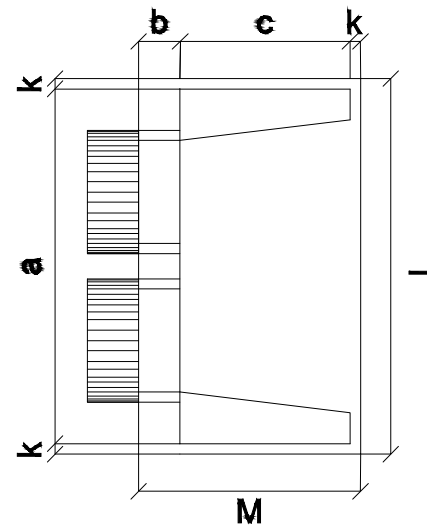


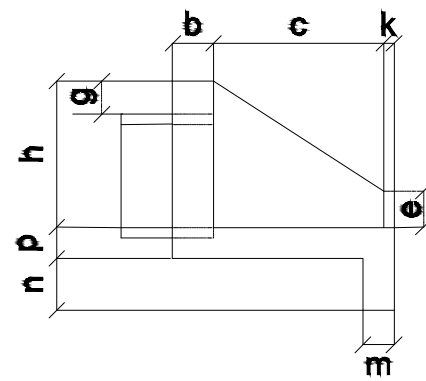


# BUEIRO DUPLO TUBULAR DE CONCRETO - BOCAS NORMAIS E ESCONSAS

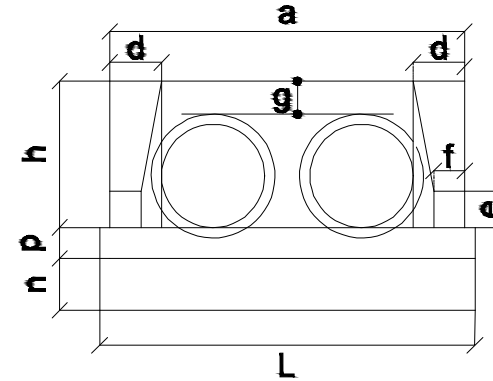
PLANTA NORMAL



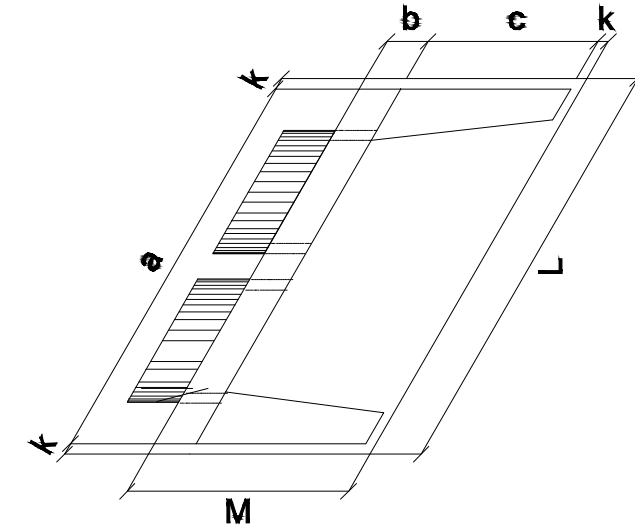
VISTA LATERAL



VISTA FRONTAL



PLANTA ESCONSO



DIMENSÕES E CONSUMOS MÉDIOS PARA UMA UNIDADE

Esc.	BUEIRO DUPLO TUBULAR $\Phi = 80$														formas m <sup>2</sup>	con creto m <sup>3</sup>	cimento saco 50kg	areia m <sup>3</sup>	brita 1 brita 2 m <sup>3</sup>	água m <sup>3</sup>	madeira m <sup>3</sup>
	a	b	c	d	e	f	g	h	k	m	n	p	L	M							
0°	240			30										260	8,25	1,957	9,588	1,331	1,448	0,313	0,206
5°	241			30										261	8,27	1,958	9,592	1,331	1,449	0,313	0,207
10°	244			30										264	8,34	1,961	9,607	1,333	1,451	0,314	0,209
15°	248			31										269	8,46	1,965	9,630	1,336	1,454	0,314	0,212
20°	255	25	145	32	35	15	30	120	10	20	30	20		277	8,65	1,972	9,663	1,341	1,459	0,316	0,216
25°	265			33										287	8,90	1,981	9,704	1,347	1,466	0,317	0,222
30°	277			35										300	9,24	1,991	9,755	1,354	1,473	0,319	0,231
35°	293			37										317	9,71	2,003	9,813	1,362	1,482	0,320	0,243
40°	313			39										339	10,34	2,016	9,879	1,371	1,492	0,323	0,259
45°	339			42										368	11,22	2,031	9,953	1,381	1,503	0,325	0,281

Esc.	BUEIRO DUPLO TUBULAR $\Phi = 120$														formas m <sup>2</sup>	con creto m <sup>3</sup>	cimento saco 50kg	areia m <sup>3</sup>	brita 1 brita 2 m <sup>3</sup>	água m <sup>3</sup>	madeira m <sup>3</sup>
	a	b	c	d	e	f	g	h	k	m	n	p	L	M							
0°	340			40										360	14,92	4,408	21,600	2,998	3,262	0,705	0,373
5°	341			40										361	14,96	4,412	21,617	3,000	3,265	0,706	0,374
10°	345			41										366	15,09	4,422	21,668	3,007	3,272	0,708	0,377
15°	352			41										373	15,31	4,439	21,753	3,019	3,285	0,710	0,383
20°	362	40	180	43	60	25	30	163	10	23	33	23		383	15,64	4,463	21,870	3,035	3,303	0,714	0,391
25°	375			44										397	16,10	4,494	22,019	3,056	3,325	0,719	0,403
30°	393			46										416	16,74	4,531	22,200	3,081	3,353	0,725	0,418
35°	415			49										439	17,59	4,573	22,410	3,110	3,384	0,732	0,440
40°	444			52										470	18,76	4,622	22,647	3,143	3,420	0,740	0,469
45°	481			57										509	20,39	4,676	22,911	3,180	3,460	0,748	0,510

Esc.	BUEIRO DUPLO TUBULAR $\Phi = 100$														formas m <sup>2</sup>	con creto m <sup>3</sup>	cimento saco 50kg	areia m <sup>3</sup>	brita 1 brita 2 m <sup>3</sup>	água m <sup>3</sup>	madeira m <sup>3</sup>
	a	b	c	d	e	f	g	h	k	m	n	p	L	M							
0°	290			35										310	11,51	3,037	14,883	2,065	2,248	0,486	0,288
5°	291			35										311	11,54	3,039	14,892	2,067	2,249	0,486	0,289
10°	294			36										315	11,64	3,044	14,917	2,070	2,253	0,487	0,291
15°	300			36										321	11,81	3,053	14,960	2,076	2,259	0,488	0,295
20°	309	30	165	37	50	20	30	142	10	22	32	22		330	12,06	3,065	15,019	2,084	2,268	0,490	0,301
25°	320			39										342	12,41	3,080	15,093	2,095	2,279	0,493	0,310
30°	335			40										358	12,89	3,099	15,184	2,107	2,293	0,496	0,322
35°	354			43										378	13,54	3,120	15,289	2,122	2,309	0,499	0,339
40°	379			46										405	14,43	3,145	15,408	2,138	2,327	0,503	0,361
45°	410			49										348	15,66	3,171	15,540	2,157	2,347	0,507	0,391

Esc.	BUEIRO DUPLO TUBULAR $\Phi = 150$														formas m <sup>2</sup>	con creto m <sup>3</sup>	cimento saco 50kg	areia m <sup>3</sup>	brita 1 brita 2 m <sup>3</sup>	água m <sup>3</sup>	madeira m <sup>3</sup>
	a	b	c	d	e	f	g	h	k	m	n	p	L	M							
0°	410			45										430	23,76	7,885	38,639	5,362	5,835	1,262	0,594
5°	412			45										432	23,82	7,891	38,668	5,366	5,840	1,263	0,595
10°	416			46										437	24,00	7,909	38,755	5,378	5,853	1,265	0,600
15°	424			47										445	24,30	7,939	38,901	5,398	5,875	1,270	0,608
20°	436	50	260	48	80	30	30	194	10	24	34	24		458	24,76	7,980	39,102	5,426	5,905	1,277	0,619
25°	452			50										474	25,41	8,032	39,359	5,462	5,944	1,285	0,635
30°	473			52										497	26,29	8,096	39,669	5,505	5,991	1,295	0,657
35°	501			55										525	27,49	8,169	40,029	5,555	6,045	1,307	0,687
40°	535			59										561	29,13	8,253	40,438	5,612	6,107	1,320	0,728
45°	580			64										608	31,41	8,345	40,891	5,675	6,175	1,335	0,785



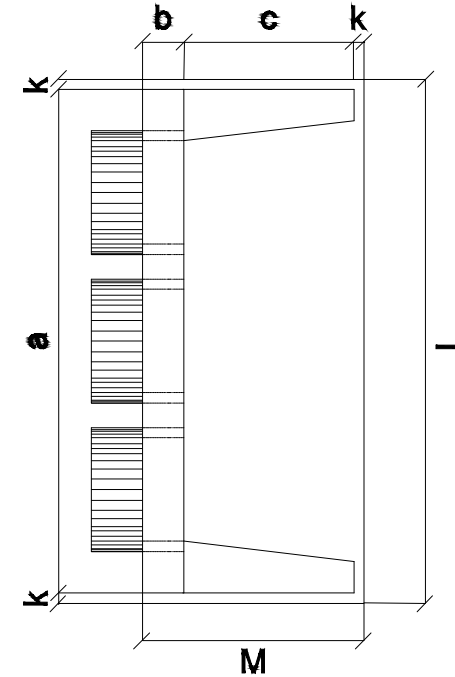
PREFEITURA MUNICIPAL DE MILHÃ  
 RECUPERAÇÃO DE ESTRADAS VICINAIS NO MUNICÍPIO DE MILHÃ-CE  
 PT 1087120-41  
**DETALHAMENTO E DIMENSIONAMENTO DE BUEIROS**  
 PROJETA: ENG. CIVIL ARTHUR MOREIRA TORQUATO - CREA 53.900D-CE  
 ARQUIVO: MILHÃ A BARRA - DRENAGEM.DWG

PRANCHA:  
**2 / 03**  
 ESCALA:  
 N/D

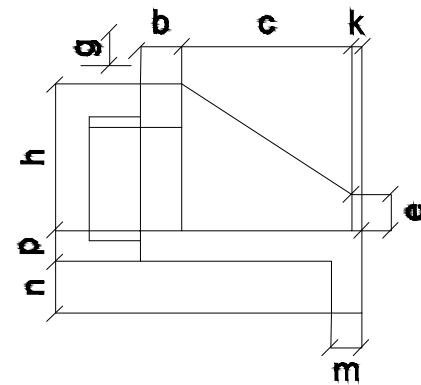


# BUEIRO TRIPLO TUBULAR DE CONCRETO - BOCAS NORMAIS E ESCONSAS

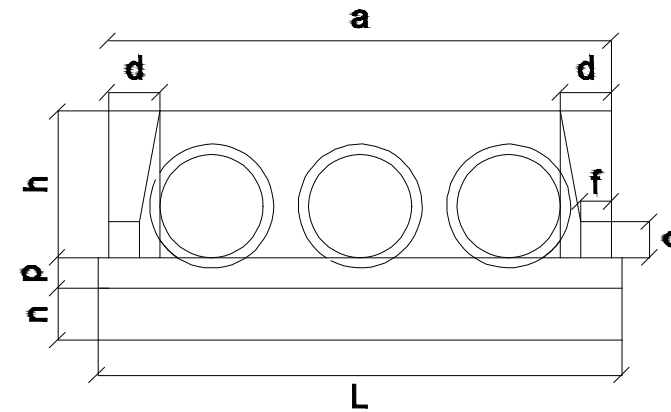
PLANTA NORMAL



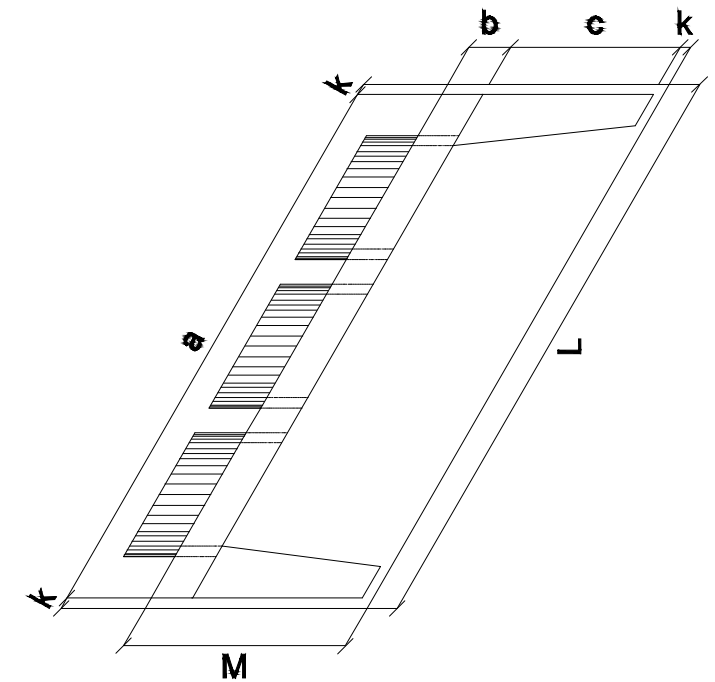
VISTA LATERAL



VISTA FRONTAL



PLANTA ESCONSO



DIMENSÕES E CONSUMOS MÉDIOS PARA UMA UNIDADE

BUEIRO TRIPLO TUBULAR $\Phi = 100$															formas	con	cimento	areia	brita 1	água	madeira	BUEIRO TRIPLO TUBULAR $\Phi = 150$															formas	con	cimento	areia	brita 1	água	madeira				
Esc.	a	b	c	d	e	f	g	h	k	m	n	p	L	M	m <sup>2</sup>	creto	saco	m <sup>3</sup>	m <sup>3</sup>	brita 2	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	Esc.	a	b	c	d	e	f	g	h	k	m	n	p	L	M	m <sup>2</sup>	creto	saco	m <sup>3</sup>	m <sup>3</sup>	brita 2	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>
0°	410			35									430	205	13,34	3,811	18,672	2,591	2,820	0,610	0,333		0°	580			45												600	320	25,44	9,733	47,689	6,618	7,202	1,557	0,636
5°	412			35									432	205	13,38	3,814	18,688	2,598	2,822	0,610	0,335		5°	582			45												602	320	25,53	9,743	47,742	6,625	7,210	1,559	0,638
10°	416			36									437	205	13,52	3,823	18,733	2,600	2,829	0,612	0,338		10°	589			46												609	320	25,78	9,775	47,899	6,647	7,234	1,564	0,644
15°	424			36									445	205	13,76	3,839	18,809	2,610	2,841	0,614	0,344		15°	600			47												621	320	26,22	9,828	48,159	6,683	7,273	1,573	0,655
20°	436	30	165	37	50	20	30	142	10	22	32	22	458	205	14,12	3,860	18,915	2,625	2,857	0,618	0,353		20°	617	50	260	48	80	30	30	194	10	24	34	24			639	320	26,87	9,902	48,521	6,734	7,328	1,584	0,672	
25°	452			39									474	205	14,62	3,888	19,049	2,644	2,877	0,622	0,366		25°	640			50											662	320	27,79	9,996	48,981	6,797	7,397	1,599	0,695	
30°	473			40									497	205	15,31	3,921	19,211	2,666	2,901	0,627	0,383		30°	670			52										693	320	29,04	10,110	49,537	6,875	7,481	1,618	0,726		
35°	501			43									525	205	16,23	3,959	19,400	2,692	2,930	0,633	0,406		35°	708			55										732	320	30,74	10,242	50,183	6,964	7,579	1,639	0,768		
40°	535			46									561	205	17,50	4,003	19,613	2,722	2,962	0,640	0,437		40°	757			59										783	320	33,06	10,391	50,916	7,066	7,689	1,663	0,827		
45°	580			49									608	205	19,24	4,051	19,850	2,755	2,998	0,648	0,481		45°	820			64										849	320	36,29	10,557	51,729	7,179	7,812	1,689	0,907		

BUEIRO TRIPLO TUBULAR $\Phi = 120$															formas	con	cimento	areia	brita 1	água	madeira		
Esc.	a	b	c	d	e	f	g	h	k	m	n	p	L	M	m <sup>2</sup>	creto	saco	m <sup>3</sup>	m <sup>3</sup>	brita 2	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>
0°	480			40									500	230	16,66	5,497	26,934	3,738	4,068	0,879	0,416		
5°	482			40									502	230	16,72	5,503	26,963	3,742	4,072	0,880	0,418		
10°	487			41									508	230	16,90	5,521	27,052	3,754	4,085	0,883	0,422		
15°	497			41									518	230	17,21	5,551	27,198	3,774	4,107	0,888	0,430		
20°	511	40	180	43	60	25	30	163	10	23	33	23	532	230	17,68	5,592	27,402	3,803	4,138	0,895	0,442		
25°	530			44									552	230	18,34	5,645	27,661	3,839	4,177	0,903	0,458		
30°	554			46									577	230	19,24	5,709	27,974	3,882	4,225	0,913	0,481		
35°	586			49									610	230	20,45	5,783	28,337	3,933	4,280	0,925	0,511		
40°	627			52									653	230	22,12	5,867	28,750	3,990	4,342	0,939	0,553		
45°	679			57									707	230	24,42	5,961	29,207	4,053	4,411	0,954	0,610		



PREFEITURA MUNICIPAL DE MILHÃ  
 RECUPERAÇÃO DE ESTRADAS VICINAIS NO MUNICÍPIO DE MILHÃ-CE  
 PT 1087120-41

DETALHAMENTO E DIMENSIONAMENTO DE BUEIROS

PROJETISTA: ENG. CIVIL ARTHUR MOREIRA TORQUATO - CREA 53.900D-CE  
 ARQUIVO: MILHÃ A BARRA - DRENAGEM.DWG

PRANCHA:  
 3 / 03

ESCALA:  
 N/D