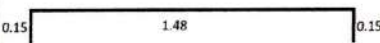
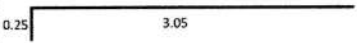
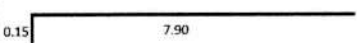
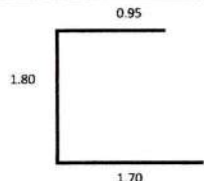
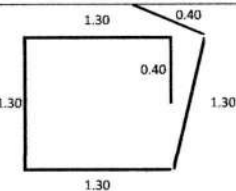
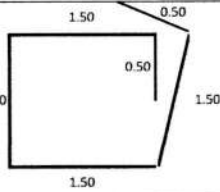
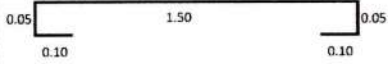
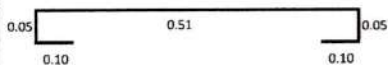
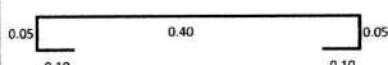
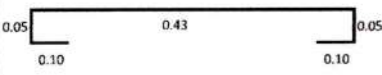
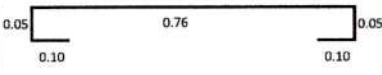
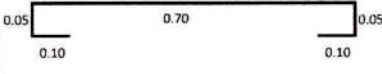
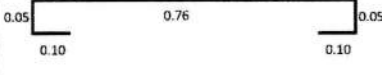
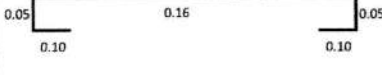
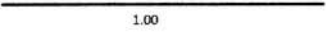
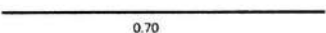
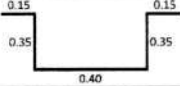


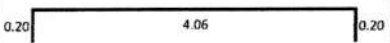
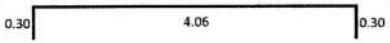
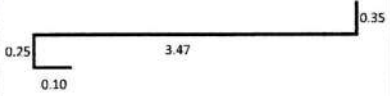
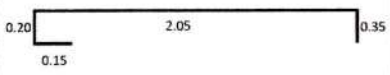
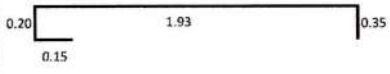
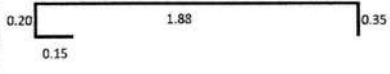
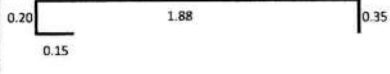
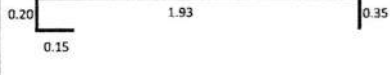
DESPIECE DE ACEROS CAMARA No. 30 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
37	MUROS MANHOLE		R12	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	44	1.78	43.86
38	MUROS MANHOLE		R13	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	3.30	66.53
39	MUROS MANHOLE		R14	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	8.05	162.29
40	MUROS MANHOLE		R15	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	12	4.45	29.90
41	MUROS MANHOLE		R16	REFUERZO INTERIOR MANHOLE DE ACCESO	# 3	0.560	49	6.00	164.64
42	MUROS MANHOLE		R17	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	44	7.00	172.48
43	TAPA MANHOLE		R18	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	30	1.80	53.68
44	TAPA MANHOLE		R18a-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.81	3.22
45	TAPA MANHOLE		R18a-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.70	2.78

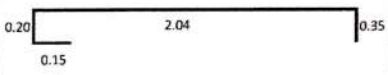
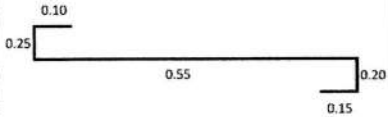
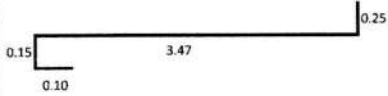
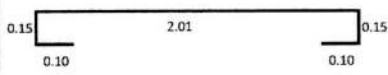
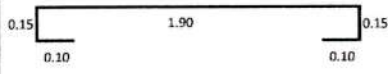
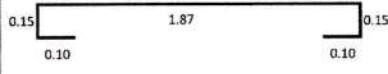
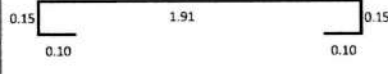
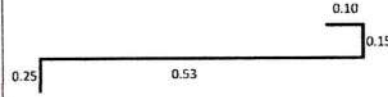
DESPIECE DE ACEROS CAMARA No. 30 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
46	TAPA MANHOLE		R18a-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.73	2.90
47	TAPA MANHOLE		R18b-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
48	TAPA MANHOLE		R18b-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.00	1.99
49	TAPA MANHOLE		R18b-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
50	TAPA MANHOLE		R18b-4	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.46	1.83
51	TAPA MANHOLE		R19	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
52	TAPA MANHOLE		R20	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
53	ESCALONES ACCESO		R21	ESCALERA DE GATO	# 5	1.56	41	1.40	89.54
								TOTAL	4501.31

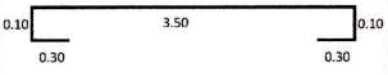
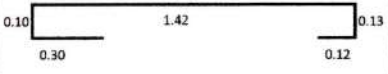
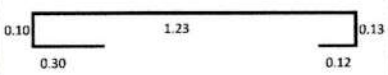
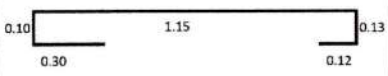
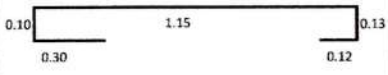
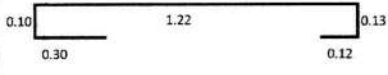
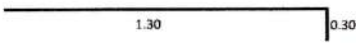
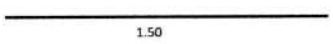
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	72	4.17	913.33
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.75	16.73
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.58	15.70
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.58	15.70
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00

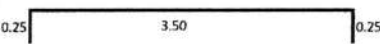
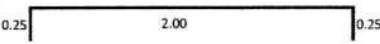
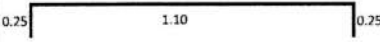
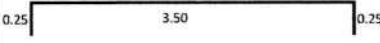
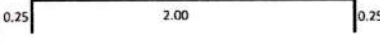
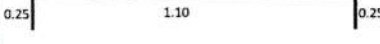
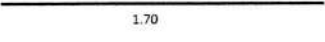
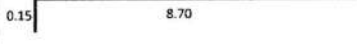
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
11	MUROS		R1b-1	REFUERZO INTERIOR ALZADA	# 7	3.042	4	1.25	15.21
12	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	54	3.97	332.72
13	MUROS		R2a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	2.51	7.79
14	MUROS		R2a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	2.40	7.45
15	MUROS		R2a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	2.37	7.36
16	MUROS		R2a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	2.41	7.48
17	MUROS		R2a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	2.53	7.85
18	MUROS		R2b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.03	6.39

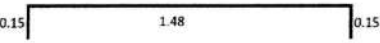
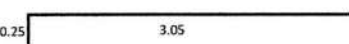
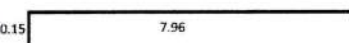
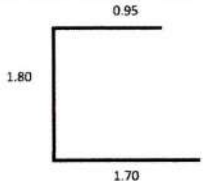
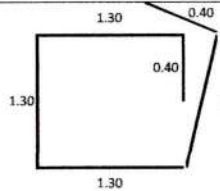
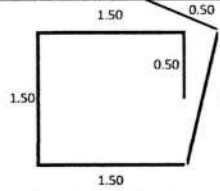
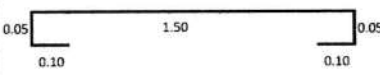
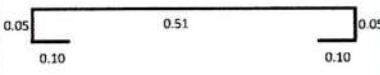
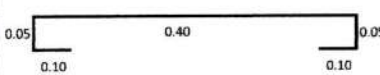
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	80	4.30	533.89
20	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.07	25.70
21	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.88	23.34
22	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.80	22.35
23	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.80	22.35
24	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.87	23.22
25	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.04	25.33
26	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
27	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25

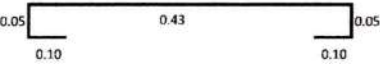
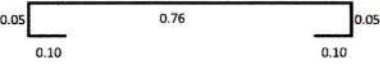
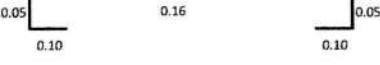
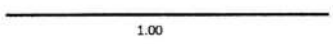
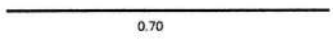
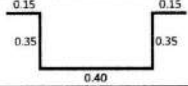
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
29	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	7	2.50	27.16
30	PLACA TAPA		R6b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	1.60	34.76
31	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	35	4.00	217.28
32	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.50	31.04
33	PLACA TAPA		R7b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	1.60	44.70
34	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	12	1.70	31.66
35	MUROS MANHOLE		R10	REFUERZO INTERIOR MANHOLE ACCESO	# 5	1.552	36	2.75	153.65
36	MUROS MANHOLE		R11	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	8.85	178.42

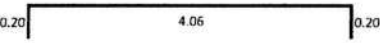
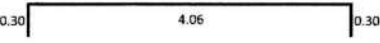
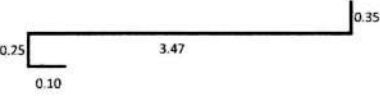
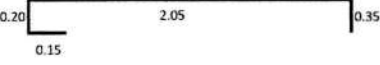
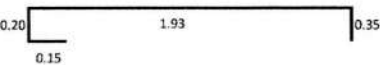
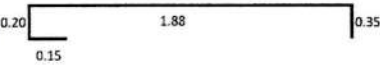
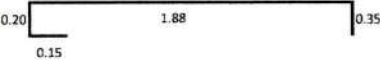
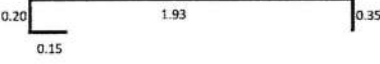
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
37	MUROS MANHOLE		R12	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	44	1.78	43.86
38	MUROS MANHOLE		R13	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	3.30	66.53
39	MUROS MANHOLE		R14	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	8.11	163.50
40	MUROS MANHOLE		R15	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	12	4.45	29.90
41	MUROS MANHOLE		R16	REFUERZO INTERIOR MANHOLE DE ACCESO	# 3	0.560	49	6.00	164.64
42	MUROS MANHOLE		R17	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	44	7.00	172.48
43	TAPA MANHOLE		R18	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	30	1.80	53.68
44	TAPA MANHOLE		R18a-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.81	3.22
45	TAPA MANHOLE		R18a-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.70	2.78

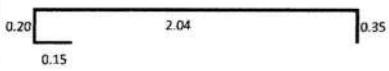
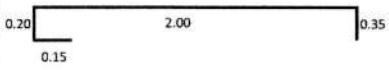
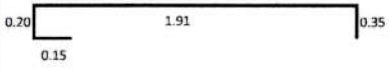
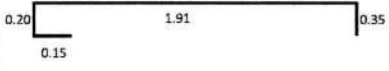
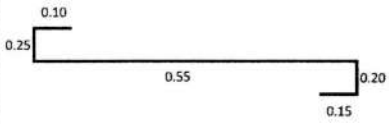
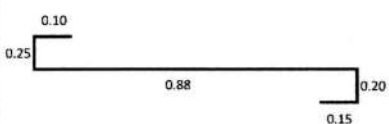
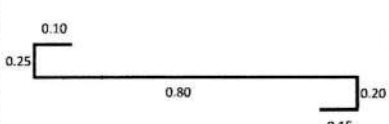
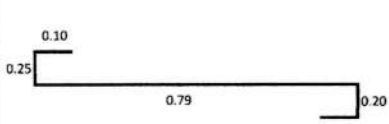
DESPIECE DE ACEROS CAMARA No. 31 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
46	TAPA MANHOLE		R18a-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.73	2.90
47	TAPA MANHOLE		R18b-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
48	TAPA MANHOLE		R18b-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.00	1.99
49	TAPA MANHOLE		R18b-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
50	TAPA MANHOLE		R18b-4	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.46	1.83
51	TAPA MANHOLE		R19	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
52	TAPA MANHOLE		R20	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
53	ESCALONES ACCESO		R21	ESCALERA DE GATO	# 5	1.56	41	1.40	89.54
								TOTAL	4503.73

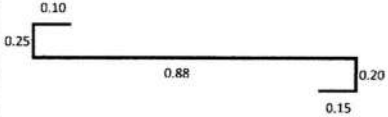
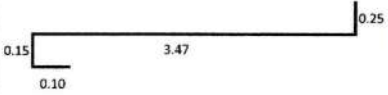
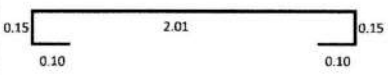
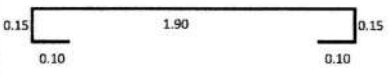
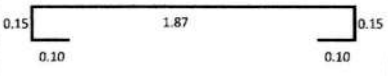
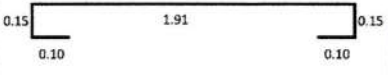
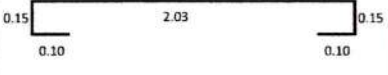
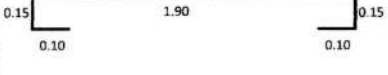
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	72	4.17	913.33
4	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.75	8.37
5	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.63	8.00
6	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.58	7.85
7	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.58	7.85
8	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.63	8.00

DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
9	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.74	8.34
10	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.70	8.21
11	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.61	7.94
12	MUROS		R1a-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.61	7.94
13	MUROS		R1a-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.69	8.18
14	MUROS		R1b-1	REFUERZO INTERIOR ALZADA	# 7	3.042	2	1.25	7.61
15	MUROS		R1b-2	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.58	4.81
16	MUROS		R1b-3	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.50	4.56
17	MUROS		R1b-4	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.49	4.53

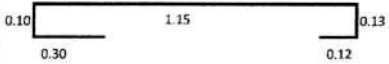
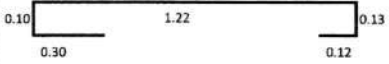
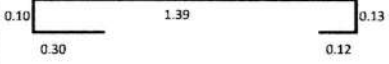
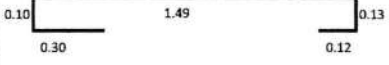
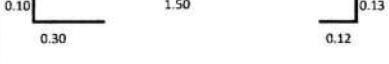
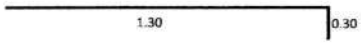
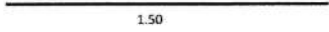
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
18	MUROS		R1b-5	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.58	4.81
19	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	54	3.97	332.72
20	MUROS		R2a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.51	3.90
21	MUROS		R2a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.40	3.72
22	MUROS		R2a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.37	3.68
23	MUROS		R2a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.41	3.74
24	MUROS		R2a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.53	3.93
25	MUROS		R2a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.45	3.80
26	MUROS		R2a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.40	3.72

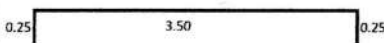
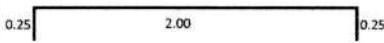
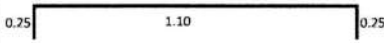
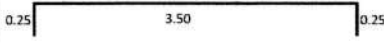
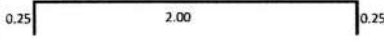
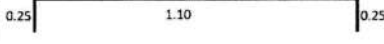
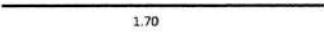
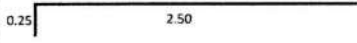
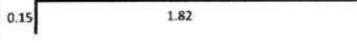
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
27	MUROS		R2a-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.46	3.82
28	MUROS		R2b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.03	3.20
29	MUROS		R2b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.35	2.10
30	MUROS		R2b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.30	2.02
31	MUROS		R2b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.36	2.11
32	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	84	4.30	560.58
33	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.07	12.85
34	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.88	11.67
35	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17

DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
36	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
37	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
38	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.04	12.66
39	MUROS		R5a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.14	13.29
40	MUROS		R5a-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.02	12.54
41	MUROS		R5a-9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.02	12.54
42	MUROS		R5a-10	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.15	13.35
43	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
44	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25

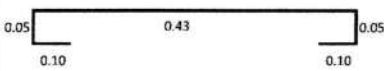
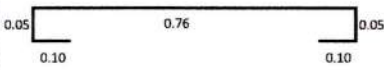
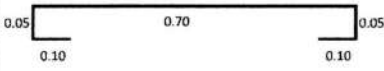
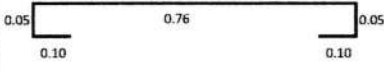
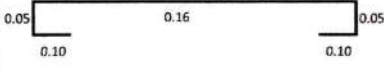
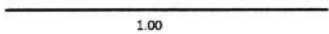
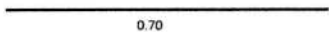
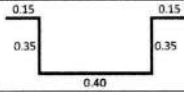
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
45	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
46	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	7	2.50	27.16
47	PLACA TAPA		R6b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	1.60	34.76
48	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	35	4.00	217.28
49	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.50	31.04
50	PLACA TAPA		R7b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	1.60	44.70
51	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	12	1.70	31.66
52	MUROS MANHOLE		R10	REFUERZO INTERIOR MANHOLE ACCESO	# 5	1.552	36	2.75	153.65
53	MUROS MANHOLE		R11	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	1.97	39.72

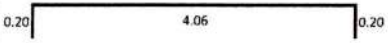
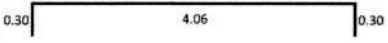
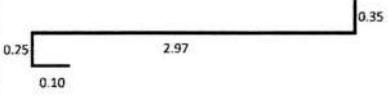
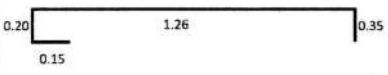
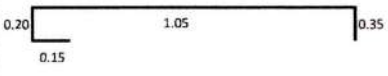
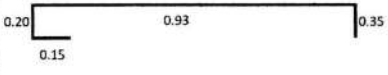
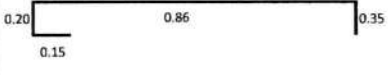
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
54	MUROS MANHOLE		R12	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	44	1.78	43.86
55	MUROS MANHOLE		R13	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	3.30	66.53
56	MUROS MANHOLE		R14	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	1.23	24.80
57	MUROS MANHOLE		R15	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	12	4.45	29.90
58	MUROS MANHOLE		R16	REFUERZO INTERIOR MANHOLE DE ACCESO	# 3	0.560	14	6.00	47.04
59	MUROS MANHOLE		R17	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	9	7.00	35.28
60	TAPA MANHOLE		R18	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	30	1.80	53.68
61	TAPA MANHOLE		R18a-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.81	3.22
62	TAPA MANHOLE		R18a-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.70	2.78

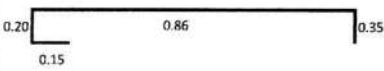
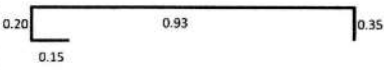
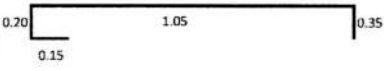
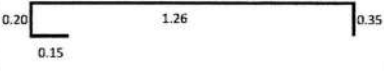
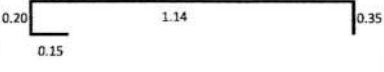
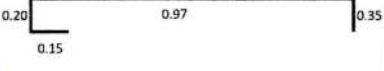
DESPIECE DE ACEROS CAMARA No. 32 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
63	TAPA MANHOLE		R18a-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.73	2.90
64	TAPA MANHOLE		R18b-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
65	TAPA MANHOLE		R18b-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.00	1.99
66	TAPA MANHOLE		R18b-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
67	TAPA MANHOLE		R18b-4	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.46	1.83
68	TAPA MANHOLE		R19	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
69	TAPA MANHOLE		R20	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
70	ESCALONES ACCESO		R21	ESCALERA DE GATO	# 5	1.56	18	1.40	39.31
								TOTAL	3918.94

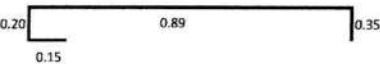
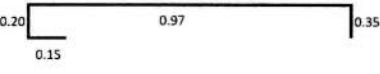
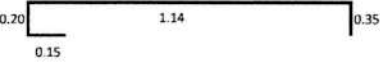
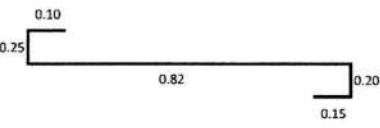
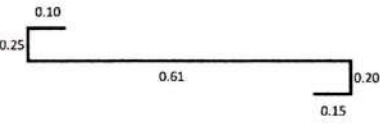
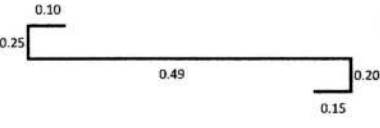
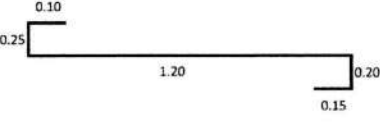
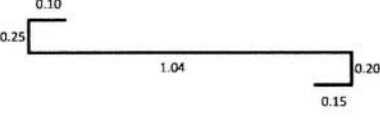
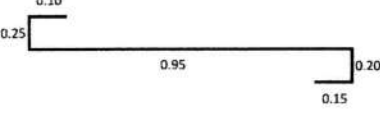
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	56	3.67	625.19
4	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.96	11.92
5	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.75	10.65
6	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.63	9.92
7	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.56	9.49
8	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.52	9.25
9	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.52	9.25

DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.56	9.49
11	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.63	9.92
12	MUROS		R1a-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.75	10.65
13	MUROS		R1a-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	1.96	11.92
14	MUROS		R1a-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.84	5.60
15	MUROS		R1a-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.67	5.08
16	MUROS		R1a-13	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
17	MUROS		R1a-14	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.55	4.72
18	MUROS		R1a-15	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.55	4.72

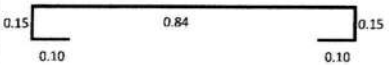
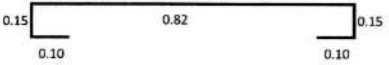
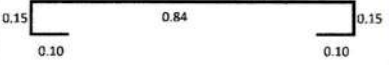
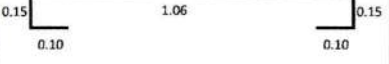
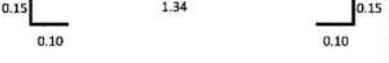
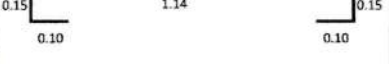
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R1a-16	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
20	MUROS		R1a-17	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.67	5.08
21	MUROS		R1a-18	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.84	5.60
22	MUROS		R1b-1	REFUERZO INTERIOR ALZADA	# 7	3.042	4	1.52	18.50
23	MUROS		R1b-2	REFUERZO INTERIOR ALZADA	# 7	3.042	4	1.31	15.94
24	MUROS		R1b-3	REFUERZO INTERIOR ALZADA	# 7	3.042	4	1.19	14.48
25	MUROS		R1b-4	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.90	5.78
26	MUROS		R1b-5	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.74	5.29
27	MUROS		R1b-6	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.65	5.02

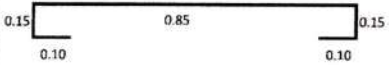
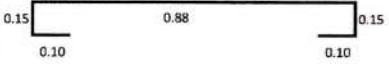
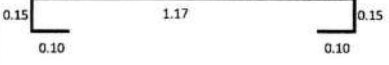
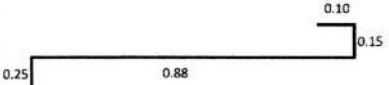
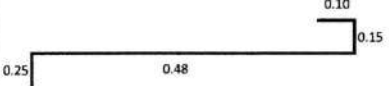
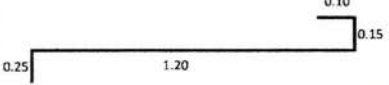
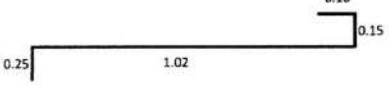
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	MUROS		R1b-7	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.61	4.90
29	MUROS		R1b-8	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.61	4.90
30	MUROS		R1b-9	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.65	5.02
31	MUROS		R1b-10	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.74	5.29
32	MUROS		R1b-11	REFUERZO INTERIOR ALZADA	# 7	3.042	1	1.90	5.78
33	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	39	3.47	210.03
34	MUROS		R2a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.81	5.62
35	MUROS		R2a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.55	4.81
36	MUROS		R2a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.41	4.38

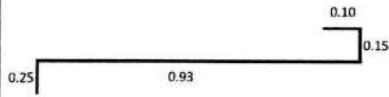
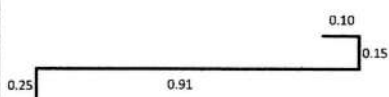
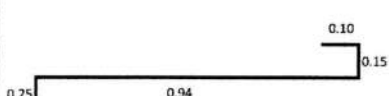
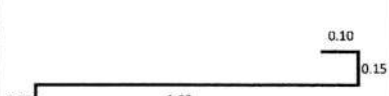
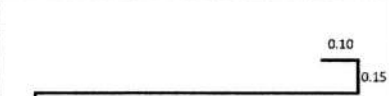
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
37	MUROS		R2a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.34	4.16
38	MUROS		R2a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.32	4.10
39	MUROS		R2a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.34	4.16
40	MUROS		R2a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.42	4.41
41	MUROS		R2a-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.56	4.84
42	MUROS		R2a-9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.84	5.71
43	MUROS		R2a-10	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.64	2.55
44	MUROS		R2a-11	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.46	2.27
45	MUROS		R2a-12	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.38	2.14

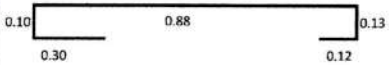
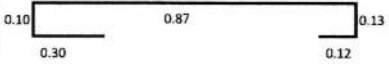
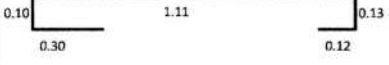
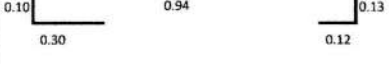
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
46	MUROS		R2a-13	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.35	2.10
47	MUROS		R2a-14	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.38	2.14
48	MUROS		R2a-15	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.47	2.28
49	MUROS		R2a-16	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.67	2.59
50	MUROS		R2b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.38	8.57
51	MUROS		R2b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.12	6.95
52	MUROS		R2b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	0.98	6.08
53	MUROS		R2b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.70	2.64
54	MUROS		R2b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.52	2.36

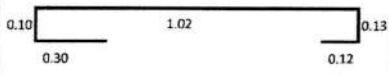
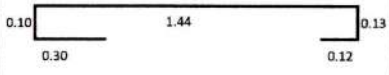
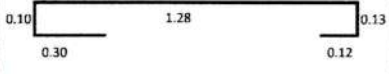
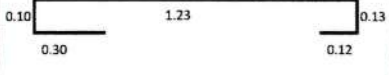
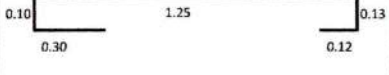
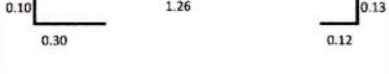
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
55	MUROS		R2b-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.43	2.22
56	MUROS		R2b-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.41	2.19
57	MUROS		R2b-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.44	2.23
58	MUROS		R2b-9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.53	2.37
59	MUROS		R2b-10	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.72	2.67
60	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	46	4.30	306.99
61	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
62	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.74	21.60
63	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.60	19.87

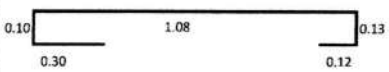
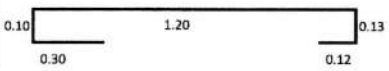
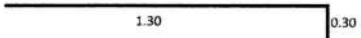
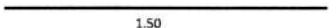
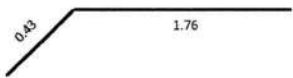
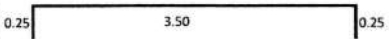
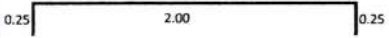
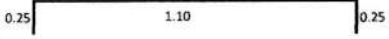
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
64	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.53	19.00
65	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.52	18.87
66	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.54	19.12
67	MUROS		R5a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.62	20.11
68	MUROS		R5a-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.76	21.85
69	MUROS		R5a-9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.75	2.72
70	MUROS		R5a-10	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.59	2.47
71	MUROS		R5a-11	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.54	2.39
72	MUROS		R5a-12	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.56	2.42

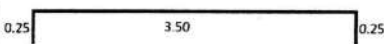
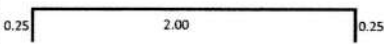
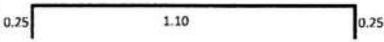
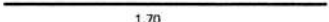
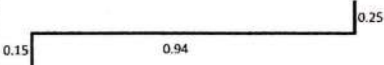
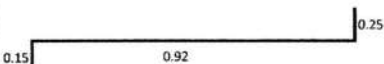
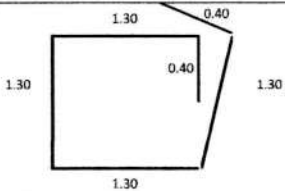
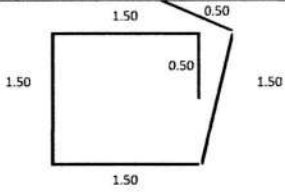
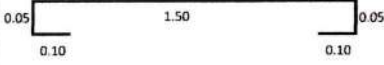
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
73	MUROS		R5a-13	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.67	2.59
74	MUROS		R5a-14	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.09	3.24
75	MUROS		R5a-15	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.93	3.00
76	MUROS		R5a-16	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.88	2.92
77	MUROS		R5a-17	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	1.90	2.95
78	MUROS		R5a-18	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	1	2.01	3.12
79	MUROS		R5a-19	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.91	5.93
80	MUROS		R5a-20	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.76	5.46
81	MUROS		R5a-21	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.71	5.31

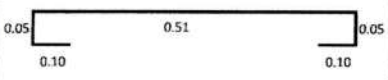
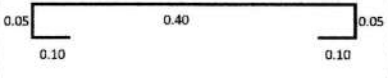
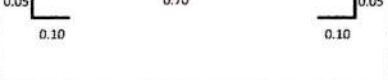
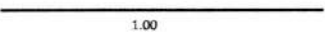
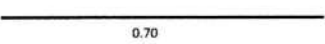
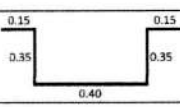
DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
82	MUROS		R5a-22	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.73	5.37
83	MUROS		R5a-23	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	2	1.85	5.74
84	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	8	1.60	28.61
85	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.50	18.62
86	MUROS		R9b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.98	70.80
87	MUROS		R9c	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	2.19	54.38
88	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
89	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	7	2.50	27.16
90	PLACA TAPA		R6b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	1.60	34.76

DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
91	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	35	4.00	217.28
92	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.50	31.04
93	PLACA TAPA		R7b	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	1.60	44.70
94	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	12	1.70	31.66
95	MUROS MANHOLE		R11	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	1.34	27.01
96	MUROS MANHOLE		R14	REFUERZO EXTERIOR MANHOLE DE ACCESO	# 3	0.560	36	1.32	26.61
97	MUROS MANHOLE		R16	REFUERZO INTERIOR MANHOLE DE ACCESO	# 3	0.560	2	6.00	6.72
98	MUROS MANHOLE		R17	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	2	7.00	7.84
99	TAPA MANHOLE		R18	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	30	1.80	53.68

DESPIECE DE ACEROS CAMARA No. 33 SANITARIO

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
100	TAPA MANHOLE		R18a-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.81	3.22
101	TAPA MANHOLE		R18a-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.70	2.78
102	TAPA MANHOLE		R18a-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.73	2.90
103	TAPA MANHOLE		R18b-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
104	TAPA MANHOLE		R18b-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.00	1.99
105	TAPA MANHOLE		R18b-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.06	2.11
106	TAPA MANHOLE		R18b-4	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.46	1.83
107	TAPA MANHOLE		R19	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
108	TAPA MANHOLE		R20	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
109	ESCALONES ACCESO		R21	ESCALERA DE GATO	# 5	1.56	7	1.40	15.29
								TOTAL	3217.39

		MEMORIA DE CÁLCULO		PRESENTE ACTA		RECIBO PARCIAL DE OBRA No. 7		 Consorcio Inter Nororiental																																				
CONTRATANTE		ACUATODOS S.A E.S.P																																										
OBJETO CONTRATO		AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL																																										
CAPÍTULO		4		HOJA		1		DE																																				
SUBCAPÍTULO		4.1		SECTOR		CARRERA 40 ENTRE CALLE 40 Y CALLE 50		4																																				
PRELIMINARES																																												
OBRA COMPLEMENTARIAS																																												
TABLA RESUMEN																																												
<table border="1"><thead><tr><th colspan="5">RESUMEN</th></tr><tr><th>ÍTEM</th><th>UND</th><th>TOTAL</th><th>ACUM. ACTAS PARCIALES</th><th>PRESENTE ACTA</th><th>TOTAL</th></tr></thead><tbody><tr><td>4.1.1 Excavación de cortes, canales y préstamo (Acarreo hasta 5' km)</td><td>m³</td><td>10159.80</td><td>29373.74</td><td>-19213.94</td><td>10159.80</td></tr><tr><td>4.1.2 Sub base granular seleccionada o clasificada</td><td>m³</td><td>24615.93</td><td>22374.33</td><td>2241.60</td><td>24615.93</td></tr><tr><td>4.1.3 Terraplen o relleno con material de corte (a libre 2 Tm)</td><td>m³</td><td>1489.20</td><td>1538.29</td><td>-49.09</td><td>1489.20</td></tr><tr><td>4.1.4 Demolicion de pavimento en concreto asfáltico (inc. retiro) e. prom 0.10 m</td><td>m²</td><td>0.00</td><td>0.00</td><td>0.00</td><td>0.00</td></tr></tbody></table>										RESUMEN					ÍTEM	UND	TOTAL	ACUM. ACTAS PARCIALES	PRESENTE ACTA	TOTAL	4.1.1 Excavación de cortes, canales y préstamo (Acarreo hasta 5' km)	m³	10159.80	29373.74	-19213.94	10159.80	4.1.2 Sub base granular seleccionada o clasificada	m³	24615.93	22374.33	2241.60	24615.93	4.1.3 Terraplen o relleno con material de corte (a libre 2 Tm)	m³	1489.20	1538.29	-49.09	1489.20	4.1.4 Demolicion de pavimento en concreto asfáltico (inc. retiro) e. prom 0.10 m	m²	0.00	0.00	0.00	0.00
RESUMEN																																												
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 CONSORCIO MACRO NORORIENTAL ING. JUAN JOSE CEPEDA PEREZ R/L CONTRATISTA DE OBRA					 CONSORCIO MACRO NORORIENTAL ING. ADRIANA CHOCONTA JIMENEZ DIRECTOR CONTRATISTA DE OBRA					 CONSORCIO INTER NORORIENTAL ING. JORGE ELIECER CASTELLANOS SILVA R/L Y DIRECTOR DE INTERVENTORIA																																		

		MEMORIAS DE CALCULO		PRESENTE ACTA		RECIBO PARCIAL DE OBRA No. 7		Consorcio Inter Nororiental			
CONTRATANTE		OBJETO CONTRATO		ACUATODOS S.A E.S.P							
CAPITULO		4.0		AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE							
SUBCAPITULO		4.1		OBRAS COMPLEMENTARIAS							
ITEM		4.1.1		PRELIMINARES							
				Excavacion de cortes, canales y préstamo (Acarreo hasta 5 Kms)							
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				CARRERA 40 ENTRE CALLE 40 Y CALLE 50							
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				CARRERA 40 ENTRE CALLE 40 Y CALLE 50							
				m²							
				4							
				2							
				CARRERA 40 ENTRE CALLE 40 Y CALLE 50							
				m²							
				4							
				2							
				CARRERA 40 ENTRE CALLE 40 Y CALLE 50							
				m²							

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 42 CRA 39 CRA 40

Sample Line Group: SL Collection - 1

Start Sta: 0+010.130

End Sta: 0+015.485

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)	
0+010.130	15.61	0	0	0	0	0	0	0	0	
0+011.351	15.41	18.93	18.93	0	0	18.93	18.93	0	18.93	
0+013.153	16.72	28.95	28.95	0	0	47.88	47.88	0	47.88	
0+014.345	23.52	23.99	23.99	0	0	71.87	71.87	0	71.87	
0+015.017	10.42	11.41	11.41	0	0	83.27	83.27	0	83.27	
0+015.485	2.49	3.02	3.02	0	0	86.29	86.29	0	86.29	

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

EJECUCIÓN 2022/MACROPROYEC

TO/DISEÑO/03 Sec. Transversales-

Boca Calles.dwg

Alignment: CLL 42 CRA 40 CRA 41

Sample Line Group: LM-CLL 42 CRA 40 CRA 41

Start Sta: 0+010.483

End Sta: 0+014.982

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)	
0+010.483	11.39	0	0	0	0	0	0	0	0	
0+011.983	11.74	17.35	17.35	0	0	17.35	17.35	0	17.35	
0+013.438	13.55	18.39	18.39	0	0	35.75	35.75	0	35.75	
0+014.939	22.83	27.3	27.3	0	0	63.05	63.05	0	63.05	
0+014.982	23.91	0.99	0.99	0	0	64.04	64.04	0	64.04	

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 43 CRA 39 CRA 40

Sample Line Group: LM-CLL 43 CRA 39 CRA 40

Start Sta: 0+010.532

End Sta: 0+015.031

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)	
0+010.532	8.64	0	0	0	0	0	0	0	0	
0+012.032	17.46	19.58	19.58	0	0	19.58	19.58	0	19.58	
0+014.152	22.73	42.61	42.61	0	0	62.19	62.19	0	62.19	
0+014.958	32.09	22.09	22.09	0	0	84.28	84.28	0	84.28	
0+015.031	33.62	2.4	2.4	0	0	86.69	86.69	0	86.69	

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 43 CRA 40 CRA 41

Sample Line Group: LM-CLL 43 CRA 40 CRA 41

Start Sta: 0+010.499

End Sta: 0+014.969

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.499	7.8	0	0	0	0	0	0	0	0
0+011.969	15.44	17.08	17.08	0	0	17.08	17.08	0	17.08
0+013.464	17.71	24.78	24.78	0	0	41.86	41.86	0	41.86
0+014.882	28.91	33.05	33.05	0	0	74.91	74.91	0	74.91
0+014.969	30.69	2.59	2.59	0	0	77.49	77.49	0	77.49

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 44 CRA 39 CRA 40

Sample Line Group: LM-CLL 44 CRA 39 CRA 40

Start Sta: 0+009.943

End Sta: 0+015.027

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+009.943	16.14	0	0	0	0	0	0	0	0
0+011.839	16.31	30.75	30.75	0	0	30.75	30.75	0	30.75
0+013.994	19.96	39.08	39.08	0	0	69.84	69.84	0	69.84
0+014.818	25.58	18.76	18.76	0	0	88.6	88.6	0	88.6
0+015.027	13.32	4.06	4.06	0	0	92.66	92.66	0	92.66

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 44 CRA 40 CRA 41

Sample Line Group: LM-CLL 44 CRA 40 CRA

41(1)

Start Sta: 0+010.499

End Sta: 0+014.955

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.499	0.12	0	0	0	0	0	0	0	0
0+011.954	16.45	12.05	12.05	0	0	12.05	12.05	0	12.05
0+014.075	20.97	39.69	39.69	0	0	51.73	51.73	0	51.73
0+014.076	20.98	0.02	0.02	0	0	51.76	51.76	0	51.76
0+014.953	28.13	21.53	21.53	0	0	73.29	73.29	0	73.29
0+014.954	26.11	0.03	0.03	0	0	73.32	73.32	0	73.32
0+014.955	0	0.01	0.01	0	0	73.33	73.33	0	73.33

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: Calle 46 CD

Sample Line Group: LM-Calle 46 CD

Start Sta: 0+024.492

End Sta: 0+029.918

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+024.492	29.27	0	0	0	0	0	0	0	0
0+026.588	30.84	63	63	0	0	63	63	0	63
0+028.922	37.35	79.6	79.6	0	0	142.6	142.6	0	142.6
0+029.504	42.28	23.16	23.16	0	0	165.77	165.77	0	165.77
0+029.625	36.14	4.75	4.75	0	0	170.51	170.51	0	170.51
0+029.771	27.73	4.64	4.64	0	0	175.15	175.15	0	175.15
0+029.918	19.36	3.46	3.46	0	0	178.61	178.61	0	178.61

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

EJECUCIÓN_2022\MACROPROYEC

TO\DISEÑO\03 Sec_Transversales-

BocaCalles.dwg

Alignment: Calle 46 CI

Sample Line Group: LM-Calle 46 CI

Start Sta: 0+025.028

End Sta: 0+029.921

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+025.028	27.23	0	0	0.01	0	0	0	0	0
0+027.402	29.12	66.9	66.9	0.01	0.03	66.9	66.9	0.03	66.9
0+029.261	34.43	59.05	59.05	0.02	0.03	125.95	125.95	0.05	125.95
0+029.921	40.44	24.71	24.71	0.02	0.01	150.66	150.66	0.07	150.66

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 46B CRA 40 CRA 41

Sample Line Group: LM-CLL 46B CRA 40 CRA

41(1)

Start Sta: 0+010.437

End Sta: 0+014.921

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.437	12.07	0	0	0	0	0	0	0	0
0+011.921	12.27	18.06	18.06	0	0	18.06	18.06	0	18.06
0+011.928	12.27	0.09	0.09	0	0	18.14	18.14	0	18.14
0+014.043	16.2	30.11	30.11	0	0	48.25	48.25	0	48.25
0+014.049	16.23	0.1	0.1	0	0	48.35	48.35	0	48.35
0+014.921	24.46	17.74	17.74	0	0	66.09	66.09	0	66.09

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 46C CRA 39 CRA 40

Sample Line Group: LM-CLL 46C CRA 39 CRA 40(1)

Start Sta: 0+010.581

End Sta: 0+015.077

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.581	13.34	0	0	0	0	0	0	0	0
0+012.078	13.42	20.03	20.03	0	0	20.03	20.03	0	20.03
0+014.199	17.52	32.81	32.81	0	0	52.84	52.84	0	52.84
0+015.077	26.1	19.15	19.15	0	0	71.98	71.98	0	71.98

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 47A CRA 40 CRA 41

Sample Line Group: LM-CLL 47A CRA 40 CRA 41(1)

Start Sta: 0+010.415

End Sta: 0+014.906

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.415	13.68	0	0	0	0	0	0	0	0
0+011.912	13.88	20.63	20.63	0	0	20.63	20.63	0	20.63
0+014.033	17.7	33.49	33.49	0	0	54.12	54.12	0	54.12
0+014.034	17.71	0.02	0.02	0	0	54.14	54.14	0	54.14
0+014.906	25.61	18.89	18.89	0	0	73.03	73.03	0	73.03

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 48 CRA 40 CRA 41

Sample Line Group: LM-CLL 48 CRA 40 CRA 41(1)

Start Sta: 0+010.496

End Sta: 0+014.900

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.496	9.24	0	0	0.05	0	0	0	0	0
0+011.900	9.47	13.14	13.14	0.04	0.07	13.14	13.14	0.07	13.14
0+012.762	9.93	8.36	8.36	0.04	0.04	21.5	21.5	0.1	21.5
0+014.021	12.23	13.95	13.95	0.04	0.05	35.45	35.45	0.15	35.45
0+014.899	18.27	13.39	13.39	0	0.02	48.84	48.84	0.17	48.84
0+014.900	18.31	0.02	0.02	0	0	48.86	48.86	0.17	48.86

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 49 CRA 39 CRA 40

Sample Line Group: LM-CLL 48 CRA 39 CRA

40(1)

Start Sta: 0+010.509

End Sta: 0+015.056

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.509	16.18	0	0	0	0	0	0	0	0
0+012.056	16.39	25.19	25.19	0	0	25.19	25.19	0	25.19
0+014.245	20.5	40.38	40.38	0	0	65.57	65.57	0	65.57
0+014.700	23.31	9.96	9.96	0	0	75.53	75.53	0	75.53
0+015.056	27.87	9.12	9.12	0	0	84.65	84.65	0	84.65

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 49 CRA 40 CRA 41

Sample Line Group: LM-CLL 49 CRA 40 CRA

41(1)

Start Sta: 0+010.000

End Sta: 0+015.573

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.000	12.24	0	0	0	0	0	0	0	0
0+011.141	12.43	14.07	14.07	0	0	14.07	14.07	0	14.07
0+012.591	13.29	18.65	18.65	0	0	32.72	32.72	0	32.72
0+013.013	13.92	5.74	5.74	0	0	38.46	38.46	0	38.46
0+014.146	19.29	18.81	18.81	0	0	57.28	57.28	0	57.28
0+014.591	12.74	7.13	7.13	0	0	64.4	64.4	0	64.4
0+015.573	0	6.26	6.26	0	0	70.66	70.66	0	70.66

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 49A CRA 39 CRA 40

Sample Line Group: LM-CLL 49A CRA 39 CRA

40(1)

Start Sta: 0+010.612

End Sta: 0+015.106

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.612	11.52	0	0	0	0	0	0	0	0
0+012.106	11.67	17.32	17.32	0	0	17.32	17.32	0	17.32
0+012.107	11.67	0.01	0.01	0	0	17.33	17.33	0	17.33
0+014.228	15.35	28.65	28.65	0	0	45.98	45.98	0	45.98
0+015.106	23.16	16.9	16.9	0	0	62.89	62.89	0	62.89

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 49B CRA 39 CRA 40

Sample Line Group: LM-CLL 49B CRA 39 CRA 40(1)

Start Sta: 0+010.624

End Sta: 0+015.107

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+010.624	14.79	0	0	0	0	0	0	0	0
0+012.107	14.91	22.02	22.02	0	0	22.02	22.02	0	22.02
0+012.943	15.43	12.69	12.69	0	0	34.71	34.71	0	34.71
0+014.229	18.62	21.89	21.89	0	0	56.6	56.6	0	56.6
0+014.678	21.1	8.92	8.92	0	0	65.53	65.53	0	65.53
0+015.107	25.83	10.06	10.06	0	0	75.59	75.59	0	75.59

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

Alignment: CLL 50 CRA 39 CRA 40

Sample Line Group: LM-CLL 50 CRA 39 CRA 40(1)

Start Sta: 0+240.677

End Sta: 0+280.554

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+240.677	12.89	0	0	0.81	0	0	0	0	0
0+250.000	12.81	119.77	119.77	0.13	4.49	119.77	119.77	4.49	119.77
0+260.000	12.91	128.56	128.56	0.12	1.25	248.33	248.33	5.74	248.33
0+265.640	12.81	72.52	72.52	0.13	0.69	320.85	320.85	6.44	320.85
0+268.968	12.58	42.25	42.25	0.23	0.59	363.1	363.1	7.03	363.1
0+270.000	12.35	12.86	12.86	0.27	0.26	375.96	375.96	7.29	375.96
0+274.825	11.87	58.42	58.42	0.08	0.85	434.38	434.38	8.13	434.38
0+275.607	12.67	9.59	9.59	0	0.03	443.97	443.97	8.16	443.97
0+278.358	16.51	40.14	40.14	0	0	484.11	484.11	8.16	484.11
0+278.991	18.59	11.11	11.11	0	0	495.22	495.22	8.16	495.22
0+279.808	24.06	17.42	17.42	0	0	512.63	512.63	8.16	512.63
0+280.000	11.87	3.45	3.45	0	0	516.09	516.09	8.16	516.09
0+280.554	0.23	3.35	3.35	0	0	519.44	519.44	8.16	519.44

Volume Report

Project: C:\Users\CARLO\Dropbox\PR

OYECTOS

EJECUCIÓN_2022\MACROPROYEC

TO\DISEÑO\03 Sec_Transversales-

BocaCalles.dwg

Alignment: CLL 50 CRA 40 CRA 41

Sample Line Group: LM-CLL 50 CRA 40 CRA 41(1)

Start Sta: 0+080.000

End Sta: 0+089.768

Station	Cut Area (Sq.m.)	Cut Volume (Cu.m.)	Reusable Volume (Cu.m.)	Fill Area (Sq.m.)	Fill Volume (Cu.m.)	Cum. Cut Vol. (Cu.m.)	Cum. Reusable Vol. (Cu.m.)	Cum. Fill Vol. (Cu.m.)	Cum. Net Vol. (Cu.m.)
0+080.000	16.28	0	0	0	0	0	0	0	0
0+080.894	16.35	14.59	14.59	0	0	14.59	14.59	0	14.59
0+083.485	18.16	44.72	44.72	0	0	59.3	59.3	0	59.3
0+084.811	20.96	25.94	25.94	0	0	85.25	85.25	0	85.25
0+085.945	28.43	28	28	0	0	113.25	113.25	0	113.25
0+088.086	11.38	42.62	42.62	0	0	155.86	155.86	0	155.86
0+089.768	0	9.57	9.57	0	0	165.44	165.44	0	165.44

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+000.00	0	0	0	0	0	0
K0+000.14	0	0.76	0	0.05	0	0.05
K0+001.50	0	13.5	0	9.73	0	9.78
K0+001.83	0	16.96	0	4.98	0	14.76
K0+003.01	0	29.78	0	27.59	0	42.36
K0+005.07	0	30.26	0	61.9	0	104.26
K0+007.76	0.01	29.81	0.01	80.63	0.01	184.89
K0+008.46	0.01	29.69	0	20.76	0.01	205.65
K0+008.46	0.01	29.69	0	20.76	0.01	205.65
K0+010.00	0	29.42	0	22.71	0.01	228.36
K0+010.73	0	22.66	0	18.9	0.02	247.27
K0+020.00	0	19.83	0.02	197.06	0.04	444.33
K0+030.00	0	19.55	0	196.91	0.04	641.24
K0+037.90	0.02	18.77	0.08	151.28	0.13	792.52
K0+038.90	0.02	18.94	0.02	18.84	0.15	811.37
K0+040.00	0.02	19.94	0.02	21.44	0.17	832.81
K0+040.51	0.02	20.92	0.01	10.33	0.18	843.14
K0+041.25	0.02	27.5	0.02	17.91	0.2	861.05
K0+050.00	0	27.24	0.1	239.61	0.29	1100.66
K0+060.00	0	28.3	0.01	277.7	0.3	1378.36
K0+061.27	0	22.68	0	32.41	0.3	1410.77
K0+061.97	0	21.12	0	15.37	0.3	1426.14
K0+062.38	0	20.64	0	8.53	0.3	1434.67
K0+063.40	0	20.08	0	20.71	0.3	1455.38
K0+064.16	0	20.09	0	15.29	0.3	1470.67
K0+070.00	0	20.52	0	118.59	0.3	1589.26
K0+080.00	0	19.8	0	201.6	0.3	1790.86
K0+090.00	0	19.06	0	194.26	0.3	1985.12
K0+100.00	0	19.19	0	191.24	0.3	2176.36
K0+110.00	0	20.24	0	197.16	0.3	2373.52
K0+120.00	0	21.83	0	210.34	0.3	2583.87
K0+130.00	0	23.29	0	225.6	0.3	2809.47
K0+140.00	0	24.14	0	237.16	0.3	3046.63
K0+150.00	0	24.51	0	243.25	0.3	3289.88
K0+153.60	0	24.65	0	88.41	0.3	3378.28
K0+153.83	0	20.55	0	5.19	0.3	3383.47
K0+160.00	0	21.58	0	130.04	0.3	3513.52
K0+165.61	0	22.53	0	123.7	0.3	3637.22
K0+166.01	0	27	0	9.94	0.3	3647.16
K0+170.00	0	27.77	0	109.26	0.3	3756.42
K0+180.00	0	29.98	0	288.78	0.3	4045.2
K0+190.00	0	32.3	0	311.42	0.3	4356.62
K0+200.00	0	31.17	0	317.36	0.3	4673.98
K0+210.00	0	32.25	0	317.08	0.3	4991.06
K0+220.00	0	32.61	0	324.29	0.3	5315.35
K0+230.00	0	31.85	0	322.32	0.3	5637.67
K0+240.00	0	30.58	0	312.13	0.3	5949.8
K0+250.00	0	29.32	0	299.48	0.3	6249.29
K0+260.00	0	28.59	0	289.58	0.3	6538.86
K0+270.00	0	29.78	0	291.88	0.3	6830.74
K0+280.00	0	31.63	0	307.08	0.3	7137.82
K0+283.83	0	31.81	0	121.43	0.3	7259.25
K0+283.91	0	25.55	0	2.26	0.3	7261.51
K0+290.00	0	25.62	0	155.91	0.3	7417.42
K0+295.82	0	26.05	0	150.5	0.3	7567.92
K0+295.95	0	32.39	0	3.65	0.3	7571.57

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+300.00	0	33	0	132.45	0.3	7704.02
K0+310.00	0	33.46	0	332.32	0.3	8036.34
K0+320.00	0	33.51	0	334.87	0.3	8371.21
K0+330.00	0	34.43	0	339.71	0.3	8710.91
K0+340.00	0	34.6	0	345.16	0.3	9056.07
K0+350.00	0	33.91	0	342.56	0.3	9398.63
K0+360.00	0	33.61	0	337.59	0.3	9736.22
K0+370.00	0	33.58	0	335.95	0.3	10072.17
K0+380.00	0	33.26	0	334.21	0.3	10406.38
K0+390.00	0	33.04	0	331.53	0.3	10737.91
K0+400.00	0	33	0	330.21	0.3	11068.12
K0+410.00	0	30.4	0	316.99	0.3	11385.11
K0+417.97	0	25.27	0	222	0.3	11607.11
K0+418.37	0	21.81	0	9.4	0.3	11616.51
K0+420.00	0	21.14	0	34.92	0.3	11651.42
K0+430.00	0	16.98	0	190.61	0.3	11842.03
K0+431.22	0	16.47	0	20.37	0.3	11862.41
K0+431.51	0.17	17.34	0.02	4.88	0.33	11867.28
K0+440.00	0.38	17.52	2.33	148.05	2.65	12015.33
K0+450.00	0	26.55	1.88	220.33	4.53	12235.67
K0+460.00	0	33.04	0	297.96	4.53	12533.63
K0+470.00	0	31.42	0	322.31	4.53	12855.94
K0+480.00	0	21.06	0	262.37	4.53	13118.31
K0+490.00	0	25.65	0	233.53	4.53	13351.84
K0+500.00	0	27.61	0	266.27	4.53	13618.11
K0+510.00	0	29.38	0	284.91	4.53	13903.02
K0+520.00	0	28.99	0	291.8	4.53	14194.83
K0+530.00	0	25.97	0	274.77	4.53	14469.6
K0+540.00	0	22.7	0	243.33	4.53	14712.92
K0+550.00	0	18.94	0.01	208.16	4.54	14921.08
K0+560.00	0.45	15.34	2.26	171.38	6.8	15092.47
K0+565.50	0.28	15.79	2.02	85.6	8.82	15178.07
K0+565.62	0.01	14.95	0.02	1.79	8.83	15179.86
K0+567.00	0.01	14.98	0.01	20.69	8.85	15200.55
K0+568.42	0.01	15.52	0.02	21.69	8.86	15222.23
K0+569.12	0.02	16.24	0.01	11.09	8.87	15233.33
K0+569.68	0.04	17.33	0.02	9.4	8.89	15242.73
K0+570.30	0	22.56	0.01	12.38	8.9	15255.11
K0+580.00	0	22.82	0	220.06	8.9	15475.17
K0+580.38	0	22.8	0	8.55	8.9	15483.73
K0+590.00	0	22	0	215.6	8.9	15699.33
K0+594.22	0	21.5	0	91.83	8.9	15791.16
K0+594.26	0.77	21.56	0.02	0.92	8.92	15792.09
K0+599.75	0.97	20.85	4.77	116.31	13.69	15908.4
K0+600.33	1.01	15.79	0.58	10.68	14.27	15919.07
K0+600.88	1.04	14.69	0.56	8.29	14.83	15927.36
K0+601.91	1.09	13.64	1.1	14.68	15.93	15942.04
K0+602.64	1.12	13.35	0.8	9.76	16.73	15951.8
K0+603.00	1.14	13.29	0.41	4.83	17.14	15956.63
K0+610.00	0.9	12.88	7.13	91.58	24.27	16048.21
K0+620.00	0.34	15.55	6.18	142.12	30.45	16190.34
K0+630.00	0	18.64	1.68	170.95	32.13	16361.28
K0+640.00	0	22.03	0	203.36	32.13	16564.65
K0+650.00	0	26.74	0	243.85	32.13	16808.49
K0+660.00	0	29.26	0	280.01	32.13	17088.51
K0+670.00	0	27.64	0	284.54	32.13	17373.05

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+680.00	0	25.69	0	266.64	32.13	17639.69
K0+690.00	0	24.92	0	253.03	32.13	17892.71
K0+700.00	0	24.08	0	245.02	32.13	18137.73
K0+710.00	0	23.29	0	236.86	32.13	18374.59
K0+716.64	0	22.83	0	153.08	32.13	18527.67
K0+716.71	0	19.93	0	1.62	32.13	18529.29
K0+720.00	0	19.79	0	65.27	32.13	18594.55
K0+728.53	0	19.35	0	166.85	32.13	18761.41
K0+728.79	0	21.85	0	5.4	32.13	18766.81
K0+730.00	0	21.74	0	26.43	32.13	18793.24
K0+740.00	0	21.2	0	214.7	32.13	19007.94
K0+750.00	0	21.02	0	211.09	32.13	19219.03
K0+760.00	0	21.13	0	210.77	32.13	19429.8
K0+770.00	0	20.84	0	209.86	32.13	19639.66
K0+780.00	0	20.62	0	207.27	32.13	19846.93
K0+790.00	0	20.9	0	207.57	32.13	20054.5
K0+800.00	0	20.54	0	207.2	32.13	20261.71
K0+810.00	0	20.64	0	205.93	32.13	20467.64
K0+820.00	0	20.96	0	208.02	32.13	20675.67
K0+830.00	0	21.11	0	210.36	32.13	20886.03
K0+840.00	0	20.95	0	210.31	32.13	21096.34
K0+850.00	0	20.74	0	208.44	32.13	21304.78
K0+851.00	0	18.75	0	19.76	32.13	21324.54
K0+851.32	0	18.75	0	5.99	32.13	21330.53
K0+860.00	0	18.66	0	162.31	32.13	21492.84
K0+864.01	0	18.63	0	74.72	32.13	21567.56
K0+864.15	0	18.63	0	2.61	32.13	21570.17
K0+870.00	0	20.5	0	114.47	32.13	21684.65
K0+880.00	0.05	18.31	0.23	194.04	32.36	21878.69
K0+890.00	0.57	14.58	3.1	164.46	35.47	22043.14
K0+900.00	0.55	14.69	5.62	146.37	41.09	22189.51
K0+910.00	0.53	14.81	5.37	147.5	46.46	22337.02
K0+920.00	0.55	14.54	5.38	146.74	51.84	22483.76
K0+930.00	0.62	14.2	5.84	143.73	57.68	22627.48
K0+940.00	0.66	14.04	6.38	141.22	64.06	22768.7
K0+950.00	0.67	13.99	6.66	140.16	70.71	22908.87
K0+960.00	0.41	15.37	5.41	146.84	76.13	23055.7
K0+970.00	0.14	17.4	2.78	163.89	78.9	23219.59
K0+980.00	0	18.93	0.72	181.66	79.63	23401.26
K0+983.20	0	18.94	0	60.53	79.63	23461.78
K0+983.41	0	17.53	0	3.79	79.63	23465.57
K0+990.00	0	17.56	0	115.72	79.63	23581.29
K0+995.20	0	17.52	0	91.24	79.63	23672.53
K0+995.36	0	18.9	0	2.92	79.63	23675.45
K1+000.00	0.04	18.48	0.09	86.69	79.72	23762.14
K1+010.00	0.12	17.69	0.79	180.84	80.51	23942.98
K1+020.00	0.13	17.8	1.26	177.42	81.77	24120.4
K1+030.00	0.09	18.1	1.11	179.46	82.88	24299.86
K1+040.00	0.12	17.86	1.09	179.76	83.97	24479.62
K1+050.00	0.17	17.37	1.48	176.14	85.45	24655.77
K1+053.70	0.14	17.46	0.57	64.39	86.02	24720.16
K1+053.82	0	16.43	0.01	2.17	86.03	24722.32
K1+060.00	0	17.57	0	104.99	86.03	24827.32
K1+066.64	0	17.7	0	117.08	86.03	24944.4
K1+066.91	0	20.5	0	5.2	86.03	24949.6
K1+070.00	0	20.61	0	63.49	86.03	25013.1

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K1+080.00	0	19.84	0	202.22	86.03	25215.31
K1+090.00	0	19.03	0	194.33	86.03	25409.64
K1+100.00	0.12	17.89	0.6	184.62	86.64	25594.26
K1+108.82	0.16	17.16	1.23	154.51	87.87	25748.77
K1+110.00	0.18	17.01	0.2	20.22	88.07	25768.99
K1+120.00	0.43	15.71	3.03	163.58	91.1	25932.57
K1+122.41	0.49	15.41	1.11	37.56	92.21	25970.13
K1+128.86	0.99	14.41	4.79	96.07	96.99	26066.2
K1+130.00	1.17	14.36	1.24	16.44	98.23	26082.65
K1+140.00	2.14	14.1	16.52	142.28	114.75	26224.92
K1+146.21	2.48	13.95	14.67	86.95	129.43	26311.88
K1+150.00	2.57	13.85	9.58	52.74	139.01	26364.62
K1+158.03	0.77	15.37	13.93	117.23	152.93	26481.85
K1+158.87	0.66	15.87	0.59	13.03	153.53	26494.89
K1+159.55	0.58	16.61	0.42	11.11	153.95	26506
K1+160.00	0.53	17.28	0.25	7.63	154.2	26513.63
K1+160.26	0.51	17.81	0.14	4.65	154.34	26518.28
K1+161.21	0.42	26.2	0.43	20.73	154.77	26539.01
K1+161.71	0.37	26.43	0.2	13.37	154.97	26552.38
K1+162.16	0.36	26.65	0.16	11.68	155.13	26564.06
K1+162.70	0	26.21	0.1	14.52	155.23	26578.58
K1+170.00	0	28.59	0	196.2	155.23	26774.78
K1+176.21	0	28.11	0	173.47	155.23	26948.25
K1+179.03	0.26	28.52	0.36	79.88	155.6	27028.13
K1+179.05	0.26	28.52	0.01	0.68	155.6	27028.81
K1+180.00	0.25	28.37	0.24	26.97	155.84	27055.78
K1+190.00	0.67	24.73	4.65	263.92	160.49	27319.69
K1+194.57	0.58	24.79	2.86	113.24	163.35	27432.93
K1+195.94	0.56	24.92	0.77	33.86	164.12	27466.79

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+010.90	0	1.07	0	0	0	0
K0+011.48	0	2.1	0	0.93	0	0.93
K0+012.43	0	2.61	0	2.22	0	3.15
K0+014.33	0	2.93	0	5.28	0	8.43
K0+018.15	0	3.5	0	12.29	0	20.72
K0+018.21	0	3.51	0	0.21	0	20.93
K0+020.00	0.47	2.23	0.42	5.13	0.42	26.06
K0+030.00	0.59	2.02	5.3	21.29	5.72	47.34
K0+037.96	0	2.18	2.34	16.72	8.06	64.06
K0+039.12	0	1.88	0	2.36	8.06	66.42
K0+040.00	0	1.49	0	1.49	8.06	67.91
K0+040.73	0	0.94	0	0.88	8.06	68.79
K0+061.23	0	0.47	0	0	8.06	68.79
K0+062.44	0	1.01	0	0.9	8.06	69.69
K0+064.59	0	1.29	0	2.46	8.06	72.15
K0+070.00	0	1.38	0	7.23	8.06	79.37
K0+080.00	1.56	0.87	7.81	11.27	15.87	90.65
K0+090.00	1.24	1.33	14.01	11.03	29.88	101.67
K0+100.00	0.94	1.65	10.9	14.94	40.78	116.61
K0+110.00	1.15	1.4	10.43	15.26	51.2	131.87
K0+120.00	0.99	1.57	10.7	14.86	61.91	146.73
K0+130.00	0.84	1.75	9.16	16.63	71.06	163.35
K0+140.00	0.71	1.92	7.71	18.34	78.77	181.69
K0+150.00	0.49	2.21	5.96	20.65	84.73	202.34
K0+160.00	0	3.49	2.43	28.51	87.17	230.85
K0+170.00	0	6.36	0	49.25	87.17	280.1
K0+180.00	0	8.75	0	75.55	87.17	355.65
K0+190.00	0	10.15	0	94.51	87.17	450.16
K0+200.00	0	5.92	0	80.37	87.17	530.53
K0+210.00	0.17	4.34	0.86	51.31	88.02	581.84
K0+220.00	0	6.83	0.86	55.85	88.88	637.68
K0+230.00	0	8.89	0	78.6	88.88	716.29
K0+240.00	0	8.03	0	84.59	88.88	800.88
K0+250.00	0	7.16	0	75.93	88.88	876.81
K0+260.00	0	6.76	0	69.63	88.88	946.44
K0+270.00	0	7.09	0	69.28	88.88	1015.72
K0+280.00	0	7.45	0	72.7	88.88	1088.42
K0+290.00	0	8.06	0	77.57	88.88	1165.99
K0+300.00	0	9.48	0	87.73	88.88	1253.72
K0+310.00	0	10.49	0	99.84	88.88	1353.56
K0+320.00	0	10.09	0	102.88	88.88	1456.44
K0+330.00	0	9.98	0	100.35	88.88	1556.79
K0+340.00	0	9.9	0	99.41	88.88	1656.19
K0+350.00	0	9.63	0	97.66	88.88	1753.85
K0+360.00	0	9.77	0	97.01	88.88	1850.86
K0+370.00	0	9.98	0	98.79	88.88	1949.65
K0+380.00	0	9.6	0	97.92	88.88	2047.57
K0+390.00	0	9.55	0	95.76	88.88	2143.33
K0+400.00	0	9.99	0	97.7	88.88	2241.03
K0+410.00	0	10.15	0	100.7	88.88	2341.73
K0+420.00	0	4.54	0	73.46	88.88	2415.19
K0+430.00	1.61	0.77	8.04	26.56	96.92	2441.75
K0+440.00	1.39	1.07	14.99	9.2	111.91	2450.95
K0+450.00	0	10	6.95	55.34	118.85	2506.29
K0+460.00	0	7.24	0	86.21	118.85	2592.5
K0+470.00	0.01	4.4	0.07	58.23	118.92	2650.72
K0+480.00	0.51	2.1	2.6	32.51	121.52	2683.24

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+490.00	0.02	3.35	2.61	27.27	124.13	2710.51
K0+500.00	0	5.48	0.08	44.19	124.21	2754.7
K0+510.00	0	7.76	0	66.24	124.21	2820.94
K0+520.00	0	9.09	0	84.26	124.21	2905.19
K0+530.00	0	7.69	0	83.91	124.21	2989.1
K0+540.00	0	4.62	0	61.59	124.21	3050.69
K0+550.00	0.81	1.89	4.03	32.55	128.24	3083.25
K0+560.00	2.91	0.2	18.59	10.43	146.83	3093.67
K0+566.37	1.92	0	15.4	0.63	162.23	3094.3
K0+568.25	1.66	0	3.37	0	165.6	3094.3
K0+569.23	1.34	0	1.47	0	167.07	3094.3
K0+569.61	1.11	0	0.47	0	167.54	3094.3
K0+569.75	0.95	0	0.15	0	167.68	3094.3
K0+570.05	0	0	0.14	0	167.83	3094.3
K0+599.98	0	0	0	0	167.83	3094.3
K0+600.00	0	0	0	0	167.83	3094.3
K0+600.24	0	0	0	0	167.83	3094.3
K0+600.88	1.71	0	0.55	0	168.38	3094.3
K0+600.88	1.71	0	0	0	168.38	3094.3
K0+601.84	2.07	0	1.81	0	170.19	3094.3
K0+603.00	2.28	0	2.53	0	172.72	3094.3
K0+610.00	3.8	0	21.28	0	194	3094.3
K0+620.00	4.16	0	39.78	0	233.78	3094.3
K0+630.00	2.29	0.41	32.27	2.07	266.05	3096.37
K0+640.00	0.7	1.91	14.98	11.61	281.02	3107.99
K0+650.00	0	4.7	3.51	33.04	284.54	3141.03
K0+660.00	0	6.15	0	54.26	284.54	3195.29
K0+670.00	0	4.59	0	53.72	284.54	3249
K0+680.00	0	3.64	0	41.14	284.54	3290.15
K0+690.00	0.09	2.85	0.47	32.45	285.01	3322.59
K0+700.00	0.38	2.27	2.36	25.63	287.37	3348.22
K0+710.00	0.55	2.02	4.67	21.49	292.03	3369.71
K0+720.00	0.69	1.85	6.24	19.36	298.27	3389.07
K0+730.00	0.85	1.67	7.7	17.58	305.97	3406.65
K0+740.00	0.98	1.52	9.15	15.93	315.12	3422.58
K0+750.00	1.03	1.46	10.09	14.91	325.2	3437.49
K0+760.00	1	1.53	10.17	14.95	335.37	3452.44
K0+770.00	0.87	1.68	9.36	16.04	344.73	3468.48
K0+780.00	1.03	1.46	9.52	15.73	354.25	3484.21
K0+790.00	1	1.52	10.17	14.91	364.42	3499.13
K0+800.00	0.97	1.57	9.85	15.42	374.26	3514.55
K0+810.00	0.86	1.69	9.14	16.29	383.4	3530.83
K0+820.00	0.66	1.93	7.63	18.1	391.03	3548.94
K0+830.00	0.65	1.93	6.59	19.3	397.62	3568.24
K0+840.00	0.7	1.88	6.78	19.04	404.4	3587.28
K0+850.00	0.73	1.85	7.18	18.61	411.58	3605.89
K0+860.00	0.78	1.79	7.58	18.18	419.15	3624.07
K0+870.00	0.85	1.71	8.17	17.49	427.32	3641.56
K0+880.00	1.61	0.82	12.34	12.63	439.66	3654.19
K0+890.00	3.75	0	26.84	4.09	466.5	3658.28
K0+900.00	3.71	0	37.3	0	503.8	3658.28
K0+910.00	4.01	0	38.57	0	542.37	3658.28
K0+920.00	4.34	0	41.76	0	584.12	3658.28
K0+930.00	4.61	0	44.78	0	628.91	3658.28
K0+940.00	4.73	0	46.69	0	675.6	3658.28
K0+950.00	4.78	0	47.55	0	723.15	3658.28
K0+960.00	3.71	0	42.47	0.01	765.62	3658.29

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+970.00	2.31	0.36	30.12	1.82	795.74	3660.12
K0+980.00	1.5	0.96	19.09	6.62	814.83	3666.74
K0+990.00	1.47	1.01	14.87	9.87	829.71	3676.61
K1+000.00	1.72	0.77	15.94	8.92	845.64	3685.53
K1+010.00	1.9	0.61	18.06	6.89	863.71	3692.42
K1+020.00	1.73	0.77	18.11	6.9	881.82	3699.31
K1+030.00	1.56	0.95	16.41	8.61	898.22	3707.92
K1+040.00	1.51	0.97	15.34	9.62	913.57	3717.54
K1+050.00	1.69	0.78	16.01	8.78	929.58	3726.33
K1+060.00	1.79	0.68	17.39	7.31	946.97	3733.64
K1+070.00	1.86	0.61	18.26	6.46	965.22	3740.09
K1+080.00	1.76	0.69	18.09	6.53	983.31	3746.62
K1+090.00	1.57	0.87	16.61	7.84	999.93	3754.46
K1+100.00	1.4	1.04	14.85	9.56	1014.78	3764.02
K1+110.00	1.72	0.72	15.6	8.8	1030.38	3772.82
K1+120.00	2.01	0.45	18.67	5.86	1049.04	3778.68
K1+128.86	1.62	0.82	16.11	5.64	1065.16	3784.32
K1+130.00	1.61	0.84	1.85	0.95	1067	3785.27
K1+140.00	1.51	0.98	15.62	9.07	1082.62	3794.35
K1+150.00	1.43	1.16	14.72	10.69	1097.34	3805.04
K1+150.10	0	1.54	0.07	0.13	1097.41	3805.18
K1+155.69	0	1.72	0	9.11	1097.41	3814.29
K1+156.95	0	1.88	0	2.26	1097.41	3816.55
K1+158.32	0	2.02	0	2.68	1097.41	3819.23
K1+160.00	0	0	0	1.7	1097.41	3820.93
K1+160.48	0	0	0	0	1097.41	3820.93

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+003.17	0	0	0	0	0	0
K0+003.87	0	7.92	0	2.78	0	2.78
K0+004.68	0	16.67	0	9.93	0	12.71
K0+006.44	0	36.44	0	46.87	0	59.58
K0+007.56	0	33.08	0	38.9	0	98.47
K0+008.50	0	31.96	0	30.28	0	128.75
K0+009.50	0	31.35	0	31.88	0	160.63
K0+010.00	0	31.2	0	15.58	0	176.2
K0+011.38	0	23.83	0	37.89	0	214.09
K0+011.46	0	23.49	0	2.03	0	216.13
K0+020.00	0	21.9	0	193.74	0	409.86
K0+023.57	0	22.21	0	78.84	0	488.7
K0+023.76	0	19.83	0	3.89	0	492.59
K0+025.39	0	20.52	0	32.86	0	525.44
K0+026.40	0	22.3	0	21.68	0	547.12
K0+026.73	0	23.61	0	7.63	0	554.76
K0+027.02	0	27.78	0	7.5	0	562.25
K0+030.01	0	27.83	0	83.1	0	645.36
K0+037.91	0	27.4	0	218.2	0	863.56
K0+039.19	0	27.7	0	35.2	0	898.76
K0+040.00	0	28.53	0	22.71	0	921.47
K0+040.61	0	29.83	0	17.69	0	939.15
K0+041.06	0	36.26	0	14.87	0	954.02
K0+050.00	0	35.89	0	322.66	0	1276.68
K0+055.71	0	35.99	0	205.29	0	1481.98
K0+060.06	0	36	0	156.68	0	1638.66
K0+060.94	0	36.01	0	31.55	0	1670.21
K0+061.36	0	29.81	0	13.93	0	1684.14
K0+061.81	0	28.68	0	12.93	0	1697.07
K0+062.39	0	27.84	0	16.37	0	1713.43
K0+063.11	0	27.26	0	20.05	0	1733.48
K0+064.10	0	27.04	0	26.66	0	1760.15
K0+070.00	0	27.23	0	160.21	0	1920.36
K0+072.69	0	27.33	0	73.41	0	1993.77
K0+072.84	0	23	0	3.67	0	1997.44
K0+073.80	0	20.26	0	20.79	0	2018.23
K0+074.90	0	19.06	0	21.7	0	2039.92
K0+075.73	0	18.51	0	15.58	0	2055.5
K0+075.92	0	20.85	0	3.8	0	2059.3
K0+080.00	0	19.06	0	81.33	0	2140.63
K0+090.00	0.28	17.57	1.41	183.15	1.41	2323.78
K0+100.00	0.24	18.27	2.63	179.2	4.04	2502.99
K0+110.00	0.24	17.97	2.4	181.19	6.45	2684.18

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+120.00	0.28	17.42	2.57	176.95	9.02	2861.13
K0+130.00	0.16	17.61	2.18	175.16	11.2	3036.28
K0+140.00	0.12	18	1.37	178.04	12.57	3214.32
K0+150.00	0.13	18.66	1.21	183.26	13.78	3397.58
K0+153.20	0.09	18.97	0.35	60.27	14.14	3457.85
K0+153.26	0	17.9	0	1.02	14.14	3458.87
K0+160.00	0	19.31	0	125.42	14.14	3584.29
K0+165.19	0	20.72	0	103.95	14.14	3688.23
K0+165.28	0	23.11	0	2	14.14	3690.24
K0+170.00	0	25.14	0	113.75	14.14	3803.99
K0+180.00	0	29.7	0	274.17	14.14	4078.16
K0+190.00	0	33.23	0	314.66	14.14	4392.81
K0+200.00	0	26.56	0	298.99	14.14	4691.8
K0+210.00	0	21.44	0	240.02	14.14	4931.82
K0+220.00	0	22.66	0	220.51	14.14	5152.33
K0+230.00	0	31.77	0	272.16	14.14	5424.49
K0+240.00	0	30.72	0	312.45	14.14	5736.94
K0+250.00	0	30.12	0	304.18	14.14	6041.12
K0+260.00	0	30.07	0	300.93	14.14	6342.04
K0+270.00	0	30.46	0	302.63	14.14	6644.67
K0+280.00	0	30.99	0	307.23	14.14	6951.91
K0+285.69	0	29.69	0	172.75	14.14	7124.66
K0+285.87	0	24.47	0	4.64	14.14	7129.3
K0+290.00	0	23.85	0	99.89	14.14	7229.19
K0+297.69	0	24.8	0	187.07	14.14	7416.26
K0+297.78	0	29.16	0	2.43	14.14	7418.69
K0+300.00	0	28.51	0	63.97	14.14	7482.66
K0+310.00	0	29.07	0	287.9	14.14	7770.56
K0+320.00	0	29.75	0	294.12	14.14	8064.68
K0+330.00	0	31.61	0	306.84	14.14	8371.52
K0+340.00	0	33.6	0	326.05	14.14	8697.58
K0+350.00	0	33.67	0	336.33	14.14	9033.91
K0+360.00	0	33.14	0	334.03	14.14	9367.94
K0+370.00	0	32.57	0	328.52	14.14	9696.46
K0+380.00	0	32.99	0	327.81	14.14	10024.27
K0+390.00	0	33.07	0	330.3	14.14	10354.57
K0+400.00	0	33.58	0	333.24	14.14	10687.81
K0+410.00	0	34.31	0	339.46	14.14	11027.27
K0+419.22	0	30.38	0	298.12	14.14	11325.4
K0+420.00	0	23.97	0	21.27	14.14	11346.66
K0+430.00	0	18.38	0	211.75	14.14	11558.41
K0+432.30	0	16.8	0	40.4	14.14	11598.81
K0+432.58	0.25	17.39	0.04	4.83	14.17	11603.64

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+440.00	0	20.26	0.92	139.7	15.1	11743.34
K0+450.00	0	34.83	0	275.45	15.1	12018.79
K0+460.00	0	34.13	0	344.77	15.1	12363.56
K0+470.00	0	30.25	0	321.88	15.1	12685.44
K0+480.00	0	28.76	0	295.05	15.1	12980.49
K0+490.00	0	29.02	0	288.87	15.1	13269.37
K0+500.00	0	30.36	0	296.85	15.1	13566.22
K0+510.00	0	33.02	0	316.9	15.1	13883.12
K0+520.00	0	34.41	0	337.17	15.1	14220.29
K0+530.00	0	33.88	0	341.43	15.1	14561.72
K0+540.00	0	25.2	0	295.4	15.1	14857.13
K0+550.00	0.14	19.19	0.72	221.96	15.82	15079.09
K0+560.00	1.82	13.22	9.84	162.07	25.65	15241.16
K0+567.00	1.97	12.64	13.27	90.54	38.92	15331.7
K0+569.23	1.88	14.04	4.28	29.73	43.2	15361.43
K0+570.00	1.92	16.76	1.46	11.86	44.66	15373.29
K0+570.02	1.79	20.12	0.04	0.45	44.71	15373.73
K0+571.00	1.73	20.24	1.71	19.61	46.42	15393.34
K0+571.07	0	20.24	0.06	1.51	46.48	15394.85
K0+580.00	0	21.1	0	184.59	46.48	15579.44
K0+584.99	0	21.41	0	106.14	46.48	15685.58
K0+590.00	0	21.34	0	107.03	46.48	15792.61
K0+598.97	0	20.34	0	186.82	46.48	15979.43
K0+599.00	1.24	20.33	0.02	0.73	46.5	15980.16
K0+599.93	1.28	20.23	1.18	18.92	47.68	15999.07
K0+600.00	1.28	20.22	0.08	1.34	47.77	16000.41
K0+600.88	1.34	14.18	1.15	15.14	48.92	16015.55
K0+603.00	1.44	12.85	2.95	28.66	51.87	16044.21
K0+610.00	1.74	12.37	11.13	88.25	63	16132.46
K0+620.00	1.31	13.39	15.28	128.78	78.27	16261.25
K0+630.00	0.88	14.54	11	139.65	89.27	16400.89
K0+640.00	0.32	17.57	6.02	160.55	95.29	16561.44
K0+650.00	0	22.5	1.6	200.36	96.89	16761.79
K0+660.00	0	24.65	0	235.75	96.89	16997.54
K0+670.00	0	23.3	0	239.74	96.89	17237.29
K0+680.00	0	22.52	0	229.1	96.89	17466.38
K0+690.00	0	21.43	0	219.73	96.89	17686.11
K0+690.75	0	19.38	0	15.33	96.89	17701.44
K0+700.00	0	18.92	0	177.11	96.89	17878.55
K0+702.60	0	18.84	0	49.01	96.89	17927.57
K0+702.82	0	20.65	0	4.46	96.89	17932.03
K0+710.00	0	20.49	0	147.66	96.89	18079.68
K0+720.00	0	20.29	0	203.94	96.89	18283.63

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K0+730.00	0	19.96	0	201.27	96.89	18484.9
K0+740.00	0	19.63	0	197.94	96.89	18682.83
K0+750.00	0	19.52	0	195.73	96.89	18878.56
K0+760.00	0	19.46	0	194.89	96.89	19073.45
K0+770.00	0	19.67	0	195.65	96.89	19269.1
K0+780.00	0	19.48	0	195.75	96.9	19464.85
K0+790.00	0.06	18.76	0.28	191.19	97.18	19656.04
K0+800.00	0	19.02	0.29	188.91	97.47	19844.95
K0+804.64	0	19.92	0.01	90.35	97.48	19935.3
K0+804.78	0	18.29	0	2.74	97.48	19938.05
K0+810.00	0	18.28	0	95.37	97.48	20033.41
K0+817.57	0	18.55	0	139.48	97.48	20172.9
K0+817.78	0	20.25	0	4	97.48	20176.89
K0+820.00	0	20.28	0	44.99	97.48	20221.88
K0+830.00	0	20.99	0	206.35	97.48	20428.23
K0+840.00	0	20.73	0	208.6	97.48	20636.83
K0+850.00	0	20.22	0	204.77	97.48	20841.6
K0+860.00	0	20.06	0	201.42	97.48	21043.02
K0+870.00	0	19.74	0	199.02	97.48	21242.04
K0+880.00	0.21	17.57	1.05	186.56	98.53	21428.6
K0+890.00	0.71	14.22	4.61	158.95	103.14	21587.54
K0+900.00	0.81	14.05	7.59	141.33	110.74	21728.88
K0+910.00	1.04	13.53	9.23	137.9	119.97	21866.78
K0+919.07	1.26	13.16	10.41	121.03	130.38	21987.8
K0+920.00	0.03	13.12	0.6	12.23	130.98	22000.03
K0+930.00	0.03	12.83	0.31	129.72	131.29	22129.75
K0+932.09	0.03	12.77	0.07	26.77	131.36	22156.52
K0+932.30	1.56	12.77	0.17	2.68	131.52	22159.2
K0+940.00	1.61	12.71	12.2	98.07	143.72	22257.26
K0+950.00	1.72	12.58	16.65	126.42	160.37	22383.68
K0+960.00	1.27	13.41	14.93	129.96	175.3	22513.65
K0+970.00	0.57	15.37	9.19	143.9	184.49	22657.54
K0+980.00	0.28	17.11	4.24	162.38	188.73	22819.93
K0+990.00	0.34	16.83	3.12	169.71	191.85	22989.64
K1+000.00	0.41	16.2	3.79	165.17	195.64	23154.81
K1+010.00	0.4	16.21	4.07	162.06	199.71	23316.87
K1+020.00	0.36	16.54	3.8	163.74	203.51	23480.61
K1+030.00	0.34	16.83	3.49	166.81	206.99	23647.42
K1+040.00	0.26	17.39	2.97	171.08	209.96	23818.51
K1+050.00	0.16	17.75	2.09	175.71	212.05	23994.22
K1+055.90	0.17	17.66	0.98	104.52	213.03	24098.74
K1+056.06	0	16.69	0.01	2.76	213.05	24101.5
K1+060.00	0	16.72	0	65.75	213.05	24167.26

ABSCISA	AREA DE RELLENO M2	AREA DE CORTE M2	VOLUMEN DE RELLENO M3	VOLUMEN DE CORTE M3	VOLUMEN DE RELLENO ACUMULADO M3	VOLUMEN DE CORTE ACUMULADO M3
K1+068.98	0	16.6	0	149.65	213.05	24316.91
K1+069.23	0.2	17.5	0.03	4.2	213.07	24321.11
K1+070.00	0.21	17.48	0.16	13.48	213.23	24334.59
K1+080.00	0.15	17.87	1.8	176.74	215.03	24511.33
K1+090.00	0.1	18.35	1.29	181.1	216.32	24692.43
K1+100.00	0.04	18.93	0.72	186.37	217.04	24878.8
K1+110.00	0.1	18.38	0.71	186.52	217.75	25065.32
K1+120.00	0.11	18.01	1.05	181.97	218.8	25247.29
K1+128.86	0	19.26	0.47	165.11	219.27	25412.4
K1+130.00	0	19.35	0	22.02	219.27	25434.43
K1+134.73	0	19.35	0	91.52	219.27	25525.94
K1+140.00	0	19.43	0	102.22	219.27	25628.17
K1+146.72	0	19.69	0	131.09	219.27	25759.26
K1+150.00	0	19.78	0	64.72	219.27	25823.99
K1+155.90	0	19.92	0	116.42	219.27	25940.41
K1+157.91	0	21.35	0	41.54	219.27	25981.95
K1+158.85	0	29.47	0	23.9	219.27	26005.85
K1+159.24	0	29.55	0	11.38	219.27	26017.23
K1+160.00	0	29.73	0	22.67	219.27	26039.89
K1+170.00	0	32.78	0	316.34	219.27	26356.23
K1+170.73	0	32.8	0	23.9	219.27	26380.14
K1+171.75	0	32.81	0	33.4	219.27	26413.53
K1+171.86	0	30.49	0	3.49	219.27	26417.02
K1+180.00	0	30.11	0	249	219.27	26666.02
K1+182.73	0	29.64	0	81.53	219.27	26747.55
K1+189.61	0	28.48	0	200.02	219.27	26947.57
K1+190.00	0	28.43	0	11.06	219.27	26958.63
K1+190.57	0	28.36	0	16.16	219.27	26974.79
K1+190.97	0	28.31	0	11.5	219.27	26986.29



MEMORIAS DE CALCULO

RECIBO PARCIAL DE OBRA No. 7

Consorcio Inter Nororiental

PRESENTE ACTA

CONTRATANTE

OBJETO CONTRATO

CAPITULO 4.0

SUBCAPITULO 4.1

ITEM 4.1.2

AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE

ACUATODOS S.A E.S.P

PRELIMINARES

Sub base granular seleccionada o clasificada

HOJA 3 DE 4

SECTOR CARRERA 40 ENTRE CALLE 40 Y CALLE 50

UNIDAD m³

A	B	C	D	E	F	G	H
DESCRIPCION	ABSCISA INICIO	ABSCISA FINAL	LONGITUD (m)	ANCHO (m)	AREA SUPERFICIAL (m ²)	ESPESOR (m)	TOTAL (m ³)
CALZADA DERECHA (INCLUYE INTERSECCIONES)	K0 + 001.503	K1 + 195.935	1,194.432	9.50	11,868.20	1.00	11,868.20
CALZADA IZQUIERDA (INCLUYE EN INTERSEC. Y ENTRA A EDS)	K0 + 004.671	K1 + 190.970	1,186.304	9.50	12,027.96	1.00	12,027.96
CALZADA DERECHA - BOCA CALLE - CALLE 42	K0 + 010.490	K0 + 015.017	4.527	6.00	29.93	1.00	29.93
CALZADA DERECHA - BOCA CALLE - CALLE 43	K0 + 010.531	K1 + 015.031	4.500	6.00	29.66	1.00	29.66
CALZADA DERECHA - BOCA CALLE - CALLE 44	K0 + 010.544	K0 + 015.046	4.502	8.00	38.29	1.00	38.29
CALZADA DERECHA - BOCA CALLE - CALLE 46	K0 + 025.416	K1 + 029.918	4.502	18.00	88.16	1.00	88.16
CALZADA DERECHA - BOCA CALLE - CALLE 46C	K0 + 010.578	K0 + 015.078	4.500	6.00	29.67	1.00	29.67
CALZADA DERECHA - BOCA CALLE - CALLE 49	K0 + 010.592	K1 + 015.092	4.500	8.00	38.26	1.00	38.26
CALZADA DERECHA - BOCA CALLE - CALLE 49A	K0 + 010.607	K0 + 015.107	4.500	6.00	29.66	1.00	29.66
CALZADA DERECHA - BOCA CALLE - CALLE 49B	K0 + 010.614	K1 + 015.614	5.000	7.00	33.96	1.00	33.96
CALZADA DERECHA - BOCA CALLE - CALLE 50	K0 + 240.620	K0 + 280.032	39.412	7.30	297.77	1.00	297.77
CALZADA IZQUIERDA - BOCA CALLE - CALLE 42	K0 + 010.483	K1 + 014.983	4.500	6.00	29.66	1.00	29.66
CALZADA IZQUIERDA - BOCA CALLE - CALLE 43	K0 + 010.489	K0 + 014.989	4.500	6.00	29.66	1.00	29.66
CALZADA IZQUIERDA - BOCA CALLE - CALLE 44	K0 + 010.454	K1 + 014.954	4.500	7.00	33.96	1.00	33.96
CALZADA IZQUIERDA - BOCA CALLE - CALLE 46	K0 + 025.437	K0 + 029.937	4.500	18.00	88.09	1.00	88.09
CALZADA IZQUIERDA - BOCA CALLE - CALLE 46B	K0 + 010.425	K1 + 014.925	4.500	6.00	29.66	1.00	29.66
CALZADA IZQUIERDA - BOCA CALLE - CALLE 47A	K0 + 010.412	K0 + 014.912	4.500	7.00	33.96	1.00	33.96
CALZADA IZQUIERDA - BOCA CALLE - CALLE 48	K0 + 010.400	K1 + 014.900	4.500	7.00	33.96	1.00	33.96
CALZADA IZQUIERDA - BOCA CALLE - CALLE 49	K0 + 010.357	K0 + 014.885	4.528	7.00	34.23	1.00	34.23
CALZADA IZQUIERDA - BOCA CALLE - CALLE 50	K0 + 081.104	K0 + 088.095	6.991	8.00	68.30	1.00	68.30
TOTAL							24,893.01

DESCUENTO ESTRUCTURAS CAPITULO 2.0

DESCUENTO EXCAVACION SUBCAPITULO 4.3

TOTAL

CONTRATISTA DE OBRA

CONSORCIO MACRO NORORIENTAL

ING. JUAN JOSE CEPEDA PEREZ

R/L CONTRATISTA DE OBRA

CONTRATISTA DE OBRA

CONSORCIO MACRO NORORIENTAL

ING. ADRIANA CHOCONTA JIMENEZ

DIRECTOR CONTRATISTA DE OBRA

CONTRATISTA DE OBRA

CONSORCIO INTER NORORIENTAL

ING. JORGE EUECER CASTELLANOS SILVA

R/L Y DIRECTOR DE INTERVENTORIA

	MEMORIAS DE CALCULO	PRESENTE ACTA	RECIBO PARCIAL DE OBRA No. 7	Consorcio Inter Nororiental 
ACUATODOS S.A E.S.P				
AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE				
CONTRATANTE		OBRAS COMPLEMENTARIAS		
OBJETO CONTRATO		PRELIMINARES		
CAPITULO	4.0			
SUBCAPITULO	4.1			
ITEM	4.1.3			
		Terraplen o rellenos con material de corte (a. libre 2 Km)		
		HOJA	4	DE 4
		SECTOR	CARRERA 40 ENTRE CALLE 40 Y CALLE 50	
		UNIDAD	m ²	

A	DESCRIPCION	B	C	D	E	F	G	H
		ABSCISA INICIO	ABSCISA FINAL	LONGITUD (m)	ANCHO (m)	AREA SUPERFICIAL (m ²)	VOLUMEN (m ³)	TOTAL (m ³)
DISEÑO								
C-8 DISEÑO CARTERA REPORTE SOFTWARE								
	CALZADA DERECHA (INCLUYE INTERSECCIONES)	K0 + 001.503	K1 + 195.935	1,194.432	9.50	17,783.50	164.12	164.12
	CALZADA IZQUIERDA (INCLUYE EN INTERSEC. Y ENTRA A EDS)	K0 + 004.671	K1 + 190.970	1,186.304	9.50	17,764.50	219.27	219.27
	SEPARADOR	K0 + 010.650	K1 + 159.800	1,149.150	11.00	12,070.08	1,097.41	1,097.41
	CALZADA DERECHA - BOCA CALLE - CALLE 42	K0 + 010.490	K0 + 015.017	4.527	6.00	36.20	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 43	K0 + 010.531	K0 + 015.031	4.500	6.00	33.30	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 44	K0 + 010.544	K0 + 015.046	4.502	8.00	47.30	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 46	K0 + 025.416	K0 + 029.918	4.502	18.00	112.00	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 46C	K0 + 010.578	K0 + 015.078	4.500	6.00	33.30	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 48	K0 + 010.592	K0 + 015.092	4.500	8.00	43.00	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 49A	K0 + 010.607	K0 + 015.107	4.500	6.00	33.30	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 49B	K0 + 010.614	K0 + 015.614	5.000	7.00	37.70	0.00	0.00
	CALZADA DERECHA - BOCA CALLE - CALLE 50	K0 + 240.620	K0 + 280.032	39.412	7.30	355.64	8.16	8.16
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 42	K0 + 010.483	K0 + 014.983	4.500	6.00	33.30	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 43	K0 + 010.469	K0 + 014.969	4.500	6.00	33.10	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 44	K0 + 010.454	K0 + 014.954	4.500	7.00	37.50	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 46	K0 + 025.437	K0 + 029.937	4.500	18.00	103.30	0.07	0.07
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 46B	K0 + 010.425	K0 + 014.925	4.500	6.00	33.30	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 47A	K0 + 010.412	K0 + 014.912	4.500	7.00	37.80	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 48	K0 + 010.400	K0 + 014.900	4.500	7.00	37.50	0.17	0.17
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 49	K0 + 010.357	K0 + 014.885	4.528	7.00	41.00	0.00	0.00
	CALZADA IZQUIERDA - BOCA CALLE - CALLE 50	K0 + 081.104	K0 + 088.095	6.991	8.00	85.20	0.00	0.00
							TOTAL	1,489.20

TOTAL	1,489.20
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Señor Jose Cepeda

CONSORCIO MACRO NORORIENTAL
 ING. JUAN JOSE CEPEDA PEREZ
 R/L CONTRATISTA DE OBRA

Adriana Cuarta J.

CONSORCIO MACRO NORORIENTAL
 ING. ADRIANA CHOCONTA JIMENEZ
 DIRECTOR CONTRATISTA DE OBRA

[Signature]

CONSORCIO INTER NORORIENTAL
 ING. JORGE ELIECER CASTELLANOS SILVA
 R/L Y DIRECTOR DE INTERVENTORIA

		MEMORIA DE CÁLCULO		PRESENTE ACTA		RECIBO PARCIAL DE OBRA No. 7						
CONTRATANTE		ACUATODOS S.A E.S.P										
OBJETO CONTRATO		AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE										
CAPITULO		4		OBRAS COMPLEMENTARIAS		HOJA		DE				
SUBCAPITULO		4.3		DRENAJE VIA		SECTOR		RED MATRIZ				
								46				
TABLA RESUMEN												
ITEM	RESUMEN	UND	COLECTORES	TRAMOS SUMIDEROS	SUMIDEROS	POZOS DE INSPECCION	CAMARAS DE INSPECCION	ZONA DE INFILTRACION	TOTAL	ACUM. ACTAS PARCIALES	PRESENTE ACTA	TOTAL
4.3.1	Replanteo y localizacion de tuberías de alcantarillado	m	1756.71	219.95	0.00	0.00	0.00	0.00	1976.66	1942.46	34.20	1976.66
4.3.2	Excavación mecánica en material común 0 - 2 m (aruga)	m³	7256.07	0.00	0.00	0.00	0.00	0.00	7256.07	5569.58	1686.49	7256.07
4.3.3	Excavación mecánica en material conglomerado hasta 4 m (aruga)	m³	5821.77	619.80	0.00	1699.31	0.00	0.00	8140.88	6377.59	1763.29	8140.88
4.3.4	Excavación mecánica en material conglomerado hasta 6 m (aruga)	m³	11347.04	0.00	0.00	0.00	0.00	7590.00	18937.04	9499.08	9437.96	18937.04
4.3.5	Excavación manual en conglomerado	m³	493.93	22.38	0.00	0.00	0.00	0.00	516.31	509.70	6.61	516.31
4.3.6	Tubería 315 mm PEAD S4 alcantarillado corrugada (1.2). Suministro e instal.	m	0.00	197.20	0.00	0.00	0.00	0.00	197.20	194.69	2.51	197.20
4.3.7	Tubería 400 mm PEAD S4 alcantarillado corrugada (1.6). Suministro e instal.	m	301.06	1.35	0.00	0.00	0.00	0.00	302.41	301.12	1.29	302.41
4.3.8	Tubería 600 mm PEAD S4 alcantarillado corrugada (2.4). Suministro e instal.	m	0.00	0.00	0.00	0.00	0.00	25.15	25.15	0.00	25.15	25.15
4.3.9	Tubería 900 mm PEAD S8 estructurada (3.6). Suministro e instal.	m	46.95	0.00	0.00	0.00	0.00	0.00	46.95	40.25	6.70	46.95
4.3.10	Tubería 1000 mm PEAD S8 estructurada (4.0). Suministro e instal.	m	774.13	0.00	0.00	0.00	0.00	0.00	774.13	751.60	22.53	774.13
4.3.11	Tubería 1200 mm PEAD S8 estructurada (4.6). Suministro e instal.	m	237.86	0.00	0.00	0.00	0.00	0.00	237.86	237.86	0.00	237.86
4.3.12	Tubería 1400 mm PEAD S8 estructurada (5.1). Suministro e instal.	m	184.33	0.00	0.00	0.00	0.00	68.52	252.85	249.14	3.71	252.85
4.3.13	Tubería 1600 mm PEAD S8 estructurada (6.3). Suministro e instal.	m	126.13	0.00	0.00	0.00	0.00	0.00	126.13	126.13	0.00	126.13
4.3.14	Repleno zona de ataque de tubería con material base granular triturado (tamazo máximo 1 1/2)	m³	3456.11	101.75	0.00	0.00	0.00	10.28	3568.14	3503.14	65.00	3568.14
4.3.15	Balota a soca con base granular de 0.60 x 0.80	und	20342.00	2899.00	0.00	0.00	0.00	0.00	23241.00	22876.00	365.00	23241.00
4.3.16	Pozo de inspección recto (sin cono truncado) H= 1.5-2.0 m Ø 1.20 m	und	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.3.17	Pozo de inspección recto (sin cono truncado) H= 2.0-3.0 m Ø 2.00 m	und	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.3.18	Pozo de inspección recto (sin cono truncado) H= 3.0-4.0 m Ø 2.00 m	und	0.00	0.00	0.00	7.00	0.00	0.00	7.00	0.00	7.00	7.00
4.3.19	Sumidero lateral SL-250 en mampostería	und	0.00	0.00	24.00	0.00	0.00	0.00	24.00	22.00	2.00	24.00
4.3.20	Sumidero transversal en concreto reforzado 3000 Psi con rejilla de Ane Ø 10, H= 0.80, es 0.80 m	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.3.21	Concreto 4000 Psi, impermeabilizado para estructuras hidráulicas	m³	0.00	0.00	0.00	0.00	577.75	0.00	577.75	577.71	0.04	577.75
4.3.22	Concreto para solado resistencia 175 kg/cm2 - 2500 psi	m³	0.00	0.00	0.00	0.00	16.76	0.00	16.76	16.76	0.00	16.76
4.3.23	Dilatación en Cinta PVC-D22	m	0.00	0.00	0.00	0.00	501.60	0.00	501.60	501.60	0.00	501.60
4.3.24	Acero de Refuerzo Grado 60	kg	0.00	0.00	0.00	0.00	67446.85	0.00	67446.85	67446.85	0.00	67446.85
4.3.25	Base granular (IKV. 330.1)	m³	0.00	0.00	0.00	0.00	67.03	0.00	67.03	67.03	0.00	67.03
4.3.26	Enladrado tipo 2: apuntalamiento combinado metal - madera tipo tablerado.	m²	0.00	0.00	0.00	0.00	1185.60	0.00	1185.60	1185.60	0.00	1185.60
4.3.27	Tapa basculante con llave de seguridad en 3 apoyos para pozo insp. en vía (Inc. marca y tapa)	und	0.00	0.00	0.00	24.00	19.00	0.00	43.00	23.00	20.00	43.00
4.3.28	Repleno en material seleccionado de la excavación compactado	m³	7300.36	508.12	0.00	1045.17	0.00	0.00	8853.65	7152.83	1700.82	8853.65
4.3.29	Cargue y refillo mecánico de material, con acarreo a 6 Kms	m³	17618.50	134.06	0.00	654.14	0.00	7590.00	25996.70	15382.96	10613.74	25996.70
4.3.30	Material crudo de No. 1 max 6"	m³	0.00	0.00	0.00	0.00	0.00	6447.58	6447.58	5436.88	1010.70	6447.58

MEMORIA DE CÁLCULO

RECIBO PARCIAL DE OBRA No. 7

PRESENTE ACTA

CONTRATANTE

OBJETO CONTRATO

CAPÍTULO

SUBCAPÍTULO

4

4.3

ACUATODOS S.A E.S.P

AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE

HOJA

DE

46

SECTOR

1

RED MATRIZ

OBRA COMPLEMENTARIAS

DRENAJE VIA

TABLA RESUMEN

ITEM	RESUMEN	UND	COLECTORES	TRAMOS SUMIDEROS	SUMIDEROS	POZOS DE INSPECCION	CAMARAS DE INSPECCION	ZONA DE INFILTRACION	TOTAL	ACUM. ACTAS PARCIALES	PRESENTE ACTA	TOTAL
4.3.31	Filtro en tubería 800 mm PEAD SNA alcantarillado corrugado (32") perforada con trifurado de 1/2" - 3/4", geotextil y relleno ataque en base granular (1.20 x 1.20 x 17.45 m)	und	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.3.32	Caja de inspección 100 x 100	und	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	2.00
4.3.33	Pozo de inspección recto (sin cono truncado) H= 5.0 - 6.0 m Ø 2.0 m - Tizon	und	0.00	0.00	0.00	5.00	0.00	0.00	5.00	4.00	1.00	5.00
4.3.34	Rejilla removible en platina de 2 x 1/4" hueco de 3" para tapa box, drenaje, inspección y limpieza (fnc. marco)	m²	0.00	0.00	0.00	0.00	7.86	0.00	7.86	0.00	0.00	0.00
4.3.35	Geotextil No Tejido 1.60	m²	0.00	0.00	0.00	0.00	0.00	802.80	802.80	777.40	25.20	802.80
4.3.36	Piedra común	m³	0.00	0.00	0.00	0.00	0.00	257.98	257.98	249.89	8.09	257.98
4.3.37	Tubería de Polietileno PE-80 RDE 11 de 2' para gas, Suministro e instal.	m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ITEMS NO PREVISTOS												
NPE 2.2.5	Pozo de inspección recto (sin cono truncado) H= 2.5 - 3.0 m Ø 1.20 m	und	0.00	0.00	0.00	12.00	0.00	0.00	12.00	0.00	12.00	12.00
NP 4.3.38	Filtro en tubería 800 mm PEAD SNA alcantarillado corrugado (32") perforada con trifurado de 1/2" - 3/4", geotextil y relleno ataque en base granular (1.20 x 1.20 x 5.04 m)	und	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	2.00

CONSORCIO MACRO NORIENTAL

ING. JUAN JOSE CEPEDA PEREZ

R/L CONTRATISTA DE OBRA

CONSORCIO MACRO NORIENTAL

ING. ADRIANA CHOCONTA JIMENEZ

DIRECTOR CONTRATISTA DE OBRA

CONSORCIO INTER NORIENTAL

ING. JORGE ELEECER CASTELANOS SILVA

R/L Y DIRECTOR DE INTERVENTORIA

		MEMORIA DE CÁLCULO		PRESENTE ACTA		RECIBO PARCIAL DE OBRA No. 7		Consorcio Inter Nororiental													
CONTRATANTE		OBJETO CONTRATO		ACUATODOS S.A. E.S.P		AMPLIACIÓN DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CALLE 30 Y DIAGONAL 30 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE		DE		45											
CAPÍTULO		4.0		OBRAS COMPLEMENTARIAS		SECTOR		2		BED MATRIZ											
SUBCAPÍTULO		4.3		DRENAJE VIA		TABLA RESUMEN		TABLA RESUMEN		TABLA RESUMEN											
ITEM		RESUMEN		UND		22		23		24		25		26		27		28		29	
4.3.1		Reparación y localización de tuberías de alcantarillado		m		9.05		26.97		9.00		27.01		9.00		26.97		26.94		26.95	
4.3.2		Excavación mecánica en material común 0 - 2 m [largo]		m³		0.00		0.00		34.41		128.13		28.21		104.58		107.15		0.00	
4.3.3		Excavación mecánica en material conglomerado hasta 4 m [largo]		m³		0.00		231.42		0.00		145.19		34.29		91.83		52.29		145.52	
4.3.4		Excavación mecánica en material conglomerado hasta 6 m [largo]		m³		75.69		0.00		52.69		0.00		0.00		0.00		0.00		0.00	
4.3.5		Excavación manual en conglomerado		m³		1.59		3.40		1.61		3.41		1.61		3.40		3.40		3.40	
4.3.6		Tubería 315 mm PEAD S48 estructurada [171]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.7		Tubería 400 mm PEAD S48 estructurada [167]. Suministro e instal.		m		0.00		25.07		0.00		25.11		0.00		25.07		25.06		25.05	
4.3.8		Tubería 600 mm PEAD S48 estructurada [247]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.9		Tubería 900 mm PEAD S48 estructurada [367]. Suministro e instal.		m		4.75		0.00		6.70		0.00		6.70		0.00		0.00		0.00	
4.3.10		Tubería 1200 mm PEAD S48 estructurada [467]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.11		Tubería 1600 mm PEAD S48 estructurada [557]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.12		Tubería 1800 mm PEAD S48 estructurada [647]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.13		Relevo zona de ataque de tubería con material base granular [172]. Suministro e instal.		m³		10.58		19.78		10.47		19.81		10.47		19.78		19.76		19.76	
4.3.14		Bolta o saco con base granular de 0.40 x 0.80		und		217.00		152.00		217.00		152.00		217.00		152.00		152.00		152.00	
4.3.15		Relevo en material seleccionado de la excavación correspondiente		m³		10.11		100.75		9.25		97.68		8.46		96.94		37.56		96.98	
4.3.29		Cargue y retiro mecánico de material con acarreo a 5 kms		m³		67.17		134.28		79.46		179.05		55.64		125.29		51.95		51.95	
4.4.1		Transporte de material Peleto (via pavimentada)		t		537.38		1074.25		635.72		1432.39		445.14		838.96		1002.29		415.98	
ITEM		RESUMEN		UND		30		31		32		33		34		35		36		37	
4.3.1		Reparación y localización de tuberías de alcantarillado		m		26.95		9.00		26.95		9.00		26.95		9.00		9.00		26.94	
4.3.2		Excavación mecánica en material común 0 - 2 m [largo]		m³		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.3		Excavación mecánica en material conglomerado hasta 4 m [largo]		m³		194.77		54.01		184.19		51.09		140.06		55.07		76.55		212.38	
4.3.4		Excavación mecánica en material conglomerado hasta 6 m [largo]		m³		0.00		0.00		0.00		0.00		3.40		1.61		1.61		3.40	
4.3.5		Excavación manual en conglomerado		m³		3.40		1.61		3.40		1.61		3.40		1.61		0.00		0.00	
4.3.6		Tubería 315 mm PEAD S48 estructurada [171]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.7		Tubería 400 mm PEAD S48 estructurada [167]. Suministro e instal.		m		25.05		0.00		25.05		0.00		25.05		0.00		0.00		25.04	
4.3.8		Tubería 600 mm PEAD S48 estructurada [247]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.9		Tubería 900 mm PEAD S48 estructurada [367]. Suministro e instal.		m		0.00		6.70		0.00		6.70		0.00		6.70		0.00		0.00	
4.3.10		Tubería 1200 mm PEAD S48 estructurada [467]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.11		Tubería 1600 mm PEAD S48 estructurada [557]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.12		Tubería 1800 mm PEAD S48 estructurada [647]. Suministro e instal.		m		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
4.3.13		Relevo zona de ataque de tubería con material base granular [172]. Suministro e instal.		m³		19.76		10.47		19.76		10.47		19.76		10.47		10.47		19.77	
4.3.14		Bolta o saco con base granular de 0.40 x 0.80		und		152.00		217.00		152.00		217.00		152.00		217.00		217.00		152.00	
4.3.29		Cargue y retiro mecánico de material con acarreo a 5 kms		m³		24.49		2.36		34.00		1.66		87.15		5.07		14.50		120.69	
4.4.1		Transporte de material Peleto (via pavimentada)		t		113.48		55.24		101.40		51.04		54.32		51.61		63.66		95.08	
4.4.1		Transporte de material Peleto (via pavimentada)		t		907.85		442.08		812.27		428.33		450.54		412.85		559.25		760.67	

		MEMORIA DE CÁLCULO		PRESENTE ACTA		RECIBO PARCIAL DE OBRA No. 7		Consorcio Inter Nororiental	
CONTRATANTE		OBJETO CONTRATO		ACUATODOS S.A. E.S.P.		RECIBO PARCIAL DE OBRA No. 7		Consorcio Inter Nororiental	
CAPÍTULO		4.0		AMPLIACIÓN DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE		HOJA		DE	
SUBCAPÍTULO		4.3		OBRAS COMPLEMENTARIAS		2		RED MAJIZ	
				DISEÑO DE VÍA		SECTOR		46	
TABLA RESUMEN									
ITEM	RESUMEN	UND	TRAMOS					TOTAL	
			Pozo-18 A Camara-14	Camara-17 A Camara-18	Camara-18 A Camara-19	Pozo-20 A Camara-15			
4.3.1	Replanteo y localización de tuberías de alcantarillado	m	26.99	83.07	48.66	26.96	1764.71		
4.3.2	Excavación mecánica en material común 0 - 2 m (largo)	m³	0.00	733.19	416.72	0.00	7254.07		
4.3.3	Excavación mecánica en material conglomerado hasta 4 m (largo)	m³	189.34	0.00	0.00	209.99	5821.77		
4.3.4	Excavación mecánica en material conglomerado hasta 6 m (largo)	m³	0.00	1234.96	717.40	0.00	11347.04		
4.3.5	Excavación manual en conglomerado	m³	3.41	32.79	18.41	3.40	493.93		
4.3.6	Tubería 315 mm PEAD S144 de concreto armado [127] Suministro e instal.	m	0.00	0.00	0.00	0.00	0.00		
4.3.7	Tubería 400 mm PEAD S144 de concreto armado [167] Suministro e instal.	m	25.09	0.00	0.00	25.04	301.04		
4.3.8	Tubería 600 mm PEAD S144 de concreto armado [247] Suministro e instal.	m	0.00	0.00	0.00	0.00	0.00		
4.3.9	Tubería 900 mm PEAD S148 de concreto armado [367] Suministro e instal.	m	0.00	0.00	0.00	0.00	46.95		
4.3.10	Tubería 1050 mm PEAD S148 de concreto armado [407] Suministro e instal.	m	0.00	0.00	0.00	0.00	774.13		
4.3.11	Tubería 1200 mm PEAD S148 de concreto armado [467] Suministro e instal.	m	0.00	0.00	0.00	0.00	237.86		
4.3.12	Tubería 1400 mm PEAD S148 de concreto armado [527] Suministro e instal.	m	0.00	0.00	0.00	0.00	184.33		
4.3.13	Tubería 1600 mm PEAD S148 de concreto armado [637] Suministro e instal.	m	0.00	80.27	45.86	0.00	124.13		
4.3.14	Relevo zona de ataque de tubería con material base granular triturado (tamaño máximo 1/2")	m²	19.80	247.78	137.72	19.77	3456.11		
4.3.15	Bolsa o saco con base granular de 0.40 x 0.80	und	152.00	2154.00	1497.00	152.00	20342.00		
4.3.26	Relevo en material seleccionado de la excavación compactado	m³	105.52	1312.12	563.30	189.23	7300.36		
4.3.29	Cargue y retiro mecánico de material, con acarreo a 6 kms	m³	87.24	468.83	591.23	24.16	17418.50		
4.4.1	Transporte de material fresco (vía pavimentada)	0	497.94	3910.63	4729.84	193.31	14942.97		



CONSORCIO MACRIO NORIENTAL
ING. JUAN JOSE CEPEDA PEREZ
P/L CONTRATISTA DE OBRA



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DIRECTOR CONTRATISTA DE OBRA



CONSORCIO INTER NORIENTAL
ING. JORGE ELECCER CASTELLANOS SILVA
P/L Y DIRECTOR DE INTERVENORIA

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CONSORCIO INTER NORORIENTAL
ING. JORGE ELECER CASTELLANOS SILVA
P/L Y DIRECTOR DE INTERVENCIÓN

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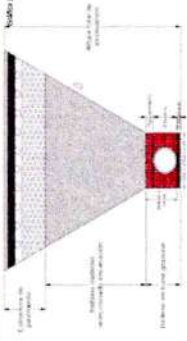
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	IJ	JK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
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San Jose Grecia 1-
CONSEJO NACIONAL
ING. JUAN JOSÉ CERVA TAYE
B.1 COMPAÑIA DE CHINA

Johnnya Cuervo J.
CONSEJO NACIONAL
ING. ARIANA CECILIA JIMENEZ
DIRECCION CONTRAMINA DE CHINA

1996
CONSEJO PARA INTERNACIONAL
ING. JORGE ENRIQUE CASTELLANO SILVA
N.1.7 MINISTERIO DE INTERIOR

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				MEMORIA DE CÁLCULO				PRESENTACIÓN ACTA				RECIBO PARCIAL DE OBRA No. 7				Consorcio Inter Nororiental			
CONTRATANTE				ACUATODOS S.A. E.S.P				SECTOR				RED MATRIZ				DE			
OBJETO CONTRATO				AMPLIACION DE COBERTURA DE ACUEDUCTO Y OBRAS COMPLEMENTARIAS SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE				TABLA RESUMEN				HOJA				32			
CAPITULO				4				DRENAJE VIA				RED MATRIZ				46			
SUBCAPITULO				4.3				OBRAS COMPLEMENTARIAS				RED MATRIZ				46			
Torneo				DISEÑO				DISEÑO				DISEÑO				DISEÑO			
Longitud tubería (m)				Longitud tubería excavación (m)				Longitud tubería (m)				Longitud tubería (m)				Longitud tubería (m)			
Pendiente (%)				Pendiente (%)				Pendiente (%)				Pendiente (%)				Pendiente (%)			
Ø Externo Tub. (Pulg.)				Ø Externo Tub. (Pulg.)				Ø Externo Tub. (Pulg.)				Ø Externo Tub. (Pulg.)				Ø Externo Tub. (Pulg.)			
Ancho Excavación (m)				Ancho Excavación (m)				Ancho Excavación (m)				Ancho Excavación (m)				Ancho Excavación (m)			
Solado (m)				Solado (m)				Solado (m)				Solado (m)				Solado (m)			
Recurbimiento o (m)				Recurbimiento o (m)				Recurbimiento o (m)				Recurbimiento o (m)				Recurbimiento o (m)			
Albura Ataque (m)				Albura Ataque (m)				Albura Ataque (m)				Albura Ataque (m)				Albura Ataque (m)			
Albura Promedio (m)				Albura Promedio (m)				Albura Promedio (m)				Albura Promedio (m)				Albura Promedio (m)			
Total Excavación Mecánica (m³)				Total Excavación Mecánica (m³)				Total Excavación Mecánica (m³)				Total Excavación Mecánica (m³)				Total Excavación Mecánica (m³)			
Total Excavación Manual (m³)				Total Excavación Manual (m³)				Total Excavación Manual (m³)				Total Excavación Manual (m³)				Total Excavación Manual (m³)			
Total Relleno Ataque (m³)				Total Relleno Ataque (m³)				Total Relleno Ataque (m³)				Total Relleno Ataque (m³)				Total Relleno Ataque (m³)			
Total Relleno Selección (m³)				Total Relleno Selección (m³)				Total Relleno Selección (m³)				Total Relleno Selección (m³)				Total Relleno Selección (m³)			
Carga y Retiro (m³)				Carga y Retiro (m³)				Carga y Retiro (m³)				Carga y Retiro (m³)				Carga y Retiro (m³)			
Transporte de material (km)				Transporte de material (km)				Transporte de material (km)				Transporte de material (km)				Transporte de material (km)			
Bolsa o Saco zona de ataque (m³)				Bolsa o Saco zona de ataque (m³)				Bolsa o Saco zona de ataque (m³)				Bolsa o Saco zona de ataque (m³)				Bolsa o Saco zona de ataque (m³)			
Bolsa o Saco zona de relleno (m³)				Bolsa o Saco zona de relleno (m³)				Bolsa o Saco zona de relleno (m³)				Bolsa o Saco zona de relleno (m³)				Bolsa o Saco zona de relleno (m³)			
Longitud a ejes (m)				Longitud a ejes (m)				Longitud a ejes (m)				Longitud a ejes (m)				Longitud a ejes (m)			
TOTAL				TOTAL				TOTAL				TOTAL				TOTAL			

RESUMEN		RESUMEN	
Longitud tubería (m)	5.95	Longitud tubería excavación (m)	4.55
Pendiente (%)	25.00%	Pendiente (%)	25.00%
Ø Externo Tub. (Pulg.)	12.00	Ø Externo Tub. (Pulg.)	12.00
Ancho Excavación (m)	1.35	Ancho Excavación (m)	1.35
Solado (m)	0.10	Solado (m)	0.10
Recurbimiento o (m)	0.15	Recurbimiento o (m)	0.15
Albura Ataque (m)	0.60	Albura Ataque (m)	0.60
Albura Promedio (m)	1.54	Albura Promedio (m)	1.54
Total Excavación Mecánica (m³)	20.08	Total Excavación Mecánica (m³)	20.08
Total Excavación Manual (m³)	0.41	Total Excavación Manual (m³)	0.41
Total Relleno Ataque (m³)	3.68	Total Relleno Ataque (m³)	3.68
Total Relleno Selección (m³)	17.01	Total Relleno Selección (m³)	17.01
Carga y Retiro (m³)	3.68	Carga y Retiro (m³)	3.68
Transporte de material (km)	29.41	Transporte de material (km)	29.41
Bolsa o Saco zona de ataque (m³)	29.00	Bolsa o Saco zona de ataque (m³)	29.00
Bolsa o Saco zona de relleno (m³)	92.00	Bolsa o Saco zona de relleno (m³)	92.00
Longitud a ejes (m)	7.35	Longitud a ejes (m)	7.35


CONSORCIO MACRO NORIENTAL
ING. JUAN JOSÉ CEPEDA PÉREZ
R/L CONTRATISTA DE OBRA


CONSORCIO MACRO NORIENTAL
ING. ADRIANA CHOCONTA JIMENEZ
DIRECTOR CONTRATISTA DE OBRA


CONSORCIO INTER NORIENTAL
ING. JORGE ELIECER CASTELLANOS SILVA
R/L Y DIRECTOR DE INTERVENTORIA



CONTRATANTE

OBJETO CONTRATO

CAPÍTULO 4.0
SUBCAPÍTULO 4.3

MEMORIA DE CÁLCULO

PRESENTE ACTA

RECIBO PARCIAL DE OBRA No. 7



acuatodos S.A.

ACUATODOS S.A. E.S.P.

AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE

OBRAS COMPLEMENTARIAS
DRENAJE VIA

HOJA 40 DE 46
SECTOR RED MAJIZ

SUMIDOROS SL-250

A	B	C	D	E
No.	POZO	COTA TAPA (CTP)	COTA BATEA (CB)	CANTIDAD (und)
CARTERA TOPOGRAFICA				
1	SL-01-C1	314.868	313.618	1.00
2	SL-01-P1	314.774	313.524	1.00
3	SL-01-C2	313.643	312.393	1.00
4	SL-01-P3	313.649	312.399	1.00
5	SL-01-C3	312.460	311.210	1.00
6	SL-01-P5	312.443	311.193	1.00
7	SL-01-C4	311.205	309.955	1.00
8	SL-01-P7	311.198	309.948	1.00
9	SL-01-C5	309.690	308.440	1.00
10	SL-01-P8	309.600	308.350	1.00
11	SL-01-C6	309.301	308.051	1.00
12	SL-01-P9	309.238	307.988	1.00
13	SL-01-P10	308.342	307.092	1.00
14	SL-01-C8	308.060	306.810	1.00
15	SL-01-P12	307.144	305.894	1.00
16	SL-01-C10	306.729	305.479	1.00
17	SL-01-P14	305.249	305.019	1.00
18	SL-01-C12	305.835	304.585	1.00
19	SL-01-C13	305.342	304.112	1.00
20	SL-01-P17	305.268	304.018	1.00
21	SL-01-C14	304.655	303.405	1.00
22	SL-01-P18	304.216	302.966	1.00
23	SL-01-P20	304.124	302.874	1.00
24	SL-02-P20	304.124	302.874	1.00
TOTAL				24.00

ITEM	RESUMEN	UND	CANTIDAD
4.3.19	Sumidero lateral SL-250 en manpostería	und	24.00

Juan Jose Cepeda
CONSORCIO MACRO NORORIENTAL
ING. JUAN JOSE CEPEDA PEREZ
R/L CONTRATISTA DE OBRA

Adriana Choconta
CONSORCIO MACRO NORORIENTAL
ING. ADRIANA CHOCONTA JIMENEZ
DIRECTOR CONTRATISTA DE OBRA

JOSE
CONSORCIO INTER NORORIENTAL
ING. JOSE ELIECER CASTELLANOS SILVA
R/L Y DIRECTOR DE INTERVENTORIA

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
No.	POZO	Ø DE POZO INTERNO (m)	COTA TERRENO (Cm)	COTA TAPA (Cm)	COTA BATEA (Cs)	ALTURA CT IN POZO A BATEA (m)	ESPESOR PLACA (m)	ESPESOR SQUELO (m)	ALTURA TOTAL E.C. (m)	Ø DE POZO EXTERNO (m)	ANCHO DE E.C. EN FONDO POZO (m)	SOBRE E.C. EN FONDO POZO (m)	TAJAL	talud	corona (m)	AREA E.C. POZO (m²)	EXCAVACIÓN MECÁNICA EN MATERIAL CONGLOMERADO O HASTA 4 m (m³)
						Df	DERRO	G+H	0.25+C=0.25	L=K+L			MAX(PH+M/80)+1	M=O=2			Q=1
CARTEIRA TOPOGRAFICA																	
1	Pozo-01	1.20	314.951	314.556	311.719	3.23	0.20	0.05	3.48	1.70	0.50	2.70	26.60	1.74	6.19	17.90	42.32
2	Pozo-02	2.00	314.356	313.370	307.679	4.68	0.20	0.05	4.93	2.50	0.50	3.50	26.60	2.47	8.43	32.75	161.35
3	Pozo-03	1.20	313.715	313.397	310.659	3.06	0.20	0.05	3.31	1.70	0.50	2.70	26.60	1.66	6.01	17.05	58.37
4	Pozo-04	2.00	313.34	312.185	308.551	4.8	0.20	0.05	5.06	2.50	0.50	3.50	26.60	2.53	8.57	33.64	170.20
5	Pozo-05	1.20	312.979	312.191	309.511	3.47	0.20	0.05	3.72	1.70	0.50	2.70	26.60	1.86	6.42	19.07	70.89
6	Pozo-06	2.00	311.425	310.909	307.325	4.10	0.20	0.05	4.35	2.50	0.50	3.50	26.60	2.18	7.86	29.05	126.37
7	Pozo-07	1.20	311.400	310.917	308.208	3.16	0.20	0.05	3.41	1.70	0.50	2.70	26.60	1.71	6.12	17.56	59.91
8	Pozo-08	1.20	309.044	309.364	306.680	2.36	0.20	0.05	2.61	1.70	0.50	2.70	26.60	1.31	5.32	13.57	36.51
9	Pozo-09	1.20	305.573	308.080	304.278	2.79	0.20	0.05	2.54	1.70	0.50	2.70	26.60	1.27	5.25	13.68	34.62
10	Pozo-10	1.20	305.370	308.072	303.559	2.81	0.20	0.05	3.06	1.70	0.50	2.70	26.60	1.53	5.77	15.92	48.72
11	Pozo-11	2.00	305.305	307.777	304.658	3.45	0.20	0.05	3.90	2.50	0.50	3.50	26.60	1.95	7.40	24.33	102.62
12	Pozo-12	1.20	307.105	304.586	304.34	2.76	0.20	0.05	3.01	1.70	0.50	2.70	26.60	1.51	5.72	13.70	47.31
13	Pozo-13	1.20	305.690	304.463	303.423	3.39	0.20	0.05	3.64	2.50	0.50	3.50	26.60	1.82	7.14	24.85	90.40
14	Pozo-14	2.00	305.690	304.034	303.489	2.20	0.20	0.05	2.45	1.70	0.50	2.70	26.60	1.23	5.15	13.30	32.59
15	Pozo-15	2.00	305.623	303.579	302.262	3.56	0.20	0.05	3.81	2.50	0.50	3.50	26.60	1.91	7.32	25.83	98.45
16	Pozo-16	2.00	305.616	305.102	301.145	4.47	0.20	0.05	4.72	2.50	0.50	3.50	26.60	2.56	8.23	31.40	148.23
17	Pozo-17	1.20	305.113	305.044	303.096	3.02	0.20	0.05	3.27	1.70	0.50	2.70	26.60	1.44	5.97	14.87	55.11
18	Pozo-18	1.20	304.491	304.239	301.554	2.94	0.20	0.05	3.19	1.70	0.50	2.70	26.60	1.40	5.89	16.49	52.57
19	Pozo-19	2.00	303.692	303.692	298.690	5.09	0.20	0.05	5.34	2.50	0.50	3.50	26.60	2.68	8.85	35.57	190.01
20	Pozo-20	1.20	304.112	304.112	301.112	3.00	0.20	0.05	3.25	1.70	0.50	2.70	26.60	1.43	5.95	14.79	54.56
																TOTAL	1699.31

ITEM	RESUMEN	UNO	CANTIDAD
4.3.3	Excavación mecánica en material congelado hasta 4 m (sin gas)	m ³	1,699.31

San José Cereza
CONSORCIO MACAO NOROCCIDENTAL
ING. JUAN JOSE CEREZA PEREZ
R/L CONTRATISTA DE OBRA

Adriana Cuemata J.
CONSORCIO MACRO NOROCCIDENTAL
ING. ADRIANA CHOCONTA JIMENEZ
DIRECTOR CONTRATISTA DE OBRA

9086
CONSORCIO INTER NOROCCIDENTAL
ING. JORGE ELLER CASTELLANOS SILVA
R/L Y DIRECTOR DE INTERVENTORIA

MEMORIA DE CÁLCULO

RECIBO PARCIAL DE OBRA No. 7

CONSORCIO INTER NORORIENTAL

CONTRATANTE

OBJETO CONTRATO

CAPÍTULO 4.0

SUBCAPÍTULO 4.3

ACUATODOS S.A. E.S.P.

AMPLIACION DE COBERTURA DE ACUEDUCTO Y ALCANTARILLADO SANITARIO Y OBRAS COMPLEMENTARIAS SECTORES ENTRE CALLE 40 Y CALLE 55 Y ENTRE CARRERA 30 Y DIAGONAL 50 EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE

HOJA 42 DE 46

SECTOR RED MAJIZ

CLASIFICACION DE POZOS DE INSPECCION DIAMETRO 1.20 M									
OBRAS COMPLEMENTARIAS DRENAR VÍA									
A	B	C	D	E	F	G	H	I	
No.	POZO	COTA TAPA (CTP)	COTA BATEA (CB)	ALTURA DE POZO A BATEA (m)	Ø DE POZO INTERNO (m)	POZOS Ø1.20 ENTRE E=2.5-3.0 m	POZOS Ø2.00 ENTRE E=3.0-4.0 m	POZOS Ø2.00 ENTRE E=5.0-6.0 m	
CARTERA TOPOGRAFICA									
C-D				2.5 > E ≤ 3.0		3.0 > E ≤ 4.0		5.0 > E ≤ 6.0	
1	Pozo-01	314.556	311.719	2.84	1.20	1.00	1.00		
2	Pozo-02	313.370	309.679	3.69	2.00				
3	Pozo-03	313.397	310.659	2.74	1.20	1.00			
4	Pozo-04	312.185	308.551	3.63	2.00				
5	Pozo-05	312.191	309.511	2.68	1.20	1.00			
6	Pozo-06	310.909	307.325	3.58	2.00				
7	Pozo-07	310.917	308.238	2.68	1.20	1.00			
8	Pozo-08	309.377	306.680	2.70	1.20	1.00			
9	Pozo-09	308.980	306.278	2.70	1.20	1.00			
10	Pozo-10	308.072	305.559	2.51	1.20	1.00			
11	Pozo-11	307.777	304.658	3.12	2.00				
12	Pozo-12	306.868	304.341	2.53	1.20	1.00			
13	Pozo-13	306.463	303.423	3.04	2.00				
14	Pozo-14	306.034	303.489	2.55	1.20	1.00			
15	Pozo-15	305.579	302.262	3.32	2.00				
16	Pozo-16	305.102	301.145	3.96	2.00				
17	Pozo-17	305.044	302.096	2.95	1.20	1.00			
18	Pozo-18	304.239	301.554	2.69	1.20	1.00			
19	Pozo-19	303.692	298.600	5.09	2.00				
20	Pozo-20	304.112	301.112	3.00	1.20	1.00			
21	PZ-INF-01	303.566	297.562	6.00					
22	PZ-INF-02	303.383	297.384	6.00					
23	PZ-INF-03	303.160	297.156	6.00					
24	PZ-INF-04	303.093	297.098	6.00					
TOTAL						12.00	7.00		

RESUMEN			
ITEM	DESCRIPCION	UND	CANTIDAD
4.3.18	Pozo de inspeccion recto (sin cono truncado) H= 3.0 - 4.0 m Ø 2.00 m	und	7.00
4.3.27	Tapa basculante con llave de seguridad en 3 apoyos para pozo insp. en via (inc. marco y tapa)	und	24.00
4.3.33	Pozo de inspeccion recto (sin cono truncado) H= 5.0 - 6.0 m Ø 2.0 m - lizon	und	5.00
ITEMS NO PREVISTOS			
NPE 2.2.5	Pozo de inspeccion recto (sin cono truncado) H= 2.5 - 3.0 m Ø 1.20 m	und	12.00

Ing. Juan Jose Cepeda P.

CONSORCIO MACRO NORORIENTAL

ING. JUAN JOSE CEPEDA PEREZ

R/L CONTRATISTA DE OBRA

Adriana Cuervo J.

CONSORCIO MACRO NORORIENTAL

ING. ADRIANA CHOCONIA JIMENEZ

DIRECTOR CONTRATISTA DE OBRA

2006

CONSORCIO INTER NORORIENTAL

ING. JORGE ELIEZER CASTELLANOS SILVA

R/L Y DIRECTOR DE INTERVENTORIA

CONTRANTE	ACUATODOS S.A. E.P.			
CLASO CONTRATO	CONSTRUCCION DE RED DE ALCANTARILLADO FUEVAL Y OBRAS COMPLEMENTARIAS EN EL BARRIO SIEDE DE AGOSTO EN EL MUNICIPIO DE YOPAL DEPARTAMENTO DE CASANARE			
CAJAFINO	GRUPO COMPLEMENTARIA	POZA	SECTOR	SE
SECAFINUD	DETALLE VIA			SE MANIZ
45				45

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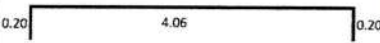
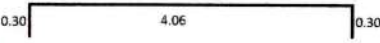
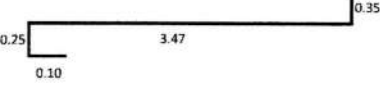
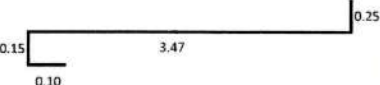
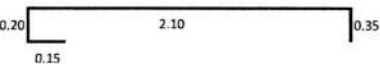
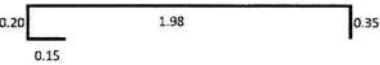
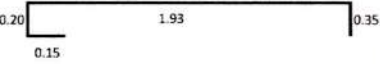
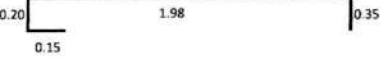
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4.3.26	Pellets en material seleccionados de la mencionada carpintería	m ³	104.17
4.3.29	Carpas y velos impermeables de material, con tamaño a 5 cm	m ²	454.44
4.4	Transporte de material Pellets (Ver procedimiento)	m ³ -Km	5203.11

44
Juan Jose Cepeda P.
COMERCIO MAYOR NOROCCIDENTAL
PAG. JUAN JOSE CEPEDA PFEIZ
EL CONTRASTA DE CIMA

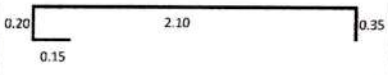
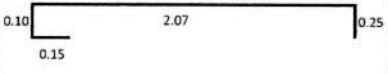
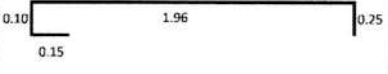
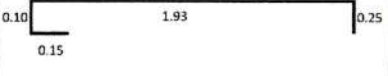
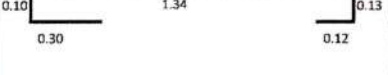
Adriana Cuentas

523011
CONSORCIO INTER
ING. JORGE BUENOS C
R/L Y DIRECTOR DEB

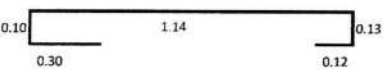
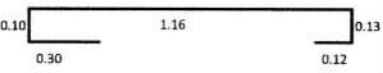
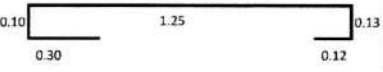
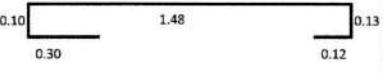
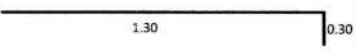
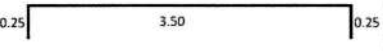
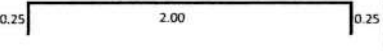
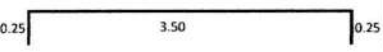
DESPIECE DE ACEROS CAMARA No. 1 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	78	4.17	989.44
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	59	3.97	363.52
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.80	8.52
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.68	8.15
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.63	8.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.63	8.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.68	8.15

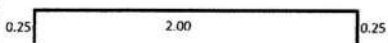
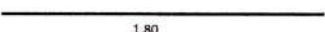
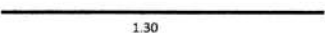
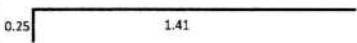
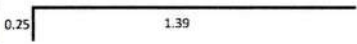
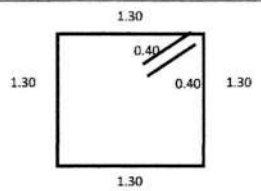
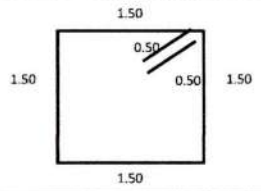
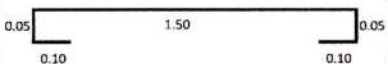
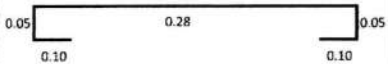
DESPIECE DE ACEROS CAMARA No. 1 PLUVIAL

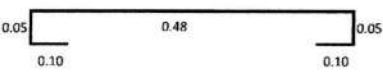
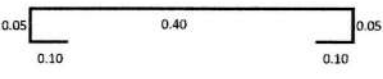
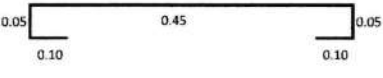
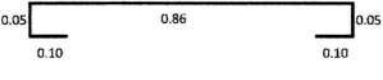
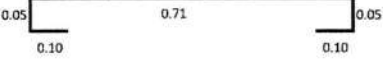
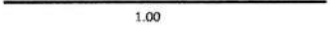
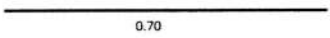
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10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.80	8.52
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.57	3.99
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.46	3.82
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.43	3.77
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.47	3.83
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.59	4.02
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	92	4.30	613.97
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.99	12.35
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48

DESPIECE DE ACEROS CAMARA No. 1 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.79	11.11
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.81	11.24
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.90	11.80
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.13	13.22
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	8	1.60	28.61
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.50	18.62
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07

DESPIECE DE ACEROS CAMARA No. 1 PLUVIAL

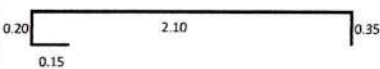
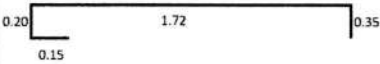
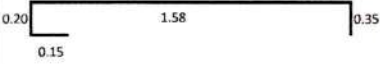
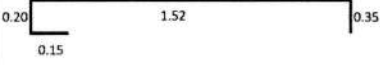
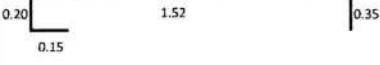
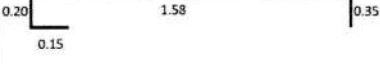
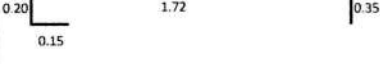
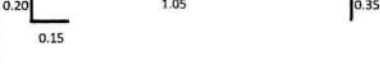
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29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.66	92.75
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.64	33.06
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	6.00	16.80
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	7.00	19.60
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31

DESPIECE DE ACEROS CAMARA No. 1 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
31	TAPA MANHOLE		R14a-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.01	2.01
35	TAPA MANHOLE		R14b-4	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3541.94

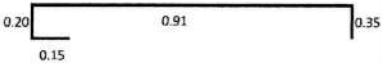
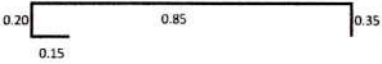
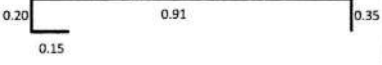
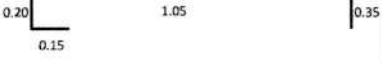
DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	66	4.17	837.22
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	49	3.97	301.91
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

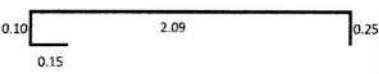
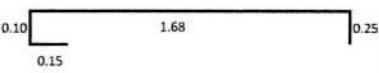
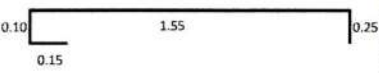
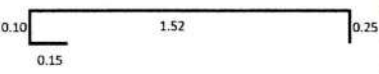
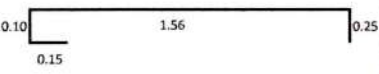
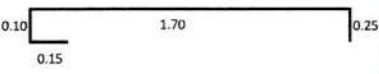
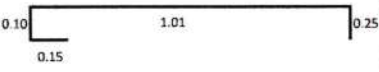
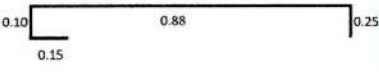
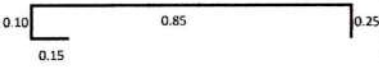
DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

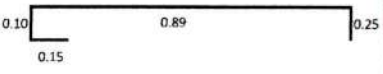
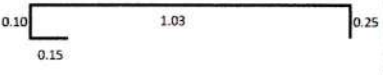
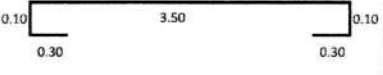
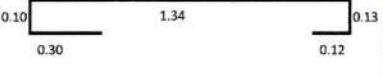
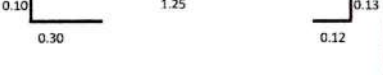
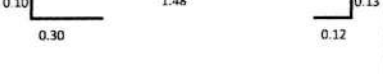
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11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.42	7.36
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.28	6.94
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.22	6.75
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.22	6.75
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.28	6.94
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.42	7.36
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.75	5.32

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

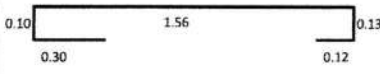
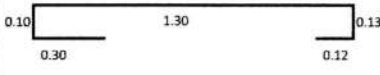
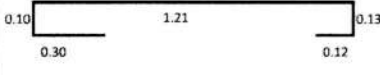
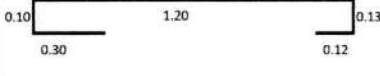
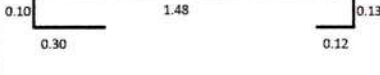
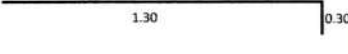
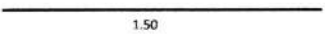
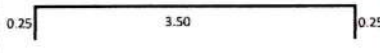
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19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.55	4.72
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.55	4.72
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.61	4.90
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.75	5.32
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

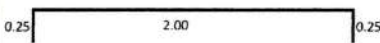
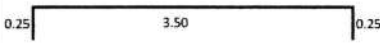
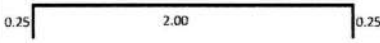
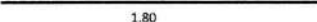
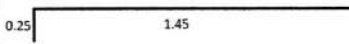
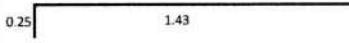
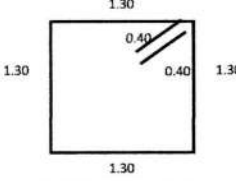
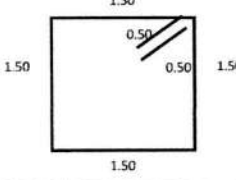
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
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16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.18	3.38
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.05	3.18
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.02	3.14
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.06	3.20
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.20	3.41
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.51	2.34
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.38	2.14
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.35	2.10

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.39	2.16
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.53	2.37
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	68	4.30	453.80
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45

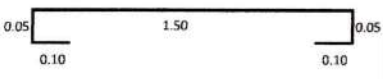
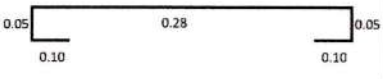
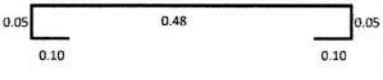
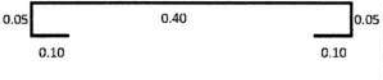
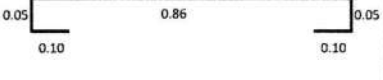
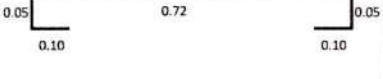
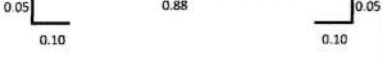
DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

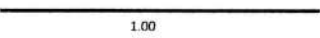
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24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.95	12.11
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.86	11.55
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.92	11.92
28	MUROS		R5b-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.13	13.22
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

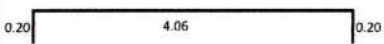
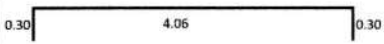
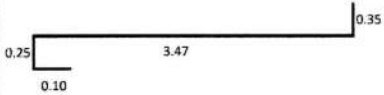
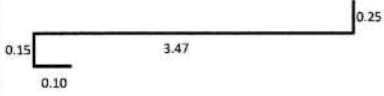
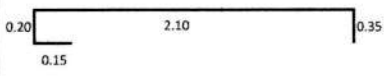
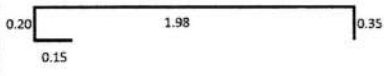
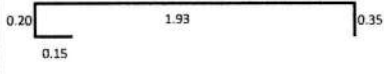
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27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.70	94.98
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.68	33.87
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	6.00	16.80
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	7.00	19.60

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL

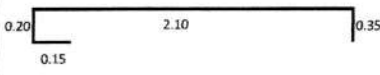
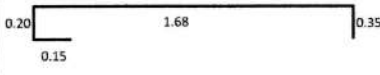
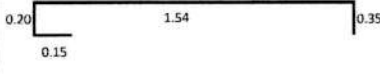
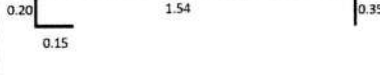
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
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31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35

DESPIECE DE ACEROS CAMARA No. 2 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
36	TAPA MANHOLE	 1.00	R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE	 0.70	R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3578.81

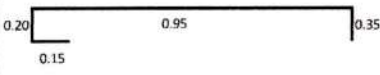
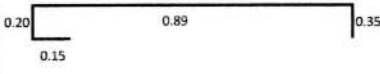
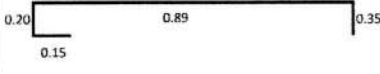
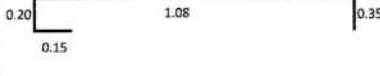
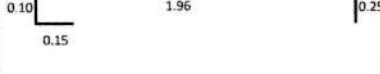
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	66	4.17	837.22
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	49	3.97	301.91
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

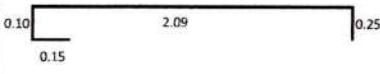
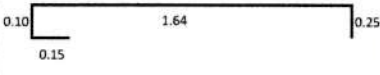
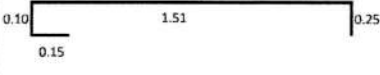
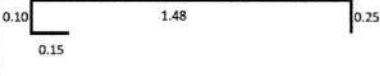
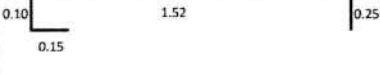
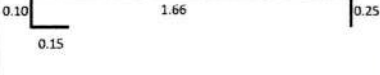
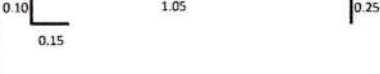
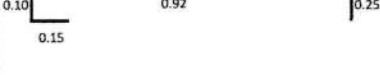
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10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.38	7.24
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.24	6.81
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.19	6.66
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.19	6.66
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.24	6.81
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.38	7.24
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.79	5.45

DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

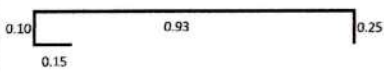
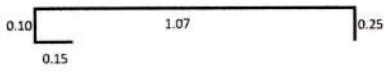
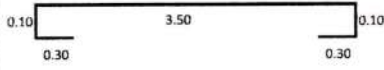
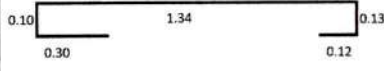
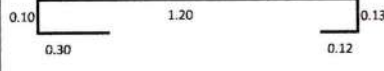
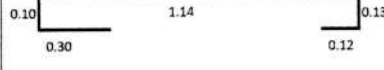
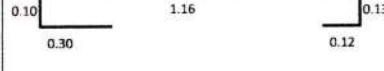
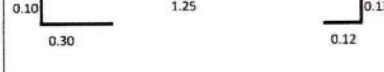
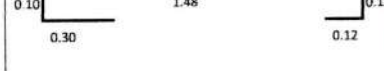
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18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.65	5.02
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.65	5.02
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.78	5.41
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67

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DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.14	3.32
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.01	3.12
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.98	3.07
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.02	3.14
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.16	3.35
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.55	2.41
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.42	2.20
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.39	2.16

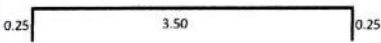
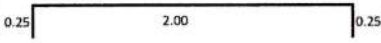
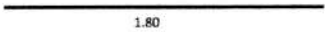
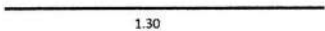
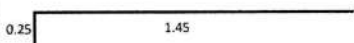
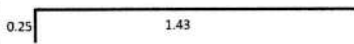
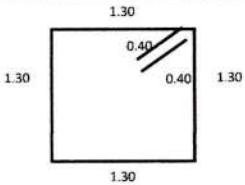
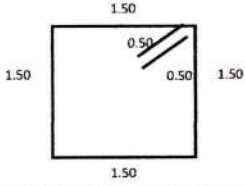
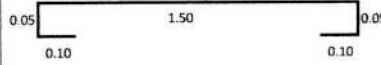
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.43	2.22
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.57	2.44
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	70	4.30	467.15
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45

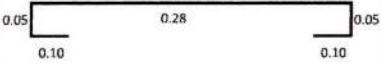
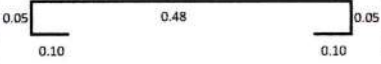
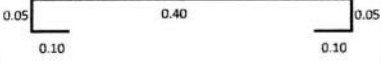
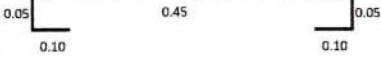
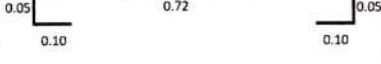
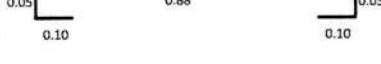
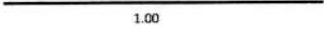
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.98	12.29
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.90	11.80
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.07	12.85
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32

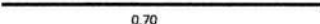
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.70	94.98
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.68	33.87
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	6.00	16.80
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	7.00	19.60
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21

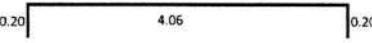
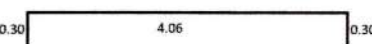
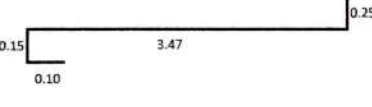
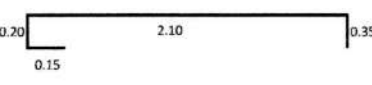
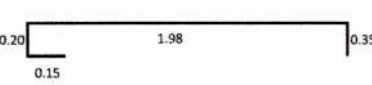
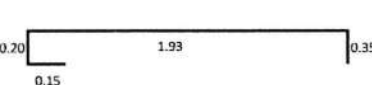
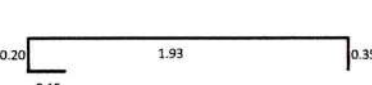
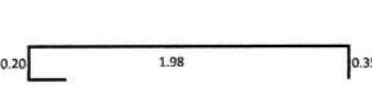
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

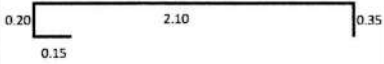
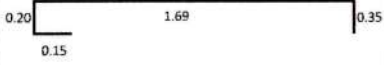
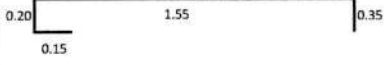
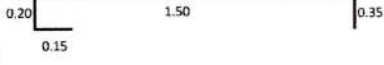
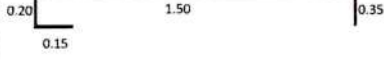
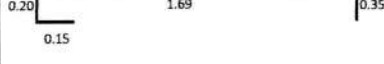
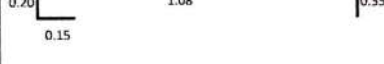
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95

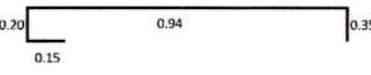
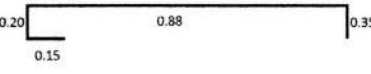
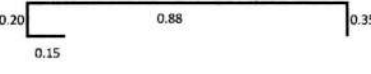
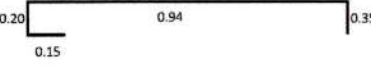
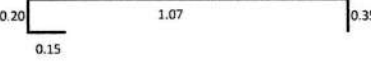
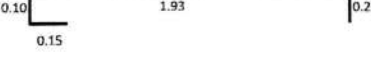
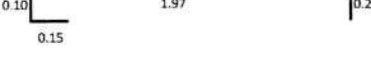
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL

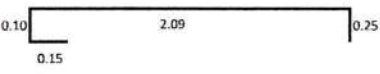
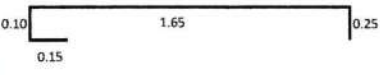
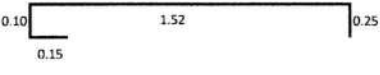
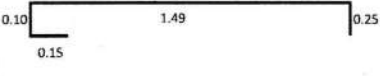
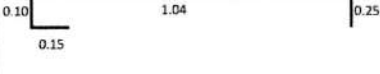
DESPIECE DE ACEROS CAMARA No. 3 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
			TOTAL						3578.25

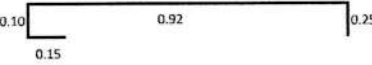
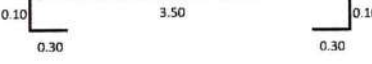
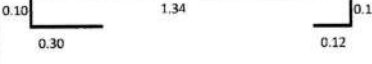
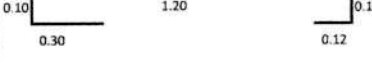
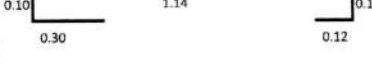
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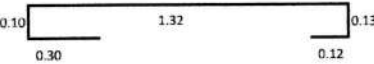
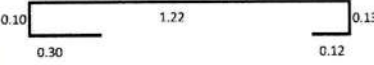
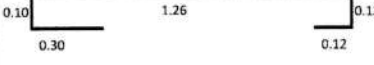
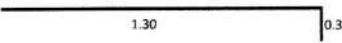
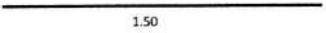
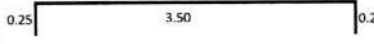
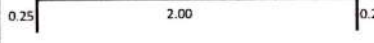
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	66	4.17	837.22
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	49	3.97	301.91
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

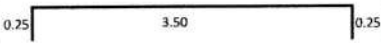
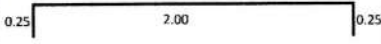
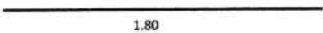
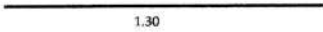
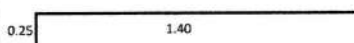
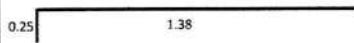
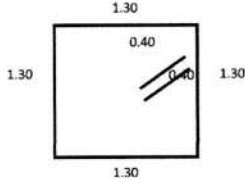
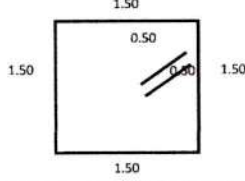
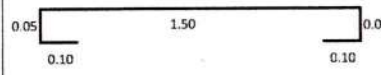
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.39	7.27
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.25	6.84
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.20	6.69
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.20	6.69
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.25	6.84
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.39	7.27
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.78	5.41

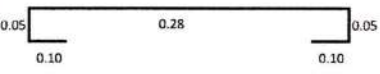
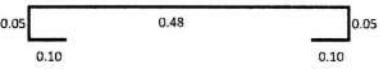
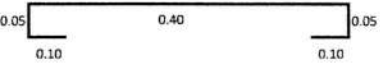
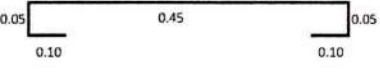
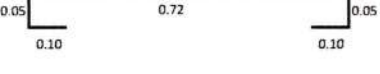
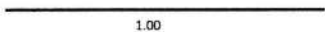
18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.64	4.99
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.58	4.81
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.58	4.81
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.64	4.99
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.77	5.38
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67

15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.15	3.34
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.02	3.14
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.99	3.09
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.03	3.15
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.17	3.37
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.54	2.39
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.41	2.19
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.38	2.14

24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.42	2.20
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.55	2.41
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	70	4.30	467.15
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45

23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.97	12.23
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.91	11.86
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.08	12.91
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32

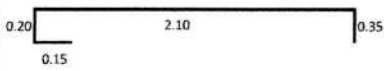
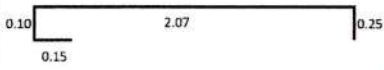
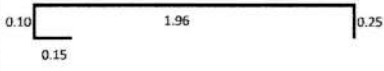
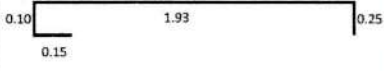
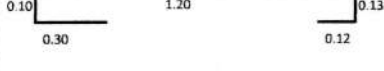
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.65	92.19
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.63	32.86
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	6.00	16.80
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	7.00	19.60
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21

31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95

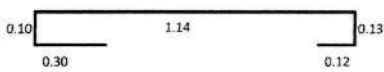
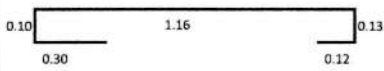
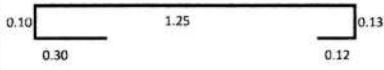
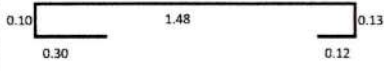
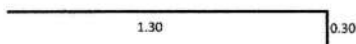
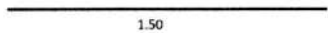
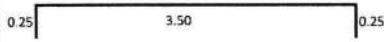
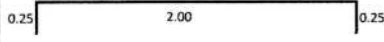
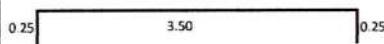
DESPIECE DE ACEROS CAMARA No. 5 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	72	4.17	913.33
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	54	3.97	332.72
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

DESPIECE DE ACEROS CAMARA No. 5 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	80	4.30	533.89
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97

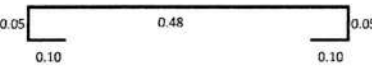
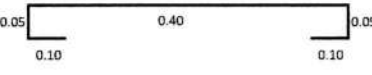
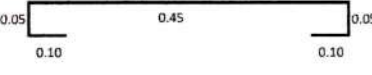
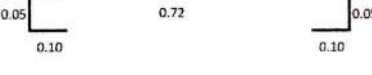
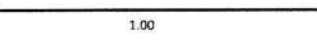
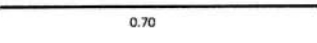
DESPIECE DE ACEROS CAMARA No. 5 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		RSa-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		RSa-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		RSa-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		RSa-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07

DESPIECE DE ACEROS CAMARA No. 5 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.43	79.90
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.41	28.43
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	6.00	13.44
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	7.00	15.68
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31

DESPIECE DE ACEROS CAMARA No. 5 PLUVIAL

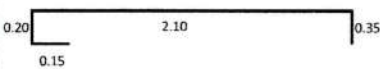
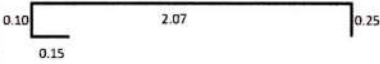
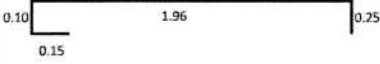
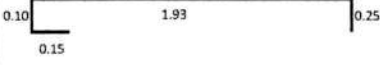
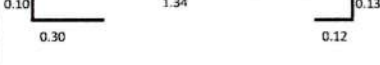
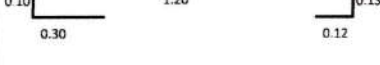
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31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3517.40

7923

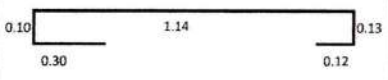
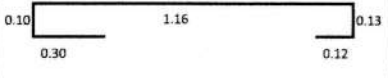
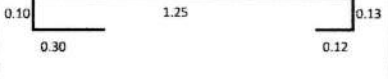
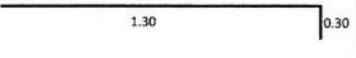
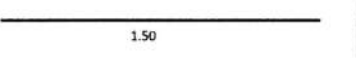
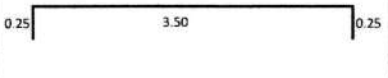
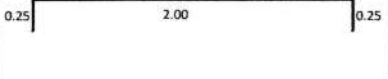
DESPIECE DE ACEROS CAMARA No. 6 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	72	4.17	913.33
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	54	3.97	332.72
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

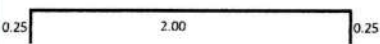
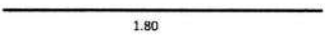
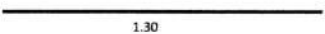
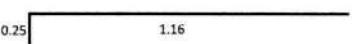
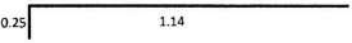
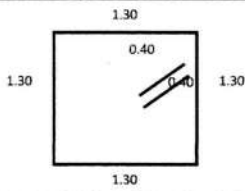
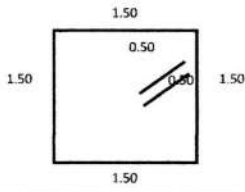
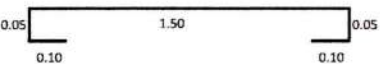
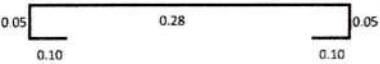
DESPIECE DE ACEROS CAMARA No. 6 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	80	4.30	533.89
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97

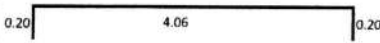
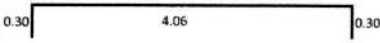
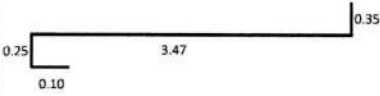
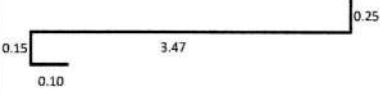
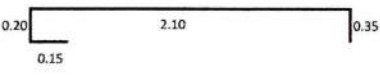
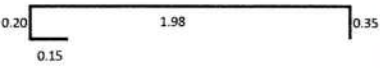
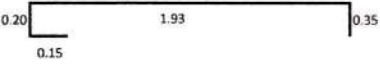
DESPIECE DE ACEROS CAMARA No. 6 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07

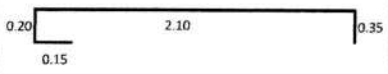
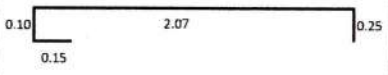
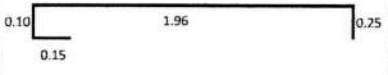
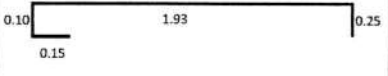
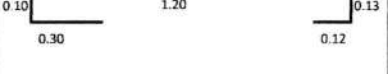
DESPIECE DE ACEROS CAMARA No. 6 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.41	78.78
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.39	28.02
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	6.00	13.44
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	7.00	15.68
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31

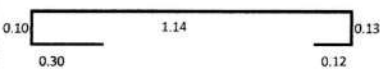
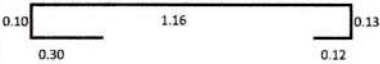
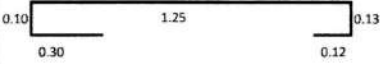
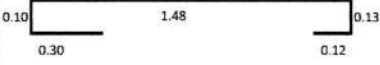
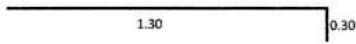
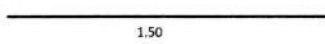
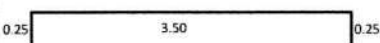
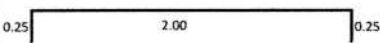
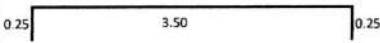
DESPIECE DE ACEROS CAMARA No. 7 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	72	4.17	913.33
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	54	3.97	332.72
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

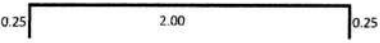
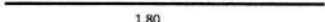
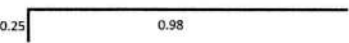
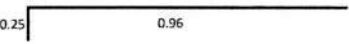
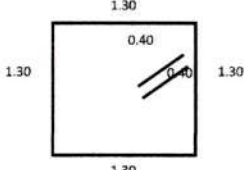
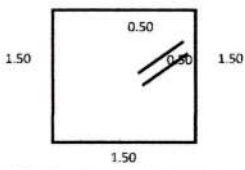
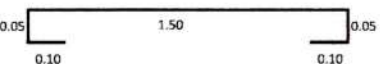
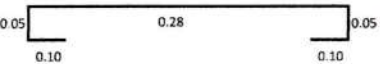
DESPIECE DE ACEROS CAMARA No. 7 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	80	4.30	533.89
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97

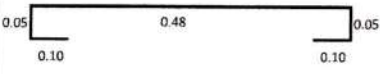
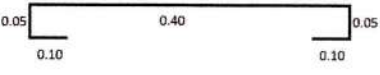
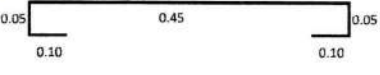
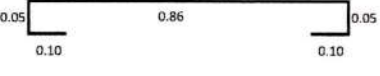
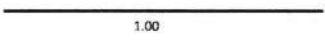
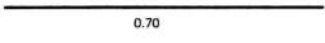
DESPIECE DE ACEROS CAMARA No. 7 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07

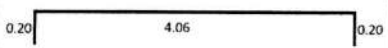
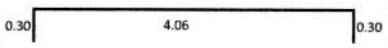
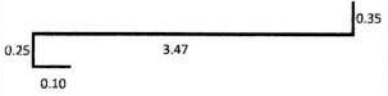
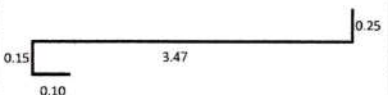
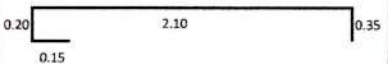
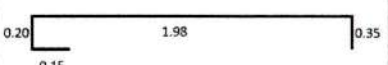
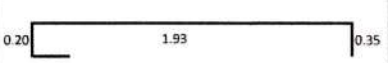
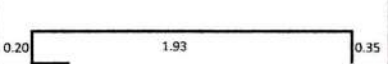
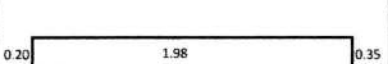
DESPIECE DE ACEROS CAMARA No. 7 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.23	68.72
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.21	24.39
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	6.00	10.08
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	7.00	11.76
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31

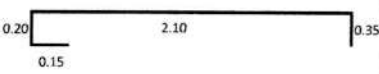
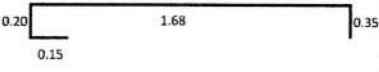
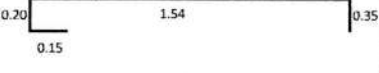
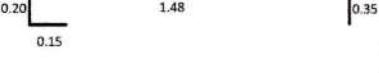
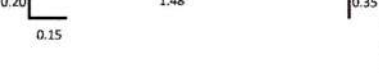
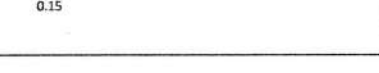
DESPIECE DE ACEROS CAMARA No. 7 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3494.92

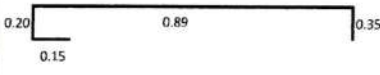
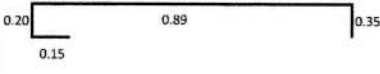
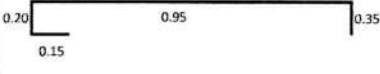
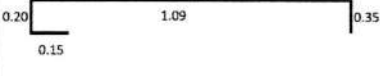
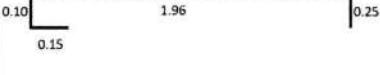
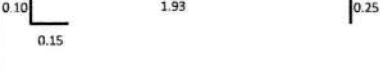
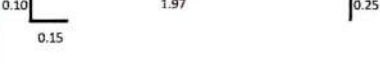
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	66	4.17	837.22
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	49	3.97	301.91
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.63	16.00
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.68	16.31

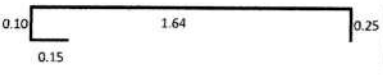
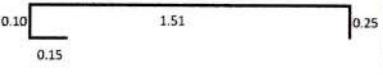
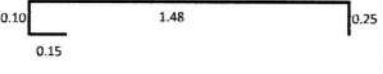
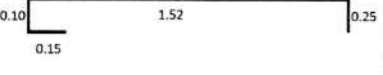
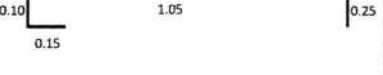
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.80	17.04
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.38	7.24
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.24	6.81
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.18	6.63
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.18	6.63
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.24	6.81
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.38	7.24
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.79	5.45
18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.65	5.02

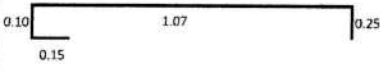
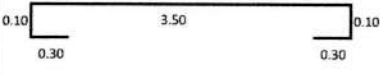
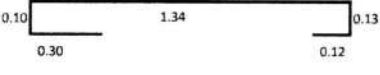
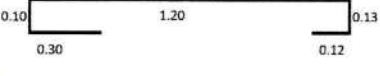
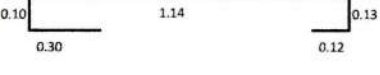
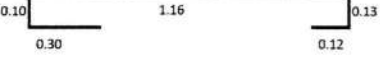
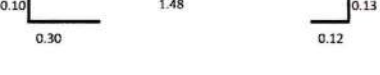
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

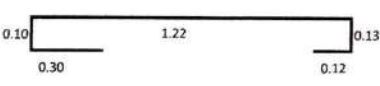
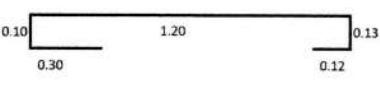
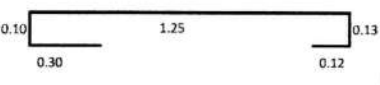
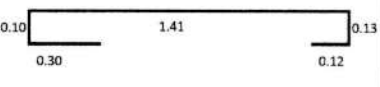
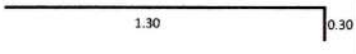
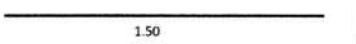
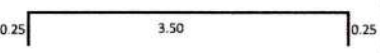
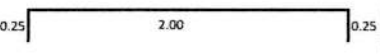
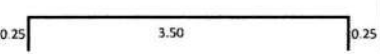
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.59	4.84
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.65	5.02
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.79	5.45
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.57	7.98
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.46	7.64
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.43	7.54
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.47	7.67
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.59	8.04

DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.14	3.32
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.01	3.12
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.98	3.07
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.02	3.14
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.16	3.35
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.55	2.41
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.42	2.20
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.39	2.16
24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.43	2.22

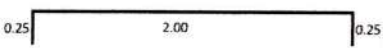
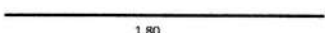
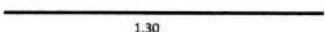
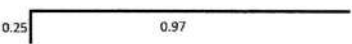
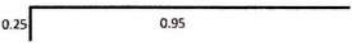
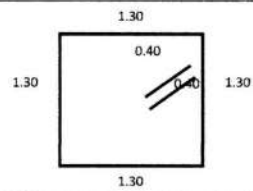
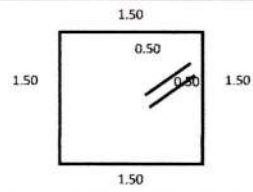
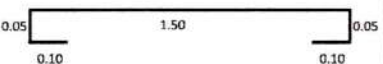
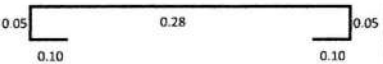
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.57	2.44
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	70	4.30	467.15
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.99	24.71
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.85	22.97
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.79	22.22
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.81	22.47
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.90	23.59
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.13	26.45
23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.98	12.29

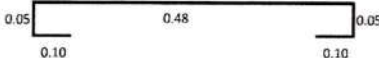
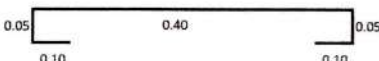
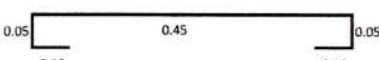
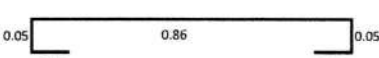
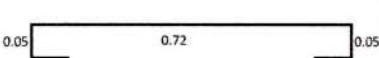
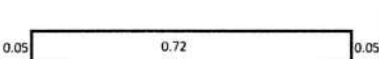
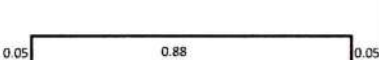
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.90	11.80
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.06	12.79
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07

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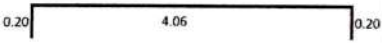
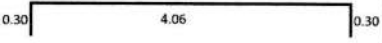
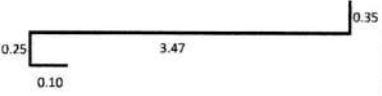
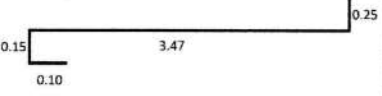
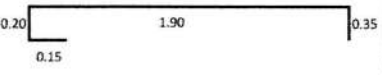
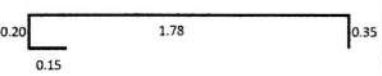
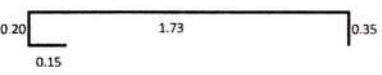
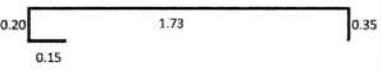
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

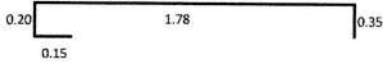
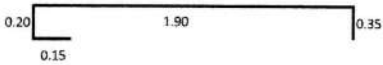
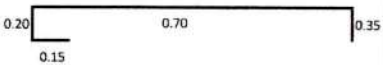
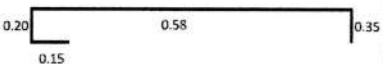
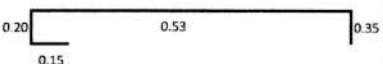
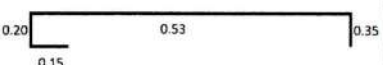
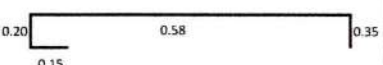
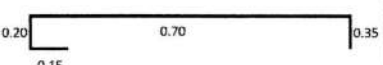
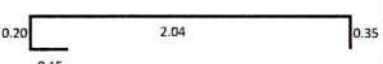
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.22	68.16
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.20	24.19
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	6.00	10.08
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	7.00	11.76
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31

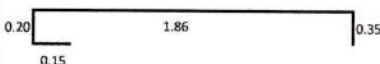
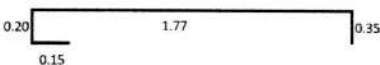
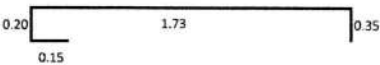
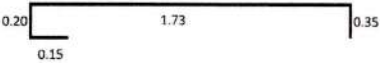
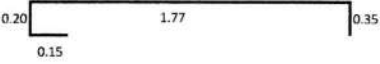
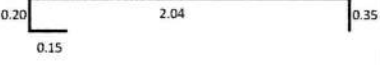
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL

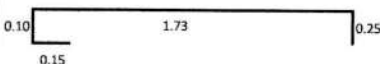
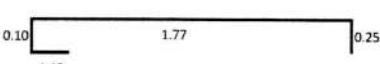
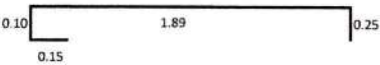
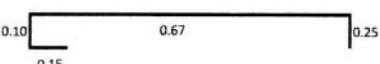
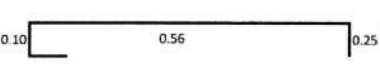
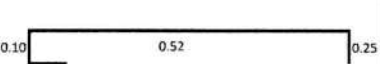
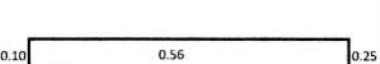
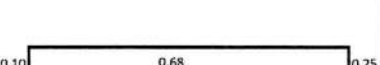
DESPIECE DE ACEROS CAMARA No. 8 PLUVIAL									
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3527.10

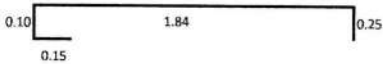
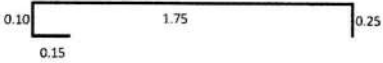
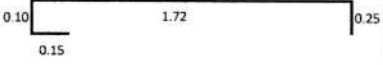
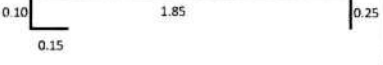
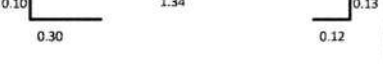
DESPIECE DE ACEROS CAMARA No. 9 PLUVIAL

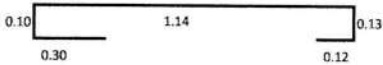
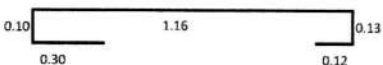
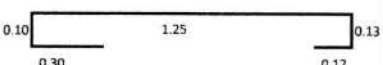
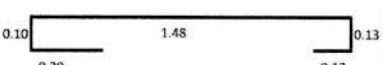
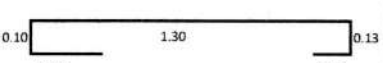
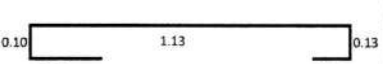
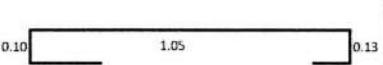
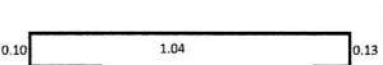
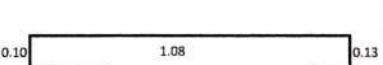
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	70	4.17	887.96
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	52	3.97	320.39
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.60	7.91
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.48	7.54
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.43	7.39
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.43	7.39

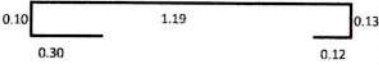
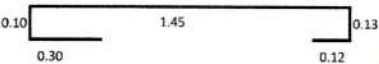
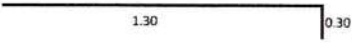
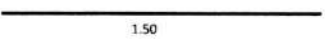
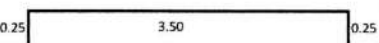
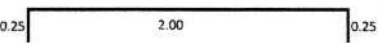
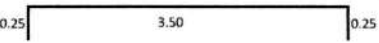
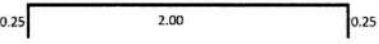
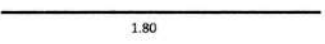
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.48	7.54
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.60	7.91
11	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.40	4.26
12	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.28	3.89
13	MUROS		R1a-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.23	3.74
14	MUROS		R1a-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.23	3.74
15	MUROS		R1a-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.28	3.89
16	MUROS		R1a-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.40	4.26
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.74	8.34

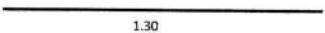
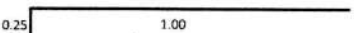
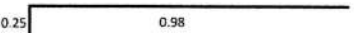
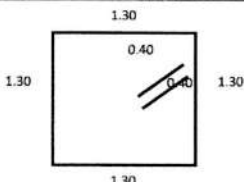
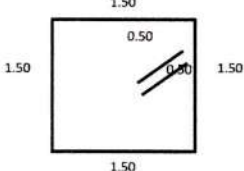
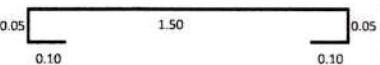
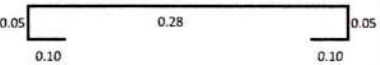
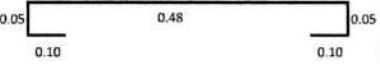
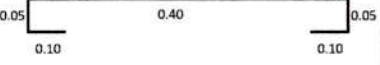
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13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.47	7.51
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.43	7.39
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.43	7.39
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.47	7.51
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.56	7.79
18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.74	8.34
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.37	3.68
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.26	3.51

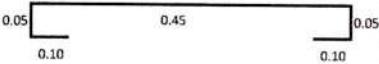
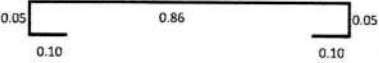
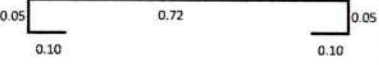
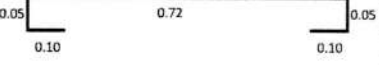
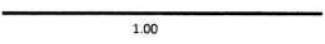
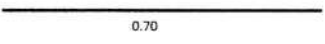
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15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.39	3.71
16	MUROS		R2a-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.17	1.82
17	MUROS		R2a-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.06	1.65
18	MUROS		R2a-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.02	1.58
19	MUROS		R2a-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.06	1.65
20	MUROS		R2a-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.18	1.83
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.54	3.94

17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.34	3.63
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.25	3.49
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.22	3.45
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.25	3.49
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.35	3.65
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.56	3.97
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	78	4.30	520.54
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.99	12.35
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48

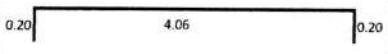
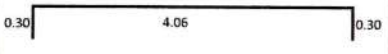
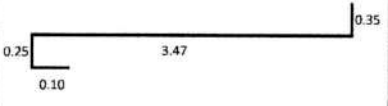
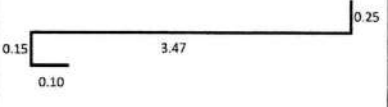
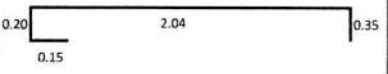
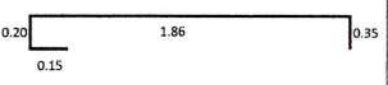
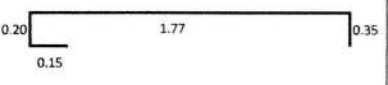
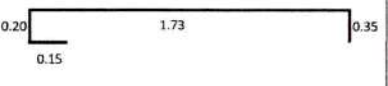
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21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.90	11.80
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.13	13.22
23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.95	12.11
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.78	11.05
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.70	10.55
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.69	10.49
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.73	10.74

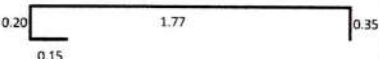
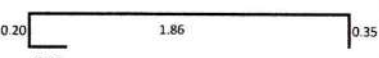
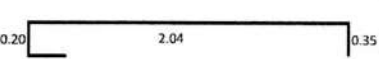
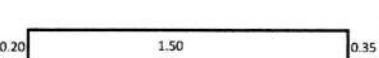
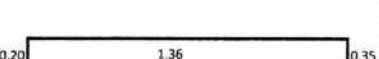
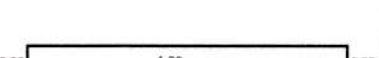
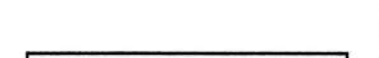
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29	MUROS		R5b-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.10	13.04
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17

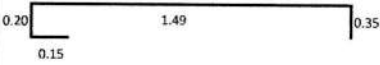
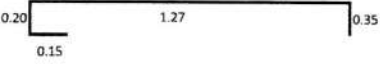
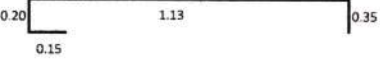
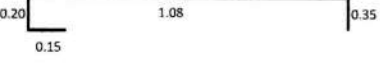
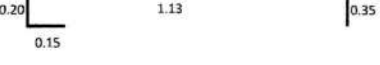
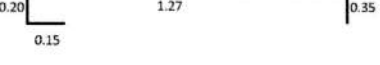
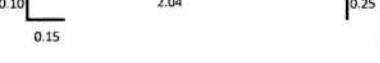
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31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.25	69.84
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.23	24.80
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	6.00	10.08
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	7.00	11.76
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78

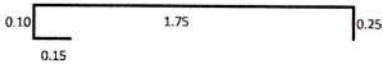
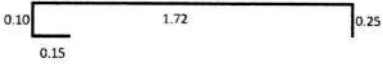
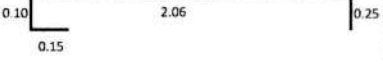
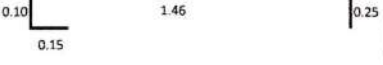
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3499.61

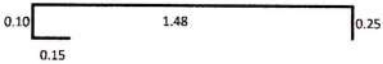
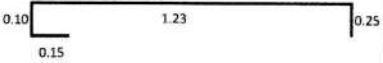
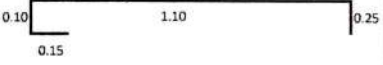
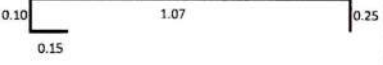
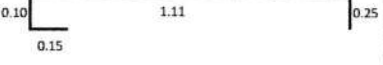
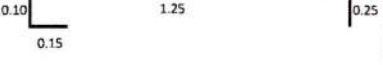
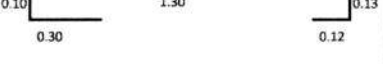
DESPIECE DE ACEROS CAMARA No. 10 PLUVIAL

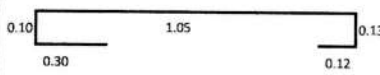
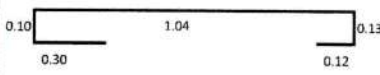
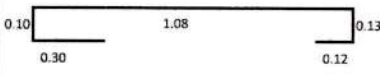
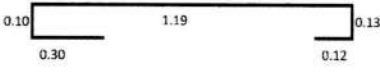
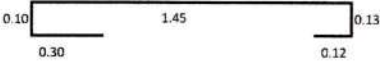
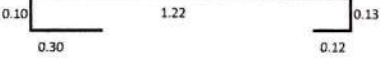
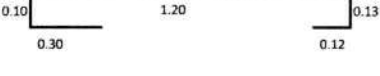
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	62	4.17	786.48
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	45	3.97	277.26
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78

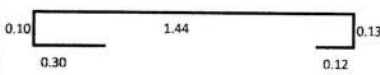
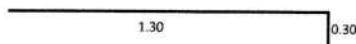
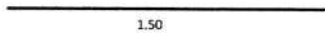
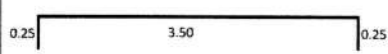
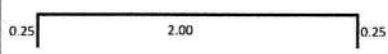
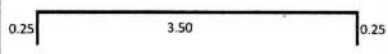
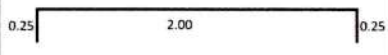
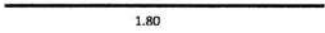
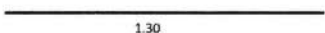
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
11	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
12	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.20	6.69
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.06	6.27
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.00	6.08
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.00	6.08
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.06	6.27

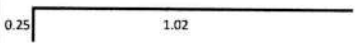
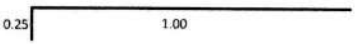
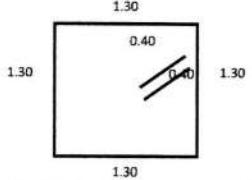
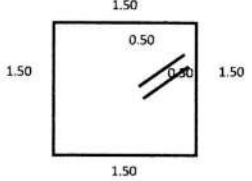
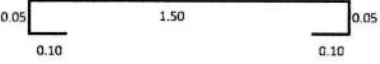
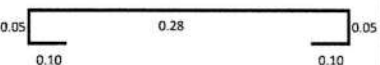
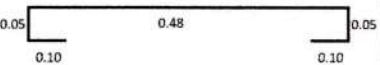
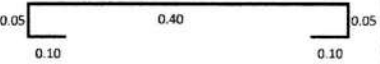
16	MUROS		R1b-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.19	6.66
17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.97	5.99
18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.83	5.57
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.78	5.41
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.78	5.41
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.83	5.57
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.97	5.99
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.54	7.88
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.34	7.26

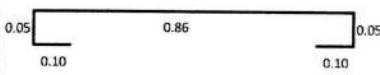
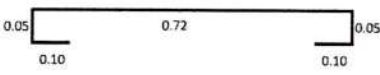
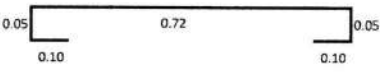
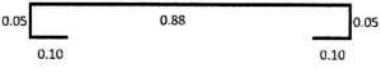
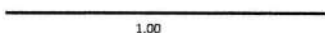
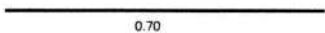
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14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.22	6.89
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.25	6.98
16	MUROS		R2a-6	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.35	7.29
17	MUROS		R2a-7	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.56	7.95
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.96	3.04
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.83	2.84
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.80	2.79
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.84	2.86

20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.98	3.07
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.73	2.68
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.60	2.48
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.57	2.44
24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.61	2.50
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.75	2.72
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	66	4.30	440.46
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.95	24.21
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.78	22.10

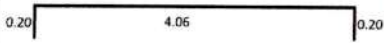
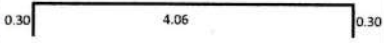
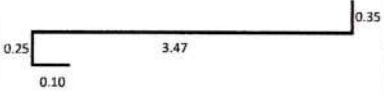
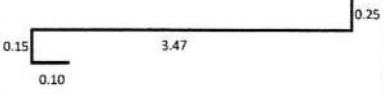
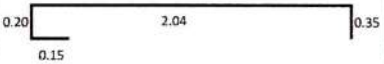
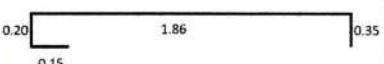
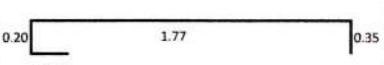
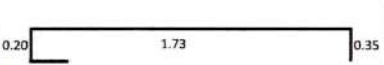
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.70	21.11
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.69	20.98
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.73	21.48
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.84	22.85
23	MUROS		R5a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.10	26.07
23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.97	12.23
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.91	11.86

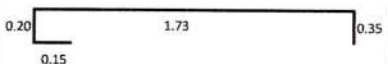
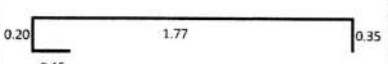
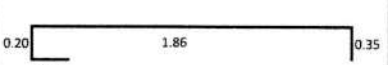
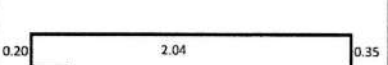
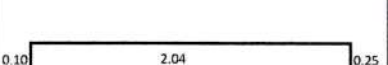
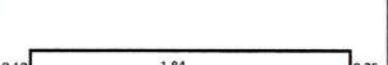
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.09	12.97
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14

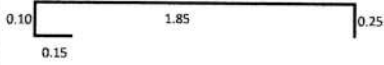
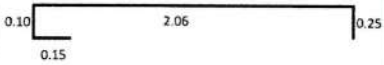
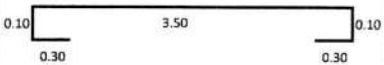
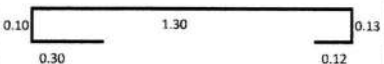
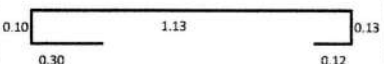
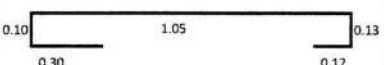
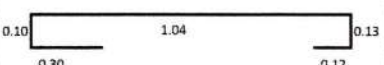
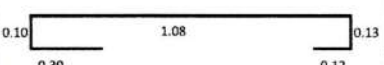
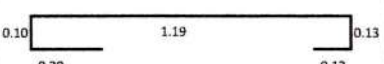
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.27	70.96
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.25	25.20
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	6.00	10.08
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	3	7.00	11.76
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98

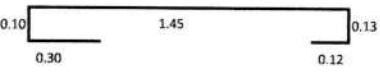
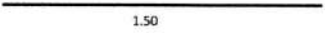
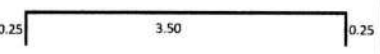
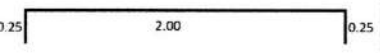
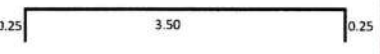
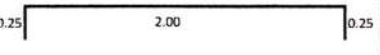
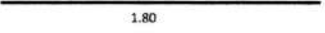
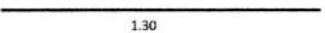
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3483.24

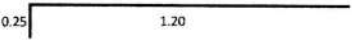
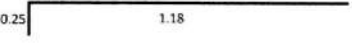
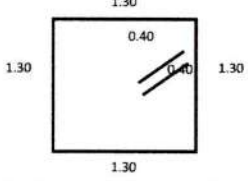
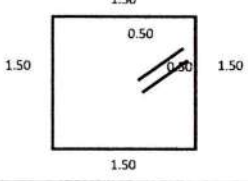
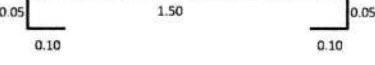
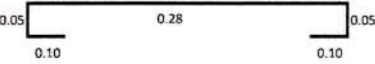
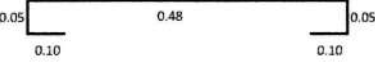
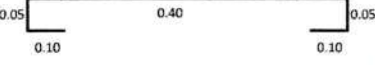
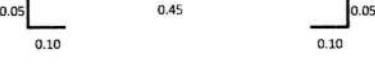
DESPIECE DE ACEROS CAMARA No. 11 PLUVIAL

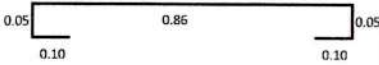
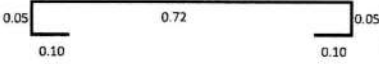
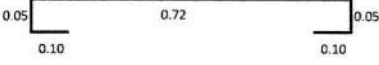
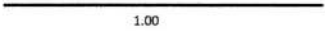
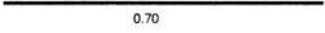
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1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	68	4.17	862.59
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	50	3.97	308.07
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78

9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
11	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
12	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.54	7.88
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.34	7.26
13	MUROS		R2a-3	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.25	6.98
14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.22	6.89
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.25	6.98

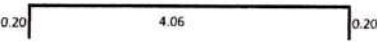
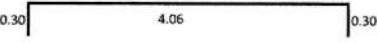
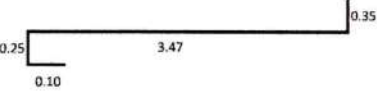
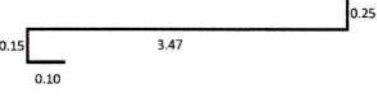
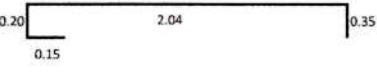
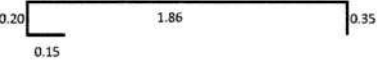
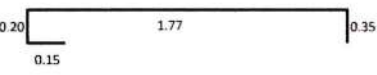
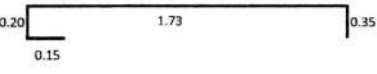
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17	MUROS		R2a-7	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.56	7.95
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	76	4.30	507.19
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.95	24.21
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.78	22.10
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.70	21.11
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.69	20.98
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.73	21.48
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.84	22.85

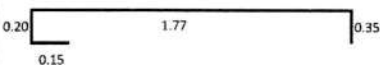
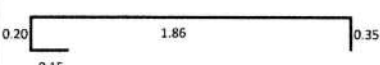
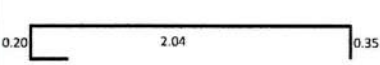
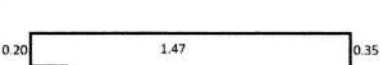
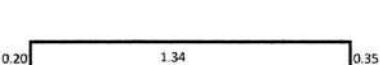
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23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	16	1.60	57.22
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	16	1.50	37.25
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14

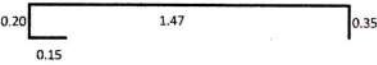
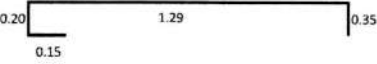
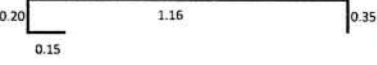
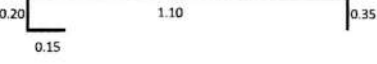
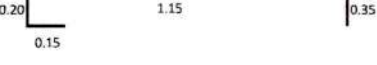
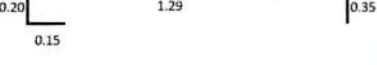
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32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.43	28.83
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	6.00	13.44
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	4	7.00	15.68
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98

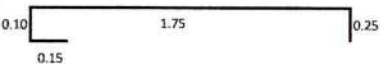
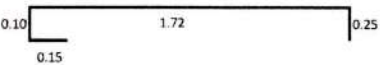
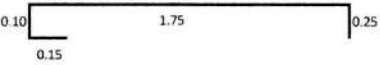
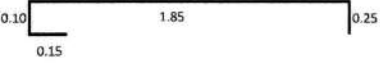
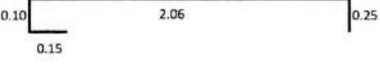
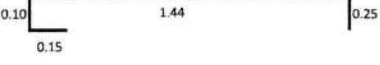
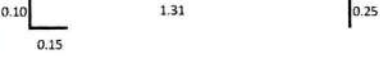
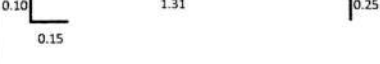
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3471.05

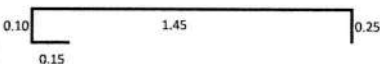
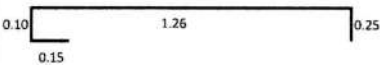
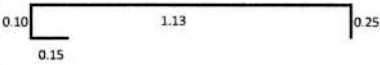
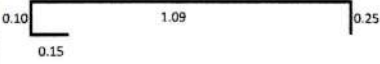
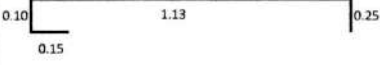
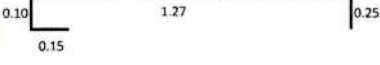
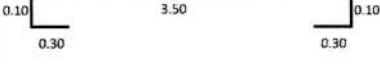
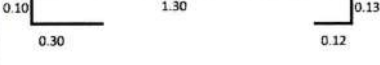
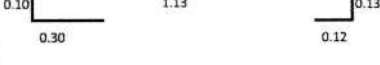
DESPIECE DE ACEROS CAMARA No. 12 PLUVIAL

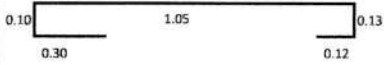
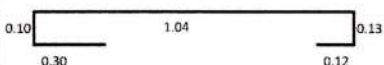
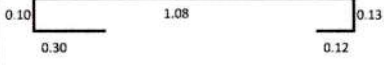
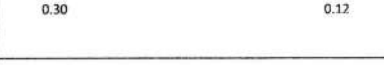
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	62	4.17	786.48
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	45	3.97	277.26
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78

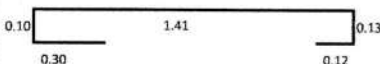
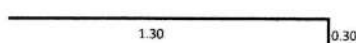
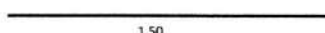
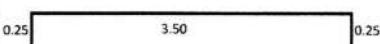
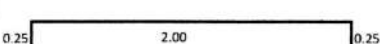
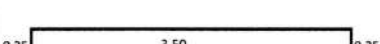
9	MUROS		R1a-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.43	14.78
10	MUROS		R1a-6	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.47	15.03
11	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.56	15.58
12	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	2	2.74	16.67
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.17	6.60
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.04	6.21
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.98	6.02
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.98	6.02
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.03	6.18

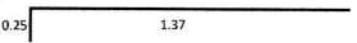
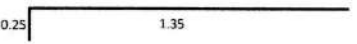
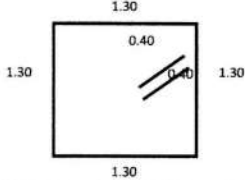
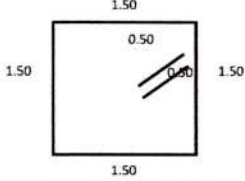
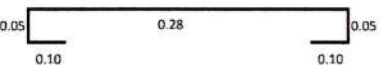
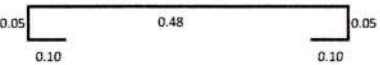
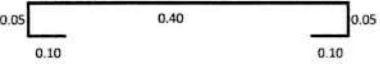
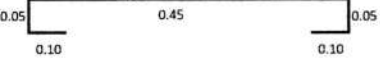
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17	MUROS		R1b-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.99	6.05
18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.86	5.66
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.80	5.48
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.80	5.48
21	MUROS		R1b-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.85	5.63
22	MUROS		R1b-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.99	6.05
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.54	7.88
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.34	7.26

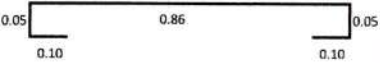
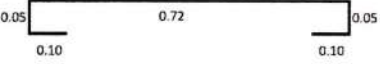
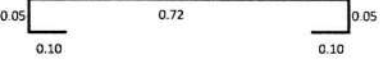
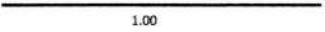
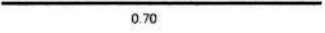
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14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.22	6.89
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.25	6.98
16	MUROS		R2a-6	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.35	7.29
17	MUROS		R2a-7	REFUERZO INTERIOR ALZADA	# 5	1.552	2	2.56	7.95
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.94	3.01
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.81	2.81
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.77	2.75
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.81	2.81

20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.95	3.03
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.76	2.73
22	MUROS		R2b-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.63	2.53
23	MUROS		R2b-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.59	2.47
24	MUROS		R2b-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.63	2.53
25	MUROS		R2b-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.77	2.75
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	66	4.30	440.46
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.95	24.21
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.78	22.10

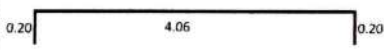
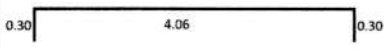
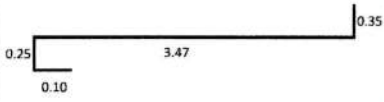
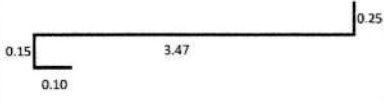
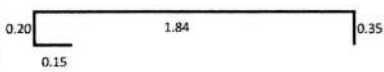
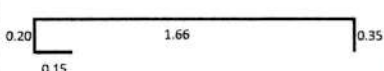
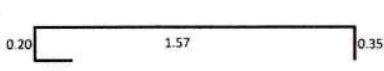
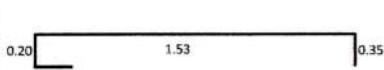
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.70	21.11
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.69	20.98
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.73	21.48
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.84	22.85
23	MUROS		R5a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	2.10	26.07
23	MUROS		R5b-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.99	12.35
24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.87	11.61
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.90	11.80

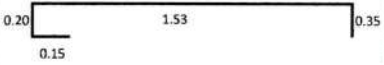
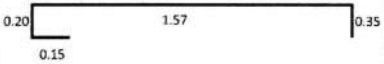
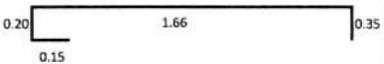
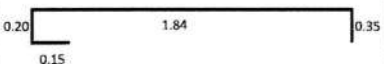
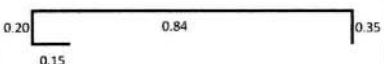
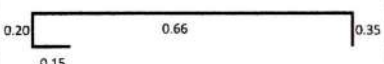
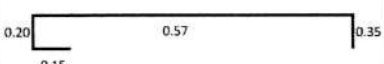
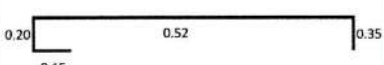
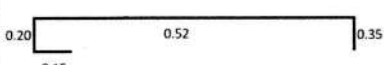
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.06	12.79
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82
26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14

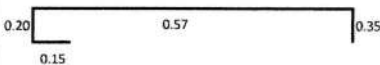
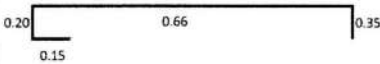
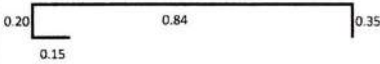
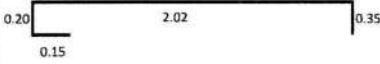
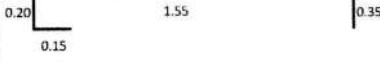
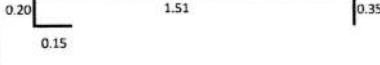
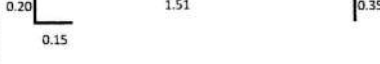
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	1.62	90.51
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.60	32.26
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	6.00	16.80
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	5	7.00	19.60
30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98

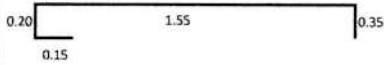
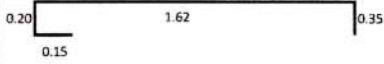
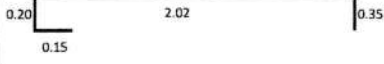
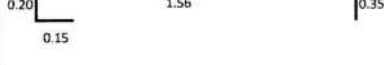
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35
36	TAPA MANHOLE		R15	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	1.00	7.95
35	TAPA MANHOLE		R16	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	8	0.70	5.57
								TOTAL	3524.25

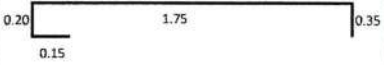
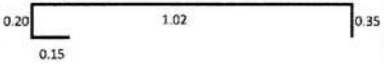
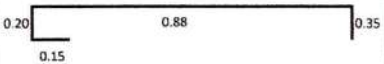
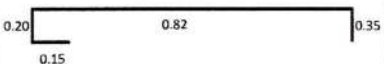
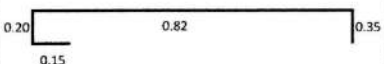
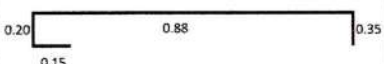
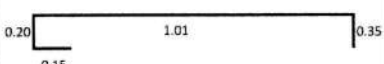
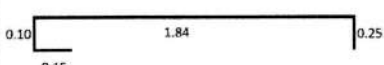
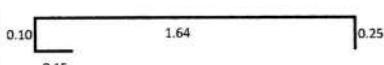
DESPIECE DE ACEROS CAMARA No. 13 PLUVIAL

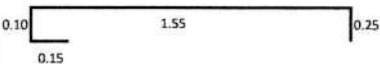
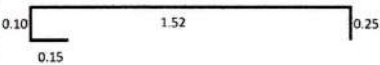
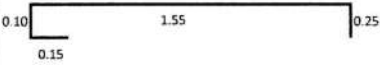
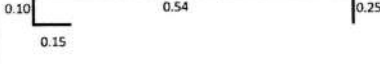
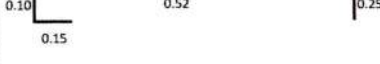
ID	ELEMENTO	ESQUEMA	NOMBRE	DESCRIPCION	# DE VARILLA	Kg-m	CANTIDAD	LONGITUD TOTAL (m)	TOTAL (Kg)
1	PLACA FONDO		R4	REFUERZO INFERIOR	# 4	0.994	42	4.46	186.20
2	PLACA FONDO		R3	REFUERZO INFERIOR	# 6	2.235	42	4.66	437.43
3	MUROS		R1	REFUERZO EXTERIOR ALZADA	# 7	3.042	60	4.17	761.11
4	MUROS		R2	REFUERZO INTERIOR ALZADA	# 5	1.552	45	3.97	277.26
5	MUROS		R1a-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.54	7.73
6	MUROS		R1a-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.36	7.18
7	MUROS		R1a-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.27	6.91
8	MUROS		R1a-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.23	6.78

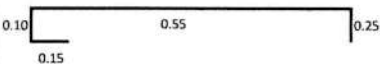
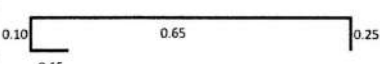
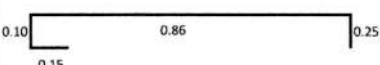
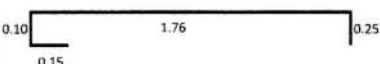
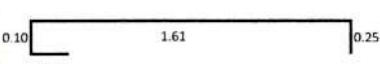
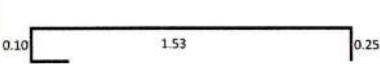
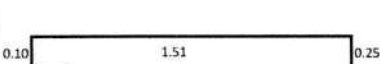
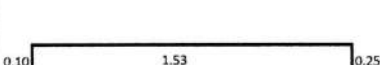
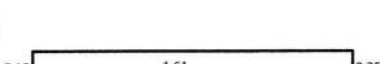
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11	MUROS		R1a-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.36	7.18
12	MUROS		R1a-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.54	7.73
13	MUROS		R1a-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.54	4.68
14	MUROS		R1a-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.36	4.14
15	MUROS		R1a-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.27	3.86
16	MUROS		R1a-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.22	3.71
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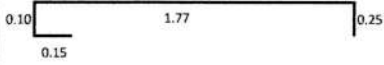
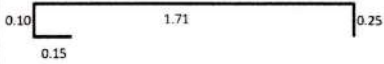
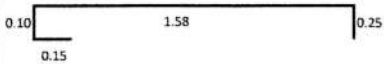
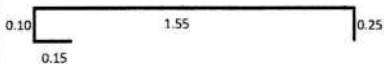
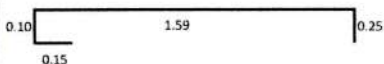
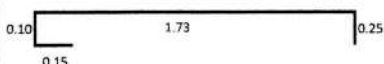
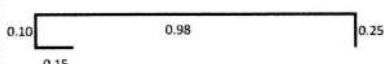
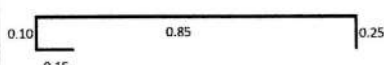
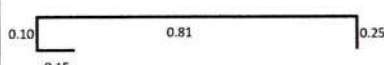
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19	MUROS		R1a-15	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.36	4.14
20	MUROS		R1a-16	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.54	4.68
11	MUROS		R1b-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.72	8.27
12	MUROS		R1b-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.46	7.48
13	MUROS		R1b-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.33	7.09
14	MUROS		R1b-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.25	6.84
15	MUROS		R1b-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.21	6.72
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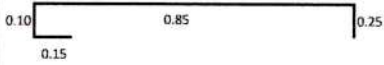
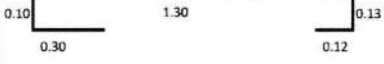
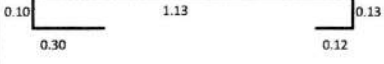
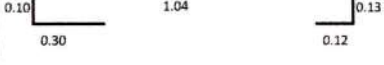
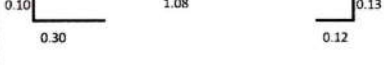
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18	MUROS		R1b-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.32	7.06
19	MUROS		R1b-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.46	7.48
20	MUROS		R1b-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.72	8.27
21	MUROS		R1c-1	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.45	7.45
22	MUROS		R1c-2	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.31	7.03
23	MUROS		R1c-3	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.26	6.87
24	MUROS		R1c-4	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.26	6.87
25	MUROS		R1c-5	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	2.31	7.03

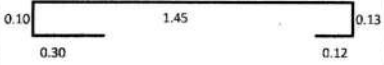
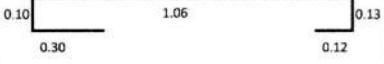
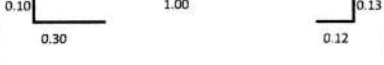
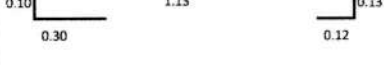
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27	MUROS		R1c-7	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.72	5.23
28	MUROS		R1c-8	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.58	4.81
29	MUROS		R1c-9	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.52	4.62
30	MUROS		R1c-10	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.52	4.62
31	MUROS		R1c-11	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.58	4.81
32	MUROS		R1c-12	REFUERZO EXTERIOR ALZADA	# 7	3.042	1	1.71	5.20
11	MUROS		R2a-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.34	3.63
12	MUROS		R2a-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.14	3.32

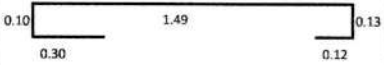
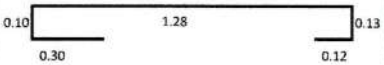
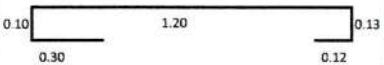
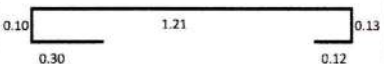
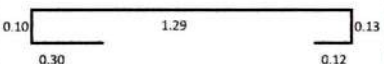
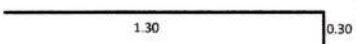
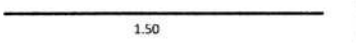
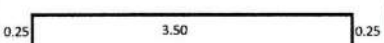
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14	MUROS		R2a-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.02	3.14
15	MUROS		R2a-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.05	3.18
16	MUROS		R2a-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.15	3.34
17	MUROS		R2a-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.36	3.66
18	MUROS		R2a-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.33	2.06
19	MUROS		R2a-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.14	1.77
20	MUROS		R2a-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.04	1.61
21	MUROS		R2a-11	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.02	1.58

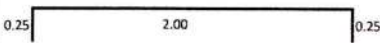
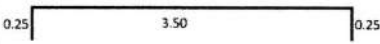
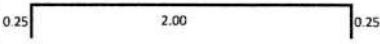
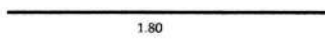
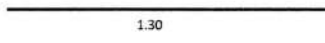
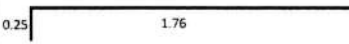
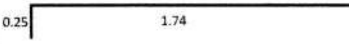
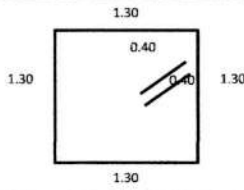
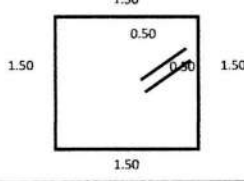
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23	MUROS		R2a-13	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.15	1.78
24	MUROS		R2a-14	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.36	2.11
16	MUROS		R2b-1	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.26	3.51
17	MUROS		R2b-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.11	3.27
18	MUROS		R2b-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.03	3.15
19	MUROS		R2b-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.01	3.12
20	MUROS		R2b-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.03	3.15
21	MUROS		R2b-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.11	3.27

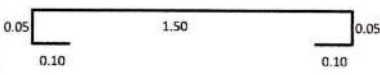
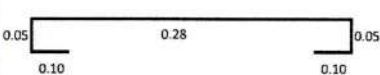
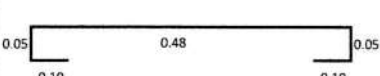
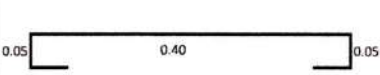
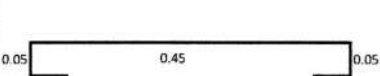
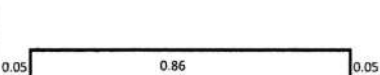
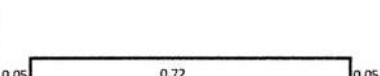
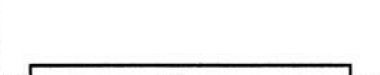
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24	MUROS		R2c-2	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.08	3.23
25	MUROS		R2c-3	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.05	3.18
26	MUROS		R2c-4	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.09	3.24
27	MUROS		R2c-5	REFUERZO INTERIOR ALZADA	# 5	1.552	1	2.23	3.46
28	MUROS		R2c-6	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.48	2.30
29	MUROS		R2c-7	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.35	2.10
30	MUROS		R2c-8	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.31	2.03

31	MUROS		R2c-9	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.35	2.10
32	MUROS		R2c-10	REFUERZO INTERIOR ALZADA	# 5	1.552	1	1.49	2.31
16	MUROS		R5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	62	4.30	413.76
17	MUROS		R5a-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.95	12.11
18	MUROS		R5a-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.78	11.05
19	MUROS		R5a-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.70	10.55
20	MUROS		R5a-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.69	10.49
21	MUROS		R5a-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.73	10.74
22	MUROS		R5a-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.84	11.42

23	MUROS		R5a-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.10	13.04
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24	MUROS		R5b-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.71	10.62
25	MUROS		R5b-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.61	9.99
26	MUROS		R5b-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.57	9.75
27	MUROS		R5b-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.58	9.81
28	MUROS		R5b-6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.65	10.24
29	MUROS		R5b-7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.78	11.05
30	MUROS		R5b-8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.04	12.66

31	MUROS		R5c-1	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	2.14	13.29
32	MUROS		R5c-2	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.93	11.98
33	MUROS		R5c-3	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.85	11.48
34	MUROS		R5c-4	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.86	11.55
35	MUROS		R5c-5	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.94	12.04
23	MUROS		R9	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 6	2.235	24	1.60	85.82
24	MUROS		R9a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	24	1.50	55.87
25	PLACA TAPA		R6	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	28	4.00	173.82

26	PLACA TAPA		R6a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	14	2.50	54.32
27	PLACA TAPA		R7	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	34	4.00	211.07
28	PLACA TAPA		R7a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	18	2.50	69.84
29	PLACA TAPA		R8	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	4	1.80	11.17
30	PLACA TAPA		R8a	REFUERZO INTERIOR Y EXTERIOR ALZADA	# 5	1.552	8	1.30	16.14
31	MUROS MANHOLE		R10	REFUERZO INTERIOR CHIMENEA ACCESO	# 5	1.552	36	2.01	112.30
32	MUROS MANHOLE		R11	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	36	1.99	40.12
33	MUROS MANHOLE		R12	REFUERZO INTERIOR CHIMENEA DE ACCESO	# 3	0.560	7	6.00	23.52
34	MUROS MANHOLE		R13	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 3	0.560	7	7.00	27.44

30	TAPA MANHOLE		R14	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	18	1.80	32.21
31	TAPA MANHOLE		R14a	REFUERZO SUPERIOR E INFERIOR	# 4	0.994	4	0.58	2.31
31	TAPA MANHOLE		R14a-1	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.78	3.10
32	TAPA MANHOLE		R14a-2	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.70	2.78
33	TAPA MANHOLE		R14a-3	REFUERZO INTERIOR CHIMENEA ACCESO	# 4	0.994	4	0.75	2.98
32	TAPA MANHOLE		R14b-1	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.16	2.31
33	TAPA MANHOLE		R14b-2	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
34	TAPA MANHOLE		R14b-3	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.02	2.03
35	TAPA MANHOLE		R14b-4	REFUERZO EXTERIOR CHIMENEA DE ACCESO	# 4	0.994	2	1.18	2.35

