



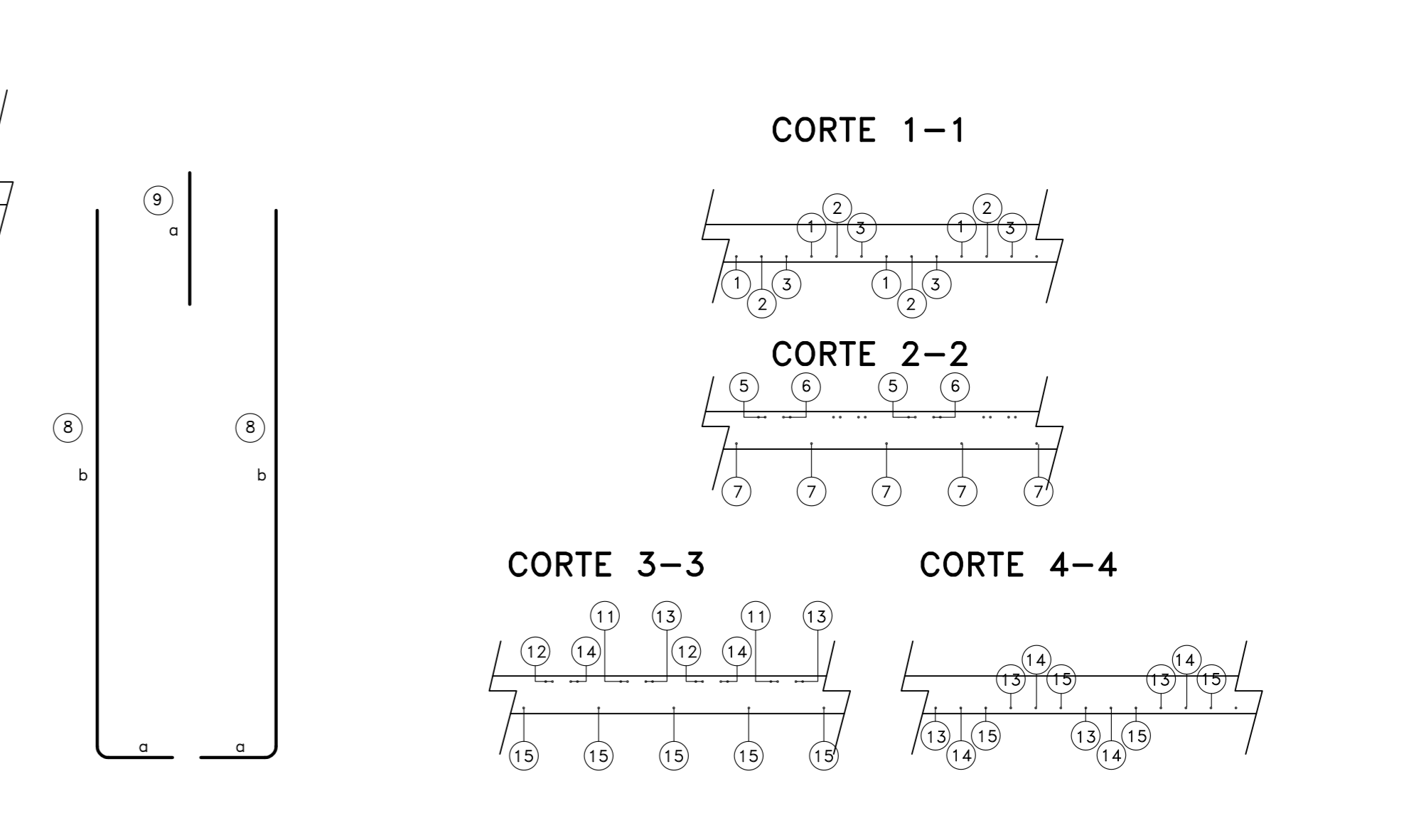
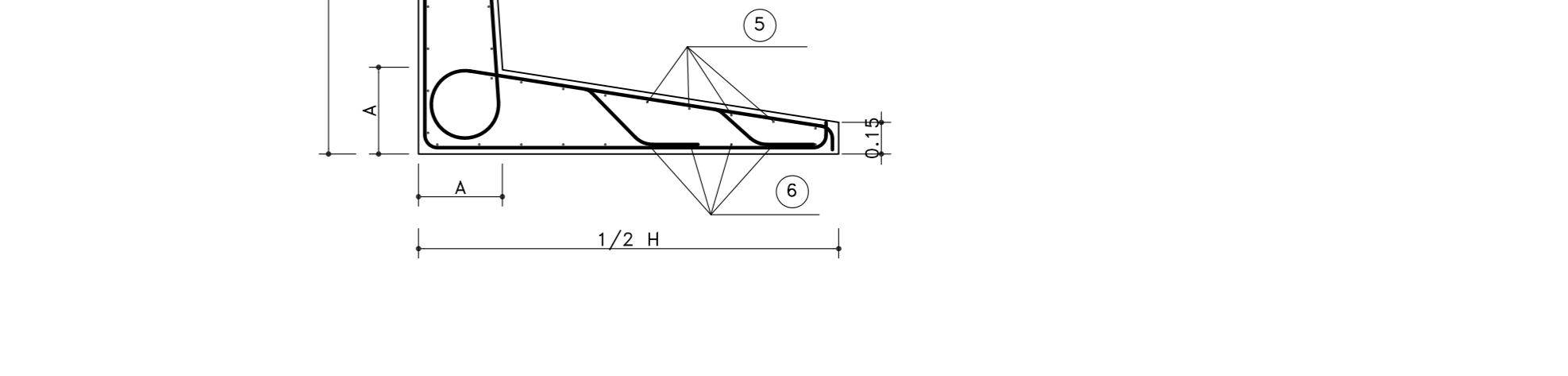
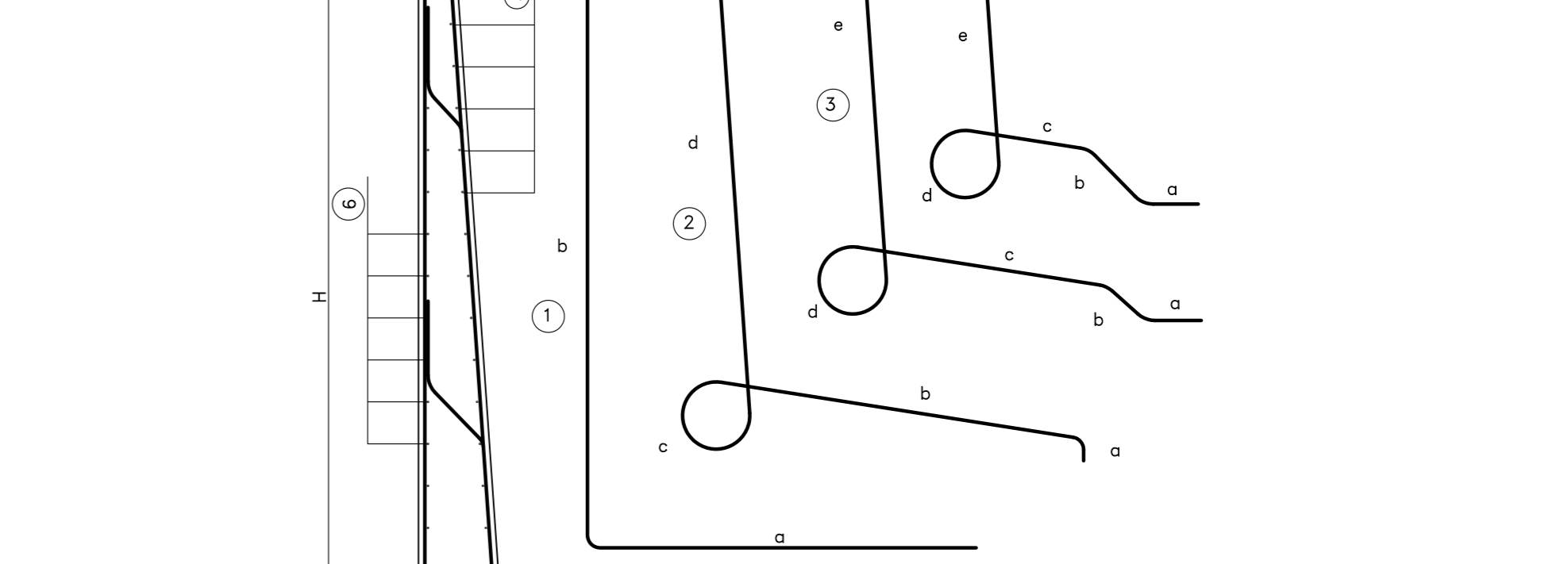
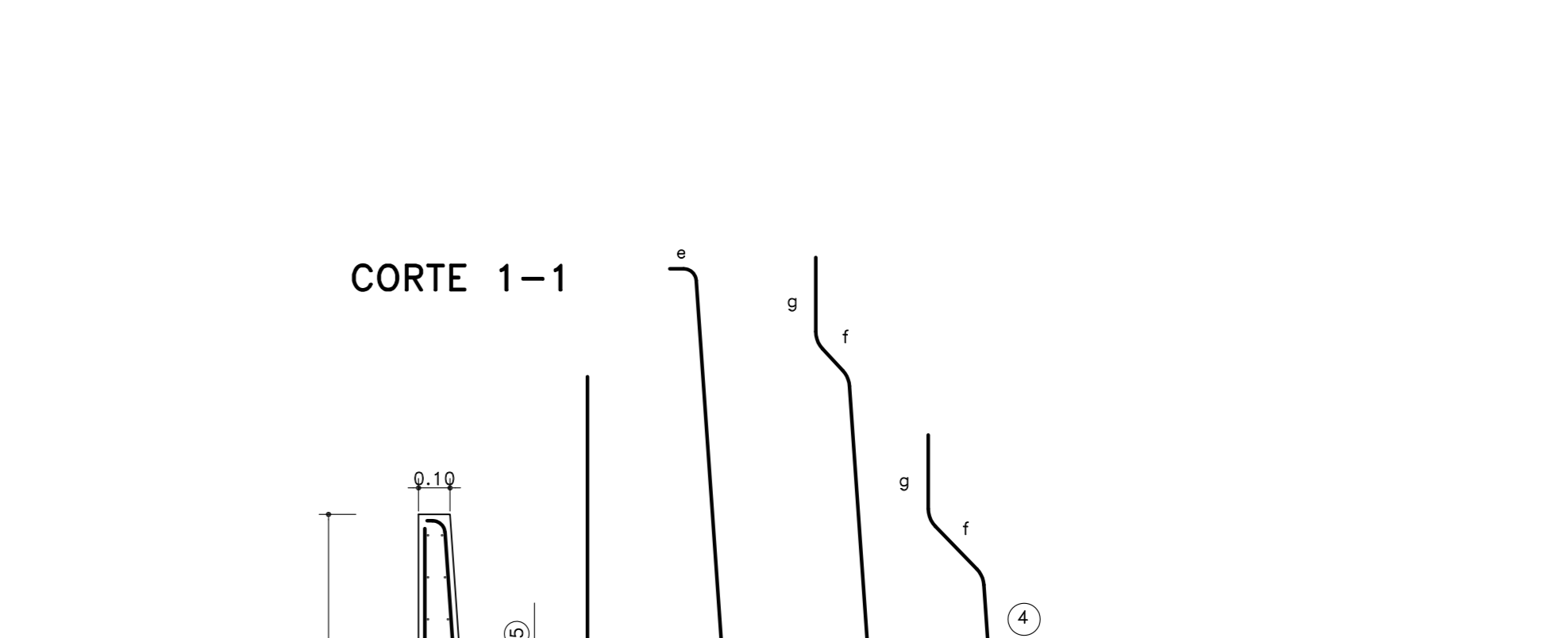
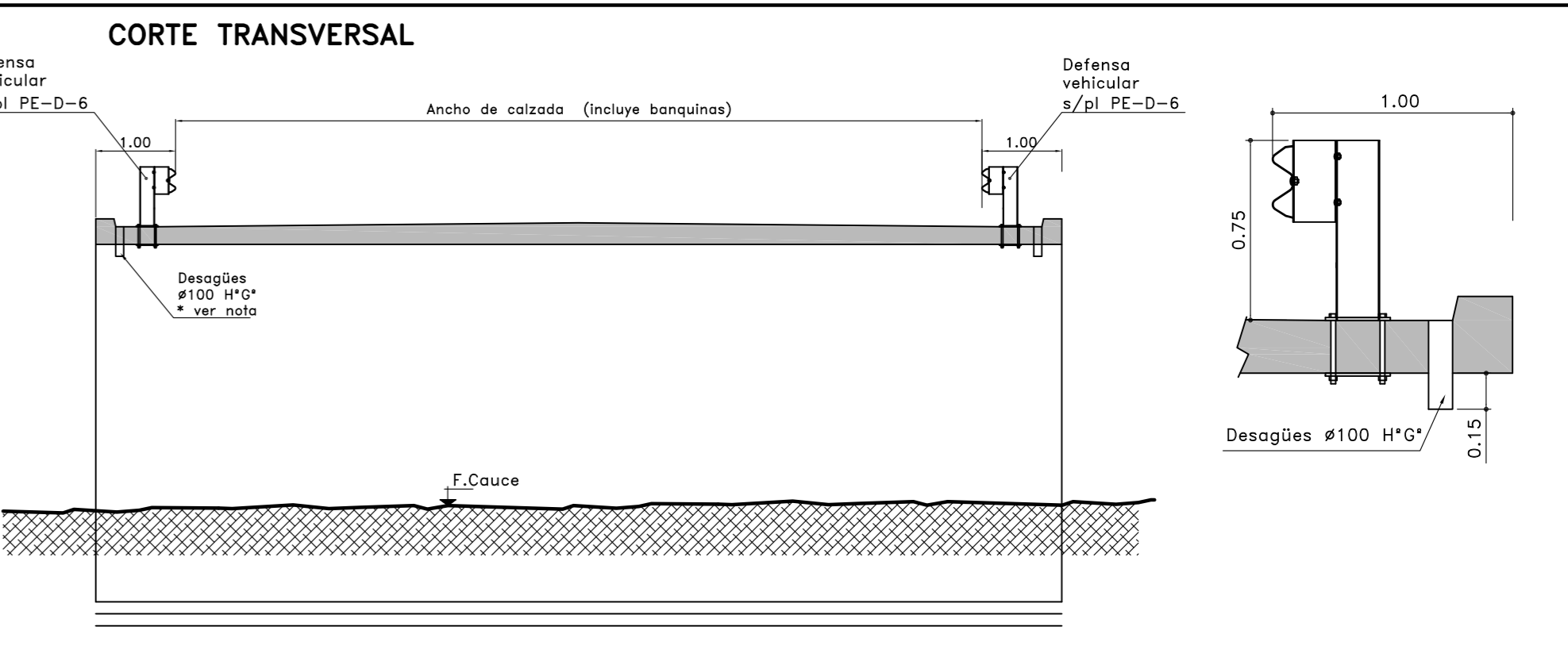
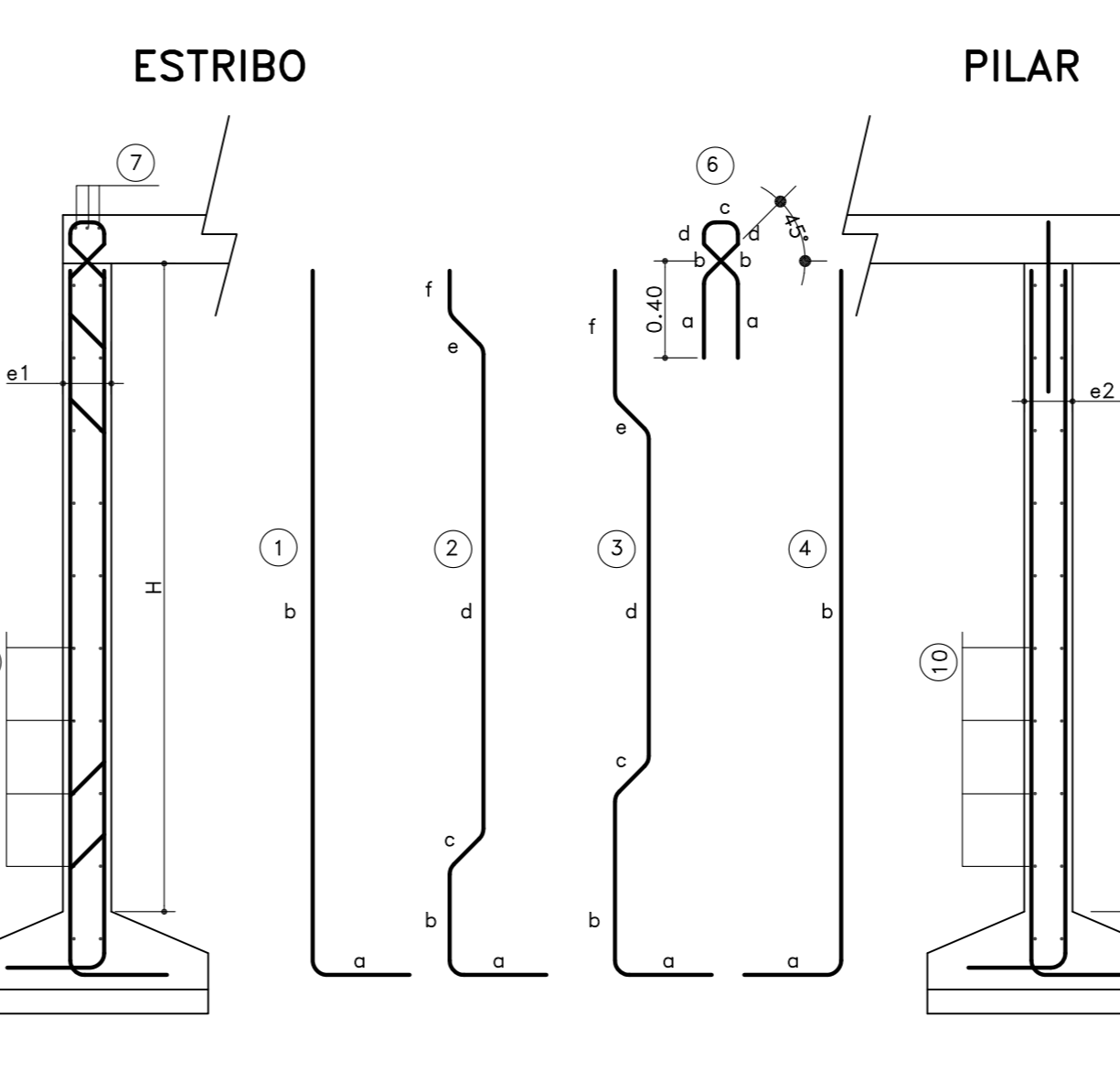
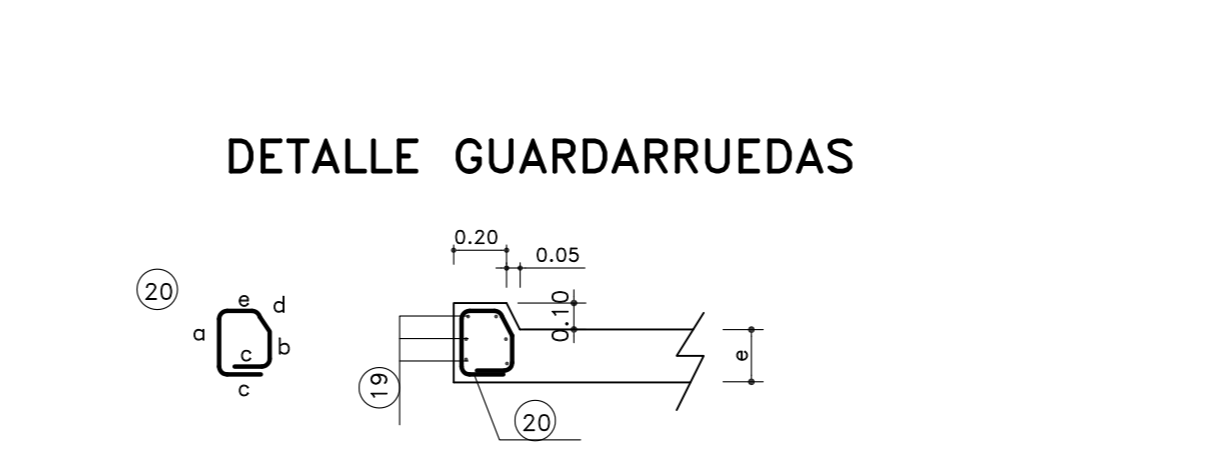
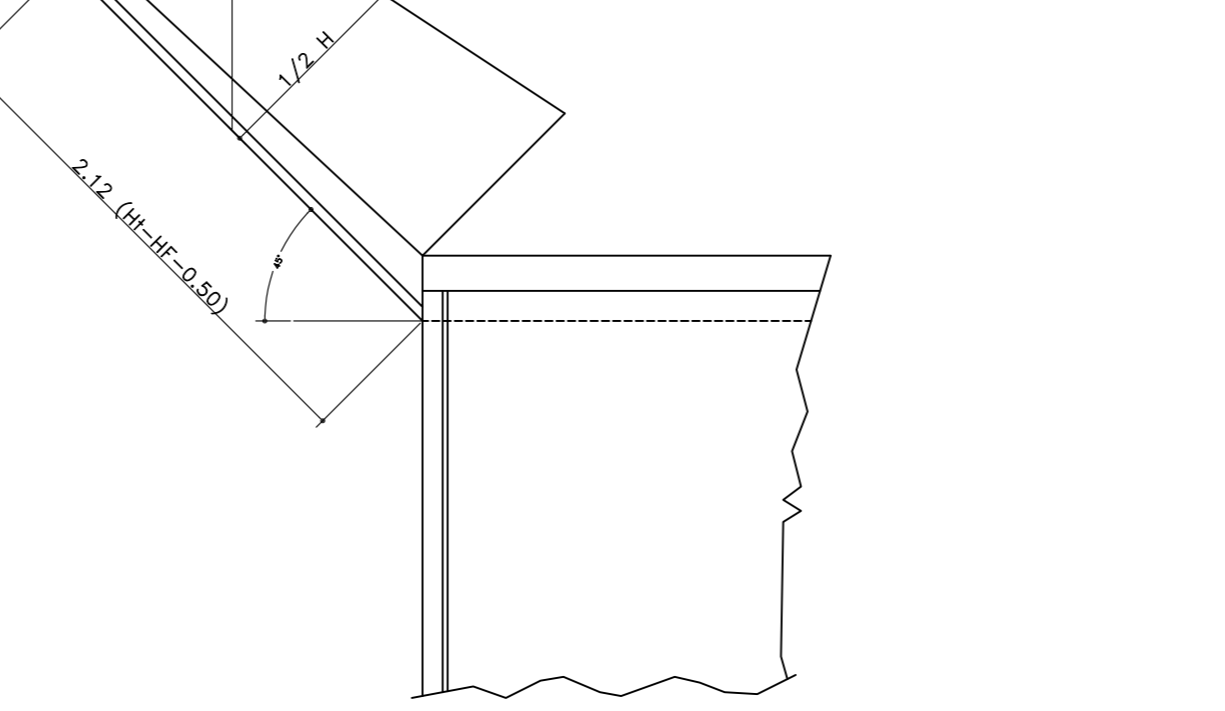
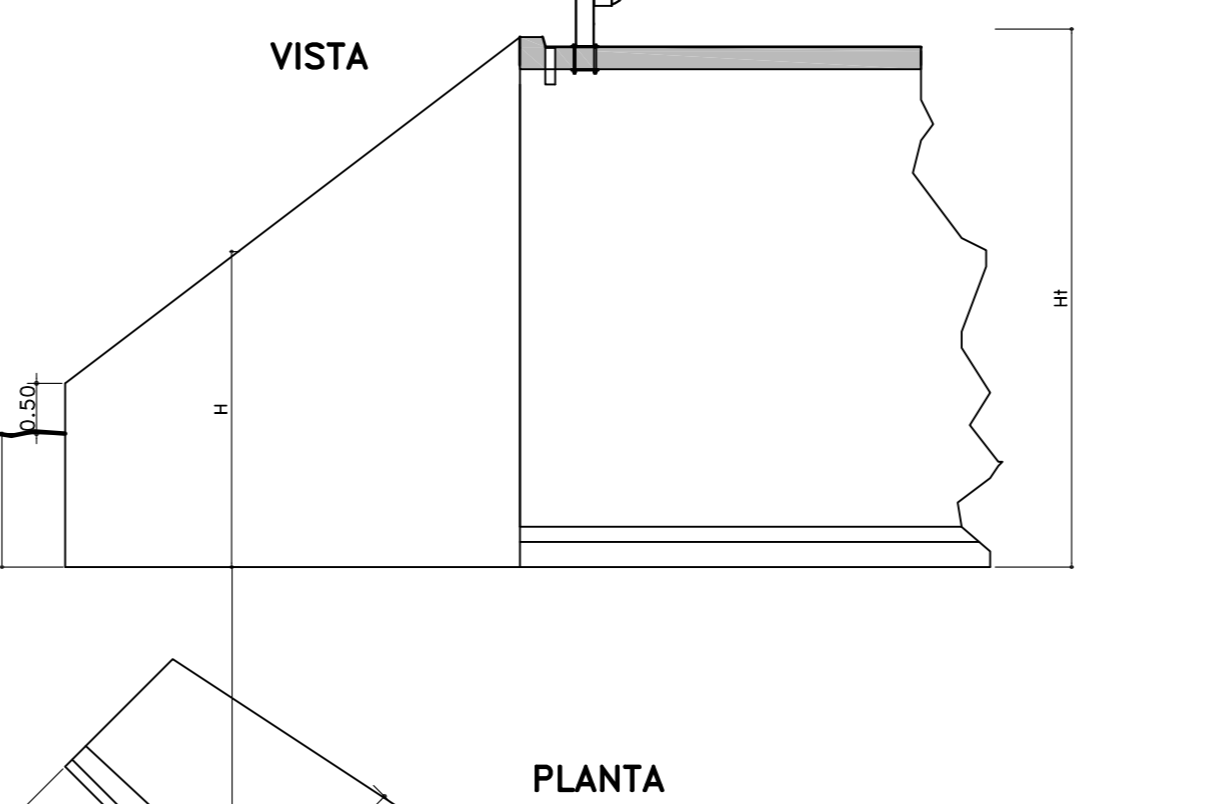
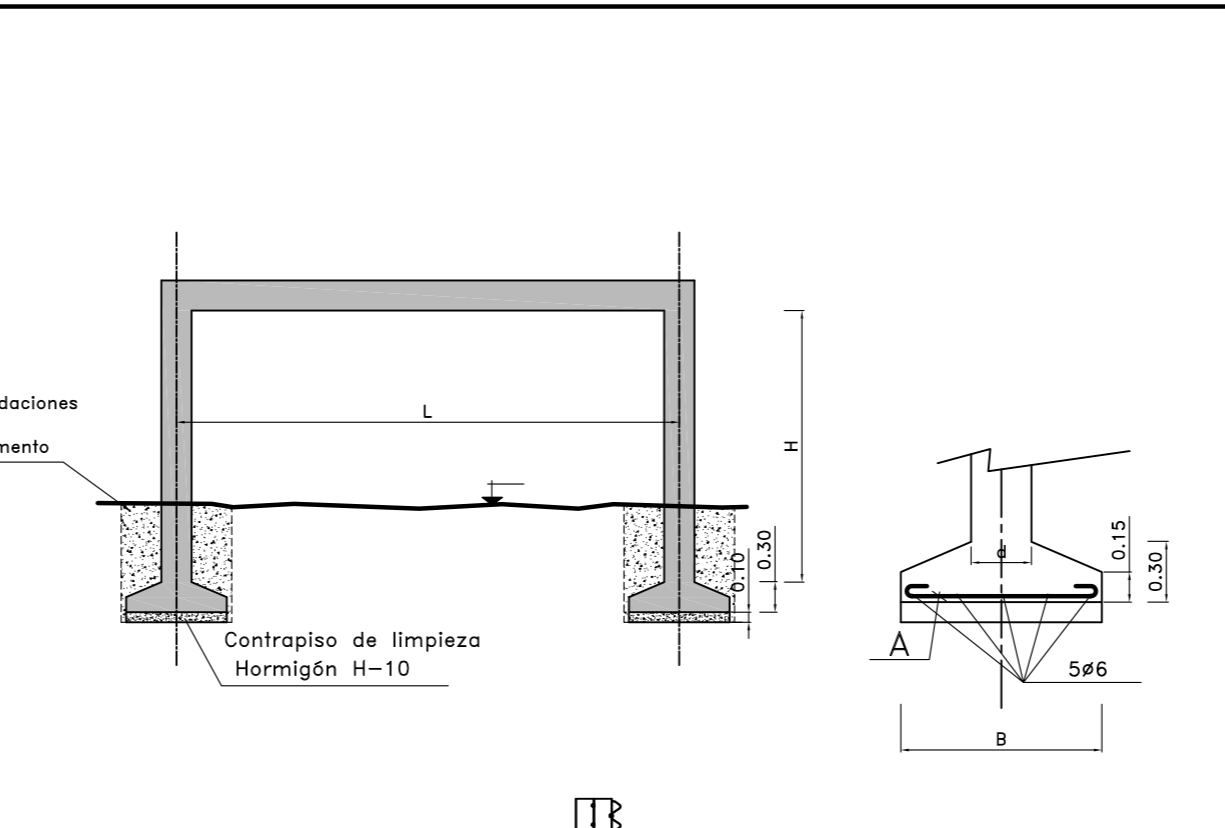
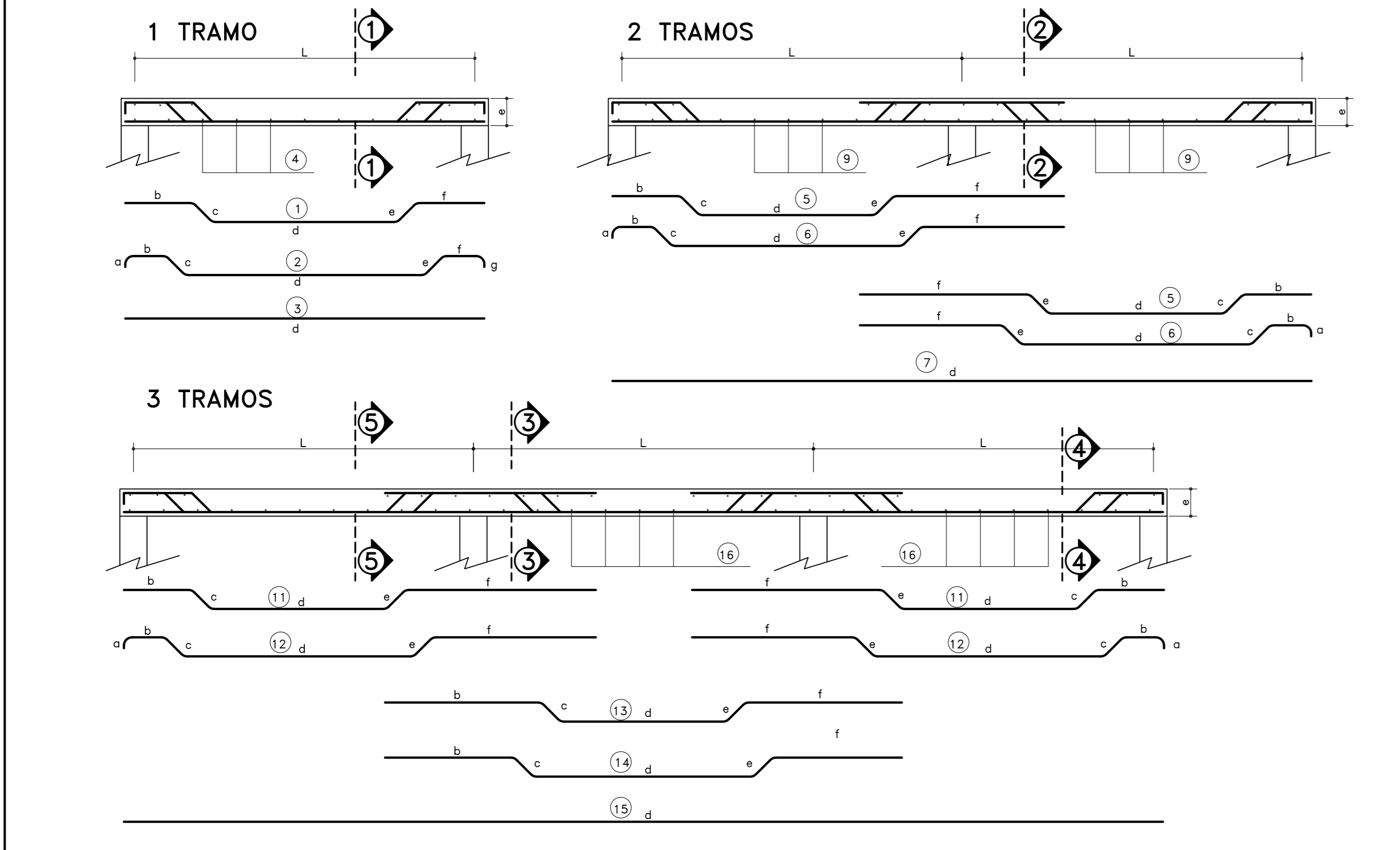
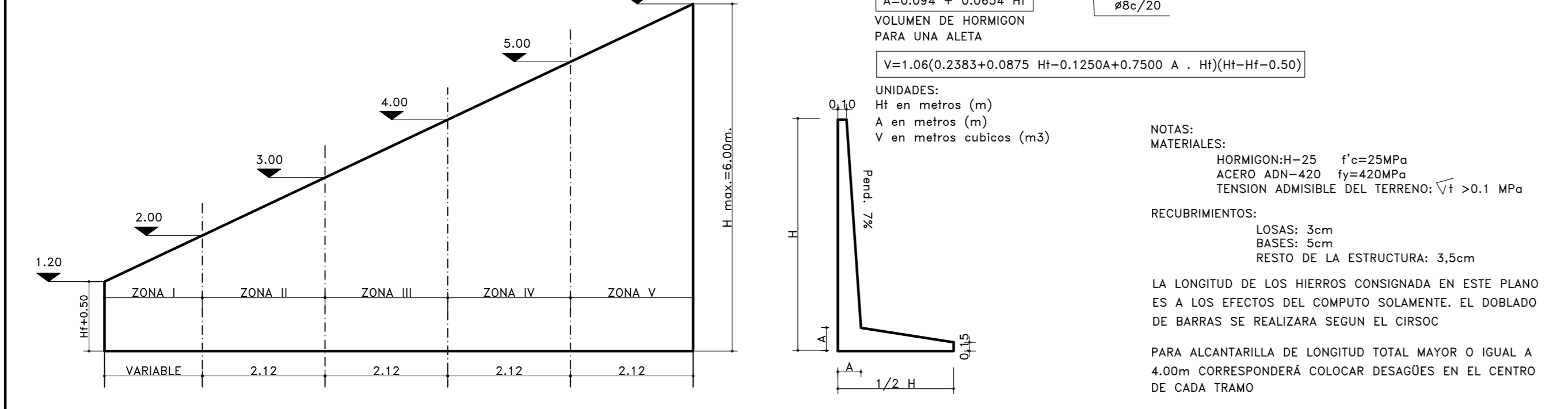
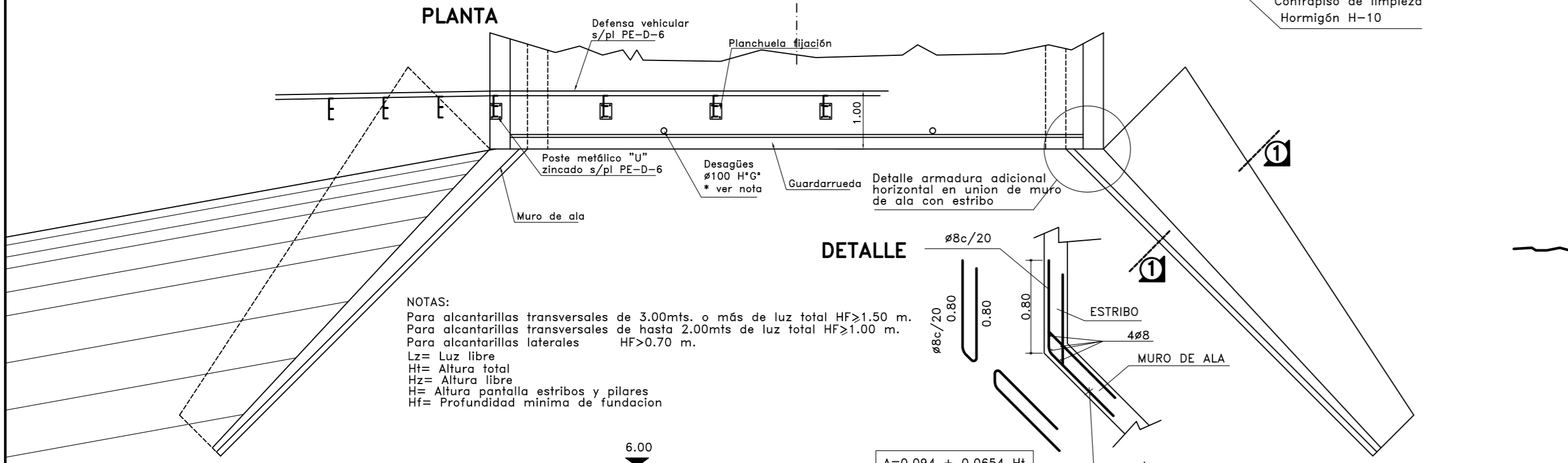
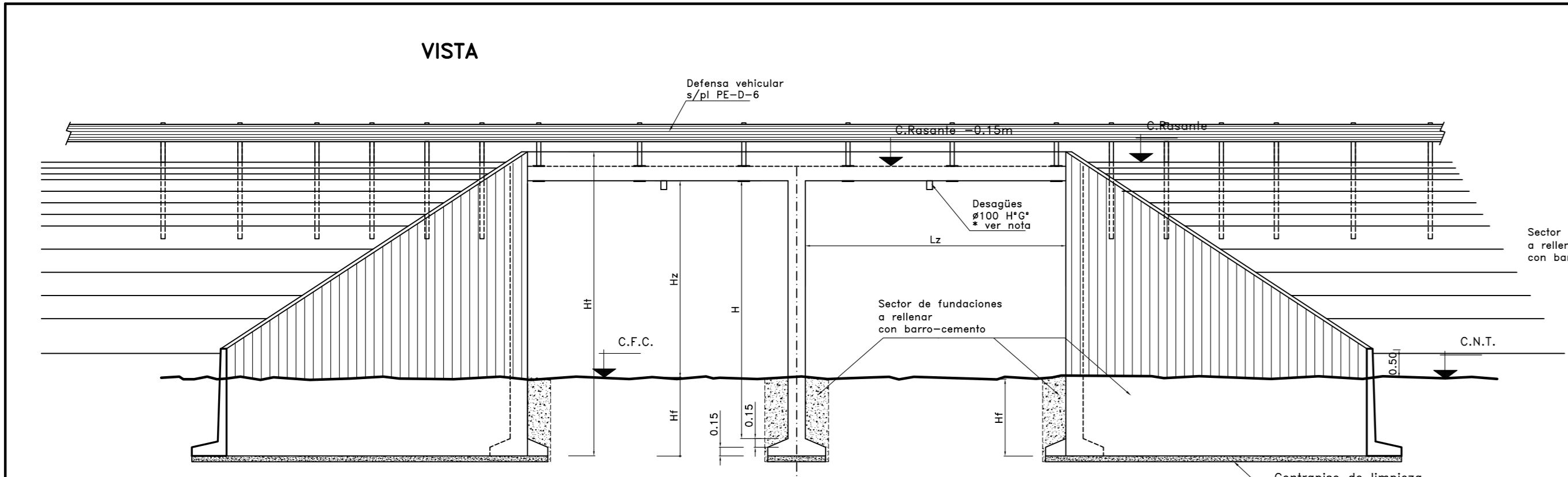
DIRECCIÓN DE
VIALIDAD

MINISTERIO DE INFRAESTRUCTURA
Y SERVICIOS PÚBLICOS



GOBIERNO DE LA PROVINCIA DE
BUENOS AIRES

PLANOS



PROVINCIA DE BUENOS AIRES
 MINISTERIO DE INFRAESTRUCTURA, VIVIENDA
 Y SERVICIOS PUBLICOS
 DIRECCION DE VIALIDAD



GERENCIA TECNICA
 SUB-GERENCIA ESTUDIOS Y PROYECTOS
 DEPARTAMENTO OBRAS DE ARTE
 DIVISION ESTRUCTURAS

OBSERVACIONES:
 ADAPTADO DEL C-I-1070
 REEMPLAZA A PE-A-1 (Septiembre 2006)

PLANO: ALCANTARILLA TIPO
 LOSA CONTINUA DE H*A*
 PLANO TIPO
 ESCALAS: FECHA: MAYO 2016 ARCHIVO: PE-A-1 (Revisión 1)

PLANO N°
 1de2

BASES

L	H	DIMENSIONES				COMPUTOS POR M. DE BASE			
		B	A	ESTRIBO	PILAR	#6	#8	#10	ESTRIBO
1.50	2.00	0.65	1#8c/20	0.15	0.15	1.10	1.60	0.16	0.16
	2.50	0.65	1#8c/20	0.17	0.15	1.10	1.60	0.16	0.16
	3.00	0.65	1#8c/20	0.20	0.17	1.10	1.60	0.16	0.16
2.00	2.00	0.65	1#8c/20	0.15	0.15	1.10	1.60	0.16	0.16
	2.50	0.65	1#8c/20	0.17	0.15	1.10	1.60	0.16	0.16
	3.00	0.65	1#8c/20	0.20	0.17	1.10	1.60	0.16	0.16
	3.50	0.70	1#8c/20	0.23	0.17	1.10	1.70	0.18	0.17
3.00	2.00	0.70	1#8c/20	0.15	0.15	1.10	1.70	0.17	0.17
	2.50	0.70	1#8c/20	0.17	0.15	1.10	1.70	0.17	0.17
	3.00	0.70	1#8c/20	0.20	0.17	1.10	1.70	0.17	0.17
	3.50	0.90	1#8c/20	0.23	0.17	1.10	2.10	0.22	0.22
	4.00	0.90	1#8c/20	0.25	0.20	1.10	2.10	0.22	0.22
4.00	2.50	0.90	1#8c/20	0.17	0.15	1.10	2.10	0.22	0.21
	3.00	0.90	1#8c/20	0.20	0.17	1.10	2.10	0.22	0.22
	3.50	1.00	1#8c/20	0.23	0.17	1.10	2.30	0.24	0.24
	4.00	1.00	1#8c/20	0.25	0.20	1.10	2.30	0.24	0.24
	5.00	1.00	1#8c/20	0.30	0.20	1.10	2.30	0.25	0.24
5.00	2.50	1.20	1#10c/20	0.17	0.15	1.10	4.19	0.28	0.28
	3.00	1.20	1#10c/20	0.20	0.17	1.10	4.19	0.29	0.28
	3.50	1.20	1#10c/20	0.23	0.17	1.10	4.19	0.29	0.28
	4.00	1.20	1#10c/20	0.25	0.20	1.10	4.19	0.29	0.29
	5.00	1.20	1#10c/20	0.30	0.20	1.10	4.19	0.29	0.29

VOLUMEN DE HORMIGON PARA CONTRAPISO POR METRO DE BASE= Bx0.10

PILARES Y ESTRIBOS

TIPO DE ESTRUCTURA	H (m)	e1 (m)	e2 (m)	POS.	Ø m.m.	SEP. (cm)	DOBLADO (m)						LONG. TOTAL (m.)	PESO/m (kg)	COMPUTO METRICO POR m/ ANCHO													
							a	b	c	d	e	f			ACERO/kg	HORMIG/m³												
ESTRIBO	2.00	0.15			1	8	25	0.40	2.23	0.15	1.55	0.15	0.08	2.63	4.31	16.27	0.30											
																		2	8	36	0.40	0.40	0.15	1.55	0.15	0.08	2.73	3.17
																		4	8	36	0.40	2.23					2.63	3.05
																		5	6	30							1.00	3.52
																		6	8	30	0.35	0.15	0.10	min. 0.07			0.74	1.02
																		7	8	30							1.00	1.20
PILAR	2.00	0.15			8	20	0.40	2.23						2.43	9.91	14.65	0.30											
																		9	8	20	0.60					0.60	1.22	
																		10	6	30						1.00	3.52	
ESTRIBO	2.50	0.17			1	8	25	0.40	2.73	0.18	1.94	0.18	0.10	3.13	5.13	18.75	0.42											
																		2	8	36	0.40	0.44	0.18	1.94	0.18	0.10	3.24	3.76
																		4	8	36	0.40	2.73					3.13	3.63
																		5	6	30							1.00	3.96
																		6	8	30	0.34	0.18	0.12	min. 0.07			0.78	1.07
																		7	8	30							1.00	1.20
																		8	8	20	0.40	2.73					3.13	12.77
PILAR	2.50	0.15			8	20	0.40	2.73						1.60	1.22	17.95	0.38											
																		9	8	20	0.60					0.60	1.22	
																		10	6	30						1.00	3.96	
ESTRIBO	3.00	0.20			1	8	25	0.40	3.23	0.22	2.39	0.22	0.10	3.63	5.95	22.59	0.60											
																		2	8	32	0.40	0.44	0.22	2.39	0.22	0.10	3.77	4.83
																		4	8	32	0.40	3.23					3.63	4.65
																		5	6	30							1.00	4.84
																		6	8	30	0.32	0.22	0.15	min. 0.07			0.81	1.12
PILAR	3.00	0.17			8	20	0.40	3.23						5.63	14.81	20.87	0.51											
																		9	8	20	0.60					0.60	1.22	
																		10	6	30						1.00	4.84	
ESTRIBO	3.50	0.23			1	8	25	0.40	3.73	0.26	2.81	0.26	0.14	4.13	5.00	29.45	0.80											
																		2	8	36	0.40	0.44	0.26	2.81	0.26	0.14	4.31	5.00
																		3	8	36	0.40	0.80	0.26	2.10	0.26	0.28	4.10	4.76
																		4	8	36	0.40	3.73					4.13	4.79
																		5	6	30							1.00	5.72
																		6	8	30	0.31	0.26	0.18	min. 0.07			0.89	1.21
																		7	8	30							1.00	1.20
PILAR	3.50	0.17			8	20	0.40	3.73						4.13	16.85	23.79	0.59											
																		9	8	20	0.60					0.60	1.22	
																		10	6	30						1.00	5.72	
ESTRIBO	4.00	0.25			1	8	25	0.40	4.23	0.28	3.17	0.28	0.18	4.63	7.59	35.21	1.00											
																		2	8	30	0.40	0.48	0.28	3.17	0.28	0.18	4.79	6.51
																		3	8	30	0.40	0.90	0.28	2.40	0.28	0.30	4.56	6.20
																		4	8	30	0.40	4.23					4.63	6.30
																		5	6	30							1.00	6.16
																		6	8	30	0.30	0.28	0.20	min. 0.07			0.92	1.25
																		7	8	30							1.00	1.20
PILAR	4.00	0.20			8	20	0.40	4.23						4.63	18.89	26.27	0.80											
																		9	8	20	0.60					0.60	1.22	
																		10	6	30						1.00	6.16	
ESTRIBO	5.00	0.30			1	8	25	0.40	5.23	0.35	3.93	0.35	0.30	5.63	9.23	52.03	1.50											
																		2	10	33	0.40	0.50	0.35	3.93	0.35	0.30	5.83	11.21
																		3	10	33	0.40	1.00	0.35	2.90	0.35	0.35	5.35	10.28
																		4	10	33	0.40	5.23					5.63	10.82
																		5	6	30							1.00	7.92
																		6	8	30	0.27	0.35	0.25	min. 0.07			1.01	1.37
																		7	8	30							1.00	1.20
PILAR	5.00	0.20			8	20	0.40	5.23						5.63	22.97	31.87	1.00											
																		9	8	25	0.60					0.60	0.98	
																		10	6	30						1.00	7.92	

NOTAS:

MATERIALES:
 HORMIGON-H-25 f'c=25MPa
 ACERO ADN-420 fy=420MPa
 TENSION ADMISIBLE DEL TERRENO: $\sqrt{f} > 0.1$ MPa

RECUBRIMIENTOS:

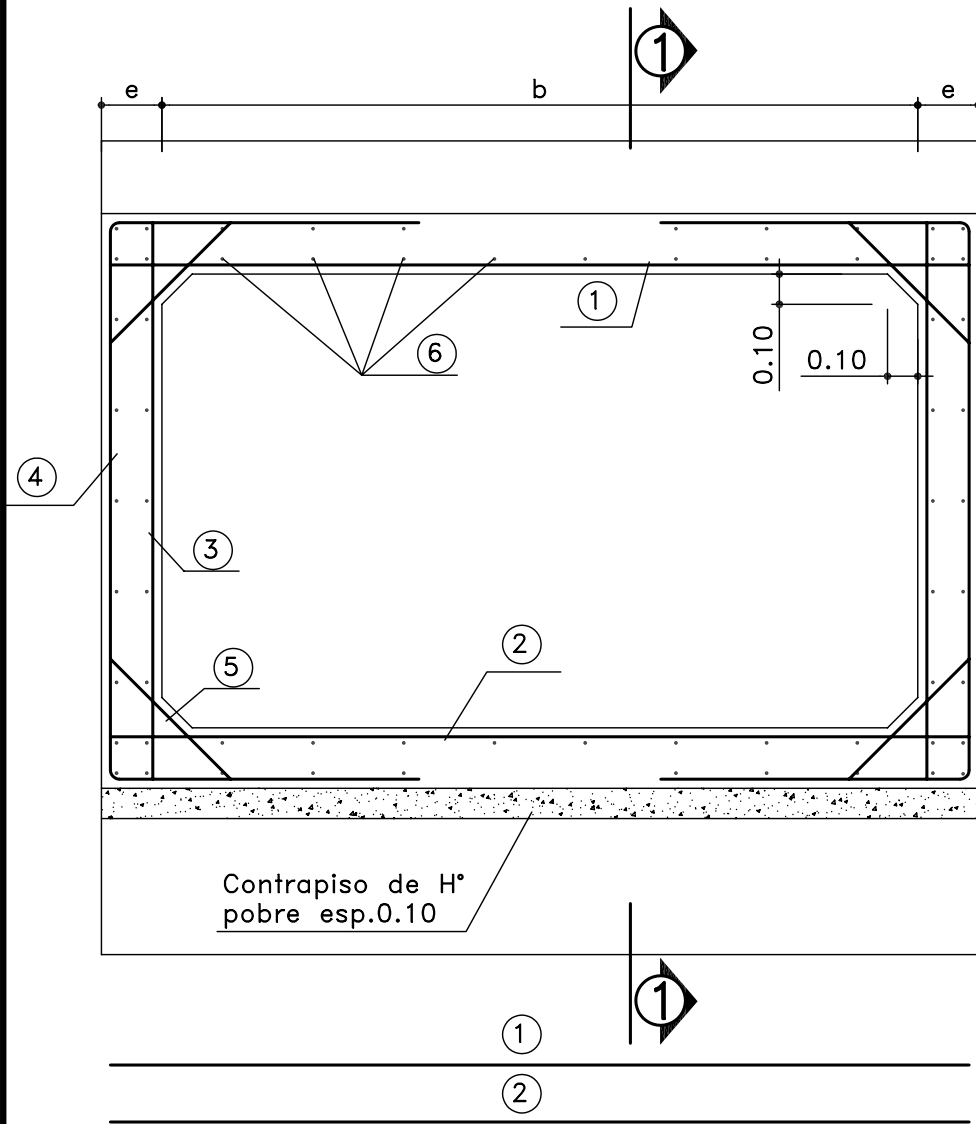
LOSAS: 3cm
 BASES: 5cm
 RESTO DE LA ESTRUCTURA: 3.5cm

LA LONGITUD DE LOS HIERROS CONSIGNADA EN ESTE PLANO ES A LOS EFECTOS DEL COMPUTO SOLAMENTE. EL DOBLADO DE BARRAS SE REALIZARA SEGUN EL CIRSOC

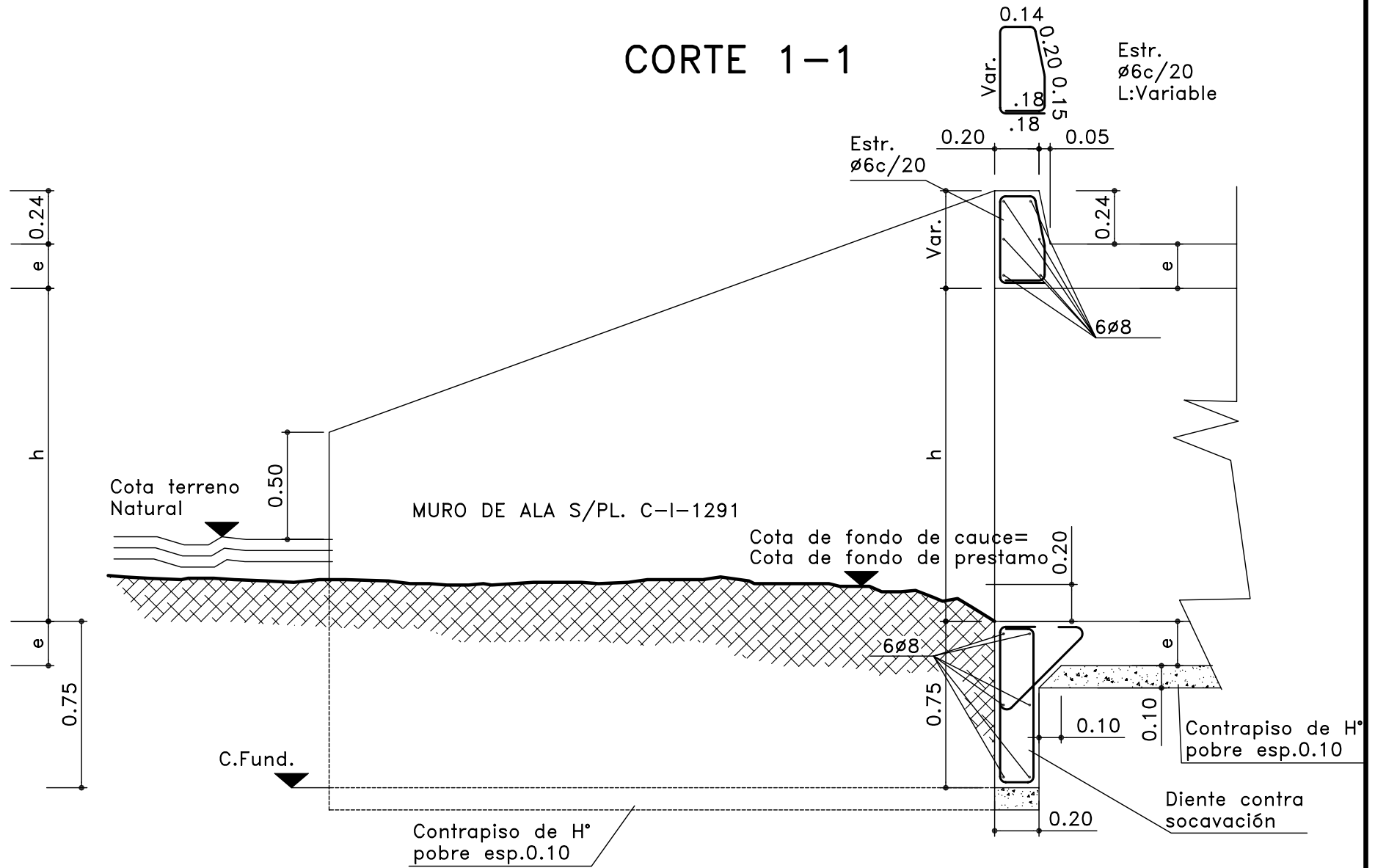
LOSAS

ZONA	L (m)	e (m)	POS.	Ø m.m.	SEP. (cm)	DOBLADO (m)						LONG. TOTAL (m.)	PESO/m (kg)	COMPUTO METRICO POR m/ ANCHO														
						a	b	c	d	e	f			ACERO/kg	HORMIG/m³													
1	1.50	0.12		1	10	27	0.32	0.11	0.80	0.11	0.32	0.08	1.66	3.91	16.36	0.20												
																	2	10	27	0.08	0.20	0.11	1.04	0.11	0.20	0.08	1.82	4.29
																	3	10	27								1.60	3.76
																	4	8	27								1.00	4.40
2	1.50	0.12		5	10	27	0.32	0.11	0.80	0.11	0.77	2.11	9.94	36.36	0.38													
																6	10	27	0.08	0.20	0.11	1.04	0.11	0.65	2.19	10.32		
																7	10	27								3.10	7.30	
																8	8	27								1.00	8.80	
																11	10	27								2.11	9.94	
																12	10	27	0.08	0.20	0.11	1.04	0.11	0.65	2.19	10.32		
3	1.50	0.12		13	10	27	0.60	0.11	0.74	0.11	0.60	2.16	5.09	54.08	0.56													
																14	10	27	0.45	0.11	1.04	0.11	0.45	2.16	5.09			
																15	10	27								4.60	10.84	
																16	8	27								1.00	12.80	
																1	10	30								2.20	4.64	
2	2.00	0.15		2	10	30	0.11	0.23	0.16	1.42	0.16	0.23	0.11	2.42	5.10	18.97	0.32											

SECCIÓN TRANSVERSAL



CORTE 1-1



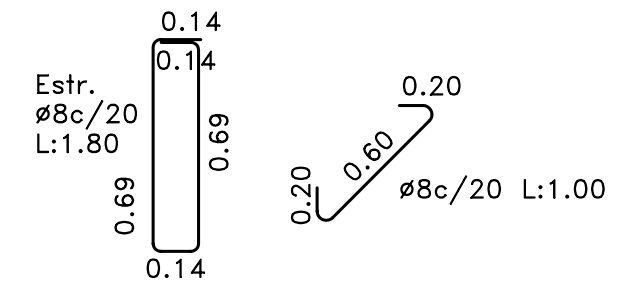
NOTAS:
DIMENSIONES Y ARMADURAS VER PLANILLA ADJUNTA
MATERIALES:

HORMIGÓN: H-21: $f'_{ck}=21\text{MPa}$
ACERO: ADN-420: $f_yk=420\text{MPa}$

RECUBRIMIENTO: 3CM

TAPADAS ADMISIBLES

b	Tapada
1.00 a 1.25	sin limite
1.50	0.00 a 7.00m
1.75	0.00 a 4.00m
2.00 a 2.75	0.00 a 3.00m
3.00 a 3.75	0.00 a 2.00m
4.00 a 5.00	0.00 a 1.50m



DV BA PROVINCIA DE BUENOS AIRES
MINISTERIO DE OBRAS Y SERVICIOS PUBLICOS
DIRECCION DE VIALIDAD
SUB-GERENCIA ESTUDIOS Y PROYECTOS
DEPARTAMENTO OBRAS DE ARTE

PLANO: CONDUCTO O ALCANTARILLA CAJÓN DE UNA CELDA DE LUZ Y ALTURA VARIABLE

ESCALA:	FECHA: AGOSTO 2003	ARCHIVO: C-I-1292
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CONDUCTOS H = 1m

DIMENSIONES			ARMADURA						Volumen de H ^o m ³ /m	φ8 mm. Long. (m)	φ8 mm. Peso (tn)	φ10 mm. Long. (m)	φ10 mm. Peso (tn)	φ12 mm. Long. (tn)	φ12 mm. Peso (tn)	Peso Total (tn)	Tapadas admisibles (m)
b	h	e	1	2	3	4	5	6									
1.00	1.00	0.15	φ 8 c/ 10 L = 1.24	φ 8 c/ 15 L = 1.24	φ 8 c/ 20 L = 1.24	φ 8 c/ 20 L = 2.56	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.710	83.08	0.033					0.033	s/ limite
1.25	1.00	0.15	φ 8 c/ 11 L = 1.49	φ 8 c/ 11 L = 1.49	φ 8 c/ 20 L = 1.24	φ 8 c/ 16 L = 2.56	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.785	91.88	0.037					0.037	s/ limite
1.50	1.00	0.15	φ 10 c/ 10 L = 1.74	φ 8 c/ 9 L = 1.74	φ 8 c/ 20 L = 1.24	φ 8 c/ 12 L = 2.56	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.860	92.08	0.037	19.14	0.012			0.049	0.00 - 7.50
1.75	1.00	0.18	φ 8 c/ 7 L = 2.05	φ 8 c/ 10 L = 2.05	φ 8 c/ 16 L = 1.30	φ 8 c/ 11 L = 2.74	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.140	133.88	0.054					0.054	0.00 - 4.50
2.00	1.00	0.18	φ 10 c/ 9 L = 2.30	φ 8 c/ 9 L = 2.30	φ 8 c/ 16 L = 1.30	φ 8 c/ 9 L = 2.74	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.230	115.66	0.046	27.6	0.017			0.063	0.00 - 3.50
2.25	1.00	0.18	φ 10 c/ 8 L = 2.55	φ 10 c/ 8 L = 2.55	φ 8 c/ 16 L = 1.30	φ 8 c/ 8 L = 2.74	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.320	90.8	0.036	68.85	0.043			0.079	0.00 - 3.50
2.50	1.00	0.21	φ 10 c/ 8 L = 2.86	φ 10 c/ 8 L = 2.86	φ 8 c/ 14 L = 1.36	φ 10 c/ 12 L = 3.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.666	60.32	0.024	104.94	0.065			0.089	0.00 - 3.50
2.75	1.00	0.21	φ 10 c/ 7 L = 3.11	φ 10 c/ 7 L = 3.11	φ 8 c/ 14 L = 1.36	φ 10 c/ 10 L = 3.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.771	62.32	0.025	114.77	0.071			0.096	0.00 - 3.50
3.00	1.00	0.21	φ 12 c/ 10 L = 3.36	φ 12 c/ 10 L = 3.36	φ 8 c/ 14 L = 1.36	φ 10 c/ 9 L = 3.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.876	64.32	0.026	36.96	0.023	73.92	0.066	0.114	0.00 - 2.50
3.25	1.00	0.24	φ 12 c/ 10 L = 3.67	φ 12 c/ 10 L = 3.67	φ 8 c/ 12 L = 1.42	φ 10 c/ 9 L = 3.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.290	67.58	0.027	39.12	0.024	80.74	0.072	0.123	0.00 - 2.50
3.50	1.00	0.24	φ 12 c/ 10 L = 3.92	φ 12 c/ 10 L = 3.92	φ 8 c/ 12 L = 1.42	φ 10 c/ 8 L = 3.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.410	71.58	0.029	42.38	0.026	86.24	0.077	0.132	0.00 - 2.50
3.75	1.00	0.24	φ 12 c/ 9 L = 4.17	φ 12 c/ 9 L = 4.17	φ 8 c/ 12 L = 1.42	φ 10 c/ 8 L = 3.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.530	73.58	0.029	42.38	0.026	100.08	0.089	0.145	0.00 - 2.50
4.00	1.00	0.27	φ 12 c/ 9 L = 4.48	φ 12 c/ 9 L = 4.48	φ 8 c/ 10 L = 1.48	φ 12 c/ 9 L = 3.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.012	78.44	0.031			138.16	0.123	0.154	0.00 - 2.00
4.25	1.00	0.27	φ 12 c/ 9 L = 4.73	φ 12 c/ 9 L = 4.73	φ 8 c/ 10 L = 1.48	φ 12 c/ 8 L = 3.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.147	80.44	0.032			160.32	0.143	0.175	0.00 - 2.00
4.50	1.00	0.27	φ 12 c/ 8 L = 4.98	φ 12 c/ 8 L = 4.98	φ 8 c/ 10 L = 1.48	φ 12 c/ 8 L = 3.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.282	84.44	0.034			181.26	0.161	0.195	0.00 - 2.00
4.75	1.00	0.30	φ 12 c/ 8 L = 5.29	φ 12 c/ 8 L = 5.29	φ 8 c/ 9 L = 1.54	φ 12 c/ 8 L = 3.78	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	3.830	88	0.035			191.97	0.171	0.206	0.00 - 2.00
5.00	1.00	0.30	φ 12 c/ 8 L = 5.54	φ 12 c/ 8 L = 5.54	φ 8 c/ 9 L = 1.54	φ 12 c/ 7 L = 3.78	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	3.980	90	0.036			206.28	0.184	0.220	0.00 - 2.00

CONDUCTOS H = 1.25m

DIMENSIONES			ARMADURA						Volumen de	φ8 mm.	φ8 mm.	φ10 mm.	φ10 mm.	φ12 mm.	φ12 mm.	Peso	Tapadas
b	h	e	1	2	3	4	5	6	Hº m³/m	Long. (m)	Peso (tn)	Long. (m)	Peso (tn)	Long. (tn)	Peso (tn)	Total (tn)	admisibles (m)
1.25	1.25	0.15	φ 10 c/ 12 L = 1.49	φ 8 c/ 10 L = 1.49	φ 8 c/ 20 L = 1.49	φ 8 c/ 17 L = 2.81	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.845	81.72	0.033	13.41	0.008			0.041	s/ limite
1.50	1.25	0.15	φ 10 c/ 9 L = 1.74	φ 10 c/ 13 L = 1.74	φ 8 c/ 20 L = 1.49	φ 8 c/ 14 L = 2.81	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.920	68.14	0.027	36.54	0.023			0.050	0.00 - 7.50
1.75	1.25	0.18	φ 10 c/ 10 L = 2.05	φ 10 c/ 14 L = 2.05	φ 8 c/ 16 L = 1.55	φ 8 c/ 11 L = 2.99	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.215	82.83	0.033	38.95	0.024			0.057	0.00 - 4.50
2.00	1.25	0.18	φ 10 c/ 9 L = 2.30	φ 10 c/ 13 L = 2.30	φ 8 c/ 16 L = 1.55	φ 8 c/ 10 L = 2.99	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.305	87.82	0.035	48.30	0.030			0.065	0.00 - 3.50
2.25	1.25	0.18	φ 10 c/ 8 L = 2.55	φ 10 c/ 8 L = 2.55	φ 8 c/ 16 L = 1.55	φ 8 c/ 8 L = 2.99	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.410	95.8	0.038	68.85	0.043			0.081	0.00 - 3.50
2.50	1.25	0.21	φ 10 c/ 8 L = 2.86	φ 10 c/ 8 L = 2.86	φ 8 c/ 14 L = 1.61	φ 10 c/ 12 L = 3.33	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.756	62.32	0.025	107.19	0.066			0.091	0.00 - 3.50
2.75	1.25	0.21	φ 10 c/ 7 L = 3.11	φ 10 c/ 7 L = 3.11	φ 8 c/ 14 L = 1.61	φ 10 c/ 11 L = 3.33	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.861	64.32	0.026	123.49	0.077			0.102	0.00 - 3.50
3.00	1.25	0.21	φ 12 c/ 9 L = 3.36	φ 12 c/ 9 L = 3.36	φ 8 c/ 14 L = 1.61	φ 10 c/ 10 L = 3.33	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.966	66.32	0.027	36.63	0.023	80.64	0.072	0.121	0.00 - 2.50
3.25	1.25	0.24	φ 10 c/ 7 L = 3.67	φ 10 c/ 7 L = 3.67	φ 8 c/ 12 L = 1.67	φ 10 c/ 9 L = 3.51	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.395	73.83	0.030	148.55	0.092			0.122	0.00 - 2.50
3.50	1.25	0.24	φ 12 c/ 9 L = 3.92	φ 12 c/ 9 L = 3.92	φ 8 c/ 12 L = 1.67	φ 12 c/ 13 L = 3.51	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.515	75.83	0.030			125.67	0.112	0.142	0.00 - 2.50
3.75	1.25	0.24	φ 12 c/ 9 L = 4.17	φ 12 c/ 9 L = 4.17	φ 8 c/ 12 L = 1.67	φ 12 c/ 11 L = 3.51	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.635	77.83	0.031			135.18	0.120	0.151	0.00 - 2.50
4.00	1.25	0.27	φ 12 c/ 9 L = 4.48	φ 12 c/ 9 L = 4.48	φ 8 c/ 10 L = 1.73	φ 12 c/ 11 L = 3.85	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.132	81.19	0.032			146.02	0.130	0.162	0.00 - 2.00
4.25	1.25	0.27	φ 12 c/ 8 L = 4.73	φ 12 c/ 8 L = 4.73	φ 8 c/ 10 L = 1.73	φ 12 c/ 10 L = 3.85	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.267	83.19	0.033			170.06	0.151	0.185	0.00 - 2.00
4.50	1.25	0.27	φ 12 c/ 8 L = 4.98	φ 12 c/ 8 L = 4.98	φ 8 c/ 10 L = 1.73	φ 12 c/ 9 L = 3.85	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.402	85.19	0.034			180.66	0.161	0.195	0.00 - 2.00
4.75	1.25	0.30	φ 12 c/ 8 L = 5.29	φ 12 c/ 8 L = 5.29	φ 8 c/ 9 L = 1.79	φ 12 c/ 8 L = 4.03	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	3.965	89	0.036			195.22	0.174	0.209	0.00 - 2.00
5.00	1.25	0.30	φ 12 c/ 8 L = 5.54	φ 12 c/ 8 L = 5.54	φ 8 c/ 9 L = 1.79	φ 12 c/ 8 L = 4.03	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.115	91	0.036			201.97	0.180	0.216	0.00 - 2.00

CONDUCTOS H = 1.5m

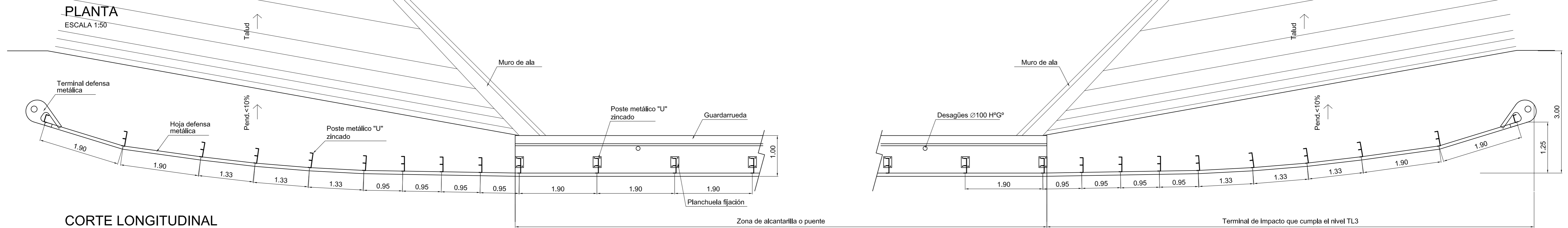
DIMENSIONES			ARMADURA						Volumen de	φ8 mm.	φ8 mm.	φ10 mm.	φ10 mm.	φ12 mm.	φ12 mm.	Peso	Tapadas
b	h	e	1	2	3	4	5	6	H° m³/m	Long. (m)	Peso (tn)	Long. (m)	Peso (tn)	Long. (tn)	Peso (tn)	Total (tn)	admisibles (m)
1.50	1.50	0.15	φ 10 c/ 9 L = 1.74	φ 8 c/ 8 L = 1.74	φ 8 c/ 20 L = 1.74	φ 8 c/ 14 L = 3.06	φ 8 c/ 30 L = 0.42	φ 8 c/ 30 L = 1.00	0.995	104.26	0.042	20.88	0.013			0.055	0.00 - 7.50
1.75	1.50	0.18	φ 10 c/ 10 L = 2.05	φ 10 c/ 13 L = 2.05	φ 8 c/ 16 L = 1.80	φ 8 c/ 12 L = 3.24	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.305	91.84	0.037	41.00	0.025			0.062	0.00 - 4.50
2.00	1.50	0.18	φ 10 c/ 8 L = 2.30	φ 10 c/ 8 L = 2.30	φ 8 c/ 16 L = 1.80	φ 8 c/ 10 L = 3.24	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.395	100.32	0.040	62.10	0.039			0.079	0.00 - 3.50
2.25	1.50	0.18	φ 10 c/ 7 L = 2.55	φ 10 c/ 7 L = 2.55	φ 8 c/ 16 L = 1.80	φ 8 c/ 9 L = 3.24	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.500	105.56	0.042	76.50	0.047			0.090	0.00 - 3.50
2.50	1.50	0.21	φ 10 c/ 8 L = 2.86	φ 10 c/ 8 L = 2.86	φ 8 c/ 14 L = 1.86	φ 10 c/ 13 L = 3.58	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.861	72.32	0.029	109.44	0.068			0.097	0.00 - 3.50
2.75	1.50	0.21	φ 10 c/ 7 L = 3.11	φ 10 c/ 7 L = 3.11	φ 8 c/ 14 L = 1.86	φ 10 c/ 12 L = 3.58	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.966	76.32	0.031	125.52	0.078			0.108	0.00 - 3.50
3.00	1.50	0.21	φ 12 c/ 9 L = 3.36	φ 12 c/ 9 L = 3.36	φ 8 c/ 14 L = 1.86	φ 10 c/ 10 L = 3.58	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.071	76.32	0.031	39.38	0.024	80.64	0.072	0.127	0.00 - 2.50
3.25	1.50	0.24	φ 12 c/ 9 L = 3.67	φ 12 c/ 9 L = 3.67	φ 8 c/ 12 L = 1.92	φ 10 c/ 10 L = 3.76	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.515	82.08	0.033	41.36	0.026	88.08	0.078	0.137	0.00 - 2.50
3.50	1.50	0.24	φ 12 c/ 9 L = 3.92	φ 12 c/ 9 L = 3.92	φ 8 c/ 12 L = 1.92	φ 10 c/ 9 L = 3.76	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.635	82.08	0.033	45.12	0.028	94.08	0.084	0.145	0.00 - 2.50
3.75	1.50	0.24	φ 12 c/ 8 L = 4.17	φ 12 c/ 8 L = 4.17	φ 8 c/ 12 L = 1.92	φ 10 c/ 8 L = 3.76	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.755	84.08	0.034	48.88	0.030	112.59	0.100	0.164	0.00 - 2.50
4.00	1.50	0.27	φ 12 c/ 9 L = 4.48	φ 12 c/ 9 L = 4.48	φ 8 c/ 10 L = 1.98	φ 12 c/ 11 L = 4.10	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.267	89.94	0.036			148.52	0.132	0.168	0.00 - 2.00
4.25	1.50	0.27	φ 12 c/ 8 L = 4.73	φ 12 c/ 8 L = 4.73	φ 8 c/ 10 L = 1.98	φ 12 c/ 10 L = 4.10	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.402	89.94	0.036			172.81	0.154	0.190	0.00 - 2.00
4.50	1.50	0.27	φ 12 c/ 8 L = 4.98	φ 12 c/ 8 L = 4.98	φ 8 c/ 10 L = 1.98	φ 12 c/ 10 L = 4.10	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.537	91.94	0.037			179.56	0.160	0.197	0.00 - 2.00
4.75	1.50	0.30	φ 12 c/ 8 L = 5.29	φ 12 c/ 8 L = 5.29	φ 8 c/ 9 L = 2.04	φ 12 c/ 9 L = 4.28	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.115	96	0.038			194.19	0.173	0.211	0.00 - 2.00
5.00	1.50	0.30	φ 12 c/ 7 L = 5.54	φ 12 c/ 7 L = 5.54	φ 8 c/ 9 L = 2.04	φ 12 c/ 9 L = 4.28	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.265	96	0.038			217.56	0.194	0.232	0.00 - 2.00

CONDUCTOS H = 1.75m

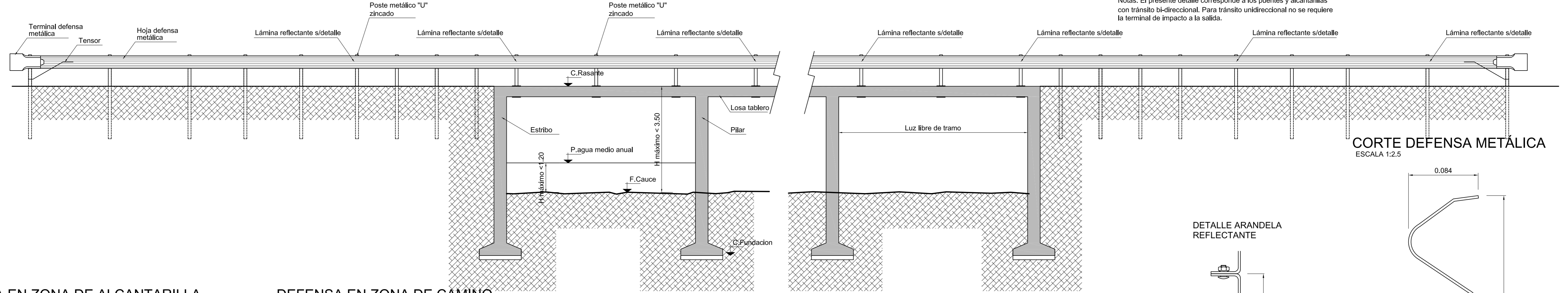
DIMENSIONES			ARMADURA						Volumen de	φ8 mm.	φ8 mm.	φ10 mm.	φ10 mm.	φ12 mm.	φ12 mm.	Peso	Tapadas
b	h	e	1	2	3	4	5	6	H° m³/m	Long. (m)	Peso (tn)	Long. (m)	Peso (tn)	Long. (tn)	Peso (tn)	Total (tn)	admisibles (m)
1.75	1.75	0.18	φ 10 c/ 9 L = 2.05	φ 10 c/ 9 L = 2.05	φ 8 c/ 16 L = 2.05	φ 8 c/ 13 L = 3.49	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.395	149.6	0.060	49.20	0.031			0.090	0.00 - 4.50
2.00	1.75	0.18	φ 10 c/ 8 L = 2.30	φ 10 c/ 8 L = 2.30	φ 8 c/ 16 L = 2.05	φ 8 c/ 11 L = 3.49	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.485	158.58	0.063	62.10	0.039			0.102	0.00 - 3.50
2.25	1.75	0.18	φ 10 c/ 7 L = 2.55	φ 10 c/ 7 L = 2.55	φ 8 c/ 16 L = 2.05	φ 8 c/ 9 L = 3.49	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.590	188.5	0.075	76.50	0.047			0.123	0.00 - 3.50
2.50	1.75	0.21	φ 10 c/ 7 L = 2.86	φ 10 c/ 7 L = 2.86	φ 8 c/ 14 L = 2.11	φ 10 c/ 14 L = 3.83	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	1.966	99.2	0.040	147.08	0.091			0.131	0.00 - 3.50
2.75	1.75	0.21	φ 12 c/ 10 L = 3.11	φ 12 c/ 10 L = 3.11	φ 8 c/ 14 L = 2.11	φ 10 c/ 12 L = 3.83	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.071	101.2	0.040	68.94	0.043	68.42	0.061	0.144	0.00 - 3.50
3.00	1.75	0.21	φ 12 c/ 9 L = 3.36	φ 12 c/ 9 L = 3.36	φ 8 c/ 14 L = 2.11	φ 10 c/ 11 L = 3.83	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.176	105.2	0.042	76.60	0.047	80.64	0.072	0.161	0.00 - 2.50
3.25	1.75	0.24	φ 12 c/ 9 L = 3.67	φ 12 c/ 9 L = 3.67	φ 8 c/ 12 L = 2.17	φ 10 c/ 10 L = 4.01	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.635	113.86	0.046	88.82	0.055	88.08	0.078	0.179	0.00 - 2.50
3.50	1.75	0.24	φ 12 c/ 9 L = 3.92	φ 12 c/ 9 L = 3.92	φ 8 c/ 12 L = 2.17	φ 10 c/ 9 L = 4.01	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.755	115.86	0.046	96.24	0.060	94.08	0.084	0.190	0.00 - 2.50
3.75	1.75	0.24	φ 12 c/ 8 L = 4.17	φ 12 c/ 8 L = 4.17	φ 8 c/ 12 L = 2.17	φ 10 c/ 9 L = 4.01	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.875	117.86	0.047	96.24	0.060	112.59	0.100	0.207	0.00 - 2.50
4.00	1.75	0.27	φ 12 c/ 9 L = 4.48	φ 12 c/ 9 L = 4.48	φ 8 c/ 10 L = 2.23	φ 10 c/ 8 L = 4.35	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.402	133.22	0.053	121.80	0.076	107.52	0.096	0.224	0.00 - 2.00
4.25	1.75	0.27	φ 12 c/ 8 L = 4.73	φ 12 c/ 8 L = 4.73	φ 8 c/ 10 L = 2.23	φ 12 c/ 11 L = 4.35	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.537	135.22	0.054			214.71	0.191	0.245	0.00 - 2.00
4.50	1.75	0.27	φ 12 c/ 7 L = 4.98	φ 12 c/ 7 L = 4.98	φ 8 c/ 10 L = 2.23	φ 12 c/ 10 L = 4.35	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.672	137.22	0.055			245.1	0.218	0.273	0.00 - 2.00
4.75	1.75	0.30	φ 12 c/ 8 L = 5.29	φ 12 c/ 8 L = 5.29	φ 8 c/ 9 L = 2.29	φ 12 c/ 10 L = 4.53	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.265	148.48	0.059			242.49	0.216	0.275	0.00 - 2.00
5.00	1.75	0.30	φ 12 c/ 7 L = 5.54	φ 12 c/ 7 L = 5.54	φ 8 c/ 9 L = 2.29	φ 12 c/ 9 L = 4.53	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.415	150.48	0.060			274.92	0.245	0.305	0.00 - 2.00

CONDUCTOS H = 2m

DIMENSIONES			ARMADURA						Volumen de	φ8 mm.	φ8 mm.	φ10 mm.	φ10 mm.	φ12 mm.	φ12 mm.	Peso	Tapadas
b	h	e	1	2	3	4	5	6	H ^o m ³ /m	Long. (m)	Peso (tn)	Long. (m)	Peso (tn)	Long. (tn)	Peso (tn)	Total (tn)	admisibles (m)
2.00	2.00	0.18	φ 10 c/ 8 L = 2.30	φ 10 c/ 8 L = 2.30	φ 8 c/ 16 L = 2.30	φ 8 c/ 10 L = 3.74	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.575	180.56	0.072	62.10	0.039			0.111	0.00 - 3.50
2.25	2.00	0.18	φ 10 c/ 7 L = 2.55	φ 10 c/ 7 L = 2.55	φ 8 c/ 16 L = 2.30	φ 8 c/ 9 L = 3.74	φ 8 c/ 30 L = 0.505	φ 8 c/ 30 L = 1.00	1.680	190.04	0.076	76.50	0.047			0.123	0.00 - 3.50
2.50	2.00	0.21	φ 10 c/ 8 L = 2.86	φ 10 c/ 8 L = 2.86	φ 8 c/ 14 L = 2.36	φ 10 c/ 13 L = 4.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.071	109.2	0.044	150.66	0.093			0.137	0.00 - 3.50
2.75	2.00	0.21	φ 10 c/ 7 L = 3.11	φ 10 c/ 7 L = 3.11	φ 8 c/ 14 L = 2.36	φ 10 c/ 12 L = 4.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.176	111.2	0.044	166.74	0.103			0.148	0.00 - 3.50
3.00	2.00	0.21	φ 12 c/ 9 L = 3.36	φ 12 c/ 9 L = 3.36	φ 8 c/ 14 L = 2.36	φ 10 c/ 10 L = 4.08	φ 8 c/ 30 L = 0.59	φ 8 c/ 30 L = 1.00	2.281	113.2	0.045	89.76	0.056	80.64	0.072	0.173	0.00 - 2.50
3.25	2.00	0.24	φ 12 c/ 9 L = 3.67	φ 12 c/ 9 L = 3.67	φ 8 c/ 12 L = 2.42	φ 10 c/ 10 L = 4.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.755	124.36	0.050	93.72	0.058	88.08	0.078	0.186	0.00 - 2.50
3.50	2.00	0.24	φ 12 c/ 9 L = 3.92	φ 12 c/ 9 L = 3.92	φ 8 c/ 12 L = 2.42	φ 10 c/ 9 L = 4.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.875	126.36	0.051	102.24	0.063	94.08	0.084	0.198	0.00 - 2.50
3.75	2.00	0.24	φ 12 c/ 8 L = 4.17	φ 12 c/ 8 L = 4.17	φ 8 c/ 12 L = 2.42	φ 10 c/ 8 L = 4.26	φ 8 c/ 30 L = 0.675	φ 8 c/ 30 L = 1.00	2.995	128.36	0.051	119.28	0.074	112.59	0.100	0.226	0.00 - 2.50
4.00	2.00	0.27	φ 12 c/ 9 L = 4.48	φ 12 c/ 9 L = 4.48	φ 8 c/ 10 L = 2.48	φ 12 c/ 11 L = 4.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.537	142.72	0.057			199.52	0.178	0.235	0.00 - 2.00
4.25	2.00	0.27	φ 12 c/ 8 L = 4.73	φ 12 c/ 8 L = 4.73	φ 8 c/ 10 L = 2.48	φ 12 c/ 10 L = 4.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.672	144.72	0.058			228.91	0.204	0.262	0.00 - 2.00
4.50	2.00	0.27	φ 12 c/ 8 L = 4.98	φ 12 c/ 8 L = 4.98	φ 8 c/ 10 L = 2.48	φ 12 c/ 10 L = 4.60	φ 8 c/ 30 L = 0.76	φ 8 c/ 30 L = 1.00	3.807	146.72	0.059			235.66	0.210	0.268	0.00 - 2.00
4.75	2.00	0.30	φ 12 c/ 8 L = 5.29	φ 12 c/ 8 L = 5.29	φ 8 c/ 9 L = 2.54	φ 12 c/ 9 L = 4.78	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.415	156.48	0.063			257.55	0.229	0.292	0.00 - 2.00
5.00	2.00	0.30	φ 12 c/ 7 L = 5.54	φ 12 c/ 7 L = 5.54	φ 8 c/ 9 L = 2.54	φ 12 c/ 9 L = 4.78	φ 8 c/ 30 L = 0.845	φ 8 c/ 30 L = 1.00	4.565	158.48	0.063			280.92	0.250	0.313	0.00 - 2.00



PLANTA
ESCALA 1:50

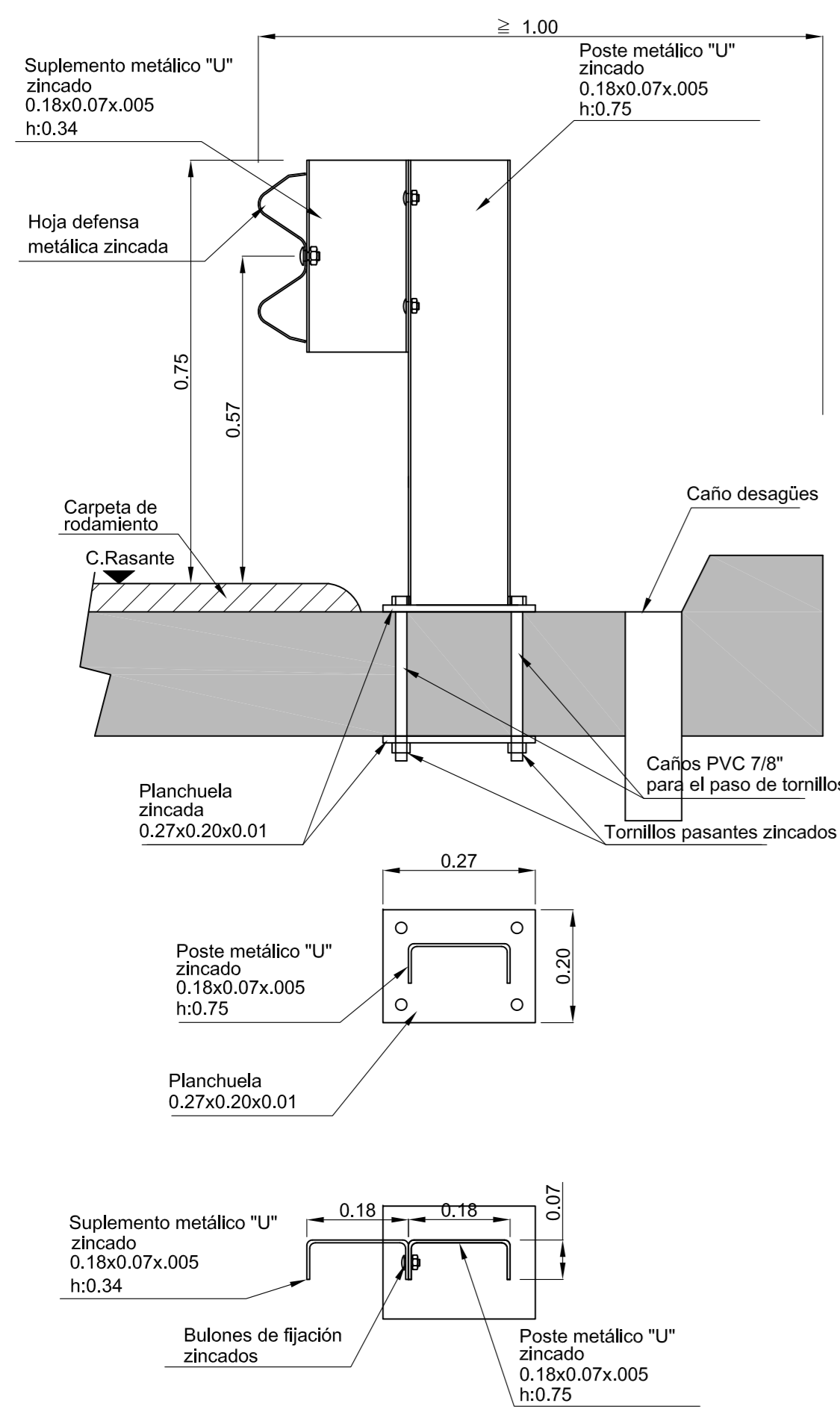


CORTE LONGITUDINAL
ESCALA 1:50

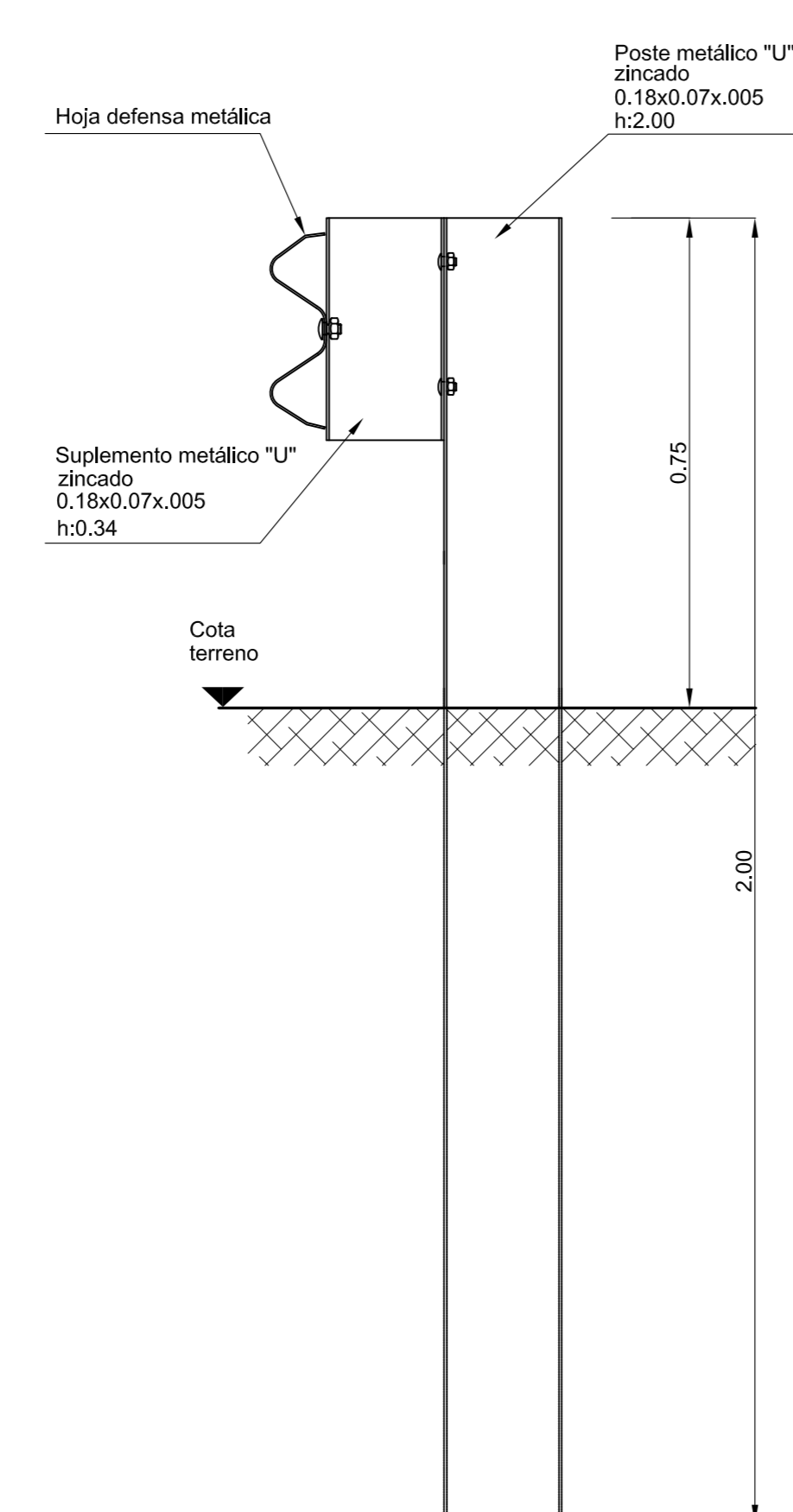
CORTE DEFENSA METÁLICA
ESCALA 1:2.5

Notas: El presente detalle corresponde a los puentes y alcantarillas con tránsito bi-direccional. Para tránsito unidireccional no se requiere la terminal de impacto a la salida.

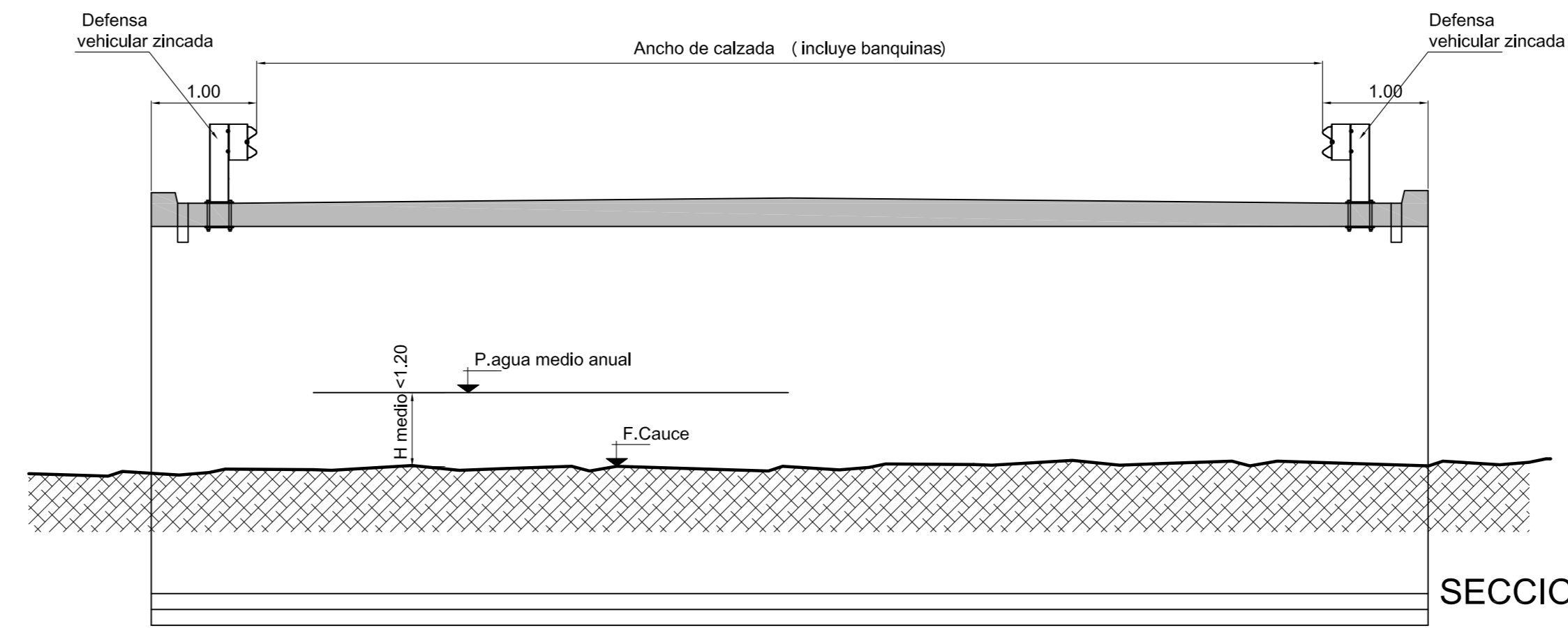
DEFENSA EN ZONA DE ALCANTARILLA
ESCALA 1:10



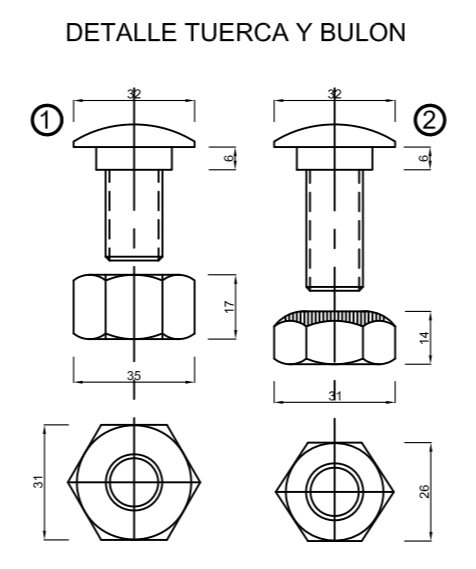
DEFENSA EN ZONA DE CAMINO
ESCALA 1:10



CORTE TRANSVERSAL
ESCALA 1:50

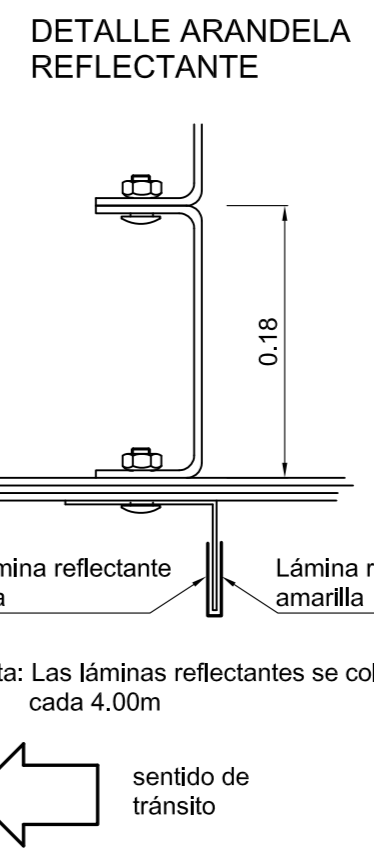


SECCION A-A

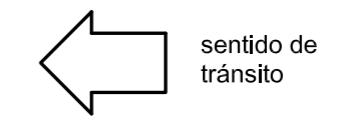


Bulón de 32 m.m. de longitud con tuerca de caras rectas con doble endurecimiento para empalme de las defensas.
Bulón de 45 m.m. de longitud con tuerca de una cara redondeada para fijar las defensas a los postes metálicos.

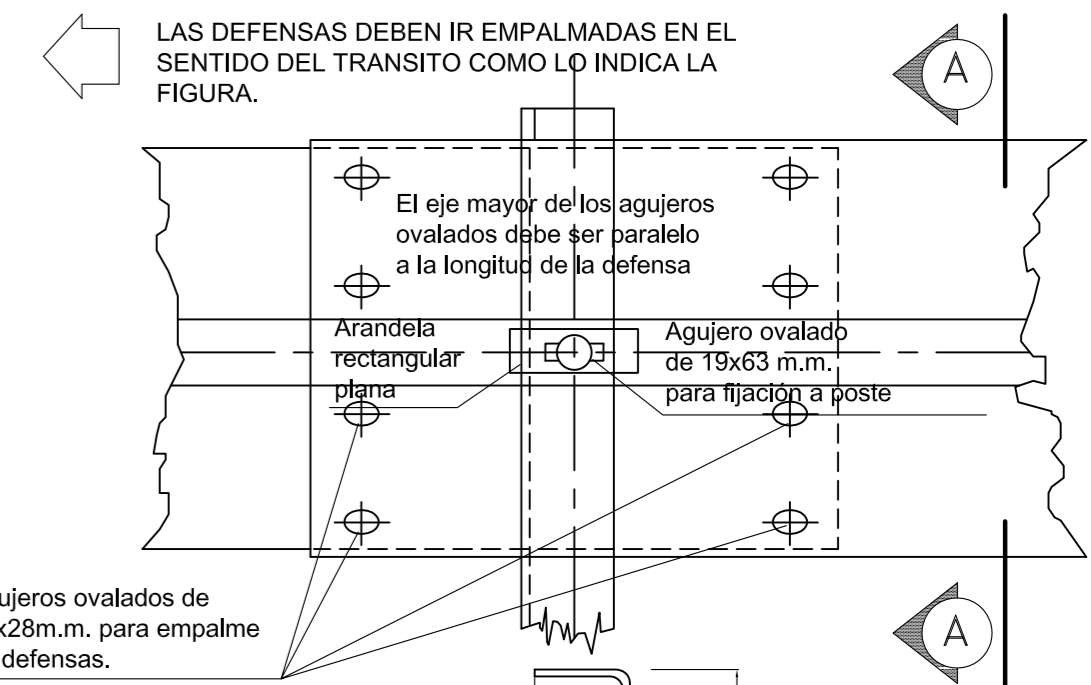
Esta defensa puede ser utilizada en todas las alcantarillas que cumplan simultáneamente las siguientes condiciones:
• Altura de rasante a suelo menor a 3.50m
• Nivel medio anual de agua menor a 1.20m
A este efecto, se considerará como alcantarilla toda estructura cuya luz parcial no exceda los 5.00m y además su luz total no supere los 17.00m
También puede utilizarse en cualquier puente que requiera un nivel de seguridad MASH TL3
Todos los elementos metálicos deberán ser zincados



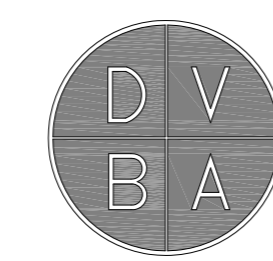
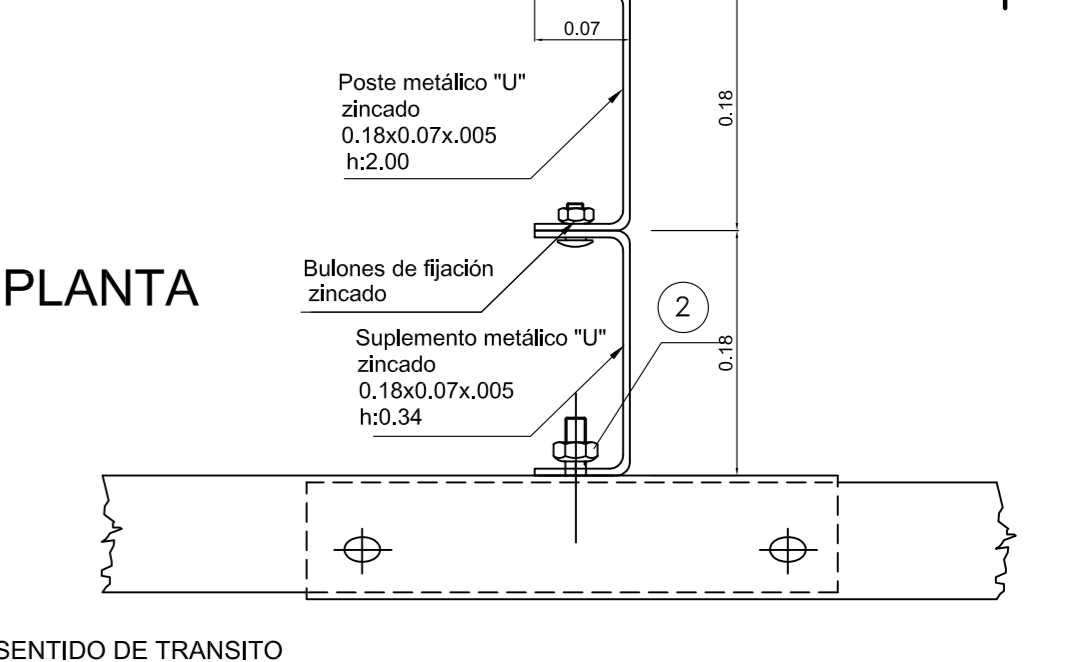
Nota: Las láminas reflectantes se colocarán cada 4.00m



VISTA



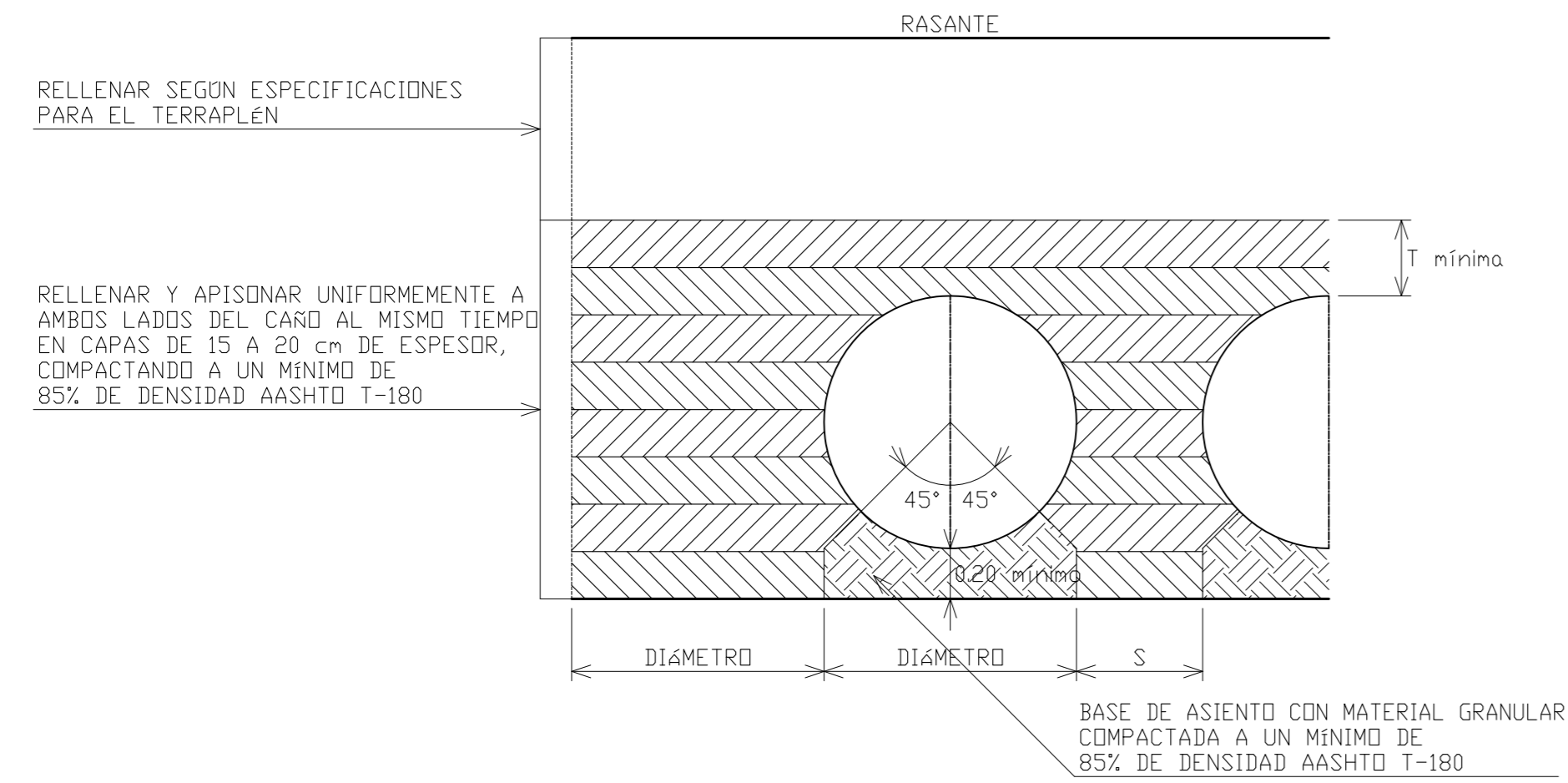
PLANTA



INSTRUCCIONES PARA LA INSTALACIÓN

CORTE TRANSVERSAL - INDICACIONES SOBRE LA MEDICIÓN DE J

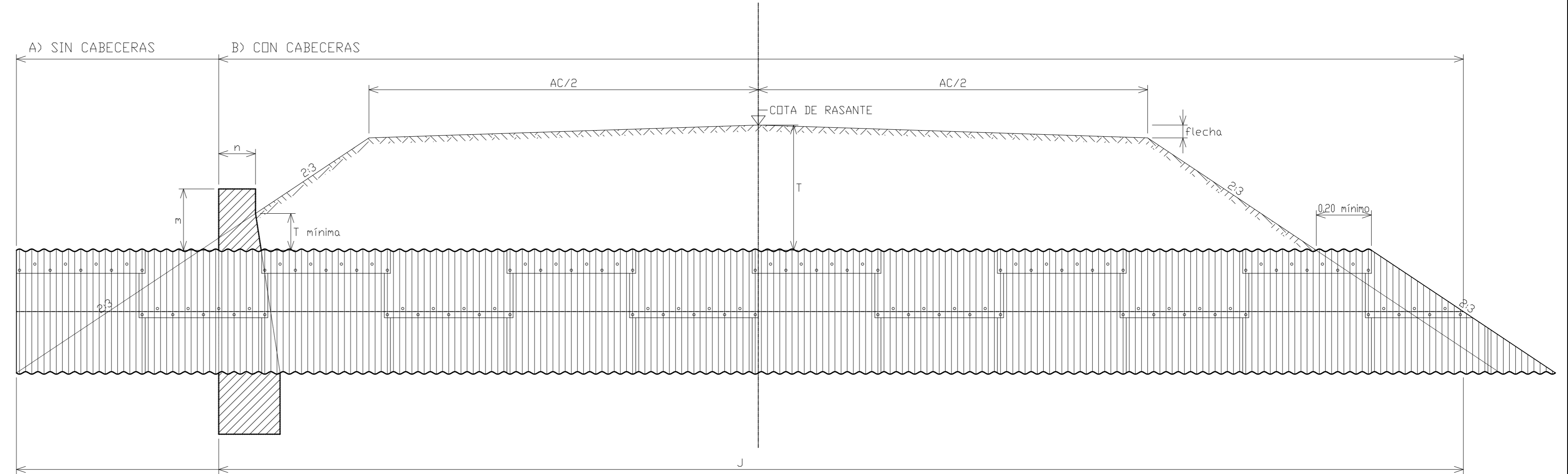
1 - FUNDACIÓN SOBRE TERRENO APTO



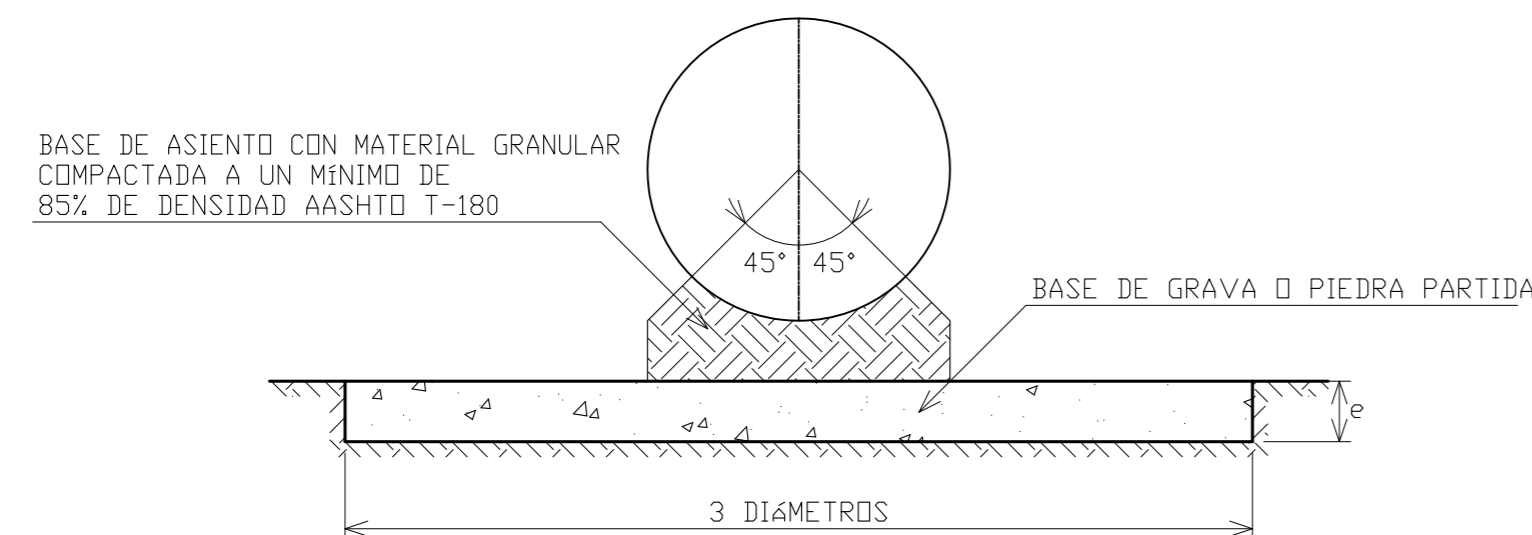
DIÁMETRO (m)	TAPADA MÍNIMA (m)	DIÁMETRO (m)	SEPARACIÓN MÍNIMA ENTRE CAJOS S (m)
HASTA 2.40	0.30	0.60 A 1.20	1/2 DIÁMETRO
MAYOR DE 2.40	1/8 DIÁMETRO	MAYOR DE 1.20	0.60

ALTERNATIVAS CON EXTREMOS RECTOS

ALTERNATIVA CON EXTREMOS BISELADOS



2 - FUNDACIÓN SOBRE TERRENO INESTABLE



NOTA
LOS VALORES DE TAPADAS MÁXIMA ESTÁN CALCULADOS PARA UNA CARGA VIVA TIPO A-30 DE LA D.N.V. Y ESTÁN BASADOS EN QUE EL RELLENO SEA COMPACTADO A UN MÍNIMO DEL 85% DE LA DENSIDAD AASHTO T-180.

PARA PROYECTOS QUE REQUIERAN TAPADAS MAYORES A LAS MÁXIMAS INDICADAS CONSULTAR CON LA GERENCIA DE OBRAS Y SERVICIOS VIALES.

BULONERÍA
LA BULONERÍA CORRESPONDE A LAS NORMAS QUE SE INDICAN:
ONDULACIÓN 68x13 mm: AASHTO A-307
ONDULACIÓN 100x20 mm: AASHTO A-307
ONDULACIÓN 152x50 mm: AASHTO A-307
P/ESPESTORES HASTA 2.50 mm: AASHTO A-307
P/ESPESTORES MAYORES DE 2.50 mm: AASHTO A-325

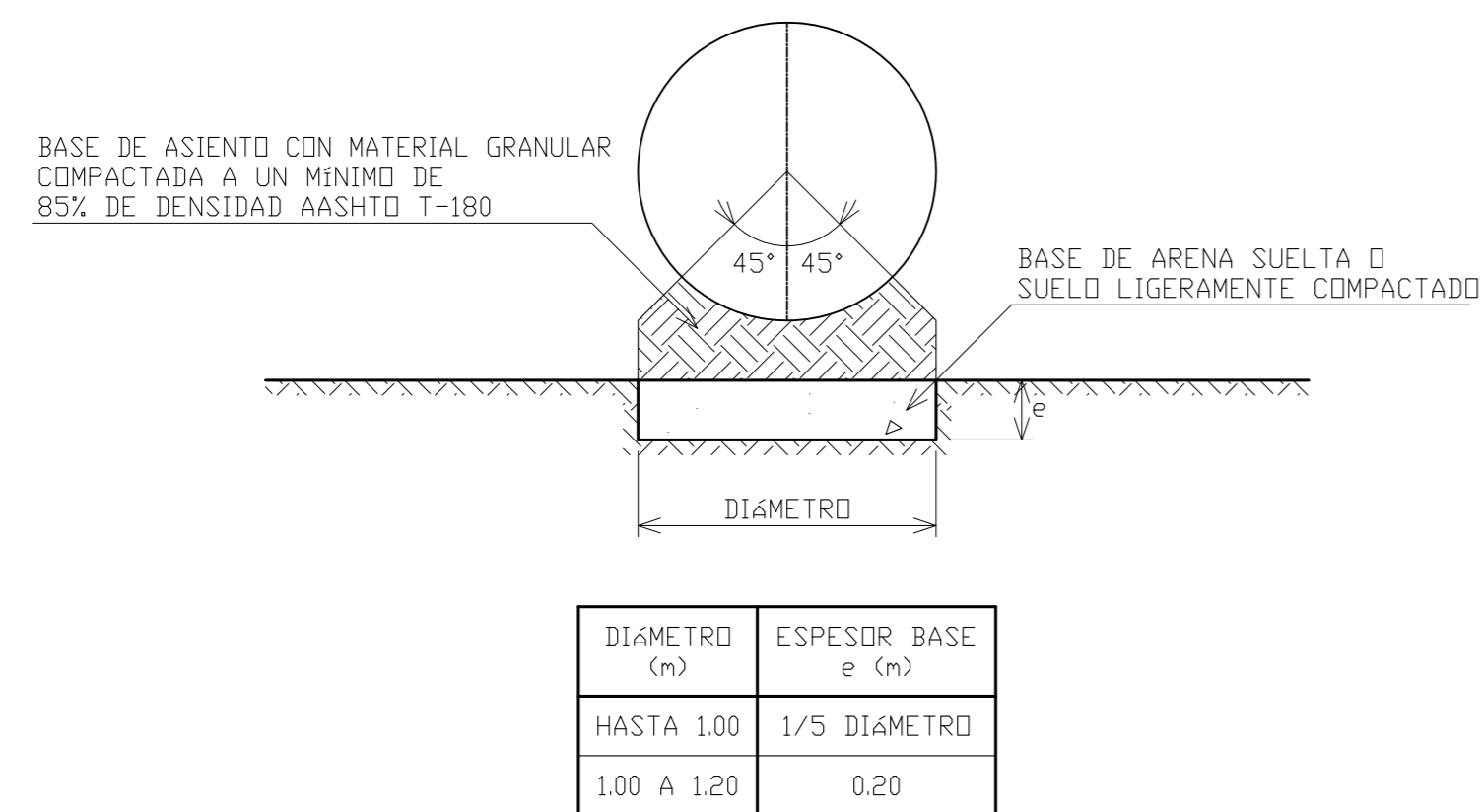
CÁLCULO DE LA LONGITUD 'J'
EXTREMO BISELADO SIN OBLICUIDAD: $J = AC + 3(T - f + \phi/2) + 0.40$ [m]
EXTREMO BISELADO CON OBLICUIDAD: $J = [AC + 3(T - f + \phi/2) + 0.40] / \text{sen } \alpha$ [m]
EXTREMO RECTO SIN OBLICUIDAD: $J = AC + 3(T - (m+f)) + 2n$ [m]
EXTREMO RECTO CON OBLICUIDAD: $J = (AC + 3(T - (m+f)) + 2n) / \text{sen } \alpha$ [m]

IMPORTANTE
LA LONGITUD DE LAS ESTRUCTURAS SE CALCULARÁN TENIENDO EN CUENTA LOS SIGUIENTES MÓDULOS PARA CADA UNA:
ONDULACIÓN 68x13 mm: 0.875 m
ONDULACIÓN 100x20 mm: 1.000 m
ONDULACIÓN 152x50 mm: 0.610 m



DIÁMETRO (m)	ÁREA (m²)	PESO (kg/m)				TAPADA MÁXIMA (m)			
		1.60	2.00	2.50	3.20	1.60	2.00	2.50	3.20
0.60	0.28	34	41	50	63	24.5	31.6	40.9	54.9
0.70	0.38	39	47	57	73	21.0	27.1	35.1	47.1
0.80	0.50	44	54	67	84	18.4	23.7	30.7	41.2
0.90	0.64	49	60	73	92	16.3	21.0	27.3	36.6
1.00	0.79	52	66	82	102	14.7	18.9	24.5	32.9
1.10	0.95	56	72	90	112	13.4	17.2	22.3	29.9
1.20	1.13	61	79	98	122	12.2	15.8	20.4	27.4
1.30	1.33	66	85	107	133	11.3	14.6	18.9	25.3
1.40	1.54	71	92	115	143	10.5	13.5	17.5	23.5
1.50	1.77	76	98	123	153	9.8	12.6	16.3	21.9
1.60	2.01	81	105	131	163	9.2	11.8	15.3	20.6
1.70	2.27	87	114	142	177	8.6	11.1	14.4	19.4
1.80	2.54	92	120	150	187	8.1	10.5	13.6	18.3
1.90	2.84	98	126	158	196	7.7	9.9	12.9	17.3
2.00	3.14	-	132	165	206	-	9.4	12.2	16.4
2.10	3.46	-	138	173	215	-	9.0	11.7	15.7
2.20	3.80	-	145	181	225	-	8.6	11.1	14.9
2.30	4.15	-	151	188	235	-	8.2	10.6	14.3
2.40	4.52	-	156	196	244	-	7.9	10.1	13.7
2.50	4.92	-	162	204	253	-	7.6	9.6	13.1
2.60	5.23	-	167	211	261	-	7.3	9.1	12.6
2.70	5.57	-	172	218	269	-	7.0	8.6	12.2
2.80	6.16	-	177	225	277	-	6.7	8.1	11.7
2.90	6.61	-	182	232	285	-	6.4	7.6	11.3
3.00	7.07	-	187	239	293	-	6.1	7.1	10.9

3 - FUNDACIÓN SOBRE TERRENO ROCOSO



DIÁMETRO (m)	ESPEJOR BASE e (m)
HASTA 1.00	1/5 DIÁMETRO
1.00 A 1.20	0.20

ESTRUCTURA DE ONDULACIÓN 68x13 mm

DIÁMETRO (m)	ÁREA (m²)	PESO (kg/m)				TAPADA MÁXIMA (m)			
		1.60	2.00	2.50	3.20	1.60	2.00	2.50	3.20
0.60	0.28	33	41	50	63	19.3	24.9	24.9	54.9
0.70	0.38	38	47	58	73	16.5	21.3	21.3	47.1
0.80	0.50	42	53	65	82	14.5	18.6	18.6	41.2
0.90	0.64	47	59	73	92	12.9	16.6	16.6	36.6
1.00	0.79	52	65	80	101	11.6	14.9	14.9	32.9
1.10	0.95	56	70	88	110	10.5	13.5	13.5	29.9
1.20	1.13	61	76	95	120	9.6	12.4	12.4	27.4
1.30	1.33	68	82	103	129	8.9	11.4	11.4	25.3
1.40	1.54	-	88	110	139	-	10.6	10.6	23.5
1.50	1.77	-	94	117	148	-	9.9	9.9	21.9
1.60	2.01	-	100	125	157	-	9.3	9.3	20.6
1.70	2.27	-	106	133	167	-	8.7	8.7	19.4
1.80	2.54	-	111	141	177	-	8.1	8.1	18.3

ESTRUCTURA DE ONDULACIÓN 152x50 mm

DIÁMETRO (m)	ÁREA (m²)	PESO (kg/m)								TAPADA MÁXIMA (m)						
		2.50	3.20	4.75	6.35	6.87	2.50	3.20	4.75	6.35	6.87	2.50	3.20	4.75	6.87	
1.50	1.82	147	188	271	355	390	25.7	34.6	56.6	75.8	82.9	-	-	-	-	-
1.75	2.69	179	229	328	431	472	22.1	29.6	48.5	64.9	71.0	-	-	-	-	-
2.00	3.08	191	245	353	463	508	19.3	25.9	42.4	56.8	62.2	-	-	-	-	-
2.25	4.11	223	286	410	538	590	17.1	23.0	37.7	50.5	55.2	-	-	-	-	-
2.50	5.27	249	319	459	602	661	15.4	20.7	33.9	45.4	49.7	-	-	-	-	-
2.75	5.91	268	343	492	646	708	14.0	18.8	30.8	41.3	45.2	-	-	-	-	-
3.00	7.29	294	376	541	710	779	12.9	17.3	28.3	37.9	41.4	-	-	-	-	-
3.25	8.04	307	393	565	742	814	11.9	15.9	26.1	34.9	38.2	-	-	-	-	-
3.50	9.66	338	433	623	818	897	11.0	14.8	24.2	32.4	35.5	-	-	-	-	-
3.75	11.43	370	474	680	893	979	10.3	13.8	22.6	30.3	33.1	-	-	-	-	-
4.00	12.36	383	490	705	925	1015	9.6	12.9	21.2	28.4	31.1	-	-	-	-	-
4.25	14.31	408	524	753	989	1085	9.1	12.2	19.9	26.7	29.2	-	-	-	-	-
4.50	16.44	441	564	811	1065	1168	8.6	11.5	18.8	25.2	27.6	-	-	-	-	-
4.75	17.55	454	581	835	1097	1203	8.1	10.9	17.8	23.9	26.1	-	-	-	-	-
5.00	19.88	-	621	893	1172	1286	-	10.3	16.9	22.7	24.8	-	-	-	-	-
5.25	21.10	-	638	917	1204	1321	-	9.8	16.1	21.6	23.6	-	-	-	-	-
5.50	23.67	-	668	975	1278	1404	-	9.4	15.4	20.6	22.6	-	-	-	-	-
5.75	26.36	-	705	1035	1344	1474	-	9.0	14.7	19.7	21.6	-	-	-	-	-
6.00	27.77	-	735	1095	1417	1542	-	8.6	14.1	18.9	20.7	-	-	-	-	-
6.25	30.70	-	770	1163	1492	1592	-	8.2	13.5	18.2	19.9	-	-	-	-	-
6.50	33.69	-	808	1239	1575	1675	-	7.8	13.0	17.5	19.1	-	-	-	-	-



Son carteles planos de una sola cara con frente de chapa y marco de madera, de hierro o plegado enterizo.

Variantes:
1-Vinilo autoadhesivo impreso a 4 colores.
2-Vinilo de corte.
3-Pintado.
4-Variante en 2 y 3.

■ UBICACION DE LA OBRA:
COLOR:BLANCO
TIPOGRAFIA: KLAVIKA BOLD

■ TITULO DE LA OBRA:
COLOR:NEGRO
TIPOGRAFIA:KLAVIKA BOLD

■ SUBTITULO DE LA OBRA:
COLOR: NEGRO
TIPOGRAFIA: KLAVIKA BOLD

■ ESPECIFICACIONES TECNICAS DE LA OBRA:
COLOR:NEGRO
TIPOGRAFIA: KLAVIKA BOLD

cartel de
2,50 x 1,80 mts.

OBRA

ZONA DE TRABAJO
DISCULPE LAS MOLESTIAS

PROVINCIA DE BUENOS AIRES

Ministerio de Infraestructura  Dirección de VIALIDAD

OBRA

ZONA DE TRABAJO
DISCULPE LAS MOLESTIAS

PROVINCIA DE BUENOS AIRES

Ministerio de Infraestructura  Dirección de VIALIDAD

cartel de
2,00 x 1,30 mts.

OBRA

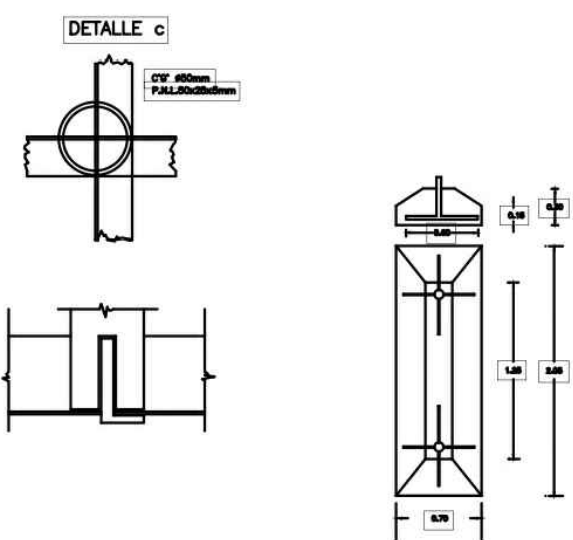
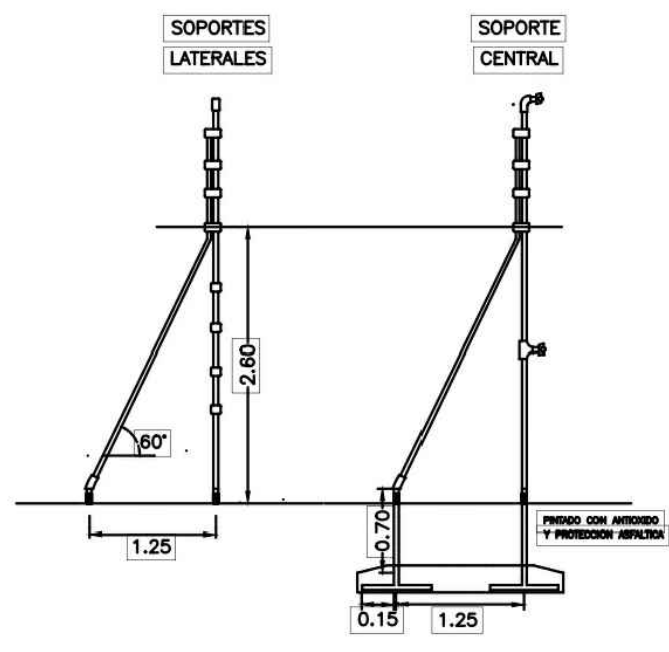
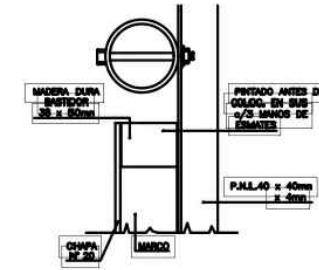
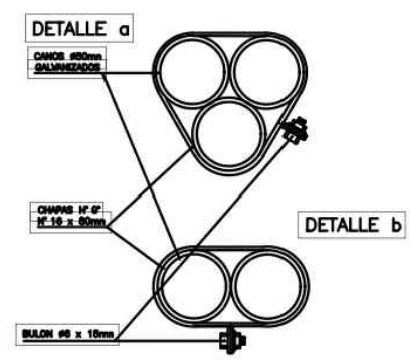
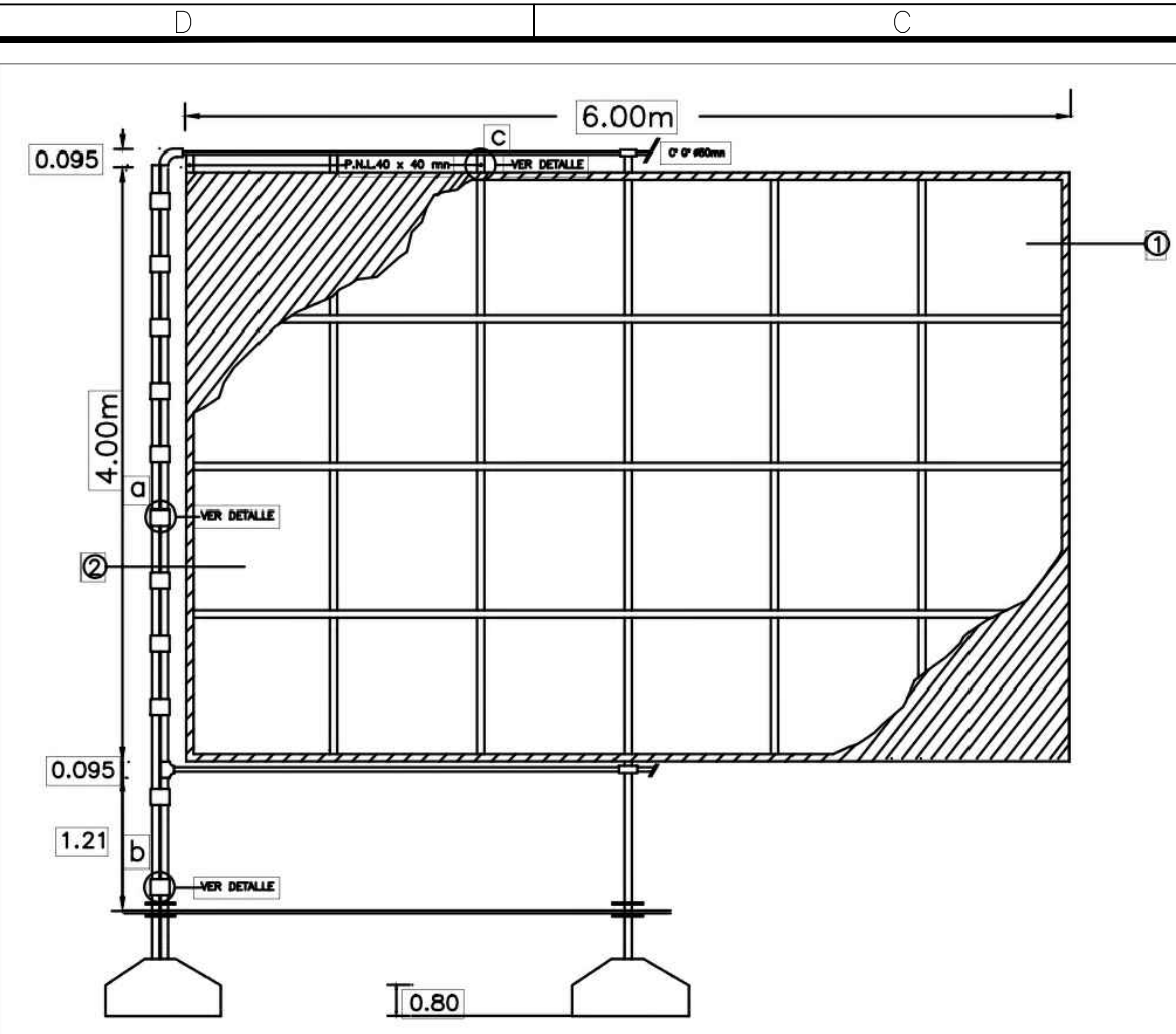
ZONA DE TRABAJO
DISCULPE LAS MOLESTIAS

PROVINCIA DE BUENOS AIRES

Ministerio de Infraestructura  Dirección de VIALIDAD

cartel de
1,50 x 0,80 mts.

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 Drawing file path & name : C:\Users\Esteban\Downloads\VALIDAD\R.P. 65\Sección II y III (Año 2020)\Sección II\PLANOS\F-II-477-1 (Bastidor Cartel) (julio 2020).dwg



CARTEL TIPO	PARA OBRAS	DESTINADAS A	BASTIDOR(m)	
			a	b
A	MAYORES	RUTAS VIADUCTOS INTERSECC. EN DESNIVEL	6.00	4.00
B	INTERMED.	PUENTES SENALIZ. HORIZ. ACCESOS ILUMINACION	5.00	3.00
C	MENORES	ALCANTARILLAS CONSERVACION FORESTACION DESMALEZADO SENALIZ. VERT.	4.00	2.30

REFERENCIAS

- ① BLANCO
- ② AZUL

VISTA BASTIDOR

Bastidor de madera semi dura de primera calidad sin nudos, montado soporte de chapa de hierro galvanizado n°22, sobre el que se pintara la gráfica correspondiente a la obra. Sus medidas serán (Ver cuadro)

Se deberá garantizar por el término de tres años la durabilidad de colores para la aplicación al exterior

La imagen de fondo será la indicada por la D.V.B.A previo a la ejecución del cartel, se presentará para su aprobación un impreso a escala con todos los datos volcados en el mismo.

EL INSPECTOR DETERMINARA EL LUGAR DE UBICACION DEL CARTEL
 Para la realización de la gráfica se deberá consultar plano tipo Cartel de Obra F-II-477/2.

UBICACION:



**PLANO TIPO:
F-II-477-1**

CARTEL DE OBRA: ESTRUCTURA SOSTÉN Y BASTIDOR

Proyectó:	Fecha:	Firma:	Plano ID:	Revisión:
Revisó:			01	00
Aprobó:			Escalas: S/E	
Director de Proyecto			Hojas: 1 de 1	



MINISTERIO DE
INFRAESTRUCTURA
Y SERVICIOS
PÚBLICOS



GOBIERNO DE LA
PROVINCIA DE
**BUENOS
AIRES**

   gba.gob.ar



TIPO DE OBRA

NOMBRE DE LA OBRA

LOCALIDAD: xxxxxxxxxxxxxx
INVERSIÓN: xxxxxxxxxxxxxxxx
PLAZO DE OBRA: xxxxxxxxxxxx

FINANCIAMIENTO: xxxxxxxxxxxx
CONTRATISTA: xxxxxxxxxxxxxxxxxx



DIRECCIÓN DE
VIALIDAD



Dirección de
VIALIDAD

**PLANO TIPO:
F-II-477-2**

GRÁFICA DE CARTEL DE OBRA

	Fecha	Firma	Plano ID:	Revisión
Proyectó:			01	00
Revisó:				
Aprobó:				
Director de Proyecto			Escalas: S/E	
			Hojas: 1 de 1	



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GOBIERNO DE LA PROVINCIA DE BUENOS AIRES
2020 - Año del Bicentenario de la Provincia de Buenos Aires

Hoja Adicional de Firmas
Plano Importado

Número:

Referencia: Planos Obra: PUESTA EN VALOR Y/O RECONSTRUCCION DE OBRAS DE ARTE EN
JURISDICCION DEL DEPARTAMENTO ZONAL IX JURISDICCION DEL DEPARTAMENTO ZONAL IX

El documento fue importado por el sistema GEDO con un total de 14 pagina/s.