

Quinta.—Quedan derogados el Decreto 3021/1974, de 31 de octubre, y cuantas disposiciones de igual o inferior rango se opongan a lo establecido en la presente Ley.

DISPOSICIONES ADICIONALES

Primera.—La Corporación Financiera Internacional podrá realizar inversiones en España de conformidad con lo dispuesto en el Decreto-ley 2/1962, de 25 de enero.

Segunda.—Las autorizaciones para invertir en España, a favor de personas jurídicas privadas extranjeras, caducarán en caso de que la persona jurídica autorizada sea objeto de nacionalización en su país, salvo que se otorgue la autorización especial prevista en la disposición adicional siguiente.

Tercera.—Los Gobiernos y todas aquellas Entidades oficiales de soberanía extranjera necesitarán autorización especial para poder realizar inversiones de capital extranjero en España.

Cuarta.—1. Las personas enumeradas en el artículo 1.º que, por sucesión testada o intestada, donación por causa de muerte o actos de naturaleza análoga, adquieran la titularidad de alguna de las inversiones previstas en el artículo 3.º, requerirán autorización administrativa previa para:

- a) La transmisión de las mismas a cualquiera de las personas que enumera el artículo 1.º
- b) La transferencia al extranjero de los beneficios y rendimientos que produzcan.
- c) La transferencia al extranjero de los capitales así adquiridos y del importe de su enajenación.

2. Las autorizaciones referidas en el número 1 de esta disposición adicional, no serán necesarias en el caso de que el causante o transmitente reúna ya las condiciones de inversor extranjero definidas en el artículo 1.º de esta Ley, y la inversión se hubiera efectuado de acuerdo con lo previsto en el número 1 del artículo 2.º

MINISTERIO DE OBRAS PUBLICAS Y URBANISMO

16335 ORDEN de 3 de junio de 1986 por la que se aprueban los documentos «Obras de paso de carreteras. Colección de puentes de vigas pretensadas IC», «Obras de paso de carreteras. Colección de puentes de vigas pretensadas IIC» y «Obras de paso de carreteras. Colección de pequeñas obras de paso 4.2 IC». (Continuación.)

Ilustrísimo señor:

El Ministerio de Obras Públicas y Urbanismo está facultado según el número 6 del artículo 5.º de la Ley de Carreteras 51/1974, de 19 de diciembre, para el establecimiento revisión y actualización de la normativa técnica en dicha materia.

La puesta en marcha del Plan General de Carreteras y las modificaciones últimas de las instrucciones de hormigón armado y

pretensado así como la experiencia en el uso de técnicas y materiales no tradicionales aconsejan la revisión y ampliación de la referida normativa.

La experiencia española de casi un siglo ha demostrado la eficacia y utilidad del empleo de colecciones oficiales de modelos de los elementos que más se repiten en las carreteras, como son las obras de fábrica y puentes de luces moderadas que, además de ahorrar la repetición de cálculos y dibujos permiten determinar con facilidad y suficiente aproximación la solución más adecuada en cada ocasión.

Las colecciones de puentes aprobadas hasta ahora están preparadas para que los tableros sean independientes por lo cual, cuando se construye una obra de varios vanos, es preciso una junta de pavimentos en cada estribo o pila. Modernamente se ha desarrollado la técnica de unir los tableros de dos o más tramos pero respetando la independencia de las vigas en que se apoya. Dos de las colecciones objeto de esta Orden introducen esta técnica en nuestra normativa.

Por otra parte y respecto de las pequeñas obras de fábrica, entendiéndose como tales las luces libres iguales o menores de diez metros, la colección existente en la actualidad incluye únicamente obras en arco de hormigón en masa. Sin perjuicio de que dicha colección continúe estando vigente, pues no hay ningún inconveniente en ello, se ha considerado procedente ampliar los tipos estructurales y los materiales para construirlos. En la tercera de las colecciones objeto de esta Orden se incluyen marcos, pórticos, arcos y tubos de hormigón armado y tubos de acero corrugado así como las correspondientes boquillas y aletas.

De acuerdo con lo expuesto, con el informe favorable de la Comisión Permanente de Normas de Dirección General de Carreteras, y a propuesta de dicho Centro directivo,

Este Ministerio, en virtud de las facultades que le concede el artículo 5.º, número 6, de la Ley 51/1974, de 19 de diciembre, de carreteras ha dispuesto:

1. Aprobar los siguientes documentos que figuran como anexo a esta Orden:

Obras de paso de carreteras. Colección de puentes de vigas pretensadas IC.

Obras de paso de carreteras. Colección de puentes de vigas pretensadas IIC.

Obras de paso de carreteras. Colección de pequeñas obras de paso 4.2 IC.

2. El uso de dichas colecciones no es obligatorio, debiendo considerarse en cada caso si las soluciones que en ellas figuran son las más adecuadas al mismo.

3. Justificando el uso, el Proyectista queda eximido de incluir en el proyecto los cálculos justificativos y mediciones detalladas del puente de que se trate.

4. Queda autorizado el empleo de las colecciones objeto de la presente Orden a partir de su publicación en el «Boletín Oficial del Estado».

Lo que comunico a V. I. para su conocimiento y efectos.
Madrid, 3 de junio de 1986.

SAENZ COSCULLUELA

Ilmo. Sr. Director general de Carreteras.

COLECCION DE PEQUEÑAS OBRAS DE PASO 4.2 IC

(Continuación.)

LH = 6,00
LV = 3,50

MARCO TIPO 11

VALORES COMUNES AL TIPO 11
L7 = 49 TIPOS ARMADURA: 6M-7 90=8 9M=3 DISTANCIA JUNTAS: 13.0

CARACTERÍST. GEOTECNICAS V MY TI TC	ESPESORES ES EP ED		LONGITUDES DE ARMADURAS L1 L2 L3 L4 L5 L6							TIPOS DE ARMADURAS 9B 9C 9D 9E 9F 9I 9J 9K							MEDICIONES POR M HORNIGON ACERO								
	ES	EP	L1	L2	L3	L4	L5	L6	9B	9C	9D	9E	9F	9I	9J	9K		9B	9C	9D	9E	9F	9I	9J	9K
2 3.5 1 2	.60	.35	.65	1.05	1.45	1.65	1.05	3.55	1.50	7 13	6	7	14	3	2	2	10.95	1295.2							
	.65	.35	.65	1.10	1.45	1.70	1.10	3.55	1.55	7 14	6	7	14	3	2	2	11.29	1350.3							
	.65	.35	.65	1.10	1.45	1.70	1.10	3.55	1.55	7 14	6	7	14	3	2	2	11.29	1350.3							
2 4.0 1 2	.50	.35	.65	.95	.00	.00	.95	1.60	1.70	1 10	6	7	14	4	2	2	10.25	1109.6							
	.65	.35	.65	1.10	1.45	1.70	1.10	3.55	1.65	7 14	6	7	14	4	2	2	11.29	1363.7							
	.65	.35	.65	1.10	1.55	1.70	1.10	3.55	1.60	7 14	6	7	14	4	2	2	11.29	1434.8							
	.65	.35	.65	1.10	1.55	1.70	1.10	3.55	1.60	7 14	6	7	14	4	3	2	11.29	1444.2							
3 .5 1 2	.80	.35	.60	.95	.00	.00	.85	1.70	1.95	1 7	4	4	12	2	2	2	9.92	690.4							
	.55	.35	.60	1.00	1.20	2.35	.90	1.75	1.95	4 10	4	4	12	2	2	2	9.92	974.6							
	.55	.35	.60	1.00	1.25	2.40	.90	1.75	1.95	5 11	4	4	12	2	2	2	10.27	1013.1							
	.55	.35	.60	1.00	1.25	2.40	.90	1.75	1.95	5 12	4	4	12	2	2	2	10.27	1052.6							
3 1.5 1 2	.50	.35	.60	.95	.00	.00	.95	2.20	1.40	1 8	5	5	13	2	2	2	9.92	974.6							
	.55	.35	.60	1.00	1.20	2.45	1.00	2.45	1.25	5 11	5	5	13	2	2	2	10.27	1083.2							
	.55	.35	.60	1.00	1.35	1.60	1.00	3.50	1.20	7 12	5	5	13	2	2	2	10.27	1140.4							
	.55	.35	.60	1.00	1.40	1.50	1.00	3.50	1.20	7 13	5	5	13	2	2	2	10.27	1190.5							
3 2.5 1 2	.50	.35	.65	.95	.00	.00	.95	2.25	1.45	1 8	5	5	13	2	2	2	10.25	979.7							
	.55	.35	.65	1.00	1.45	1.60	1.00	3.55	1.30	7 12	5	5	13	2	2	2	10.60	1147.6							
	.55	.35	.65	1.00	1.70	2.10	1.00	3.55	1.25	9 13	5	5	13	2	2	2	10.60	1242.0							
	.65	.35	.65	1.10	1.35	2.50	1.10	2.35	1.35	7 13	5	5	13	2	2	2	11.29	1295.6							
3 3.0 1 2	.50	.35	.65	.95	.00	.00	.95	2.40	1.55	1 8	5	5	13	2	2	2	10.25	982.3							
	.55	.35	.65	1.00	1.50	1.60	1.00	3.55	1.40	7 12	5	5	13	2	2	2	10.60	1149.4							
	.65	.35	.65	1.10	1.40	1.70	1.10	3.55	1.45	7 13	6	7	14	2	2	2	11.29	1289.1							
	.65	.35	.65	1.10	1.40	1.70	1.10	3.55	1.45	7 13	6	7	14	2	2	2	11.29	1289.1							
3 3.5 1 2	.80	.35	.65	.95	1.30	1.95	.95	2.50	1.65	7 9	6	7	14	2	2	2	10.25	1128.4							
	.55	.35	.65	1.00	1.60	1.60	1.00	3.55	1.50	7 13	6	7	14	2	2	2	10.60	1263.1							
	.65	.35	.65	1.10	1.50	1.70	1.10	3.55	1.55	7 14	6	7	14	2	2	2	11.29	1341.6							
	.65	.35	.65	1.10	1.50	1.70	1.10	3.55	1.55	7 14	6	7	14	2	2	2	11.29	1341.6							
3 4.0 1 2	.80	.35	.65	.95	1.40	2.05	.95	2.60	1.90	7 9	6	9	14	3	2	2	10.25	1191.5							
	.60	.35	.65	1.05	1.60	1.65	1.05	3.55	1.65	7 13	6	7	14	3	2	2	10.95	1299.9							
	.65	.35	.65	1.10	1.75	2.20	1.10	3.55	1.65	9 14	6	7	14	3	2	2	11.29	1399.6							
	.65	.35	.65	1.10	1.75	2.20	1.10	3.55	1.65	9 14	6	7	14	3	2	2	11.29	1399.6							

L7= .69		VALORES COMUNES AL TIPO 12				MARCO TIPO 12				LH = 6.00		LV = 5.00									
TIPOS ARMADURA 9A= 7		DISTANCIA JUNTAS: 17.0																			
T	MT	CARACTERÍST. GEOTECNICAS		ESORES		LONGITUDES DE ARMADURAS				TIPOS DE ARMADURAS				MEDICIONES POR M.							
		TI	TC	ES	EP	L1	L2	L3	L4	L5	L6	#R	#C	#D	#E	#F	#I	#J	#K	HORNIGÓN	ACERO
1	.5	1	2	.50	.35	.60	.95	1.30	1.70	.95	2.05	1.40	4	7	6	5	12	2	2	10.97	1038.7
		2		.55	.35	.60	1.00	1.50	2.30	1.00	1.95	1.15	7	11	6	4	12	2	2	11.32	1148.5
		3	4	.55	.35	.60	1.00	1.75	2.65	1.00	1.95	1.10	9	12	6	4	12	2	2	11.32	1235.0
		5	6	.55	.35	.60	1.00	1.75	2.70	1.00	1.95	1.10	9	12	6	4	12	2	2	11.32	1236.3
1	1.5	1	2	.50	.35	.65	.95	1.60	1.95	.95	2.25	1.55	5	8	7	7	13	2	2	11.30	1161.6
		2		.55	.35	.65	1.00	1.85	2.65	1.00	2.25	1.45	9	12	6	5	13	2	2	11.65	1299.4
		3	4	.55	.35	.65	1.00	1.85	2.90	1.00	2.20	1.40	9	13	6	5	13	2	2	11.65	1353.9
		5	6	.60	.35	.65	1.05	1.80	2.75	1.05	2.20	1.40	9	13	6	5	13	2	2	11.99	1353.2
1	2.5	1	2	.55	.35	.65	1.00	1.70	2.15	1.00	2.65	1.95	7	9	7	9	14	2	2	11.65	1304.7
		2		.55	.35	.65	1.00	1.95	2.90	1.00	2.50	1.65	9	13	7	7	14	2	2	11.65	1452.7
		3	4	.65	.35	.65	1.10	1.90	2.85	1.10	2.45	1.70	9	14	6	7	14	2	2	12.34	1485.3
		5	6	.65	.35	.65	1.10	1.85	2.80	1.10	2.40	1.65	9	13	6	7	14	2	2	12.34	1431.8
1	3.0	1	2	.55	.35	.70	1.00	1.85	2.20	1.00	2.60	2.00	7	10	7	9	14	2	2	11.98	1336.8
		2		.60	.35	.70	1.05	2.00	2.65	1.05	2.40	1.65	9	13	7	7	14	2	2	12.33	1459.9
		3	4	.70	.35	.70	1.15	1.90	2.75	1.15	2.40	1.70	9	14	7	7	14	2	2	13.02	1514.0
		5	6	.70	.35	.70	1.15	1.90	2.75	1.15	2.35	1.70	9	14	7	7	14	2	2	13.02	1513.2
1	3.5	1	2	.55	.40	.70	1.00	1.95	2.40	1.00	3.05	2.25	7	10	7	9	14	3	2	12.61	1381.9
		2		.70	.40	.70	1.15	2.05	3.05	1.15	2.85	2.00	9	13	6	7	14	3	2	13.66	1488.6
		3	4	.70	.40	.70	1.15	2.10	3.25	1.15	2.90	1.95	9	14	6	7	14	3	2	13.66	1544.9
		5	6	.70	.40	.70	1.15	2.10	3.10	1.15	2.75	1.95	9	14	6	7	14	3	2	13.66	1536.8
1	4.0	1	2	.55	.40	.70	1.00	2.05	2.55	1.00	3.15	2.35	7	10	7	9	14	4	2	12.61	1403.3
		2		.70	.50	.70	1.15	2.25	1.75	1.15	5.10	2.40	7	14	7	7	14	4	2	14.94	1600.2
		3	4	.70	.50	.70	1.15	2.45	2.25	1.15	5.10	2.40	9	14	7	7	15	5	3	14.94	1717.7
		5	6	.70	.40	.70	1.15	2.15	3.20	1.15	3.05	2.20	9	14	6	9	14	4	2	13.66	1610.4
2	1.5	1	2	.50	.35	.60	.95	1.75	1.95	.95	2.10	1.60	7	7	7	7	12	2	2	10.97	1115.0
		2		.55	.35	.60	1.00	1.90	2.50	1.00	2.10	1.50	9	10	7	7	12	2	2	11.32	1224.2
		3	4	.55	.35	.60	1.00	1.95	2.65	1.00	2.10	1.45	9	12	7	7	12	2	2	11.32	1291.5
		5	6	.55	.35	.60	1.00	1.95	2.70	1.00	2.10	1.45	9	12	7	7	12	2	2	11.32	1292.8
2	1.5	1	2	.50	.35	.65	.95	1.90	2.00	.95	2.40	1.40	7	8	7	9	13	2	2	11.30	1231.9
		2		.55	.35	.65	1.00	2.05	2.60	1.00	2.25	1.60	9	11	7	7	13	2	2	11.65	1309.3
		3	4	.55	.35	.65	1.00	1.85	2.70	1.00	2.25	1.55	10	13	7	7	13	2	2	11.65	1425.3
		5	6	.60	.40	.65	1.05	2.05	3.05	1.05	2.50	1.70	9	13	6	5	13	2	2	12.62	1386.9
2	2.5	1	2	.55	.40	.65	1.00	1.95	2.20	1.00	2.85	2.20	5	9	7	9	13	2	2	12.27	1265.7
		2		.55	.40	.65	1.00	2.15	3.15	1.00	2.85	1.90	9	12	7	7	14	2	2	12.27	1432.8
		3	4	.65	.40	.65	1.10	2.10	3.10	1.10	2.75	1.90	9	13	7	7	14	2	2	12.97	1492.6
		5	6	.65	.40	.65	1.10	2.10	3.15	1.10	2.75	1.90	9	13	7	7	14	2	2	12.97	1493.8
2	3.0	1	2	.55	.40	.70	1.00	2.10	2.25	1.00	2.60	2.25	5	11	7	9	13	2	2	12.61	1271.2
		2		.55	.40	.70	1.00	2.25	3.15	1.00	2.70	1.90	9	12	7	7	14	2	2	12.61	1442.3
		3	4	.70	.40	.70	1.15	2.15	2.95	1.15	2.60	1.95	9	13	7	7	14	2	2	13.66	1497.3
		5	6	.70	.40	.70	1.15	2.15	3.00	1.15	2.60	1.95	9	13	7	7	14	2	2	13.66	1498.6
2	3.5	1	2	.50	.40	.70	.95	2.25	2.25	1.20	2.90	2.35	7	8	8	9	14	2	2	12.26	1362.0

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS M 26

VALORES COMUNES AL TIPO 12		MARCO TIPO 12										LH = 6,00 LV = 5,00							
VALORES COMUNES AL TIPO 12		MARCO TIPO 12										LH = 6,00 LV = 5,00							
CARACTERIST. GEOTECNICAS - T MT	TIPOS ARMADURAS	LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS						MEDICIONES POP M	
		L1	L2	L3	L4	L5	L6	8R	9C	10U	11E	12F	13G	14H	15I	16J	MORMIGON	ACERO	
2	3,5	1,2	1,05	2,35	2,16	1,05	5,10	2,15	9,13	7,7	7,14	3,2	2,2	13,59	1501,0	13,59	1501,0		
		3,4	1,15	2,35	3,60	1,15	3,25	2,20	9,14	6,7	7,14	3,2	2,2	14,30	1504,4			14,30	1504,4
		5,6,7	1,15	2,35	2,25	1,15	5,10	2,20	9,14	6,7	7,14	3,2	2,2	14,30	1500,3				
2	4,0	1,2	1,00	2,25	2,60	1,00	3,40	2,55	7,9	7,9	14,4	2,2	13,23	1600,1	13,23	1600,1			
		3,4	1,10	2,40	2,20	1,10	5,10	2,50	9,13	7,9	14,4	2,2	13,94	1633,5			13,94	1633,5	
		5,6,7	1,15	2,40	2,25	1,15	5,10	2,50	9,14	7,9	14,4	2,2	14,30	1609,9					14,30
3	3,5	1,2	0,95	1,95	1,95	1,20	2,30	1,95	5,7	8,7	12,2	1,2	11,58	1120,3	11,58	1120,3			
		3,4	1,00	2,15	2,65	1,00	2,30	1,85	9,10	7,7	12,2	2,2	11,93	1254,3			11,93	1254,3	
		5,6,7,8	1,00	2,20	2,85	1,00	2,35	1,80	9,12	7,7	12,2	2,2	11,93	1324,6					11,93
3	1,5	1,2	0,95	2,10	2,00	1,20	2,60	2,25	5,7	8,9	12,2	2,2	11,92	1210,4	11,92	1210,4			
		3,4	1,00	2,25	2,75	1,00	2,45	1,90	9,11	7,7	13,2	2,2	12,27	1338,5			12,27	1338,5	
		5,6,7,8	1,00	2,25	3,05	1,00	2,45	1,85	9,12	7,7	13,2	2,2	12,27	1384,1					12,27
3	2,5	1,2	1,05	2,20	2,95	1,05	2,40	1,85	9,12	7,7	13,2	2,2	12,62	1364,0	12,62	1364,0			
		3,4	0,95	2,15	2,10	1,20	3,05	2,50	5,7	8,9	13,2	2,2	12,53	1287,3			12,53	1287,3	
		5,6,7	1,10	2,40	2,10	1,00	5,05	2,10	9,11	7,7	13,2	2,2	12,89	1383,4					12,89
3	3,0	1,2	1,00	2,40	2,10	1,00	5,05	2,10	9,13	7,7	13,2	2,2	13,60	1480,1	13,60	1480,1			
		3,4	0,95	2,25	2,20	1,20	3,15	2,55	5,7	8,9	13,2	2,2	12,53	1293,1			12,53	1293,1	
		5,6,7	1,15	2,35	3,15	1,15	2,80	2,20	9,13	7,7	13,2	2,2	14,30	1481,5					14,30
3	3,5	1,2	0,95	2,40	2,20	1,20	3,05	2,55	5,7	8,9	13,2	2,2	12,88	1296,8	12,88	1296,8			
		3,4	1,00	2,50	3,40	1,25	3,25	2,45	9,12	8,9	13,2	2,2	13,23	1523,8			13,23	1523,8	
		5,6,7	1,15	2,50	2,25	1,15	5,10	2,40	9,13	7,7	13,2	2,2	14,94	1524,4					14,94
3	4,0	1,2	0,95	2,40	2,45	1,20	3,50	2,75	5,7	8,9	13,2	2,2	13,50	1337,1	13,50	1337,1			
		3,4	1,05	2,55	2,15	1,05	5,10	2,65	9,12	8,9	14,4	3,2	14,22	1505,8			14,22	1505,8	
		5,6,7	1,15	2,55	2,25	1,15	5,10	2,65	9,13	7,9	14,4	3,2	14,94	1661,1					14,94
3	3,5	1,2	1,15	2,55	2,25	1,15	5,10	2,65	9,14	7,9	14,4	3,2	14,94	1712,6	14,94	1712,6			

LH = 7,00
LV = 5,00

MARCO TIPO 13

VALORES COMUNES AL TIPO 13
TIPOS ARMADURA: SA=7 Ø=9 SM=5 DISTANCIA JUNTAS: 18,0

CARACTERIST. Y MT	GEOTECNICAS TC	ESPESORES ES EP ED					LONGITUDES DE ARMADURAS L1 L2 L3 L4 L5 L6					TIPOS DE ARMADURAS ØB ØC ØD ØE ØF ØI ØJ ØK						MEDICIONES POR MORMIGON	ACERO	
		ES	EP	ED	L1	L2	L3	L4	L5	L6	ØB	ØC	ØD	ØE	ØF	ØI	ØJ			ØK
1	0.5	1	.60	.40	.70	1.05	1.35	2.05	1.05	2.45	1.65	5	0	5	5	13	2	2	14.26	1327.6
		2	.65	.40	.70	1.10	1.65	2.70	1.10	2.50	1.55	7	13	5	5	13	2	2	14.66	1439.0
		3 4	.65	.40	.70	1.10	1.75	3.05	1.10	2.50	1.50	7	13	5	5	13	2	2	14.66	1547.7
		5 6 7 8	.65	.40	.70	1.10	1.75	3.10	1.10	2.55	1.50	7	13	5	5	13	2	2	14.66	1549.0
1	1.5	1	.60	.40	.75	1.05	1.65	2.25	1.05	2.70	1.80	7	9	6	7	14	2	2	14.65	1469.9
		2	.65	.40	.75	1.10	1.85	3.10	1.10	2.80	1.70	7	12	6	7	14	2	2	15.05	1592.5
		3 4	.70	.40	.75	1.15	2.00	3.40	1.15	2.80	1.65	9	16	6	7	14	2	2	15.45	1765.5
		5 6 7 8	.70	.40	.75	1.15	2.05	3.40	1.15	2.75	1.65	9	16	6	7	14	2	2	15.45	1765.9
1	2.5	1	.65	.40	.75	1.10	1.75	2.50	1.10	3.20	2.25	7	10	7	9	15	2	2	15.05	1656.3
		2	.65	.40	.75	1.10	2.20	2.20	1.10	5.15	1.90	9	13	7	7	15	2	2	15.05	1800.6
		3 4	.75	.40	.75	1.20	2.10	3.60	1.20	3.25	1.95	9	14	7	7	15	2	2	15.05	1870.2
		5 6 7	.75	.40	.75	1.20	2.10	3.55	1.20	3.15	1.90	9	14	7	7	15	2	2	15.05	1870.6
1	3.0	1	.65	.40	.75	1.10	1.85	2.60	1.10	3.40	2.35	7	11	7	9	15	3	2	15.05	1707.9
		2	.70	.40	.75	1.15	2.20	2.25	1.15	5.15	2.05	9	14	7	7	15	3	2	15.45	1882.5
		3 4	.75	.40	.75	1.20	2.20	2.30	1.20	5.15	2.05	9	15	7	7	15	3	2	15.05	1953.5
		5 6 7	.75	.40	.75	1.20	2.20	2.30	1.20	5.15	2.00	9	15	7	7	15	3	2	15.05	1952.1
1	3.5	1	.65	.40	.75	1.10	1.95	2.75	1.10	3.55	2.45	7	11	7	9	15	4	2	15.05	1733.6
		2	.75	.40	.75	1.20	2.20	2.30	1.45	5.15	2.40	9	14	6	9	16	4	2	15.05	2073.4
		3 4	.75	.40	.75	1.20	2.30	2.30	1.45	5.15	2.35	9	16	6	9	16	4	2	15.05	2152.0
		5 6 7	.75	.40	.75	1.20	2.25	2.30	1.20	5.15	2.30	9	16	7	9	15	4	3	15.05	2052.0
1	4.0	1	.75	.55	.75	1.20	2.85	2.30	1.20	5.15	3.00	9	15	7	9	15	5	4	17.00	2171.6
2	0.5	1	.60	.40	.70	1.05	1.70	2.15	1.05	2.45	1.80	9	6	6	7	13	2	2	14.26	1368.4
		2	.65	.40	.70	1.10	1.90	2.70	1.10	2.50	1.70	7	11	6	5	13	2	2	14.66	1457.5
		3 4	.65	.40	.70	1.10	2.10	3.10	1.10	2.50	1.65	9	12	6	5	13	2	2	14.66	1557.0
		5 6 7 8	.65	.40	.70	1.10	2.10	3.20	1.10	2.50	1.65	9	13	6	5	13	2	2	14.66	1616.5
2	1.5	1	.60	.40	.75	1.05	1.90	2.25	1.05	2.65	1.90	5	9	6	7	13	2	2	14.65	1399.2
		2	.65	.40	.75	1.10	2.15	3.10	1.10	2.70	1.80	9	12	6	7	14	2	2	15.05	1643.9
		3 4	.70	.40	.75	1.15	2.15	3.25	1.15	2.65	1.80	9	13	6	7	14	2	2	15.45	1708.5
		5 6 7 8	.70	.40	.75	1.15	2.15	3.30	1.15	2.70	1.75	9	13	6	7	14	2	2	15.45	1709.7
2	2.5	1	.65	.40	.75	1.10	2.05	2.45	1.10	3.05	2.35	7	10	7	9	14	2	2	15.05	1598.1
		2	.65	.40	.75	1.10	2.30	3.45	1.10	3.05	2.00	9	13	6	7	14	2	2	15.05	1721.9
		3 4	.70	.45	.75	1.15	2.45	2.25	1.15	5.15	2.15	9	14	6	7	14	2	2	16.09	1808.9
		5 6 7	.75	.45	.75	1.20	2.40	2.30	1.20	5.15	2.20	9	14	6	7	14	2	2	16.50	1814.4
2	3.0	1	.65	.40	.75	1.10	2.15	2.55	1.10	3.15	2.45	7	10	7	9	15	2	2	15.05	1667.1
		2	.70	.45	.75	1.15	2.45	2.25	1.15	5.15	2.55	9	13	7	9	15	3	2	16.09	1923.0
		3 4	.75	.45	.75	1.20	2.45	2.30	1.20	5.15	2.55	9	14	7	9	15	3	2	16.50	1987.0
		5 6 7	.75	.45	.75	1.20	2.45	2.30	1.20	5.15	2.50	9	15	7	9	15	3	2	16.50	2052.0
2	3.5	1	.65	.45	.75	1.10	2.25	1.90	1.10	5.15	2.55	7	10	7	10	15	4	2	15.69	1805.0

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS N 20

VALORES COMUNES AL TIPO 13									
MARCO TIPO 13									
LH = 7,00 LV = 5,00									
L70-449 TIPOS ARMADURAS 7 90-9 5M 5 DISTANCIA JUNTAS: 18,0									
CARACTERÍST. GEOTÉCNICAS TIPO	ES ESORES ES EP ED	LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS #B #C #D #E #F #I #J #K	MEDICIONES POR M HORMIGÓN ACERO
		L1	L2	L3	L4	L5	L6		
2 3.5 1 2	.75 .45 .75	1.20	2.45	2.30	1.20	5.15	2.65	9 14 7 9 15 4 2 2	16.50 2005.6
3 3.5 1 5	.75 .45 .75	1.20	2.40	2.30	1.20	5.15	2.60	10 15 7 9 15 4 2 2	16.50 2101.2
5 3.5 1 5	.75 .45 .75	1.20	2.40	2.30	1.20	5.15	2.60	10 15 7 9 15 4 2 2	16.50 2101.2
2 4.0 1 2	.75 .55 .75	1.20	2.35	2.00	1.20	5.15	3.00	7 11 7 10 15 5 2 2	17.00 1910.2
3 4.0 1 5	.75 .55 .75	1.20	2.80	2.30	1.20	5.15	3.10	9 14 7 9 15 5 2 2	17.00 2077.7
5 4.0 1 5	.75 .55 .75	1.20	2.90	2.30	1.20	5.15	3.05	9 15 7 9 15 5 3 2	17.00 2156.6
3 4.5 1 2	.75 .55 .75	1.20	2.90	2.30	1.20	5.15	3.05	9 15 7 9 15 5 4 2	17.00 2174.1
3 5.0 1 2	.60 .40 .70	1.05	2.05	2.20	1.05	2.60	2.20	7 8 7 9 13 2 2 2	14.26 1469.4
3 5.0 1 5	.65 .40 .70	1.10	2.30	3.05	1.10	2.45	1.90	9 11 7 7 13 2 2 2	14.66 1559.7
3 5.5 1 2	.65 .40 .70	1.10	2.30	3.05	1.10	2.50	1.85	9 12 7 7 13 2 2 2	14.66 1609.1
3 5.5 1 5	.65 .40 .70	1.10	2.30	3.05	1.10	2.50	1.85	10 12 7 7 13 2 2 2	14.66 1638.1
3 6.0 1 2	.60 .40 .75	1.05	2.20	2.30	1.05	2.75	2.25	7 8 7 9 13 2 2 2	14.65 1403.2
3 6.0 1 5	.65 .40 .75	1.10	2.35	3.00	1.10	2.60	1.95	9 12 7 7 13 2 2 2	15.05 1617.1
3 6.5 1 2	.70 .45 .75	1.15	2.40	3.60	1.15	3.05	2.05	9 13 6 7 13 2 2 2	16.09 1694.3
3 6.5 1 5	.70 .45 .75	1.15	2.40	3.70	1.15	3.10	2.05	9 13 6 7 13 2 2 2	16.09 1697.5
3 7.0 1 2	.65 .45 .75	1.10	2.35	2.55	1.10	3.25	2.40	7 9 7 9 14 2 2 2	15.69 1600.2
3 7.0 1 5	.65 .45 .75	1.10	2.50	2.20	1.10	5.15	2.50	9 12 7 9 14 2 2 2	15.69 1785.8
3 7.5 1 2	.70 .45 .75	1.15	2.40	2.25	1.15	5.15	2.45	10 14 7 9 14 2 2 2	16.09 1935.8
3 7.5 1 5	.70 .45 .75	1.15	2.40	1.95	1.15	5.15	2.25	10 14 7 9 14 2 2 2	16.09 1855.6
3 8.0 1 2	.65 .45 .75	1.10	2.40	2.60	1.10	3.40	2.70	7 10 7 9 14 2 2 2	15.69 1636.7
3 8.0 1 5	.70 .45 .75	1.15	2.55	2.25	1.15	5.15	2.60	9 13 7 9 14 2 2 2	15.69 1833.3
3 8.5 1 2	.75 .45 .75	1.20	2.40	2.30	1.20	5.15	2.85	10 14 7 9 15 3 2 2	16.33 1947.0
3 8.5 1 5	.75 .45 .75	1.20	2.40	2.30	1.20	5.15	2.85	10 14 7 9 15 3 2 2	17.15 2049.0
3 9.0 1 2	.65 .45 .75	1.10	2.50	2.70	1.10	3.35	2.60	7 10 7 10 14 3 2 2	17.15 2047.0
3 9.0 1 5	.65 .45 .75	1.10	2.75	2.20	1.10	5.15	2.60	9 13 7 9 15 3 2 2	15.69 1689.7
3 9.5 1 2	.75 .50 .75	1.20	2.60	2.30	1.20	5.15	2.85	10 14 7 9 15 3 2 2	16.33 1947.0
3 9.5 1 5	.75 .50 .75	1.20	2.60	2.30	1.20	5.15	2.85	10 14 7 9 15 3 2 2	17.15 2049.0
3 10.0 1 2	.65 .45 .75	1.10	2.60	1.90	1.10	5.15	2.80	7 10 7 10 15 4 2 2	16.33 1833.3
3 10.0 1 5	.75 .50 .75	1.20	2.75	2.30	1.20	5.15	2.75	9 14 7 10 15 4 2 2	17.15 2086.5
3 10.5 1 2	.75 .50 .75	1.20	2.65	2.30	1.20	5.15	2.90	10 15 7 9 15 4 3 2	17.15 2146.3
3 10.5 1 5	.75 .50 .75	1.20	2.65	2.30	1.20	5.15	2.90	10 15 7 9 15 4 3 2	17.15 2146.3

DIRECCION GENERAL DE CARRITERAS COLECCION DE MARCOS M 28

LH = 7,00
LV = 5,50

MARCO TIPO 14

VALORES COMUNES AL TIPO 14
TIPOS ARMADURA: 8A=7 8B=8 8C=5 DISTANCIA JUNTAS: 19.5

T	CARACTERIST. GEOTECNICAS TC	ESPORES ES EP ED			LONGITUDES DE ARMADURAS L1 L2 L3 L4 L5 L6					TIPOS DE ARMADURAS #B #C #D #E #F #G #H						MEDICIONES POR M HORMIGON ACERO			
		ES	EP	ED	L1	L2	L3	L4	L5	L6	#B	#C	#D	#E	#F		#G	#H	
1	0.5 1 2	.60	.45	.70	1.05	1.80	2.25	1.05	2.65	2.05	5	6	7	13	2	2	2	15.34	1356.0
		.65	.45	.70	1.10	2.05	3.10	1.10	2.95	1.95	7	11	6	5	13	2	2	15.74	1489.7
		.65	.45	.70	1.10	2.25	3.75	1.10	3.10	1.90	9	12	6	5	13	2	2	15.74	1562.4
		.65	.45	.70	1.10	2.30	3.90	1.10	3.15	1.85	9	13	6	5	13	2	2	15.74	1625.0
1	1.5 1 2	.60	.45	.75	1.05	2.05	2.50	1.05	3.15	2.15	7	9	6	7	14	2	2	15.73	1468.9
		.65	.45	.75	1.10	2.35	3.80	1.10	3.40	2.05	9	12	6	7	14	2	2	16.14	1656.5
		.70	.45	.75	1.15	2.35	2.25	1.15	5.65	2.00	9	13	6	7	14	2	2	16.54	1717.3
		.70	.45	.75	1.15	2.35	2.25	1.15	5.65	2.00	9	14	6	7	14	2	2	16.54	1775.1
1	2.5 1 2	.60	.45	.75	1.05	2.20	2.80	1.05	3.75	2.40	7	10	7	9	16	2	2	15.73	1602.8
		.65	.45	.75	1.10	2.50	2.20	1.10	5.65	2.25	9	13	7	7	15	2	2	16.14	1806.0
		.75	.45	.80	1.20	2.50	2.30	1.20	5.70	2.15	9	14	7	7	15	2	2	17.34	1880.0
		.75	.45	.75	1.20	2.45	2.30	1.20	5.65	2.25	9	14	7	7	15	2	2	16.95	1876.7
1	3.0 1 2	.60	.45	.80	1.05	2.35	2.90	1.05	3.60	2.60	7	10	7	9	15	2	2	16.13	1669.6
		.75	.45	.80	1.20	2.50	2.30	1.20	5.70	2.30	9	14	7	7	15	3	2	17.34	1895.5
		.80	.45	.80	1.25	2.50	3.95	1.25	3.60	2.30	9	15	7	7	15	3	2	17.75	1973.6
		.80	.45	.80	1.25	2.45	3.85	1.25	3.45	2.30	9	15	7	7	15	2	2	17.75	1954.4
1	3.5 1 2	.65	.45	.80	1.10	2.45	3.05	1.10	3.75	2.70	7	11	7	9	15	4	2	16.53	1743.1
		.80	.45	.80	1.25	2.55	2.35	1.25	5.70	2.65	9	14	7	9	15	4	2	17.75	1999.0
		.80	.45	.80	1.25	2.40	2.35	1.25	5.70	2.60	10	16	7	9	15	4	2	17.75	2092.5
		.80	.45	.80	1.25	2.40	2.35	1.25	5.70	2.55	10	16	7	9	15	3	2	17.75	2074.9
1	4.0 1 2	.80	.55	.80	1.25	2.65	2.05	1.25	5.70	2.95	7	12	7	10	15	5	2	19.17	1951.4
		.80	.55	.80	1.25	2.85	2.35	1.25	5.70	3.05	9	15	7	9	15	5	2	19.17	2136.8
		.80	.55	.80	1.25	2.90	2.35	1.50	5.70	3.05	9	15	8	9	16	5	3	19.17	2252.9
		.80	.55	.80	1.25	2.90	2.35	1.25	5.70	3.00	9	15	7	9	15	5	3	19.17	2149.9
2	0.5 1 2	.60	.45	.70	1.05	2.15	2.35	1.05	2.80	2.25	5	8	7	7	13	2	2	15.34	1388.0
		.65	.45	.70	1.10	2.45	3.20	1.10	2.90	2.15	9	11	7	7	13	2	2	15.74	1561.0
		.65	.45	.70	1.10	2.45	3.60	1.10	3.00	2.10	9	12	7	7	13	2	2	15.74	1616.6
		.65	.45	.70	1.10	2.50	3.65	1.10	3.00	2.05	9	13	7	7	13	2	2	15.74	1676.0
2	1.5 1 2	.60	.45	.75	1.05	2.30	2.50	1.05	3.15	2.50	5	8	7	9	13	2	2	15.73	1455.7
		.65	.45	.75	1.10	2.55	3.50	1.10	3.15	2.15	9	12	7	7	14	2	2	16.14	1678.9
		.70	.45	.75	1.15	2.50	3.75	1.15	3.15	2.15	9	13	7	7	14	2	2	16.54	1746.4
		.70	.45	.75	1.15	2.50	3.80	1.15	3.15	2.15	9	13	7	7	14	2	2	16.54	1747.6
2	2.5 1 2	.60	.50	.75	1.05	2.45	2.90	1.05	4.00	2.85	7	9	7	9	14	2	2	16.42	1605.0
		.65	.50	.75	1.10	2.70	2.20	1.10	5.65	2.50	9	13	7	7	14	2	2	16.83	1768.1
		.70	.50	.75	1.15	2.55	1.95	1.15	5.65	2.50	10	14	7	7	14	2	2	17.24	1852.6
		.75	.50	.75	1.20	2.65	2.30	1.20	5.65	2.55	9	14	7	7	14	2	2	17.65	1838.3
2	3.0 1 2	.60	.50	.80	1.05	2.60	2.95	1.05	3.90	2.85	7	9	7	9	14	2	2	16.82	1610.5
		.65	.50	.80	1.10	2.90	2.20	1.10	5.70	2.70	9	13	7	9	15	2	2	17.23	1916.5
		.75	.50	.80	1.20	2.60	2.30	1.20	5.70	2.70	10	14	7	9	15	2	2	18.05	2016.1
		.80	.50	.80	1.25	2.70	2.35	1.25	5.70	2.55	9	14	7	7	15	3	2	18.46	1926.9
2	3.5 1 2	.65	.50	.80	1.10	2.70	3.15	1.10	4.05	2.95	7	10	7	9	15	3	2	17.23	1731.0

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS M 30

VALORES COMUNES AL TIPO 14		MARCO TIPO 14										LH = 7,00 LV = 5,50							
L7 = 4,8 TIPOS ARMADURAS AL T I P O 14		DISTANCIA JUNTAS 19,8																	
CARACTERIST. TIPO	GEOTECNICAS TC	ESPORES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS						MEDICIONES POR M		
		ES	EP	ED	L1	L2	L3	L4	L5	L6	MB	MC	MD	ME	MF	MI	MI	MJ	MK
2	3.5 1 2	.75	.50	.80	1.20	2.40	2.30	1.20	5.70	2.85	9 14	7 9	15 3	2 2	2	18.05	2005.0		
		.60	.50	.80	1.25	2.65	2.35	1.25	5.70	2.85	10 15	7 9	15 4	2 2	2	16.46	2123.8		
		.80	.50	.80	1.25	2.55	2.35	1.25	5.70	2.85	10 15	7 9	15 4	2 2	2	18.46	2123.8		
2	4.0 1 2	.65	.50	.80	1.10	2.80	1.90	1.35	5.70	2.80	7 10	8 10	15 4	2 2	2	17.23	1862.7		
		.80	.55	.80	1.25	2.90	2.34	1.25	5.70	3.10	9 14	7 9	15 5	2 2	2	19.17	2072.0		
		.80	.55	.80	1.25	2.85	2.35	1.25	5.70	3.05	10 15	7 9	15 5	3 2	2	19.17	2185.9		
3	4.5 1 2	.60	.45	.70	1.05	2.50	2.40	1.30	2.90	2.65	7 7	8 9	13 2	2 2	2	15.34	1493.8		
		.65	.45	.70	1.10	2.70	3.15	1.35	2.95	2.95	9 11	8 9	13 2	2 2	2	15.74	1659.2		
		.65	.50	.70	1.10	2.70	2.20	1.10	5.60	2.40	9 12	7 7	13 2	2 2	2	16.43	1647.6		
3	5.0 1 2	.65	.50	.70	1.10	2.75	2.20	1.10	5.60	2.40	9 12	7 7	13 2	2 2	2	16.43	1648.8		
		.60	.50	.75	1.05	2.55	2.55	1.30	3.35	2.80	5 8	8 9	13 2	2 2	2	16.42	1520.6		
		.65	.50	.75	1.10	2.80	3.75	1.10	3.50	2.50	9 12	7 7	13 2	2 2	2	16.83	1661.6		
3	5.5 1 2	.70	.50	.75	1.15	2.75	2.25	1.15	5.65	2.45	9 13	7 7	13 2	2 2	2	17.24	1719.7		
		.70	.50	.75	1.15	2.75	2.25	1.15	5.65	2.45	9 13	7 7	13 2	2 2	2	17.24	1719.7		
		.60	.50	.75	1.05	2.70	2.70	1.30	3.65	2.90	7 8	8 9	14 2	2 2	2	16.42	1617.0		
3	6.0 1 2	.65	.50	.75	1.10	2.85	2.20	1.35	5.65	2.90	9 12	8 9	14 2	2 2	2	16.83	1830.8		
		.70	.50	.75	1.15	2.65	2.25	1.15	5.65	2.75	10 14	7 9	14 2	2 2	2	17.24	1943.9		
		.75	.50	.75	1.20	2.60	2.30	1.20	5.65	2.80	10 14	7 9	14 2	2 2	2	17.65	1950.0		
3	6.5 1 2	.60	.50	.80	1.05	2.85	2.70	1.30	3.40	2.70	7 8	8 10	14 2	2 2	2	16.82	1655.5		
		.65	.50	.80	1.10	2.75	2.20	1.35	5.70	2.80	10 13	8 9	14 2	2 2	2	17.23	1927.2		
		.75	.50	.80	1.20	2.70	2.30	1.45	5.70	2.80	10 14	8 9	14 2	2 2	2	18.05	1997.4		
3	7.0 1 2	.75	.50	.80	1.20	2.70	2.30	1.45	5.70	2.80	10 14	8 9	14 2	2 2	2	18.05	1997.4		
		.65	.50	.80	1.10	3.05	2.85	1.35	3.50	2.80	7 9	8 10	14 3	2 2	2	17.23	1704.2		
		.65	.55	.80	1.10	2.85	2.20	1.35	5.70	3.00	10 13	8 9	14 3	2 2	2	17.92	1963.4		
3	7.5 1 2	.80	.55	.80	1.25	2.45	2.35	1.25	5.70	3.05	10 14	7 9	14 3	2 2	2	19.17	2005.4		
		.80	.55	.80	1.25	2.85	2.35	1.25	5.70	3.05	10 14	7 9	14 3	2 2	2	19.17	2005.4		
		.60	.55	.80	1.05	2.95	1.85	1.30	5.70	3.00	7 9	8 10	14 3	2 2	2	17.51	1787.0		
3	8.0 1 2	.75	.55	.80	1.20	2.90	2.00	1.45	5.70	2.95	10 13	8 10	15 4	2 2	2	18.76	2107.0		
		.80	.55	.80	1.25	2.90	2.35	1.25	5.70	3.10	10 14	7 9	15 4	2 2	2	19.17	2087.8		
		.80	.55	.80	1.25	2.90	2.35	1.25	5.70	3.10	10 15	7 9	15 4	2 2	2	19.17	2155.0		

L7=1.00		VALORES COMUNES AL TIPO 15										LH= 8,00										
TIPOS ARMADURAS		DISTANCIA JUNTAS: 19.5										LV= 5,50										
T	MY	CARACTERÍST. GEOTECNICAS		ES		LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS		MEDICIONES POR M				
		TI	TC	ES	EP	L1	L2	L3	L4	L5	L6	MB	PC	PD	PE	PF	PG	HORMIGÓN	ACERO			
1	.5	1 2		.65	.50	.80	1.65	.00	.00	1.10	.00	.00	1	6	7	1 13	2	2	2	18.68	1650.1	
				.70	.50	.80	1.70	1.35	2.45	1.15	.00	.00				7 12	7	1 14	2	2	19.14	1914.0
				.75	.50	.80	1.75	1.45	2.85	1.20	.00	.00				7 13	7	1 14	2	2	19.60	1960.0
				.75	.50	.80	1.75	1.50	2.95	1.20	.00	.00				7 13	7	1 14	2	2	19.60	1960.0
1	1.5	1 2		.70	.50	.80	1.70	.00	.00	1.15	3.00	1.60	1	10	7	7 14	2	2	2	19.14	1846.9	
				.70	.50	.80	1.70	1.45	3.20	1.15	3.20	1.60				7 13	7	7 15	2	2	19.14	2142.7
				.75	.50	.80	1.75	1.70	3.75	1.20	3.30	1.55				7 14	7	7 15	2	2	19.60	2224.1
				.75	.50	.80	1.75	1.75	3.85	1.20	3.30	1.50				7 14	7	7 15	2	2	19.60	2225.6
1	2.0	1 2		.70	.50	.80	1.70	.00	.00	1.15	3.30	1.95	1	10	7	7 15	2	2	2	19.14	1924.4	
				.70	.50	.80	1.70	1.80	2.25	1.15	5.20	1.75				7 13	7	7 15	2	2	19.14	2164.0
				.75	.50	.85	1.75	2.05	4.15	1.20	.00	.00				9 15	7	1 15	2	2	20.05	2294.5
				.80	.50	.80	1.80	1.70	2.35	1.25	5.20	1.75				7 15	7	7 15	2	2	20.06	2315.1
1	2.5	1 2		.70	.50	.85	1.70	.00	.00	1.15	3.25	1.90	1	10	7	7 15	2	2	2	19.59	1928.5	
				.75	.50	.85	1.75	1.95	3.60	1.45	3.65	1.90				9 14	8	9 16	3	2	20.05	2454.0
				.85	.50	.85	1.85	1.85	3.70	1.55	3.55	1.95				9 15	8	9 16	3	2	20.97	2550.6
				.85	.50	.85	1.85	1.70	3.50	1.30	3.30	1.70				7 15	7	7 15	2	2	20.97	2313.9
1	3.0	1 2		.70	.50	.85	1.70	.00	.00	1.40	3.60	2.20	1	11	8	9 16	3	2	2	19.59	2147.5	
				.80	.50	.85	1.80	1.95	2.85	1.50	5.25	2.10				9 15	8	9 16	4	2	20.51	2591.5
				.85	.50	.85	1.85	1.95	2.90	1.55	5.25	2.05				9 16	8	9 16	4	2	20.97	2671.7
				.85	.50	.85	1.85	2.45	2.90	1.55	5.25	2.05				9 16	8	9 16	3	2	20.97	2652.0
1	3.5	1 2		.85	.60	.85	1.85	.00	.00	1.55	3.40	2.05	1	12	8	9 16	5	2	2	22.41	2305.9	
				.85	.60	.85	1.85	2.30	2.90	1.55	5.25	2.10				9 15	8	9 16	5	2	22.41	2685.4
				.85	.60	.85	1.85	2.85	2.90	1.55	5.25	2.05				9 16	8	9 16	5	4	22.41	2799.3
				.85	.60	.85	1.85	2.45	2.90	1.55	5.25	2.05				9 16	8	9 16	5	3	22.41	2776.4
2	.5	1 2		.65	.50	.80	1.65	.00	.00	1.10	2.40	1.50	1	6	7	5 13	2	2	2	18.60	1691.1	
				.70	.50	.80	1.70	1.55	2.50	1.15	2.35	1.50				5 12	7	5 13	2	2	19.14	1876.0
				.75	.50	.80	1.75	1.60	2.85	1.20	2.35	1.50				7 13	7	7 14	2	2	19.60	2056.8
				.75	.50	.80	1.75	1.65	2.95	1.20	.00	.00				7 13	7	1 14	2	2	19.60	1998.4
2	1.5	1 2		.70	.50	.80	1.70	.00	.00	1.15	2.85	1.80	1	10	7	7 14	2	2	2	19.14	1844.5	
				.70	.50	.80	1.70	1.75	3.00	1.15	2.95	1.65				7 12	7	7 15	2	2	19.14	2072.7
				.75	.50	.80	1.75	1.95	3.60	1.20	3.00	1.60				9 14	7	7 15	2	2	19.60	2271.0
				.75	.50	.80	1.75	2.00	3.70	1.20	3.00	1.55				9 14	7	7 15	2	2	19.60	2273.9
2	2.0	1 2		.70	.50	.80	1.70	.00	.00	1.15	3.25	2.20	1	10	7	9 15	2	2	2	19.14	1976.0	
				.70	.50	.80	1.70	1.85	3.30	1.15	3.30	1.80				7 13	7	7 15	2	2	19.14	2152.2
				.75	.50	.80	1.75	2.25	2.80	1.20	5.20	2.00				9 14	7	7 15	2	2	20.30	2317.5
				.80	.50	.80	1.80	2.00	2.35	1.25	5.20	2.05				7 15	7	7 15	2	2	20.77	2363.2
2	2.5	1 2		.70	.50	.85	1.70	.00	.00	1.15	3.05	1.90	1	10	7	7 15	2	2	2	19.59	1925.3	
				.75	.50	.85	1.75	1.90	3.30	1.20	3.15	1.75				7 10	7	7 15	2	2	20.05	2161.2
				.80	.50	.85	1.80	2.25	2.85	1.25	5.25	1.95				9 13	7	7 15	2	2	21.23	2408.2
				.85	.50	.85	1.85	2.00	2.40	1.30	5.25	2.00				7 15	7	7 15	2	2	21.69	2355.3
2	3.0	1 2		.70	.50	.85	1.70	.00	.00	1.15	3.35	2.25	1	10	7	9 15	3	2	2	19.59	2001.2	

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS M 32

L7=1.00		VALORES COMUNES AL TIPO 15										MARCO TIPO 15		LH = 8,00 LV = 5,50								
TIPOS ARMADURAS		DISTANCIAS JUNTAS 19.5																				
T	HT	CARACTERIST. GEOTECNICAS		ESPEORES		LONGITUDS DE ARMADURAS										TIPOS DE ARMADURAS		MEDICIONES POR M				
		TI	TC	ES	EP	EN	L1	L2	L3	L4	L5	LA	LB	LC	LD	LE	LF	LG	MORMIGON	ACERO		
2	3.0	1	2	.75	.55	.85	1.75	2.30	2.80	1.45	5.25	2.35	9	14	8	9	16	3	2	2	20.76	2523.7
				.85	.55	.85	1.75	2.20	2.90	1.55	5.25	2.35	9	15	8	9	16	4	2	2	21.69	2630.3
				.85	.55	.85	1.85	2.25	2.90	1.55	5.25	2.35	9	15	8	9	16	4	2	2	21.69	2631.6
2	3.5	1	2	.70	.50	.85	1.70	1.90	2.60	1.40	3.55	2.35	9	11	8	9	16	4	2	2	19.59	2280.6
				.85	.55	.85	1.85	2.20	2.90	1.55	5.25	2.50	9	15	8	9	16	4	2	2	21.69	2634.0
				.85	.60	.85	1.85	2.50	2.90	1.55	5.25	2.65	9	14	8	9	16	5	3	2	22.41	2760.8
				.85	.60	.85	1.85	2.50	2.90	1.55	5.25	2.65	9	16	8	9	16	5	3	2	22.41	2760.8
3	.5	1	2	.65	.50	.80	1.65	.00	.00	1.10	2.40	1.65	1	8	7	5	13	2	2	2	18.68	1692.7
				.70	.50	.80	1.70	1.75	2.55	1.15	2.40	1.50	7	11	7	5	13	2	2	2	19.14	1850.9
				.75	.50	.80	1.75	1.95	3.00	1.20	2.40	1.50	9	13	7	5	13	2	2	2	19.60	2027.0
				.75	.50	.80	1.75	1.95	3.05	1.20	2.35	1.50	9	13	7	5	13	2	2	2	19.60	2027.7
3	1.5	1	2	.65	.50	.80	1.65	.00	.00	1.10	2.75	1.85	1	9	7	7	14	2	2	2	18.68	1805.5
				.70	.55	.80	1.70	2.00	3.20	1.15	3.30	1.95	7	12	7	7	14	2	2	2	19.84	2035.3
				.75	.55	.80	1.75	2.20	4.00	1.20	3.45	1.90	9	14	7	7	14	2	2	2	20.30	2245.5
				.75	.55	.80	1.75	2.25	2.40	1.20	5.20	1.90	9	14	7	7	14	2	2	2	20.30	2244.7
3	2.0	1	2	.70	.55	.80	1.70	.00	.00	1.15	3.40	2.45	1	9	7	9	14	2	2	2	19.84	1897.3
				.70	.55	.80	1.70	2.10	3.55	1.15	3.70	2.10	7	12	7	7	15	2	2	2	19.84	2122.2
				.75	.55	.80	1.75	2.30	2.80	1.20	5.20	2.05	9	14	7	7	15	2	2	2	20.30	2319.5
				.75	.55	.80	1.75	2.35	2.80	1.20	5.20	2.00	9	14	7	7	15	2	2	2	20.30	2319.9
3	2.5	1	2	.70	.55	.80	1.70	.00	.00	1.15	3.60	2.55	1	10	7	9	15	2	2	2	19.84	2008.7
				.70	.55	.80	1.70	2.20	2.25	1.15	5.20	2.20	7	13	7	7	15	2	2	2	19.84	2194.5
				.75	.55	.85	1.75	2.45	2.80	1.20	5.25	1.95	9	14	7	7	15	2	2	2	20.76	2328.1
				.80	.55	.85	1.80	2.35	2.85	1.25	5.25	2.00	9	15	7	7	15	2	2	2	21.23	2408.5
3	3.0	1	2	.70	.55	.85	1.70	.00	.00	1.15	3.50	2.50	1	10	7	9	15	2	2	2	20.29	2010.7
				.75	.55	.85	1.75	2.40	2.80	1.20	5.25	2.15	9	13	7	7	15	3	2	2	20.76	2279.8
				.85	.55	.85	1.85	2.30	2.90	1.30	5.25	2.20	9	15	7	7	15	3	2	2	21.69	2433.2
				.85	.55	.85	1.85	2.30	2.90	1.30	5.25	2.15	9	15	7	7	15	3	2	2	21.69	2432.4
3	3.5	1	2	.70	.55	.85	1.70	.00	.00	1.15	3.70	2.60	1	10	7	9	15	3	2	2	20.29	2034.0
				.80	.55	.85	1.80	2.40	2.65	1.50	5.25	2.50	9	14	8	9	16	4	2	2	21.23	2556.7
				.85	.55	.85	1.85	2.40	2.90	1.55	5.25	2.50	9	15	8	9	16	4	2	2	21.69	2639.0
				.85	.55	.85	1.85	2.40	2.90	1.55	5.25	2.50	9	15	8	9	16	4	2	2	21.69	2639.0

LH = 9,00
LV = 5,50

MARCO TIPO 16

VALORES COMUNES AL TIPO 16
TIPOS ARMADURA: MA=9 MG=10 PH=7 DISTANCIA JUNTAS: 20,0

CARACTERIST. TIPO	GEOTECNICAS TC	ESPEORES		LONGITUDES DE ARMADURAS							TIPOS DE ARMADURAS							MEDICIONES POR MORMIGON ACERO		
		ES	EP	ED	L1	L2	L3	L4	L5	L6	#R	#C	#D	#E	#F	#I	#J		#K	
1	.5 1 2	1 2 3 4 5 6 7 8	.75	.55	.90	1.75	.00	.00	1.20	3.00	1.65	1 9	7	7	14	2	2	2	22.86	
			.80	.55	.90	1.80	1.55	.90	1.25	.00	.00	7 12	7	14	2	2	2	2	23.38	
			.85	.55	.90	1.85	1.65	.90	1.30	.00	.00	7 14	7	14	2	2	2	2	2	23.90
			.85	.55	.90	1.85	1.70	4.00	1.30	.00	.00	7 14	7	14	2	2	2	2	2	23.90
1	1.5 1 2	1 2 3 4 5 6 7	.80	.55	.90	1.80	.00	.00	1.25	3.75	2.10	1 11	7	7	15	2	2	2	23.38	
			.85	.55	.90	1.85	1.70	2.40	1.30	5.30	1.95	7 14	7	15	2	2	2	2	23.90	
			.85	.55	.90	1.85	2.10	2.90	1.55	5.30	2.05	9 15	8	9	16	2	2	2	2	23.90
			.90	.55	.90	1.90	1.95	2.95	1.60	5.30	2.10	9 15	8	9	16	2	2	2	2	24.41
1	2.0 1 2	1 2 3 4 5 6 7	.80	.55	.90	1.80	.00	.00	1.50	4.30	2.45	1 11	8	9	16	2	2	2	23.38	
			.85	.55	.90	1.85	2.00	2.90	1.55	5.30	2.30	9 14	8	9	16	2	2	2	23.90	
			.90	.55	.90	1.90	2.10	2.95	1.60	5.30	2.25	9 16	8	9	16	2	2	2	2	24.41
			.90	.55	.90	1.90	2.10	2.95	1.60	5.30	2.25	9 16	8	9	16	2	2	2	2	24.41
1	2.5 1 2	1 2 3 4 5 6 7	.80	.55	.90	1.80	.00	.00	1.50	4.75	2.60	1 11	8	9	16	3	2	2	23.38	
			.85	.55	.90	1.85	2.15	2.90	1.85	5.30	2.45	9 15	9	9	17	3	2	2	23.90	
			.90	.55	.90	1.90	2.20	2.95	1.90	5.30	2.40	9 16	9	9	17	3	2	2	24.41	
			.90	.55	.90	1.90	2.20	2.95	1.90	5.30	2.35	9 16	9	9	17	3	2	2	24.41	
1	3.0 1 2	1 2 3 4 5 6	.90	.65	.90	1.90	.00	.00	1.60	4.35	3.05	1 12	8	10	16	5	2	2	25.87	
			.90	.65	.90	1.90	2.55	2.95	1.90	5.30	3.10	9 15	9	9	17	5	2	2	25.87	
			.90	.65	.90	1.90	2.60	2.95	1.90	5.30	3.05	9 16	9	9	17	5	3	2	25.87	
			.90	.65	.90	1.90	2.60	2.95	1.90	5.30	3.00	9 16	9	9	17	5	4	2	25.87	
1	3.5 1 2	1 2 3 4 5 6	.90	.65	.90	1.90	2.90	2.95	1.90	5.30	3.10	9 17	9	9	17	5	4	2	25.87	
			.75	.55	.90	1.75	.00	.00	1.20	2.90	1.75	1 9	7	7	14	2	2	2	22.86	
			.80	.55	.90	1.80	1.70	3.15	1.25	3.00	1.60	7 12	7	14	2	2	2	2	23.38	
			.85	.55	.90	1.85	1.80	3.65	1.30	3.05	1.60	7 14	7	14	2	2	2	2	23.90	
2	.5 1 2	3 4 5 6 7 8	.85	.55	.90	1.85	1.85	3.75	1.30	3.10	1.60	7 14	7	14	2	2	2	2	23.90	
			.85	.55	.90	1.85	1.85	3.75	1.30	3.10	1.60	7 14	7	14	2	2	2	2	23.90	
			.80	.55	.90	1.80	.00	.00	1.25	3.55	2.15	1 10	7	7	15	2	2	2	23.38	
			.80	.55	.90	1.80	1.95	2.35	1.25	5.30	1.90	7 13	7	15	2	2	2	2	23.38	
2	1.5 1 2	1 2 3 4 5 6 7	.85	.55	.90	1.85	2.20	2.90	1.30	5.30	1.85	9 15	7	7	15	2	2	2	23.90	
			.85	.55	.90	1.85	2.25	2.90	1.30	5.30	1.85	9 15	7	7	15	2	2	2	23.90	
			.80	.55	.90	1.80	.00	.00	1.25	4.00	2.50	1 11	7	9	15	2	2	2	23.38	
			.85	.55	.90	1.85	2.10	2.90	1.55	5.30	2.35	9 14	8	9	16	2	2	2	23.90	
2	2.0 1 2	1 2 3 4 5 6 7	.85	.55	.90	1.85	2.30	2.90	1.55	5.30	2.25	9 15	8	9	16	2	2	2	23.90	
			.85	.55	.90	1.85	2.30	2.90	1.55	5.30	2.25	9 15	8	9	16	2	2	2	23.90	
			.90	.55	.90	1.90	2.20	2.95	1.60	5.30	2.30	9 15	8	9	16	2	2	2	24.41	
			.80	.55	.90	1.80	.00	.00	1.25	4.25	2.60	1 11	8	9	16	3	2	2	23.38	
2	2.5 1 2	1 2 3 4 5 6 7	.85	.55	.90	1.85	2.20	2.90	1.55	5.30	2.45	9 16	8	9	16	3	2	2	23.90	
			.85	.55	.90	1.85	2.30	2.95	1.60	5.30	2.45	9 16	8	9	16	3	2	2	24.41	
			.90	.55	.90	1.90	2.30	2.95	1.60	5.30	2.45	9 16	8	9	16	3	2	2	24.41	
			.90	.55	.90	1.90	2.30	2.95	1.60	5.30	2.40	9 16	8	9	16	3	2	2	24.41	
2	3.0 1 2	1	.80	.55	.90	1.80	.00	.00	1.50	4.45	2.55	1 11	8	10	16	4	2	2	23.38	
			.80	.55	.90	1.80	.00	.00	1.50	4.45	2.55	1 11	8	10	16	4	2	2	23.38	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPEORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS M 34

VALORES COMUNES AL TIPO 16		MARCO TIPO 16										MEDICIONES POR M											
L7=1.00		DISTANCIA JUNTAS: 20.0										MORMIGON		ACERO									
TIPOS ARMADURA #M=9 #G=10 #H=7																							
CARACTERIST. TIPO	GEOTECNICAS TC	LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS											
		L1	L2	L3	L4	L5	L6	#B	#C	#D	#E	#F	#I	#J	#K								
Y	HT	ES	EP	ED	L1	L2	L3	L4	L5	L6	#B	#C	#D	#E	#F	#I	#J	#K					
2	3.0	1	2		.85	.55	.90	2.75	2.90	1.85	5.30	2.60	9	15	9	9	17	4	2	2	23.90	3175.2	
		3	4		.90	.55	.90	1.90	2.40	2.95	1.90	5.30	2.55	9	16	9	9	17	4	3	2	24.41	3285.0
		5	6	7	.90	.55	.90	1.90	2.45	2.95	1.90	5.30	2.55	9	16	9	9	17	4	3	2	24.41	3286.2
2	3.5	1	2		.90	.65	.90	.00	.00	.00	1.60	4.20	3.65	1	12	8	11	16	5	2	2	25.87	2864.3
		3	4		.90	.65	.90	2.70	2.95	1.90	5.30	3.00	9	15	9	10	17	5	2	2	25.87	3330.0	
		3	4		.90	.65	.90	2.75	2.65	1.90	5.30	2.95	10	16	9	10	17	5	4	2	25.87	3480.1	
		5	6		.90	.65	.90	2.95	2.95	1.90	5.30	2.90	9	17	9	10	17	5	4	2	25.87	3554.8	
3	1.5	1	2		.75	.55	.90	.00	.00	.00	1.20	2.65	1.85	1	9	7	7	14	2	2	2	22.86	2183.0
		2			.80	.55	.90	1.70	1.90	3.05	1.25	2.95	1.70	7	12	7	7	14	2	2	2	23.38	2395.4
		3	4		.85	.55	.90	2.10	3.65	1.30	2.95	1.65	9	13	7	7	14	2	2	2	23.90	2538.6	
		5	6	7	.85	.55	.90	2.15	3.75	1.30	3.00	1.65	9	14	7	7	14	2	2	2	23.90	2616.1	
3	1.5	1	2		.75	.55	.90	.00	.00	.00	1.20	3.30	2.15	1	10	7	7	15	2	2	2	22.86	2310.2
		2			.80	.55	.90	2.10	3.75	1.25	3.70	1.95	7	13	7	7	15	2	2	2	23.38	2578.3	
		3	4		.85	.55	.90	2.30	4.90	1.30	5.30	1.95	9	14	7	7	15	2	2	2	23.90	2718.9	
		5	6	7	.85	.55	.90	2.37	2.90	1.30	5.30	1.90	9	15	7	7	15	2	2	2	23.90	2891.1	
3	2.0	1	2		.80	.55	.90	.00	.00	.00	1.25	3.70	2.50	1	10	7	9	15	2	2	2	23.38	2383.5
		2			.85	.55	.90	2.05	2.40	1.30	5.30	2.15	7	14	7	7	15	2	2	2	23.90	2664.0	
		3	4		.90	.55	.90	2.40	2.90	1.55	5.30	2.25	9	15	8	9	16	2	2	2	23.90	2994.3	
		5	6	7	.90	.60	.90	2.65	2.95	1.35	5.30	2.35	9	15	7	7	15	2	2	2	25.14	2838.8	
3	2.5	1	2		.80	.55	.90	.00	.00	.00	1.85	3.90	2.65	1	11	7	9	15	2	2	2	23.38	2428.7
		2			.85	.60	.90	2.45	2.90	1.55	5.30	2.70	9	14	8	9	16	3	2	2	24.62	2961.6	
		3	4		.90	.60	.90	2.55	2.95	1.60	5.30	2.70	9	15	8	9	16	3	2	2	25.14	3055.7	
		5	6	7	.90	.60	.90	2.55	2.95	1.60	5.30	2.70	9	15	8	9	16	3	2	2	25.14	3055.7	
3	3.0	1	2		.80	.55	.90	.00	.00	.00	1.50	3.95	2.55	1	11	8	10	16	3	2	2	23.38	2609.0
		2			.85	.60	.90	2.55	2.90	1.55	5.30	2.85	9	14	8	9	16	4	2	2	24.62	2991.1	
		3	4		.90	.60	.90	2.65	2.95	1.60	5.30	2.80	9	16	8	9	16	4	2	2	25.14	3167.7	
		5	6	7	.90	.60	.90	2.50	2.95	1.60	5.30	2.80	10	16	8	9	16	4	3	2	25.14	3220.3	
3	3.5	1	2		.80	.55	.90	.00	.00	.00	1.50	4.55	3.20	9	11	8	11	16	4	2	2	23.38	2852.7
		2			.85	.60	.90	2.70	2.90	1.55	5.30	2.75	9	14	8	10	16	4	2	2	24.62	3047.9	
		3	4		.90	.65	.90	2.80	2.65	1.60	5.30	2.90	10	16	8	10	16	5	3	2	25.87	3329.3	
		5	6		.90	.65	.90	2.80	2.65	1.60	5.30	2.90	10	16	8	10	16	5	3	2	25.87	3329.3	

MARCO TIPO 17

LH = 10,00
LV = 5,50

V A L O R E S C O M U N E S A L T I P O 17

LT=1.00 TIPOS ARMADURAS: #A=9 #B=10 #M=7 DISTANCIA JUNTAS: 20.5

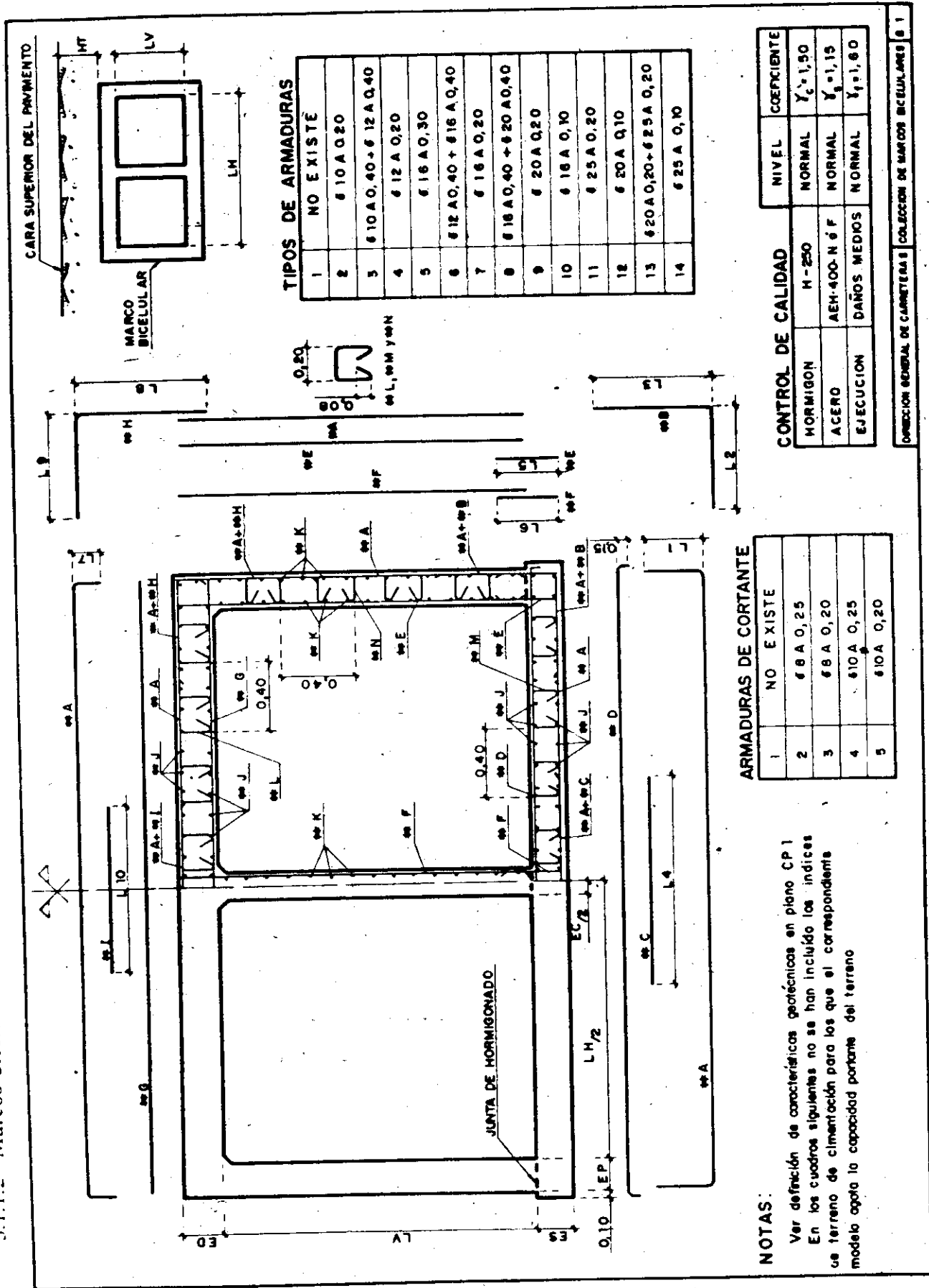
T	M	TI	CARACTERÍST. GEOTECNICAS		LONGITUDES DE ARMADURAS							TIPOS DE ARMADURAS		MEDICIONES POR M				
			TC	TC	L1	L2	L3	L4	L5	L6	#R	#C	#D	#E	#F	#I	#J	#K
1	1.0	1 2	1	1	1.85	.00	.00	1.55	4.50	2.35	1 10	8	7	14	2	2	28.22	2508.1
			2	2	1.90	2.00	2.45	1.60	5.40	2.20	7 13	8	7	15	2	2	28.80	2870.9
			3 4	3 4	1.95	2.15	2.50	1.65	5.40	2.15	7 14	8	7	15	2	2	29.37	2961.6
			5 6 7 8	5 6 7 8	1.95	2.20	2.50	1.65	5.40	2.10	7 14	8	7	15	2	2	29.37	2961.6
1	1.0	1 2	1	1	1.85	.00	.00	1.55	5.45	2.55	1 10	8	7	15	2	2	28.22	2614.8
			2	2	1.90	2.15	2.45	1.60	5.40	2.40	7 13	8	7	15	2	2	28.80	2876.5
			3 4	3 4	1.95	2.50	3.00	1.65	5.40	2.50	9 15	8	9	16	2	2	29.37	3280.6
			5 6 7 8	5 6 7 8	1.95	2.55	3.00	1.65	5.40	2.50	9 15	8	9	16	2	2	29.37	3281.4
1	1.5	1 2	1	1	1.90	.00	.00	1.60	4.25	2.95	1 11	8	9	16	2	2	28.80	2802.4
			2	2	1.95	2.40	3.00	1.65	5.40	2.80	9 14	8	9	16	2	2	29.37	3193.1
			3 4	3 4	2.00	2.50	3.05	1.70	5.40	2.75	9 16	8	9	16	2	2	29.95	3307.4
			5 6 7	5 6 7	2.00	2.55	3.05	1.70	5.40	2.75	9 16	8	9	16	2	2	29.95	3308.7
1	2.0	1 2	1	1	1.90	.00	.00	1.60	4.40	3.10	1 12	8	9	16	3	2	28.80	2695.8
			2	2	1.95	2.55	3.00	1.95	5.40	2.95	9 15	8	9	17	3	2	29.37	3458.7
			3 4	3 4	2.00	2.70	3.05	2.00	5.40	2.90	9 16	9	9	17	3	2	29.95	3562.1
			5 6 7	5 6 7	2.00	2.70	3.05	2.00	5.40	2.90	9 16	9	9	17	3	2	29.95	3562.1
1	2.5	1 2	1	1	1.90	.00	.00	1.90	4.30	3.05	1 12	9	10	17	4	2	28.80	3114.1
			2	2	1.95	2.70	3.00	1.95	5.40	3.10	9 15	8	9	17	4	2	29.37	3494.5
			3 4	3 4	2.00	2.80	3.05	2.00	5.40	3.05	9 17	9	9	17	4	2	29.95	3723.4
			5 6 7	5 6 7	2.00	2.85	3.05	2.00	5.40	3.00	9 17	9	9	17	4	2	29.95	3723.4
1	3.0	1 2	1	1	2.00	2.25	3.05	2.00	5.40	3.05	9 13	9	12	17	5	2	31.45	3634.9
			2	2	2.00	3.15	3.55	2.00	5.40	4.05	9 15	8	11	17	5	2	31.45	3758.0
			3 4	3 4	2.00	3.40	3.05	2.00	5.40	3.45	9 17	9	10	17	5	4	31.45	3918.2
			5 6	5 6	2.00	3.25	2.75	2.00	5.40	3.40	10 17	9	10	17	5	4	31.45	3946.9
2	1.5	1 2	1	1	1.85	.00	.00	1.55	4.20	2.40	1 10	8	7	14	2	2	28.22	2504.2
			2	2	1.90	2.10	2.45	1.40	5.40	2.20	7 13	8	7	15	2	2	28.80	2872.5
			3 4	3 4	1.95	2.30	2.50	1.65	5.40	2.15	7 14	8	7	15	2	2	29.37	2964.0
			5 6 7 8	5 6 7 8	1.95	2.30	2.50	1.65	5.40	2.15	7 14	8	7	15	2	2	29.37	2964.0
2	1.0	1 2	1	1	1.85	.00	.00	1.55	4.90	2.60	1 10	8	7	15	2	2	28.22	2606.9
			2	2	1.90	2.25	2.45	1.50	5.40	2.40	7 13	8	7	15	2	2	28.80	2878.0
			3 4	3 4	1.95	2.40	2.50	1.65	5.40	2.35	7 15	8	7	15	2	2	29.37	3061.2
			5 6 7 8	5 6 7 8	1.95	2.60	3.00	1.65	5.40	2.35	9 15	8	7	15	2	2	29.37	3122.9
2	1.5	1 2	1	1	1.85	.00	.00	1.55	3.75	2.95	1 10	8	9	15	2	2	28.22	2653.8
			2	2	1.95	2.45	3.00	1.65	5.40	2.80	9 14	8	9	16	2	2	29.37	3194.3
			3 4	3 4	1.95	2.70	3.00	1.65	5.40	2.70	9 15	8	9	16	2	2	29.37	3290.5
			5 6 7	5 6 7	2.00	2.60	3.05	1.70	5.40	2.75	9 16	8	9	16	2	2	29.95	3389.9
2	2.0	1 2	1	1	1.90	.00	.00	1.60	3.70	2.90	1 11	8	10	16	2	2	28.80	2833.2
			2	2	1.95	2.60	3.00	1.65	5.40	2.95	9 14	8	9	16	2	2	29.37	3201.7
			3 4	3 4	2.00	2.70	3.05	2.00	5.40	2.95	9 16	9	9	17	3	2	29.95	3563.3
			5 6 7	5 6 7	2.00	2.75	3.05	2.00	5.40	2.90	9 16	9	9	17	3	2	29.95	3563.3
2	2.5	1 2	1	1	1.90	.00	.00	1.60	3.75	3.05	1 12	8	10	16	3	2	28.80	2925.5

DIRECCION GENERAL DE CARRETERAS

COLECCION DE MARCOS M 36

L7=1.00		VALORES COMUNES AL TIPO 17		MARCO TIPO 17		LH = 10.00		L.V. = 5.50											
TIPOS ARMADURA: 9 9 10 10 11 11 12 12		DISTANCIA JUNTAS: 20.5																	
Y	TY	ESESORES		LONGITUDES (F ARMADURAS						TIPOS DE ARMADURAS		MEDICIONES POR M							
		ES	EP	L1	LP	L3	L4	L5	L6	R	C	D	E	F	G	H	I	J	K
2	2.5	1 2	.95	1.95	2.75	3.00	1.95	5.40	3.10	9 15	9 9	17 4	2 2	29.37	3495.7				
			1.00	2.00	2.45	3.05	2.00	5.40	3.05	9 16	9 9	17 4	2 2	29.95	3597.8				
			1.00	2.00	2.90	3.05	2.00	5.40	3.05	9 17	9 9	17 4	3 2	29.95	3725.9				
2	3.0	1 2	1.00	2.00	4.30	3.05	2.00	5.40	3.40	9 12	9 12	17 5	2 2	31.45	3535.1				
			1.00	2.00	3.15	3.55	2.00	5.40	4.05	9 15	9 11	17 5	2 2	31.45	3758.0				
			1.00	2.00	3.40	3.05	2.00	5.40	3.40	9 17	9 10	17 5	3 2	31.45	3888.2				
			1.00	2.00	3.25	2.75	2.00	5.40	3.40	10 17	9 10	17 5	4 2	31.45	3946.9				
3	1.5	1 2	.85	1.45	.00	.00	1.55	3.95	2.45	1 9	8 7	14 2	2 2	28.22	2460.5				
			.90	1.90	2.25	2.45	1.60	5.40	2.30	7 13	8 7	15 2	2 2	28.80	2876.5				
			.95	1.95	2.55	3.00	1.65	5.40	2.25	9 14	8 7	15 2	2 2	29.37	3026.7				
			.95	1.95	2.60	3.00	1.65	5.40	2.20	9 14	8 7	15 2	2 2	29.37	3027.2				
3	1.0	1 2	.85	1.45	.00	.00	1.55	4.55	2.40	1 10	8 9	15 2	2 2	28.22	2669.8				
			.90	1.90	2.35	2.45	1.60	5.40	2.45	7 13	8 7	15 2	2 2	28.80	2880.4				
			.95	1.95	2.65	3.00	1.65	5.40	2.40	9 15	8 7	15 2	2 2	29.37	3124.0				
			.95	1.95	2.70	3.00	1.65	5.40	2.35	9 15	8 7	15 2	2 2	29.37	3124.5				
3	1.5	1 2	.85	1.45	.00	.00	1.55	5.15	2.95	1 10	8 9	15 2	2 2	28.22	2688.3				
			.95	1.95	2.55	3.00	1.65	5.40	2.85	9 14	8 9	16 2	2 2	29.37	3198.0				
			.95	1.95	2.75	3.00	1.65	5.40	2.75	9 15	8 9	16 2	2 2	29.37	3292.9				
			1.00	2.00	2.70	3.05	1.70	5.40	2.80	9 15	8 9	16 2	2 2	29.95	3301.1				
3	2.0	1 2	.85	1.45	.00	.00	1.55	3.30	2.90	1 10	8 10	16 2	2 2	28.22	2772.8				
			.95	1.95	2.65	3.00	1.65	5.40	3.00	9 14	8 9	16 2	2 2	29.37	3204.2				
			1.00	2.00	2.80	3.05	1.70	5.40	2.95	9 16	8 9	16 2	2 2	29.95	3399.8				
			1.00	2.00	2.80	3.05	1.70	5.40	2.95	9 16	8 9	16 2	2 2	29.95	3399.8				
3	2.5	1 2	.90	1.90	.00	.00	1.60	3.30	3.05	1 11	8 10	16 3	2 2	28.80	2848.0				
			.95	1.95	2.80	3.00	1.65	5.40	3.10	9 14	8 9	16 3	2 2	29.37	3233.1				
			1.00	2.00	2.90	3.05	2.00	5.40	3.05	9 16	9 9	17 3	2 2	29.95	3570.7				
			1.00	2.00	2.75	3.05	2.00	5.40	3.05	10 16	9 9	17 3	2 2	29.95	3607.1				
3	3.0	1 2	.90	1.90	.00	.00	1.90	3.75	3.70	1 12	8 11	17 4	2 2	28.80	3169.0				
			.95	1.95	2.90	3.00	1.95	5.40	3.00	9 15	9 10	17 4	2 2	29.37	3555.0				
			1.00	2.00	2.85	2.75	2.00	5.40	3.00	10 17	9 10	17 4	2 2	29.95	3790.0				
			1.00	2.00	2.90	2.75	2.00	5.40	2.95	10 17	9 10	17 4	3 2	29.95	3812.7				

3.1.1.2 - Marcos bicelulares



TIPOS DE ARMADURAS

1	NO EXISTE
2	6 10 A Q,20
3	6 10 A Q,40 + 6 12 A Q,40
4	6 12 A Q,20
5	6 16 A Q,30
6	6 12 A Q,40 + 6 16 A Q,40
7	6 16 A Q,20
8	6 16 A Q,40 + 6 20 A Q,40
9	6 20 A Q,20
10	6 16 A Q,10
11	6 25 A Q,20
12	6 20 A Q,10
13	6 20 A Q,20 + 6 25 A Q,20
14	6 25 A Q,10

CONTROL DE CALIDAD

		NIVEL	COEFICIENTE
HORMIGON	M-250	NORMAL	$\gamma_c = 1,50$
ACERO	AEH-400-N 6 F	NORMAL	$\gamma_s = 1,15$
EJECUCION	DADOS MEDIOS	NORMAL	$\gamma_f = 1,80$

ARMADURAS DE CORTANTE

1	NO EXISTE
2	6 8 A Q,25
3	6 8 A Q,20
4	6 10 A Q,25
5	6 10 A Q,20

NOTAS:
 Var definición de características geotécnicas en plano CP 1
 En los cuadros siguientes no se han incluido los índices
 de terreno de cimentación para los que el correspondiente
 modelo agota la capacidad portante del terreno

DIRECCION GENERAL DE CARRETERAS | COLECCION DE MARCOS BICELULARES 6 1

MARCO BICELULAR TIPO 1

LH = 4,00
LV = 1,50

VALORES COMUNES AL TIPO 1

LTM: .35 TIPOS ARMADURA: MAR 4 PKM 2 DISTANCIA JUNTAS: 6.0

CARACT. TIPO	GEOMETRICAS TC	ESPORES			LONGITUDES DE ARMADURAS							L9	L10	TIPOS DE ARMADURAS										MEDIC. POR M MORMI ACERO									
		ES	EP	EC	ED	L1	L2	L3	L4	L5	L6			L8	L8	L9	L10	8B	8C	8D	8E	8F	8G		8H	8I	8J	8K	8L	8M	8N		
1	.5	1 2	1	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.30	1	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2.64	234.0	
			2	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.30	1	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2.64	234.0
			3 4	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.25	1	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2.64	233.9
1	2.0	1 2	1	.20	.20	.15	.25	.55	.00	.00	1.05	.45	.45	.00	1.65	1	7	5	2	2	5	1	4	2	2	2	2	2	2	2	2.84	257.9	
			2	.25	.20	.15	.25	.60	.00	.00	.95	.50	.50	.00	1.90	1	4	5	2	2	5	1	4	2	2	2	2	2	2	2	2	3.07	257.0
			3 4	.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	1.65	1	5	5	2	2	4	1	2	2	2	2	2	2	2	2	2	3.30	254.9
1	3.5	1 2	1	.20	.20	.15	.30	.55	.00	.00	2.35	.45	.45	.00	1.95	1	9	6	2	2	6	1	4	2	4	1	4	2	4	1	3.06	296.5	
			2	.25	.20	.15	.30	.60	.00	.00	2.15	.50	.50	.00	2.00	1	7	6	2	2	6	1	4	2	3	1	4	2	3	1	3.30	284.6	
			3 4	.30	.20	.15	.30	.65	.00	.00	1.25	.55	.55	.00	2.35	1	5	5	2	2	5	1	5	2	2	2	1	5	2	2	1	3.52	269.2
1	5.0	1 2	1	.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	1.90	1	7	5	2	2	5	1	4	2	2	1	4	2	2	1	3.30	264.8	
			2	.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	1.90	1	7	5	2	2	5	1	4	2	2	1	4	2	2	1	3.30	264.8	
			3 4	.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	1.90	1	7	5	2	2	5	1	4	2	2	1	4	2	2	1	3.30	264.8	
1	6.0	1 2	1	.30	.20	.15	.35	.65	.00	.00	2.45	.50	.50	.00	2.45	1	9	7	2	2	6	1	5	2	5	1	5	2	5	1	3.51	322.0	
			2	.35	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	2.50	1	7	6	2	2	6	1	5	2	3	1	5	2	3	1	3.74	304.2	
			3 4	.35	.20	.15	.35	.70	.00	.00	1.35	.60	.60	.00	2.50	1	7	6	2	2	6	1	7	2	2	1	7	2	2	1	3.98	294.8	
1	7.0	1 2	1	.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	2.40	1	9	6	2	2	6	1	7	2	2	1	7	2	2	1	3.52	287.3	
			2	.35	.20	.15	.35	.70	.00	.00	2.55	.55	.55	.00	2.65	1	9	7	2	2	7	1	5	2	5	1	7	3	5	1	3.74	347.1	
			3 4	.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.00	2.65	1	7	7	2	2	7	1	7	3	3	1	7	3	3	1	3.98	327.6	
1	7.0	1	1	.35	.20	.15	.35	.65	.00	.00	2.65	.55	.55	.00	2.45	1	7	6	2	2	6	1	5	2	3	1	5	2	3	1	3.74	295.7	
			2	.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	3.20	1	9	7	2	2	7	1	9	5	5	2	5	5	2	2	3.98	390.7	
			3 4	.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	3.15	1	9	7	2	2	7	1	9	5	5	2	3.98	390.7					
1	7.0	2	1	.35	.20	.15	.35	.65	.00	.00	1.35	.60	.60	.00	2.55	1	7	6	2	2	6	1	7	2	2	2	2	2	2	2	3.98	303.5	
			2	.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	3.20	1	9	7	2	2	7	1	9	4	4	4	2	4	2	4	2	3.98	377.8
			3 4	.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	3.15	1	9	7	2	2	7	1	9	4	4	4	4	2	4	2	3.98	377.8	
2	5	1 2	1	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.30	1	2	3	2	2	3	1	2	2	2	1	2	2	2	2	2.04	234.0	
			2	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.25	1	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2.04	233.9
			3 4	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	1.25	1	2	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2.04	233.9
2	2.0	1 2	1	.20	.20	.15	.25	.55	.00	.00	1.05	.45	.45	.00	1.80	1	7	4	2	2	5	1	4	2	2	1	4	2	2	1	2.04	253.6	
			2	.20	.20	.15	.25	.55	.00	.00	1.05	.45	.45	.00	1.75	1	7	5	2	2	5	1	4	2	2	1	4	2	2	1	2.04	257.5	
			3 4	.25	.20	.15	.25	.60	.00	.00	.95	.50	.50	.00	1.85	1	4	4	2	2	5	1	4	2	2	2	2	2	2	2	3.07	252.9	
2	3.5	1 2	1	.20	.20	.15	.25	.60	.00	.00	.95	.50	.50	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4	2	2	1	3.07	252.9	
			2	.20	.20	.15	.30	.60	.00	.00	2.35	.45	.45	.00	1.85	1	9	6	2	2	5	1	4	2	4	1	4	2	4	1	3.06	292.1	
			3 4	.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	1.95	1	7	5	2	2	5	1	4	2	2	1	4	2	2	1	3.30	265.1	
2	5.0	1 2	1	.25	.20	.15	.35	.65	.00	.00	2.45	.55	.55	.00	2.10	1	9	6	2	2	6	1	4	2	4	1	4	2	4	1	3.51	305.2	
			2	.25	.20	.15	.35	.65	.00	.00	2.45	.55	.55	.00	2.10	1	9	6	2	2	6	1	4	2	4	1	4	2	4	1	3.51	305.2	
			3 4	.25	.20	.15	.35	.65	.00	.00	2.45	.55	.55	.00	2.10	1	9	6	2	2	6	1	4	2	4	1	4	2	4	1	3.51	305.2	

CARACT. GEOTECHNICAS		ES PESORES		LONGITUDES DE ARMAZURAS									TIPOS DE ARMAZURAS							MEDIC. POR M											
T	MT	ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L8	L9	L10	#B	#C	#D	#E	#F	#G	#H	#I	#J	#N	HORMI	ACERO					
L7 = .35		V A L O R E S C O M U N E S A L T I P O 1		D I S T A N C I A J U N T A S : 6 . 0		M A R C O B I C E L U L A R T I P O 1																						L H = 4 . 0 0		L V = 1 . 5 0	
L7 = .35		T I P O S A R M A D U R A I N A N A M J = 2		D I S T A N C I A J U N T A S : 6 . 0		M A R C O B I C E L U L A R T I P O 1																						L H = 4 . 0 0		L V = 1 . 5 0	
2	5.0	1	2	2	.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.15	1	7	6	2	2	6	1	4	2	2	1	3.74	288.8	
					.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.10	1	7	6	2	2	6	1	4	2	2	1	3.74	288.5	
					.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.10	1	7	6	2	2	6	1	4	2	2	1	3.74	288.5	
2	6.0	1	2	1	.30	.20	.15	.35	.65	.00	.00	2.55	.55	.55	.00	.00	2.60	1	9	7	2	2	6	1	7	2	4	2	3.74	338.0	
					.30	.20	.15	.35	.65	.00	.00	2.55	.55	.55	.00	.00	2.55	1	9	7	2	2	6	1	7	2	4	2	3.74	337.9	
					.35	.20	.15	.35	.70	.00	.00	1.35	.60	.60	.00	.00	2.60	1	7	6	2	2	6	1	7	2	2	2	3.98	303.9	
					.35	.20	.15	.35	.70	.00	.00	1.35	.60	.60	.00	.00	2.60	1	7	6	2	2	6	1	7	2	2	2	3.98	303.9	
2	7.0	1	1	1	.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.00	.00	3.10	1	7	7	2	2	7	1	9	4	4	2	3.98	363.0	
					.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	.00	3.10	1	9	7	2	2	7	1	9	4	4	2	3.98	377.2	
					.35	.20	.15	.35	.70	.00	.00	2.65	.60	.60	.00	.00	3.10	1	9	7	2	2	7	1	9	4	4	2	3.98	377.2	
2	7.0	2	1	1	.30	.20	.15	.35	.65	.00	.00	2.55	.55	.55	.00	.00	2.65	1	9	7	2	2	7	1	7	3	3	2	3.98	335.8	
					.30	.20	.15	.35	.65	.00	.00	2.55	.55	.55	.00	.00	2.65	1	7	7	2	2	7	1	7	3	3	2	3.98	335.8	
					.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.00	.00	2.65	1	7	7	2	2	7	1	7	3	3	2	3.98	335.8	
					.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.00	.00	2.65	1	7	7	2	2	7	1	7	3	3	2	3.98	335.8	
3	5	1	2	1	.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	.00	1.30	1	2	3	2	2	3	1	2	2	2	1	2.84	230.8	
					.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	.00	1.25	1	2	3	2	2	3	1	2	2	2	1	2.84	233.9	
					.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	.00	1.25	1	2	3	2	2	3	1	2	2	2	1	2.84	233.9	
					.20	.20	.15	.25	.55	.00	.00	.75	.45	.45	.00	.00	1.20	1	2	3	2	2	3	1	2	2	2	1	2.84	233.7	
3	2.0	1	2	1	.20	.20	.15	.25	.55	.00	.00	1.05	.45	.45	.00	.00	1.65	1	5	4	2	2	5	1	2	2	2	1	2.84	248.1	
					.20	.20	.15	.25	.55	.00	.00	1.05	.45	.45	.00	.00	1.60	1	7	5	2	2	5	1	2	2	2	1	2.84	254.6	
					.25	.20	.15	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.80	1	4	4	2	2	4	1	4	2	2	1	3.07	249.1	
					.25	.20	.15	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.80	1	4	4	2	2	4	1	4	2	2	1	3.07	249.1	
3	3.5	1	2	1	.20	.20	.15	.30	.55	.00	.00	2.05	.45	.45	.00	.00	1.70	1	7	5	2	2	5	1	2	2	3	1	3.06	268.6	
					.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	.00	1.75	1	7	5	2	2	5	1	2	2	2	1	3.30	261.8	
					.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	.00	1.75	1	7	5	2	2	5	1	2	2	2	1	3.30	261.8	
					.25	.20	.15	.30	.60	.00	.00	1.15	.50	.50	.00	.00	1.75	1	7	5	2	2	5	1	2	2	2	1	3.30	261.8	
3	5.0	1	2	1	.20	.20	.15	.30	.55	.60	.45	2.35	.45	.45	.00	.00	2.00	2	9	6	2	2	6	1	4	2	5	2	3.06	315.8	
					.30	.20	.15	.30	.65	.00	.00	1.25	.55	.55	.00	.00	2.40	1	5	4	2	2	6	1	7	2	2	2	3.52	288.0	
					.30	.20	.15	.30	.65	.00	.00	1.25	.55	.55	.00	.00	2.40	1	7	5	2	2	6	1	7	2	2	2	3.52	291.2	
					.30	.20	.15	.30	.65	.00	.00	1.25	.55	.55	.00	.00	2.40	1	7	5	2	2	6	1	7	2	2	2	3.52	291.2	
3	6.0	1	2	1	.25	.20	.15	.35	.60	.60	.45	2.45	.50	.50	.00	.00	2.45	2	9	7	2	2	6	1	5	2	5	2	3.51	336.7	
					.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.50	1	7	6	2	2	6	1	5	2	3	2	3.74	304.2	
					.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.50	1	7	6	2	2	6	1	5	2	3	2	3.74	303.9	
					.30	.20	.15	.35	.65	.00	.00	2.25	.55	.55	.00	.00	2.45	1	7	6	2	2	6	1	5	2	3	2	3.74	303.9	
3	7.0	1	1	1	.30	.20	.15	.35	.65	.60	.50	2.55	.55	.55	.00	.00	2.65	2	9	7	2	2	7	1	7	2	5	2	3.74	358.2	
					.30	.20	.15	.35	.65	.60	.50	2.55	.55	.55	.00	.00	2.60	2	9	7	2	2	7	1	7	2	5	2	3.74	357.8	
					.30	.20	.15	.35	.65	.60	.50	2.55	.55	.55	.00	.00	2.60	2	9	7	2	2	7	1	7	2	5	2	3.74	357.8	
					.30	.20	.15	.35	.65	.60	.50	2.55	.55	.55	.00	.00	2.60	2	9	7	2	2	7	1	7	2	5	2	3.74	357.8	
3	7.0	2	1	1	.30	.20	.15	.35	.65	.60	.50	2.55	.55	.55	.00	.00	2.60	2	9	7	2	2	6	1	7	2	4	2	3.74	344.8	
					.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.00	.00	2.60	1	7	6	2	2	6	1	7	2	4	2	3.98	311.7	

L7= .35		VALORES COMUNES AL TIPO 1										MARCO BICELULAR TIPO 1		LH= 4,00 LV= 1,50																	
TIPOS ARMADURA: SA= 4 BJ= 2		DISTANCIA JUNTAS: 6.0																													
CHARACT. TIPO	GEOTECNICAS	ESPORES			LONGITUDES DE ARMADURAS			TIPOS DE ARMADURAS			MEDIC. POR M																				
HT	TI	ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L8	L9	L10	#B	#C	#D	#E	#F	#G	#H	#I	#J	#K	#L	#M	#N	MORNI	ACERO		
3	7.0	2	3	4	.35	.20	.15	.35	.70	.00	.00	2.35	.60	.60	.60	.00	.00	2.60	1	7	6	2	2	6	1	7	2	2	2	3.98	311.7
									.70	.00	.00	2.35	.60	.60	.00	.00	2.60	1	7	6	2	2	6	1	7	2	2	2	3.98	311.7	

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 4

MARCO BICELULAR TIPO 2

LH= 4,00
LV= 2,50

VALORES COMUNES AL TIPO 2 DISTANCIA JUNTAS: 9,0
TIPOS ARMADURA: #A= 4 #J= 2 #N= 2

L7= .35

CARACT. TIPO	GEOTECNICAS TC	ESPESORES					LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS							MEDIC. POR M. NORMI ACERO									
		ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	PR.	#C	#0	#E		#F	#G	#H	#I	#J	#K	#L	#M	#N
1	1 1.5	1 2	.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.45	1	2	2	2	3	1	2	2	2	1	4.05	276.1		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.45	1	2	3	2	3	1	2	2	2	1	4.05	279.4		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.40	1	2	3	2	3	1	2	2	2	1	4.05	279.3		
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.40	1	2	3	2	3	1	2	2	2	1	4.05	298.1		
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	2.20	1	4	5	2	2	5	1	5	2	2	1	4.05	302.1	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.90	1	4	5	2	2	5	1	4	2	2	1	4.05	299.0	
1	1 2.0	1 2	.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	244.8	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	2.30	2	7	5	2	2	5	1	5	2	2	1	4.28	317.9	
			.25	.25	.20	.25	.65	.00	.00	1.25	.55	.55	.00	.00	2.30	1	5	5	2	2	5	1	5	2	2	1	4.51	410.9	
			.25	.25	.20	.25	.65	.00	.00	1.25	.55	.55	.00	.00	2.30	1	5	4	2	2	5	1	5	2	2	1	4.51	301.6	
			.25	.25	.20	.25	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.50	368.1	
			.25	.25	.20	.25	.65	.70	.50	1.15	.50	.50	.00	.00	2.45	2	9	7	2	2	6	1	5	2	5	2	1	4.74	409.4
1	1 3.5	1 2	.25	.25	.20	.30	.65	.75	.55	2.25	.55	.55	.00	.00	2.45	2	7	6	2	2	6	1	5	2	3	2	4.97	350.3	
			.25	.25	.20	.30	.70	.75	.55	2.35	.60	.60	.00	.00	2.50	2	5	6	2	2	6	1	5	2	2	2	4.51	344.1	
			.25	.25	.20	.30	.65	.70	.55	1.25	.55	.55	.00	.00	2.35	2	7	5	2	2	5	1	7	2	2	2	4.74	359.2	
			.25	.25	.20	.30	.65	.70	.55	1.25	.55	.55	.00	.00	2.10	2	7	6	2	2	5	2	4	2	2	2	4.97	444.8	
			.25	.25	.20	.30	.65	.80	.55	2.55	.60	.60	.00	.00	2.60	2	9	7	2	2	7	1	7	2	5	2	1	4.97	444.8
			.25	.25	.20	.30	.70	.80	.55	2.65	.60	.60	.00	.00	3.15	2	9	7	2	2	7	2	9	4	4	2	2	4.97	444.8
1	1 7.0	1	.35	.25	.20	.35	.70	.80	.55	2.65	.60	.60	.55	.85	3.10	2	9	7	2	2	7	2	9	4	4	2	4.97	444.1	
			.35	.25	.20	.35	.70	.80	.55	2.65	.60	.60	.55	.85	3.15	2	9	7	2	2	7	2	9	4	4	2	4.97	444.1	
			.35	.25	.20	.35	.70	.80	.55	2.65	.60	.60	.55	.85	3.10	2	9	7	2	2	7	2	9	4	4	2	4.97	444.8	
			.35	.25	.20	.35	.70	.80	.55	2.65	.60	.60	.55	.85	2.50	2	9	7	2	2	6	2	7	2	2	2	4.97	369.7	
			.35	.25	.20	.35	.70	.80	.55	1.35	.60	.60	.55	.85	2.50	2	7	6	2	2	6	2	7	2	2	2	4.97	444.1	
			.35	.25	.20	.35	.70	.80	.55	2.65	.60	.60	.55	.85	3.10	2	9	7	2	2	7	2	9	4	4	2	4.97	444.1	
2	2 5	1 2	.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.45	1	2	2	2	3	1	2	2	2	1	4.05	276.1		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.40	1	2	2	2	3	1	2	2	2	1	4.05	276.0		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.40	1	2	2	2	3	1	2	2	2	1	4.05	276.0		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.40	1	2	2	2	3	1	2	2	2	1	4.05	276.0		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.40	1	2	2	2	3	1	2	2	2	1	4.05	276.0		
			.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
2	2 2.0	1 2	.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
			.25	.25	.20	.25	.60	.00	.00	.95	.50	.50	.00	.00	1.85	1	4	4	2	2	5	1	4	2	2	1	4.05	294.0	
			.25	.25	.20	.25	.60	.75	.50	1.15	.50	.50	.00	.00	1.95	2	7	5	2	2	5	1	4	2	2	1	4.28	314.0	
2	2 3.5	1 2	.25	.25	.20	.30	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.51	301.6	
			.25	.25	.20	.30	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.51	301.6	
			.25	.25	.20	.30	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.51	301.6	
			.25	.25	.20	.30	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.51	301.6	
			.25	.25	.20	.30	.65	.00	.00	1.05	.55	.55	.00	.00	1.95	1	4	4	2	2	5	1	4	2	2	1	4.51	301.6	
			.25	.25	.20	.30	.60	.85	.50	2.45	.60	.60	.00	.00	2.05	2	9	6	3	2	5	1	4	2	4	2	4.50	372.5	

DIRECCION GENERAL DE CARRETERAS

COLECCION DE MARCOS BICELULARES B. B

MARCO BICELULAR TIPO 2
LH=4,00
LV=2,50

VALORES COMUNES AL TIPO 2
TIPOS ARMADURA NÚM 2 DISTANCIA JUNTAS: 9,0

CARACT. GEOTÉCNICAS T MT TI	ES EP EC ED	LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS						MEDIC. POR M MORMI ACERO														
		L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	#B	#C		#D	#E	#F	#G	#H	#I	#J	#K	#L	#M	#N			
2 5.0 1 2	2 3 4 5 6	.30	.25	.20	.35	.65	.80	.55	2.25	.55	.55	.55	.55	.80	2.10	2	7	6	2	2	5	2	4	2	2	2	4.74	359.2
		.30	.25	.20	.35	.55	.80	.55	2.25	.55	.55	.55	.55	.80	2.10	2	7	6	2	2	5	2	4	2	2	2	4.74	359.2
		.30	.25	.20	.35	.65	.80	.55	2.25	.55	.55	.55	.55	.80	2.10	2	7	6	2	2	5	2	4	2	2	2	4.74	359.2
2 6.0 1 2	1 2 3 4 5 6	.25	.25	.20	.35	.60	.95	.55	2.45	.60	.50	.55	.55	.85	2.50	4	9	7	3	2	6	2	7	2	5	2	4.50	414.1
		.30	.25	.20	.35	.65	.85	.55	2.55	.65	.55	.55	.55	.85	2.50	2	9	7	3	2	6	2	7	2	4	2	4.74	409.8
		.35	.25	.20	.35	.70	.85	.55	1.35	.70	.60	.55	.55	.85	2.55	2	7	6	3	2	6	2	7	2	2	2	4.97	375.3
2 7.0 1	1 2 3 4 5 6	.35	.25	.20	.35	.70	.85	.55	1.35	.70	.60	.55	.55	.85	2.55	2	7	6	3	2	6	2	7	2	2	2	4.97	375.8
		.30	.25	.20	.35	.65	.95	.60	2.55	.65	.55	.55	.55	.90	2.65	4	9	7	4	2	7	2	7	3	5	2	4.74	438.1
		.35	.25	.20	.35	.70	.90	.60	2.55	.70	.60	.55	.55	.90	2.65	4	9	7	4	2	7	2	7	3	5	2	4.74	438.1
2 7.0 2	1 2 3 4 5 6	.35	.25	.20	.35	.70	.90	.60	2.35	.70	.60	.55	.55	.90	2.65	4	7	7	3	2	7	2	7	3	3	2	4.97	413.5
		.30	.25	.20	.35	.65	.95	.60	2.55	.65	.55	.55	.55	.90	2.60	4	9	7	4	2	7	2	7	3	5	2	4.74	437.7
		.35	.25	.20	.35	.70	.90	.60	2.35	.70	.60	.55	.55	.90	2.60	4	7	7	3	2	7	2	7	2	3	2	4.97	409.1
3 .5 1 2	1 2 3 4 5 6 7 8	.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.40	1	2	2	2	2	3	1	2	2	1	1	4.05	263.3
		.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.40	1	2	2	2	2	3	1	2	2	1	4.05	276.0	
		.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.35	1	2	2	2	2	3	1	2	2	1	4.05	275.8	
3 2.0 1 2	1 2 3 4 5 6 7 8	.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.75	1	4	4	2	2	4	1	4	2	2	1	4.05	290.7
		.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.75	1	4	4	2	2	4	1	4	2	2	1	4.05	290.7
		.25	.25	.20	.25	.60	.00	.00	.85	.50	.50	.00	.00	.00	1.75	1	4	4	2	2	4	1	4	2	2	1	4.05	290.7
3 3.5 1 2	1 2 3 4 5 6 7 9	.25	.25	.20	.30	.60	.80	.50	1.15	.60	.50	.00	.00	.00	1.85	2	5	4	3	2	4	1	4	2	2	2	4.28	324.9
		.25	.25	.20	.30	.60	.80	.50	1.15	.60	.50	.00	.00	.00	1.75	2	5	4	3	2	4	1	2	2	2	2	4.28	322.1
		.30	.25	.20	.30	.65	.75	.55	1.05	.55	.55	.00	.00	.00	1.85	2	4	4	2	2	4	1	4	2	2	2	4.51	321.3
3 5.0 1 2	1 2 3 4 5 6 7	.25	.25	.20	.30	.65	.75	.55	1.05	.55	.55	.00	.00	.00	1.85	2	4	4	2	2	4	1	4	2	2	2	4.51	321.3
		.25	.25	.20	.30	.65	.75	.55	1.05	.55	.55	.00	.00	.00	1.85	2	4	4	2	2	4	1	4	2	2	2	4.51	321.3
		.25	.25	.20	.30	.65	.75	.55	1.05	.55	.55	.00	.00	.00	1.85	2	4	4	2	2	4	1	4	2	2	2	4.51	321.3
3 6.0 1 2	1 2 3 4 5 6	.25	.25	.20	.35	.60	1.00	.55	2.45	.70	.50	.55	.55	.90	2.10	4	9	6	5	2	5	2	5	2	3	2	4.50	403.3
		.30	.25	.20	.35	.65	.95	.60	2.25	.65	.55	.55	.55	.90	2.10	4	7	6	4	2	5	2	4	2	3	2	4.74	378.8
		.35	.25	.20	.35	.70	.95	.60	1.35	.70	.60	.55	.55	.90	2.45	4	7	6	4	2	5	2	5	2	2	2	4.97	366.8
3 7.0 1	1 2 3 4 5 6	.35	.25	.20	.35	.70	.95	.60	1.35	.70	.60	.55	.55	.90	2.45	4	5	4	4	2	5	2	5	2	2	2	4.97	366.8
		.30	.25	.20	.35	.65	1.10	.70	2.55	.75	.55	.55	.55	.95	2.55	5	4	7	5	2	6	2	7	2	4	3	4.74	436.3
		.35	.25	.20	.35	.70	1.10	.70	2.55	.75	.55	.60	1.00	2.55		5	4	7	5	2	6	4	7	2	4	3	4.74	441.3
3 7.0 2	1 2 3 4 5 6	.35	.25	.20	.35	.70	1.10	.70	2.35	.90	.60	.60	1.00	2.55		5	7	6	5	2	6	4	7	2	2	3	4.97	415.1
		.35	.25	.20	.35	.70	1.10	.70	2.35	.90	.60	.60	1.00	2.55		5	7	6	5	2	6	4	7	2	2	3	4.97	415.1
		.35	.25	.20	.35	.70	1.10	.70	2.35	.90	.60	.60	1.00	2.55		5	7	6	5	2	6	4	7	2	2	3	4.97	415.1
3 7.0 2	1 2	.25	.25	.20	.35	.60	1.10	.65	2.45	.70	.50	.55	.55	.95	2.50	5	9	7	5	2	6	2	7	2	5	2	4.50	431.1
		.30	.25	.20	.35	.65	1.10	.70	2.55	.75	.55	.60	1.00	2.50		5	9	6	5	2	6	4	7	2	4	3	4.74	432.4
		.35	.25	.20	.35	.70	1.10	.70	2.55	.75	.55	.60	1.00	2.50		5	9	6	5	2	6	4	7	2	4	3	4.74	432.4

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 6

L7= .35		VALORES COMUNES AL TIPO 2										LH= 4,00		LV= 2,50													
TIPOS ARMADURAS		DISTANCIA JUNTAS: 9.0										MARCO BICELULAR TIPO 2															
CARACT. GEOTECNICAS T MT	TI	ESPEORES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS						MEDIC. POR M MORMI ACERU										
		ES	EP	EC	ED	L1	L2	L3	LA	L4	L5	LA	LB	LC	LD	LE			LF	LG	MH	MI	NL	MM	MN		
3	7.0	2				.70	1.10	.70	1.35	.80	.60	.60	1.00	2.50	5	7	4	5	2	6	4	7	2	2	3	4.97	406.8
						.70	1.10	.70	1.35	.80	.60	.60	1.00	2.50	5	7	4	5	2	6	4	7	2	2	3	4.97	406.8

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B. 7

VALORES COMUNES AL TIPO 3												MARCO BICELULAR TIPO 3		LH=6.00 LV=2.00															
L7= .35 TIPOS ARMADURA: MA= 4 MJ= 2 INSTANCIA JUNTAS: 7.5																													
CARACT. GEOTECNICAS T HT TI TC	ESESORES				LONGITUDES DE ARMADURAS												TIPOS DE ARMADURAS				MEDIC. POR M NORME ACERO								
	ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	PR	PC	PD	PE	PF	PG		PH	PI	PL	PM	PN			
1	.5	1	2	.25	.25	.20	.35	.60	.00	.00	2.15	.50	.50	.00	1.85	1	7	5	2	2	2	6	1	2	2	2	1	5.35	378.5
				.25	.25	.20	.35	.60	.00	.00	2.45	.50	.50	.00	1.85	1	9	6	2	2	6	1	2	2	2	2	1	5.35	398.0
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	1.95	1	7	6	2	2	6	1	2	2	2	2	1	5.69	349.6
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	1.95	1	7	6	2	2	6	1	2	2	2	2	1	5.69	384.6
				.25	.25	.20	.35	.60	.65	.50	2.45	.50	.50	.00	2.75	2	9	7	2	2	7	1	5	2	2	2	1	5.35	436.4
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	2.85	1	9	7	2	2	7	1	7	2	2	2	1	5.69	442.8
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	2.85	1	9	7	2	2	7	1	5	2	2	2	1	5.69	435.3
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	2.85	1	5	7	2	2	7	1	5	2	2	2	1	5.69	435.1
1	2.5	1	2	.25	.25	.20	.35	.60	.75	.50	2.15	.50	.50	.00	3.10	2	10	7	2	2	8	1	7	2	3	1	5.35	470.3	
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	3.55	1	10	8	2	2	8	1	7	2	3	1	5.69	503.2	
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	3.55	1	10	8	2	2	8	1	7	2	3	1	5.69	503.2	
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	3.05	1	10	8	2	2	8	1	7	2	2	1	5.69	478.1	
1	3.5	1	2	.25	.25	.20	.40	.60	.85	.55	3.95	.60	.60	.65	3.30	4	11	8	3	3	8	4	7	2	5	1	5.68	473.3	
				.35	.25	.20	.40	.70	.00	.00	2.35	.60	.60	.60	3.85	1	10	8	2	2	8	2	7	2	3	1	6.34	524.4	
				.35	.25	.20	.40	.70	.00	.00	2.35	.60	.60	.60	3.85	1	10	8	2	2	8	2	7	2	3	1	6.34	524.4	
				.40	.25	.20	.40	.75	.65	.60	2.75	.65	.65	.60	3.75	1	9	8	2	2	8	1	7	2	2	1	6.02	501.2	
1	4.5	1	2	.30	.25	.20	.40	.65	.85	.60	4.05	.65	.65	.65	4.00	4	11	8	3	3	8	4	7	2	5	1	6.01	611.6	
				.35	.25	.20	.40	.70	.00	.00	4.15	.70	.70	.70	3.65	1	11	9	3	3	8	4	10	3	5	1	6.34	630.4	
				.35	.25	.20	.40	.70	.00	.00	4.15	.70	.70	.70	3.65	1	11	9	3	3	8	4	10	3	5	1	6.34	630.4	
				.40	.25	.20	.40	.75	.65	.60	2.75	.65	.65	.60	3.75	2	9	8	2	2	8	1	7	2	2	1	6.68	524.0	
1	5.5	1	2	.40	.25	.20	.40	.75	.80	.65	3.45	.75	.75	.65	4.90	4	10	9	3	3	9	4	11	5	4	1	6.64	683.6	
				.40	.25	.20	.40	.75	.80	.65	3.45	.75	.75	.65	4.90	4	10	9	3	3	9	4	11	4	5	1	6.64	683.6	
				.40	.25	.20	.40	.75	.80	.65	3.45	.75	.75	.65	4.90	4	11	9	3	3	9	4	11	4	5	1	6.64	711.0	
				.40	.25	.20	.40	.75	.70	.60	3.45	.65	.65	.60	3.65	2	10	8	2	2	8	2	10	3	4	1	6.68	579.7	
2	.5	1	2	.25	.25	.20	.35	.60	.00	.00	2.15	.50	.50	.00	1.85	1	7	5	2	2	6	1	2	2	2	1	5.35	378.5	
				.25	.25	.20	.35	.60	.00	.00	2.15	.50	.50	.00	1.80	1	7	6	2	2	6	1	2	2	2	2	1	5.35	384.6
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	1.95	1	7	6	2	2	6	1	2	2	2	2	1	5.69	389.6
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	1.95	1	7	6	2	2	6	1	2	2	2	2	1	5.69	384.6
2	1.5	1	2	.25	.25	.20	.35	.60	.70	.50	2.45	.50	.50	.00	2.40	2	9	6	2	2	7	1	4	2	2	1	5.35	421.5	
				.30	.25	.20	.35	.65	.80	.60	2.55	.55	.55	.00	2.40	1	9	7	2	2	7	1	5	2	2	1	5.69	435.1	
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	2.80	1	9	7	2	2	7	1	5	2	2	1	5.69	435.1	
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	2.75	1	9	7	2	2	7	1	5	2	2	1	5.69	434.8	
2	2.5	1	2	.25	.25	.20	.35	.60	.75	.50	2.15	.50	.50	.00	3.05	2	10	7	2	2	8	1	7	2	3	1	5.35	469.9	
				.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	3.10	1	9	8	2	2	8	1	7	2	2	1	5.69	474.4	
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	3.05	1	10	8	2	2	8	1	7	2	2	1	5.69	478.1	
				.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	3.05	1	10	8	2	2	8	1	7	2	2	1	5.69	478.1	
2	3.5	1	2	.25	.25	.20	.40	.60	.90	.55	2.95	.60	.60	.65	3.25	4	11	7	3	3	8	4	7	2	4	1	5.68	531.3	
				.30	.25	.20	.40	.65	.75	.55	2.25	.55	.55	.60	3.70	2	10	6	2	2	8	2	7	2	4	1	6.01	512.2	
				.35	.25	.20	.40	.70	.00	.00	2.65	.60	.60	.60	3.40	1	9	8	2	2	8	2	7	2	2	1	6.34	513.9	
				.35	.25	.20	.40	.70	.00	.00	2.65	.60	.60	.60	3.60	1	9	8	2	2	8	2	7	2	2	1	6.34	513.9	
2	4.5	1	2	.30	.25	.20	.40	.65	.85	.60	4.05	.65	.65	.65	3.95	4	11	8	3	3	8	4	7	2	5	1	6.01	604.4	

CARACT. GEOTECNICAS TIPO ARMADURA		VALORES COMUNES AL TIPO 3 TIPO ARMADURA		DISTANCIA JUNTAS		MARCO BICELULAR TIPO 3										LH=6,00 LV=2,00												
CANTIDAD	TIPO	ESPEORES		LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS										MEDIC. POR M HORNIA	ACERO			
		ES	EP	L1	L2	L3	L4	L5	L6	L8	L9	L10	B	C	D	E	F	G	H	I	J	K	L			M	N	
2	4.5	1	.35	.25	.20	.40	.70	.75	.55	2.35	.60	.60	.60	.75	4.00	2	10	2	2	2	8	2	9	2	4	1	6.34	542.1
3	4	2	.40	.25	.20	.40	.75	.70	.60	2.75	.65	.65	.60	.75	4.00	2	10	2	2	2	8	2	9	2	2	1	6.68	529.3
5	6	7	.40	.25	.20	.40	.75	.70	.60	2.75	.65	.65	.60	.75	4.00	2	10	2	2	2	8	2	9	2	2	1	6.68	529.3
2	5.5	1	.35	.25	.20	.40	.70	.65	.60	4.15	.70	.70	.65	.85	3.70	4	11	8	3	3	9	4	10	4	5	2	6.34	664.2
3	4	2	.35	.25	.20	.40	.70	.65	.60	4.15	.70	.70	.65	.85	3.70	4	11	8	3	3	9	4	10	4	5	2	6.34	679.5
3	4	3	.40	.25	.20	.40	.75	.75	.60	3.45	.65	.65	.60	.85	3.70	2	10	6	2	2	9	2	10	4	4	2	6.68	616.1
5	6	7	.40	.25	.20	.40	.75	.75	.60	3.45	.65	.65	.60	.85	3.70	2	10	6	2	2	9	2	10	4	4	2	6.68	616.1
3	1.5	1	.25	.25	.20	.35	.60	.00	.00	2.15	.50	.50	.00	.00	1.80	1	7	5	2	2	6	1	2	2	2	1	5.35	378.4
2	2	.25	.25	.20	.35	.60	.00	.00	.00	2.15	.50	.50	.00	.00	1.80	1	7	5	2	2	6	1	2	2	2	1	5.35	384.6
3	4	.30	.25	.20	.35	.65	.00	.00	.00	2.25	.55	.55	.00	.00	1.90	1	7	5	2	2	6	1	2	2	2	1	5.69	389.5
5	6	7	.30	.25	.20	.35	.65	.00	.00	2.25	.55	.55	.00	.00	1.90	1	7	5	2	2	6	1	2	2	2	1	5.69	389.5
3	1.5	1	.25	.25	.20	.35	.60	.70	.50	2.45	.50	.50	.00	.00	2.35	2	9	4	2	2	7	1	4	2	2	1	5.35	421.3
2	2	.30	.25	.20	.35	.65	.00	.00	.00	2.45	.55	.55	.00	.00	2.45	1	9	7	2	2	7	1	4	2	2	1	5.69	431.2
3	4	.30	.25	.20	.35	.65	.00	.00	.00	2.45	.55	.55	.00	.00	2.40	1	9	7	2	2	7	1	4	2	2	1	5.69	431.0
5	6	7	.30	.25	.20	.35	.65	.00	.00	2.45	.55	.55	.00	.00	2.40	1	9	7	2	2	7	1	4	2	2	1	5.69	431.0
3	2.5	1	.25	.25	.20	.35	.60	.75	.50	2.45	.50	.50	.00	.00	2.95	2	9	7	2	2	7	1	7	2	2	1	5.35	466.4
2	2	.30	.25	.20	.35	.65	.00	.00	.00	2.55	.55	.55	.00	.00	3.05	1	9	7	2	2	7	1	7	2	2	1	5.69	444.4
3	4	.30	.25	.20	.35	.65	.00	.00	.00	2.55	.55	.55	.00	.00	3.00	1	9	7	2	2	7	1	7	2	2	1	5.69	444.0
5	6	7	.30	.25	.20	.35	.65	.00	.00	2.55	.55	.55	.00	.00	3.00	1	9	7	2	2	7	1	7	2	2	1	5.69	444.0
3	3.5	1	.25	.25	.20	.35	.60	.85	.50	2.15	.50	.50	.00	.00	3.60	2	10	7	2	2	8	1	9	2	4	1	5.35	496.7
2	2	.30	.25	.20	.35	.65	.00	.75	.55	2.25	.55	.55	.00	.00	3.65	2	10	8	2	2	8	1	9	2	3	1	5.69	512.4
3	4	.35	.25	.20	.35	.70	.00	.00	.00	2.65	.60	.60	.00	.00	3.70	1	9	7	2	2	8	1	9	2	2	1	6.02	485.2
5	6	7	.35	.25	.20	.35	.70	.00	.00	2.65	.60	.60	.00	.00	3.70	1	9	7	2	2	8	1	9	2	2	1	6.02	485.2
3	4.5	1	.25	.25	.20	.40	.60	.95	.55	3.95	.60	.60	.65	.80	3.75	4	11	7	3	3	8	4	9	2	5	2	5.68	591.6
2	2	.35	.25	.20	.40	.70	.75	.55	2.35	.60	.60	.60	.60	.75	3.90	2	10	8	2	2	8	2	9	2	3	2	6.34	546.1
3	4	.40	.25	.20	.40	.75	.70	.60	2.75	.65	.65	.65	.60	.80	3.90	2	10	8	2	2	8	2	9	2	2	2	6.68	525.7
5	6	7	.40	.25	.20	.40	.75	.70	.60	2.75	.65	.65	.60	.80	3.90	2	10	8	2	2	8	2	9	2	2	2	6.68	525.7
3	5.5	1	.30	.25	.20	.40	.65	.95	.60	4.05	.65	.65	.65	.90	4.00	4	11	6	3	3	8	4	9	2	5	2	6.01	619.4
2	2	.35	.25	.20	.40	.70	.40	.55	3.35	.60	.60	.60	.60	.85	4.00	2	10	8	2	2	8	2	9	3	5	2	6.34	587.2
3	4	.40	.25	.20	.40	.75	.40	.60	3.45	.65	.65	.65	.60	.85	3.65	2	10	8	2	2	8	2	9	3	3	2	6.68	585.1
5	6	.40	.25	.20	.40	.75	.40	.60	3.45	.65	.65	.65	.60	.85	3.65	2	10	8	2	2	8	2	9	3	3	2	6.68	585.1

L7= .35		VA LO P E S C O M U N E S A L T I P O 4										MARCO BICELULAR TIPO 4										LH = 6.00 LV = 2.50		
TIPOS ARMADURA		DISTANCIA JUNTAS																				MEDIC. POR M MORMI ACTRO		
CARACT. GEOTECHNICAS T HY TI	ES EP EC ED	LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS										MEDIC. POR M MORMI ACTRO		
		L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	#H	#C	#D	#E	#F	#G	#H	#I	#J	#K		#L	#M
1	.25 .25 .20 .35	1	.60	.00	.00	2.15	.50	.50	.00	.00	1.90	1	7	5	2	2	6	1	2	2	2	1	5.70	398.6
		2	.65	.00	.00	2.15	.55	.55	.00	.00	2.05	1	7	6	2	2	6	1	2	2	2	1	6.04	409.8
		3 4	.65	.00	.00	2.25	.55	.55	.00	.00	2.00	1	7	6	2	2	6	1	2	2	2	1	6.04	409.6
1	.25 .25 .20 .35	1	.60	.70	.50	2.45	.50	.50	.00	.00	2.40	2	9	7	2	2	7	1	5	2	2	1	5.70	457.4
		2	.65	.00	.00	2.55	.55	.55	.00	.00	2.90	1	9	7	2	2	7	1	7	2	2	1	6.04	463.1
		3 4	.65	.00	.00	2.55	.55	.55	.00	.00	2.85	1	9	7	2	2	7	1	5	2	2	1	6.04	455.2
1	.25 .25 .20 .35	1	.60	.00	.00	2.55	.55	.55	.00	.00	2.40	1	9	7	2	2	7	1	5	2	2	1	6.04	456.4
		2	.60	.40	.50	2.15	.50	.50	.00	.00	3.10	2	10	7	2	2	8	1	7	2	3	1	5.70	490.5
		3 4	.65	.70	.55	2.15	.55	.55	.00	.00	3.60	2	10	6	2	2	8	1	9	2	3	1	6.04	531.4
1	.25 .25 .20 .40	1	.70	.75	.55	2.35	.60	.60	.00	.00	3.55	1	10	8	2	2	8	1	9	2	3	1	6.04	523.0
		2	.70	.70	.55	2.45	.60	.60	.00	.00	3.10	1	10	8	2	2	8	1	7	2	2	1	6.04	496.4
		3 4	.75	.75	.55	2.45	.60	.60	.00	.00	3.75	2	10	8	2	2	8	1	9	2	3	1	6.04	595.8
1	.30 .25 .20 .40	1	.65	.90	.60	4.05	.65	.65	.45	.45	4.00	4	11	9	3	3	9	4	7	2	5	1	6.36	444.5
		2	.70	.85	.60	4.15	.70	.70	.45	.45	3.65	4	11	9	3	3	9	4	10	3	5	2	6.69	480.7
		3 4	.75	.85	.60	4.15	.75	.75	.45	.45	3.65	4	11	9	3	3	9	4	10	3	5	2	6.69	480.7
1	.40 .25 .20 .40	1	.75	.75	.60	2.75	.65	.65	.60	.60	3.95	2	9	8	2	2	8	1	9	2	2	2	7.03	565.0
		2	.75	.90	.65	3.45	.75	.75	.45	.45	4.90	4	10	9	3	3	9	4	11	5	5	2	7.03	732.5
		3 4	.75	.90	.65	3.45	.75	.75	.45	.45	4.90	4	10	9	3	3	9	4	11	4	5	2	7.03	722.3
2	.40 .25 .20 .40	1	.75	.85	.60	3.45	.65	.65	.60	.60	3.65	2	10	8	2	2	8	1	9	2	3	4	7.03	744.7
		2	.80	.95	.60	4.05	.65	.65	.60	.60	3.65	2	10	8	2	2	8	1	9	2	3	4	7.03	616.4
		3 4	.85	.95	.60	4.05	.65	.65	.60	.60	3.65	2	10	8	2	2	8	1	9	2	3	4	7.03	616.4
2	.25 .25 .20 .35	1	.60	.00	.00	2.15	.50	.50	.00	.00	1.85	1	7	5	2	2	6	1	2	2	2	1	5.70	398.4
		2	.65	.00	.00	2.25	.55	.55	.00	.00	2.00	1	7	6	2	2	6	1	2	2	2	1	6.04	409.6
		3 4	.65	.00	.00	2.25	.55	.55	.00	.00	1.95	1	7	6	2	2	6	1	2	2	2	1	6.04	404.5
2	.25 .25 .20 .35	1	.60	.75	.50	2.45	.50	.50	.00	.00	2.45	2	9	7	2	2	7	1	5	2	2	1	5.70	441.4
		2	.65	.65	.55	2.55	.55	.55	.00	.00	2.40	2	9	7	2	2	7	1	5	2	2	1	6.04	462.3
		3 4	.65	.65	.55	2.55	.55	.55	.00	.00	2.40	2	9	7	2	2	7	1	5	2	2	1	6.04	462.3
2	.25 .25 .20 .35	1	.60	.80	.50	2.15	.50	.50	.00	.00	3.05	2	10	7	2	2	8	1	7	2	3	1	5.70	490.1
		2	.65	.75	.55	2.55	.55	.55	.00	.00	3.10	2	10	7	2	2	8	1	7	2	2	1	6.04	502.3
		3 4	.65	.75	.55	2.25	.55	.55	.00	.00	3.10	2	10	8	2	2	8	1	7	2	2	1	6.04	506.4
2	.35 .25 .20 .40	1	.70	.70	.55	2.65	.60	.60	.00	.00	3.55	2	9	7	2	2	7	1	9	2	2	1	6.37	496.7
		2	.60	.95	.55	3.95	.60	.60	.65	.65	3.25	4	11	7	3	3	8	4	7	2	4	1	6.03	572.2
		3 4	.70	.75	.55	3.25	.60	.60	.65	.65	3.35	2	10	8	2	2	8	2	7	2	4	2	6.36	564.6
2	.35 .25 .20 .40	1	.70	.75	.55	2.65	.60	.60	.60	.60	3.75	2	9	8	2	2	8	2	9	2	3	2	6.69	563.2
		2	.75	.95	.60	4.05	.65	.65	.65	.65	3.45	4	11	8	3	3	8	4	9	2	5	2	6.36	643.2
		3 4	.75	.95	.60	4.05	.65	.65	.65	.65	3.45	4	11	8	3	3	8	4	9	2	5	2	6.36	643.2

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 10

V ALORES C O M U N E S A L T I P O 5			M ARCO B ICELULAR T I P O 5												L H = 8,00 L V = 2,50																	
L 7 = .35 T I P O S A R M A D U R A I M A = A M J = 3 E X = 2 D I S T A N C I A J U N T A S I 9,0																																
C A R A C T . G E O T E C N I C A S	E S P E S O R E S	L O N G I T U D E S D E A R M A D U R A S												T I P O S D E A R M A D U R A S												M E D I C . P O R M						
T	E S	E P	E C	E D	L1	L2	L3	L4	L5	L6	L8	L9	L10	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC		
1	.5	1	.25	.20	.40	.65	.00	.00	3.55	.55	.60	.75	.60	.75	.30	.4	2	7	2	2	1	1	9	7	2	2	2	2	1	7,76	622,3	
						.70	.00	.00	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1	8,19	649,1									
						.70	.00	.00	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1			8,19	648,7							
						.70	.00	.00	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1					8,19	648,3					
1	1.5	1	.25	.20	.40	.70	.00	.00	3.35	.60	.60	.75	.60	.75	.30	.4	2	9	2	2	1	1	10	4	2	9	2	2	1	8,19	707,1	
						.70	.80	.60	4.15	.70	.70	.65	.80	.45	.2	2	2	1	8,19	776,9												
						.70	.80	.60	4.15	.70	.70	.65	.85	.45	.2	2	1	8,63			736,1											
						.75	.65	.60	3.45	.65	.65	.60	.80	.45	.2	2	1					8,63	736,1									
1	2.5	1	.25	.20	.45	.70	.85	.60	4.15	.70	.70	.65	.85	.45	.2	3	1	4	2	2	1	4	11	4	9	2	3	1	8,62	794,0		
						.70	.90	.60	3.65	.70	.70	.65	.85	.45	.2	3	1	8,62	884,6													
						.80	.70	.60	3.55	.70	.70	.60	.85	.45	.2	1	2			2	1	9,49	761,9									
						.80	.70	.60	3.55	.70	.70	.60	.85	.45	.2	1	2			2	1			9,49	761,1							
1	3.5	1	.25	.20	.45	.70	.95	.60	3.65	.70	.70	.65	.90	.55	.2	3	5	1	4	1	1	4	10	4	11	3	5	1	8,62	926,3		
						.75	.90	.65	4.75	.75	.75	.65	.90	.570	.2	3	4	1	9,05	979,5												
						.80	.85	.65	3.85	.80	.80	.65	.95	.570	.2	3	3	1			9,49	952,0										
						.80	.85	.65	4.35	.80	.80	.65	.95	.565	.2	3	3	1					9,49	889,5								
1	4.0	1	.25	.20	.45	.70	1.05	.70	5.15	.80	.80	.75	1.10	.575	.2	4	5	1	4	5	1	5	10	5	11	4	5	1	8,62	1103,5		
						.75	1.05	.75	5.25	.85	.85	.75	1.10	.580	.2	4	5	1	9,05	1115,8												
						.80	.90	.65	4.85	.80	.80	.65	1.00	.580	.2	4	4	4			1	9,49	1017,2									
						.80	.85	.65	3.95	.80	.80	.65	.95	.575	.2	4	4	4			1			9,49	964,8							
2	.5	1	.25	.20	.40	.65	.00	.00	3.55	.55	.60	.75	.60	.75	.30	.4	2	8	2	7	2	2	2	2	7	2	2	1	7,76	621,9		
						.70	.65	.55	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1	8,19	656,1									
						.70	.65	.55	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1			8,19	655,7							
						.70	.60	.55	3.65	.60	.60	.75	.60	.75	.30	.4	2	7	2	2	1					8,19	655,4					
2	1.5	1	.25	.20	.40	.70	.00	.00	3.35	.60	.60	.75	.60	.75	.30	.4	2	9	2	9	2	2	1	10	4	2	9	2	2	1	8,19	701,5
						.70	.75	.55	3.35	.60	.60	.80	.40	.2	2	2	1	8,19	729,7													
						.70	.75	.55	3.35	.60	.60	.80	.435	.2	2	2	2			1	8,19	729,1										
						.75	.70	.60	3.45	.65	.65	.60	.80	.445	.2	2	2			2			1	8,63	716,6							
2	2.5	1	.25	.20	.45	.70	.85	.60	4.15	.70	.70	.65	.85	.45	.2	3	1	4	9	2	3	1	4	9	2	3	1	8,62	773,0			
						.70	.90	.60	3.65	.70	.70	.65	.85	.45	.2	3	1	8,62	813,2													
						.80	.75	.60	3.65	.70	.70	.60	.85	.435	.2	3	1			9,49	741,4											
						.80	.75	.60	3.65	.70	.70	.60	.85	.475	.2	3	1					9,49	751,3									
2	3.5	1	.25	.20	.45	.70	.95	.60	3.65	.70	.70	.65	.95	.50	.2	4	2	4	10	4	10	2	4	2	4	2	4	2	8,62	682,9		
						.75	.95	.65	3.75	.75	.75	.65	.95	.455	.2	4	2	9,05	924,0													
						.80	.90	.65	4.35	.80	.80	.65	.95	.565	.2	3	2			9,49	905,7											
						.80	.90	.65	4.35	.80	.80	.65	1.00	.565	.2	3	2					9,49	906,1									
2	4.0	1	.25	.20	.45	.70	1.00	.60	3.55	.70	.70	.65	.95	.570	.2	4	2	4	10	4	10	2	4	2	4	2	4	2	8,62	943,9		
						.75	1.00	.65	3.55	.75	.75	.65	.95	.455	.2	4	2	9,05	1045,5													
						.80	.90	.65	4.85	.80	.80	.65	1.00	.520	.2	5	5			2	9,49	1049,2										
						.80	.90	.65	4.85	.80	.80	.65	1.00	.510	.2	4	4			2			9,49	1033,0								

DIRECCION GENERAL DE CARNETERAS COLECCION DE MARCOS BICELULARES B 12

MARCO BICELULAR TIPO 5

LH=8,00
LV=2,50

VALORES COMUNES AL TIPO 5				DISTANCIA JUNTAS: 9.0						TIPOS DE ARMADURAS										MEDIC. POR M MORMI ACERO						
CARACT. GEOTECNICAS T MT TI			VALORES COMUNES AL TIPO 5			TIPOS ARMADURAS			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURAS						MEDIC. POR M MORMI ACERO					
2	4.0	1 2	2	40	.25	.20	.45	.75	.95	.45	4.75	.75	.75	.65	.95	5.70	4	10	4	11	3	5	2	9.05	1009.7	
			3	45	.25	.20	.45	.80	.95	.65	4.85	.80	.80	.65	1.00	5.75	4	10	4	11	3	4	2	9.49	1006.6	
			5	67	.45	.25	.20	.45	.80	.95	4.85	.80	.80	.65	1.00	5.75	4	10	4	10	4	11	3	4	9.49	1006.6
2	4.5	1 2	1	40	.25	.20	.45	.75	1.00	.65	4.75	.75	.75	.65	1.00	5.15	4	10	4	10	4	12	4	9.05	1039.6	
			2	40	.25	.20	.45	.75	1.10	.75	5.25	.85	.85	.75	1.15	5.10	5	10	5	10	5	12	4	9.05	1147.7	
			3	45	.25	.20	.45	.80	.95	.65	4.85	.80	.80	.65	1.05	5.10	4	10	4	10	4	12	4	9.49	1033.9	
			5	67	.45	.25	.20	.45	.80	.95	4.85	.80	.80	.65	1.05	5.10	4	10	4	10	4	12	4	9.49	1033.9	
3	1.5	1 2	1	30	.25	.20	.40	.65	.70	.55	3.55	.55	.60	.60	.75	3.40	2	9	2	2	2	5	2	7.76	620.7	
			2	35	.25	.20	.40	.70	.70	.55	3.65	.60	.60	.60	.75	3.50	2	9	2	2	2	7	2	8.19	656.0	
			3	4	35	.25	.20	.40	.70	.70	3.65	.60	.60	.60	.75	3.50	2	9	2	2	2	7	2	8.19	656.0	
			5	67	35	.25	.20	.40	.70	.70	3.65	.60	.60	.60	.75	3.45	2	9	2	2	2	7	2	8.19	655.4	
3	1.5	1 2	1	35	.25	.20	.40	.70	.75	.55	3.65	.60	.60	.60	.80	4.35	2	9	2	2	2	9	2	8.19	701.4	
			2	35	.25	.20	.40	.70	.80	.55	3.35	.60	.60	.60	.80	4.35	2	10	2	2	2	9	2	8.19	729.4	
			3	4	35	.25	.20	.40	.70	.80	3.35	.60	.60	.60	.85	4.30	2	10	2	2	2	9	2	8.19	729.1	
			5	67	35	.25	.20	.40	.70	.80	3.35	.60	.60	.60	.85	4.30	2	10	2	2	2	9	2	8.19	729.1	
3	2.5	1 2	1	35	.25	.20	.45	.70	.85	.55	3.35	.60	.60	.60	.85	4.60	2	10	2	2	2	9	2	8.62	733.5	
			2	35	.25	.20	.45	.70	.95	.60	4.15	.70	.70	.65	.90	4.60	4	11	9	3	3	9	2	8.62	809.3	
			3	4	35	.30	.20	.45	.70	1.10	4.15	.70	.70	.70	1.10	4.50	4	11	9	3	3	9	2	8.95	800.4	
			5	67	45	.25	.20	.45	.80	.80	4.15	.70	.70	.70	.90	4.45	2	10	4	2	2	9	2	9.49	746.7	
3	3.5	1 2	1	35	.25	.20	.45	.70	1.00	.60	4.15	.70	.70	.65	.95	4.40	4	11	9	3	3	9	2	8.62	832.8	
			2	35	.25	.20	.45	.70	1.10	.70	3.65	.70	.70	.65	.95	4.40	5	12	10	4	4	9	4	8.62	888.2	
			3	4	45	.30	.20	.45	.80	1.05	4.35	.80	.80	.70	1.15	4.45	4	11	9	3	3	9	4	9.83	820.8	
			5	67	45	.30	.20	.45	.80	1.05	4.35	.80	.80	.70	1.15	4.45	4	11	9	3	3	9	4	9.83	820.8	
3	4.0	1 2	1	35	.25	.20	.45	.70	1.05	.60	3.65	.70	.70	.65	1.00	4.50	4	12	9	4	4	9	4	8.62	855.2	
			2	40	.30	.20	.45	.75	1.15	.70	3.75	.75	.75	.70	1.15	4.55	4	12	9	4	4	9	4	9.39	874.6	
			3	4	45	.30	.20	.45	.80	1.10	4.35	.80	.80	.70	1.15	4.55	4	11	9	3	3	9	4	9.83	887.1	
			5	67	45	.30	.20	.45	.80	1.10	4.35	.80	.80	.70	1.15	4.55	4	11	9	3	3	9	4	9.83	850.1	
3	4.5	1 2	1	35	.25	.20	.45	.70	1.15	.70	3.65	.70	.70	.65	1.05	5.70	5	12	9	4	4	10	4	8.62	950.1	
			2	40	.30	.20	.45	.75	1.20	.70	4.75	.75	.75	.70	1.15	5.75	4	12	10	4	4	10	4	9.39	1022.3	
			3	4	45	.30	.20	.45	.80	1.15	4.35	.80	.80	.70	1.20	5.75	4	11	9	3	3	10	4	9.83	960.0	
			5	67	45	.30	.20	.45	.80	1.10	4.35	.80	.80	.70	1.20	5.75	4	11	9	3	3	10	4	9.83	959.5	

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B. 13

MARCO BICELULAR TIPO 7

LH = 8,00
LV = 5,00

VALORES COMUNES AL TIPO 7

L7 = .35 TIPOS ARMADURAS M1 = 4 DISTANCIA JUNTAS: 1,6,5

CAPAC. TIPO	GEOTECNICAS	ESPESES			LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS										MEDIC. MORMI	POM. ACIQU		
		ES	LP	EC	FD	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	M1	M2	M3	M4	M5	M6	M7	M8	M9			M10	
2	3.5	1	.40	.40	.25	.50	.75	2.30	1.05	4.75	1.10	.75	.95	2.05	4.55	9	12	9	9	9	9	7	10	2	4	2	13.28	1290.4
		3	.50	.40	.25	.50	.85	2.35	1.10	4.65	.95	.75	1.10	2.25	4.55	9	10	9	7	2	9	9	10	2	2	2	14.10	1204.5
		7	.50	.40	.25	.50	.85	2.35	1.10	4.65	.95	.75	1.10	2.25	4.55	9	10	9	7	2	9	9	10	2	2	2	14.10	1204.5
2	4.0	1	.40	.40	.25	.50	.75	2.35	1.05	4.75	1.10	.75	1.10	2.30	4.65	9	12	9	9	9	9	7	10	2	5	2	13.28	1343.7
		2	.45	.40	.25	.50	.80	2.35	1.05	5.35	1.15	.80	1.10	2.25	4.65	9	11	9	8	3	9	9	10	2	4	2	13.64	1313.6
		3	.50	.40	.25	.50	.85	2.35	1.10	5.45	1.20	.85	1.10	2.30	4.65	9	11	9	8	3	9	9	10	2	2	2	14.10	1302.1
3	5.5	1	.35	.35	.25	.40	.70	1.15	.95	7.35	1.05	.60	.85	2.05	3.80	9	7	9	7	7	7	7	7	2	2	2	11.37	1020.7
		2	.35	.35	.25	.40	.70	1.50	.95	1.65	1.05	.60	.85	2.05	3.75	9	9	7	7	7	7	7	7	2	2	2	11.37	1081.0
		3	.35	.35	.25	.40	.70	1.50	.95	1.65	1.05	.70	.85	2.05	3.75	9	9	7	7	7	7	7	7	2	2	2	11.37	1108.0
3	1.5	1	.35	.35	.25	.45	.70	2.50	.95	4.65	1.05	.80	1.00	2.25	4.10	9	4	7	5	8	9	7	2	2	2	2	11.77	1134.5
		2	.35	.35	.25	.45	.70	2.35	.95	5.15	1.05	.70	.90	2.10	4.05	9	10	4	8	5	8	9	7	2	2	2	11.77	1167.0
		3	.35	.35	.25	.45	.70	2.35	.95	4.35	1.05	.80	1.00	2.25	4.00	9	10	4	8	5	8	9	7	2	2	2	11.77	1166.6
3	2.5	1	.40	.35	.25	.45	.75	2.45	1.00	4.45	1.10	.75	1.00	2.25	4.00	9	10	4	8	4	8	9	7	2	2	2	12.10	1166.3
		2	.35	.40	.25	.45	.70	2.40	1.00	4.35	1.05	.70	.90	2.15	4.70	9	10	7	8	4	8	9	7	2	2	2	12.37	1134.6
		3	.45	.40	.25	.45	.80	2.50	1.05	4.55	1.15	.80	.90	2.10	4.65	9	10	4	8	3	8	7	9	2	2	2	13.29	1168.1
3	3.0	1	.35	.40	.25	.50	.80	2.50	1.05	4.55	1.15	.80	.90	2.10	4.65	9	10	4	8	3	8	7	9	2	2	2	13.29	1168.1
		2	.35	.40	.25	.50	.70	2.40	1.00	5.15	1.05	.70	1.10	2.40	4.40	9	11	4	8	4	8	9	7	2	2	2	12.77	1243.5
		3	.45	.40	.25	.50	.80	2.20	.90	4.65	1.05	.70	1.00	2.25	4.80	9	10	4	8	3	8	7	9	2	2	2	13.37	1276.3
3	3.5	1	.45	.40	.25	.50	.85	2.50	1.05	4.55	1.15	.80	1.10	2.35	4.75	9	10	4	8	3	8	7	9	2	2	2	13.69	1212.5
		2	.50	.40	.25	.50	.85	2.55	1.10	4.65	1.20	.75	1.10	2.35	4.75	9	10	6	8	2	8	9	9	2	2	2	14.10	1212.8
		3	.45	.40	.25	.50	.80	2.30	.90	5.15	1.05	.70	1.00	2.40	4.90	9	10	4	8	3	8	7	9	2	2	2	13.37	1236.0
3	4.0	1	.40	.45	.25	.50	.75	2.45	1.10	5.25	1.10	.75	1.00	2.25	4.90	9	11	4	8	3	8	7	9	2	2	2	13.88	1252.4
		2	.45	.45	.25	.50	.80	2.55	1.10	4.55	1.15	.70	1.00	2.25	4.85	9	10	4	8	2	8	7	9	2	2	2	14.29	1181.1
		3	.50	.45	.25	.50	.85	2.60	1.15	4.45	1.20	.75	1.00	2.25	4.90	9	10	6	8	2	8	7	9	2	2	2	14.80	1191.1
3	4.0	1	.35	.45	.25	.50	.70	2.30	.90	4.65	1.35	.70	1.15	2.50	4.45	9	10	4	9	4	9	9	2	5	2	2	13.37	1347.5
		2	.40	.45	.25	.50	.75	2.35	.95	4.75	1.10	.75	1.15	2.50	4.55	9	10	4	9	4	9	10	2	4	2	2	13.88	1363.3
		3	.45	.45	.25	.50	.80	2.55	1.10	5.35	1.15	.80	1.15	2.45	4.55	9	10	4	9	4	9	10	2	3	2	2	14.29	1320.7
3	5.5	1	.50	.45	.25	.50	.85	2.60	1.15	4.45	1.20	.75	1.15	2.45	4.55	9	10	4	9	4	9	10	2	2	2	2	14.80	1259.6
		2	.45	.45	.25	.50	.80	2.60	1.15	4.45	1.20	.75	1.15	2.45	4.55	9	10	4	9	4	9	10	2	2	2	2	14.80	1259.6
		3	.50	.45	.25	.50	.85	2.60	1.15	4.45	1.20	.75	1.15	2.45	4.55	9	10	4	9	4	9	10	2	2	2	2	14.80	1259.6

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 17

MARCO BICELULAR TIPO B

LH= 10,00
LV= 2,50

VALORES COMUNES AL TIPO B DISTANCIA JUNTAS: 9,5

L7= .50	TIPOS ARMADURA	ESPORES							LONGITUDES DE ARMADURAS							TIPOS DE ARMADURAS							MEDIC. POR M MORMI ACERO	
		ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L8	L9	L10	#R	#C	#E	#F	#G	#H	#I	#J		#K
2	3.5 1 2	.50	.35	.25	.55	.95	.00	.00	4.95	.85	.A5	.00	.00	5.90	1 12 10	4	4	10	1 11	2	4	1	13.70	1254.4
		.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	16.21	1224.0
		.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	14.21	1224.0
2	4.0 1 2	.45	.30	.25	.55	.90	.00	.00	5.35	.90	.90	.00	.00	5.25	1 14 10	5	5	11	1 12	3	5	1	12.79	1624.9
		.55	.35	.25	.55	1.00	.00	.00	5.05	.90	.90	.00	.00	5.35	1 12 11	4	4	11	1 12	3	4	1	16.21	1373.7
		.55	.35	.25	.55	1.00	.00	.00	5.05	.90	.90	.00	.00	5.30	1 12 11	4	4	11	1 12	3	4	1	16.21	1372.5
3	.5 1 2	.55	.35	.25	.55	1.00	.00	.00	5.05	.90	.90	.00	.00	5.30	1 17 11	4	4	11	1 12	3	4	1	16.21	1372.5
		.45	.30	.25	.50	.90	.00	.00	2.55	.80	.70	.00	.00	3.50	1 7 4	3	2	9	1 7	2	2	1	12.29	906.1
		.45	.30	.25	.50	.90	.00	.00	2.85	.80	.70	.00	.00	3.50	1 9 4	3	2	9	1 7	2	2	1	12.29	921.1
3	1.5 1 2	.45	.30	.25	.50	.90	.00	.00	3.85	.80	.70	.00	.00	3.45	1 9 4	3	2	9	1 7	2	2	1	12.29	933.1
		.45	.30	.25	.50	.90	.00	.00	3.85	.80	.70	.00	.00	3.45	1 9 8	3	2	9	1 7	2	2	1	12.29	933.1
		.45	.30	.25	.50	.90	.00	.00	3.85	.80	.70	.00	.00	3.45	1 9 8	3	2	9	1 7	2	2	1	12.29	933.1
3	2.5 1 2	.45	.30	.25	.55	.90	.00	.00	3.85	.80	.70	.00	.00	4.35	1 9 9	3	2	9	1 9	2	2	1	12.79	989.7
		.45	.30	.25	.55	.90	.00	.00	3.55	.80	.70	.00	.00	4.35	1 10 9	3	2	9	1 9	2	2	1	12.79	994.3
		.50	.30	.25	.55	.95	.00	.00	3.65	.85	.75	.00	.00	4.40	1 10 9	3	2	9	1 9	2	2	1	13.40	1006.2
3	3.0 1 2	.50	.30	.25	.55	.95	.00	.00	3.65	.85	.75	.00	.00	4.40	1 10 9	3	2	9	1 9	2	2	1	13.40	1006.2
		.45	.35	.25	.55	.90	.00	.00	3.55	.80	.70	.00	.00	4.70	1 10 9	3	2	10	1 9	2	2	1	13.19	1049.4
		.45	.35	.25	.55	.90	.00	.00	4.35	.80	.80	.00	.00	4.70	1 11 10	3	3	10	1 9	2	3	1	12.79	1122.4
3	3.5 1 2	.50	.35	.25	.55	.95	.00	.00	4.45	.85	.85	.00	.00	4.34	1 11 10	4	3	10	1 10	2	2	1	13.70	1139.8
		.50	.35	.25	.55	.95	.00	.00	4.45	.85	.85	.00	.00	4.30	1 11 10	4	3	10	1 10	2	2	1	13.70	1139.1
		.50	.35	.25	.55	.95	.00	.00	4.45	.85	.85	.00	.00	4.30	1 11 10	4	3	10	1 10	2	2	1	13.70	1139.1
3	4.0 1 2	.45	.35	.25	.55	.90	.00	.00	4.35	.80	.80	.00	.00	4.45	1 11 9	4	3	10	1 10	2	3	1	13.19	1107.1
		.45	.35	.25	.55	.90	.00	.00	3.85	.80	.80	.00	.00	4.60	1 12 10	4	4	10	1 10	2	4	1	13.19	1175.9
		.50	.35	.25	.55	.95	.00	.00	4.45	.85	.85	.00	.00	4.45	1 11 10	4	3	10	1 10	2	2	1	13.70	1141.4
3	3.5 1 2	.55	.35	.25	.55	1.00	.00	.00	4.55	.90	.90	.00	.00	5.75	1 11 10	4	3	10	1 11	2	2	1	14.21	1190.7
		.55	.35	.25	.55	1.00	.00	.00	4.55	.90	.90	.00	.00	5.75	1 11 10	4	3	10	1 11	2	2	1	14.21	1190.7
		.55	.35	.25	.55	1.00	.00	.00	4.55	.90	.90	.00	.00	5.75	1 11 10	4	3	10	1 11	2	2	1	14.21	1190.7
3	4.0 1 2	.45	.35	.25	.55	.90	.00	.00	3.85	.80	.80	.00	.00	5.80	1 12 10	4	4	10	1 11	2	4	1	13.19	1218.1
		.50	.35	.25	.55	.95	.00	.00	3.95	.85	.85	.00	.00	5.85	1 12 10	4	4	10	1 11	2	4	1	13.70	1254.4
		.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	14.21	1224.0
3	5.6 7 8	.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	14.21	1224.0
		.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	14.21	1224.0
		.55	.35	.25	.55	1.00	.00	.00	4.05	.90	.90	.00	.00	5.90	1 12 10	4	4	10	1 11	2	3	1	14.21	1224.0

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 19

MARCO BICELULAR TIPO 9

V A L O R E S C O M U N E S A L T I P O 9
 TIPOS ARMADURA 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

CARACT. GEOTECNICAS TIPO YI	ESPAESORES ES EP EC ED	LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS										MEDIC. POR M MURTI ACCHO											
		L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	PR	PC	PD	PE	PF	PG	PH	PI	PJ	PK		PL	PM	PN	PO	PP	PQ	PR	PS	PT	PV	PW
2 3.5 1 2	.50 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.95	1.05	.80	4.95	.85	.85	.00	.00	.00	5.97	4	12	11	4	4	11	1	11	2	4	2	14.70	1427.1									
2 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.20	.85	5.35	.90	.90	.90	1.20	5.25	4	12	11	4	4	11	1	12	3	5	2	14.09	1457.5										
3 4.5 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	.00	.00	2.65	.80	.70	.00	.00	3.55	1	7	8	4	2	9	1	7	2	2	1	13.59	965.7										
3 1.5 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	.85	.70	3.55	.80	.70	.00	.00	4.60	2	10	9	4	2	9	1	9	2	2	2	14.09	1095.0										
3 2.5 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.95	.80	.75	3.65	.85	.75	.00	.00	4.65	2	10	9	4	2	9	1	9	2	2	2	14.70	1103.5										
3 2.5 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.00	.75	4.35	.80	.80	.00	.00	4.75	4	11	9	4	2	9	1	9	2	2	2	14.09	1052.7										
3 3.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.95	.95	.80	4.45	.85	.85	.00	.00	4.65	4	11	10	4	3	10	1	10	2	2	2	14.70	1233.7										
3 3.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.95	.95	.80	4.45	.85	.85	.00	.00	4.65	4	11	10	4	3	10	1	10	2	2	2	14.70	1233.7										
3 3.5 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.05	.75	4.35	.80	.80	.00	.00	4.85	4	12	10	4	3	10	1	10	2	2	2	14.09	1201.5										
3 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.10	.75	4.45	.80	.80	.00	.00	4.85	4	12	10	4	3	10	1	10	2	2	2	14.09	1291.1										
3 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.15	.75	4.85	.80	.80	.00	.00	5.45	4	12	10	4	3	10	1	10	2	2	2	14.09	1375.2										
3 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.15	.80	4.95	.85	.85	.00	.00	5.90	4	12	10	4	3	10	1	10	2	2	2	14.70	1360.8										
3 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.05	.80	5.05	.90	.90	.00	.00	5.90	4	12	10	4	3	10	1	10	2	2	2	15.21	1361.7										
3 4.0 1 2	.45 .35 .25 .55 .55 .35 .25 .55 .55 .35 .25 .55	.90	1.05	.80	5.05	.90	.90	.00	.00	5.90	4	12	10	4	3	10	1	10	2	2	2	15.21	1361.7										

VALORES COMUNES AL TIPO 10		MARCO BICELULAR TIPO 10												LH = 10,00								
TIPOS ARMADURA B A 7 B U 4 B M 3 DISTANCIA JUNTAS 17,0		L V = 5,00																				
CARACT. GEOTECNICAS T HT TI TC	LONGITUDES DE ARMADURAS											MEDIG. POR M HORMI ACERO										
	L1	L2	L3	L4	L5	L6	L8	L9	L10	TIPOS DE ARMADURAS												
ES EP EC ED	ES ES ES ES ES ES ES ES ES ES ES ES																					
1	.45	.35	.25	.55	.90	.70	.75	.95	3.60	4	9	8	6	2	9	2	7	2	2	2	15.59	1184.6
2	.45	.35	.25	.55	.90	.70	.75	.95	3.60	4	9	8	6	2	9	2	7	2	2	2	15.59	1209.8
3	.50	.35	.25	.55	.95	.75	.75	.95	3.65	5	9	8	6	2	9	2	7	2	2	2	16.10	1197.5
4	.50	.35	.25	.55	.95	.75	.75	.95	3.65	5	9	8	6	2	9	2	7	2	2	2	16.10	1197.5
1	1.5	1.2			.90	.70	.75	1.00	4.60	5	10	9	6	2	10	2	9	2	2	2	15.59	1289.5
2	.50	.35	.25	.55	.95	.75	.75	1.00	4.65	7	10	10	6	2	10	2	9	2	2	2	16.10	1347.7
3	.50	.35	.25	.55	.95	.75	.75	1.00	4.60	7	10	10	6	2	10	2	9	2	2	2	16.10	1347.1
4	.50	.35	.25	.55	.95	.75	.75	1.00	4.60	7	10	10	6	2	10	2	9	2	2	2	16.10	1347.1
1	2.5	1.2			.90	.80	.80	1.20	4.55	7	11	10	7	3	10	4	10	2	4	2	15.59	1468.1
2	.50	.35	.25	.55	.95	.85	.80	1.20	4.60	7	12	10	6	4	10	4	10	2	3	2	16.10	1466.7
3	.55	.35	.25	.55	1.00	.90	.80	1.20	5.70	7	11	10	6	3	10	4	11	2	2	2	16.61	1453.2
4	.55	.35	.25	.55	1.00	.90	.90	1.35	4.55	7	11	10	6	3	10	5	10	2	2	2	16.61	1421.2
1	3.0	1.2			.90	.80	.95	1.35	4.65	9	12	10	7	4	10	5	10	2	5	2	16.09	1555.1
2	.50	.35	.25	.60	.95	.85	.95	1.35	4.70	9	12	11	7	4	10	5	10	2	4	2	16.60	1587.1
3	.60	.35	.25	.60	1.05	.95	.95	1.40	5.85	9	11	10	7	3	10	7	11	2	2	2	17.72	1561.5
4	.55	.35	.25	.55	1.00	.90	.90	1.40	5.80	7	12	10	7	4	10	7	11	2	4	2	16.61	1556.5
1	3.5	1.2			.90	.90	.95	1.40	5.90	9	14	10	7	5	11	7	11	2	5	2	16.09	1744.4
2	.55	.35	.25	.60	1.00	1.00	.95	1.45	6.00	9	12	11	7	4	11	7	11	2	4	2	17.21	1690.2
3	.60	.35	.25	.60	1.05	.95	.95	1.45	6.00	9	12	11	7	4	11	7	11	2	3	2	17.72	1645.3
4	.60	.35	.25	.60	1.05	.95	.95	1.45	5.90	9	11	10	7	3	10	7	11	2	2	2	17.72	1564.5
1	4.0	1.2			.95	.95	.95	1.50	5.40	7	14	10	7	5	11	5	12	3	5	2	17.20	1766.9
2	.55	.40	.25	.60	1.00	1.00	1.00	1.55	5.45	7	14	11	6	5	11	5	12	3	5	2	17.81	1797.7
3	.60	.40	.25	.60	1.05	1.00	.95	1.60	5.45	7	12	11	6	4	11	5	12	3	4	2	18.32	1686.7
4	.60	.40	.25	.60	1.05	1.00	.95	1.60	6.05	7	12	10	6	4	11	5	11	2	3	2	18.32	1596.4
2	5	1.2			.90	.70	.60	1.05	3.55	7	9	8	7	2	9	4	7	2	2	2	15.59	1232.5
3	.45	.35	.25	.55	.90	.75	.75	.95	3.55	7	9	9	7	2	9	4	7	2	2	2	15.59	1250.5
4	.50	.35	.25	.55	.95	.75	.80	1.05	3.60	7	9	8	7	2	9	4	7	2	2	2	16.10	1239.6
5	.50	.35	.25	.55	.95	.75	.80	1.05	3.60	7	9	8	7	2	9	4	7	2	2	2	16.10	1239.6
1	4.5	1.2			.90	.70	.80	1.15	4.45	7	10	9	7	2	10	4	9	2	2	2	15.59	1330.2
2	.50	.35	.25	.55	.95	.75	.80	1.15	4.55	9	10	9	7	2	10	4	9	2	2	2	16.10	1367.5
3	.50	.35	.25	.55	.95	.75	.90	1.30	4.50	7	10	9	7	2	10	5	9	2	2	2	16.10	1344.4
4	.50	.35	.25	.55	.95	.75	.90	1.30	4.50	7	10	9	7	2	10	5	9	2	2	2	16.10	1344.4
1	2.5	1.2			.90	.70	.90	1.45	4.45	9	11	9	7	2	10	5	9	2	2	2	15.59	1444.9
2	.50	.40	.25	.55	.95	.85	.85	1.35	4.50	7	11	10	7	3	10	4	10	2	2	2	16.70	1444.8
3	.50	.40	.25	.55	.95	.85	.85	1.35	4.50	7	11	10	7	3	10	4	10	2	3	2	16.70	1477.0
4	.55	.40	.25	.55	1.00	.90	.95	1.35	4.50	7	11	10	7	3	10	4	10	2	2	2	17.21	1452.2
1	3.0	1.2			.90	.80	.95	1.55	4.60	7	12	10	7	4	10	5	10	2	2	2	16.19	1516.8
2	.50	.40	.25	.55	.95	.85	.95	1.55	5.75	7	12	10	7	4	10	5	11	2	3	2	16.70	1550.0
3	.55	.40	.25	.55	1.00	.90	.95	1.60	5.75	7	11	10	7	3	10	5	11	2	2	2	17.21	1519.3
4	.55	.40	.25	.55	1.00	.90	.95	1.60	5.75	7	11	10	7	3	10	5	11	2	2	2	17.21	1519.3
1	3.5	1.2			.90	.80	.90	1.60	4.70	7	12	10	7	4	10	7	10	2	5	2	16.69	1558.7

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B 22

MARCO BICELULAR TIPO 10

LH = 10.00

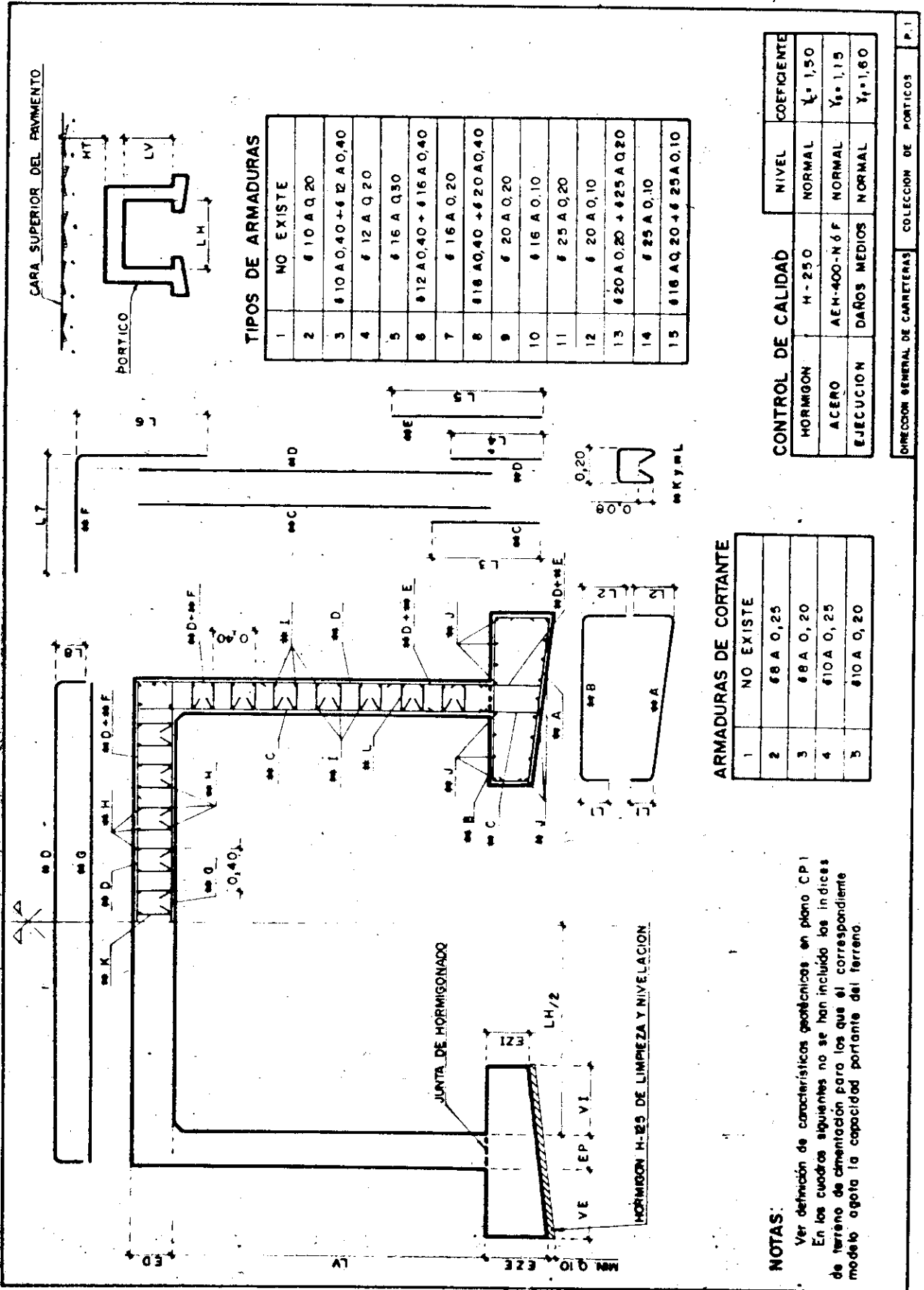
LV = 5.00

VALORES COMUNES AL TIPO 10 DISTANCIA JUNTAS: 17.0

CARACT. GEOMETRICAS Y HT TI	ESPORES			LONGITUDES DE ARMADURAS										TIPOS DE ARMADURAS										MEDIC. POR M MORMI ACERO			
	ES	EP	EC	ED	L1	L2	L3	L4	L5	L6	L8	L9	L10	#H	#C	#D	#E	#F	#G	#H	#I	#J	#K		#L	#M	#N
2 3.5 1 2	2	.55	.40	.25	.60	1.00	1.80	1.10	5.05	1.00	.90	1.00	1.60	5.90	9	12	10	7	4	10	7	11	2	3	2	17.81	1614.3
3 4	3	.60	.40	.25	.60	1.05	1.80	1.15	5.65	1.05	.95	1.00	1.60	5.90	9	11	10	7	3	10	7	11	2	2	2	18.32	1583.4
5 6 7	5	.60	.40	.25	.60	1.05	1.75	1.15	5.65	1.05	.95	1.00	1.60	5.90	9	11	10	7	3	10	7	11	2	2	2	18.32	1582.2
2 4.0 1 2	2	.45	.40	.25	.60	.90	1.95	1.05	5.35	1.15	.90	1.00	1.65	5.90	9	14	10	8	5	10	7	11	2	5	2	16.69	1762.9
3 4	3	.55	.45	.25	.60	1.00	1.80	1.00	5.05	1.00	.90	1.05	1.75	6.00	7	12	10	7	4	10	5	11	2	4	2	18.41	1604.1
5 6 7	5	.60	.45	.25	.60	1.05	1.75	1.05	5.15	1.05	.95	1.05	1.75	6.05	7	12	10	7	4	10	5	11	2	3	2	18.92	1597.6
3 4	3	.45	.35	.25	.55	.90	1.90	1.00	3.55	.90	.70	.90	1.35	3.50	9	7	8	7	2	8	5	5	2	2	2	15.59	1221.5
5 6 7 8	5	.50	.35	.25	.55	.95	1.80	1.05	3.95	.95	.75	.90	1.35	3.60	9	9	8	7	2	8	5	7	2	2	2	16.10	1257.2
3 4	3	.50	.35	.25	.55	.95	1.80	1.05	3.95	.95	.75	.90	1.35	3.55	9	9	8	7	2	9	5	7	2	2	2	16.10	1280.4
5 6 7 8	5	.50	.40	.25	.55	.95	1.65	.95	3.95	.95	.75	.85	1.30	3.60	7	9	8	7	2	9	4	7	2	2	2	16.70	1255.6
3 4	3	.45	.40	.25	.55	.90	1.70	.90	3.65	.90	.80	.85	1.35	4.40	7	9	8	7	3	9	4	9	2	2	2	16.19	1283.6
5 6 7 8	5	.50	.40	.25	.55	.95	1.65	.95	3.65	.95	.75	.85	1.35	4.45	7	10	9	7	2	9	4	9	2	2	2	16.70	1316.4
3 4	3	.50	.40	.25	.55	.95	1.65	.95	3.65	.95	.75	.85	1.35	4.45	7	10	9	7	2	9	4	9	2	2	2	16.70	1316.4
5 6 7 8	5	.50	.40	.25	.55	.95	1.65	.95	3.65	.95	.75	.85	1.35	4.45	7	10	9	7	2	9	4	9	2	2	2	16.70	1316.4
3 2.5 1 2	2	.45	.40	.25	.55	.90	1.80	.90	3.55	1.15	.80	.95	1.60	4.75	7	10	9	8	3	10	7	9	2	2	2	16.19	1414.2
3 4	3	.50	.40	.25	.55	.95	1.90	1.10	4.45	.95	.85	.95	1.60	4.40	9	11	10	7	3	10	7	10	2	2	2	16.70	1497.7
5 6 7 8	5	.50	.45	.25	.55	.95	1.80	1.00	4.45	1.00	.85	.90	1.55	4.35	7	11	10	7	3	10	4	10	2	2	2	17.30	1454.2
3 3.0 1 2	2	.45	.45	.25	.55	1.00	1.75	1.00	3.75	1.00	.80	.90	1.55	4.40	7	10	9	7	2	10	4	10	2	2	2	17.81	1389.6
3 4	3	.55	.45	.25	.55	.90	1.85	.95	4.35	1.15	.80	1.00	1.75	4.50	7	11	9	8	3	10	5	10	2	3	2	16.69	1465.8
5 6 7	5	.55	.45	.25	.55	.95	1.85	1.00	5.45	.95	.85	1.00	1.75	4.55	7	11	10	7	3	10	5	10	2	3	2	17.30	1501.4
3 3.5 1 2	2	.45	.45	.25	.55	1.00	1.80	1.00	4.55	1.00	.90	1.00	1.75	4.55	7	11	10	7	3	10	5	10	2	2	2	17.81	1476.7
3 4	3	.55	.45	.25	.55	1.00	1.80	1.00	4.55	1.00	.90	1.00	1.75	4.55	7	11	10	7	3	10	5	10	2	2	2	17.81	1476.7
5 6 7	5	.55	.45	.25	.55	1.00	1.80	1.00	4.55	1.00	.90	1.00	1.75	4.55	7	11	10	7	3	10	5	10	2	3	2	18.41	1533.7
3 3.5 1 2	2	.45	.45	.25	.60	.90	1.95	.95	4.85	1.15	.80	1.05	1.80	4.60	7	12	9	8	4	10	7	10	2	4	2	17.29	1550.8
3 4	3	.55	.45	.25	.60	1.00	2.05	1.15	4.95	1.20	.85	1.05	1.80	4.60	9	12	10	8	4	10	7	10	2	4	2	17.80	1634.3
5 6 7	5	.55	.45	.25	.60	1.00	1.85	1.00	5.55	1.00	.90	1.05	1.80	4.60	7	11	10	7	3	10	7	10	2	3	2	18.41	1533.7
3 4.0 1 2	2	.45	.45	.25	.60	1.00	1.85	1.00	5.55	1.00	.90	1.05	1.80	4.60	7	11	10	7	3	10	7	10	2	3	2	18.41	1533.7
3 4	3	.55	.45	.25	.60	.90	2.15	1.10	4.85	1.15	.80	1.05	1.85	4.70	9	12	9	8	4	10	7	10	2	5	2	17.29	1606.1
5 6 7	5	.55	.45	.25	.60	1.00	2.05	1.15	5.05	1.25	.90	1.05	1.85	4.85	9	12	10	8	4	10	7	11	2	3	2	18.41	1669.2
3 4	3	.55	.45	.25	.60	1.00	2.05	1.15	5.05	1.25	.90	1.05	1.85	4.75	9	12	10	8	4	10	7	10	2	3	2	18.41	1631.5
5 6 7	5	.55	.45	.25	.60	1.00	2.05	1.15	5.05	1.25	.90	1.05	1.85	4.75	9	12	10	8	4	10	7	10	2	3	2	18.41	1631.5

DIRECCION GENERAL DE CARRETERAS COLECCION DE MARCOS BICELULARES B. 23

3.1.2 Pórticos



PORTICO TIPO 1

VALORES COMUNES AL TIPO 1
 L8= .35 TIPOS ARMADURA: 8D= 4 8E= 3 8I= 2 8J= 2 DIST. JUNTAS: 9.0

CARACT. TIPO	GEOTECNICAS TC	DIMENSIONES								LONGITUDES DE ARMADURAS								TIPOS DE ARMADURA								MEDICIONES POR M	
		VI	EZ	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	8A	8B	8C	8E	8F	8G	8K	8L	M-Z	M-A	ACERO		
1	.5	1	2	3	4	.50	.50	.50	.25	.40	.40	.75	.85	.00	1.15	.95	7	1	2	1	2	8	2	2	1.25	3.05	279.0
						.60	.50	.70	.50	.40	.40	.75	.85	.00	1.15	.95	7	1	2	1	2	8	2	2	1.55	3.05	287.5
1	1.5	1	2	3	.50	.50	.50	.25	.40	.40	.75	.85	.00	1.45	1.25	10	1	2	1	4	10	2	2	1.25	3.05	346.3	
					.50	.50	.60	.50	.25	.40	.40	.75	.85	.00	1.45	1.25	10	1	2	1	4	10	2	2	1.35	3.05	350.6
1	2.5	1	2	.50	.50	.50	.30	.40	.40	.40	.85	.85	.00	1.65	1.75	10	1	3	1	7	10	2	2	1.30	3.34	390.9	
				.50	.50	.60	.30	.40	.40	.40	.85	.85	.00	1.65	1.75	10	1	3	1	7	10	2	2	1.40	3.34	395.3	
				.50	.50	.80	.30	.40	.40	.40	.85	.85	.00	1.65	1.75	10	1	3	1	7	10	2	2	1.60	3.34	404.1	
1	3.5	1	2	.50	.80	.50	.40	.45	.45	.40	.40	.95	.85	1.05	2.10	10	7	5	2	7	10	2	2	1.40	4.16	468.7	
				.50	.50	.70	.50	.40	.45	.40	.40	.95	.85	1.05	2.10	10	7	5	2	7	10	2	2	1.60	4.16	480.6	
1	4.0	1	2	.50	.50	.50	.40	.45	.45	.40	.40	.95	.85	1.05	2.30	10	7	5	2	9	10	2	2	1.40	4.16	516.3	
				.50	.50	.60	.50	.40	.45	.40	.40	.95	.85	1.05	2.30	10	7	5	2	9	10	2	2	1.70	4.16	534.2	
1	4.5	1	2	3	.50	.50	.50	.25	.40	.40	.75	.85	1.10	1.15	.95	7	1	2	2	2	8	2	2	1.25	3.05	285.8	
				.50	.50	.60	.25	.40	.40	.40	.75	.85	1.15	1.15	.95	7	1	2	2	2	8	2	2	1.31	3.05	286.4	
2	.5	1	2	.50	.50	.50	.25	.40	.40	.40	.80	.85	1.15	1.15	.95	7	1	2	2	2	8	2	2	1.52	3.05	292.0	
				.60	.50	.60	.25	.40	.40	.40	.80	.85	1.15	1.15	.95	7	1	2	2	2	8	2	2	1.52	3.05	292.0	
2	1.5	1	2	3	.50	.50	.50	.25	.40	.40	.75	.85	1.05	1.40	1.25	9	1	2	2	4	10	2	2	1.25	3.05	338.7	
				.70	.50	.60	.25	.40	.40	.40	.75	.85	1.05	1.40	1.25	9	1	2	2	4	10	2	2	1.65	3.05	360.9	
2	2.5	1	2	3	.50	.50	.50	.30	.40	.40	.85	.85	.00	1.80	1.75	10	1	3	1	7	10	2	2	1.30	3.34	390.2	
				.50	.50	.70	.30	.40	.40	.40	.85	.85	.00	1.80	1.75	10	1	3	1	7	10	2	2	1.50	3.34	398.0	
2	3.5	1	2	.50	.50	.50	.35	.45	.45	.40	.40	.85	.85	.00	1.95	1.95	10	1	4	1	7	10	2	1.35	3.86	409.8	
				.50	.50	.60	.35	.45	.45	.40	.40	.85	.85	.00	1.95	1.95	10	1	4	1	7	10	2	1.65	3.86	414.2	
				.60	.50	.90	.35	.45	.45	.40	.40	.85	.85	.00	1.95	1.95	10	1	4	1	7	10	2	1.85	3.86	431.7	
2	4.0	1	2	.50	.50	.50	.40	.45	.45	.40	.40	.95	.85	1.05	2.10	10	7	5	2	7	10	2	2	1.40	4.16	467.9	
				.50	.50	.70	.50	.40	.45	.40	.40	.95	.85	1.05	2.10	10	7	5	2	7	10	2	2	1.60	4.16	479.8	
2	4.5	1	2	3	.50	.50	.50	.25	.40	.40	.75	.85	1.25	1.10	.95	7	1	2	2	2	8	2	2	1.25	3.05	286.4	
				.60	.50	.60	.25	.40	.40	.40	.75	.85	1.30	1.10	.95	7	1	2	2	2	8	2	2	1.49	3.05	291.1	
				.60	.45	.50	.25	.40	.35	.45	.60	.90	1.30	1.10	.95	7	1	2	2	2	8	2	2	1.49	3.05	290.3	
				.70	.45	.60	.25	.40	.35	.45	.60	.90	1.30	1.10	.95	7	1	2	2	2	8	2	2	1.63	3.05	295.9	
3	1.5	1	2	.50	.50	.50	.25	.40	.40	.40	.75	.85	1.20	1.35	1.25	8	1	2	2	4	10	2	2	1.25	3.05	330.4	
				.60	.50	.50	.25	.40	.40	.40	.75	.85	1.20	1.35	1.25	8	1	2	2	4	10	2	2	1.35	3.05	333.7	
				.60	.50	.50	.25	.40	.40	.40	.80	.85	1.20	1.35	1.25	8	1	2	2	4	10	2	2	1.42	3.05	334.0	
				.70	.50	.80	.25	.40	.40	.40	.75	.85	1.20	1.35	1.25	8	1	2	2	4	10	2	2	1.75	3.05	346.7	
3	2.5	1	2	.50	.50	.50	.30	.40	.40	.40	.85	.85	.00	1.70	1.75	9	1	3	1	7	10	2	2	1.30	3.34	374.6	
				.50	.50	.60	.30	.40	.40	.40	.85	.85	.00	1.70	1.75	9	1	3	1	7	10	2	2	1.40	3.34	378.3	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P. 2

PORTICO TIPO 1										LH = 4,00														
VARIABLES COMUNES AL TIPO 1										LV = 2,50														
TIPOS ARMADURA #0 = 4 #1 = 2 #2 = 2 #3 = 2 DIST. JUNTAS: 9,0																								
CARACT. GEOTECHNICAS TIPO	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA				MEDICIONES POR M									
	VI	EZI	VE	EZE	EP	EO	L1	L2	L3	L4	L5	L6	L7	PA	PB	PC	PE	PF	PG	PH	PI	M-Z	M-A	ACERO
3 3.5 1 2	.50	.50	.50	.50	.35	.45	.40	.40	.85	.85	.00	1.85	1.90	10	1	4	1	7	10	2	2	1.35	3.86	607.4
3 3.5 1 3	.60	.50	.80	.50	.35	.45	.40	.40	.85	.85	.00	1.85	1.90	10	1	4	1	7	10	2	2	1.75	3.86	625.0
3 4.0 1 2	.50	.50	.50	.50	.35	.45	.40	.40	.85	.85	.00	1.90	1.95	10	7	4	1	7	10	2	2	1.35	3.86	441.7
3 4.0 1 3	.70	.50	.90	.50	.35	.45	.40	.40	.85	.85	.00	1.90	1.95	10	7	4	1	7	10	2	2	1.95	3.86	477.5
3 4.5 1 2	.50	.50	.50	.50	.40	.45	.40	.40	.95	.85	1.10	2.05	2.10	10	7	5	2	7	10	2	2	1.40	4.16	467.4
3 4.5 1 3	.50	.50	.60	.50	.40	.45	.40	.40	.95	.85	1.10	2.05	2.10	10	7	5	2	7	10	2	2	1.50	4.16	473.4
3 4.5 1 3	.70	.50	1.00	.50	.40	.45	.40	.40	.95	.85	1.10	2.05	2.10	10	7	5	2	7	10	2	2	2.10	4.16	509.2

LH=4.00
LV=3.50

PORTICO TIPO 2

VALORES COMUNES AL TIPO 2
L6=.35 TIPOS ARMADURA #D=4 #H=3 #I=2 #J=3 DIST. JUNTAS 12.0

CARACT. GEOTECNICAS T HT TI	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA							MEDICIONES POR M					
	V1	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#H	#C	#E	#F	#G	#K	#L	M-2	M-A	ACERO
1 .5 1 2	.50	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.55	1.75	1.25	7	1	3	4	2	9	2	2	1.30	3.94	355.4
1 .5 1 2	.60	.50	.50	.55	.30	.40	.40	.85	.85	.85	1.60	1.35	1.25	7	1	3	4	2	9	2	2	1.47	3.94	358.9
1 .5 1 2	.80	.50	.70	.50	.30	.40	.40	.85	.85	.85	1.55	1.35	1.25	7	1	3	4	2	9	2	2	1.80	3.94	370.9
1 1.5 1 2	.50	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.50	1.80	1.65	7	1	3	2	5	10	2	2	1.30	3.94	386.7
1 1.5 1 2	.60	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.50	1.80	1.65	7	1	3	2	5	10	2	2	1.40	3.94	389.8
1 2.5 1 2	.50	.50	.50	.50	.30	.45	.40	.85	.85	.85	1.55	1.85	1.70	10	1	3	4	7	10	2	2	1.30	4.17	445.6
1 2.5 1 2	.60	.50	.50	.50	.30	.45	.40	.85	.85	.85	1.55	1.85	1.70	10	1	3	4	7	10	2	2	1.40	4.17	450.3
1 2.5 1 2	.70	.50	.70	.50	.30	.45	.40	.85	.85	.85	1.55	1.85	1.70	10	1	3	4	7	10	2	2	1.70	4.17	464.2
1 3.5 1 2	.50	.50	.50	.50	.40	.45	.40	.95	.95	.95	1.45	2.35	2.10	10	1	5	2	7	10	2	2	1.40	4.96	484.5
1 3.5 1 2	.60	.50	.60	.50	.40	.45	.40	.95	.95	.95	1.45	2.35	2.10	10	1	5	2	7	10	2	2	1.60	4.96	493.8
1 4.0 1 2	.50	.50	.50	.50	.40	.45	.40	.95	.95	.95	1.55	2.55	2.35	10	7	5	4	9	11	2	2	1.40	4.96	589.9
1 4.0 1 2	.60	.50	.70	.50	.40	.45	.40	.95	.95	.95	1.55	2.55	2.35	10	7	5	4	9	11	2	2	1.70	4.96	608.6
1 4.5 1 2 1 2 3 4	.60	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.80	1.30	1.25	7	1	3	5	2	8	2	2	1.40	3.94	353.3
2 .5 1 2	.70	.50	.50	.55	.30	.40	.40	.85	.85	.85	1.85	1.30	1.25	7	1	3	5	2	8	2	2	1.58	3.94	356.6
2 .5 1 2	.70	.45	.50	.60	.30	.40	.35	.85	.90	.90	1.85	1.30	1.25	7	1	3	5	2	8	2	2	1.58	3.94	357.3
2 .5 1 2	.90	.45	.60	.60	.30	.40	.35	.85	.90	.90	1.85	1.30	1.25	7	1	3	5	2	8	2	2	1.80	3.94	366.6
2 1.5 1 2	.60	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.75	1.70	1.65	7	1	3	5	5	10	2	2	1.40	3.94	397.9
2 1.5 1 2	.70	.50	.50	.55	.30	.40	.40	.85	.85	.85	1.90	1.70	1.65	7	1	3	5	5	10	2	2	1.58	3.94	401.5
2 1.5 1 2	.90	.50	1.00	.50	.30	.40	.40	.85	.85	.85	1.75	1.70	1.65	7	1	3	5	5	10	2	2	2.20	3.94	422.6
2 2.5 1 2	.60	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.75	1.90	1.80	10	1	3	5	7	10	2	2	1.40	3.94	454.5
2 2.5 1 2	.70	.50	.60	.55	.30	.40	.40	.85	.85	.85	1.80	1.90	1.80	10	1	3	5	7	10	2	2	1.68	3.94	464.4
2 3.5 1 2	.50	.50	.50	.50	.35	.45	.40	.85	.85	.85	1.65	2.05	2.00	10	1	4	4	7	10	2	2	1.35	4.56	468.0
2 3.5 1 2	.60	.50	.50	.50	.35	.45	.40	.85	.85	.85	1.65	2.05	2.00	10	1	4	4	7	10	2	2	1.65	4.56	472.6
2 3.5 1 2	.90	.50	.90	.50	.35	.45	.40	.85	.85	.85	1.65	2.05	2.00	10	1	4	4	7	10	2	3	2.15	4.56	512.2
2 4.0 1 2	.50	.50	.50	.50	.40	.45	.40	.95	.95	.95	1.65	2.45	2.35	10	7	5	2	9	10	2	2	1.40	4.96	567.4
2 4.0 1 2	.60	.50	.60	.50	.40	.45	.40	.95	.95	.95	1.65	2.45	2.35	10	7	5	2	9	10	2	2	1.60	4.96	579.9
2 4.5 1 2 1 2 3 4	.70	.50	.60	.55	.30	.40	.40	.85	.85	.85	1.95	1.25	1.30	7	7	3	7	2	8	2	2	1.68	3.94	407.9
3 .5 1 2	.70	.45	.60	.60	.30	.40	.35	.85	.90	.90	1.95	1.25	1.30	7	7	3	7	2	8	2	2	1.68	3.94	408.3
3 .5 1 2	.80	.45	.70	.70	.30	.40	.35	.90	.95	.95	2.05	1.25	1.30	7	7	3	7	2	8	2	2	2.07	3.94	421.6
3 1.5 1 2	1.00	.40	.70	.65	.30	.40	.35	.85	.90	.90	2.00	1.25	1.30	7	7	3	7	2	8	2	2	2.10	3.94	427.8
3 1.5 1 2	.70	.50	.50	.50	.30	.40	.40	.85	.85	.85	1.85	1.65	1.65	7	7	3	7	5	9	2	2	1.50	3.94	430.7
3 1.5 1 2	.80	.50	.50	.55	.30	.40	.40	.85	.85	.85	1.90	1.65	1.65	7	7	3	7	5	9	2	2	1.68	3.94	436.1
3 1.5 1 2	.80	.45	.50	.65	.30	.40	.35	.90	.90	.90	1.95	1.65	1.65	7	7	3	7	5	9	2	2	1.76	3.94	437.7
3 1.5 1 2	1.00	.50	.80	.60	.30	.40	.40	.90	.90	.90	1.95	1.65	1.65	7	7	3	7	5	9	2	2	2.31	3.94	462.6

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO.

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P. 4

L8= .35		VALORES COMUNICADOS AL TIPO 2										PORTICO TIPO 2		LH= 4.00		LV= 3.50							
TIPOS ARMADURA		DIST: JUNTAS: 12.0																					
CARACT. GEOTECNICAS Y HT TI TC	VI	DIMENSIONES:			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA						MEDICIONES POR M					
		EZ	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	8A	8B	8C	8E	8F	8G	8K	8L	M-Z	M-A
3 2.5 1 2	1	.60	.50	.60	.50	.30	.40	.85	.85	1.85	1.80	1.80	9	7	3	7	7	10	2	2	1.50	3.94	488.1
	2	.80	.50	.50	.55	.30	.40	.85	.85	1.90	1.80	1.80	9	7	3	7	7	10	2	2	1.68	3.94	494.4
	3	.80	.45	.50	.65	.30	.40	.90	.90	1.95	1.80	1.80	9	7	3	7	7	10	2	2	1.76	3.94	496.1
3 3.5 1 2	1	.70	.50	.50	.50	.35	.40	.85	.85	1.85	1.95	1.95	10	7	4	5	7	10	2	3	1.55	4.56	522.5
	2	.70	.50	.50	.55	.35	.40	.85	.85	1.90	1.95	1.95	10	7	4	5	7	10	2	2	1.63	4.56	516.1
	3	.90	.50	.60	.60	.35	.45	.90	.90	1.90	1.95	1.95	10	7	4	5	7	10	2	3	2.04	4.56	545.0
3 4.0 1 2	1	.70	.50	.50	.50	.35	.40	.85	.85	1.85	2.15	2.20	10	7	4	7	9	10	2	3	1.55	4.56	576.0
	2	.70	.50	.50	.55	.35	.40	.85	.85	1.90	2.15	2.20	10	7	4	7	9	10	2	3	1.63	4.56	578.8
	3	.90	.50	.60	.55	.35	.45	.90	.85	1.90	2.15	2.20	10	7	4	7	9	10	2	3	2.15	4.56	610.0
3 4.5 1 2	1	.60	.50	.50	.50	.40	.45	.90	.85	1.90	2.35	2.35	10	7	5	5	9	10	2	3	1.50	4.96	588.6
	2	.70	.50	.50	.50	.40	.45	.90	.85	1.90	2.35	2.35	10	7	5	5	9	10	2	3	1.60	4.96	594.8
	3	1.00	.50	.90	.50	.40	.45	.90	.85	1.90	2.35	2.35	10	7	5	5	9	10	2	4	2.30	4.96	646.0

LH = 4,00
LV = 4,50

PORTICO TIPO 3

VALORES COMUNES AL TIPO 3 DIST. JUNTAS: 15.0

L8 = .35 TIPOS ARMADURA 10= 4 #M= 3 #I= 3 #U= 5

CARACT. GEOTECNICAS T HT TI	DIMENSIONES								LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA							MEDICIONES POR M						
	VI	EZI	VE	EZE	EP	EO	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	M-Z	M-A	ACERO
1	.50	.50	.50	.50	.35	.40	.40	.40	.85	.20	.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.45	5.03	496.6	
2	.50	.50	.50	.50	.35	.40	.40	.40	.85	.20	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.55	5.03	502.1	
3	.50	.50	.60	.60	.35	.40	.40	.45	.90	.20	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.82	5.03	511.4	
4	1.00	.50	.80	.50	.35	.40	.40	.40	.85	.20	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	2.15	5.03	533.6	
1	.60	.50	.50	.50	.35	.40	.40	.40	.85	.20	2.00	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.45	5.03	545.9	
2	.70	.50	.50	.50	.35	.40	.40	.40	.85	.20	2.00	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.55	5.03	551.1	
3	.90	.50	.60	.55	.35	.40	.40	.40	.85	.20	2.00	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.94	5.03	576.6	
1	.60	.50	.50	.50	.35	.40	.40	.40	.85	.20	2.20	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	1.45	5.03	595.6	
2	.70	.50	.50	.50	.35	.40	.40	.40	.85	.20	2.20	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	1.55	5.03	601.8	
3	.90	.50	.80	.50	.35	.40	.40	.40	.85	.20	2.20	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	5.03	643.6
1	.60	.50	.50	.50	.40	.50	.40	.40	.95	.25	2.30	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	1.50	6.00	640.9	
2	.80	.50	.50	.50	.40	.50	.40	.40	.95	.25	2.30	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	1.70	6.00	666.8	
1	4.0	1.2	1	2	3	4																							
1	4.5	1	2	1	2	3	4																						
1	.5	1	2																										
2	.5	1	2																										
3	.90	.45	.60	.65	.35	.40	.35	.45	.90	.20	1.55	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.92	5.03	610.3	
4	1.00	.50	.80	.65	.35	.40	.40	.45	.90	.20	1.55	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	2.59	5.03	560.5	
1	.70	.50	.50	.50	.35	.40	.40	.40	.85	.25	1.90	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.55	5.03	595.3	
2	.80	.50	.50	.55	.35	.40	.40	.40	.85	.25	1.90	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.73	5.03	602.3	
3	.90	.45	.50	.65	.35	.40	.35	.45	1.05	.25	1.90	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.92	5.03	610.3	
1	.70	.50	.50	.50	.35	.40	.40	.40	.95	.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	1.55	5.03	666.7	
2	.80	.50	.50	.55	.35	.40	.40	.40	.95	.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	1.73	5.03	674.2	
3	1.00	.45	.60	.60	.35	.40	.35	.45	1.00	.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.05	5.03	691.8	
1	.70	.50	.50	.50	.35	.45	.40	.40	.95	.25	2.25	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	1.55	5.26	723.3	
2	.90	.50	.50	.55	.35	.45	.40	.40	.95	.25	2.25	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	1.84	5.26	752.7	
1	.70	.50	.50	.50	.40	.50	.40	.40	.95	.25	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	1.60	6.00	749.5	
2	.90	.50	.50	.50	.40	.50	.40	.40	.95	.25	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	1.80	6.00	763.2	
1	.60	.50	.80	.55	.35	.40	.40	.40	1.00	.50	1.50	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	2.05	5.03	520.4	
2	.90	.65	.80	.65	.35	.40	.35	.45	1.00	.50	1.50	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	2.26	5.03	525.7	
3	.90	.40	.90	.70	.35	.40	.35	.50	1.00	.50	1.50	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	2.37	5.03	530.2	
1	.90	.50	.50	.55	.35	.40	.40	.40	1.00	.50	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.84	5.03	615.0	
2	1.00	.40	.50	.60	.35	.40	.35	.45	1.00	.50	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.85	5.03	620.7	
3	1.00	.40	.60	.70	.35	.40	.35	.50	1.05	.50	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.15	5.03	629.6	
1	.80	.50	.60	.55	.35	.40	.40	.40	1.00	.50	2.10	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	1.84	5.03	691.2	

● - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO.

DIRECCION GENERAL DE CARRETERAS

COLECCION DE PORTICOS P 8

VALORES COMUNES A LA TIPO 3		PORTICO TIPO 3										LH = 4,00		LV = 4,50											
LA= 6,35		TIPOS ARMADURA: #D= 4 #E= 3 #F= 3 #G= 5		DIST. JUNTAS: 15,0																					
CARACT. GEOTECNICAS	TIPO	VI	CZ	VE	EP	ED	LONGITUDES DE ARMADURAS					TIPOS DE ARMADURA					MEDICIONES POR M								
T	MY	TI	TC				L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M-A	ACEHO	
3	2,5	1	2	1,00	.40	.50	.60	.35	.45	1,00	.90	2,40	2,10	2,30	7	7	6	10	9	10	2	5	1,85	5,03	710,7
				1,00	.40	.70	.35	.35	.90	1,00	.95	2,45	2,10	2,30	7	7	6	10	9	10	2	4	2,26	5,03	711,0
3	3,5	1	2	.80	.50	.50	.45	.40	.40	1,00	.85	2,60	2,30	2,40	6	7	6	9	9	10	2	5	1,79	5,76	720,7
				.90	.45	.50	.40	.35	.45	1,00	.90	2,60	2,30	2,40	6	7	6	9	9	10	2	5	1,89	5,76	726,9
3	4,0	1	2	.80	.50	.50	.40	.40	.40	.95	.85	2,40	2,30	2,40	9	7	6	10	9	10	2	5	1,70	6,00	745,5
				1,00	.45	.50	.40	.35	.45	1,00	.90	2,50	2,30	2,40	9	7	6	10	9	10	2	5	2,00	6,00	762,0
3	4,5	1	2	.80	.50	.50	.40	.40	.40	.95	.85	2,45	2,35	2,45	10	7	7	10	9	10	2	5	1,70	6,00	786,7
				1,00	.45	.50	.40	.35	.45	1,00	.90	2,50	2,35	2,45	10	7	7	10	9	10	2	5	2,00	6,00	803,2

LH = 4,00

LV = 5,00

PORTICO TIPO 4

VALORES COMUNES AL TIPO 4
LH = .35 TIPOS ARMADURA: #M=3 #I=5 #J=6 DIST. JUNTASI 16,5

CARACT. GEOTECHNICAS		DIMENSIONES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M											
T	HT	TI	TC	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#H	#I	#L	M-Z	M-A	ACERO
1	.5	1	2	.70	.50	.50	.35	.40	.40	.40	.95	.85	2.65	1.65	1.75	1.75	7	7	5	9	4	9	2	3	1.55	5.38	612.1	
		2		.80	.50	.50	.35	.40	.40	.40	1.00	.85	2.70	1.65	1.75	1.75	7	7	5	9	4	9	2	3	1.73	5.38	619.5	
		3		1.00	.45	.50	.60	.35	.40	.35	1.00	.90	2.70	1.65	1.75	1.75	7	7	5	9	4	9	2	3	1.94	5.38	631.1	
1	1.5	1	2	.70	.50	.50	.35	.40	.40	.40	.95	.85	2.65	2.05	2.00	2.00	7	7	5	9	7	10	2	3	1.55	5.38	661.7	
		2		.80	.50	.50	.35	.40	.40	.40	.95	.85	2.65	2.05	2.00	2.00	7	7	5	9	7	10	2	4	1.65	5.38	679.7	
		3		1.00	.45	.50	.55	.35	.40	.35	1.00	.85	2.65	2.05	2.00	2.00	7	7	5	9	7	10	2	4	1.85	5.38	689.9	
1	2.5	1	2	.70	.50	.50	.35	.45	.40	.40	.95	.85	2.60	2.15	2.10	2.10	9	7	6	9	7	10	2	4	1.55	5.61	710.7	
		2		.90	.50	.50	.35	.45	.40	.40	.95	.85	2.60	2.15	2.10	2.10	9	7	6	9	7	10	2	5	1.75	5.61	739.1	
		3		1.00	.50	.70	.50	.35	.45	.40	.95	.85	2.60	2.15	2.10	2.10	9	7	6	9	7	10	2	5	2.05	5.61	758.6	
1	3.5	1	2	.70	.50	.50	.50	.40	.50	.40	.95	.85	2.65	2.35	2.20	2.20	10	7	5	9	7	11	2	5	1.60	6.40	766.8	
		2		.90	.50	.50	.50	.40	.50	.40	.95	.85	2.65	2.35	2.20	2.20	10	7	5	9	7	11	2	5	1.80	6.40	783.2	
1	4.0	1	2	1.00	.40	.70	.65	.35	.40	.40	.95	.85	2.60	1.70	2.00	2.00	1	7	6	10	5	9	2	4	1.85	5.38	837.5	
		2		.90	.50	.70	.60	.35	.40	.40	1.00	.90	2.65	1.70	2.00	2.00	1	7	6	10	5	9	2	3	2.15	5.38	832.7	
		3		1.00	.40	.70	.65	.35	.40	.35	1.00	.90	2.65	1.70	2.00	2.00	1	7	6	10	5	9	2	4	2.15	5.38	848.3	
2	1.5	1	2	.80	.50	.50	.35	.40	.45	.40	.95	.85	2.60	1.95	2.10	2.10	7	7	6	10	7	10	2	4	1.65	5.38	707.8	
		2		.90	.45	.50	.35	.40	.45	.40	1.00	.85	2.60	1.95	2.10	2.10	7	7	6	10	7	10	2	5	1.75	5.38	727.8	
		3		1.00	.45	.70	.65	.35	.40	.35	1.00	.90	2.65	1.95	2.10	2.10	7	7	6	10	7	10	2	4	2.26	5.38	732.9	
2	2.5	1	2	.80	.50	.50	.35	.40	.45	.40	.95	.85	2.55	2.25	2.35	2.35	8	7	7	10	9	10	2	5	1.65	5.38	803.5	
		2		.90	.45	.50	.35	.40	.45	.40	1.00	.85	2.60	2.25	2.35	2.35	8	7	7	10	9	10	2	5	1.75	5.38	810.1	
		3		1.00	.50	1.00	.55	.35	.40	.40	1.00	.85	2.60	2.25	2.35	2.35	8	7	7	10	9	10	2	5	2.47	5.38	840.3	
2	3.5	1	2	.80	.50	.50	.35	.40	.45	.40	.95	.85	2.60	2.45	2.45	2.45	9	7	7	10	9	11	2	5	1.70	6.16	855.5	
		2		1.00	.50	.50	.60	.40	.45	.40	1.05	.90	2.70	2.45	2.45	2.45	9	7	7	10	9	11	2	5	2.09	6.16	875.7	
2	4.0	1	2	.80	.50	.50	.35	.40	.50	.40	.95	.85	2.60	2.45	2.50	2.50	10	7	7	10	9	11	2	5	1.70	6.40	876.8	
		2		1.00	.50	.50	.55	.40	.50	.40	1.00	.85	2.65	2.45	2.50	2.50	10	7	7	10	9	11	2	5	2.00	6.40	893.5	
2	4.5	1	2	1.00	.40	1.00	.75	.35	.40	.40	.95	.85	3.10	1.70	2.15	2.15	1	7	7	11	7	8	2	4	2.05	5.38	716.3	
		2		.90	.45	1.00	.65	.35	.40	.35	1.00	.90	3.15	1.70	2.15	2.15	1	7	7	11	7	8	2	4	2.47	5.38	727.6	
		3		1.00	.40	1.00	.75	.35	.40	.35	1.00	.95	3.20	1.70	2.15	2.15	1	7	7	11	7	8	2	4	2.70	5.38	734.6	
3	1.5	1	2	.90	.50	.70	.55	.38	.40	.40	1.00	.85	3.10	1.85	2.20	2.20	7	7	7	11	7	10	2	5	2.05	5.38	800.0	
		2		1.00	.45	.70	.65	.35	.40	.35	1.00	.90	3.15	1.85	2.20	2.20	7	7	7	11	7	10	2	5	2.26	5.38	808.0	
		3		1.00	.45	1.00	.70	.35	.40	.35	1.00	.95	3.15	1.85	2.20	2.20	7	7	7	11	7	10	2	4	2.70	5.38	812.2	
3	2.5	1	2	1.00	.50	.50	.60	.40	.40	.40	1.05	.90	2.75	2.25	2.45	2.45	7	7	7	10	9	10	2	5	2.09	5.92	828.9	
		2		1.00	.45	.60	.65	.40	.40	.35	1.00	.90	2.75	2.25	2.45	2.45	7	7	7	10	9	10	2	5	2.20	5.92	832.1	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P B

LH=4,00
LV=5,00

PORTICO TIPO 4

VALORES COMUNES AL TIPO A
L6= .35 TIPOS ARMADURA #D= 4 #H= 3 #I= 5 #J= 6 DIST. JUNTAS: 16.5

CARACT. GEOTECHNICAS T MT TI TC	DIMENSIONES			FD	LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA					MEDICIONES POR M								
	VI	EZI	VE		EZE	EP	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	H-Z	H-A	ACERO
3 3.5 1 2	1.00	.50	.50	.60	.40	.45	.40	.45	1.05	.90	3.15	2.30	2.55	A	7	7	11	9	10	2	5	2.09	6.16	882.3
	1.00	.45	.70	.60	.60	.45	.35	.45	1.00	.90	3.10	2.30	2.55	B	7	7	11	9	10	2	5	2.21	6.16	889.9
3 4.0 1 2	.90	.50	.50	.55	.40	.50	.40	.40	1.00	.85	3.10	2.35	2.70	9	7	7	11	9	10	2	5	1.89	6.40	890.7
	1.00	.50	1.00	.50	.40	.50	.40	.40	.95	.85	3.05	2.35	2.70	9	7	7	11	9	10	2	5	2.40	6.40	927.1
3 4.5 1 2	.90	.50	.50	.55	.40	.50	.40	.40	1.20	.85	3.10	2.35	2.70	10	7	8	11	9	10	2	5	1.89	6.40	940.9

PORTICO TIPO 5

V.A.L.O.R.E.S. COMUNES AL TIPO 5
 LH= 5,00
 LV= 2,50

LB= .49 TIPOS ARMADURA #0= 7 #1= 3 #2= 3 #3= 3 #4= 3 #5= 3 #6= 3 #7= 3 #8= 3 #9= 3 #10= 3 #11= 3 #12= 3 #13= 3 #14= 3 #15= 3 #16= 3 #17= 3 #18= 3 #19= 3 #20= 3 #21= 3 #22= 3 #23= 3 #24= 3 #25= 3 #26= 3 #27= 3 #28= 3 #29= 3 #30= 3 #31= 3 #32= 3 #33= 3 #34= 3 #35= 3 #36= 3 #37= 3 #38= 3 #39= 3 #40= 3 #41= 3 #42= 3 #43= 3 #44= 3 #45= 3 #46= 3 #47= 3 #48= 3 #49= 3 #50= 3 #51= 3 #52= 3 #53= 3 #54= 3 #55= 3 #56= 3 #57= 3 #58= 3 #59= 3 #60= 3 #61= 3 #62= 3 #63= 3 #64= 3 #65= 3 #66= 3 #67= 3 #68= 3 #69= 3 #70= 3 #71= 3 #72= 3 #73= 3 #74= 3 #75= 3 #76= 3 #77= 3 #78= 3 #79= 3 #80= 3 #81= 3 #82= 3 #83= 3 #84= 3 #85= 3 #86= 3 #87= 3 #88= 3 #89= 3 #90= 3 #91= 3 #92= 3 #93= 3 #94= 3 #95= 3 #96= 3 #97= 3 #98= 3 #99= 3 #100= 3

CAPACIT. GEOTECNICAS T MT TI TC	DIMENSIONES										LONGITUDES DE ARMADURAS										TIPOS DE ARMADURA										MEDICIONES POP M	
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	1A	1B	1C	1E	1F	1G	1H	1I	1J	1K	1L	M-Z	M-A	ACERO					
1 .5 1 2	.50	.50	.50	.50	.30	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.30	4.30	383.5									
1 1.5 1 2	.50	.50	.60	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.40	4.30	386.6									
1 2.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.70	4.30	395.8									
1 3.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.35	4.60	447.7									
1 3.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.45	4.60	451.2									
1 4.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.55	4.60	454.3									
2 .5 1 2	.50	.50	.50	.50	.30	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.30	4.30	383.5									
2 1.5 1 2	.50	.50	.60	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.40	4.30	386.6									
2 2.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.70	4.30	395.8									
2 3.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.35	4.60	447.7									
2 3.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.45	4.60	451.2									
2 4.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.55	4.60	454.3									
3 .5 1 2	.50	.50	.50	.50	.30	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.30	4.30	383.5									
3 1.5 1 2	.50	.50	.60	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.40	4.30	386.6									
3 2.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.70	4.30	395.8									
3 3.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.35	4.60	447.7									
3 3.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.45	4.60	451.2									
3 4.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.55	4.60	454.3									
4 .5 1 2	.50	.50	.50	.50	.30	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.30	4.30	383.5									
4 1.5 1 2	.50	.50	.60	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.40	4.30	386.6									
4 2.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.70	4.30	395.8									
4 3.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.35	4.60	447.7									
4 3.5 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.45	4.60	451.2									
4 4.0 1 2	.50	.50	.80	.50	.35	.50	.40	.45	.45	.95	.00	.00	7	1	3	1	1	9	2	2	1.55	4.60	454.3									

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 10

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE MAN UTILIZADO

VALORES COMUNES AL TIPO 5		PORTICO TIPO 5										LH= 5.00 LV= 2.50													
L8= .49 TIPOS ARMADURA: #D= 7 #H= 3 #I= 3 #J= 3 DIST. JUNTAS: 9.5		DIMENSIONES		LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA				MEDICIONES POR M											
CARACT. GEOTECNICAS	TC	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	LC	L7	#A	#B	#C	#E	#F	#K	#L	M-Z	M-A	ACERO	
3	1.5	1	.60	.50	1.10	.50	.35	.50	.40	.85	.95	.00	1.40	1.25	7	1	4	1	4	10	2	2	2.05	4.60	458.8
3	2.5	1	.50	.50	.50	.50	.35	.55	.40	.85	.95	.00	1.50	1.25	10	1	4	1	4	10	2	2	1.35	4.89	474.3
3	3.0	1	.50	.50	.80	.50	.35	.55	.40	.85	.95	.00	1.50	1.25	10	1	4	1	4	10	2	2	1.65	4.89	488.3
3	3.0	2	.50	.50	.50	.50	.40	.55	.40	.95	.95	.00	1.75	1.70	10	7	5	1	5	10	2	2	1.40	5.19	533.7
3	3.0	3	.50	.50	.70	.50	.40	.55	.40	.95	.95	.00	1.75	1.70	10	7	5	1	5	10	2	2	1.60	5.19	546.2
3	3.5	1	.50	.50	.90	.50	.40	.55	.40	.95	.95	.00	1.75	1.70	10	7	5	1	5	10	2	2	1.80	5.19	558.6
3	3.5	2	.50	.50	.50	.50	.40	.55	.40	.95	.95	.00	1.80	1.75	10	7	5	1	7	11	2	2	1.40	5.19	573.3
3	3.5	3	.60	.50	1.00	.50	.40	.55	.40	.95	.95	.00	1.80	1.75	10	7	5	1	7	11	2	2	1.60	5.19	585.8
3	4.0	1	.50	.50	.50	.50	.45	.55	.40	.95	.95	.00	1.95	2.00	10	7	6	1	7	10	2	2	1.45	5.50	574.3
3	4.0	2	.50	.50	.80	.50	.45	.55	.40	.95	.95	.00	1.95	2.00	10	7	6	1	7	10	2	3	1.75	5.50	599.0
3	4.0	3	.60	.50	1.20	.50	.45	.55	.40	.95	.95	.00	1.95	2.00	10	7	6	1	7	10	2	4	2.25	5.50	637.6

PORTICO TIPO 6

L.H. = 5.00
LV = 3.50

VALORES COMUNES AL TIPO 6
TIPOS ARMADURA 7 MM 4 RI= 2 DIST. JUNTAS 12.5

CARACT. GEOTECHNICAS T WT TI	DIMENSIONES										LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA						MEDICIONES POR M ACERO		
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	MA	MB	MC	ME	MF	MG	MH	MI	MJ	MK	ML	M-Z	M-A
1 .5 1 2	.50	.50	.50	.50	.30	.50	.40	.40	.85	.95	.00	.00	.00	7	1	3	1	1	10	2	2	2	2	1.30	4.90	462.0
1 .60 1 2	.60	.50	.50	.50	.30	.50	.40	.40	.85	.95	.00	.00	.00	7	1	3	1	1	10	2	2	2	1.40	4.90	444.8	
1 .80 1 2	.80	.50	.90	.50	.30	.50	.40	.40	.85	.95	.00	.00	.00	7	1	3	1	1	10	2	2	2	2.00	4.90	461.7	
1 1.5 1 2	.50	.50	.50	.50	.35	.55	.40	.40	.85	.95	.00	1.50	1.10	6	1	4	1	4	11	2	2	2	1.35	5.58	510.6	
1 .60 1 2	.60	.50	.70	.50	.35	.55	.40	.40	.85	.95	.00	1.50	1.10	6	1	4	1	4	11	2	2	2	1.65	5.58	520.4	
1 2.5 1 2	.50	.50	.50	.50	.40	.55	.40	.40	.95	.95	.00	1.90	1.70	10	1	5	1	5	11	2	2	2	1.40	5.99	565.6	
1 .50 1 2	.50	.50	.60	.50	.40	.55	.40	.40	.95	.95	.00	1.90	1.70	10	1	5	1	5	11	2	2	2	1.50	5.99	570.0	
1 .70 1 2	.70	.50	1.10	.50	.40	.55	.40	.40	.95	.95	.00	1.90	1.70	10	1	5	1	5	11	2	2	2	2.20	5.99	600.8	
1 3.0 1 2	.50	.50	.50	.50	.45	.55	.40	.40	.95	.95	.00	2.10	1.95	10	1	6	1	7	11	2	2	2	1.45	6.40	608.4	
1 .50 1 2	.50	.50	.60	.50	.45	.55	.40	.40	.95	.95	.00	2.10	1.95	10	1	6	1	7	11	2	2	2	1.75	6.40	621.6	
1 .80 1 2	.80	.55	1.30	.55	.45	.55	.40	.40	1.00	1.00	.00	2.10	1.95	10	1	6	1	7	11	2	3	3	2.80	6.40	666.5	
1 3.5 1 2	.50	.50	.50	.50	.45	.55	.40	.40	.95	.95	.00	2.20	2.00	10	7	6	1	7	11	2	2	2	1.45	6.40	645.1	
1 .60 1 2	.60	.50	.90	.50	.45	.55	.40	.40	.95	.95	.00	2.20	2.00	10	7	6	1	7	11	2	3	3	1.95	6.40	683.2	
1 4.0 1 2	.50	.50	.50	.50	.45	.55	.40	.40	.95	.95	.00	2.20	2.00	10	7	6	1	7	11	2	2	2	1.35	5.30	435.8	
2 .5 1 2	.50	.50	.50	.50	.35	.50	.40	.40	.85	.95	.00	.00	.00	7	1	4	1	1	9	2	2	2	1.45	5.30	438.6	
2 .60 1 2	.60	.50	.50	.50	.35	.50	.40	.40	.85	.95	.00	.00	.00	7	1	4	1	1	9	2	2	2	1.63	5.30	442.2	
2 .70 1 2	.70	.50	.50	.50	.35	.50	.40	.40	.85	1.00	.00	.00	.00	7	1	4	1	1	9	2	2	2	2.15	5.30	458.3	
2 .90 1 2	.90	.50	.90	.50	.35	.50	.40	.40	.85	.95	.00	.00	.00	7	1	4	1	1	9	2	2	2	2.15	5.30	458.3	
2 1.5 1 2	.50	.50	.50	.50	.35	.50	.40	.40	.85	.95	.00	1.55	1.25	7	1	4	1	4	11	2	2	2	1.35	5.30	499.2	
2 .70 1 2	.70	.50	.70	.50	.35	.50	.40	.40	.85	.95	.00	1.55	1.25	7	1	4	1	4	11	2	2	2	1.75	5.30	510.9	
2 2.5 1 2	.50	.50	.50	.50	.35	.55	.40	.40	.85	.95	.00	1.60	1.30	10	1	4	1	4	11	2	2	2	1.35	5.58	536.8	
2 .60 1 2	.60	.50	.50	.50	.35	.55	.40	.40	.85	.95	.00	1.60	1.30	10	1	4	1	4	11	2	2	2	1.45	5.58	541.1	
2 .70 1 2	.70	.50	.60	.50	.35	.55	.40	.40	.85	.95	.00	1.60	1.30	10	1	4	1	4	11	2	2	2	1.85	5.58	558.7	
2 3.0 1 2	.50	.50	.50	.50	.40	.55	.40	.40	.95	.95	.00	1.95	1.75	10	1	5	1	7	11	2	2	2	1.40	5.99	586.2	
2 .60 1 2	.60	.50	.60	.50	.40	.55	.40	.40	.95	.95	.00	1.95	1.75	10	1	5	1	7	11	2	2	2	1.60	5.99	594.9	
2 .80 1 2	.80	.50	1.00	.50	.40	.55	.40	.40	.95	.95	.00	1.95	1.75	10	1	5	1	7	11	2	2	2	2.20	5.99	621.3	
2 3.5 1 2	.50	.50	.50	.50	.45	.55	.40	.40	.95	.95	.00	2.10	2.00	10	7	6	1	7	11	2	2	2	1.45	6.40	643.5	
2 .60 1 2	.60	.50	.70	.50	.45	.55	.40	.40	.95	.95	.00	2.10	2.00	10	7	6	1	7	11	2	2	2	1.75	6.40	661.4	
2 .80 1 2	.80	.50	1.20	.50	.45	.55	.40	.40	.95	.95	.00	2.10	2.00	10	7	6	1	7	11	2	3	3	2.45	6.40	711.5	
2 4.0 1 2	.50	.50	.50	.50	.35	.50	.40	.40	.95	.95	.00	2.10	2.00	10	7	6	1	7	11	2	2	2	1.45	5.30	458.7	
3 .5 1 2	.60	.50	.50	.50	.35	.50	.40	.40	.85	.95	1.20	1.15	.90	7	1	4	2	2	9	2	2	2	1.45	5.30	464.9	
3 .70 1 2	.70	.50	.50	.60	.35	.50	.40	.40	.90	1.05	1.30	1.15	.90	7	1	4	2	2	9	2	2	2	1.71	5.30	467.0	
3 .80 1 2	.80	.45	.50	.45	.35	.50	.35	.45	.90	1.05	1.30	1.15	.90	7	1	4	2	2	9	2	2	2	1.82	5.30	467.0	
3 1.00 1 2	1.00	.50	.80	.60	.35	.50	.40	.45	.90	1.05	1.30	1.15	.90	7	1	4	2	2	9	2	2	2	2.37	5.30	481.8	
3 1.5 1 2	.60	.50	.50	.50	.35	.50	.40	.40	.85	.95	1.20	1.50	1.25	7	1	4	2	4	10	2	2	2	1.85	5.30	489.9	
3 .70 1 2	.70	.50	.50	.50	.35	.50	.40	.40	.85	.95	1.20	1.50	1.25	7	1	4	2	4	10	2	2	2	1.55	5.30	492.7	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAY UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 12

L8= .40		V.A.L.O.R.E.S. C.O.M.U.N.E.S. A.L. T.I.P.O. 6										LH= 5,00												
TIPOS ARMADURA		DIST. JUNTAS: 12.5										LV= 3,50												
PORTICO TIPO 6																								
CARACT. GEOTECNICAS T MT TI TC	VI	DIMENSIONES			LONGITUDES DE ARMADURAS								TIPOS DE ARMADURA			MEDICIONES POR M								
		EZT	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#H	#C	#E	#F	#G	#K	#L	M-Z	M-A	ACERO
3 1.5 1 2	.70	.50	.50	.60	.35	.50	.40	.45	.90	1.05	1.25	1.50	1.25	7	1	4	2	4	10	2	2	1.71	5.30	495.8
4	1.00	.50	1.10	.50	.35	.50	.40	.40	.45	.95	1.20	1.50	1.25	7	1	4	2	4	10	2	2	2.45	5.30	518.0
3 2.5 1 2	.60	.50	.50	.50	.35	.55	.40	.40	.45	.95	1.25	1.55	1.25	10	1	4	4	4	11	2	2	1.45	5.58	551.4
3	.80	.50	.70	.50	.35	.55	.40	.40	.45	.95	1.25	1.55	1.25	10	1	4	4	4	11	2	2	1.85	5.58	568.4
3 3.0 1 2	.50	.50	.50	.50	.40	.55	.40	.40	.45	.95	.00	1.85	1.70	10	1	5	1	5	11	2	2	1.40	5.99	565.1
2	.60	.50	.50	.50	.40	.55	.40	.40	.45	.95	.00	1.85	1.70	10	1	5	1	5	11	2	2	1.50	5.99	569.5
3	.80	.50	.80	.50	.40	.55	.40	.40	.45	.95	.00	1.85	1.70	10	1	5	1	5	11	2	3	2.00	5.99	599.1
3 3.5 1 2	.50	.50	.50	.50	.40	.55	.40	.40	.45	.95	.00	1.90	1.75	10	7	5	1	7	11	2	2	1.40	5.99	618.8
2	.60	.50	.50	.50	.40	.55	.40	.40	.45	.95	.00	1.90	1.75	10	7	5	1	7	11	2	2	1.50	5.99	624.8
3	.80	.50	.80	.50	.40	.55	.40	.40	.45	.95	.00	1.90	1.75	10	7	5	1	7	11	2	3	2.10	5.99	668.2
3 4.0 1 2	.50	.50	.50	.50	.45	.55	.40	.40	.45	.95	.00	2.05	2.00	10	7	6	1	7	11	2	2	1.45	6.40	642.7
2	.60	.50	.70	.50	.45	.55	.40	.40	.45	.95	.00	2.05	2.00	10	7	6	1	7	11	2	2	1.75	6.40	660.6
3	.90	.50	1.10	.50	.45	.55	.40	.40	.45	.95	.00	2.05	2.00	10	7	6	1	7	11	2	4	2.45	6.40	721.0

PORTICO TIPO 7

VALORES COMUNES AL TIPO 7
 LB= .49 TIPOS ARMADURA: #D= 7 #M= 5 #I= 3 #J= 5 DIST. JUNTAS: 15.5

CARACT. GEOTECNICAS T MT YI	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA							MEDICIONES POR M ACERO				
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	SA	SB	SC	SE	SF	SG	SH	M-2	M-4	
1 .5 1 2	.60	.50	.50	.50	.35	.50	.40	.40	.45	.95	1.55	1.25	.95	7	1	4	4	2	10	2	2	1.45	6.00
2 .70	.50	.50	.50	.35	.50	.50	.40	.40	.45	.95	1.55	1.25	.95	7	1	4	4	2	10	2	2	1.55	6.00
3 .80	.50	.50	.50	.35	.50	.50	.40	.40	.45	.95	1.60	1.25	.95	7	1	4	4	2	10	2	2	1.73	6.00
4 1.10	.50	1.10	.90	.35	.50	.50	.40	.40	.45	.95	1.55	1.25	.95	7	1	4	4	2	10	2	3	2.55	6.00
1 1.5 1 2	.50	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.55	1.55	1.15	8	1	4	4	4	11	2	2	1.35	6.28
2 .70	.50	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.55	1.55	1.15	8	1	4	4	4	11	2	3	1.55	6.28
3 .90	.50	.70	.50	.35	.55	.55	.40	.40	.45	.95	1.55	1.55	1.15	8	1	4	4	4	11	2	3	1.95	6.28
1 2.5 1 2	.50	.50	.50	.40	.55	.55	.40	.40	.45	.95	1.50	2.00	1.75	10	7	5	4	5	12	2	2	1.40	6.79
2 .70	.50	.50	.50	.40	.55	.55	.40	.40	.45	.95	1.50	2.00	1.75	10	7	5	4	5	12	2	3	1.70	6.79
3 1.00	.50	1.10	.50	.40	.55	.55	.40	.40	.45	.95	1.50	2.00	1.75	10	7	5	4	5	12	2	4	2.50	6.79
1 3.0 1 2	.50	.50	.50	.45	.55	.55	.40	.40	.45	.95	1.45	2.20	2.00	10	7	6	4	7	12	2	2	1.45	7.30
2 .70	.50	.70	.50	.45	.55	.55	.40	.40	.45	.95	1.45	2.20	2.00	10	7	6	4	7	12	2	3	1.85	7.30
1 3.5 1 2	.50	.50	.50	.45	.55	.55	.40	.40	.45	.95	1.45	2.30	2.05	10	7	6	4	7	12	2	2	1.45	7.30
2 .80	.50	.80	.40	.45	.55	.55	.40	.40	.45	.95	1.45	2.30	2.05	10	7	6	4	7	12	2	4	2.05	7.30
1 4.0 1 2 1 2 3 4	.70	.50	.50	.35	.50	.50	.40	.40	.45	.95	1.80	1.25	1.00	7	7	4	7	2	10	2	3	1.55	6.00
2 .80	.50	.50	.50	.35	.50	.50	.40	.40	.45	.95	1.80	1.25	1.00	7	7	4	7	2	10	2	3	1.73	6.00
3 .90	.45	.50	.65	.35	.50	.50	.35	.45	.90	1.05	1.90	1.25	1.00	7	7	4	7	2	10	2	3	1.92	6.00
4 1.20	.50	.90	.55	.35	.50	.50	.40	.40	.45	.90	1.85	1.25	1.00	7	7	4	7	2	10	2	3	2.57	6.00
2 1.5 1 2	.70	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.80	1.55	1.20	8	7	4	7	4	11	2	3	1.55	6.28
2 .80	.50	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.80	1.55	1.20	8	7	4	7	4	11	2	3	1.65	6.28
3 1.00	.50	.50	.80	.35	.55	.55	.40	.40	.45	.90	1.90	1.55	1.20	8	7	4	7	4	11	2	3	1.93	6.28
2 2.5 1 2	.70	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.80	1.80	1.55	10	7	4	7	7	12	2	4	1.55	6.28
2 .80	.50	.50	.50	.35	.55	.55	.40	.40	.45	.95	1.80	1.80	1.55	10	7	4	7	7	12	2	4	1.65	6.28
3 1.00	.50	.80	.50	.35	.55	.55	.40	.40	.45	.95	1.80	1.80	1.55	10	7	4	7	7	12	2	5	2.15	6.28
2 3.0 1 2	.60	.50	.50	.40	.55	.55	.40	.40	.45	.95	1.65	2.00	1.80	10	7	5	4	7	12	2	3	1.50	6.79
2 .80	.50	.50	.50	.40	.55	.55	.40	.40	.45	.95	1.65	2.00	1.80	10	7	5	4	7	12	2	4	1.70	6.79
3 1.00	.50	1.00	.50	.40	.55	.55	.40	.40	.45	.95	1.65	2.00	1.80	10	7	5	4	7	12	2	5	2.40	6.79
2 3.5 1 2	.60	.50	.50	.45	.55	.55	.40	.40	.45	.95	1.65	2.20	2.05	10	7	6	4	7	12	2	3	1.55	7.30
2 .80	.50	.60	.50	.45	.55	.55	.40	.40	.45	.95	1.65	2.20	2.05	10	7	6	4	7	12	2	4	1.85	7.30
3 1.10	.55	1.30	.55	.45	.55	.55	.40	.40	.45	1.00	1.70	2.20	2.05	10	7	6	4	7	12	2	5	3.13	7.30
2 4.0 1 2 1 2 3 4	.80	.50	.70	.35	.50	.50	.40	.40	.45	.95	2.10	1.25	1.00	7	7	5	9	2	10	2	4	1.85	6.00
3 .90	.45	.70	.60	.35	.50	.50	.35	.45	1.00	1.05	2.15	1.25	1.00	7	7	5	9	2	10	2	4	2.05	6.00
3 1.00	.40	.70	.70	.35	.50	.50	.40	.40	.45	1.00	1.05	2.20	1.00	7	7	5	9	2	10	2	3	2.26	6.00
4 1.20	.40	.70	.70	.35	.50	.50	.40	.40	.45	1.05	1.10	2.25	1.00	7	7	5	9	2	10	2	4	2.48	6.48
3 1.5 1 2	.90	.50	.50	.35	.55	.55	.40	.40	.45	.95	2.10	1.50	1.20	7	7	5	9	4	10	2	4	1.65	6.28

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P.14

VALORES COMUNES AL TIPO 7		PORTICO TIPO 7											LH=5,00		LV=4,50													
L=749 TIPOS ARMADURA 7 8M=5 #1=3 #J=5 DIST. JUNTAS 15,5																												
CARACT. GEOTECNICAS TIPO	TC	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA					MEDICIONES POR M											
		VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M=Z	M=A	ACEHO			
3	1.5	1	2	2	.90	.50	.30	.60	.35	.55	.40	.45	1.05	1.05	2.15	1.50	1.20	7	7	5	9	4	10	2	4	1.93	6.28	701.0
		2		3	1.00	.40	.50	.65	.35	.55	.35	.45	1.00	1.05	2.15	1.50	1.20	7	7	5	9	4	10	2	4	1.94	6.28	704.2
		4		4	1.20	.50	1.20	.50	.35	.55	.40	.40	.95	.95	2.10	1.40	1.20	7	7	5	9	4	10	2	4	2.75	6.28	748.2
3	2.5	1	2	1	.80	.50	.50	.50	.35	.55	.40	.40	.95	.95	2.10	1.75	1.55	10	7	6	9	7	11	2	5	1.65	6.28	809.0
		2		2	.90	.50	.50	.60	.35	.55	.40	.45	1.05	1.05	2.15	1.75	1.55	10	7	6	9	7	11	2	4	1.93	6.28	799.4
		3		3	1.10	.40	.60	.65	.35	.55	.35	.45	1.00	1.05	2.15	1.75	1.55	10	7	6	9	7	11	2	5	2.15	6.28	830.8
3	3.0	1	2	1	.80	.50	.50	.50	.40	.55	.40	.40	.95	.95	1.90	1.90	1.80	10	7	5	7	7	11	2	5	1.70	6.79	786.8
		2		2	.90	.50	.50	.60	.40	.55	.40	.45	1.00	1.05	2.00	1.90	1.80	10	7	5	7	7	11	2	4	1.98	6.79	784.5
		3		3	1.10	.45	.70	.60	.40	.55	.35	.45	1.00	1.05	1.95	1.90	1.80	10	7	5	7	7	11	2	5	2.31	6.79	823.9
3	3.5	1	2	1	.80	.50	.50	.50	.40	.55	.40	.40	.95	.95	1.95	2.00	1.95	10	7	5	7	7	11	2	5	1.70	6.79	798.0
		2		2	.90	.50	.50	.60	.40	.55	.40	.45	1.00	1.05	2.00	2.00	1.95	10	7	5	7	7	11	2	5	1.98	6.79	802.1
		3		3	1.10	.50	.90	.60	.40	.55	.40	.45	1.00	1.05	2.00	2.00	1.95	10	7	5	7	7	11	2	5	2.64	6.79	843.1
3	4.0	1	2	1	.70	.50	.50	.50	.45	.55	.40	.40	.95	.95	1.95	2.30	2.30	10	7	6	7	9	11	2	5	1.65	7.29	859.7
		2		2	.90	.50	.50	.65	.45	.55	.40	.40	1.00	1.00	2.00	2.30	2.30	10	7	6	7	9	11	2	5	1.94	7.29	875.5
		3		3	1.20	.50	1.10	.50	.45	.55	.40	.40	.95	.95	1.95	2.30	2.30	10	7	6	7	9	11	2	5	2.75	7.29	934.9

LH = 5,00
LV = 5,00

PORTICO TIPO 8

V A L O R E S C O M U N E S A L T I P O 8
TIPOS ARMADURA # 7 # 8 # 5 # 1 # 4 # J # 5 DIST. JUNTAS: 17,0

CARACT. GEOTECNICAS Y MT TI	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA							MEDICIONES POR M					
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	H-7	H-A	ACERO
1 0.5 1 2	.70	.50	.50	.50	.35	.50	.40	.40	.45	.95	1.95	1.35	1.05	7	7	4	7	2	10	2	3	1.55	6.35	668.7
2	.80	.50	.50	.50	.35	.50	.40	.45	.95	1.95	1.35	1.05	7	7	4	7	2	10	2	3	1.65	6.35	674.0	
3	.90	.50	.50	.60	.35	.50	.40	.45	.95	1.95	2.00	1.35	1.05	7	7	4	7	2	10	2	3	1.93	6.35	683.6
4	1.20	.50	1.20	.50	.35	.50	.40	.45	.95	1.95	1.35	1.05	7	7	4	7	2	10	2	4	2.75	6.35	744.1	
1 1.5 1 2	.60	.50	.50	.50	.35	.55	.40	.45	.95	1.95	1.65	1.25	1.25	8	7	5	7	4	11	2	4	1.65	6.63	742.4
2	.80	.50	.50	.50	.35	.55	.40	.45	.95	1.95	1.65	1.25	1.25	8	7	5	7	4	11	2	4	2.05	6.63	765.2
3	1.00	.50	.70	.50	.35	.55	.40	.45	.95	1.95	1.65	1.25	1.25	8	7	5	7	4	11	2	4	2.05	6.63	765.2
1 2.5 1 2	.60	.50	.50	.50	.40	.55	.40	.45	.95	1.90	2.05	1.80	1.80	10	7	3	7	7	12	2	3	1.50	7.19	819.5
2	.80	.50	.50	.50	.40	.55	.40	.45	.95	1.90	2.05	1.80	1.80	10	7	3	7	7	12	2	4	1.70	7.19	846.7
3	1.10	.50	1.10	.50	.40	.55	.40	.45	.95	1.90	2.05	1.80	1.80	10	7	3	7	7	12	2	5	2.60	7.19	925.2
1 3.0 1 2	.60	.50	.50	.50	.45	.55	.40	.45	.95	1.75	2.25	2.00	2.00	10	7	6	4	7	12	2	4	1.55	7.75	849.4
2	.80	.50	.70	.50	.45	.55	.40	.45	.95	1.75	2.25	2.00	2.00	10	7	6	4	7	12	2	4	1.95	7.75	876.8
3	1.10	.50	.70	.50	.45	.55	.40	.45	.95	1.75	2.25	2.00	2.00	10	7	6	4	7	12	2	5	2.15	7.75	912.5
1 4.0 1 2 3 4	.80	.50	.60	.50	.35	.50	.40	.45	.95	2.25	1.30	1.10	1.10	7	7	6	9	2	10	2	4	1.75	6.35	739.2
2	.90	.50	.60	.50	.35	.50	.40	.45	1.00	2.35	1.30	1.10	1.10	7	7	6	9	2	10	2	4	2.04	6.35	750.7
3	1.00	.45	.60	.65	.35	.50	.35	.45	1.05	2.35	1.30	1.10	1.10	7	7	6	9	2	10	2	4	2.14	6.35	755.0
4	1.20	.50	.90	.60	.35	.50	.40	.45	1.00	2.35	1.30	1.10	1.10	7	7	6	9	2	10	2	4	2.70	6.35	782.3
2 1.5 1 2	.80	.50	.50	.50	.35	.55	.40	.45	.95	2.25	1.60	1.30	1.30	8	7	6	9	4	11	2	4	1.65	6.63	778.8
3	.90	.50	.50	.55	.35	.55	.40	.45	1.00	2.25	1.60	1.30	1.30	8	7	6	9	4	11	2	4	1.84	6.63	785.9
4	1.10	.45	.50	.65	.35	.55	.35	.45	1.05	2.35	1.60	1.30	1.30	8	7	6	9	4	11	2	4	2.14	6.63	801.2
2 2.5 1 2	.80	.50	.50	.50	.35	.55	.40	.45	.95	2.25	1.90	1.45	1.45	10	7	6	9	7	12	2	5	1.65	6.63	881.7
3	.90	.50	.50	.55	.35	.55	.40	.45	1.00	2.30	1.90	1.65	1.65	10	7	6	9	7	12	2	5	1.84	6.63	891.2
4	1.10	.50	.80	.55	.35	.55	.40	.45	1.00	2.30	1.90	1.65	1.65	10	7	6	9	7	12	2	5	2.36	6.63	925.4
2 3.0 1 2	.70	.50	.50	.50	.40	.55	.40	.45	.95	2.20	2.05	1.85	1.85	10	7	6	9	7	12	2	5	1.60	7.19	893.5
3	.90	.50	.50	.50	.40	.55	.40	.45	.95	2.20	2.05	1.85	1.85	10	7	6	9	7	12	2	5	1.80	7.19	907.2
4	1.20	.50	1.00	.50	.40	.55	.40	.45	.95	2.20	2.05	1.85	1.85	10	7	6	9	7	12	2	5	2.60	7.19	961.9
2 3.5 1 2	.70	.50	.50	.50	.45	.55	.40	.45	.95	2.05	2.25	2.10	2.10	10	7	6	7	7	12	2	5	1.65	7.75	893.1
3	.90	.50	.50	.50	.45	.55	.40	.45	.95	2.05	2.25	2.10	2.10	10	7	6	7	7	12	2	5	1.95	7.75	913.6
4	1.20	.45	1.30	.65	.35	.55	.40	.45	1.00	2.10	2.25	2.10	2.10	10	7	6	7	7	12	2	5	3.24	7.75	984.2
2 4.0 1 2 3 4	.80	.50	.50	.55	.35	.55	.40	.45	1.00	2.25	1.70	1.50	1.50	7	7	7	10	5	10	2	4	2.05	6.35	808.9
3	.90	.50	.90	.65	.35	.50	.40	.45	1.05	2.30	1.50	1.45	1.45	7	7	7	10	5	10	2	4	2.47	6.35	820.5
4	1.00	.40	.90	.70	.35	.50	.35	.45	1.00	2.30	1.50	1.45	1.45	7	7	7	10	5	10	2	4	2.48	6.35	824.9
3 1.5 1 2	.80	.50	.50	.50	.35	.50	.40	.45	1.00	2.30	1.50	1.45	1.45	7	7	7	10	5	10	2	4	3.03	6.35	849.6
4	1.20	.45	1.20	.65	.35	.50	.35	.45	1.00	2.30	1.50	1.45	1.45	7	7	7	10	5	10	2	4	3.03	6.35	849.6
3 1.5 1 2	.90	.50	.50	.55	.35	.55	.40	.45	1.00	2.25	1.70	1.50	1.50	7	7	7	10	5	10	2	5	1.84	6.63	853.1

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 16

ESTE MODELO FALLA A COPTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

VALORES COMUNES AL TIPO A		PORTICO TIPO 8										MEDICIONES POR M											
LRS 149 TIPOS ARMADURAS 7 8 9 5 M=4 8 9 5		DIST. JUNTAS: 17,0										LH=5,00 LV=5,00											
CARACT. GEOTECNICAS T HT TI TC	DIMENSIONES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						M-Z M-A ACERO							
	VI	EPI	VF	EZE	EP	FO	L1	L2	L3	LA	LB	LC	LD	LE	LF		LG	LH	LI	LJ	LK	LL	
3 1.5 1.2	2	1.00	.45	.50	.65	.35	.55	.45	1.05	2.30	1.70	1.50	7	7	7	10	7	11	2	5	2.03	6.63	861.5
	3	1.20	.35	.40	.65	.35	.55	.45	1.05	2.25	1.70	1.50	7	7	7	10	7	11	2	5	2.15	6.63	873.3
	1	.90	.50	.50	.50	.40	.55	.40	.95	2.30	1.90	1.40	8	7	6	9	7	11	2	5	1.80	7.19	847.0
3 2.5 1.2	2	1.00	.45	.50	.60	.40	.55	.45	1.05	2.40	1.90	1.40	8	7	6	9	7	11	2	5	2.00	7.19	857.4
	3	1.20	.40	.60	.70	.40	.55	.35	1.05	2.45	1.90	1.40	8	7	6	9	7	11	2	5	2.42	7.19	878.9
	1	.90	.50	.50	.50	.40	.55	.40	.95	2.35	1.95	1.40	10	7	7	9	7	11	2	5	1.80	7.19	901.5
3 3.5 1.2	2	1.00	.45	.50	.60	.40	.55	.45	1.05	2.40	1.95	1.40	10	7	7	9	7	11	2	5	2.00	7.19	912.0
	3	1.20	.40	.70	.45	.40	.55	.35	1.05	2.40	1.95	1.40	10	7	7	9	7	11	2	5	2.41	7.19	939.3
	1	.90	.50	.50	.50	.40	.55	.40	.95	2.20	2.20	2.15	10	7	7	10	9	12	2	5	1.80	7.19	990.5
3 4.0 1.2	2	1.00	.45	.50	.60	.40	.55	.45	1.05	2.30	2.20	2.15	10	7	7	10	9	12	2	5	2.10	7.19	1009.7
	3	1.20	.45	.40	.65	.40	.55	.35	1.05	2.30	2.20	2.15	10	7	7	10	9	12	2	5	2.64	7.19	1037.0
	1	.90	.50	.50	.50	.45	.55	.40	.95	2.40	2.30	2.25	10	7	7	9	9	12	2	5	1.75	7.75	995.1
	2	1.00	.45	.50	.60	.45	.55	.45	1.05	2.45	2.30	2.25	10	7	7	9	9	12	2	5	2.05	7.75	1012.4

LH = 6,00
LV = 3,50

PORTICO TIPO 9

VALORES COMUNES AL TIPO 9
TIPOS ARMADURA #D= 7 #H= 5 #I= 4 #J= 3 DIST. JUNTAS: 13.0

CARACT. GEOTÉCNICAS T MT TI TC	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA												MEDICIONES POR M			
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#H	#I	#J	#K	#L	M-Z	M-A	
1 .5 1 2 1 2 3 4	.60	.60	.60	.60	.35	.55	.45	.45	.95	1.05	.00	1.55	1.15	7	1	4	1	4	10	2	2	1.86	6.14	565.1	2.82	6.14	569.7
1 1.5 1 2 1 2 3	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	.00	1.70	1.45	10	1	4	1	5	12	2	2	1.86	6.47	676.6	2.22	6.47	690.6
1 2.5 1 2 1 2 3	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.55	2.40	10	1	6	1	9	12	2	2	1.98	7.29	798.9	2.34	7.29	812.9
1 3.0 1 2 1 2 3	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.55	2.40	10	1	6	1	9	12	2	3	3.06	7.29	849.1	2.04	8.05	875.3
1 3.5 1 2 1 2 3 4	.60	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	.00	2.65	2.55	10	7	7	1	9	12	2	2	2.52	8.05	909.3	2.70	8.05	909.3
2 .5 1 2 1 2 3 4	.60	.60	.60	.60	.35	.55	.45	.45	.95	1.05	.00	1.50	1.15	7	1	4	1	4	10	2	2	1.86	6.14	566.6	2.70	6.14	586.2
2 1.5 1 2 1 2 3	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	.00	1.80	1.45	9	1	4	1	5	12	2	2	1.86	6.47	659.2	2.22	6.47	671.1
2 2.5 1 2 1 2 3	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.45	2.35	9	7	6	1	9	12	2	2	1.98	7.29	817.1	2.22	7.29	828.2
2 3.0 1 2 1 2 3	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.45	2.35	10	1	6	1	9	12	2	3	2.82	7.29	864.2	1.98	7.63	799.4
2 3.5 1 2 1 2 3 4	.60	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	.00	2.65	2.60	10	7	7	1	9	12	2	2	2.04	8.05	876.6	2.22	7.63	808.7
3 .5 1 2 1 2 3 4	.60	.60	.60	.60	.35	.55	.45	.45	.95	1.05	1.30	1.50	1.15	7	1	4	2	4	10	2	2	1.86	6.14	572.7	1.98	6.14	575.7
3 1.5 1 2 1 2 3 4	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.30	1.50	1.15	7	1	4	2	4	10	2	2	2.28	6.14	581.9	2.28	6.14	594.2
3 2.5 1 2 1 2 3 4	.60	.60	.60	.60	.45	.60	.45	.45	.95	1.05	1.30	1.50	1.15	7	1	4	2	4	10	2	2	1.86	6.47	622.9	2.10	6.47	630.8
3 3.0 1 2 1 2 3 4	.60	.60	.60	.60	.45	.60	.45	.45	.95	1.05	1.30	1.50	1.15	7	1	4	2	4	10	2	2	3.42	6.47	674.5	1.92	6.88	766.4
3 3.5 1 2 1 2 3 4	.60	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	1.30	1.50	1.15	10	7	6	1	9	12	2	2	2.52	6.88	789.7	1.98	7.63	834.7

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 18

L0# .49		VALORES COMUNES AL TIPO 9										LH= 6,00		LV= 3,50											
TIPOS ARMADURAS		DIST. JUNTAS 13.0										PORTICO TIPO 9													
CARACT. TIPO	GEOTECNICAS	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA				MEDICIONES POR M									
		VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M-A	ACERO
3	3.0	1	.60	.60	.70	.60	.45	.65	.45	1.05	1.05	.00	2.35	2.30	10	7	6	1	9	12	2	2	2.10	7.63	640.9
		3	.80	.60	1.10	.60	.45	.65	.45	1.05	1.05	.00	2.35	2.30	10	7	6	1	9	12	2	2	2.82	7.63	878.3
3	3.5	1	.60	.60	.60	.60	.50	.65	.45	1.05	1.05	.00	2.55	2.55	10	7	7	1	9	12	2	2	2.04	6.05	872.9
		2	.60	.60	.80	.60	.50	.65	.45	1.05	1.05	.00	2.55	2.55	10	7	7	1	9	12	2	2	2.28	6.05	885.4
		3	.80	.60	1.30	.60	.50	.65	.45	1.05	1.05	.00	2.55	2.55	10	7	7	1	9	12	2	3	3.12	6.05	938.0
3	4.0	1	.60	.60	.60	.60	.50	.65	.45	1.05	1.05	.00	2.60	2.65	10	7	7	1	9	12	2	2	2.04	6.05	876.6
		2	.60	.60	.90	.60	.50	.65	.45	1.05	1.05	.00	2.60	2.65	10	7	7	1	9	12	2	2	2.40	6.05	895.3
		3	1.00	.60	1.50	.60	.50	.65	.45	1.05	1.05	.00	2.60	2.65	10	7	7	1	9	12	2	4	3.60	6.05	977.9

LH= 6.00

LV= 4.50

PORTICO TIPO 10

VALORES COMUNES AL TIPO 10
 TIPO ARMADURA: #D= 7 #M= 5 #I= 4 #J= 4 DIST. JUNTAS: 16.0

CARACT. GEOTECHNICAS T HT TT TC	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA				MEDICIONES POR M ACERO							
	VI	EZT	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M-A
1 .5 1 2	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.50	1.05	7	1	4	4	4	11	2	2	1.86	7.17
	.70	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.50	1.05	7	1	4	4	4	11	2	2	1.98	7.17
	.80	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.50	1.05	7	1	4	4	4	11	2	2	2.10	7.17
	1.10	.60	1.30	.60	.35	.60	.45	.45	.95	1.05	1.60	1.50	1.05	7	1	4	4	4	11	2	2	3.30	7.17
1 1.5 1 2	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.95	1.50	10	1	4	4	4	7	12	2	1.86	7.17
	.70	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.95	1.50	10	1	4	4	4	7	12	2	1.98	7.17
	.90	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.60	1.95	1.50	10	1	4	4	4	7	12	2	2.46	7.17
1 2.5 1 2	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.65	2.40	10	1	6	1	9	12	2	2	1.98	8.19
	.70	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	.00	2.65	2.40	10	1	6	1	9	12	2	2	2.34	8.19
	1.08	.60	1.40	.60	.45	.60	.45	.45	1.05	1.05	.00	2.65	2.40	10	1	6	1	9	12	2	3	3.42	8.19
1 3.0 1 2	.60	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	.00	2.80	2.60	10	7	7	1	9	12	2	2	2.04	9.05
	.78	.60	.90	.60	.50	.65	.45	.45	1.05	1.05	.00	2.80	2.60	10	7	7	1	9	12	2	2	2.52	9.05
1 3.5 1 2 1 2 3 4																							
1 4.0 1 2 1 2 3 4	.70	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.90	1.50	1.05	7	1	4	7	4	11	2	2	1.98	7.17
	.80	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.90	1.50	1.05	7	1	4	7	4	11	2	2	2.10	7.17
	.90	.60	.60	.70	.35	.60	.45	.45	1.00	1.15	1.95	1.50	1.05	7	1	4	7	4	11	2	2	2.41	7.17
	1.20	.60	1.10	.60	.35	.60	.45	.45	.95	1.05	1.90	1.50	1.05	7	1	4	7	4	11	2	3	3.18	7.17
2 1.5 1 2	.60	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.90	1.90	1.55	9	7	4	7	7	12	2	2	1.86	7.17
	.80	.60	.60	.60	.35	.60	.45	.45	.95	1.05	1.90	1.90	1.55	9	7	4	7	7	12	2	3	2.10	7.17
	1.00	.60	.70	.60	.35	.60	.45	.45	.95	1.05	1.90	1.90	1.55	9	7	4	7	7	12	2	3	2.46	7.17
2 2.5 1 2	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	9	7	6	4	9	12	2	2	1.98	8.19
	.80	.60	.70	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	9	7	6	4	9	12	2	3	2.34	8.19
	1.10	.60	1.30	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	9	7	6	4	9	12	2	4	3.06	8.19
2 3.0 1 2	.60	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	10	7	6	4	9	12	2	2	1.98	8.54
	.80	.60	.70	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	10	7	6	4	9	12	2	3	2.34	8.54
	1.10	.60	1.30	.60	.45	.60	.45	.45	1.05	1.05	1.65	2.55	2.40	10	7	6	4	9	12	2	4	3.42	8.54
2 3.5 1 2	.60	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	1.65	2.80	2.65	10	7	7	4	9	12	2	2	2.04	9.05
	.80	.60	.90	.60	.50	.65	.45	.45	1.05	1.05	1.65	2.80	2.65	10	7	7	4	9	12	2	3	2.64	9.05
2 4.0 1 2 1 2 3 4																							
3 .5 1 2	.80	.60	.60	.60	.35	.60	.45	.45	1.05	1.05	2.20	1.45	1.05	7	7	5	9	4	11	2	3	2.10	7.17
	1.08	.55	.60	.78	.35	.60	.40	.40	1.10	1.15	2.25	1.45	1.05	7	7	5	9	4	11	2	3	2.44	7.17
	1.18	.58	.60	.75	.35	.60	.40	.40	1.10	1.15	2.30	1.45	1.05	7	7	5	9	4	11	2	3	2.56	7.17
	1.30	.58	.80	.78	.35	.60	.40	.40	1.10	1.10	2.25	1.45	1.05	7	7	5	9	4	11	2	4	2.94	7.17
3 1.5 1 2	.70	.60	.60	.60	.35	.60	.45	.45	1.05	1.05	2.15	1.85	1.55	9	7	5	9	7	12	2	3	1.98	7.17
	.90	.60	.60	.60	.35	.60	.45	.45	1.10	1.10	2.20	1.85	1.55	9	7	5	9	7	12	2	3	2.31	7.17

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE MAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 20

PORTICO TIPO 10
LH= 6.00
LV= 4.50

V A L O R E S C O M U N E S A L T I P O 10
L8= .49 TIPOS ARMADURA #8= 4 #J= 4 DIST. JUNTAS: 1A.0

CARACT. GEOTECNICAS T HT TI	TC	DIMENSIONES							LONGITUDES DE ARMADURAS								TIPOS DE ARMADURA								MEDICIONES POR M	
		VI	EZ1	VE	EZE	CP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#H	#I	#J	#K	#L	M-2
3	1.5	1.2	1.10	.55	.60	.75	.35	.60	.40	.50	1.15	1.15	2.25	1.85	1.55	9	7	5	9	7	12	2	3	2.66	7.17	877.1
4	1.40	.60	1.50	.60	.35	.60	.45	.45	.45	1.05	1.05	2.15	1.85	1.55	9	7	5	9	7	12	2	4	3.90	7.17	952.9	
1	.70	.60	.60	.60	.60	.60	.45	.45	.45	1.05	1.05	1.95	2.30	2.20	10	7	5	7	9	12	2	3	2.04	7.68	911.9	
2	.90	.60	.60	.60	.40	.60	.45	.45	.45	1.05	1.05	1.95	2.30	2.20	10	7	5	7	9	12	2	4	2.28	7.68	937.1	
3	1.10	.60	.60	.70	.40	.60	.45	.45	.45	1.10	1.15	2.05	2.30	2.20	10	7	5	7	9	12	2	4	2.99	7.68	969.2	
1	.60	.60	.60	.60	.45	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	6	4	9	12	2	3	1.98	8.54	925.5	
2	.90	.60	.60	.60	.45	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	6	4	9	12	2	4	2.34	8.54	958.4	
3	1.10	.60	1.00	.60	.45	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	6	4	9	12	2	5	3.06	8.54	1014.1	
1	.60	.60	.60	.60	.50	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	7	4	9	12	2	3	2.04	9.05	987.7	
2	.90	.60	.70	.60	.50	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	7	4	9	12	2	4	2.52	9.05	1008.2	
3	1.10	.60	1.30	.60	.50	.65	.45	.45	.45	1.05	1.05	1.80	2.45	2.40	10	7	7	4	9	12	2	5	3.48	9.05	1078.3	
1	.70	.60	.60	.60	.50	.65	.45	.45	.45	1.05	1.05	1.85	2.70	2.70	10	7	7	4	9	12	2	4	2.16	9.05	992.8	
2	.90	.60	.80	.60	.50	.65	.45	.45	.45	1.05	1.05	1.85	2.70	2.70	10	7	7	4	9	12	2	4	2.64	9.05	1018.8	
3	1.20	.60	1.50	.60	.50	.65	.45	.45	.45	1.05	1.05	1.85	2.70	2.70	10	7	7	4	9	12	2	5	3.84	9.05	1101.9	

LH= 6.00
LV= 5.00

PORTICO TIPO II

VALORES COMUNES AL TIPO II
TIPO ARMADURA DM=7 SM=5 JM=6 JUNTAS: 17.0

CARACT. Y HT	TIPO	GEOTECNICAS TC	DIMENSIONES				LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA					MEDICIONES POR M							
			VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M-A ACERO	
1	.5	1 2	.60	.60	.60	.35	.60	.45	.45	.95	1.05	2.05	1.55	1.05	7	1	4	7	4	11	2	2	1.86	7.52	712.3	
			.80	.60	.60	.35	.60	.45	.45	.95	1.05	2.05	1.55	1.05	7	1	4	7	4	11	2	2	2.10	7.52	720.4	
			1.00	.60	.60	.35	.60	.45	.45	.95	1.10	2.05	1.55	1.05	7	1	4	7	4	11	2	3	2.44	7.52	739.2	
			1.20	.60	1.50	.60	.35	.60	.45	.45	1.05	2.05	1.55	1.05	7	1	4	7	4	11	2	3	3.66	7.52	782.8	
1	1.5	1 2	.60	.60	.60	.35	.60	.45	.45	.95	1.05	2.05	2.00	1.60	10	7	4	7	7	12	2	2	1.86	7.52	856.6	
			.80	.60	.60	.35	.60	.45	.45	.95	1.05	2.05	2.00	1.60	10	7	4	7	7	12	2	3	2.10	7.52	880.9	
			1.00	.60	.80	.35	.60	.45	.45	.95	1.05	2.05	2.00	1.60	10	7	4	7	7	12	2	4	2.58	7.52	922.0	
1	2.5	1 2	.60	.60	.60	.45	.65	.45	.45	1.05	1.05	1.80	2.60	2.35	10	7	6	4	9	12	2	3	1.98	8.99	966.6	
			.80	.60	.70	.45	.65	.45	.45	1.05	1.05	1.80	2.60	2.35	10	7	6	4	9	12	2	3	2.34	8.99	988.2	
			1.20	.60	1.50	.60	.45	.65	.45	1.05	1.05	1.80	2.60	2.35	10	7	6	4	9	12	2	5	3.78	8.99	1107.9	
1	3.0	1 2	.60	.60	.60	.50	.65	.45	.45	1.05	1.05	1.75	2.85	2.60	10	7	7	4	9	12	2	3	2.04	9.55	1013.2	
			.80	.60	.90	.50	.65	.45	.45	1.05	1.05	1.75	2.85	2.60	10	7	7	4	9	12	2	4	2.76	9.55	1072.5	
1	3.5	1 2 3 4																								
1	4.0	1 2 1 2 3 4																								
2	.5	1 2	.60	.60	.60	.35	.60	.45	.45	1.05	1.05	2.35	1.65	1.30	7	7	5	9	5	11	2	3	2.10	7.52	816.1	
			.90	.60	.60	.35	.60	.45	.45	1.10	1.10	2.40	1.65	1.30	7	7	5	9	5	11	2	3	2.31	7.52	824.2	
			1.10	.60	.70	.35	.60	.45	.45	1.10	1.10	2.40	1.65	1.30	7	7	5	9	5	11	2	4	2.56	7.52	848.6	
			1.40	.60	1.10	.60	.35	.60	.45	1.05	1.05	2.35	1.65	1.30	7	7	5	9	5	11	2	4	3.42	7.52	890.2	
2	1.5	1 2	.70	.60	.60	.35	.60	.45	.45	1.05	1.05	2.35	1.95	1.60	9	7	5	9	7	12	2	3	1.98	7.52	893.1	
			.90	.60	.60	.35	.60	.45	.45	1.05	1.05	2.35	1.95	1.60	9	7	5	9	7	12	2	4	2.22	7.52	918.5	
			1.10	.60	.60	.35	.60	.45	.45	1.15	1.15	2.40	1.95	1.60	9	7	5	9	7	12	2	4	2.67	7.52	937.4	
2	2.5	1 2	.60	.60	.60	.45	.60	.45	.45	1.05	1.05	2.05	2.60	2.45	9	7	6	5	9	12	2	3	1.98	8.64	953.4	
			.90	.60	.60	.45	.60	.45	.45	1.05	1.05	2.05	2.60	2.45	9	7	6	5	9	12	2	4	2.34	8.64	987.7	
			1.10	.60	1.10	.60	.45	.60	.45	1.05	1.05	2.05	2.60	2.45	9	7	6	5	9	12	2	5	3.18	8.64	1051.7	
2	3.0	1 2	.70	.60	.60	.45	.65	.45	.45	1.05	1.05	2.10	2.60	2.45	10	7	6	7	9	12	2	4	2.10	8.98	1008.2	
			.90	.60	.70	.45	.65	.45	.45	1.05	1.05	2.10	2.60	2.45	10	7	6	7	9	12	2	4	2.46	8.98	1029.8	
			1.20	.60	1.30	.60	.45	.65	.45	1.05	1.05	2.10	2.60	2.45	10	7	6	7	9	12	2	5	3.54	8.98	1113.1	
2	3.5	1 2	.70	.60	.60	.50	.65	.45	.45	1.05	1.05	2.00	2.80	2.65	10	7	7	4	9	12	2	4	2.16	9.55	1036.7	
			1.00	.60	.80	.50	.65	.45	.45	1.05	1.05	2.00	2.80	2.65	10	7	7	4	9	12	2	5	2.76	9.55	1099.7	
2	4.0	1 2 1 2 3 4																								
3	.5	1 2	.60	.60	.70	.35	.60	.45	.45	1.05	1.05	2.30	1.70	1.45	7	7	6	10	7	11	2	4	2.34	7.52	884.9	
			1.00	.55	.70	.35	.60	.45	.45	1.10	1.10	2.35	1.70	1.45	7	7	6	10	7	11	2	4	2.56	7.52	893.5	
			1.20	.45	.70	.35	.60	.45	.45	1.10	1.15	2.40	1.70	1.45	7	7	6	10	7	11	2	4	2.70	7.52	905.5	
3	1.5	1 2	.60	.60	.60	.35	.60	.45	.45	1.05	1.05	2.30	1.90	1.65	9	7	7	10	7	12	2	4	2.22	7.52	967.9	
			1.00	.60	.60	.35	.60	.45	.45	1.15	1.15	2.35	1.90	1.65	9	7	7	10	7	12	2	4	2.54	7.52	981.2	
			1.20	.50	.60	.35	.60	.45	.45	1.10	1.15	2.40	1.90	1.65	9	7	7	10	7	12	2	5	2.69	7.52	1006.3	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS

COLECCION DE PORTICOS

P. 22

VALORES COMUNES AL TIPO 11		PORTICO TIPO 11												LH= 6,00		LV= 5,00									
L8= .49 TIPOS ARMADURA: #D= 7 #H= 5 #J= 4 #K= 6 DIST. JUNTAS: 17.0																									
CARACT. GEOTECNICAS T MT TI	TC	DIMENSIONES						LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M					
		VI	EZ	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M-A	ACEPO
3	2.5	1	.80	.60	.60	.60	.40	.60	.45	1.05	1.05	2.40	2.35	2.25	10	7	6	9	9	12	2	4	2.16	8.08	1013.3
		2	1.00	.60	.60	.70	.40	.60	.45	1.10	1.15	2.50	2.35	2.25	10	7	6	9	9	12	2	5	2.60	8.08	1051.6
		3	1.20	.55	.40	.70	.40	.60	.40	1.10	1.10	2.45	2.35	2.25	10	7	6	9	9	12	2	5	3.00	8.08	1076.0
3	3.0	1	.80	.60	.60	.60	.45	.65	.45	1.05	1.05	2.40	2.50	2.45	10	7	6	9	9	12	2	5	2.22	8.98	1057.5
		2	1.00	.60	.60	.65	.45	.65	.45	1.10	1.10	2.40	2.50	2.45	10	7	6	9	9	12	2	5	2.56	8.98	1073.3
		3	1.20	.60	1.00	.65	.45	.65	.45	1.10	1.10	2.40	2.50	2.45	10	7	6	9	9	12	2	5	3.31	8.98	1116.5
3	3.5	1	1.70	.60	.60	.60	.50	.65	.45	1.05	1.05	2.20	2.65	2.65	10	7	7	7	9	12	2	4	2.16	9.55	1051.9
		2	1.00	.60	.60	.60	.50	.65	.45	1.05	1.05	2.20	2.65	2.65	10	7	7	7	9	12	2	5	2.52	9.55	1093.5
		3	1.30	.60	1.20	.60	.50	.65	.45	1.05	1.05	2.20	2.65	2.65	10	7	7	7	9	12	2	5	3.60	9.55	1156.3
3	4.0	1	.60	.60	.60	.60	.50	.65	.45	1.05	1.05	2.25	2.75	2.70	10	7	7	7	9	12	2	5	2.28	9.55	1083.6
		2	1.10	.60	.70	.60	.50	.65	.45	1.05	1.05	2.25	2.75	2.70	10	7	7	7	9	12	2	5	2.76	9.55	1112.4
		3	1.40	.60	1.50	.60	.50	.65	.45	1.05	1.05	2.25	2.75	2.70	10	7	7	7	9	12	2	5	4.08	9.55	1191.6

PORTICO TIPO 12

LH = 7,00

LV = 4,50

VIA LARGAS COMUNES AL TIPO VIZ. L8m 49 TIPOS ARMADURAS DE 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

DIST. PUNTA: 16,5

CARACT. GEOMETRICAS T H T	DIMENSIONES						LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M ACEMO				
	VI	EZI	VE	EZE	EP	FE	L1	L2	L3	L4	L5	L6	L7	#A	#R	#C	#E	#F	#G	#K	#L	H-7	H-A
1 1.5 1 2	.60	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.50	1.80	1.35	7	1	5	4	4	11	2	2	1.92	9.06
1 1.5 1 2	.80	.70	.60	.60	.40	.70	.45	.45	1.05	1.05	1.50	1.80	1.35	7	1	5	4	4	11	2	2	2.20	9.06
1 1.5 1 2	1.20	.70	1.70	.70	.40	.70	.50	.45	1.15	1.15	1.60	1.80	1.35	7	1	5	4	4	11	2	2	4.62	9.06
1 1.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.55	2.30	1.90	10	1	5	5	7	13	2	2	1.92	9.06
1 1.5 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.55	2.30	1.90	10	1	5	5	7	13	2	2	2.04	9.06
1 1.5 1 2	.90	.60	1.10	.60	.60	.70	.45	.45	1.05	1.05	1.55	2.30	1.90	10	1	5	5	7	13	2	2	2.88	9.06
1 2.0 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	2.70	2.40	10	1	6	1	9	13	2	2	1.98	9.97
1 2.0 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	2.70	2.40	10	1	6	1	9	13	2	2	2.34	9.97
1 2.0 1 2	1.00	.60	1.40	.60	.60	.75	.45	.45	1.05	1.05	.60	2.70	2.40	10	1	6	1	9	13	2	3	3.62	9.97
1 2.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	2.95	2.70	10	1	7	1	9	13	2	2	2.04	10.50
1 2.5 1 2	.70	.60	1.00	.60	.60	.75	.45	.45	1.05	1.05	.60	2.95	2.70	10	1	7	1	9	13	2	3	2.66	10.50
1 3.0 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	3.05	2.80	10	7	7	1	10	13	2	2	2.10	11.03
1 3.0 1 2	.70	.60	1.20	.60	.60	.75	.45	.45	1.05	1.05	.60	3.05	2.80	10	7	7	1	10	13	2	4	2.96	11.03
1 3.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.70	1.80	1.35	7	1	5	4	4	11	2	2	1.92	9.06
2 .5 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.70	1.80	1.35	7	1	5	4	4	11	2	2	2.04	9.06
2 .5 1 2	.90	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.70	1.80	1.35	7	1	5	4	4	11	2	2	2.37	9.06
2 1.0 1 2	1.20	.60	1.40	.60	.60	.75	.45	.45	1.05	1.05	1.70	1.80	1.35	7	1	5	4	4	11	2	3	3.60	9.06
2 1.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.65	2.20	1.90	9	1	5	4	7	12	2	2	1.92	9.06
2 1.5 1 2	.80	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.65	2.20	1.90	9	1	5	4	7	12	2	3	2.16	9.06
2 1.5 1 2	.90	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.65	2.20	1.90	9	1	5	4	7	12	2	3	2.64	9.06
2 2.0 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.60	2.45	2.15	10	1	6	4	7	12	2	2	1.98	9.97
2 2.0 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.60	2.45	2.15	10	1	6	4	7	12	2	2	2.10	9.97
2 2.0 1 2	1.00	.60	1.10	.60	.60	.75	.45	.45	1.05	1.05	1.60	2.45	2.15	10	1	6	4	7	12	2	3	3.06	9.97
2 2.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	2.95	2.70	10	1	7	1	9	13	2	2	2.04	10.50
2 2.5 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	2.95	2.70	10	1	7	1	9	13	2	2	2.40	10.50
2 2.5 1 2	1.00	.60	1.40	.60	.60	.75	.45	.45	1.05	1.05	.60	2.95	2.70	10	1	7	1	9	13	2	4	3.48	10.50
2 3.0 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	.60	3.10	2.95	10	7	7	1	9	13	2	2	2.10	11.03
2 3.0 1 2	.70	.60	1.00	.60	.60	.75	.45	.45	1.05	1.05	.60	3.10	2.95	10	7	7	1	9	13	2	3	2.70	11.03
2 3.0 1 2	1.10	.70	1.70	.70	.55	.75	.50	.45	1.15	1.15	.60	3.10	2.95	10	7	7	1	9	13	2	4	4.60	11.03
3 .5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.95	1.75	1.40	7	1	5	7	4	11	2	3	2.04	9.06
3 .5 1 2	.90	.60	.60	.60	.60	.75	.45	.45	1.10	1.10	2.00	1.75	1.40	7	1	5	7	4	11	2	3	2.37	9.06
3 .5 1 2	1.00	.65	.60	.70	.60	.70	.40	.50	1.10	1.15	2.00	1.75	1.40	7	1	5	7	4	11	2	3	2.50	9.06
3 .5 1 2	1.30	.60	1.10	.60	.60	.70	.45	.45	1.05	1.05	1.95	1.75	1.40	7	1	5	7	4	11	2	3	3.36	9.06
3 1.5 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.95	2.15	1.90	9	7	5	7	12	2	2	1.92	9.06	
3 1.5 1 2	.70	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	1.95	2.15	1.90	9	7	5	7	12	2	2	2.04	9.06	

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

VALORES COMUNES AL TIPO 12		PORTICO TIPO 12										LH= 7,00 LV= 4,50																	
L8= .49		TIPOS ARMADURA: #0= 7 #1= 6 #2= 4 #3= 4 DIST. JUNTAS: 16.5																											
CARACT. GEOTECNICAS T MT TI	TC	DIMENSIONES					LONGITUDES DE ARMADURAS					TIPOS DE ARMADURA					MEDICIONES POR M												
		VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	PA	PC	PE	PF	PG	PH	PL	M-Z	M-A	ACERO					
3	1.5	1	2	2	3	.80	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.95	2.15	1.90	9	7	5	5	7	12	2	3	2.16	9.06	914.3
						1.00	.60	.70	.65	.40	.70	.45	.45	1.10	1.10	1.95	2.15	1.90	9	7	5	5	7	12	2	3	2.63	9.06	933.1
3	2.0	1	2	2	3	.70	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	1.95	2.20	1.90	10	1	5	5	7	12	2	3	2.04	9.45	891.5
						.90	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	1.95	2.20	1.90	10	1	5	5	7	12	2	4	2.28	9.45	913.6
						1.10	.60	.80	.60	.40	.75	.45	.45	1.05	1.05	1.95	2.20	1.90	10	1	5	5	7	12	2	4	2.74	9.45	933.3
3	2.5	1	2	2	3	.60	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	1.90	2.60	2.45	10	7	6	5	9	13	2	3	1.98	9.97	1060.7
						.80	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	1.90	2.60	2.45	10	7	6	5	9	13	2	4	2.22	9.97	1087.0
						1.10	.60	1.10	.60	.45	.75	.45	.45	1.05	1.05	1.90	2.60	2.45	10	7	6	5	9	13	2	4	3.18	9.97	1139.1
3	3.0	1	2	2	3	.60	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	1.85	2.85	2.75	10	7	7	5	9	13	2	3	2.04	10.50	1107.2
						.80	.60	.70	.60	.50	.75	.45	.45	1.05	1.05	1.85	2.95	2.75	10	7	7	5	9	13	2	4	2.40	10.50	1141.1
						1.10	.60	1.30	.60	.50	.75	.45	.45	1.05	1.05	1.85	2.85	2.75	10	7	7	5	9	13	2	5	3.48	10.50	1217.8
3	3.5	1	2	2	3	.60	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	1.80	2.90	2.85	10	7	7	5	10	13	2	3	2.10	11.03	1161.9
						.80	.60	.90	.60	.55	.75	.45	.45	1.05	1.05	1.80	2.90	2.85	10	7	7	5	10	13	2	4	2.70	11.03	1210.0
						1.20	.65	1.60	.65	.55	.75	.45	.45	1.10	1.10	1.85	2.90	2.85	10	7	7	5	10	13	2	5	4.35	11.03	1303.1

VALORES COMUNES AL TIPO 13		PORTICO TIPO 13										LM= 7,00 LV= 5,00													
L8= .49 TIPOS ARMADURAS 7 8 9 6 5 4 3 2 1		DIST. JUNTAS: 18,0																							
CARACT. GEOTECNICAS TIPO	TC	DIMENSIONES			LONGITUDES DE ARMADURAS			TIPOS DE ARMADURA			MEDICIONES POR M														
		VI	EZT	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	M-2	M-1	ACELHO					
1	1.5	.60	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.80	1.85	1.40	7	1	5	4	4	12	2	2	1.92	9.46	824.6
		.80	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.80	1.85	1.40	7	1	5	4	4	12	2	2	2.16	9.46	812.0
		.90	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.80	1.85	1.40	7	1	5	4	4	12	2	3	2.28	9.46	846.6
		1.40	.80	2.00	.60	.60	.70	.55	.45	1.25	1.25	2.00	1.85	1.40	7	1	5	4	4	12	2	3	6.08	9.46	926.7
1	1.5	.60	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.90	2.35	1.95	10	1	5	5	7	13	2	2	1.92	9.46	959.3
		.80	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	1.90	2.35	1.95	10	1	5	5	7	13	2	3	2.16	9.46	980.7
		1.00	.60	1.10	.60	.40	.70	.45	.45	1.05	1.05	1.90	2.35	1.95	10	1	5	5	7	13	2	4	3.00	9.46	1031.1
1	2.0	.60	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	1.85	2.70	2.40	10	1	5	5	9	13	2	2	1.98	10.42	1044.1
		.80	.60	.70	.60	.45	.75	.45	.45	1.05	1.05	1.85	2.70	2.40	10	1	6	5	9	13	2	3	2.34	10.42	1071.7
		1.10	.60	1.40	.60	.45	.75	.45	.45	1.05	1.05	1.85	2.70	2.40	10	1	4	5	9	13	2	4	3.54	10.42	1131.1
1	2.5	.60	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	.00	3.00	2.75	10	1	7	1	9	13	2	2	2.04	11.00	1074.6
		.80	.60	.90	.60	.50	.75	.45	.45	1.05	1.05	.00	3.00	2.75	10	1	7	1	9	13	2	3	2.64	11.00	1113.8
1	3.0	.60	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	.00	3.15	2.80	10	7	7	1	10	13	2	2	2.10	11.58	1171.8
		.90	.60	1.20	.60	.55	.75	.45	.45	1.05	1.05	.00	3.15	2.80	10	7	7	1	10	13	2	4	3.18	11.58	1264.5
2	1.5	.70	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	2.10	1.40	1.45	7	1	5	7	4	11	2	3	2.04	9.46	814.6
		.90	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	2.10	1.40	1.45	7	1	5	7	4	11	2	3	2.28	9.46	822.0
		1.10	.60	.90	.60	.40	.70	.45	.45	1.05	1.05	2.10	1.40	1.45	7	1	5	7	4	11	2	3	2.60	9.46	829.4
2	2.0	.60	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	2.00	2.60	2.40	10	7	4	5	9	13	2	3	1.98	10.42	1094.0
		.90	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	2.00	2.60	2.40	10	7	4	5	9	13	2	4	2.34	10.42	1129.3
		1.10	.60	1.10	.60	.45	.75	.45	.45	1.05	1.05	2.00	2.60	2.40	10	7	6	5	9	13	2	4	3.18	10.42	1171.2
2	2.5	.60	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	.95	2.90	2.75	10	7	7	5	9	13	2	3	2.04	11.00	1145.1
		.90	.60	.70	.60	.50	.75	.45	.45	1.05	1.05	.95	2.90	2.75	10	7	7	5	9	13	2	4	2.52	11.00	1188.7
		1.20	.60	1.40	.60	.50	.75	.45	.45	1.05	1.05	.95	2.90	2.75	10	7	7	5	9	13	2	5	3.72	11.00	1277.0
2	3.0	.60	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	1.90	3.15	3.00	10	7	7	5	9	13	2	3	2.10	11.58	1169.5
		.90	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	1.90	3.15	3.00	10	7	7	5	9	13	2	4	2.82	11.58	1227.8
3	1.5	.90	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	2.40	1.90	1.65	7	7	5	9	7	11	2	4	2.28	9.46	931.7
		1.00	.60	.60	.70	.40	.70	.45	.45	1.05	1.05	2.50	1.90	1.65	7	7	5	9	7	11	2	4	2.60	9.46	943.1
		1.20	.60	.60	.75	.40	.70	.45	.45	1.05	1.05	2.50	1.90	1.65	7	7	5	9	7	11	2	4	2.75	9.46	952.0
		1.50	.60	1.10	.70	.40	.70	.45	.45	1.05	1.05	2.50	1.90	1.65	7	7	5	9	7	11	2	4	3.90	9.46	995.7
3	1.5	.90	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	2.40	2.35	2.15	7	7	5	9	9	12	2	4	2.16	9.46	1046.4

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 28

CARACT. GEOTECNICAS T MT TI TC		DIMENSIONES VI E2T VE EZE EP ED		LONGITUDES DE ARMADURAS L1 L2 L3 L4 L5 L6 L7						TIPOS DE ARMADURA #A #B #C #E #F #G #H #I #L						MEDICIONES POR M M-2 M-A ACERO											
<p>V A L O R E S C O M U N E S A L T I P O 13</p> <p>L6 = .60 TIPOS ARMADURA DE 7 #M= 6 #I= 4 #J= 5 DIST. JUNTAS: 14.0</p> <p style="text-align: right;">LH= 7,00 LV= 5,00</p> <p style="text-align: center;">PORTICO TIPO 13</p>																											
3	1.5	1	2	1.00	.60	.60	.60	.40	.70	.45	.45	1.05	1.05	2.40	2.35	2.15	9	7	5	9	9	12	2	5	2.40	9.46	1075.6
				1.20	.55	.70	.70	.40	.70	.40	.50	1.10	1.15	2.45	2.35	2.15	9	7	5	9	9	12	2	5	2.40	9.46	1097.4
3	2.0	1	2	.80	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	2.40	2.35	2.20	10	7	5	9	9	13	2	4	2.16	9.85	1123.7
				1.00	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	2.40	2.35	2.20	10	7	5	9	9	13	2	5	2.40	9.85	1154.3
				1.20	.60	.80	.70	.40	.75	.45	.50	1.10	1.15	2.45	2.35	2.20	10	7	5	9	9	13	2	5	3.12	9.85	1187.4
3	2.5	1	2	.70	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	2.20	2.40	2.55	10	7	6	7	9	13	2	4	2.10	10.42	1133.0
				1.00	.60	.60	.60	.40	.75	.45	.45	1.05	1.05	2.20	2.40	2.55	10	7	6	7	9	13	2	5	2.46	10.42	1172.0
				1.20	.60	1.00	.60	.45	.75	.45	.45	1.05	1.05	2.20	2.60	2.55	10	7	6	7	9	13	2	5	3.14	10.42	1213.0
3	3.0	1	2	.70	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.15	2.85	2.80	10	7	7	7	9	13	2	4	2.16	11.00	1181.6
				1.00	.60	.70	.60	.50	.75	.45	.45	1.05	1.05	2.15	2.85	2.80	10	7	7	7	9	13	2	5	2.64	11.00	1224.9
				1.20	.60	1.30	.60	.50	.75	.45	.45	1.05	1.05	2.15	2.85	2.80	10	7	7	7	9	13	2	5	3.60	11.00	1283.6
3	3.5	1	2	.70	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	2.15	2.95	2.85	10	7	7	5	10	13	2	4	2.22	11.58	1227.6
				1.00	.60	.80	.60	.55	.75	.45	.45	1.05	1.05	2.15	2.95	2.85	10	7	7	5	10	13	2	5	2.82	11.58	1283.4
				1.30	.65	1.60	.65	.55	.75	.45	.45	1.10	1.10	2.20	2.95	2.85	10	7	7	5	10	13	2	5	4.48	11.58	1360.7

LH = 7,00
LV = 5,50

PÓRTICO TIPO 14

VALORES COMUNES AL TIPO 14
L6 = .49 TIPOS ARMADURAS: 7 M=7 N=5 O=6 DIST. JUNTA: 19,5

CARACT. GEOTECNICAS T M N O	VI	Ezi	VE	EZE	FP	EP	COORDINADAS DE ARMADURAS						LT	TIPOS DE ARMADURA						MEDICIONES POR M				
							L1	L2	L3	L4	L5	L6		L7	MA	MB	MC	MD	ME	MF	MG	MH	M1	M2
1 .5 1 2	.60	.60	.60	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.05	1.75	2	7	1	6	5	4	12	2	1.98	10.48	935.0
	.90	.60	.60	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.05	1.75	3	7	1	6	5	4	12	3	2.22	10.48	956.2
	1.00	.60	.70	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.05	1.75	4	7	1	6	5	4	12	4	2.58	10.48	984.6
1 1.5 1 2	.60	.60	.60	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.70	2.45	3	6	7	6	5	9	13	2	1.98	10.48	1145.5
	.90	.60	.60	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.70	2.45	4	6	7	6	5	9	13	2	2.34	10.48	1180.0
	1.10	.60	1.20	.60	.45	.70	.45	.45	1.05	1.05	2.15	2.70	2.45	5	6	7	6	5	9	13	2	3.30	10.48	1228.5
1 2.0 1 2	.70	.60	.60	.60	.45	.75	.45	.45	1.05	1.05	2.15	2.75	2.45	4	10	7	6	7	9	13	2	2.10	10.87	1214.2
	.90	.60	.70	.60	.45	.75	.45	.45	1.05	1.05	2.15	2.75	2.45	5	10	7	6	7	9	13	2	2.46	10.87	1235.8
	1.30	.60	1.50	.60	.45	.75	.45	.45	1.05	1.05	2.15	2.75	2.45	5	10	7	6	7	9	13	2	3.90	10.87	1342.6
1 2.5 1 2	.70	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.10	3.05	2.80	5	10	7	7	5	9	13	2	2.16	11.50	1258.0
	.90	.60	.90	.60	.50	.75	.45	.45	1.05	1.05	2.10	3.05	2.80	5	10	7	7	5	9	13	2	2.75	11.50	1316.0
	1.00	.60	1.10	.60	.55	.75	.45	.45	1.05	1.05	2.05	3.20	2.85	5	10	7	7	5	10	13	2	2.10	12.12	1292.5
1 3.0 1 2	.60	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	2.05	3.45	3.10	5	10	7	7	5	10	13	2	3.18	12.12	1400.0
	.90	.60	.60	.60	.60	.75	.45	.45	1.05	1.05	2.05	3.45	3.10	5	10	7	7	5	10	13	2	2.16	12.75	1321.5
	1.50	.70	1.70	.70	.65	.75	.45	.45	1.05	1.05	2.05	3.45	3.10	5	10	7	7	5	10	13	2	3.60	12.75	1453.6
2 .5 1 2	.80	.60	.60	.60	.65	.70	.45	.45	1.05	1.05	2.35	2.10	1.95	4	7	7	6	7	5	11	2	2.22	10.48	992.6
	1.00	.60	.60	.60	.65	.70	.45	.45	1.05	1.05	2.35	2.10	1.95	4	7	7	6	7	5	11	2	2.46	10.48	1006.9
	1.10	.55	.60	.60	.65	.70	.45	.45	1.10	1.10	2.35	2.10	1.95	4	7	7	6	7	5	11	2	2.58	10.48	1012.3
	1.50	.70	1.70	.70	.65	.75	.45	.45	1.15	1.15	2.45	2.10	1.95	4	7	7	6	7	5	11	2	5.11	10.48	1104.4
2 1.5 1 2	.70	.60	.60	.60	.65	.70	.45	.45	1.05	1.05	2.30	2.60	2.45	5	6	7	6	7	9	12	2	2.10	10.48	1124.8
	1.00	.60	.60	.60	.65	.70	.45	.45	1.05	1.05	2.30	2.60	2.45	5	6	7	6	7	9	12	2	2.46	10.48	1163.3
	1.20	.60	.90	.60	.65	.70	.45	.45	1.05	1.05	2.30	2.60	2.45	5	6	7	6	7	9	12	2	3.06	10.48	1193.7
2 2.0 1 2	.70	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.50	2.65	2.50	5	10	7	6	9	9	13	2	2.10	10.87	1240.7
	1.00	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.50	2.65	2.50	5	10	7	6	9	9	13	2	2.46	10.87	1282.7
	1.20	.60	1.10	.60	.65	.75	.45	.45	1.05	1.05	2.50	2.65	2.50	5	10	7	6	9	9	13	2	3.30	10.87	1333.1
2 2.5 1 2	.70	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.30	2.95	2.80	5	10	7	7	7	9	13	2	2.16	11.50	1269.8
	1.00	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.30	2.95	2.80	5	10	7	7	7	9	13	2	2.64	11.50	1320.6
	1.30	.60	1.40	.60	.65	.75	.45	.45	1.05	1.05	2.30	2.95	2.80	5	10	7	7	7	9	13	2	3.84	11.50	1392.6
2 3.0 1 2	.70	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.25	3.05	2.85	5	10	7	7	5	10	13	2	2.22	12.12	1316.1
	1.00	.60	.90	.60	.65	.75	.45	.45	1.05	1.05	2.25	3.05	2.85	5	10	7	7	5	10	13	2	2.94	12.12	1383.0
	1.70	.60	1.40	.60	.65	.75	.45	.45	1.05	1.05	2.30	3.30	3.05	5	10	7	7	5	10	13	2	2.28	12.75	1445.3
2 3.5 1 2	.70	.60	.60	.60	.65	.75	.45	.45	1.05	1.05	2.70	2.10	2.00	5	7	7	6	9	7	11	2	2.34	10.48	1071.9
	1.10	.55	.60	.60	.65	.70	.45	.45	1.10	1.10	2.70	2.10	2.00	5	7	7	6	9	7	11	2	2.69	10.48	1086.6
	1.30	.65	.60	.60	.65	.70	.45	.45	1.10	1.10	2.70	2.10	2.00	5	7	7	6	9	7	11	2	2.82	10.48	1096.3
3 1.5 1 2	.80	.60	.60	.60	.65	.70	.45	.45	1.05	1.05	2.60	2.50	2.50	5	7	7	6	9	9	12	2	2.22	10.48	1166.0
	1.10	.60	.60	.60	.65	.70	.45	.45	1.10	1.10	2.65	2.50	2.50	5	7	7	6	9	9	12	2	2.69	10.48	1185.5
	1.30	.55	.70	.60	.65	.70	.45	.45	1.15	1.15	2.70	2.50	2.50	5	7	7	6	9	9	12	2	3.19	10.48	1205.0

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 28

LBP .49		VALORES COMUNES AL TIPO 14										PORTICO TIPO 14		LH=7,00		LV=5,50										
TIPOS ARMADURA: ND=7		DM=7		DM=5		DM=6		DM=5		DM=6		DM=5		DM=6		DM=5		DM=6								
CARACT. GEOTECNICAS	TIPO	DIMENSIONES										LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M		
		VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	PA	PB	PC	PE	PF	PG	PH	PI	M-Z	M-A	ACERO	
3	2.0	1.2	.80	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.70	2.70	B	7	7	9	9	12	2	5	2.28	11.50	1232.4
			1.10	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.70	2.70	B	7	7	9	9	12	2	5	2.64	11.50	1250.6
			1.30	.60	.90	.45	.50	.75	.45	.45	1.10	1.10	2.60	2.70	2.70	B	7	7	9	9	12	2	5	3.37	11.50	1282.5
3	2.5	1.2	.80	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.80	2.80	B	7	7	9	9	13	2	5	2.24	11.50	1304.3
			1.10	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.80	2.80	B	7	7	9	9	13	2	5	2.64	11.50	1323.8
			1.30	.60	1.10	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.80	2.80	B	7	7	9	9	13	2	5	3.48	11.50	1369.4
3	3.0	1.2	.80	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.75	2.70	B	7	7	9	10	13	2	5	2.24	11.50	1357.0
			1.10	.60	.60	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.75	2.70	B	7	7	9	10	13	2	5	2.64	11.50	1378.6
			1.40	.60	1.30	.60	.50	.75	.45	.45	1.05	1.05	2.60	2.75	2.70	B	7	7	9	10	13	2	5	3.44	11.50	1450.6
3	3.5	1.2	.80	.60	.60	.60	.55	.75	.45	.45	1.05	1.05	2.60	2.95	2.90	B	7	7	9	10	13	2	5	2.34	12.12	1385.9
			1.10	.60	.80	.60	.55	.75	.45	.45	1.05	1.05	2.60	2.95	2.90	B	7	7	9	10	13	2	5	2.94	12.12	1421.9
			1.50	.65	1.60	.65	.55	.75	.45	.45	1.10	1.10	2.45	2.95	2.90	B	7	7	9	10	13	2	5	4.74	12.12	1511.1

LH = 8,00
LV = 5,00

PORTICO TIPO 15

VALORES COMUNES AL TIPO 15
TIPOS ARMADURA: 9 7 6 4 3 2 1
DIST. JUNTAS: 18.0

CARACT. GEOTECNICAS T MT TI TC	DIMENSIONES						LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M					
	VI	E71	VE	EZE	EP	EO	L1	L2	L3	L4	L5	L6	L7	8A	8B	8C	8E	8F	8G	8K	8L	M-Z	M-A	ACERO
1 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.95	1.30	7	1	7	1	4	12	2	2	2.66	11.75	1122.2
1 1.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.95	1.30	7	1	7	1	4	12	2	2	3.22	11.75	1135.6
1 2.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.30	1.75	7	7	7	1	7	13	2	2	2.66	12.20	1282.7
1 2.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.30	1.75	7	7	7	1	7	13	2	2	2.80	12.20	1288.1
1 3.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.30	1.75	7	7	7	1	7	13	2	3	4.06	12.20	1349.4
1 3.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.60	2.10	10	7	7	1	9	13	2	2	2.66	12.20	1366.8
2 .5 1 2	.80	.70	.90	.70	.50	.80	.50	.50	1.15	1.70	.00	2.50	2.10	10	7	7	1	9	13	2	3	3.08	12.20	1399.2
2 1.5 1 2	.80	.70	.90	.70	.50	.80	.50	.50	1.15	1.70	.00	2.50	2.10	10	7	7	1	9	13	2	4	4.76	12.20	1493.3
2 2.0 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.90	2.50	10	7	7	1	9	13	2	2	2.73	12.78	1396.0
2 2.5 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.90	2.50	10	7	7	1	9	13	2	3	3.57	12.78	1448.9
2 3.0 1 2	.70	.70	.70	.70	.60	.80	.50	.50	1.15	1.70	.00	3.00	2.65	10	7	7	1	10	14	2	3	2.94	13.36	1537.7
2 3.5 1 2	.70	.70	.70	.70	.60	.80	.50	.50	1.15	1.70	.00	3.00	2.65	10	7	7	1	10	14	2	5	4.06	13.36	1631.4
3 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.80	1.30	7	1	7	1	4	12	2	2	2.66	11.75	1121.7
3 1.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.80	1.30	7	1	7	1	4	12	2	2	2.80	11.75	1125.1
3 2.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.80	1.30	7	1	7	1	4	12	2	3	3.22	11.75	1148.0
3 2.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.80	1.30	7	1	7	1	4	12	2	3	6.08	11.75	1204.0
3 3.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.25	1.70	7	7	7	1	7	13	2	3	2.66	12.20	1294.0
3 3.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.25	1.70	7	7	7	1	7	13	2	3	2.80	12.20	1299.4
4 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.55	2.10	10	7	7	1	9	13	2	3	2.66	12.20	1378.4
4 1.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.55	2.10	10	7	7	1	9	13	2	3	2.94	12.20	1391.4
4 2.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.55	2.10	10	7	7	1	9	13	2	4	4.20	12.20	1466.1
4 2.5 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.80	2.50	10	7	7	1	9	13	2	3	2.73	12.78	1407.4
4 3.0 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.80	2.50	10	7	7	1	9	13	2	3	3.29	12.78	1433.4
4 3.5 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.80	2.50	10	7	7	1	9	13	2	4	5.33	12.78	1530.8
5 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.90	2.60	10	7	7	1	10	13	2	3	2.80	13.36	1463.2
5 1.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.90	2.60	10	7	7	1	10	13	2	4	3.78	13.36	1527.3
5 2.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.75	1.30	7	7	7	1	4	12	2	3	2.66	11.75	1178.6
5 2.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.75	1.30	7	7	7	1	4	12	2	3	2.94	11.75	1188.5
5 3.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.75	1.30	7	7	7	1	4	12	2	3	3.45	11.75	1202.0
5 3.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.75	1.30	7	7	7	1	4	12	2	4	4.76	11.75	1268.7
6 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.25	1.90	7	7	7	1	7	13	2	3	2.66	11.75	1278.9
6 1.5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.25	1.90	7	7	7	1	7	13	2	3	2.94	11.75	1288.7
6 2.0 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	2.25	1.90	7	7	7	1	7	13	2	4	3.50	11.75	1324.5

ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P. 30

L0=1.00		VALORES COMUNES AL TIPO 15										PORTICO TIPO 15		LH= 8.00		LV= 5.00											
TIPOS ARMADURA		DIST. JUNTAS: 18.0																									
CARACT. GEOTECNICAS T MY YI YC	3 2.0 1 2	VI			EZE			EP			ED			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M	
		EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	AA	AB	AC	AE	AF	AG	BK	BL	M-7	M-A	ACERO			
	1	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.30	1.90	9	7	7	1	7	13	2	3	2.66	12.20	1310.5			
	2	.90	.70	.70	.50	.90	.50	.50	1.15	1.70	.00	2.30	1.90	9	7	7	1	7	13	2	4	2.94	12.20	1338.2			
	3	1.20	.70	1.10	.70	.50	.90	.50	.50	1.15	1.70	.00	2.30	1.90	9	7	7	1	7	13	2	4	3.92	12.20	1378.9		
	1	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.55	2.20	10	7	7	1	9	13	2	3	2.66	12.20	1380.9			
	2	1.00	.70	.70	.50	.90	.50	.50	1.15	1.70	.00	2.55	2.20	10	7	7	1	9	13	2	4	3.08	12.20	1416.4			
	3	1.20	.70	1.30	.70	.50	.80	.50	.50	1.15	1.70	.00	2.55	2.20	10	7	7	1	9	13	2	5	4.20	12.20	1488.5		
	1	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.80	2.55	10	7	7	1	9	13	2	3	2.73	12.78	1408.6			
	2	.90	.70	.90	.70	.55	.90	.50	.50	1.15	1.70	.00	2.80	2.55	10	7	7	1	9	13	2	4	3.29	12.78	1451.9		
	3	1.30	.70	1.60	.70	.55	.90	.50	.50	1.15	1.70	.00	2.80	2.55	10	7	7	1	9	13	2	5	4.83	12.78	1545.1		
	1	.70	.70	.70	.60	.80	.50	.50	1.15	1.70	.00	2.85	2.65	10	7	7	1	10	13	2	3	2.80	13.36	1463.2			
	2	1.00	.70	1.10	.70	.60	.80	.50	.50	1.15	1.70	.00	2.85	2.65	10	7	7	1	10	13	2	4	3.78	13.36	1527.3		
	3	1.40	.80	2.00	.80	.60	.80	.55	1.25	1.80	.00	2.85	2.65	10	7	7	1	10	13	2	5	6.40	13.36	1643.8			

LH = 8,00
LV = 5,50

PORTICO TIPO 16

VALORES COMUNES AL TIPO 16
TIPOS ARMADURA #D=9 #H=7 #J=6 #J=5 DIST. JUNTAS: 19,5

CARACT. GEOTECNICAS T MT TI	DIMENSIONES					LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA					MEDICIONES POR M							
	VI	EZI	VE	PZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#K	#L	M-Z	M-A	ACERO		
1 .5 1 2	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.90	1.35	7	1	7	1	4	12	2	2	2.66	12.25	1166.1	
2	.80	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.90	1.35	7	1	7	1	4	12	2	3	2.80	12.25	1184.0	
3	1.00	.70	.90	.70	.50	.75	.50	.50	1.15	1.70	.00	1.90	1.35	7	1	7	1	4	12	2	3	3.36	12.25	1198.7	
1 1.5 1 2	.70	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.35	1.75	8	7	7	1	7	13	2	3	2.66	12.70	1340.7	
2	.90	.70	.80	.70	.50	.80	.50	.50	1.15	1.70	.00	2.65	2.15	8	7	7	1	7	13	2	3	3.08	12.70	1357.9	
3	1.20	.70	1.40	.70	.50	.80	.50	.50	1.15	1.70	.00	2.35	1.75	8	7	7	1	7	13	2	4	4.34	12.70	1426.8	
1 2.0 1 2	.70	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.65	2.15	10	7	7	1	9	13	2	3	2.66	12.70	1426.4	
2	.90	.70	.90	.70	.50	.80	.50	.50	1.15	1.70	.00	2.65	2.15	10	7	7	1	9	13	2	4	3.22	12.70	1471.4	
3	1.30	.75	1.80	.75	.50	.80	.50	.50	1.20	1.75	.00	2.65	2.15	10	7	7	1	9	13	2	5	5.40	12.70	1584.4	
1 2.5 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.95	2.55	10	7	7	1	9	14	2	3	2.73	13.33	1519.8	
2	.90	.70	1.20	.70	.55	.80	.50	.50	1.15	1.70	.00	2.95	2.55	10	7	7	1	9	14	2	4	3.71	13.33	1586.7	
1 3.0 1 2	.70	.70	.70	.70	.60	.80	.50	.50	1.15	1.70	.00	3.10	2.65	10	7	7	1	10	14	2	3	2.80	13.96	1579.9	
2	1.00	.70	1.40	.70	.60	.80	.50	.50	1.15	1.70	.00	3.10	2.65	10	7	7	1	10	14	2	4	4.20	13.96	1668.6	
1 3.5 1 2 1 2 3 4	.70	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.65	1.35	7	7	7	4	4	12	2	3	2.66	12.25	1239.0	
2	.90	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.65	1.35	7	7	7	4	4	12	2	3	2.94	12.25	1249.5	
3	1.10	.70	.70	.75	.50	.75	.50	.50	1.20	1.70	.00	1.65	1.35	7	7	7	4	4	12	2	4	3.34	12.25	1278.9	
2 1.5 1 2	.70	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	1.80	2.25	1.75	8	7	7	5	7	13	2	3	2.66	12.70	1358.1
2	.90	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	1.80	2.25	1.75	8	7	7	5	7	13	2	4	2.94	12.70	1387.1
3	1.20	.70	1.10	.70	.50	.80	.50	.50	1.15	1.70	.00	1.80	2.25	1.75	8	7	7	5	7	13	2	4	3.92	12.70	1427.1
2 2.0 1 2	.70	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.55	2.15	10	7	7	5	9	13	2	3	2.66	12.70	1442.9	
2	1.00	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.55	2.15	10	7	7	5	9	13	2	4	3.08	12.70	1481.1	
3	1.30	.70	1.40	.70	.50	.80	.50	.50	1.15	1.70	.00	2.55	2.15	10	7	7	5	9	13	2	5	4.48	12.70	1571.4	
2 2.5 1 2	.70	.70	.70	.70	.55	.80	.50	.50	1.15	1.70	.00	2.85	2.50	10	7	7	1	9	13	2	3	2.73	13.33	1453.5	
2	1.00	.70	.90	.70	.55	.80	.50	.50	1.15	1.70	.00	2.85	2.50	10	7	7	1	9	13	2	4	3.43	13.33	1506.7	
3	1.40	.75	1.80	.75	.55	.80	.50	.50	1.20	1.75	.00	2.85	2.50	10	7	7	1	9	13	2	5	5.62	13.33	1621.3	
2 3.0 1 2	.70	.70	.70	.70	.60	.80	.50	.50	1.15	1.70	.00	2.95	2.65	10	7	7	1	10	14	2	3	2.80	13.96	1575.2	
2	1.00	.70	1.20	.70	.60	.80	.50	.50	1.15	1.70	.00	2.95	2.65	10	7	7	1	10	14	2	4	3.92	13.96	1675.6	
2 3.5 1 2 1 2 3 4	.90	.70	.70	.70	.50	.75	.50	.50	1.15	1.70	.00	1.80	1.35	7	7	7	4	4	12	2	4	2.94	12.25	1268.9	
2	1.00	.70	.70	.75	.50	.75	.50	.50	1.20	1.70	.00	1.80	1.35	7	7	7	4	4	12	2	4	3.19	12.25	1275.0	
3	1.20	.65	.70	.85	.50	.75	.45	.55	1.20	1.80	.00	2.00	1.35	7	7	7	4	4	12	2	4	3.60	12.25	1288.8	
4	1.60	.70	1.60	.70	.50	.75	.50	.50	1.15	1.70	.00	1.90	1.35	7	7	7	4	4	12	2	5	5.18	12.25	1375.1	
3 1.5 1 2	.80	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.00	2.20	1.75	8	7	7	5	7	13	2	4	2.80	12.70	1382.7
2	1.10	.70	.70	.70	.50	.80	.50	.50	1.15	1.70	.00	2.20	1.75	8	7	7	5	7	13	2	5	3.22	12.70	1421.9	
3	1.30	.70	.90	.75	.50	.80	.50	.50	1.20	1.70	.00	2.05	2.20	1.75	8	7	7	5	7	13	2	5	3.91	12.70	1466.0

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 32

CARACT. GEOTECNICAS Y MT YI		VALORES COMUNES AL TIPO 16 TIPOS ARMADURA #0=9 #1=7 #2=6 #3=5 DIST. JUNTAS: 19.5										PORTICO TIPO 16 LH= 8,00 LV= 5,50													
		DIMENSIONES					LONGITUDES DE ARMADURAS					TIPOS DE ARMADURA					MEDICIONES POR M								
		VI	EZ	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	MA	MB	MC	ME	MF	MG	OK	PL	M-Z	M-A	ACEHO
3	2.0	1	.80	.70	.70	.70	.55	.80	.50	1.15	1.70	1.90	2.60	2.35	8	7	7	5	9	13	2	4	2.87	13.33	1455.7
		2	1.00	.70	.70	.70	.80	.50	.50	1.15	1.70	1.90	2.60	2.35	8	7	7	5	9	13	2	5	3.15	13.33	1490.8
		3	1.30	.70	1.10	.70	.80	.50	.50	1.15	1.70	1.90	2.60	2.35	8	7	7	5	9	13	2	5	4.13	13.33	1530.8
3	2.5	1	.60	.70	.70	.70	.55	.80	.50	1.15	1.70	1.95	2.75	2.50	9	7	7	5	9	13	2	4	2.87	13.33	1476.9
		2	1.10	.70	.70	.70	.55	.80	.50	1.15	1.70	1.95	2.75	2.50	9	7	7	5	9	13	2	5	3.29	13.33	1519.0
		3	1.30	.70	1.40	.70	.55	.80	.50	1.15	1.70	1.95	2.75	2.50	9	7	7	5	9	13	2	5	4.55	13.33	1574.3
3	3.0	1	.60	.70	.70	.70	.55	.80	.50	1.15	1.70	2.00	2.70	2.40	10	7	7	5	10	13	2	4	2.87	13.33	1529.4
		2	1.10	.70	.80	.70	.55	.80	.50	1.15	1.70	2.00	2.70	2.40	10	7	7	5	10	13	2	5	3.43	13.33	1580.5
		3	1.40	.70	1.60	.70	.55	.80	.50	1.15	1.70	2.00	2.70	2.40	10	7	7	5	10	13	2	5	4.97	13.33	1655.7
3	3.5	1	.60	.70	.70	.70	.60	.80	.50	1.15	1.70	1.95	2.90	2.70	10	7	7	7	10	14	2	4	2.94	13.96	1633.1
		2	1.10	.70	1.00	.70	.60	.80	.50	1.15	1.70	1.95	2.90	2.70	10	7	7	7	10	14	2	5	3.78	13.96	1699.5
		3	1.60	.80	2.00	.80	.60	.80	.55	1.25	1.80	2.05	2.90	2.70	10	7	7	7	10	14	2	5	6.72	13.96	1812.5

LH= 9.00
LV= 5.00

PORTICO TIPO 17

VALORES COMUNES AL TIPO 17
TIPOS ARMADURA: #0= 9 #1= 7 #2= 4 #3= 4 #4= 4 #5= 4 #6= 4 #7= 4 #8= 4 #9= 4 #10= 4 #11= 4 #12= 4 #13= 4 #14= 4 #15= 4 #16= 4 #17= 4 #18= 4 #19= 4 #20= 4 #21= 4 #22= 4 #23= 4 #24= 4 #25= 4 #26= 4 #27= 4 #28= 4 #29= 4 #30= 4 #31= 4 #32= 4 #33= 4 #34= 4 #35= 4 #36= 4 #37= 4 #38= 4 #39= 4 #40= 4 #41= 4 #42= 4 #43= 4 #44= 4 #45= 4 #46= 4 #47= 4 #48= 4 #49= 4 #50= 4 #51= 4 #52= 4 #53= 4 #54= 4 #55= 4 #56= 4 #57= 4 #58= 4 #59= 4 #60= 4 #61= 4 #62= 4 #63= 4 #64= 4 #65= 4 #66= 4 #67= 4 #68= 4 #69= 4 #70= 4 #71= 4 #72= 4 #73= 4 #74= 4 #75= 4 #76= 4 #77= 4 #78= 4 #79= 4 #80= 4 #81= 4 #82= 4 #83= 4 #84= 4 #85= 4 #86= 4 #87= 4 #88= 4 #89= 4 #90= 4 #91= 4 #92= 4 #93= 4 #94= 4 #95= 4 #96= 4 #97= 4 #98= 4 #99= 4 #100= 4

CARACT. GEOTEKNICAS TIPO	DIMENSIONES						LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA					MEDICIONES POR M								
	VI	EZI	VE	EZE	EP	EU	L1	L2	L3	L4	L5	L6	L7	MA	MB	MC	ME	MF	MG	MH	MI	MJ	MK	ML	H-2	H-A	ACERO
1 .5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.15	1.55	7	7	7	1	4	12	2	2	2	2	2	2.73	14.09	1291.8
1 1.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.15	1.55	7	7	7	1	4	12	2	2	2	2	2	2.73	14.09	1316.4
1 2.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.60	2.25	9	7	7	1	9	13	2	2	2	2	2	2.73	14.59	1484.7
1 2.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.80	2.25	9	7	7	1	9	13	2	2	2	2	2	3.01	14.59	1496.4
1 3.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.45	10	7	7	1	9	14	2	2	2	2	2	3.43	14.59	1630.4
1 3.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.45	10	7	7	1	9	14	2	2	2	2	2	3.43	14.59	1630.4
2 .5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.45	10	7	7	1	9	14	2	2	2	2	2	2.73	14.09	1291.8
2 1.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.55	2.05	8	7	7	1	7	13	2	2	2	2	2	2.73	14.59	1420.0
2 2.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.90	2.45	10	7	7	1	9	14	2	2	2	2	2	3.01	14.59	1444.6
2 2.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.60	10	7	7	1	9	14	2	2	2	2	2	3.43	14.59	1687.6
2 3.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.60	10	7	7	1	9	14	2	2	2	2	2	2.73	14.59	1595.4
2 3.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	3.00	2.60	10	7	7	1	9	14	2	2	2	2	2	3.29	14.59	1621.4
3 .5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.10	1.60	7	7	7	1	4	12	2	2	2	2	2	2.73	14.09	1305.6
3 1.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.10	1.60	7	7	7	1	4	12	2	2	2	2	2	2.87	14.09	1310.5
3 2.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.10	1.60	7	7	7	1	4	12	2	2	2	2	2	3.29	14.09	1325.3
3 2.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.10	1.60	7	7	7	1	4	12	2	2	2	2	2	3.43	14.09	1406.5
3 3.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.50	2.05	8	7	7	1	7	13	2	2	2	2	2	2.73	14.59	1433.1
3 3.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.50	2.05	8	7	7	1	7	13	2	2	2	2	2	3.01	14.59	1443.8
3 4.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.50	2.05	8	7	7	1	7	13	2	2	2	2	2	3.43	14.59	1493.4
3 4.5 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.80	2.40	9	7	7	1	9	13	2	2	2	2	2	2.73	14.59	1502.3
3 5.0 1 2	.70	.70	.70	.70	.55	.85	.50	.50	1.15	1.70	.00	2.80	2.40	9	7	7	1	9	13	2	2	2	2	2	3.15	14.59	1519.8

ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

DIRECCION GENERAL DE CARMETERAS COLECCION DE PORTICOS P 34

L8=1.00		VALORES COMUNES AL TIPO 17										PORTICO TIPO 17		LH= 9,00		LV = 5,00											
TIPOS ARMADURA: #D= 9 #H= 7 #J= 4		DIST. JUNTAS: 1R,0																									
CARACT. GEOTECNICAS T MT TI	TC	DIMENSIONES						LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA					MEDICIONES POR M								
		VI	E21	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	9A	9B	9C	9D	9E	9F	9G	9H	9I	M-2	M-A	ACENO	
3	2.0	1.2	3	1.10	.70	1.40	.70	.55	.90	.50	.50	1.15	1.70	.00	2.60	2.40	9	7	7	1	9	13	2	4	4.27	14.59	1583.6
3	2.5	1.2	1	.70	.70	.70	.70	.55	.90	.50	.50	1.15	1.70	.00	2.90	2.55	10	7	7	1	9	14	2	3	2.73	14.59	1597.0
			2	.90	.70	.90	.70	.55	.90	.50	.50	1.15	1.70	.00	2.90	2.55	10	7	7	1	9	14	2	4	3.29	14.59	1641.1
			3	1.30	.70	1.60	.70	.55	.90	.50	.50	1.15	1.70	.00	2.90	2.55	10	7	7	1	9	14	2	5	4.03	14.59	1734.3
3	3.0	1.2	1	.70	.70	.70	.70	.60	.90	.50	.50	1.15	1.70	.00	3.00	2.70	10	7	7	1	10	14	2	3	2.80	15.18	1657.0
			2	.90	.70	1.10	.70	.60	.90	.50	.50	1.15	1.70	.00	3.00	2.70	10	7	7	1	10	14	2	4	3.64	15.18	1714.5
			3	1.40	.80	2.00	.80	.60	.90	.55	.55	1.25	1.80	.00	3.00	2.70	10	7	7	1	10	14	2	5	6.40	15.18	1837.6
3	3.5	1.2	1	.70	.70	.70	.70	.65	.90	.50	.50	1.40	1.70	.00	3.65	3.60	10	7	8	1	11	14	2	3	2.87	15.77	1806.2
			2	1.00	.70	1.30	.70	.65	.90	.50	.50	1.40	1.70	.00	3.65	3.60	10	7	8	1	11	14	2	5	4.13	15.77	1909.1

VALORES COMUNES AL TIPO 18		PORTICO TIPO 18												LH = 9.00		LV = 5.50							
L8=1.00 TIPOS ARMADURA ED=9 ME=7 MI=7 MJ=5 DIST. JUNTAS 20.0																							
CARACT. GEOTECNICAS T MT TI TC	VI	DIMENSIONES			ED	LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M					
		EZ	VE	EZE		EP	L1	L2	L3	L4	L5	L6	L7	EA	EB	EC	ED	EF	EG	EH	EL	M-Z	M-A
3 2.0 1 2	1.00	.70	.70	.70	.95	.50	.50	1.15	1.70	1.90	2.80	2.45	9	7	7	5	9	13	2	5	3.15	15.14	1633.0
	1.30	.70	1.30	.70	.55	.50	.50	1.15	1.70	1.90	2.80	2.45	9	7	7	5	9	13	2	5	4.41	15.14	1688.3
3 2.5 1 2	.70	.70	.70	.70	.60	.50	.50	1.15	1.70	.00	2.95	2.60	9	7	7	1	10	14	2	4	2.80	15.78	1701.4
	1.00	.70	.90	.70	.60	.50	.50	1.15	1.70	.00	2.95	2.60	9	7	7	1	10	14	2	5	3.50	15.78	1757.5
	1.40	.70	1.70	.70	.60	.50	.50	1.15	1.70	.00	2.95	2.60	9	7	7	1	10	14	2	5	5.18	15.78	1831.3
3 3.0 1 2	.70	.70	.70	.70	.60	.50	.50	1.15	1.70	.00	3.05	2.75	10	7	7	1	10	14	2	4	2.80	15.78	1729.4
	1.10	.70	1.00	.70	.60	.50	.50	1.15	1.70	.00	3.05	2.75	10	7	7	1	10	14	2	5	3.78	15.78	1802.7
	1.50	.60	2.00	.60	.60	.55	.55	1.25	1.80	.00	3.05	2.75	10	7	7	1	10	14	2	5	6.56	15.78	1907.2
3 3.5 1 2	.70	.70	.70	.70	.65	.50	.50	1.40	1.70	.00	3.70	3.60	10	7	8	1	11	14	2	4	2.87	16.42	1881.5
	1.10	.70	1.30	.70	.65	.50	.50	1.40	1.70	.00	3.70	3.60	10	7	8	1	11	14	2	5	4.27	16.42	1977.0

LH=10.00
LV= 5.00
PORTICO TIPO 19

VALORES COMUNES AL TIPO 19
TIPOS ARMADURA #D# 9 #M# 8 #I# 7 #J# 6 DIST. JUNTAS: 1F.5

CARACT. GEOTECNICAS Y HT TI	VI	DIMENSIONES VE EZE				DIMENSIONES DE ARMADURAS L1 L2 L3 L4 L5 L6 L7				TIPOS DE ARMADURA #A #B #C #E #F #G #H #I #J #K #L				MEDICIONES POR M H-A ACERO											
		EZI	VE	EZE	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#H	#I	#J	#K	#L	M-A	ACERO
1	.5	1	.80	.80	.80	.65	.95	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	2	3.60	17.24	1548.9	
		2	.80	.80	.90	.65	.95	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	2	3.76	17.24	1554.5	
		3	.80	.80	1.40	.65	.95	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	3	4.56	17.24	1598.5	
1	1.5	1	.80	.80	.80	.65	1.00	.55	1.50	1.80	.00	3.30	2.95	7	7	8	1	9	13	2	3	3.60	17.80	1737.7	
		2	.80	.80	1.20	.65	1.00	.55	1.50	1.80	.00	3.30	2.95	7	7	8	1	9	13	2	4	4.24	17.80	1781.7	
		3	1.10	.95	2.10	.65	1.00	.55	1.55	1.85	.00	3.30	2.95	7	7	8	1	9	13	1	5	6.55	17.80	1790.6	
1	2.0	1	.80	.80	.80	.65	1.00	.55	1.50	1.80	.00	3.35	2.90	10	7	8	1	10	14	2	3	3.60	17.80	1895.9	
		2	.80	.80	1.40	.65	1.00	.55	1.50	1.80	.00	3.35	2.90	10	7	8	1	10	14	2	4	4.56	17.80	1958.8	
1	2.5	1	.80	.80	1.00	.70	1.00	.55	1.50	1.80	.00	4.00	3.85	10	7	8	1	11	14	1	4	4.00	18.40	1954.6	
		2	.80	.80	1.70	.60	1.00	.55	1.50	1.80	.00	4.00	3.85	10	7	8	1	11	14	2	5	5.12	18.40	2126.9	
1	3.0	1	.80	.80	1.20	.75	1.00	.55	1.50	1.80	.00	4.00	3.85	10	7	8	1	12	14	1	5	4.40	19.00	2101.8	
		2	.90	.80	2.00	.60	1.00	.55	1.50	1.80	.00	4.00	3.65	10	7	8	1	12	14	1	5	5.84	19.00	2166.6	
1	3.5	1	.80	.80	.80	.65	.95	.55	1.50	1.80	.00	2.70	2.35	7	7	8	1	7	12	2	2	3.50	17.24	1548.1	
		2	.80	.80	1.20	.65	.95	.55	1.50	1.80	.00	2.70	2.35	7	7	8	1	7	12	2	2	4.24	17.24	1570.6	
		3	1.00	.80	1.80	.65	1.00	.55	1.50	1.80	.00	3.20	2.90	7	7	8	1	9	13	2	2	3.60	17.80	1703.7	
		2	.80	.80	1.10	.65	1.00	.55	1.50	1.80	.00	3.20	2.90	7	7	8	1	9	13	2	3	4.08	17.80	1736.3	
		3	1.00	.80	1.80	.65	1.00	.55	1.50	1.80	.00	3.20	2.90	7	7	8	1	9	13	2	4	5.52	17.80	1806.6	
2	2.0	1	.80	.80	.80	.65	1.00	.55	1.50	1.80	.00	3.25	2.90	9	7	8	1	10	14	2	3	3.60	17.80	1870.1	
		2	.80	.80	1.20	.65	1.00	.55	1.50	1.80	.00	3.25	2.90	9	7	8	1	10	14	2	4	4.24	17.80	1915.9	
		3	1.20	.85	2.10	.65	1.00	.55	1.55	1.85	.00	3.25	2.90	9	7	8	1	10	14	1	5	6.72	17.80	1936.6	
2	2.5	1	.80	.80	.90	.70	1.00	.55	1.50	1.80	.00	3.90	3.60	9	7	8	1	11	14	2	4	3.84	18.40	2013.7	
		2	.80	.80	1.50	.60	1.00	.55	1.50	1.80	.00	3.90	3.60	9	7	8	1	11	14	2	5	4.80	18.40	2078.9	
2	3.0	1	.80	.80	1.00	.70	1.00	.55	1.50	1.80	.00	3.75	3.60	10	7	8	1	12	14	2	4	4.00	18.40	2110.5	
		2	.90	.80	1.70	.60	1.00	.55	1.50	1.80	.00	3.75	3.60	10	7	8	1	12	14	2	5	5.28	18.40	2194.2	
2	3.5	1	.80	.80	.80	.65	.95	.55	1.50	1.80	.00	2.65	2.35	7	7	8	1	7	12	2	2	3.60	17.24	1547.3	
		2	.80	.80	1.10	.65	.95	.55	1.50	1.80	.00	2.65	2.35	7	7	8	1	7	12	2	3	4.40	17.24	1591.3	
		3	1.00	.80	2.50	1.00	.65	.95	.55	1.70	2.00	.00	2.65	2.35	7	7	8	1	7	12	2	3	9.30	17.24	1713.4
3	1.5	1	.80	.80	.80	.65	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	9	13	2	3	3.60	17.80	1715.8	
		2	.90	.80	.90	.65	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	9	13	2	3	3.76	17.80	1721.4	
		3	1.00	.80	1.50	.60	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	9	13	2	3	5.04	17.80	1766.4	
3	2.0	1	.80	.80	.80	.65	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	10	14	2	3	3.60	17.80	1849.3	
		2	.80	.80	1.00	.60	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	10	14	2	3	3.92	17.80	1861.4	
		3	1.10	.80	1.70	.60	1.00	.55	1.50	1.80	.00	3.10	2.85	7	7	8	1	10	14	2	4	5.52	17.80	1941.0	

DIRECCION GENERAL DE CARRETERAS COLECCION DE PORTICOS P 38

ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAY UTILIZADO

VALORES COMUNES AL TIPO 19										PORTICO TIPO 19					LH = 10.00		LV = 5.00								
TIPOS ARMADURA #0=9 #1=7 #2=6 DIST. JUNTAS I.R.S																									
CARACT. GEOTECHNICAS T MT TT TC	DIMENSIONES						LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M						
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	BA	BB	BC	BE	BF	BG	BH	BI	M-Z	M-A	M-B	M-C
3 2.5 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.25	3.00	10	7	8	1	10	14	2	3	3.60	17.80	1895.9	
2	.90	.80	1.20	.80	.65	1.00	.55	.55	1.59	1.80	.00	3.25	3.00	10	7	8	1	10	14	2	3	4.40	17.80	1931.9	
3	1.30	.80	2.00	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.25	3.00	10	7	8	1	10	14	2	5	6.32	17.80	2062.6	
3 3.0 1 2	.80	.80	.80	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.45	3.05	10	7	8	1	11	14	2	3	3.68	18.40	2009.2	
2	.90	.80	1.40	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.45	3.05	10	7	8	1	11	14	2	4	4.80	18.40	2080.6	
3	1.40	1.00	2.50	1.00	.70	1.00	.65	.65	1.70	2.00	.00	3.45	3.05	10	7	8	1	11	14	2	5	9.20	18.40	2280.4	
3 3.5 1 2	.80	.80	.90	.80	.75	1.00	.55	.55	1.50	1.80	.00	3.45	3.40	10	7	8	1	12	14	2	4	3.92	19.00	2133.3	
2	.90	.80	1.60	.80	.75	1.00	.55	.55	1.50	1.80	.00	3.45	3.40	10	7	8	1	12	14	2	5	5.20	19.00	2219.6	

LH = 10.00
LV = 5.50

PORTICO TIPO 20

VALORES COMUNES AL TIPO 20
TIPOS ARMADURA: #D=9 #M=6 #N=7 #U=6 DIST. JUNTAS: 20.5

CARACT. GEOTECNICAS T HT TJ	DIMENSIONES										LONGITUDES DE ARMADURAS										TIPOS DE ARMADURA										MEDICIONES POR M ACENO	
	VI	EZI	VE	FZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#L	M-Z	M+A									
1 0.5 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.90	2.35	7	7	8	1	7	13	2	2	3.60	17.88	1672.0								
2	.80	.80	.90	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.90	2.35	7	7	8	1	7	13	2	2	3.76	17.88	1677.6								
3	.90	.80	1.40	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.40	2.35	7	7	8	1	7	13	2	3	4.72	17.88	1728.8								
1 1.5 1 2	.80	.80	.90	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.35	2.95	8	7	8	1	9	14	2	3	3.60	18.45	1862.9								
2	.80	.80	1.20	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.35	2.95	8	7	8	1	9	14	2	3	4.24	18.45	1887.2								
3	1.30	.90	2.20	.90	.65	1.00	.60	.60	1.60	1.90	.00	3.35	2.95	8	7	8	1	9	14	1	5	7.67	18.45	1948.3								
1 2.0 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.40	2.90	10	7	8	1	10	14	2	3	3.60	18.45	1943.6								
2	.90	.80	1.40	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.40	2.90	10	7	8	1	10	14	2	4	4.72	18.45	2015.6								
1 2.5 1 2	.80	.80	.90	.80	.70	1.00	.55	.55	1.50	1.80	.00	4.10	3.65	10	7	8	1	11	14	2	4	3.84	19.10	2095.7								
2	.90	.80	1.70	.80	.70	1.00	.55	.55	1.50	1.80	.00	4.10	3.65	10	7	8	1	11	14	2	5	5.28	19.10	2189.3								
1 3.0 1 2	.80	.80	1.10	.80	.75	1.00	.55	.55	1.50	1.80	.00	4.10	3.60	10	7	8	1	12	15	2	5	4.24	19.75	2324.4								
2	1.00	.80	2.00	.80	.75	1.00	.55	.55	1.50	1.80	.00	4.10	3.60	10	7	8	1	12	15	1	5	6.00	19.75	2314.4								
1 3.5 1 2 1 2 3 *	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	3	3.60	17.88	1610.4								
2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	3	4.56	17.88	1644.6								
3	1.00	.80	1.20	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.75	2.35	7	7	8	1	7	12	2	3	3.60	18.45	1766.8								
2 1.5 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.25	2.90	7	7	8	1	9	13	2	3	3.92	18.45	1778.1								
3	.80	.80	1.00	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.25	2.90	7	7	8	1	9	13	2	3	5.84	18.45	1867.2								
3 1.5 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.30	2.90	9	7	8	1	10	14	2	3	3.60	18.45	1917.8								
2	.90	.80	1.20	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.30	2.90	9	7	8	1	10	14	2	3	4.40	18.45	1950.4								
3	1.40	.90	2.20	.90	.65	1.00	.55	.55	1.50	1.80	.00	3.30	2.90	9	7	8	1	10	14	2	5	7.65	18.45	2105.3								
2 2.5 1 2	.80	.80	.80	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.95	3.60	9	7	8	1	11	14	2	3	3.98	19.10	2034.8								
3	.90	.80	1.40	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.95	3.60	9	7	8	1	11	14	2	4	4.80	19.10	2103.4								
2 3.0 1 2	.80	.80	.90	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.95	3.60	10	7	8	1	12	15	2	4	3.84	19.10	2244.2								
3	1.00	.80	1.60	.90	.70	1.00	.55	.55	1.50	1.80	.00	3.95	3.60	10	7	8	1	12	15	2	5	5.28	19.10	2339.8								
2 3.5 1 2 1 2 3 *	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.70	2.35	7	7	8	1	7	12	2	3	3.50	17.88	1610.1								
3	.90	.80	.90	.80	.65	1.00	.55	.55	1.50	1.80	.00	2.70	2.35	7	7	8	1	7	12	2	3	3.76	17.88	1615.7								
3 1.5 1 2	.80	.80	1.00	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.90	7	7	8	1	9	13	2	3	3.60	18.45	1766.4								
2	.90	.80	.90	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.90	7	7	8	1	9	13	2	3	3.76	18.45	1770.0								
3	1.20	.80	1.40	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.90	7	7	8	1	9	13	2	4	5.20	18.45	1842.3								
3 2.0 1 2	.80	.80	.80	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.95	8	7	8	1	10	14	2	3	3.60	18.45	1897.0								
2	1.00	.80	.90	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.95	8	7	8	1	10	14	2	4	4.08	18.45	1930.9								
3	1.30	.90	1.70	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.15	2.95	8	7	8	1	10	14	2	5	5.84	18.45	2030.6								

* - ESTE MODELO FALLA A CORTANTE CON LOS ESPESORES MAXIMOS QUE SE HAN UTILIZADO

LH = 10,00
LV = 5,50

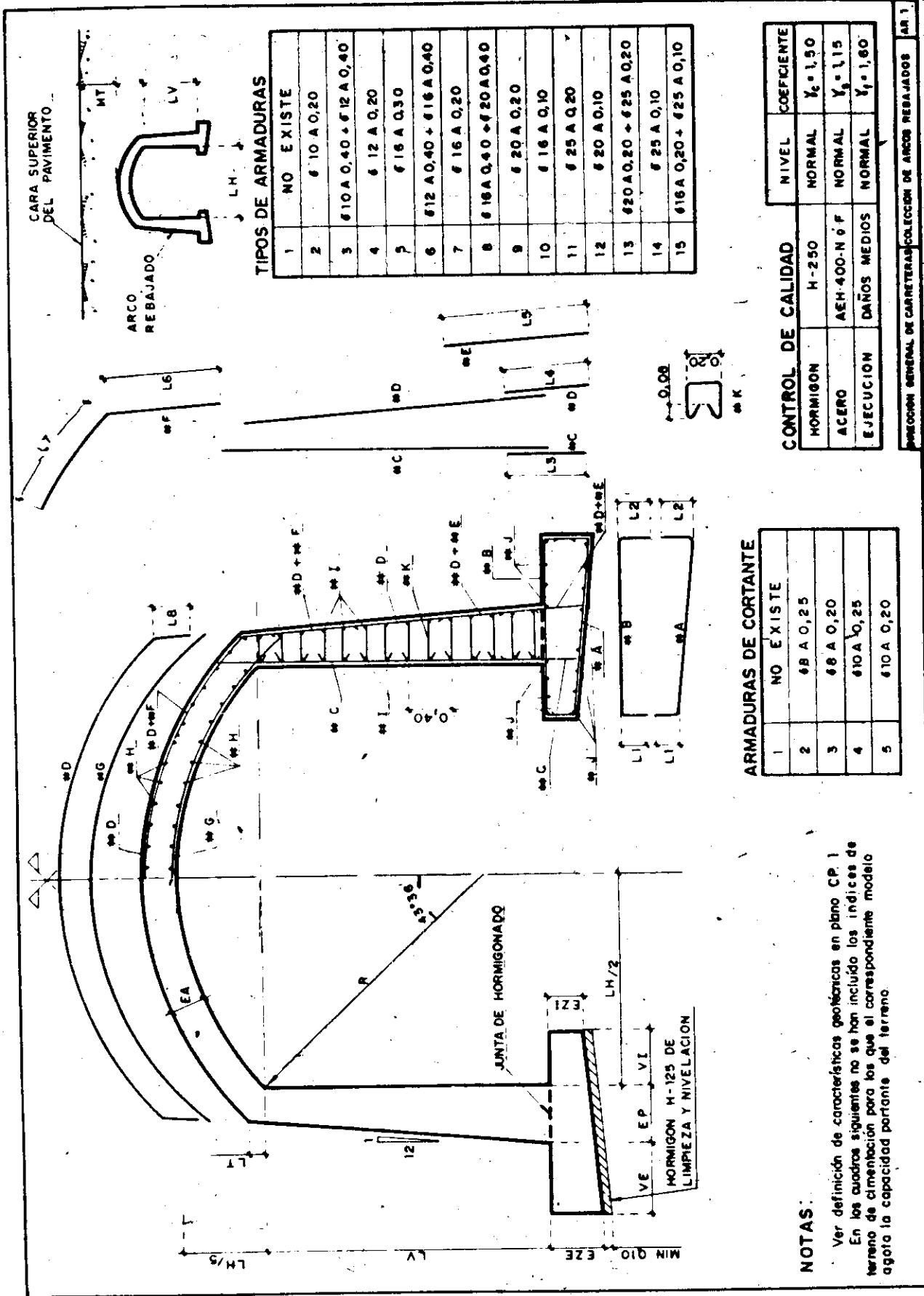
PORTICO TIPO 20

VALORES COMUNES AL TIPO 20
LB=1,00 TIPOS ARMADURA: 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
DIST. JUNTAS: 20,0

CARACT. GEOTECNICAS T MT TI	DIMENSIONES			LONGITUDINES DE ARMADURAS										TIPOS DE ARMADURA										MEDICIONES POR M			
	VI	EZI	VE	EZE	EP	ED	L1	L2	L3	L4	L5	L6	L7	9A	9B	9C	9E	9F	9G	9H	9I	9J	9K	9L	M-7	M-8	ACEHO
3 2x5 1-2	.80	.80	.80	.80	.85	1.00	.55	.55	1.50	1.80	.00	3.70	3.55	10	7	A	1	11	14	2	4	3.60	19.45	2045.7	3.60	19.45	2045.7
2	1.00	.80	1.10	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.70	3.55	10	7	A	1	11	14	2	4	3.60	19.45	2045.7	3.60	19.45	2045.7
3	1.40	.80	2.00	.80	.65	1.00	.55	.55	1.50	1.80	.00	3.70	3.55	10	7	M	1	11	14	2	4	3.60	19.45	2045.7	3.60	19.45	2045.7
3 3-0 1-2	.80	.80	.80	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.45	3.30	10	7	M	1	11	14	2	4	3.60	19.10	2045.6	3.60	19.10	2045.6
2	1.00	.80	1.70	.80	.70	1.00	.55	.55	1.50	1.80	.00	3.45	3.30	10	7	M	1	11	14	2	4	3.60	19.10	2135.0	3.60	19.10	2135.0
3	1.60	1.00	2.50	1.00	.70	1.00	.55	.55	1.50	2.00	.00	3.05	3.00	10	7	B	1	11	14	2	5	9.60	19.10	2311.9	9.60	19.10	2311.9
3 3-5 1-2	.80	.80	.80	.80	.75	1.00	.55	.55	1.50	1.80	.00	3.90	3.85	10	7	M	1	12	14	2	4	3.76	19.75	2160.4	3.76	19.75	2160.4
2	1.10	.80	1.60	.80	.75	1.00	.55	.55	1.50	1.80	.00	3.90	3.85	10	7	M	1	12	14	2	5	5.52	19.75	2290.0	5.52	19.75	2290.0

3.1.3 Arcos

3.1.3.1 - Arcos rebajados



DIRECCION GENERAL DE CARRETERAS COLECCION DE ARCOS REBAJADOS AR 1

VALORES COMUNES AL TIPO 1				ARCO REBAJADO TIPO 1																					
EP= .39 R= 2.18 LH= 3.00				CV= 1.70																					
TIPOS ARMADURA: #D= 4 #H= 2 #J= 2 #K= 2 #L= .11 #M= .35				DISTANCIA JUNTAS: 7.5																					
CARACTER. GEOTECHNICAS	TI	YI	TC	DIMENSIONES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA			MEDICIONES POR M									
				VI	EZI	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	M-Z	M-A	ACERO	
1	.5	1 2	1 2 3	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	2	2	5	2	1	4	1	1.29	2.02	183.5
			4	.40	.50	.70	.50	.40	.40	.95	.85	1.65	.00	.00	.00	3	0	2	5	2	1	4	1.49	2.02	191.4
1	3.0	1 2	1	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	5	2	5	2	1	5	1	1.29	2.02	195.4
			2	.40	.50	.60	.50	.40	.40	.95	.85	1.65	.00	.00	.00	6	2	5	2	1	5	1	1.39	2.02	202.1
1	5.0	1 2	1	.40	.50	.60	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	7	2	5	2	2	7	2	1.39	2.02	241.7
1	6.5	2	1	.40	.50	.70	.50	.40	.40	.95	.85	1.40	1.40	1.30	.00	0	2	5	2	5	0	2	1.49	2.02	280.8
2	.5	1 2	1 2 3	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	2	2	5	2	1	4	1	1.29	2.02	183.5
			4	.40	.50	.70	.50	.40	.40	.95	.85	1.65	.00	.00	.00	3	2	5	2	1	4	1	1.49	2.02	191.4
2	3.0	1 2	1 2	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	5	2	5	2	1	4	1	1.29	2.02	192.2
			3	.40	.50	.70	.50	.40	.40	.95	.85	1.65	.00	.00	.00	6	2	5	2	1	4	1	1.49	2.02	202.0
2	5.0	1 2	1	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	6	2	5	2	2	7	2	1.29	2.02	231.3
2	6.5	1	1	.40	.50	.70	.50	.40	.40	.95	.85	1.25	1.40	1.15	.00	0	2	5	2	4	0	2	1.49	2.02	274.2
2	6.5	2	1	.40	.50	.60	.50	.40	.40	.95	.85	1.25	1.40	1.15	.00	7	2	5	2	4	7	2	1.39	2.02	252.3
3	.5	1 2	1	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	2	2	5	2	1	4	1	1.29	2.02	183.5
			2	.40	.50	.50	.55	.40	.40	1.00	.85	1.70	.00	.00	.00	2	2	5	2	1	4	1	1.38	2.02	184.3
			3	.40	.50	.50	.65	.40	.45	1.00	.95	1.75	.00	.00	.00	2	2	5	2	1	4	1	1.48	2.02	186.1
			4	.40	.50	.60	.60	.40	.45	1.00	.90	1.70	.00	.00	.00	2	2	5	2	1	4	1	1.53	2.02	187.8
3	3.0	1 2	1 2	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.00	.00	.00	4	2	5	2	1	4	1	1.29	2.02	188.9
			3	.40	.50	.60	.55	.40	.40	1.00	.85	1.70	.00	.00	.00	4	2	5	2	1	4	1	1.46	2.02	192.5
3	5.0	1 2	1	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	5	2	5	2	2	4	2	1.29	2.02	221.0
			2	.40	.50	.70	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	6	2	5	2	2	6	2	1.40	2.02	230.8
3	6.5	1	1	.40	.50	.60	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	7	2	5	2	2	7	2	1.39	2.02	241.7
3	6.5	2	1	.40	.50	.50	.50	.40	.40	.95	.85	1.65	.45	1.10	.00	6	2	5	2	2	7	2	1.29	2.02	231.3
3	8.0	1	1	.40	.50	.70	.50	.40	.40	.95	.85	1.40	1.40	1.30	.00	9	2	5	2	7	0	4	1.49	2.02	312.0
3	8.0	2	1	.40	.50	.60	.50	.40	.40	.95	.85	1.25	1.40	1.15	.00	7	2	5	2	4	0	2	1.39	2.02	260.9
3	9.0	2	1	.40	.50	.70	.50	.40	.40	.95	.85	1.40	1.40	1.30	.00	0	2	5	2	7	0	3	1.49	2.02	298.2

VALORES COMUNES AL TIPO 2
 EPO .44 R= 2.10 EA= .25 LM= .35
 TIPOS ARMADURAS: #D= 4 #H= 4 #I= 3 #J= 2 #K= 2 #L= 3 #M= 2 #N= 2 #O= 2 #P= 2 #Q= 2 #R= 2 #S= 2 #T= 2 #U= 2 #V= 2 #W= 2 #X= 2 #Y= 2 #Z= 2
 DISTANCIA JUNTAS: 9.5

ARCO REBAJADO TIPO 2
 LH = 3.00
 LV = 2.30

CARACTER. GEOTECNICAS T HT TI TC	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA												MEDICIONES POR M		
	VI	EZI	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#M-Z	#H-A	#ACERO				
1 .5 1 2 1 2 3 4	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.00	.00	2	2	6	2	1	4	1	1.34	2.52	229.3				
	.40	.50	.70	.50	.40	.40	.95	.85	2.20	.00	.00	3	2	6	2	1	4	1	1.54	2.52	237.3				
1 3.0 1 2 1	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.45	1.10	5	7	6	2	2	6	1	1.34	2.52	254.5				
2	.40	.50	.60	.50	.40	.40	.95	.85	2.20	.45	1.10	5	2	6	2	2	6	1	1.44	2.52	257.4				
1 5.0 1 2 1	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.50	1.15	6	2	6	2	4	8	2	1.34	2.52	296.5				
1 6.5 1 1 1	.40	.50	.70	.50	.40	.40	.95	.85	1.40	2.00	1.30	8	2	6	2	7	9	2	1.54	2.52	361.6				
1 6.5 2 1 1	.40	.50	.70	.50	.40	.40	.95	.85	1.40	2.00	1.30	8	2	6	2	7	9	2	1.54	2.52	361.6				
2 .5 1 2 1 2 3 4	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.00	.00	2	2	6	2	1	4	1	1.34	2.52	229.3				
	.40	.50	.60	.50	.40	.40	.95	.85	2.20	.00	.00	2	2	6	2	1	4	1	1.44	2.52	231.8				
2 3.0 1 2 1 2	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.00	.00	4	2	6	2	1	6	1	1.34	2.52	241.6				
3	.40	.50	.70	.50	.40	.40	.95	.85	2.20	.00	.00	5	2	6	2	1	6	1	1.54	2.52	250.7				
2 5.0 1 2 1 2	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.45	1.10	6	2	6	2	2	7	2	1.34	2.52	262.9				
2	.40	.50	.70	.50	.40	.40	.95	.85	2.20	.45	1.10	6	2	6	2	2	7	2	1.54	2.52	269.0				
2 6.5 1 1 1	.40	.50	.60	.50	.40	.40	.95	.85	1.40	2.00	1.30	7	2	6	2	7	9	2	1.44	2.52	348.2				
2 6.5 2 1 1	.40	.50	.50	.50	.40	.40	.95	.85	1.40	2.00	1.30	7	2	6	2	5	8	2	1.34	2.52	310.8				
2 8.0 2 1 1	.50	.50	.70	.50	.40	.40	.95	.85	1.40	2.00	1.30	8	2	6	2	7	9	2	1.64	2.52	365.5				
3 .5 1 2 1 2 3 4	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.00	.00	2	2	6	2	1	4	1	1.34	2.52	229.3				
	.40	.50	.60	.50	.40	.40	.95	.90	2.30	.00	.00	2	2	6	2	1	4	1	1.47	2.52	231.6				
	.50	.50	.40	.60	.40	.40	.95	.90	2.30	.00	.00	2	2	6	2	1	4	1	1.58	2.52	234.1				
3 3.0 1 2 1 2 3	.40	.50	.50	.50	.40	.40	.95	.85	2.20	.00	.00	3	2	6	2	1	5	1	1.34	2.52	235.2				
3 5.0 1 2 1 2	.40	.50	.50	.50	.40	.40	.95	.85	2.10	.45	1.10	4	2	6	2	2	7	2	1.34	2.52	275.2				
3 6.5 1 1 1	.40	.50	.50	.50	.40	.40	.95	.85	2.00	.50	1.15	6	2	6	2	4	8	2	1.34	2.52	295.3				
3 6.5 2 1 1	.40	.50	.50	.50	.40	.40	.95	.85	2.00	.50	1.15	5	2	6	2	4	8	2	1.34	2.52	291.6				
3 8.0 1 1 1	.50	.50	.60	.50	.40	.40	.95	.85	1.40	2.00	1.30	8	2	6	4	7	9	2	1.54	2.52	369.4				
3 8.0 2 1 1	.50	.50	.50	.50	.40	.40	.95	.85	1.40	2.00	1.30	7	2	6	4	7	9	2	1.44	2.52	352.0				
3 9.0 2 1 1	.50	.50	.70	.50	.40	.40	.95	.85	1.40	2.00	1.30	8	2	6	5	7	9	2	1.64	2.52	371.6				

VALORES COMUNES AL TIPO 3																								
EP= .56		R= 2.18		LT= .11		L8= .35		LH = 3.00																
TIPOS ARMADURA: #D= 4		#M= 5		#J= 3		DISTANCIA JUNTAS: 14.0		LV = 3.70																
CARACTER. GEOTECNICAS		DIMENSIONES		LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA		MEDICIONES POR M												
MT	TI	TC	VI	EZI	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	M-Z	M-A	ACERO	
1	.5	1 2	1 2 3 4	.60	.60	.50	.60	.45	.45	1.05	.95	3.75	.00	.00	2	2	7	2	1	5	1	1.75	3.95	334.9
				.60	.60	.60	.60	.45	.45	1.05	.95	3.75	.00	.00	3	2	7	2	1	5	1	2.11	3.95	346.6
1	3.0	1 2	1	.40	.60	.50	.60	.45	.45	1.05	.95	3.75	.45	1.10	5	2	7	2	2	7	1	1.75	3.95	364.6
				.50	.60	.50	.60	.45	.45	1.05	.95	3.75	.45	1.10	6	2	7	2	2	7	1	1.87	3.95	372.1
				.70	.60	.70	.60	.45	.45	1.05	.95	3.75	.45	1.10	7	2	7	2	2	7	1	2.35	3.95	395.1
1	5.0	1 2	1	.40	.60	.50	.60	.45	.45	1.05	.95	3.80	.60	1.30	6	2	7	4	5	9	1	1.75	3.95	407.0
1	6.5	1	1	.60	.60	.50	.60	.45	.45	1.05	.95	.00	4.85	1.50	6	2	7	1	9	10	2	1.99	3.95	581.9
1	6.5	2	1	.60	.60	.50	.60	.45	.45	1.05	.95	3.90	.75	1.50	6	2	7	7	9	10	2	1.90	3.95	542.3
2	.5	1 2	1	.40	.60	.50	.60	.45	.45	1.05	.95	3.75	.00	.00	3	2	7	2	1	4	1	1.75	3.95	334.9
				.50	.60	.50	.60	.45	.45	1.05	.95	3.75	.00	.00	4	2	7	2	1	4	1	1.87	3.95	341.0
				.50	.60	.50	.65	.45	.45	1.10	.95	3.80	.00	.00	4	2	7	2	1	4	1	1.95	3.95	342.1
				.70	.60	.50	.65	.45	.45	1.10	.95	3.80	.00	.00	5	2	7	2	1	4	1	2.20	3.95	352.3
2	3.0	1 2	1	.40	.60	.50	.60	.45	.45	1.05	.95	3.75	.45	1.10	5	2	7	2	2	7	1	1.75	3.95	364.6
				.60	.60	.50	.60	.45	.45	1.05	.95	3.75	.45	1.10	7	2	7	2	2	7	1	1.99	3.95	384.0
				.70	.60	.50	.60	.45	.45	1.05	.95	3.75	.45	1.10	7	2	7	2	2	7	1	2.11	3.95	387.7
2	5.0	1 2	1	.50	.60	.50	.60	.45	.45	1.05	.95	3.90	.50	1.15	7	2	7	7	4	8	2	1.87	3.95	464.8
				.80	.60	.50	.60	.45	.45	1.05	.95	3.90	.50	1.15	8	2	7	7	4	8	2	2.23	3.95	487.8
2	6.5	1	1	.60	.60	.50	.60	.45	.45	1.05	.95	3.90	.60	1.30	6	2	7	7	7	10	2	1.99	3.95	516.8
2	6.5	2	1	.60	.60	.50	.60	.45	.45	1.05	.95	3.90	.60	1.30	6	2	7	7	7	9	2	1.99	3.95	503.4
2	8.0	1	1	.70	.60	.70	.60	.45	.45	1.05	.95	.00	4.85	1.50	10	3	7	1	9	11	2	2.35	3.95	643.1
2	8.0	2	1	.70	.60	.60	.60	.45	.45	1.05	.95	4.05	.75	1.50	10	2	7	9	9	10	2	2.23	3.95	619.4
2	9.0	2	1	.80	.60	.70	.60	.45	.45	1.30	.95	.00	4.85	1.50	10	3	8	1	9	11	2	2.47	3.95	675.7
3	.5	1 2	1	.60	.60	.50	.60	.45	.45	1.05	.95	3.80	.00	.00	6	2	7	4	1	4	1	1.99	3.95	363.2
				.60	.60	.50	.65	.45	.45	1.10	.95	3.85	.00	.00	6	2	7	4	1	4	1	2.08	3.95	364.4
				.70	.55	.50	.70	.40	.50	1.10	1.00	3.85	.00	.00	6	2	7	4	1	4	1	2.20	3.95	368.2
3	3.0	1 2	1 2 3	.60	.60	.50	.60	.45	.45	1.05	.95	3.80	.45	1.10	7	2	7	4	2	6	1	1.99	3.95	387.9
				.80	.60	.50	.60	.45	.45	1.05	.95	3.80	.45	1.10	7	2	7	4	2	6	1	2.23	3.95	395.3
3	5.0	1 2	1	.60	.60	.50	.60	.45	.45	1.05	.95	3.90	.45	1.10	8	2	7	7	2	8	2	1.99	3.95	474.4
				.80	.60	.50	.60	.45	.45	1.05	.95	3.90	.45	1.10	9	2	7	7	2	8	2	2.23	3.95	494.6
3	6.5	1	1	.70	.60	.50	.60	.45	.45	1.05	.95	4.05	.60	1.30	9	2	7	9	7	9	2	2.11	3.95	557.4
3	6.5	2	1	.70	.60	.50	.60	.45	.45	1.05	.95	4.05	.60	1.30	9	2	7	9	5	6	2	2.11	3.95	538.8
3	8.0	1	1	.80	.60	.50	.60	.45	.45	1.30	.95	4.05	.75	1.50	10	2	8	9	9	10	2	2.23	3.95	646.6

DIRECCION GENERAL DE CARRETERAS COLECCION DE ANOS REBAJADOS AR 4

ARCO REBAJADO TIPO 3
LH = 3,00
LV = 3,70

VALORES COMUNES AL TIPO 3
EP = .56 R = 2,18 EA = .25 L8 = .35
TIPOS ARMADURA: #D = 4 #E = 5 #I = 6 #J = 3 #K = 3 #L = 4 #M = 5 #N = 6 #O = 7 #P = 8 #Q = 9 #R = 10 #S = 11 #T = 12 #U = 13 #V = 14 #W = 15 #X = 16 #Y = 17 #Z = 18 #AA = 19 #AB = 20 #AC = 21 #AD = 22 #AE = 23 #AF = 24 #AG = 25 #AH = 26 #AI = 27 #AJ = 28 #AK = 29 #AL = 30 #AM = 31 #AN = 32 #AO = 33 #AP = 34 #AQ = 35 #AR = 36 #AS = 37 #AT = 38 #AU = 39 #AV = 40 #AW = 41 #AX = 42 #AY = 43 #AZ = 44 #BA = 45 #BB = 46 #BC = 47 #BD = 48 #BE = 49 #BF = 50 #BG = 51 #BH = 52 #BI = 53 #BJ = 54 #BK = 55 #BL = 56 #BM = 57 #BN = 58 #BO = 59 #BP = 60 #BQ = 61 #BR = 62 #BS = 63 #BT = 64 #BU = 65 #BV = 66 #BW = 67 #BX = 68 #BY = 69 #BZ = 70 #CA = 71 #CB = 72 #CC = 73 #CD = 74 #CE = 75 #CF = 76 #CG = 77 #CH = 78 #CI = 79 #CJ = 80 #CK = 81 #CL = 82 #CM = 83 #CN = 84 #CO = 85 #CP = 86 #CQ = 87 #CR = 88 #CS = 89 #CT = 90 #CU = 91 #CV = 92 #CW = 93 #CX = 94 #CY = 95 #CZ = 96 #DA = 97 #DB = 98 #DC = 99 #DD = 100 #DE = 101 #DF = 102 #DG = 103 #DH = 104 #DI = 105 #DJ = 106 #DK = 107 #DL = 108 #DM = 109 #DN = 110 #DO = 111 #DP = 112 #DQ = 113 #DR = 114 #DS = 115 #DT = 116 #DU = 117 #DV = 118 #DW = 119 #DX = 120 #DY = 121 #DZ = 122 #EA = 123 #EB = 124 #EC = 125 #ED = 126 #EE = 127 #EF = 128 #EG = 129 #EH = 130 #EI = 131 #EJ = 132 #EK = 133 #EL = 134 #EM = 135 #EN = 136 #EO = 137 #EP = 138 #EQ = 139 #ER = 140 #ES = 141 #ET = 142 #EU = 143 #EV = 144 #EW = 145 #EX = 146 #EY = 147 #EZ = 148 #FA = 149 #FB = 150 #FC = 151 #FD = 152 #FE = 153 #FF = 154 #FG = 155 #FH = 156 #FI = 157 #FJ = 158 #FK = 159 #FL = 160 #FM = 161 #FN = 162 #FO = 163 #FP = 164 #FQ = 165 #FR = 166 #FS = 167 #FT = 168 #FU = 169 #FV = 170 #FW = 171 #FX = 172 #FY = 173 #FZ = 174 #GA = 175 #GB = 176 #GC = 177 #GD = 178 #GE = 179 #GF = 180 #GG = 181 #GH = 182 #GI = 183 #GJ = 184 #GK = 185 #GL = 186 #GM = 187 #GN = 188 #GO = 189 #GP = 190 #GQ = 191 #GR = 192 #GS = 193 #GT = 194 #GU = 195 #GV = 196 #GW = 197 #GX = 198 #GY = 199 #GZ = 200 #HA = 201 #HB = 202 #HC = 203 #HD = 204 #HE = 205 #HF = 206 #HG = 207 #HH = 208 #HI = 209 #HJ = 210 #HK = 211 #HL = 212 #HM = 213 #HN = 214 #HO = 215 #HP = 216 #HQ = 217 #HR = 218 #HS = 219 #HT = 220 #HU = 221 #HV = 222 #HW = 223 #HX = 224 #HY = 225 #HZ = 226 #IA = 227 #IB = 228 #IC = 229 #ID = 230 #IE = 231 #IF = 232 #IG = 233 #IH = 234 #IJ = 235 #IK = 236 #IL = 237 #IM = 238 #IN = 239 #IO = 240 #IP = 241 #IQ = 242 #IR = 243 #IS = 244 #IT = 245 #IU = 246 #IV = 247 #IW = 248 #IX = 249 #IY = 250 #IZ = 251 #JA = 252 #JB = 253 #JC = 254 #JD = 255 #JE = 256 #JF = 257 #JG = 258 #JH = 259 #JI = 260 #JJ = 261 #JK = 262 #JL = 263 #JM = 264 #JN = 265 #JO = 266 #JP = 267 #JQ = 268 #JR = 269 #JS = 270 #JT = 271 #JU = 272 #JV = 273 #JW = 274 #JX = 275 #JY = 276 #JZ = 277 #KA = 278 #KB = 279 #KC = 280 #KD = 281 #KE = 282 #KF = 283 #KG = 284 #KH = 285 #KI = 286 #KJ = 287 #KK = 288 #KL = 289 #KM = 290 #KN = 291 #KO = 292 #KP = 293 #KQ = 294 #KR = 295 #KS = 296 #KT = 297 #KU = 298 #KV = 299 #KW = 300 #KX = 301 #KY = 302 #KZ = 303 #LA = 304 #LB = 305 #LC = 306 #LD = 307 #LE = 308 #LF = 309 #LG = 310 #LH = 311 #LI = 312 #LJ = 313 #LK = 314 #LL = 315 #LM = 316 #LN = 317 #LO = 318 #LP = 319 #LQ = 320 #LR = 321 #LS = 322 #LT = 323 #LU = 324 #LV = 325 #LW = 326 #LX = 327 #LY = 328 #LZ = 329 #MA = 330 #MB = 331 #MC = 332 #MD = 333 #ME = 334 #MF = 335 #MG = 336 #MH = 337 #MI = 338 #MJ = 339 #MK = 340 #ML = 341 #MN = 342 #MO = 343 #MP = 344 #MQ = 345 #MR = 346 #MS = 347 #MT = 348 #MU = 349 #MV = 350 #MW = 351 #MX = 352 #MY = 353 #MZ = 354 #NA = 355 #NB = 356 #NC = 357 #ND = 358 #NE = 359 #NF = 360 #NG = 361 #NH = 362 #NI = 363 #NJ = 364 #NK = 365 #NL = 366 #NM = 367 #NO = 368 #NP = 369 #NQ = 370 #NR = 371 #NS = 372 #NT = 373 #NU = 374 #NV = 375 #NW = 376 #NX = 377 #NY = 378 #NZ = 379 #OA = 380 #OB = 381 #OC = 382 #OD = 383 #OE = 384 #OF = 385 #OG = 386 #OH = 387 #OI = 388 #OJ = 389 #OK = 390 #OL = 391 #OM = 392 #ON = 393 #OO = 394 #OP = 395 #OQ = 396 #OR = 397 #OS = 398 #OT = 399 #OU = 400 #OV = 401 #OW = 402 #OX = 403 #OY = 404 #OZ = 405 #PA = 406 #PB = 407 #PC = 408 #PD = 409 #PE = 410 #PF = 411 #PG = 412 #PH = 413 #PI = 414 #PJ = 415 #PK = 416 #PL = 417 #PM = 418 #PN = 419 #PO = 420 #PP = 421 #PQ = 422 #PR = 423 #PS = 424 #PT = 425 #PU = 426 #PV = 427 #PW = 428 #PX = 429 #PY = 430 #PZ = 431 #QA = 432 #QB = 433 #QC = 434 #QD = 435 #QE = 436 #QF = 437 #QG = 438 #QH = 439 #QI = 440 #QJ = 441 #QK = 442 #QL = 443 #QM = 444 #QN = 445 #QO = 446 #QP = 447 #QQ = 448 #QR = 449 #QS = 450 #QT = 451 #QU = 452 #QV = 453 #QW = 454 #QX = 455 #QY = 456 #QZ = 457 #RA = 458 #RB = 459 #RC = 460 #RD = 461 #RE = 462 #RF = 463 #RG = 464 #RH = 465 #RI = 466 #RJ = 467 #RK = 468 #RL = 469 #RM = 470 #RN = 471 #RO = 472 #RP = 473 #RQ = 474 #RR = 475 #RS = 476 #RT = 477 #RU = 478 #RV = 479 #RW = 480 #RX = 481 #RY = 482 #RZ = 483 #SA = 484 #SB = 485 #SC = 486 #SD = 487 #SE = 488 #SF = 489 #SG = 490 #SH = 491 #SI = 492 #SJ = 493 #SK = 494 #SL = 495 #SM = 496 #SN = 497 #SO = 498 #SP = 499 #SQ = 500 #SR = 501 #SS = 502 #ST = 503 #SU = 504 #SV = 505 #SW = 506 #SX = 507 #SY = 508 #SZ = 509 #TA = 510 #TB = 511 #TC = 512 #TD = 513 #TE = 514 #TF = 515 #TG = 516 #TH = 517 #TI = 518 #TJ = 519 #TK = 520 #TL = 521 #TM = 522 #TN = 523 #TO = 524 #TP = 525 #TQ = 526 #TR = 527 #TS = 528 #TT = 529 #TU = 530 #TV = 531 #TW = 532 #TX = 533 #TY = 534 #TZ = 535 #UA = 536 #UB = 537 #UC = 538 #UD = 539 #UE = 540 #UF = 541 #UG = 542 #UH = 543 #UI = 544 #UJ = 545 #UK = 546 #UL = 547 #UM = 548 #UN = 549 #UO = 550 #UP = 551 #UQ = 552 #UR = 553 #US = 554 #UT = 555 #UU = 556 #UV = 557 #UW = 558 #UX = 559 #UY = 560 #UZ = 561 #VA = 562 #VB = 563 #VC = 564 #VD = 565 #VE = 566 #VF = 567 #VG = 568 #VH = 569 #VI = 570 #VJ = 571 #VK = 572 #VL = 573 #VM = 574 #VN = 575 #VO = 576 #VP = 577 #VQ = 578 #VR = 579 #VS = 580 #VT = 581 #VU = 582 #VV = 583 #VW = 584 #VX = 585 #VY = 586 #VZ = 587 #WA = 588 #WB = 589 #WC = 590 #WD = 591 #WE = 592 #WF = 593 #WG = 594 #WH = 595 #WI = 596 #WJ = 597 #WK = 598 #WL = 599 #WM = 600 #WN = 601 #WO = 602 #WP = 603 #WQ = 604 #WR = 605 #WS = 606 #WT = 607 #WU = 608 #WV = 609 #WW = 610 #WX = 611 #WY = 612 #WZ = 613 #XA = 614 #XB = 615 #XC = 616 #XD = 617 #XE = 618 #XF = 619 #XG = 620 #XH = 621 #XI = 622 #XJ = 623 #XK = 624 #XL = 625 #XM = 626 #XN = 627 #XO = 628 #XP = 629 #XQ = 630 #XR = 631 #XS = 632 #XT = 633 #XU = 634 #XV = 635 #XW = 636 #XX = 637 #XY = 638 #XZ = 639 #YA = 640 #YB = 641 #YC = 642 #YD = 643 #YE = 644 #YF = 645 #YG = 646 #YH = 647 #YI = 648 #YJ = 649 #YK = 650 #YL = 651 #YM = 652 #YN = 653 #YO = 654 #YP = 655 #YQ = 656 #YR = 657 #YS = 658 #YT = 659 #YU = 660 #YV = 661 #YW = 662 #YX = 663 #YY = 664 #YZ = 665 #ZA = 666 #ZB = 667 #ZC = 668 #ZD = 669 #ZE = 670 #ZF = 671 #ZG = 672 #ZH = 673 #ZI = 674 #ZJ = 675 #ZK = 676 #ZL = 677 #ZM = 678 #ZN = 679 #ZO = 680 #ZP = 681 #ZQ = 682 #ZR = 683 #ZS = 684 #ZT = 685 #ZU = 686 #ZV = 687 #ZW = 688 #ZX = 689 #ZY = 690 #ZZ = 691

CARACTER. GEOTECHNICAS Y MT TI TC	DIMENSIONES			LONGITUDES DE ARMADURAS						TIPOS DE ARMADURA						MEDICIONES POR M					
	VI	EZ	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	#Z	M-A	ACERO
3 8.0 2 1	.80	.60	.50	.60	.45	.45	1.30	.95	4.05	.60	1.30	10	2	6	9	7	9	2	2.23	3.95	607.7
3 9.0 1 1	.80	.60	.60	.60	.45	.45	1.30	.95	.00	4.70	1.30	11	3	6	1	10	11	2	2.35	3.95	722.5
3 9.0 2 1	.80	.60	.50	.60	.45	.45	1.30	.95	3.90	.75	1.50	11	3	6	10	9	10	2	2.23	3.95	692.1

DIRECCION GENERAL DE CARRETERAS COLECCION DE ARCOS REBAJADOS AN 9

VALORES COMUNES AL TIPO 4		ARCO REBAJADO TIPO 4										MEDICIONES POR M	
EP= .44		LH = 4,00										M-A	
R= 2,90		LV = 1,70										M-Z	
TIPOS ARMADURA: #0= 4												ACERO	
EA= .30													
#M= 2													
#J= 5													
LTM= .14													
DISTANCIA JUNTAS: 8,5													
CARACTER. GEOTECNICAS		LONGITUDES DE ARMADURAS										TIPOS DE ARMADURA	
T MT		L1 L2 L3 L4 L5 L6 L7										#A #B #C #E #F #G #K	
1 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										5 2 6 2 1 4 1	
2 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										5 2 6 2 1 4 1	
3 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										6 2 6 2 1 4 1	
1 2.5 1 2		.40 .40 .95 .85 1.20 1.40 1.30										7 2 6 2 2 5 2	
2 2.5 1 2		.40 .40 .95 .85 1.20 1.40 1.30										8 2 6 2 2 5 2	
1 4.5 1 2		.40 .40 .95 .85 .00 2.50 1.35										9 2 6 1 4 7 2	
1 6.0 1 2		.40 .40 .95 .85 .00 2.60 1.50										11 3 7 1 7 8 5	
2 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										5 2 6 2 1 4 1	
3 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										5 2 6 2 1 4 1	
4 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										6 2 6 2 1 4 1	
2 2.5 1 2		.40 .40 .95 .85 2.25 .00 .00										7 2 6 2 1 4 2	
2 4.5 1 2		.40 .40 .95 .85 2.25 .00 .00										7 2 6 2 1 4 2	
3 4.5 1 2		.40 .40 .95 .85 2.25 .00 .00										8 2 6 2 1 4 2	
2 6.0 1 2		.40 .40 .95 .85 .00 2.60 1.50										10 2 6 1 5 7 3	
2 7.0 1 1		.40 .40 .95 .85 .00 2.60 1.50										12 4 7 1 7 8 5	
2 7.0 2 1		.40 .40 .95 .85 .00 2.60 1.50										11 3 7 1 7 8 5	
3 .5 1 2		.40 .40 .95 .85 2.25 .00 .00										4 2 6 2 1 4 1	
3 2.5 1 2		.40 .40 .95 .85 2.25 .00 .00										4 2 6 2 1 4 1	
3 4.5 1 2		.40 .40 .95 .85 2.25 .00 .00										6 2 6 2 1 4 1	
3 6.0 1 2		.40 .40 .95 .85 2.25 .00 .00										6 2 6 2 1 4 2	
3 7.0 1 1		.40 .40 .95 .85 2.25 .00 .00										7 2 6 2 1 4 2	
3 7.0 2 1		.40 .40 .95 .85 2.25 .00 .00										7 2 6 2 1 4 2	
3 8.0 2 1		.40 .40 .95 .85 .00 2.60 1.50										7 2 6 2 2 5 2	
3 8.0 2 1		.40 .40 .95 .85 .00 2.60 1.50										8 2 6 2 2 5 2	
3 6.0 1 2		.40 .40 .95 .85 .00 2.50 1.35										9 2 6 1 4 7 2	
3 7.0 1 1		.40 .40 .95 .85 .00 2.60 1.50										10 2 6 1 7 8 4	
3 7.0 2 1		.40 .40 .95 .85 .00 2.60 1.50										10 2 6 1 7 8 4	
3 8.0 2 1		.40 .40 .95 .85 .00 2.60 1.50										11 3 6 1 7 8 5	

VALORES COMUNES AL TIPO 5
 EPR. 49 R= 2,90 EA= .30 LT= .14 L8= .35
 TIPOS ARMADURA: #D= 4 #M= 3 #J= 4 #J= 4 DISTANCIA JUNTAS 10.0

ARCO REBAJADO TIPO 5
 LH = 4.00
 LV = 2.30

Y	TI	TC	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA						MEDICIONES POR M						
			VI	EZ	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	M-Z	M-A	ACERO		
1	.5	1 2	1 2	.50	.50	.50	.50	.40	.40	.95	.85	2.85	.00	.00	.00	4	2	7	2	1	4	1	1.49	3.30	277.8
				.50	.50	.70	.50	.40	.40	.95	.85	2.85	.00	.00	.00	5	2	7	2	1	4	1	1.69	3.30	289.3
1	2.5	1 2	1	.50	.50	.50	.50	.40	.40	.95	.85	1.20	2.00	1.30	7	2	7	2	2	7	2	1.49	3.30	340.7	
				.50	.50	.80	.50	.40	.40	.95	.85	1.20	2.00	1.30	7	2	7	2	2	7	2	1.79	3.30	352.6	
1	4.5	1 2	1	.50	.50	.70	.50	.40	.40	.95	.85	1.40	2.00	1.50	9	2	7	5	5	8	2	1.69	3.30	405.2	
1	6.0	1 2	1	.50	.50	.90	.50	.40	.40	.95	.85	1.90	2.00	1.70	11	3	7	9	9	9	2	1.89	3.30	552.6	
2	.5	1 2	1 2	.50	.50	.50	.50	.40	.40	.95	.85	2.85	.00	.00	4	2	7	2	1	4	1	1.49	3.30	277.8	
				.50	.50	.60	.50	.40	.40	.95	.85	2.85	.00	.00	5	2	7	2	1	4	1	1.59	3.30	284.9	
				.50	.50	1.00	.50	.40	.40	.95	.85	2.85	.00	.00	6	2	7	2	1	4	1	1.99	3.30	303.5	
2	2.5	1 2	1	.50	.50	.50	.50	.40	.40	.95	.85	1.20	2.00	1.30	6	2	7	2	2	6	1	1.49	3.30	304.4	
				.50	.50	.70	.50	.40	.40	.95	.85	1.20	2.00	1.30	7	2	7	2	2	6	1	1.69	3.30	320.0	
				.50	.50	.90	.50	.40	.40	.95	.85	1.20	2.00	1.30	7	2	7	2	2	6	1	1.89	3.30	327.9	
2	4.5	1 2	1	.50	.50	.60	.50	.40	.40	.95	.85	1.25	2.00	1.35	8	2	7	4	4	8	2	1.59	3.30	379.4	
				.50	.50	1.00	.50	.40	.40	.95	.85	1.25	2.00	1.35	9	2	7	4	4	8	2	1.99	3.30	409.1	
2	6.0	1 2	1	.50	.50	.80	.50	.40	.40	.95	.85	1.40	2.00	1.50	10	2	7	7	7	9	2	1.79	3.30	444.5	
2	7.0	1	1	.50	.50	.90	.50	.40	.40	.95	.85	1.90	2.00	1.70	11	3	7	9	9	10	3	1.89	3.30	575.2	
2	7.0	2	1	.50	.50	.90	.50	.40	.40	.95	.85	1.90	2.00	1.70	11	3	7	9	9	10	3	1.89	3.30	575.2	
2	8.0	2	1	.50	.50	1.00	.50	.40	.40	.95	.85	1.60	2.00	1.50	12	4	7	10	10	10	5	1.99	3.30	651.4	
3	.5	1 2	1 2	.50	.50	.50	.50	.40	.40	.95	.85	2.85	.00	.00	4	2	7	2	1	4	1	1.49	3.30	277.8	
				.50	.50	.50	.55	.40	.40	1.00	.85	2.90	.00	.00	3	2	7	2	1	4	1	1.56	3.30	275.9	
				.50	.50	.90	.50	.40	.40	.95	.85	2.85	.00	.00	5	2	7	2	1	4	1	1.89	3.30	295.2	
3	2.5	1 2	1	.50	.50	.50	.50	.40	.40	.95	.85	1.20	2.00	1.30	5	2	7	2	2	5	1	1.49	3.30	295.8	
				.50	.50	.60	.50	.40	.40	.95	.85	1.20	2.00	1.30	6	2	7	2	2	5	1	1.59	3.30	303.4	
				.50	.50	.80	.50	.40	.40	.95	.85	1.20	2.00	1.30	7	2	7	2	2	5	1	1.79	3.30	319.3	
3	4.5	1 2	1	.50	.50	.50	.50	.40	.40	.95	.85	1.20	2.00	1.30	6	2	7	2	2	7	2	1.49	3.30	333.0	
				.50	.50	.80	.50	.40	.40	.95	.85	1.20	2.00	1.30	8	2	7	2	2	7	2	1.79	3.30	363.7	
3	6.0	1 2	1	.50	.50	.60	.50	.40	.40	.95	.85	1.40	2.00	1.50	6	2	7	7	7	8	2	1.59	3.30	415.8	
				.50	.50	1.00	.50	.40	.40	.95	.85	1.40	2.00	1.50	9	2	7	7	7	8	2	1.99	3.30	445.5	
3	7.0	1	1	.50	.50	.80	.50	.40	.40	.95	.85	1.90	2.00	1.70	10	2	7	9	9	9	2	1.79	3.30	525.3	
3	7.0	2	1	.50	.50	.80	.50	.40	.40	.95	.85	1.40	2.00	1.50	10	2	7	7	7	9	2	1.79	3.30	464.5	
3	8.0	1	1	.50	.50	.90	.50	.40	.40	.95	.85	1.90	2.00	1.70	11	3	7	9	9	10	4	1.89	3.30	581.4	
3	8.0	2	1	.50	.50	.80	.50	.40	.40	.95	.85	1.90	2.00	1.70	10	2	7	9	9	9	4	1.79	3.30	536.9	

DIRECCION GENERAL DE CARRETERAS COLECCION DE ANOS REBAJADOS AR 7

VALORES COMUNES AL TIPO 6		ARCO REBAJADO TIPO 6										LH = 4,00		LV = 4,50											
EP = .68		R = 2,90		EA = .30		LT = .14		L8 = .35		L9 = .35		LH = 4,00		LV = 4,50											
TIPOS ARMADURA: #D= 4		#M= 5		#I= 5		#J= 2		DISTANCIA JUNTAS: 16,5																	
CARACTER. GEOTECHNICAS TIPO TI	TC	DIMENSIONES			LONGITUDES DE ARMADURAS							TIPOS DE ARMADURA						MEDICIONES POR M							
		VI	EZI	VE	EZE	L1	L2	L3	L4	L5	L6	L7	#A	#B	#C	#E	#F	#G	#K	M-2	M-A	ACERO			
1	.5	1 2	1 2 3	.50	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.50	1.35	4	2	A	1	4	7	1	2.35	5.91	504.6
1	2.5	1 2	1	.50	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.50	1.35	6	2	A	1	4	6	1	2.35	5.91	524.9
1	2.5	1 2	2	.60	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.50	1.35	7	2	A	1	4	8	1	2.47	5.91	537.3
1	2.5	1 2	3	.80	.70	1.00	.70	.50	.70	1.00	1.05	1.05	.00	5.50	1.35	7	2	A	1	4	8	1	3.47	5.91	561.3
1	4.5	1 2	1	.50	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.75	1.70	7	2	A	1	9	10	2	2.35	5.91	731.3
1	4.5	1 2	2	.80	.70	1.00	.70	.50	.70	1.00	1.05	1.05	.00	5.75	1.70	8	2	A	1	9	10	2	3.47	5.91	773.8
1	6.0	1 2	1	.60	.70	.60	.70	.50	.70	.60	1.40	1.05	.00	5.60	1.50	8	3	A	1	10	11	2	2.63	5.91	812.6
1	7.0	1 2	1	.70	.70	.90	.70	.50	.70	.90	1.40	1.05	.00	6.00	2.05	9	4	A	1	11	12	2	3.19	5.91	960.8
2	.5	1 2	1 2	.50	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.50	1.35	5	2	B	1	4	7	1	2.35	5.91	508.8
2	.5	1 2	3	.70	.70	.50	.75	.50	.70	.50	1.40	1.05	.00	5.50	1.35	6	2	A	1	4	7	1	2.73	5.91	519.7
2	2.5	1 2	1	.50	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.60	1.50	7	2	A	1	5	8	1	2.35	5.91	547.7
2	2.5	1 2	2	.60	.70	.50	.70	.50	.70	.60	1.40	1.05	.00	5.60	1.50	7	2	A	1	5	8	1	2.49	5.91	551.1
2	4.5	1 2	1	.60	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.60	1.50	6	2	A	1	7	9	2	2.49	5.91	657.3
2	6.0	1 2	1	.70	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.75	1.70	9	2	A	1	9	10	2	2.63	5.91	763.0
2	7.0	1 2	1	.80	.70	.60	.70	.50	.70	.60	1.40	1.05	.00	5.60	1.50	10	3	B	1	10	11	2	2.91	5.91	854.7
3	.5	1 2	1	.60	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.60	1.50	7	2	A	1	5	6	1	2.49	5.91	530.9
3	.5	1 2	2	.70	.70	.50	.80	.50	.70	.60	1.40	1.10	.00	5.60	1.50	7	2	A	1	5	6	1	2.82	5.91	535.9
3	.5	1 2	3	.80	.69	.50	.85	.45	.55	1.40	1.15	1.15	.00	5.60	1.50	7	2	A	1	5	6	1	2.97	5.91	538.7
3	2.5	1 2	1	.60	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.60	1.50	7	2	B	1	7	8	2	2.49	5.91	633.9
3	2.5	1 2	2	.70	.70	.50	.70	.50	.70	.60	1.40	1.05	.00	5.60	1.50	8	2	A	1	7	8	2	2.63	5.91	649.8
3	4.5	1 2	1	.70	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.75	1.70	8	2	B	1	9	9	2	2.63	5.91	732.5
3	6.0	1 2	1	.80	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.75	1.70	10	2	A	1	9	10	2	2.77	5.91	787.4
3	7.0	1 2	1	.80	.70	.50	.70	.50	.70	.50	1.40	1.05	.00	5.60	1.50	10	2	B	1	10	10	2	2.77	5.91	827.8

DIRECCION GENERAL DE CARRETERAS COLECCION DE ARCOS REBAJADOS (AR 8)