



Dirección de Vialidad

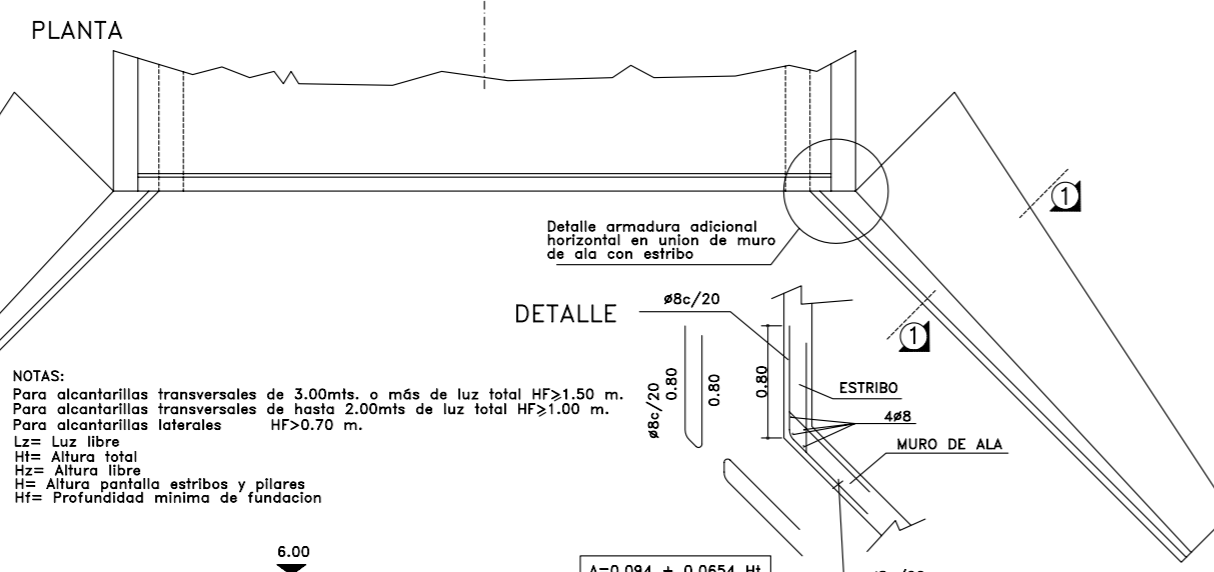
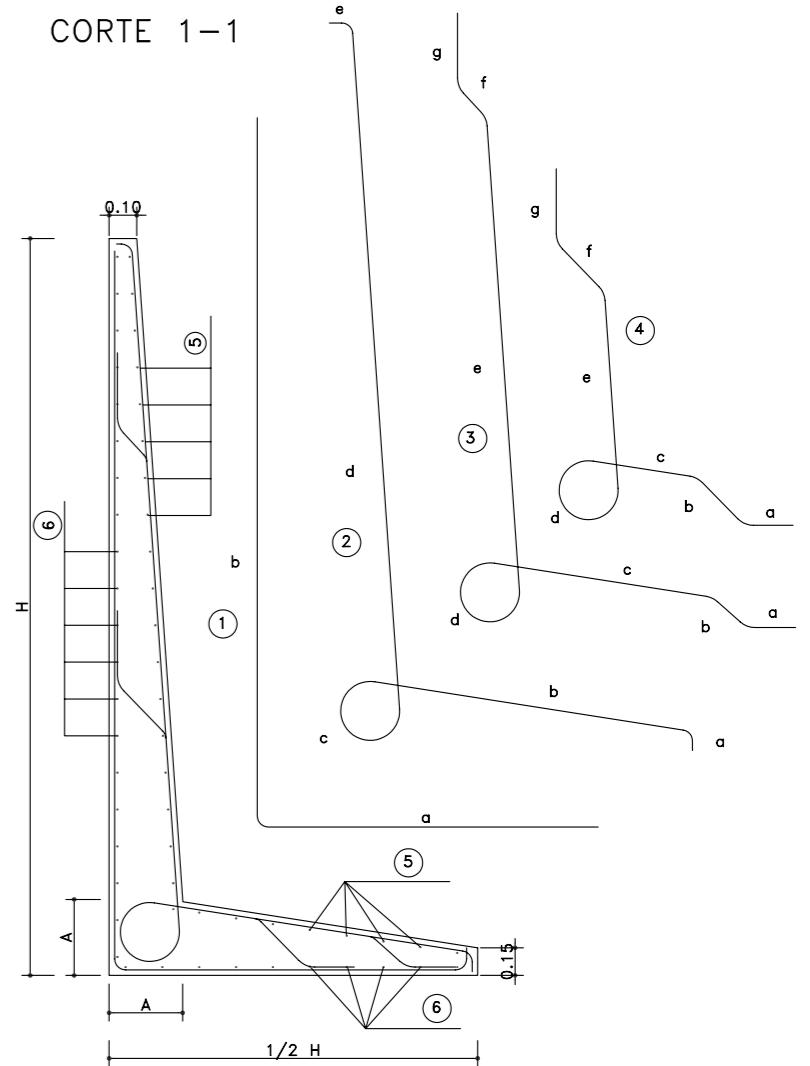
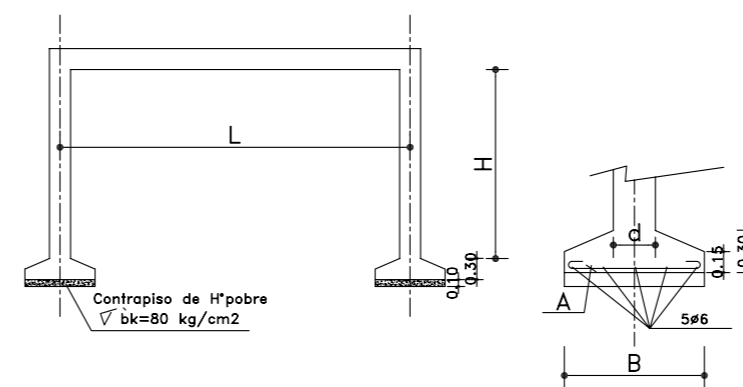
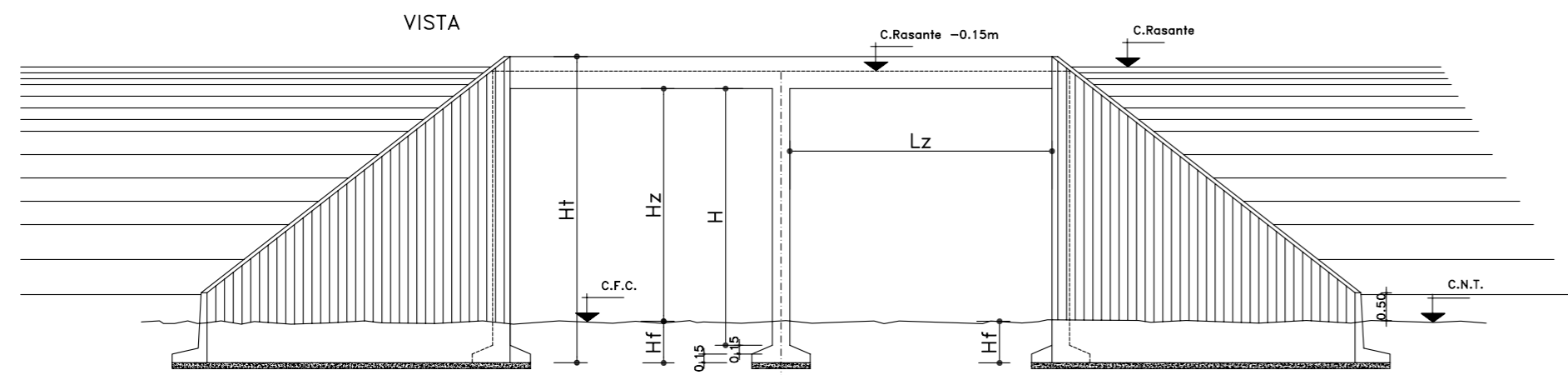
Ministerio de
Infraestructura
Vivienda y Servicios Públicos



Gobierno de la
Provincia
de Buenos Aires

Parte 3: Planos Tipo

Gerencia Técnica
Subgerencia de Estudios y Proyectos
Departamento Obras de Arte
Julio 2007



NOTAS:
 Para alcantarillas transversales de 3.00mts. o más de luz total HF>1.50 m.
 Para alcantarillas transversales de hasta 2.00mts de luz total HF>1.00 m.
 Para alcantarillas laterales HF>0.70 m.
 LZ= Luz libre
 Ht= Altura total
 Hz= Altura libre
 H= Altura pantalla estribos y pilares
 Hf= Profundidad mínima de fundación

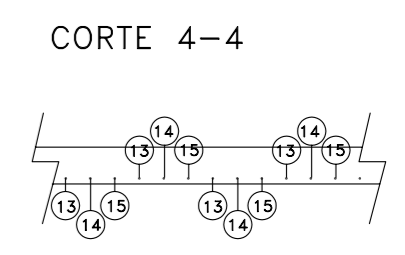
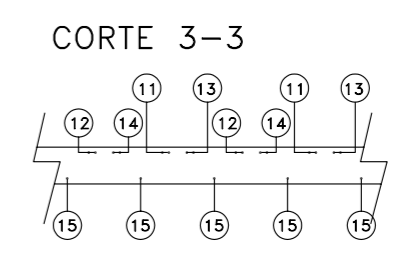
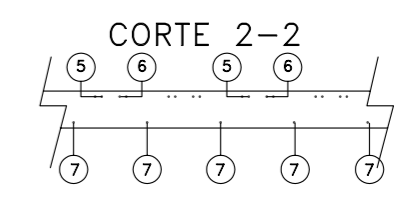
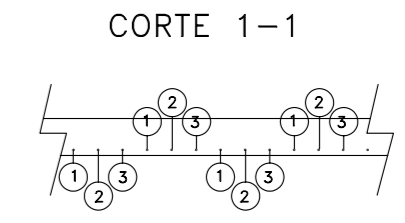
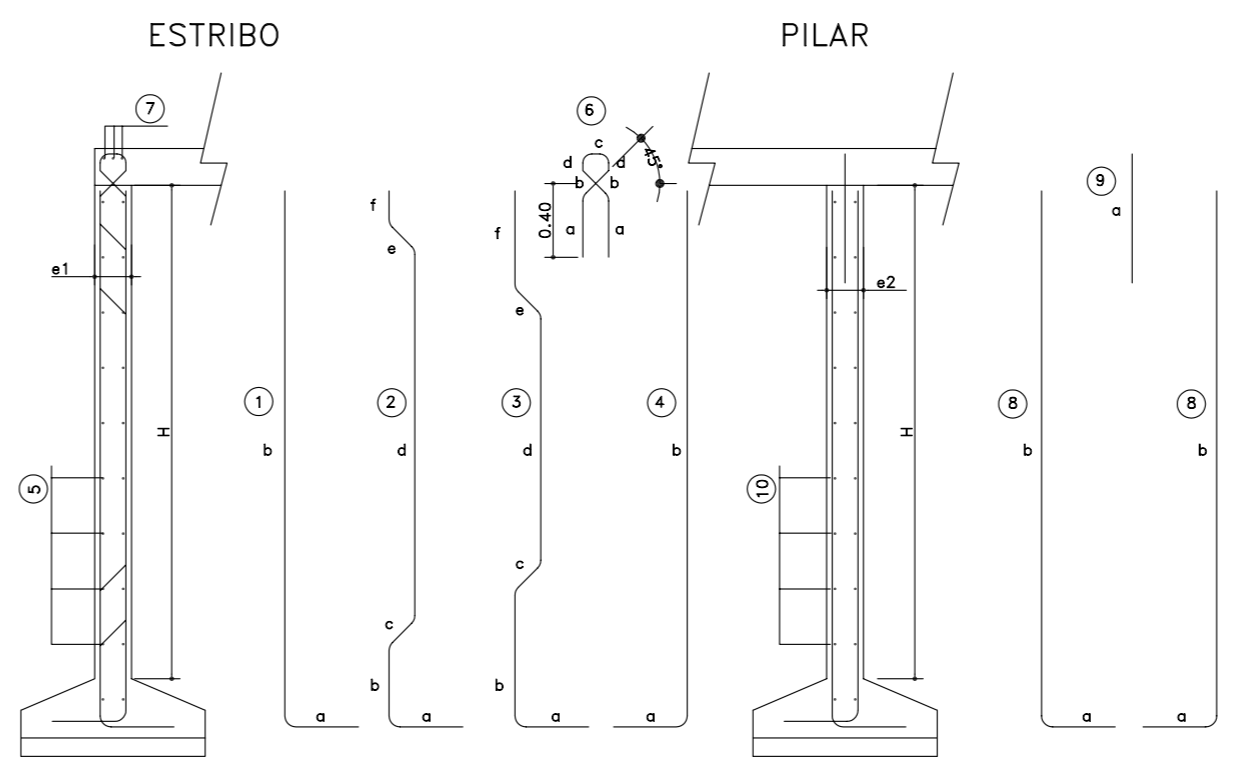
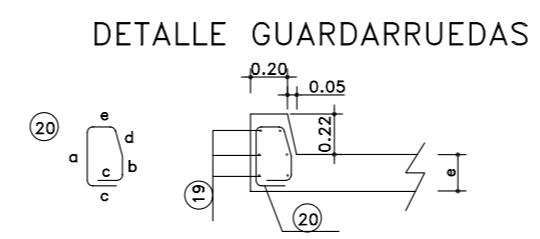
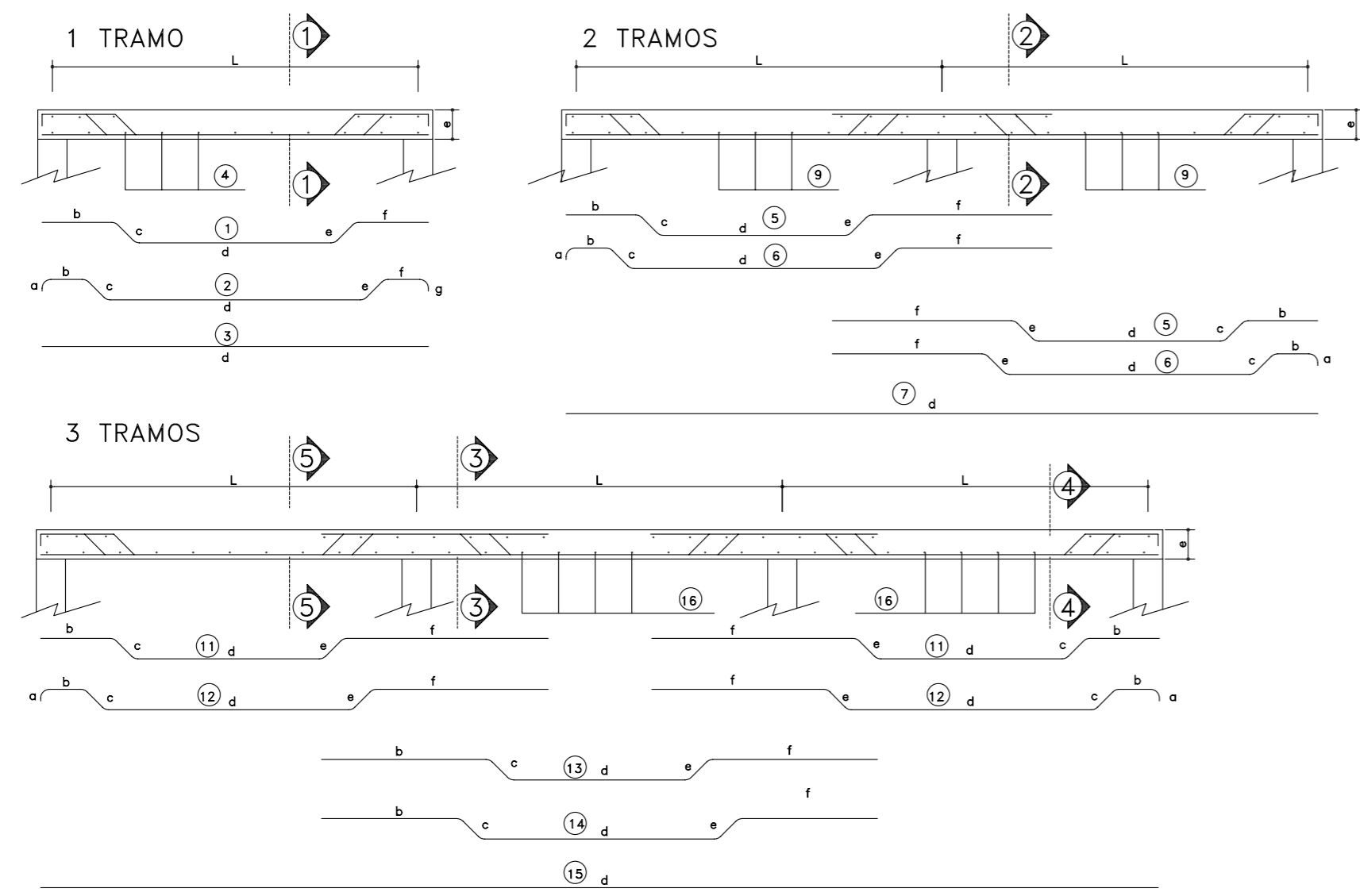
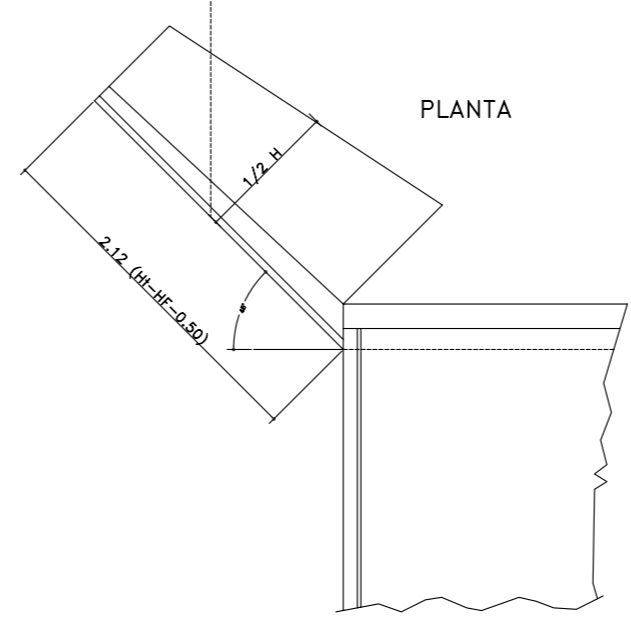
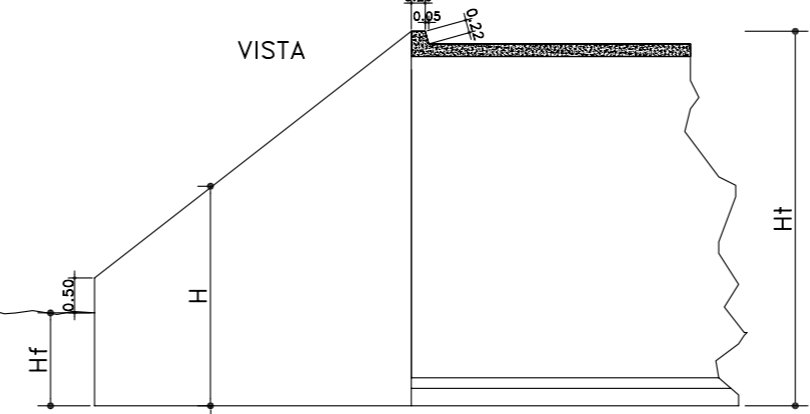
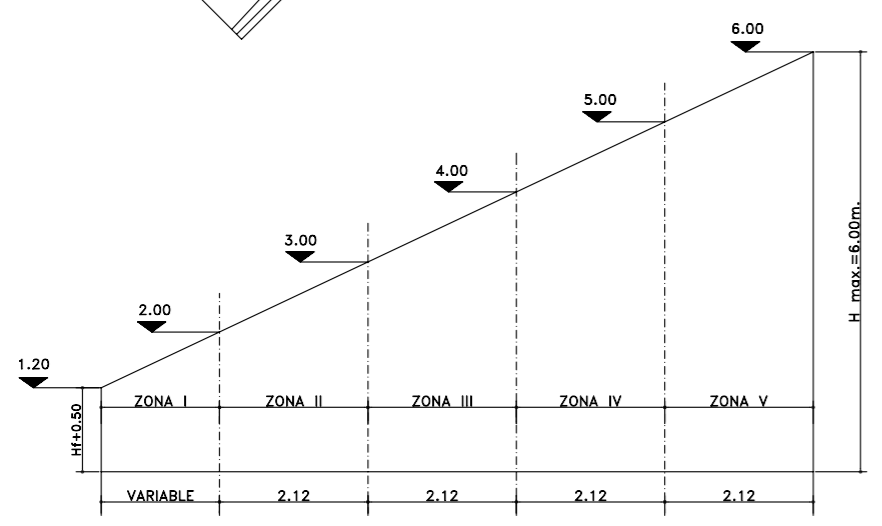
$$A = 0.094 + 0.0654 \cdot Ht$$

VOLUMEN DE HORMIGÓN PARA UNA ALETA

$$V = 1.06(0.2383 + 0.0875 \cdot Ht - 0.1250A + 0.7500 \cdot A \cdot Ht)(Ht - Hf - 0.50)$$

UNIDADES:
 Ht en metros (m)
 A en metros (m)
 V en metros cúbicos (m³)

NOTAS:
 MATERIALES:
 HORMIGÓN H=25 $f'c=25\text{MPa}$
 ACERO ADN=420 $f_y=420\text{MPa}$
 TENSION ADMISIBLE DEL TERRENO: $\sqrt{t} > 0.1 \text{ MPa}$
 RECUBRIMIENTOS: 3cm
 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



BASES

L	H	DIMENSIONES				COMPUTOS POR M. DE BASE			
		B	A	ESTRIB	PILAR	ACERO (kg)		HORMIG(m3)	
						#6	#8	#10	ESTRIB
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
3.00	2.00	0.70	1#8c/20	0.17	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
4.00	2.50	0.90	1#8c/20	0.23	0.17	1.10	2.10	0.22	0.22
	3.00	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	2.30	0.24	0.24
5.00	3.00	1.00	1#8c/20	0.25	0.20	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

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

PILARES Y ESTRIBOS

TIPO DE ESTRUCTURA	H (m)	e1 (m)	e2 (m)	POS.	# m.m.	SEP (cm)	DOBLADO (m)							LONG. TOTAL (m.)	PESO (kg)	COMPUTO METRICO POR		
							a	b	c	d	e	f	g			m/ ANCHO	HORMIG/m3	
ESTRIBO	2.00	0.15			1	8	25	0.40	2.23						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	cant. 3							1.00	1.20			
					8	8	20	0.40	2.23					2.43	9.91			
PILAR	2.00	0.15			9	8	20	0.60					0.60	1.22	14.65	0.30		
					10	6	30						1.00	3.52				
					1	8	25	0.40	2.73					3.13	5.13			
ESTRIBO	2.50	0.17			2	8	36	0.40	0.44	0.18	1.94	0.18	0.10	3.24	3.76	18.75	0.42	
					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	cant. 3							1.00	1.20			
					8	8	20	0.40	2.73					3.13	12.77			
					9	8	20	0.60						0.60	1.22			
PILAR	2.50	0.15			10	6	30						1.00	3.96	17.95	0.38		
					1	8	25	0.40	3.23					3.63	5.95			
					2	8	32	0.40	0.44	0.22	2.39	0.22	0.10	3.77	4.83			
ESTRIBO	3.00	0.20			4	8	32	0.40	3.23					3.63	4.65	22.59	0.60	
					5	6	30							1.00	4.84			
					6	8	30	0.32	0.22	0.15	min 0,07			0.81	1.12			
					7	8	cant. 3							1.00	1.20			
					8	8	20	0.40	3.23					3.63	14.81			
PILAR	3.00	0.17			9	8	20	0.60					0.60	1.22	20.87	0.51		
					10	6	30						1.00	4.84				
					1	8	25	0.40	3.73					4.13	6.77			
ESTRIBO	3.50	0.23			2	8	36	0.40	0.44	0.26	2.81	0.26	0.14	4.31	5.00	29.45	0.80	
					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	cant. 3							1.00	1.20			
					8	8	20	0.40	3.73					4.13	16.85			
PILAR	3.50	0.17			9	8	20	0.60					0.60	1.22	23.79	0.59		
					10	6	30						1.00	5.72				
					1	8	25	0.40	4.23					4.63	7.59			
ESTRIBO	4.00	0.25			2	8	30	0.40	0.48	0.28	3.17	0.28	0.18	4.79	6.51	35.21	1.00	
					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	cant. 3							1.00	1.20			
					8	8	20	0.40	4.23					4.63	18.89			
PILAR	4.00	0.20			9	8	20	0.60					0.60	1.22	26.27	0.80		
					10	6	30						1.00	6.16				
					1	8	25	0.40	5.23					5.63	9.23			
ESTRIBO	5.00	0.30			2	10	33	0.40	0.50	0.35	3.93	0.35	0.30	5.83	11.21	52.03	1.50	
					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	cant. 3							1.00	1.20			
					8	8	20	0.40	5.23					5.63	22.97			
PILAR	5.00	0.20			9	8	25	0.60					0.60	0.98	31.87	1.00		
					10	6	30						1.00	7.92				

NOTAS:
MATERIALES:
HORMIGON:H-25 f'c=25MPa
ACERO ADN-420 fy=420MPa
TENSION ADMISIBLE DEL TERRENO: $\sqrt{1} > 0.1$ MPa

RECUBRIMIENTOS: 3cm

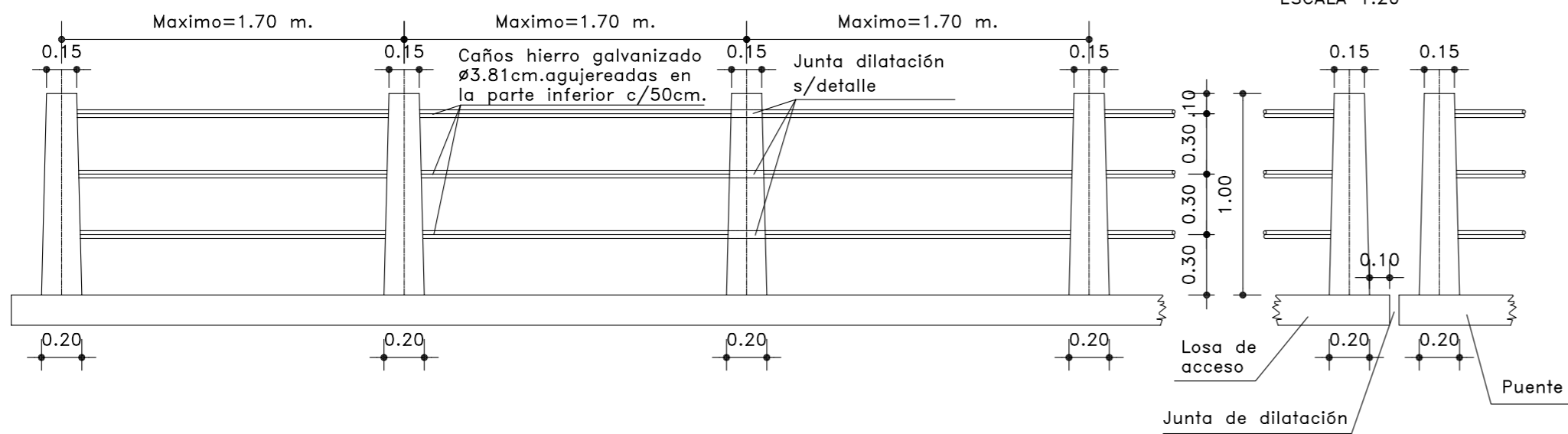
LA LONGITUD DE LOS HIERROS CONSIGNADA EN ESTE PLANO ES A LOS EFECTOS DEL COMPUTO SOLAMENTE...EL DOBLADO DE BARRAS SE REALIZARA SEGUN EL CIRSOC

LOSAS

L	L (m)	e (m)	POS.	# m.m.	SEP (cm)	DOBLADO (m)							LONG. TOTAL (m.)	PESO (kg)	COMPUTO METRICO POR				
						a	b	c	d	e	f	g			m/ ANCHO	HORMIG/m3			
1	1.50	0.12				1	10	27		0.32	0.11	0.80	0.11	0.32	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		0.32	0.11	0.80	0.11	0.77	2.11	9.94			
3	1.50	0.12				12	10	27	0.08	0.20	0.11	1.04	0.11	0.65	2.19	10.32	54.08	0.56	
						13	10	27		0.60	0.11	0.74	0.11	0.60	2.16	5.09			
						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		0.39	0.16	1.10	0.16	0.39	2.20	4.64			
1	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
						3	10	30							2.10	4.43			
						4	8	30							1.00	4.80			
						5	10	30		0.39	0.16	1.11	0.16	0.99	2.81	11.85			
2	2.00	0.15				6	10	30	0.11	0.23	0.16	1.43	0.16	0.83	2.92	12.31	42.50	0.62	
						7	10	30							4.10	8.64			
						9	8	30							1.00	9.60			
						11	10	30		0.39	0.16	1.11	0.16	0.99	2.80	11.80			
3	2.00	0.15				12	10	30	0.11	0.23	0.16	1.43	0.16	0.83	2.92	12.31	53.19	0.92	
						13	10	30		0.80	0.16	0.98	0.16	0.80	2.90	6.11			
						14	10	30		0.60	0.16	1.38	0.16	0.60	2.90	6.11			
						15	10	30							6.10	12.86			
						16	8	30							1.00	14.00			
						1	10	30		0.52	0.23	1.74	0.23	0.52	3.24	6.83			
1	3.00	0.20				2	10	30	0.14	0.28	0.23	2.22	0.23	0.28					

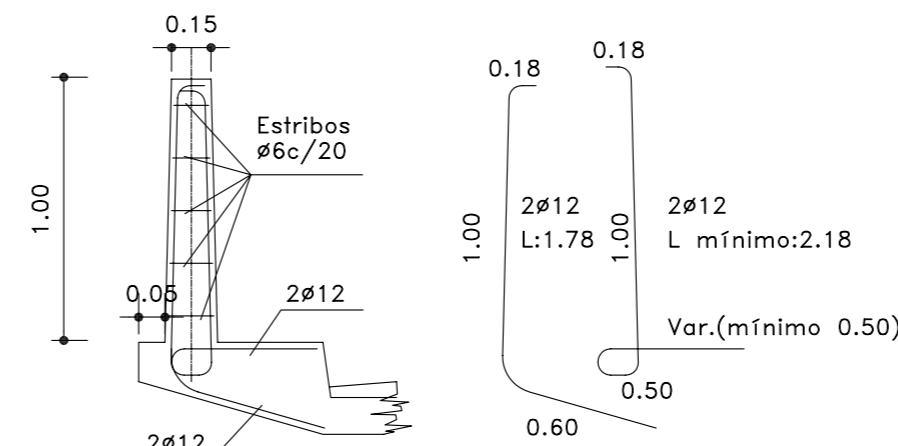
VISTA
ESCALA 1:20

BARANDA TIPO B1

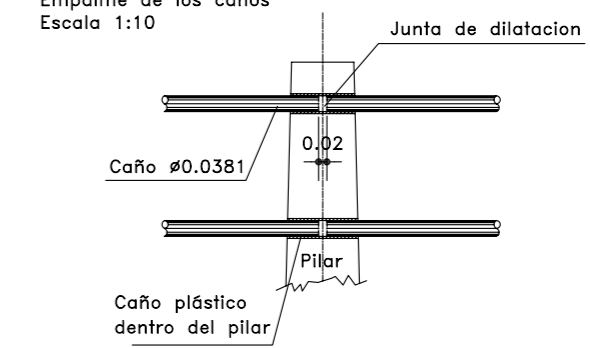


PILAR EN JUNTA DE DILATACIÓN
ESCALA 1:20

ARMADURA PILAR
ESCALA 1:20

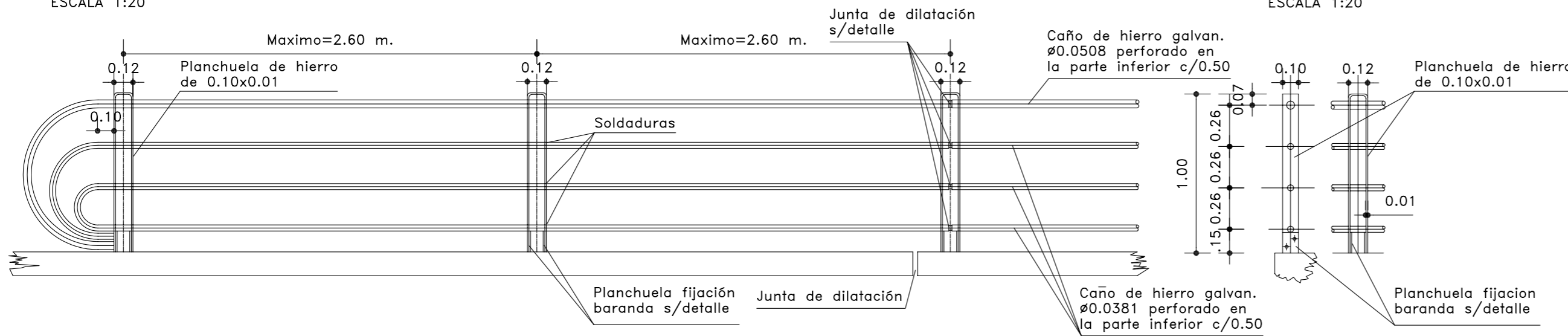


JUNTA DE DILATACIÓN
Empalme de los caños
Escala 1:10

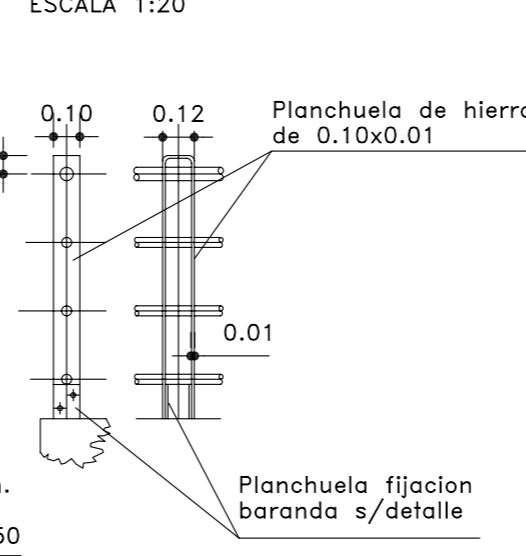


VISTA
ESCALA 1:20

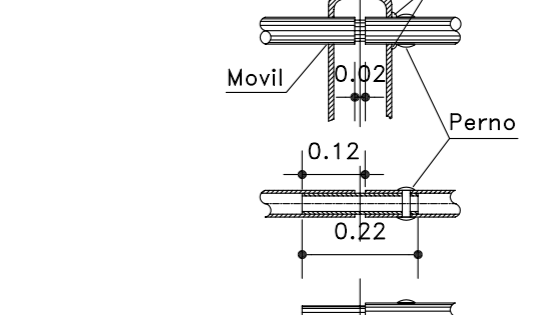
BARANDA TIPO B2



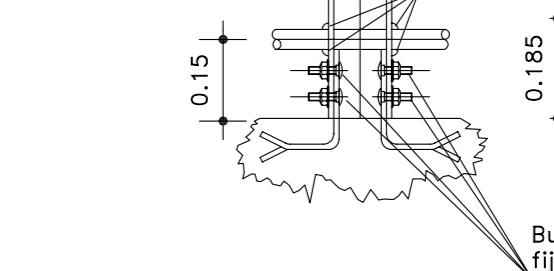
PILAR
ESCALA 1:20



JUNTA DE DILATACIÓN
Empalme de los caños
Escala 1:10

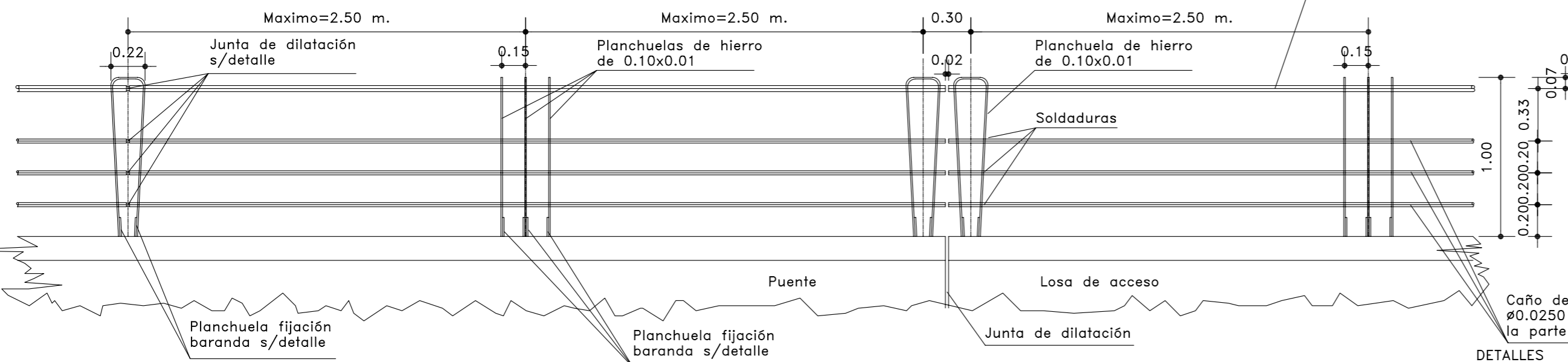


FIJACIÓN DE LA BARANDA
Escala 1:10

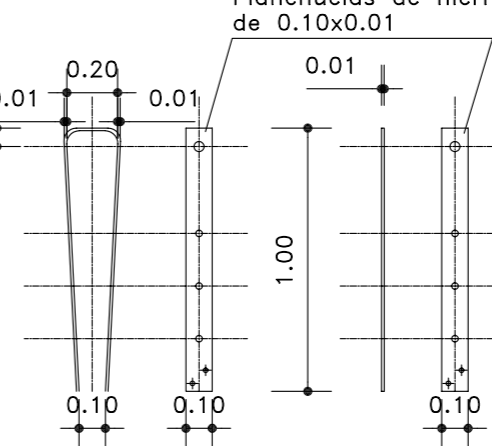


VISTA
ESCALA 1:20

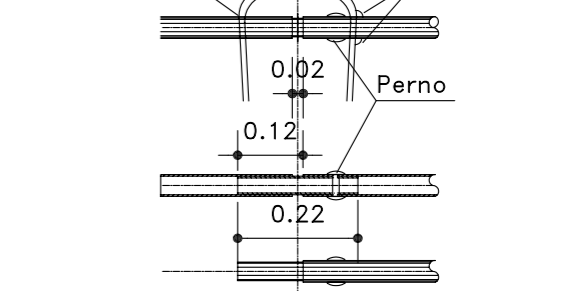
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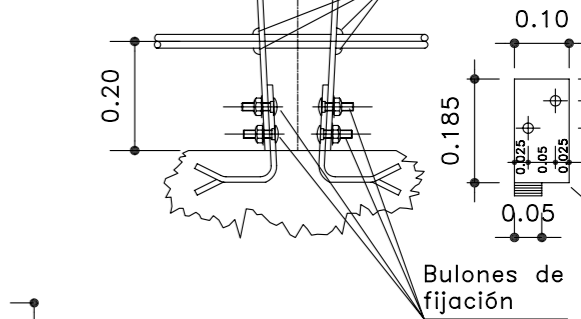
PILARES
ESCALA 1:20



JUNTA DE DILATACIÓN
Empalme de los caños
Escala 1:10

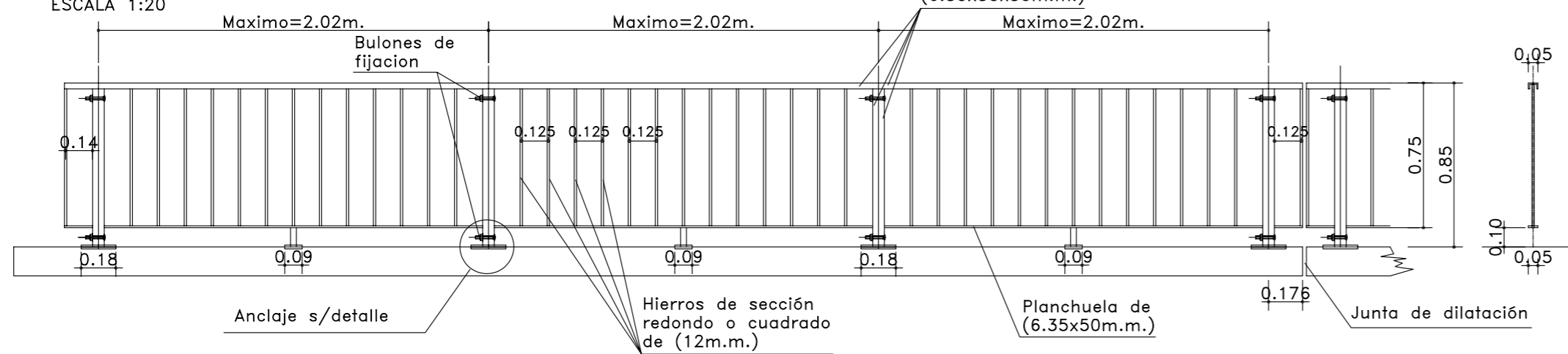


FIJACIÓN DE LA BARANDA
Escala 1:10

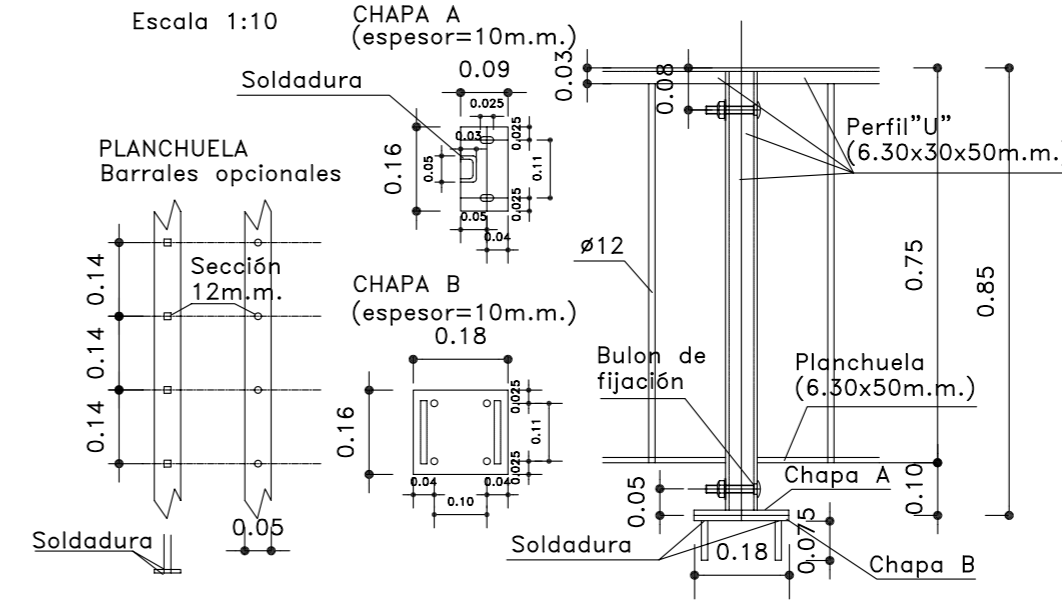


VISTA
ESCALA 1:20

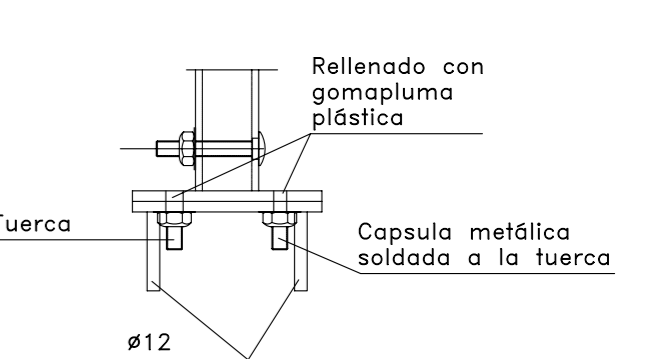
BARANDA TIPO B4



DETALLES
Escala 1:10

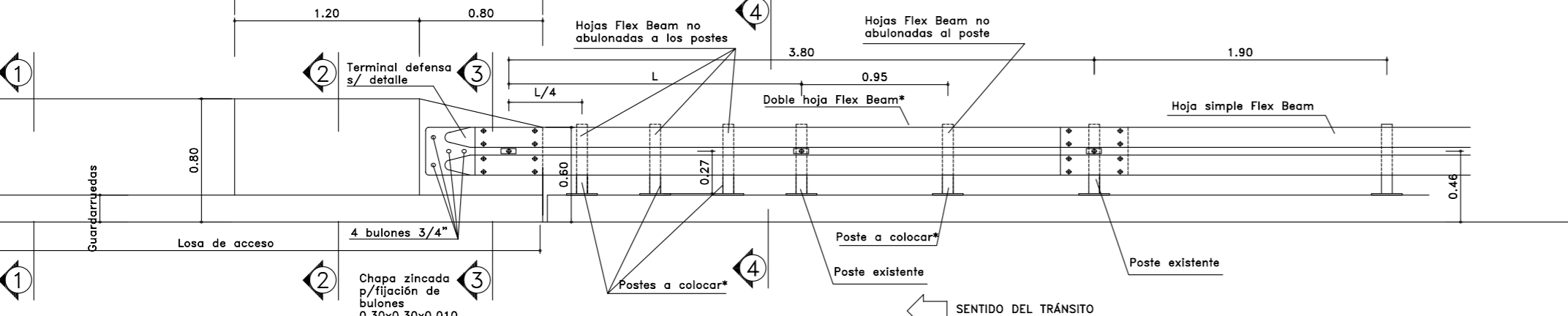


DETALLE ANCLAJE A LA LOSA
Escala 1:5

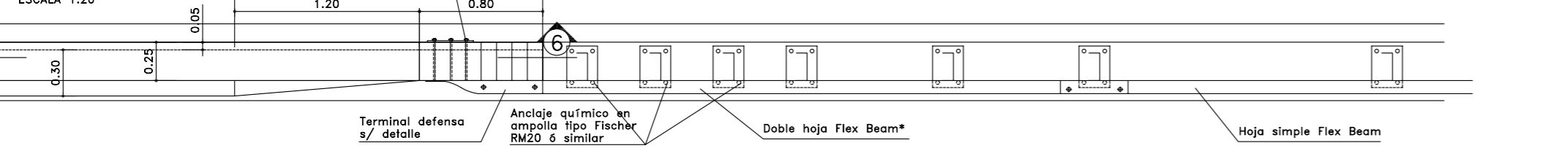


DETALLE TRANSICIÓN ACCESOS CON GUARDARRUEDAS

VISTA
ESCALA 1:25

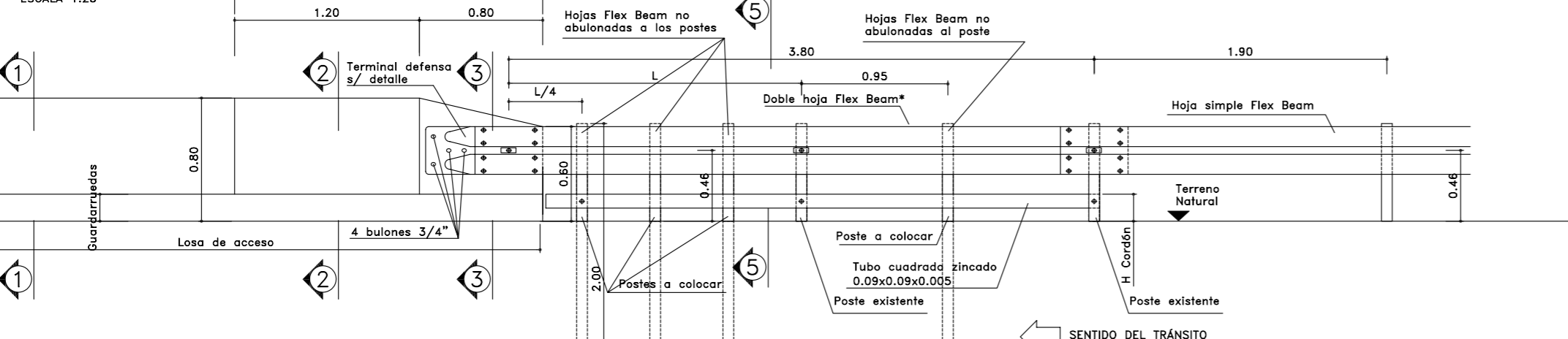


PLANTA
ESCALA 1:20

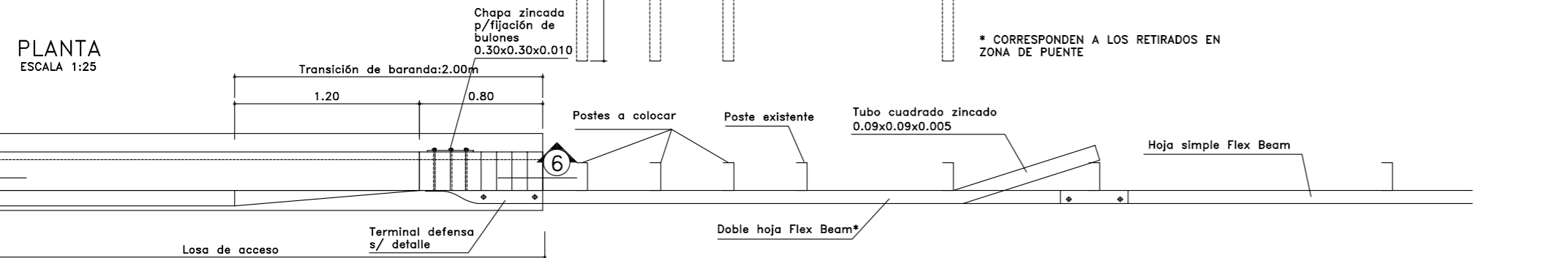


DETALLE TRANSICIÓN ACCESOS SIN GUARDARRUEDAS

VISTA
ESCALA 1:25

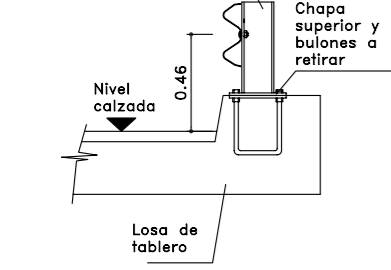


PLANTA
ESCALA 1:25



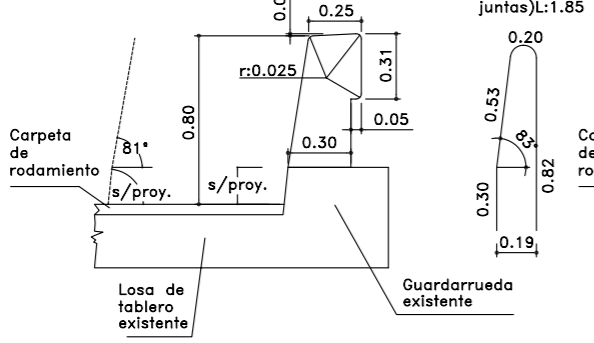
DEFENSA VEHICULAR A RETIRAR

ESCALA 1:25



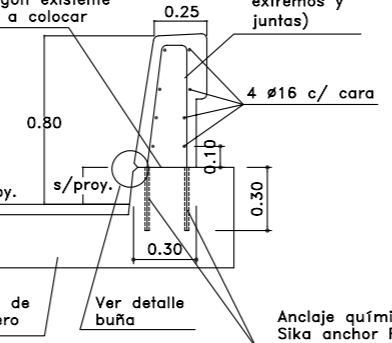
SECCIÓN TRANSVERSAL

ESCALA 1:25



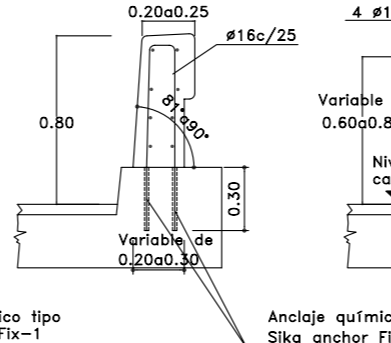
CORTE 1-1

ESCALA 1:25



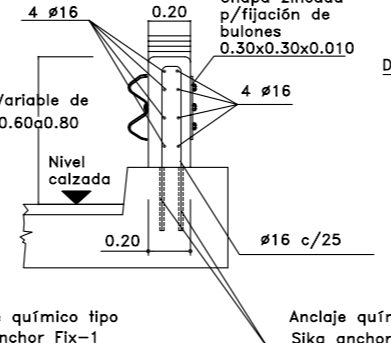
CORTE 2-2

ESCALA 1:25



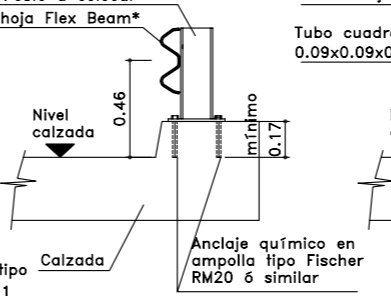
CORTE 3-3

ESCALA 1:25



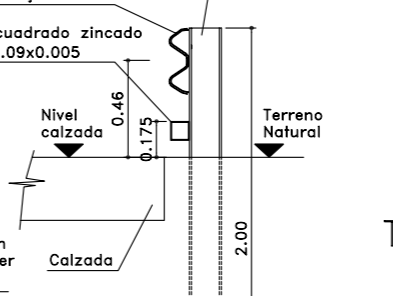
CORTE 4-4

ESCALA 1:25



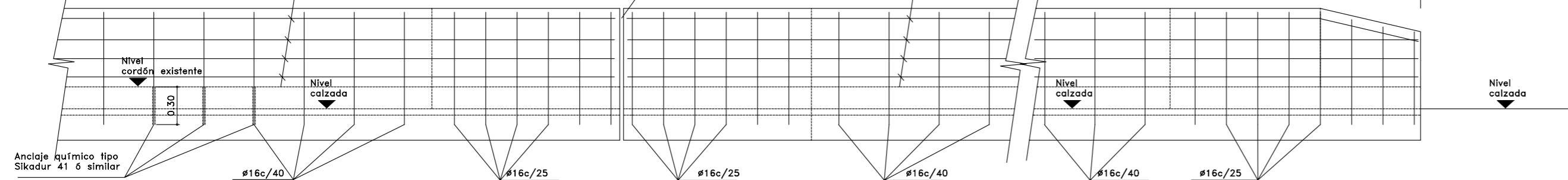
CORTE 5-5

ESCALA 1:25

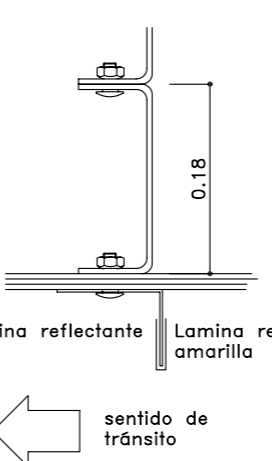


CORTE 6-6

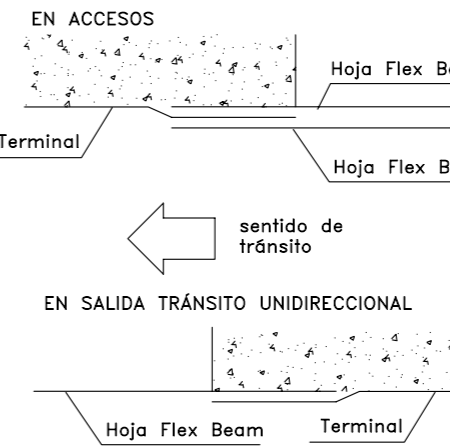
ESCALA 1:25



DETALLE ARANDELA REFLECTANTE

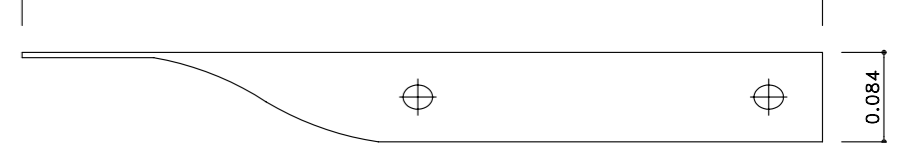


DETALLE DE EMPALME EN ZONA TERMINAL



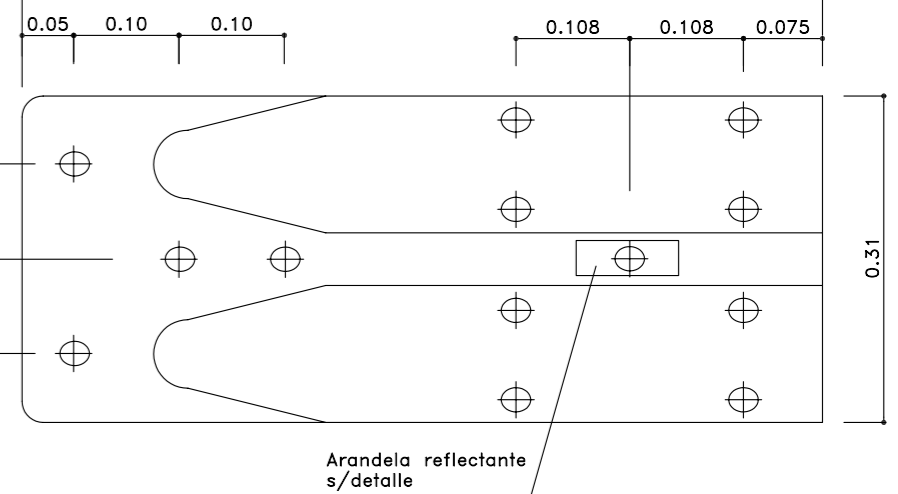
PLANTA TERMINAL DEFENSA METÁLICA

ESCALA 1:5



VISTA TERMINAL DEFENSA METÁLICA

ESCALA 1:5



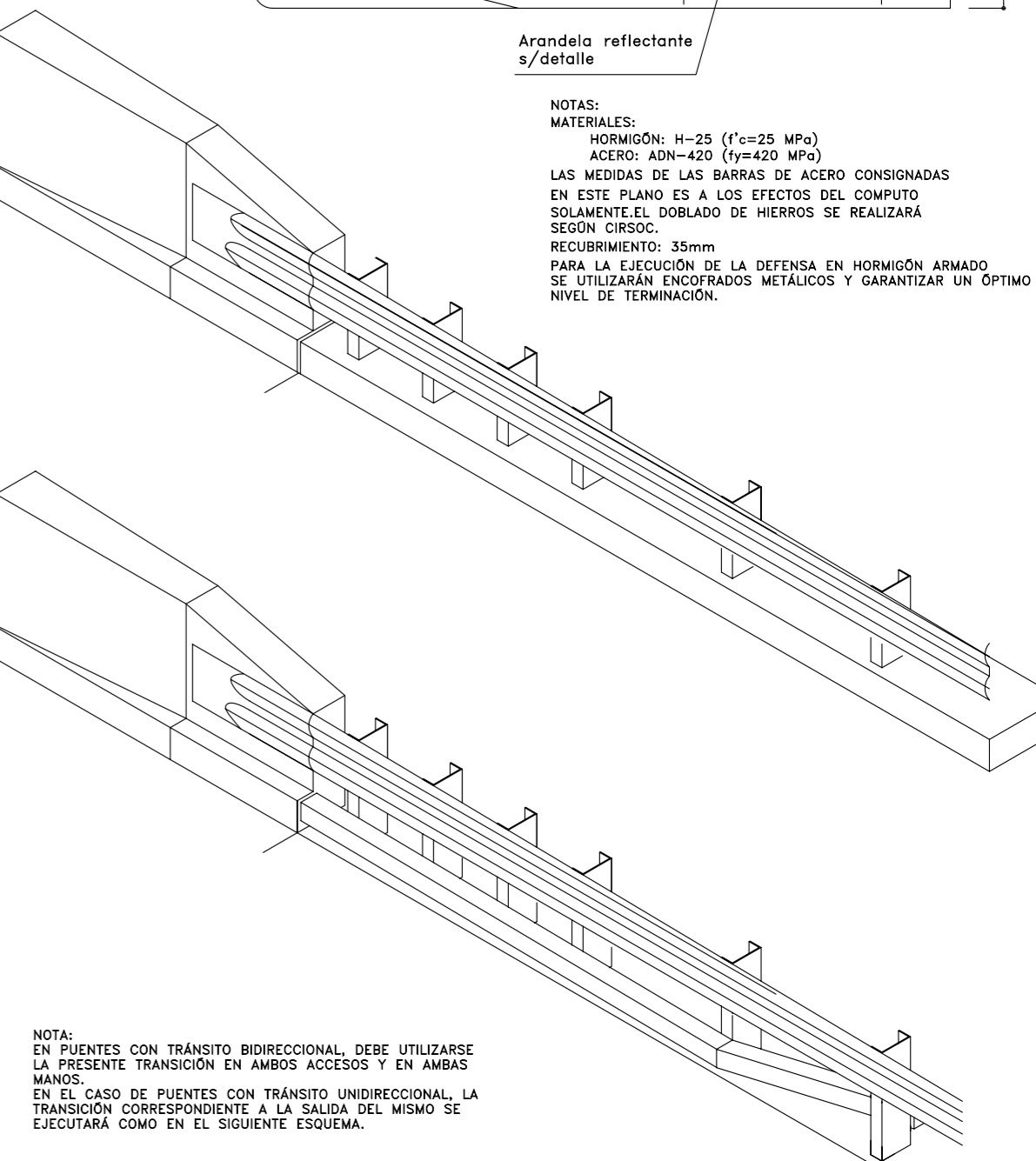
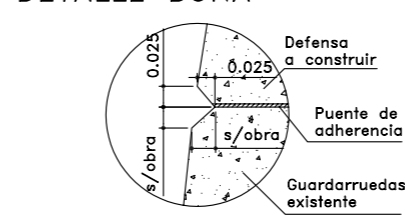
AXONOMÉTRICA TRANSICIÓN CON GUARDARRUEDAS

ESCALA 1:25

AXONOMÉTRICA TRANSICIÓN SIN GUARDARRUEDAS

ESCALA 1:25

DETALLE BUÑA



NOTAS:
MATERIALES:
HORMIGÓN: H-25 (f_c=25 MPa)
ACERO: ARI-420 (f_y=420 MPa)
LAS MEDIDAS DE LAS BARRAS DE ACERO CONSIGNADAS EN ESTE PLANO ES A LOS EFECTOS DEL COMPUTO SOLAMENTE. EL DOBLADO DE HIERROS SE REALIZARÁ SEGUN CIRSOC.
RECUBRIMIENTO: 35mm
PARA LA EJECUCIÓN DE LA DEFENSA EN HORMIGÓN ARMADO SE UTILIZARÁN ENCOFRADOS METÁLICOS Y GARANTIZAR UN ÓPTIMO NIVEL DE TERMINACIÓN.

TRANSICIÓN SALIDA CON TRÁNSITO UNIDIRECCIONAL

VISTA

CON GUARDARRUEDAS

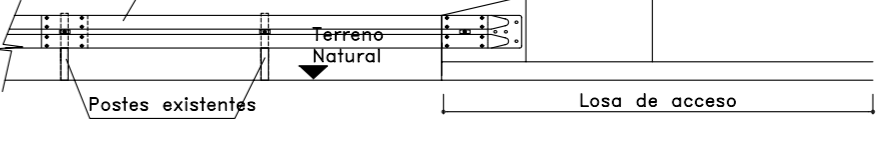
ESCALA 1:50



VISTA

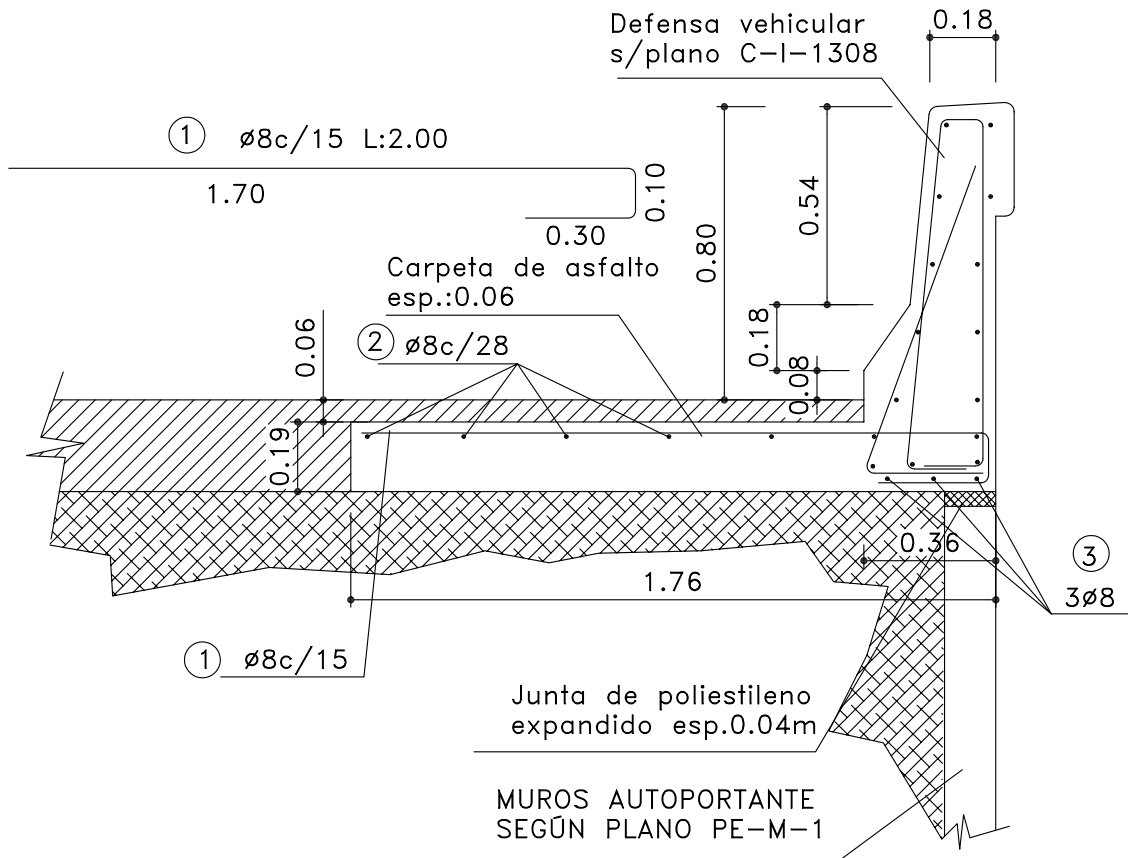
SIN GUARDARRUEDAS

ESCALA 1:50



DETALLE DE DEFENSA VEHICULAR EN ZONA DE MUROS

CORTE TRANSVERSAL ESCALA 1:20



HORMIGÓN: H-25 $f'_c:25\text{MPa}$
 ACERO ADN-420 $f_y:420\text{MPa}$
 Doblado de barras según CIRSOC



PROVINCIA DE BUENOS AIRES
 MINISTERIO DE VIVIENDA, INFRAESTRUCTURA Y
 SERVICIOS PUBLICOS
 DIRECCION DE VIALIDAD
 SUB-GERENCIA ESTUDIOS Y PROYECTOS
 DEPARTAMENTO OBRAS DE ARTE

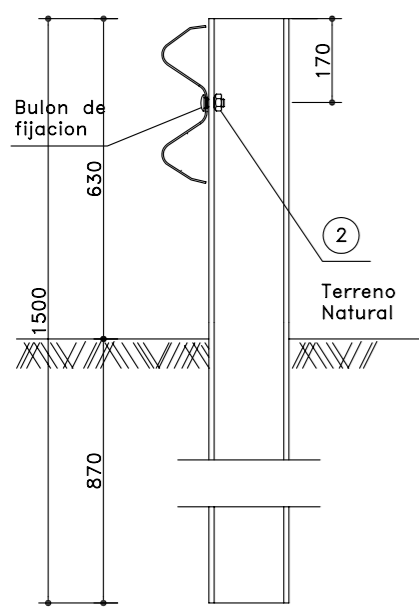
Plano:DETALLE DEFENSA VEHICULAR SOBRE MURO

ESCALA:
1:20

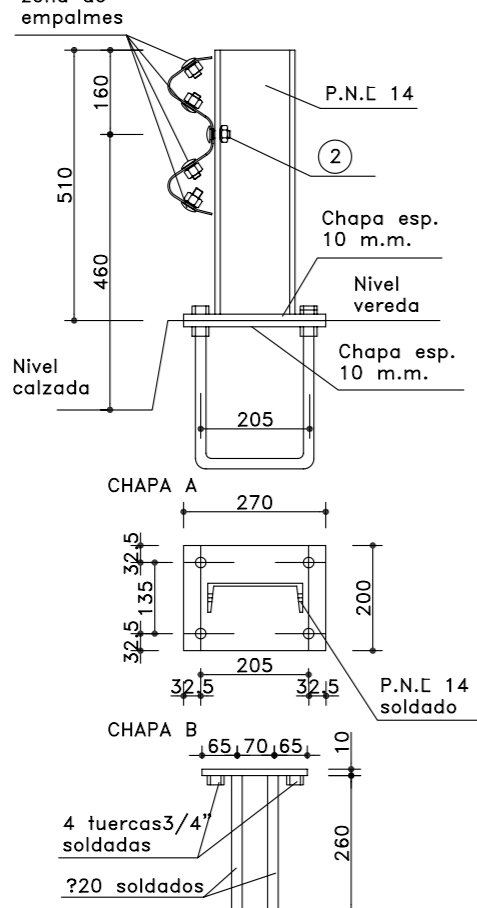
FECHA:
MARZO 2007

ARCHIVO:
PE-D-3

DEF.VEHIC.TIPO D1



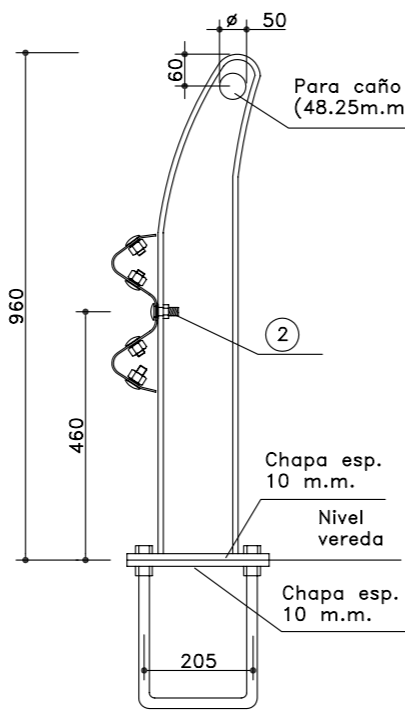
DEF.VEHIC.TIPO D2



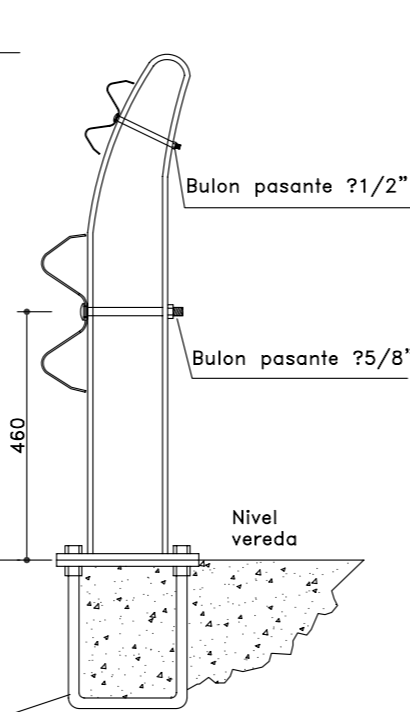
POSTES DE FIJACION

ESCALA 1:10

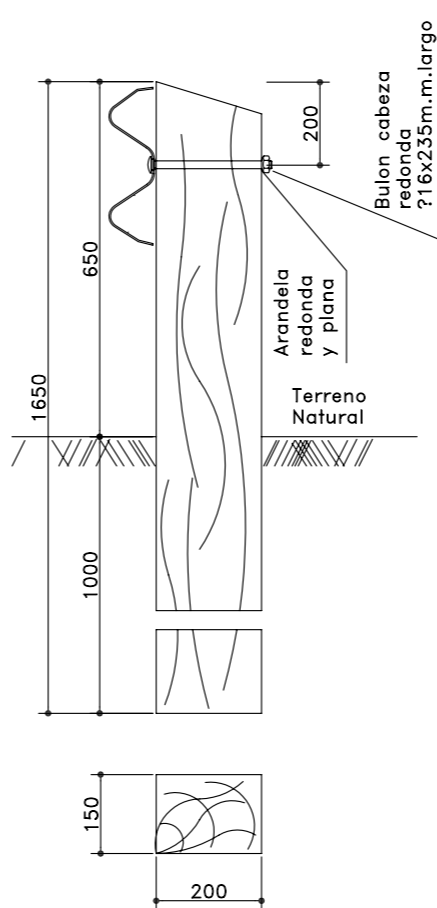
DEF.VEHIC.TIPO D3



DEF.VEHIC.TIPO D4

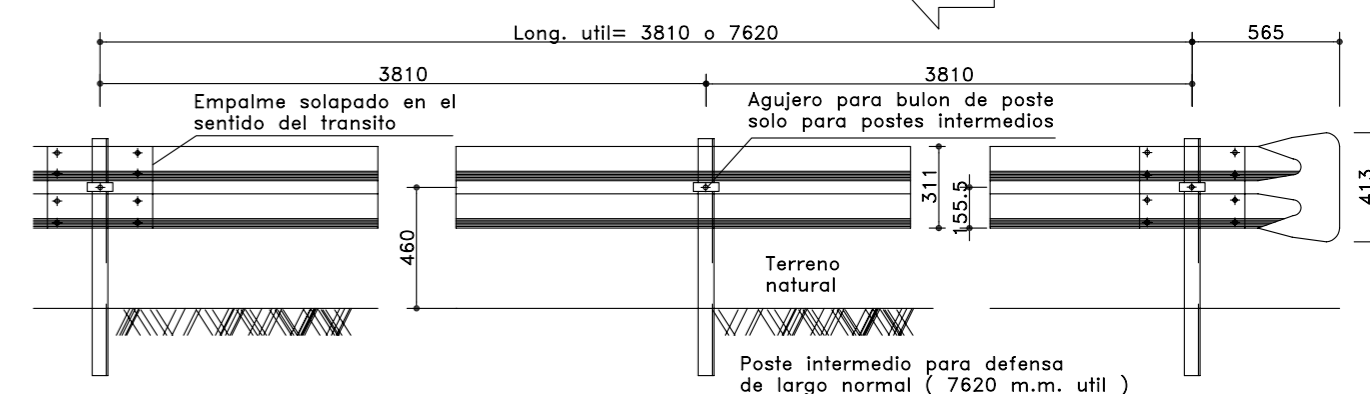


DEF.VEHIC.TIPO D5



INSTALACION

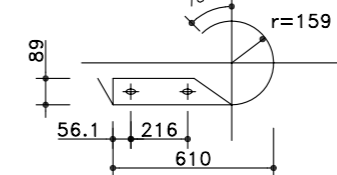
ESCALA 1:20



SECCION TERMINAL

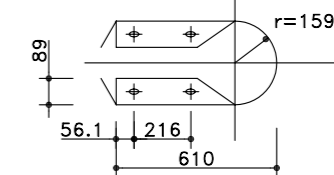
TIPO DE BARANDA SIMPLE

ESCALA 1:20



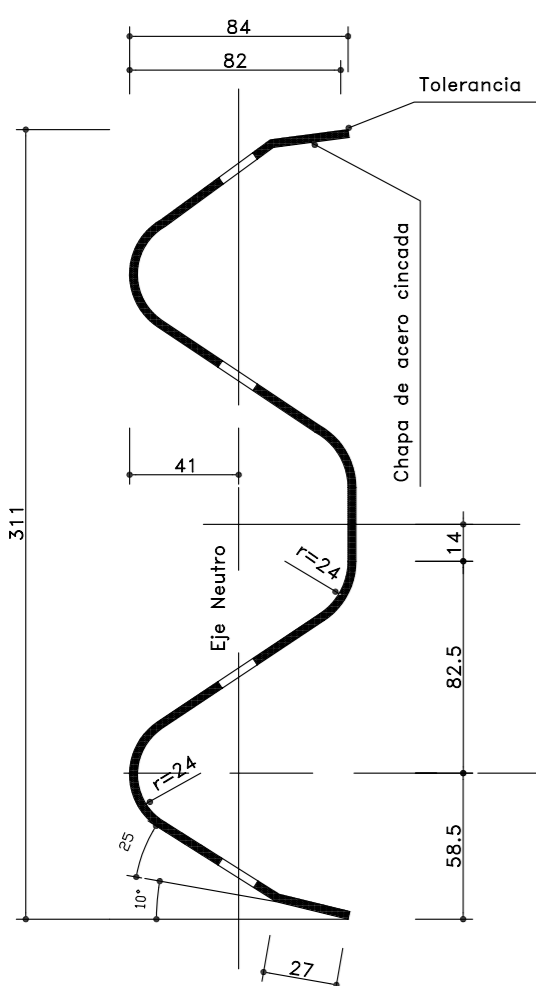
TIPO DE BARANDA DOBLE

ESCALA 1:20

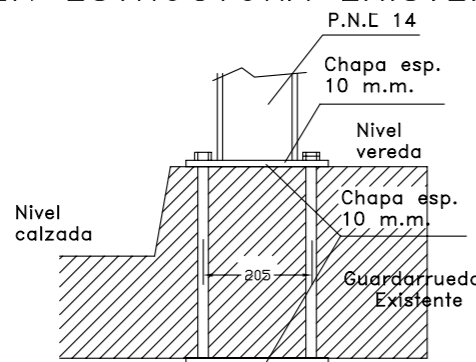


SECCION TRANSVERSAL

ESCALA 1:2

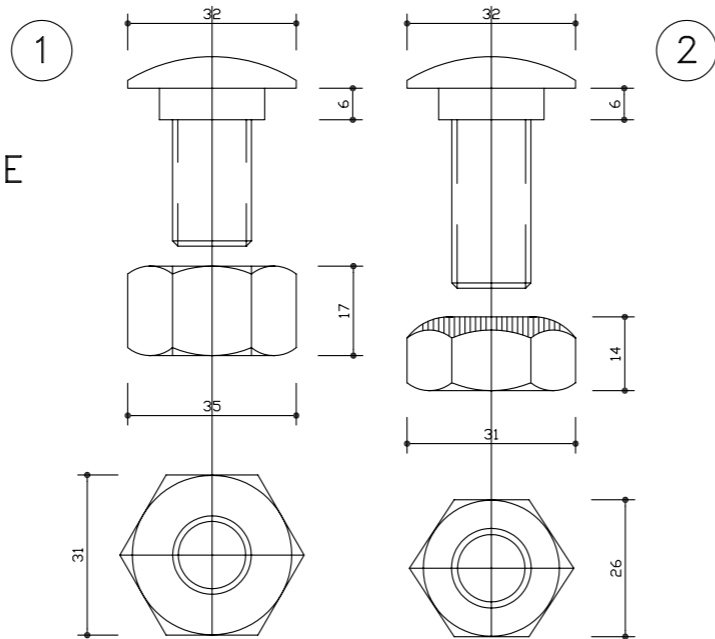


DETALLE PARA FIJACION EN ESTRUCTURA EXISTENTE



DETALLE TUERCA Y BULON

ESCALA 1:1

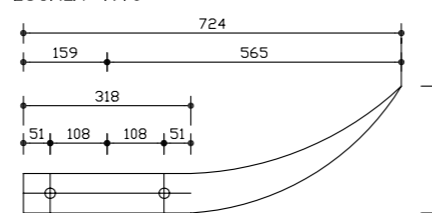


- 1) Bulon de 32 m.m. de longitud con tuercas de caras rectas con doble endadura para empalme de las defensas.
- 2) Bulon de 45 m.m. de longitud con tuercas de una cara redondeada para fijar las defensas a los postes metalicos.

DETALLE ALA TERMINAL COMUN

EMPALME EN EL SENTIDO DEL TRANSITO

ESCALA 1:10

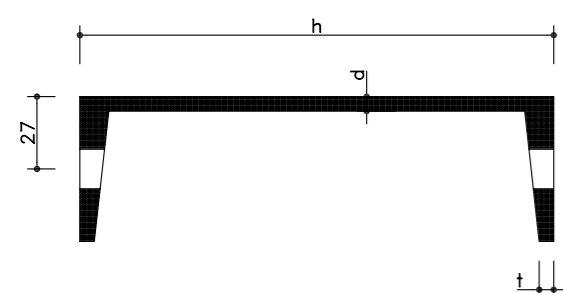


DATOS A FIJAR EN EL PROYECTO

BARANDA S/PLANO.....CLASE.....TIPO.....
LONGITUD UTIL.....(MULTIPLA DE 7.62m)
CON O SIN ALAS TERMINALES COMUNES.....
POSTE (INDICAR MATERIAL Y TIPO PARA METALICOS).....

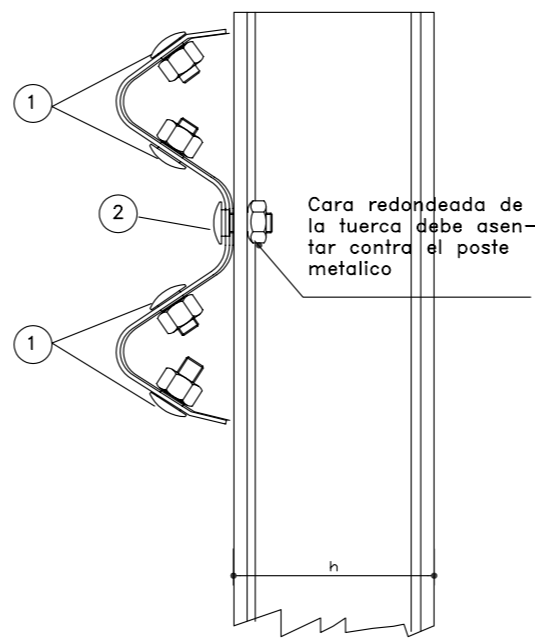
Tipo	Dimensiones				Peso kg/m
	h	b	d	t	
Liviano	152.4	48.77	5.08	8.71	12.2
Pesado	177.8	53.09	5.33	9.33	14.6

Clase	Calibre	Area de la seccion transversal cm ²	Momento de inercia cm ⁴		Momento resistente cm ³		Peso de la defensa Kg.	
			Horizontal	Vertical	Horizontal	Vertical	3.81m	7.62m
A	12(2.5m.m.)	12.84	96.15	1249	22.53	80.6	42.3	79.7
B	10(3.2m.m.)	16.52	123.62	1607	28.90	103.6	49.7	95.6

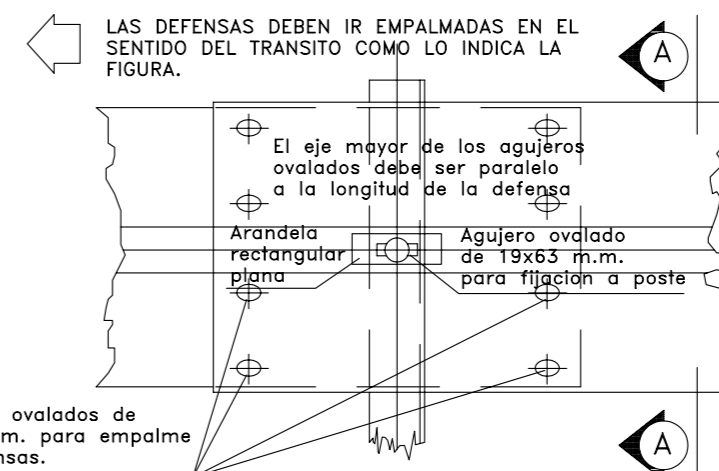


SECCION A-A

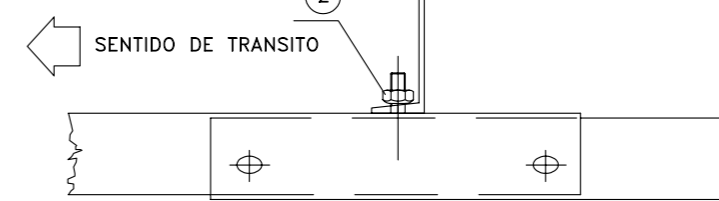
ESCALA 1:4



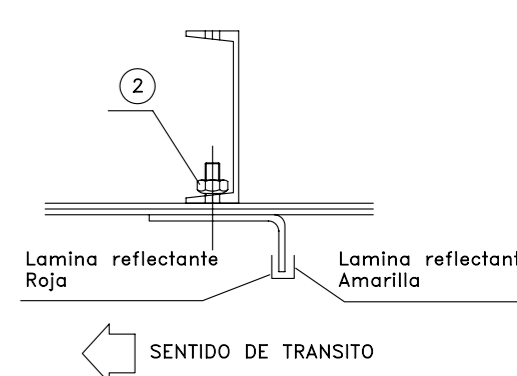
DETALLE EMPALME DE LAS DEFENSAS Y FIJACION A POSTE METALICO VISTA



PLANTA



DETALLE ARANDELA REFLECTANTE

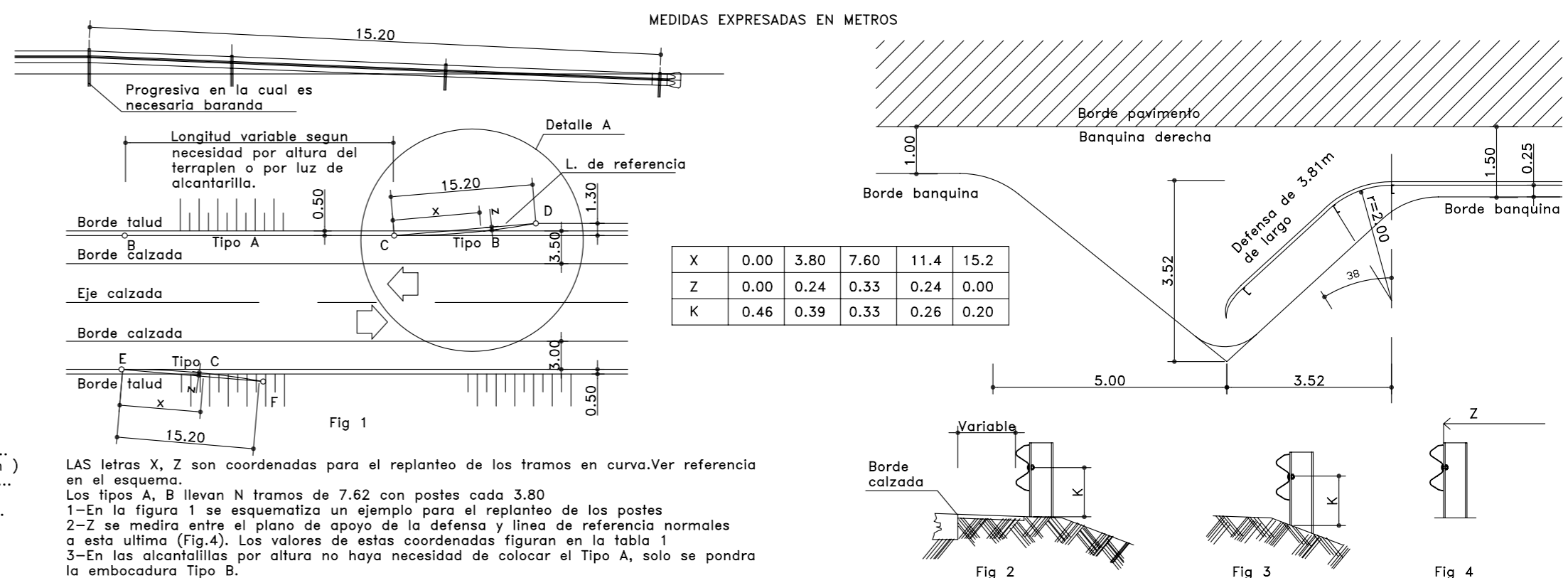


NOTAS

CUANDO NO SE INDIQUE LO CONTRARIO EN EL PROYECTO, LOS POSTES DE FIJACION SERAN METALICOS CINCADOS.
LAS DEFENSAS EN CURVA, CUYO RADIO SEA MAYOR DE 45.00 M. PODRAN ADAPTARSE DIRECTAMENTE EN OBRA AL SER INSTALADOS. LAS DE MENOR RADIO DEBEN SER PROVISTAS CURVADAS PREVIAMENTE.

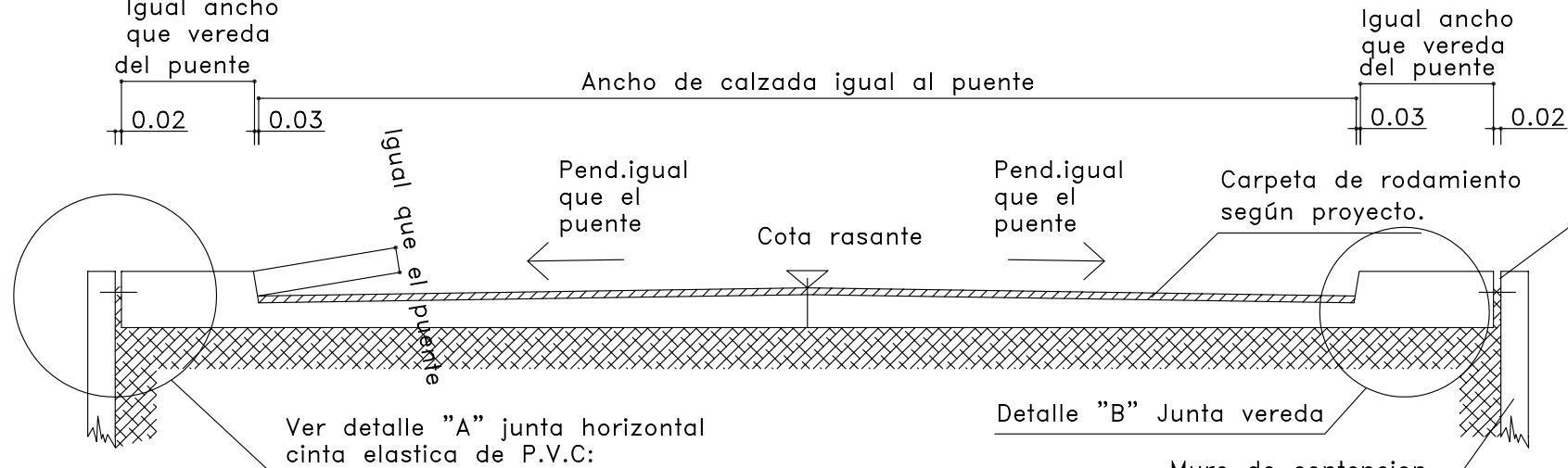
DETALLE EMBOCADURAS

MEDIDAS EXPRESADAS EN METROS



SECCION TRANSVERSAL 1-1

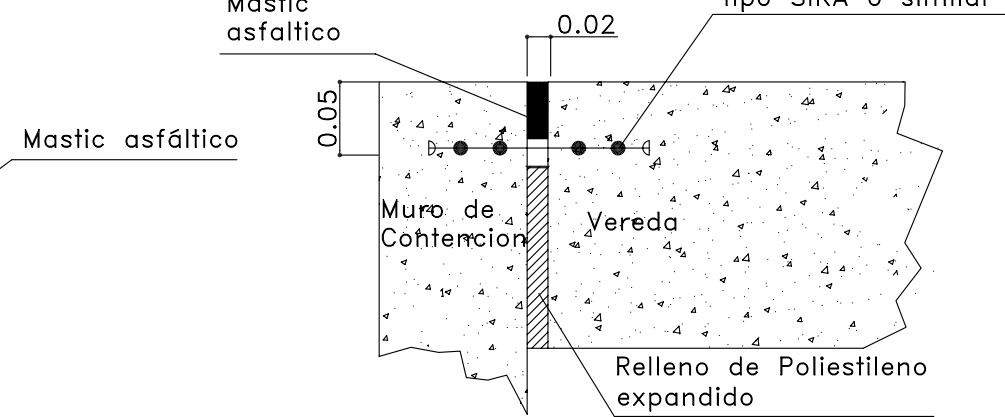
ESCALA 1:50
Igual ancho
que vereda
del puente



JUNTA HORIZONTAL

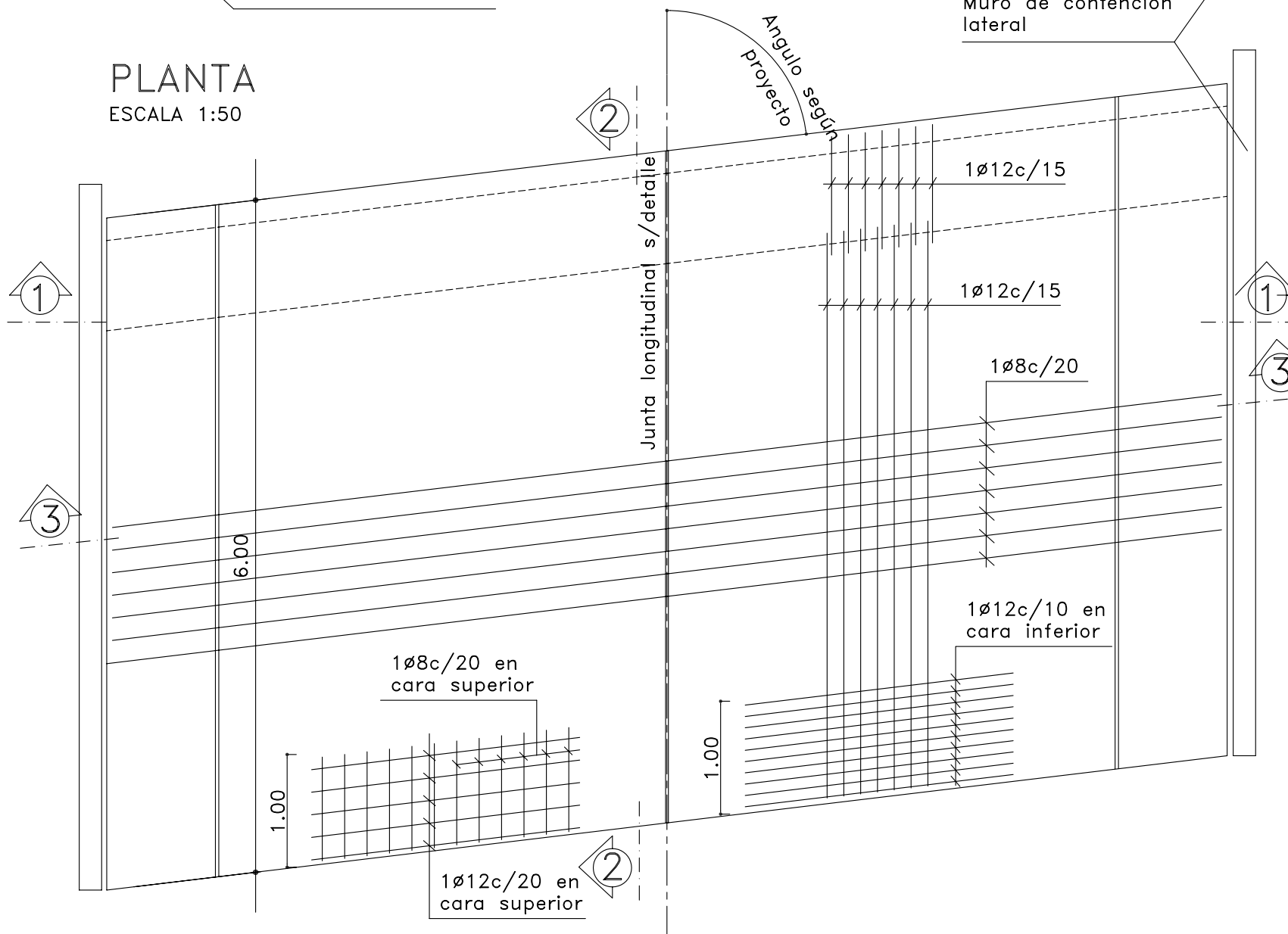
DETALLE "A"
ESCALA 1:10

Cinta elastica de P.V.C. I-22 tipo SIKA o similar



PLANTA

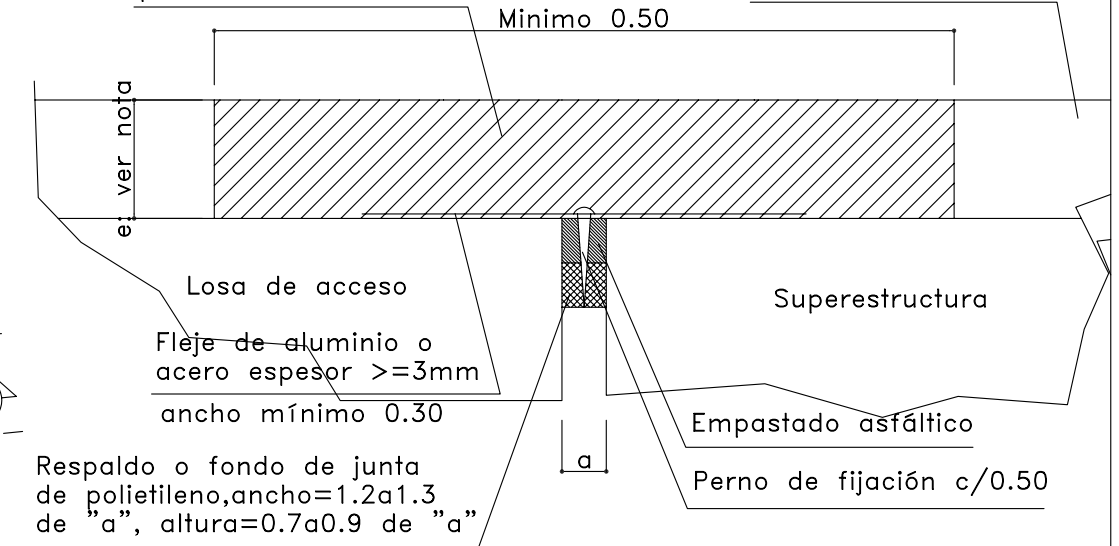
ESCALA 1:50



DETALLE JUNTA

Junta de material asfáltico polimerizado e inerte

Carpeta de rodamiento s/proyecto

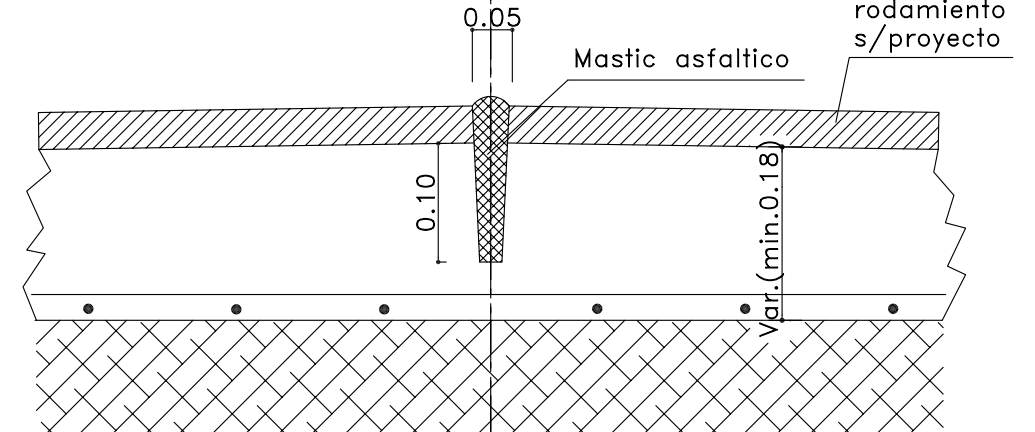


Nota espesor de asfalto: el espesor será igual al de la carpeta de desgaste pero no menor a 5cm ni mayor a 8cm

DETALLE JUNTA LONGITUDINAL

ESCALA 1:10

Carpeta de rodamiento s/proyecto





República Argentina - Poder Ejecutivo Nacional
1983/2023 - 40 AÑOS DE DEMOCRACIA

Hoja Adicional de Firmas
Informe gráfico

Número:

Referencia: Documentacion Complementaria - DVBA Mantenimiento Puentes y Alcantarillas - PARTE 02

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