartelas		<u>39,279</u>
Suma:		2.003,239
5% de tolerancia en peso		<u>100,162</u>
Total:		<u>2.103,401</u>

ACERO ELECTROSOLDADO EN PERFILES EN JACENAS

Jácena fachada Sur:

2	∟	P8x20,15x8,64	=	348,192
2	"	P8x17,80x $\frac{2}{3}$ x8,64	=	204,851
2	"	P10x5,20x " x10,60	=	73,420
2	"	P8x7,65x " x8,64	=	88,040
2	"	P8x2,35x " x8,64	=	27,045
7	L	(60x60x6)x2,35x $\frac{2}{3}$ x5,42	=	59,380
2	L	(40x40x4)x2,35x " x2,42	=	7,575
2	L	(55x55x6)x2,35x " x4,95	=	15,494
8	L	(65x65x7)x2,35x " x6,83	=	85,512
2	L	(50x50x5)x2,35x " x3,77	=	11,801
2	∟	P10x2,35x2/3x10,60	=	33,181
4	L	(45x45x5)x3,65x2/3x3,38	=	32,865
12	L	(40x40x4)x3,65x " x2,42	=	70,593
8	L	(50x50x7)x3,65x " x5,15	=	100,153

Jácena fachada Norte:

2	∟	P8x20,15x2x8,64	=	696,384
4	∟	P8x2,35x2/3x8,64	=	54,090
4	L	(60x60x6)x2,35x2/3x5,42	=	33,932
2	L	(40x40x4)x2,35x " x2,42	=	7,575
5	L	(55x55x6)x2,35x2,35x2/3x4,95	=	<u>38,734</u>
8	L	(65x65x7)x2,35x2/3x6,83	=	85,517
2	L	(45x45x5)x2,35x " x3,38	=	10,580
16	L	(40x40x4)x3,65x " x2,42	=	94,124
4	L	(50x50x7)x3,65x " x5,15	=	50,076
4	L	(45x45x5)x3,65x " x3,38	=	<u>32,866</u>
Suma:				2261,980

	Suma:	2.261,980
5% de cartelas		<u>113,099</u>
	Suma:	2.375,079
5% de tolerancia en peso:		<u>118,753</u>
	TOTAL:	<u>2.493,832</u>
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ENCOFRADO

Soporte: $(0,65+1,0) \times 8,55 \times 2 = 28,22$

A deducir: $0,4 \times 0,3 \times 2 = - 0,24$

27,98

Zona alta de soporte

1,00x3,75x2 = 7,50

0,75x3,80x2 = 5,70

2,60x2,80 = 7,28

0,85x3,10 = 2,64

1,30x2,20 = 2,86

25,98

TOTAL: 53,96 m2

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CUBIERTA DE FIBROCEMENTO

19,20x20,00 = 384,00

Total: 384,00 m2

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CANALON

Total: 19,50 m.l.

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EDUARDO TORROJA
OFICINA TÉCNICA

AISLAMIENTO TÉRMICO EN CUBIERTA

16,90x19,25

= 325,33

Total, 325,33 m²

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