

Hydraulic Calculations for

Project: ALFANDEGA DA RECEITA FEDERAL DO BRASIL NO ESTADO DE SAO PAULO
Drawing no.: SRG_1860_SPK_MC_R02_VGA1
Date: 14/01/2020

Design

Remote area number: AREA01
Remote area location: VGA01 + RACK06
Occupancy classification: high piled rack storage
Density: Min.=14,3lpm/m²
Area of application: 186m²
Coverage per sprinkler: 8,55m²
Type of sprinklers calculated: TETO: SPK K160 - 22UN
RACK: SPK K115 - 14UN
No. of sprinklers calculated: 36
In rack demand: 1779,83lpm
Hose streams: none outside + none inside
Total water required (including hose streams): 4663,04 lpm at -1,072 bar [1,082 bar safety margin (10823,9%)]
Total water required at base of system riser: 4663,04 lpm at 6,897 bar
Type of system: wet pipe
Volume of dry or preaction system: 656m³ (SPK) + 64m³ (HD)

Water Supply Information

Date:
Location:
Source:

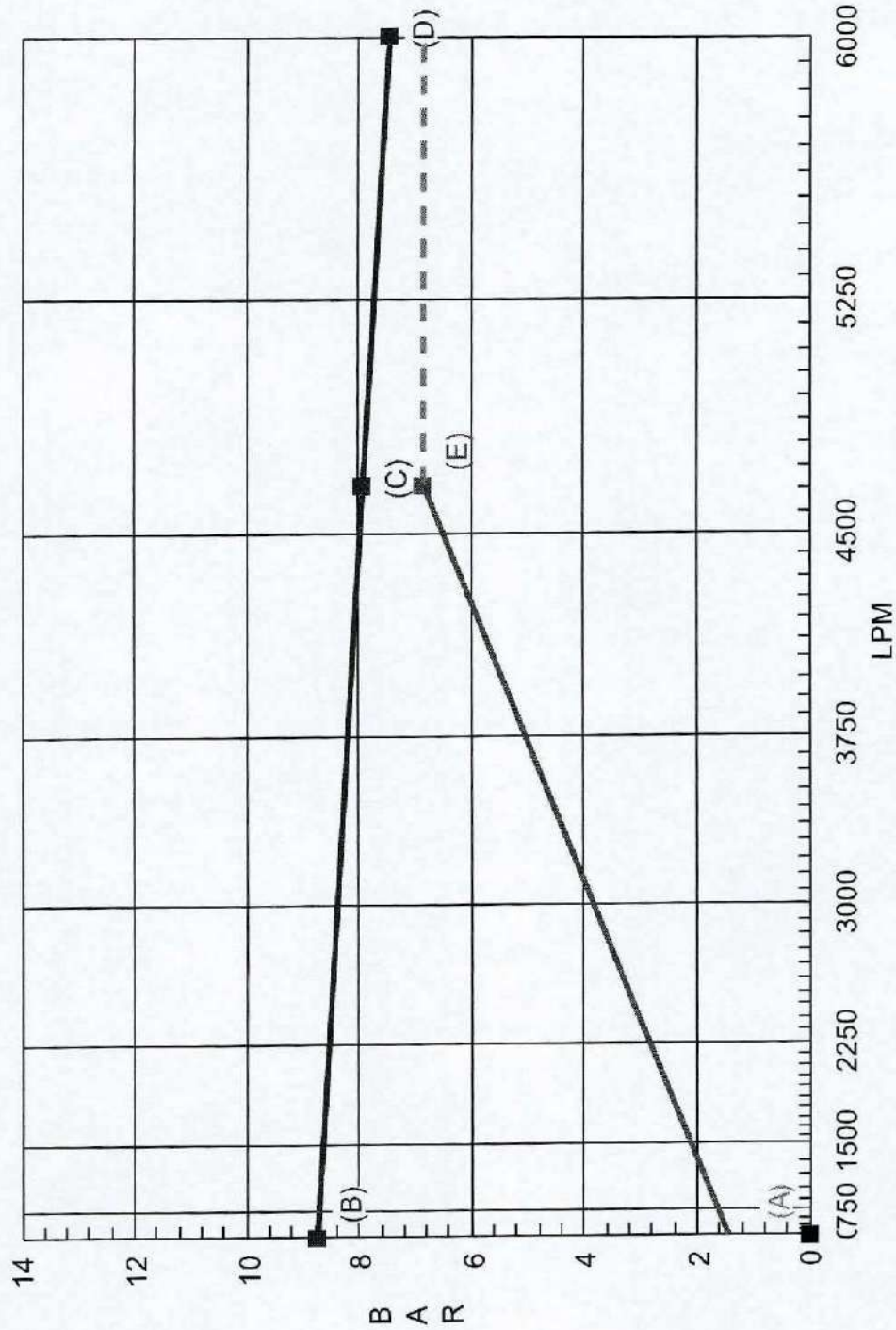
Contractor: RECEITA FEDERAL
Under contract with: SORENGE
Name of designer: LUIZ BUENO
Authority having jurisdiction: CORPO DE BOMBEIROS DE SAO PAULO

Notes

CALCULO HIDRAULICO DO SISTEMA DE CHUVEIROS AUTOMATICOS



Hydraulic Demand Graph



Supply Analysis

Node at	Static Pressure [bar]	Residual Pressure [bar]	Flow [lpm]	Available Pressure [bar]	Total Demand [lpm]	Required Pressure [bar]
RTI	0,01			0,01	4663,04	-1,07

Node Analysis

Node Tag	Elev [M]	Type	Pressure [bar]	Discharge [lpm]	Node Tag	Elev [M]	Type	Pressure [bar]	Discharge [lpm]
RTI	-1,850	source	-1,072	-4663,04	M2-12	13,500	ref	2,866	0,000
EB	0,000	ref	-1,287	0,000	M2-13	13,500	ref	2,798	0,000
SB	0,000	ref	7,196	0,000	M2-14	13,500	ref	2,731	0,000
M1-1	13,500	ref	3,416	0,000	M2-15	13,500	ref	2,663	0,000
M1-2	13,500	ref	3,410	0,000	M2-16	13,500	ref	2,596	0,000
M1-3	13,500	ref	3,392	0,000	M2-17	13,500	ref	2,528	0,000
M1-4	13,500	ref	3,359	0,000	M2-18	13,500	ref	2,461	0,000
M1-5	13,500	ref	3,315	0,000	M2-19	13,500	ref	2,393	0,000
M1-6	13,500	ref	3,260	0,000	M2-20	13,500	ref	2,326	0,000
M1-7	13,500	ref	3,200	0,000	M2-21	13,500	ref	2,258	0,000
M1-8	13,500	ref	3,135	0,000	M2-22	13,500	ref	2,191	0,000
M1-9	13,500	ref	3,068	0,000	M2-23	13,500	ref	2,123	0,000
M1-10	13,500	ref	3,001	0,000	M2-24	13,500	ref	2,056	0,000
M1-11	13,500	ref	2,933	0,000	M2-25	13,500	ref	1,988	0,000
M1-12	13,500	ref	2,866	0,000	M2-26	13,500	ref	1,921	0,000
M1-13	13,500	ref	2,798	0,000	M2-27	13,500	ref	1,853	0,000
M1-14	13,500	ref	2,731	0,000	M2-28	13,500	ref	1,786	0,000
M1-15	13,500	ref	2,663	0,000	M2-29	13,500	ref	1,718	0,000
M1-16	13,500	ref	2,596	0,000	M2-30	13,500	ref	1,652	0,000
M1-17	13,500	ref	2,528	0,000	M2-31	13,500	ref	1,586	0,000
M1-18	13,500	ref	2,461	0,000	M2-32	13,500	ref	1,523	0,000
M1-19	13,500	ref	2,393	0,000	M2-33	13,500	ref	1,469	0,000
M1-20	13,500	ref	2,326	0,000	M2-34	13,500	ref	1,436	0,000
M1-21	13,500	ref	2,258	0,000	M2-35	13,500	ref	1,408	0,000
M1-22	13,500	ref	2,191	0,000	M2-36	13,500	ref	1,389	0,000
M1-23	13,500	ref	2,123	0,000	M2-37	13,500	ref	1,380	0,000
M1-24	13,500	ref	2,056	0,000	M2-38	13,500	ref	1,377	0,000
M1-25	13,500	ref	1,988	0,000	L35-1	15,750	K=160,00	0,821	144,941
M1-26	13,500	ref	1,921	0,000	L35-2	15,750	K=160,00	0,816	144,527
M1-27	13,500	ref	1,853	0,000	L35-3	15,750	K=160,00	0,817	144,603
M1-28	13,500	ref	1,786	0,000	L35-4	15,750	K=160,00	0,831	145,827
M1-29	13,500	ref	1,717	0,000	L35-5	15,750	ref	0,871	0,000
M1-30	13,500	ref	1,646	0,000	L35-6	15,750	ref	0,912	0,000
M1-31	13,500	ref	1,571	0,000	L35-7	15,750	ref	0,952	0,000
M1-32	13,500	ref	1,487	0,000	L35-8	15,750	ref	0,993	0,000
M1-33	13,500	ref	1,390	0,000	L35-9	15,750	ref	1,033	0,000
M1-34	13,500	ref	1,269	0,000	L35-10	15,750	ref	1,074	0,000
M1-35	13,500	ref	1,111	0,000	L36-1	15,750	K=160,00	0,665	130,463
M1-36	13,500	ref	1,008	0,000	L36-2	15,750	K=160,00	0,648	128,813
M1-37	13,500	ref	0,962	0,000	L36-3	15,750	K=160,00	0,645	128,545
M1-38	13,500	ref	0,949	0,000	L36-4	15,750	K=160,00	0,647	128,676
DER'	13,500	ref	1,480	0,000	L36-5	15,750	K=160,00	0,660	129,979
M2-1	13,500	ref	3,669	0,000	L36-6	15,750	K=160,00	0,696	133,468
M2-2	13,500	ref	3,586	0,000	L36-7	15,750	ref	0,765	0,000
M2-3	13,500	ref	3,500	0,000	L36-8	15,750	ref	0,835	0,000
M2-4	13,500	ref	3,420	0,000	L36-9	15,750	ref	0,905	0,000
M2-5	13,500	ref	3,345	0,000	L36-10	15,750	ref	0,974	0,000
M2-6	13,500	ref	3,274	0,000	L37-1	15,750	K=160,00	0,634	127,371
M2-7	13,500	ref	3,204	0,000	L37-2	15,750	K=160,00	0,620	125,974
M2-8	13,500	ref	3,136	0,000	L37-3	15,750	K=160,00	0,618	125,803
M2-9	13,500	ref	3,068	0,000	L37-4	15,750	K=160,00	0,620	126,012
M2-10	13,500	ref	3,001	0,000	L37-5	15,750	K=160,00	0,635	127,506
M2-11	13,500	ref	2,933	0,000	L37-6	15,750	K=160,00	0,673	131,256

Node Analysis, cont.

Node Tag	Elev [M]	Type	Pressure [bar]	Discharge [lpm]	Node Tag	Elev [M]	Type	Pressure [bar]	Discharge [lpm]
L37-7	15,750	ref	0,745	0,000	R2-13	15,750	ref	2,578	0,000
L37-8	15,750	ref	0,816	0,000	R2-14	15,750	ref	2,510	0,000
L37-9	15,750	ref	0,888	0,000	R2-15	15,750	ref	2,443	0,000
L37-10	15,750	ref	0,959	0,000	R2-16	15,750	ref	2,375	0,000
L38-1	15,750	K=160,00	0,625	126,509	R2-17	15,750	ref	2,308	0,000
L38-2	15,750	K=160,00	0,612	125,179	R2-18	15,750	ref	2,240	0,000
L38-3	15,750	K=160,00	0,611	125,031	R2-19	15,750	ref	2,173	0,000
L38-4	15,750	K=160,00	0,613	125,266	R2-20	15,750	ref	2,105	0,000
L38-5	15,750	K=160,00	0,628	126,815	R2-21	15,750	ref	2,038	0,000
L38-6	15,750	K=160,00	0,667	130,639	R2-22	15,750	ref	1,970	0,000
L38-7	15,750	ref	0,739	0,000	R2-23	15,750	ref	1,903	0,000
L38-8	15,750	ref	0,811	0,000	R2-24	15,750	ref	1,835	0,000
L38-9	15,750	ref	0,883	0,000	R2-25	15,750	ref	1,768	0,000
L38-10	15,750	ref	0,955	0,000	R2-26	15,750	ref	1,700	0,000
R1-1	15,750	ref	3,230	0,000	R2-27	15,750	ref	1,633	0,000
R1-2	15,750	ref	3,214	0,000	R2-28	15,750	ref	1,565	0,000
R1-3	15,750	ref	3,186	0,000	R2-29	15,750	ref	1,498	0,000
R1-4	15,750	ref	3,147	0,000	R2-30	15,750	ref	1,430	0,000
R1-5	15,750	ref	3,098	0,000	R2-31	15,750	ref	1,364	0,000
R1-6	15,750	ref	3,042	0,000	R2-32	15,750	ref	1,298	0,000
R1-7	15,750	ref	2,980	0,000	R2-33	15,750	ref	1,238	0,000
R1-8	15,750	ref	2,915	0,000	R2-34	15,750	ref	1,193	0,000
R1-9	15,750	ref	2,848	0,000	R2-35	15,750	ref	1,106	0,000
R1-10	15,750	ref	2,780	0,000	R2-36	15,750	ref	1,029	0,000
R1-11	15,750	ref	2,713	0,000	R2-37	15,750	ref	1,016	0,000
R1-12	15,750	ref	2,645	0,000	R2-38	15,750	ref	1,012	0,000
R1-13	15,750	ref	2,578	0,000	BCR	0,500	ref	6,897	0,000
R1-14	15,750	ref	2,510	0,000	N6-232	8,950	K=115,00	1,132	122,358
R1-15	15,750	ref	2,443	0,000	N6-233	8,950	K=115,00	1,067	118,766
R1-16	15,750	ref	2,375	0,000	N6-234	8,950	K=115,00	1,027	116,547
R1-17	15,750	ref	2,308	0,000	N6-235	8,950	K=115,00	1,007	115,410
R1-18	15,750	ref	2,240	0,000	N6-236	8,950	K=115,00	1,000	115,022
R1-19	15,750	ref	2,173	0,000	N6-237	8,950	K=115,00	1,000	115,000
R1-20	15,750	ref	2,105	0,000	N6-238	8,950	K=115,00	1,002	115,142
R1-21	15,750	ref	2,038	0,000	N6-171	4,450	K=115,00	1,526	142,082
R1-22	15,750	ref	1,970	0,000	N6-173	4,450	K=115,00	1,472	139,521
R1-23	15,750	ref	1,903	0,000	N6-174	4,450	K=115,00	1,361	134,148
R1-24	15,750	ref	1,835	0,000	N6-175	4,450	K=115,00	1,462	139,065
R1-25	15,750	ref	1,768	0,000	N6-176	4,450	K=115,00	1,352	133,707
R1-26	15,750	ref	1,700	0,000	N6-177	4,450	K=115,00	1,466	139,217
R1-27	15,750	ref	1,633	0,000	N6-178	4,450	K=115,00	1,355	133,853
R1-28	15,750	ref	1,565	0,000	N6-2	8,950	ref	4,407	0,000
R1-29	15,750	ref	1,496	0,000	N6-1	4,450	ref	4,859	0,000
R1-30	15,750	ref	1,426	0,000	N6-2'	8,950	ref	1,010	0,000
R1-31	15,750	ref	1,352	0,000	N6-1'	4,450	ref	1,470	0,000
R1-32	15,750	ref	1,271	0,000	N6	-0,100	ref	5,351	0,000
R1-33	15,750	ref	1,180	0,000	N6'	-0,100	ref	2,014	0,000
R1-34	15,750	ref	1,072	0,000	DER	2,000	ref	5,498	0,000
R1-35	15,750	ref	0,843	0,000	N6-172	4,450	ref	1,526	0,000
R1-36	15,750	ref	0,705	0,000					
R1-37	15,750	ref	0,669	0,000					
R1-38	15,750	ref	0,659	0,000					
R2-1	15,750	ref	3,415	0,000					
R2-2	15,750	ref	3,342	0,000					
R2-3	15,750	ref	3,265	0,000					
R2-4	15,750	ref	3,191	0,000					
R2-5	15,750	ref	3,121	0,000					
R2-6	15,750	ref	3,052	0,000					
R2-7	15,750	ref	2,983	0,000					
R2-8	15,750	ref	2,915	0,000					
R2-9	15,750	ref	2,848	0,000					
R2-10	15,750	ref	2,780	0,000					
R2-11	15,750	ref	2,713	0,000					
R2-12	15,750	ref	2,645	0,000					

Pipe Information

negative pipe flow (Q) indicates flow is from node 2 towards node 1

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
RTI	-1,850		q=-4663,04 Q=4663,041	200 209,5	1E=6,447 1G=1,433	5,000 7,880 12,880		Pt= -1,072 Pe= 0,161 Pf= 0,034	Mat="S10"
EB	0,000						C=120 0,003		
EB	0,000		Pump inlet pressure = -1,287 bar						
			Net gain across pump = 8,484 bar						
SB	0,000		Pump outlet pressure = 7,196 bar						
SB	0,000		q= 0,000 Q=4663,041	200 209,5	6E=38,682 1B=4,298	31,900 63,719	C=120 0,003	Pt= 7,196 Pe= 0,049 Pf= 0,250	Mat="S10"
BOR	0,500				1C=16,088 1TN=4,650	95,619			
BOR	0,500		q= 0,000 Q=4663,041	100 108,2	1B=4,809 1A=4,809	1,500 17,634	C=120 0,065	Pt= 6,897 Pe= 0,147 Pf= 1,251	Mat="S10"
DER	2,000				1T=8,015	19,134			
DER	2,000		q= 0,000 Q=3452,836	100 108,2	1TN=2,405 1E=4,008	12,300 6,412	C=120 0,038	Pt= 5,498 Pe= 1,127 Pf= 0,702	Mat="S10"
M2-1	13,500					18,712			
M1-1	13,500		q= 0,000 Q= 268,634	65 66,9		2,500 0,000	C=120 0,002	Pt= 3,416 Pe= 0,000 Pf= 0,005	Mat="S10"
M1-2	13,500					2,500			
M1-2	13,500		q= 0,000 Q= 379,610	65 66,9		2,850 0,000	C=120 0,007	Pt= 3,410 Pe= 0,000 Pf= 0,019	Mat="S10"
M1-3	13,500					2,850			
M1-3	13,500		q= 0,000 Q= 511,140	65 66,9		2,850 0,000	C=120 0,011	Pt= 3,392 Pe= 0,000 Pf= 0,032	Mat="S10"
M1-4	13,500					2,850			
M1-4	13,500		q= 0,000 Q= 607,703	65 66,9		2,850 0,000	C=120 0,016	Pt= 3,359 Pe= 0,000 Pf= 0,045	Mat="S10"
M1-5	13,500					2,850			
M1-5	13,500		q= 0,000 Q= 674,615	65 66,9		2,850 0,000	C=120 0,019	Pt= 3,315 Pe= 0,000 Pf= 0,054	Mat="S10"
M1-6	13,500					2,850			
M1-6	13,500		q= 0,000 Q= 717,583	65 66,9		2,850 0,000	C=120 0,021	Pt= 3,260 Pe= 0,000 Pf= 0,061	Mat="S10"
M1-7	13,500					2,850			
M1-7	13,500		q= 0,000 Q= 742,348	65 66,9		2,850 0,000	C=120 0,023	Pt= 3,200 Pe= 0,000 Pf= 0,065	Mat="S10"
M1-8	13,500					2,850			
M1-8	13,500		q= 0,000 Q= 754,406	65 66,9		2,850 0,000	C=120 0,023	Pt= 3,135 Pe= 0,000 Pf= 0,057	Mat="S10"
M1-9	13,500					2,850			
M1-9	13,500		q= 0,000 Q= 758,757	65 66,9		2,850 0,000	C=120 0,024	Pt= 3,068 Pe= 0,000 Pf= 0,067	Mat="S10"
M1-10	13,500					2,850			
M1-10	13,500		q= 0,000 Q= 759,602	65 66,9		2,850 0,000	C=120 0,024	Pt= 3,001 Pe= 0,000 Pf= 0,068	Mat="S10"
M1-11	13,500					2,850			



Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M1-11	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,933 Pe= 0,000	Mat="S10"
M1-12	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-12	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,866 Pe= 0,000	Mat="S10"
M1-13	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-13	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,798 Pe= 0,000	Mat="S10"
M1-14	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-14	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,731 Pe= 0,000	Mat="S10"
M1-15	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-15	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,663 Pe= 0,000	Mat="S10"
M1-16	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-16	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,596 Pe= 0,000	Mat="S10"
M1-17	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-17	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,528 Pe= 0,000	Mat="S10"
M1-18	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-18	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,461 Pe= 0,000	Mat="S10"
M1-19	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-19	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,393 Pe= 0,000	Mat="S10"
M1-20	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-20	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,326 Pe= 0,000	Mat="S10"
M1-21	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-21	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,258 Pe= 0,000	Mat="S10"
M1-22	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-22	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,191 Pe= 0,000	Mat="S10"
M1-23	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-23	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,123 Pe= 0,000	Mat="S10"
M1-24	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-24	13,500		q= 0,000 Q= 759,647	65 66,9		2,850 0,000		Pt= 2,056 Pe= 0,000	Mat="S10"
M1-25	13,500					2,850	C=120 0,024	Pf= 0,068	
M1-25	13,500		q= 0,000 Q= 759,648	65 66,9		2,850 0,000		Pt= 1,988 Pe= 0,000	Mat="S10"
M1-26	13,500					2,850	C=120 0,024	Pf= 0,068	

Pipe Information, cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M1-26	13,500		q= 0,000 Q= 759,720	65 66,9		2,850 0,000	C=120	Pt= 1,921 Pe= 0,000 Pf= 0,068	Mat="S10"
M1-27	13,500					2,850	0,024	Pf= 0,068	
M1-27	13,500		q= 0,000 Q= 760,821	65 66,9		2,850 0,000	C=120	Pt= 1,853 Pe= 0,000 Pf= 0,068	Mat="S10"
M1-28	13,500					2,850	0,024	Pf= 0,068	
M1-28	13,500		q= 0,000 Q= 765,905	65 66,9		2,850 0,000	C=120	Pt= 1,785 Pe= 0,000 Pf= 0,069	Mat="S10"
M1-29	13,500					2,850	0,024	Pf= 0,069	
M1-29	13,500		q= 0,000 Q= 779,332	65 66,9		2,850 0,000	C=120	Pt= 1,717 Pe= 0,000 Pf= 0,071	Mat="S10"
M1-30	13,500					2,850	0,025	Pf= 0,071	
M1-30	13,500		q= 0,000 Q= 806,318	65 66,9		2,850 0,000	C=120	Pt= 1,646 Pe= 0,000 Pf= 0,075	Mat="S10"
M1-31	13,500					2,850	0,026	Pf= 0,075	
M1-31	13,500		q= 0,000 Q= 852,828	65 66,9		2,850 0,000	C=120	Pt= 1,571 Pe= 0,000 Pf= 0,084	Mat="S10"
M1-32	13,500					2,850	0,029	Pf= 0,084	
M1-32	13,500		q= 0,000 Q= 925,618	65 66,9		2,850 0,000	C=120	Pt= 1,487 Pe= 0,000 Pf= 0,097	Mat="S10"
M1-33	13,500					2,850	0,034	Pf= 0,097	
M1-33	13,500		q= 0,000 Q=1037,273	65 66,9		2,850 0,000	C=120	Pt= 1,390 Pe= 0,000 Pf= 0,120	Mat="S10"
M1-34	13,500					2,850	0,042	Pf= 0,120	
M1-34	13,500		q= 0,000 Q=1203,365	65 66,9		2,850 0,000	C=120	Pt= 1,269 Pe= 0,000 Pf= 0,158	Mat="S10"
M1-35	13,500					2,850	0,055	Pf= 0,158	
M1-35	13,500		q= 0,000 Q= 955,138	65 66,9		2,850 0,000	C=120	Pt= 1,111 Pe= 0,000 Pf= 0,103	Mat="S10"
M1-36	13,500					2,850	0,036	Pf= 0,103	
M1-36	13,500		q= 0,000 Q= 619,266	65 66,9		2,850 0,000	C=120	Pt= 1,008 Pe= 0,000 Pf= 0,046	Mat="S10"
M1-37	13,500					2,850	0,016	Pf= 0,046	
M1-37	13,500		q= 0,000 Q= 306,437	65 66,9		2,850 0,000	C=120	Pt= 0,962 Pe= 0,000 Pf= 0,013	Mat="S10"
M1-38	13,500					2,850	0,004	Pf= 0,013	
M2-1	13,500		q= 0,000 Q=3244,203	100 108,2		2,500 0,000	C=120	Pt= 3,669 Pe= 0,000 Pf= 0,084	Mat="S10"
M2-2	13,500					2,500	0,033	Pf= 0,084	
M2-2	13,500		q= 0,000 Q=3073,227	100 108,2		2,850 0,000	C=120	Pt= 3,586 Pe= 0,000 Pf= 0,086	Mat="S10"
M2-3	13,500					2,850	0,03	Pf= 0,086	
M2-3	13,500		q= 0,000 Q=2941,696	100 108,2		2,850 0,000	C=120	Pt= 3,500 Pe= 0,000 Pf= 0,079	Mat="S10"
M2-4	13,500					2,850	0,028	Pf= 0,079	

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M2-4	13,500		q= 0,000 100 Q=2845,134 108,2			2,850 0,000		Pt= 3,420 Mat="S10" Pe= 0,000	
M2-5	13,500					2,850	C=120 0,026	Pf= 0,075	
M2-5	13,500		q= 0,000 100 Q=2778,221 108,2			2,850 0,000		Pt= 3,345 Mat="S10" Pe= 0,000	
M2-6	13,500					2,850	C=120 0,025	Pf= 0,072	
M2-6	13,500		q= 0,000 100 Q=2735,254 108,2			2,850 0,000		Pt= 3,274 Mat="S10" Pe= 0,000	
M2-7	13,500					2,850	C=120 0,024	Pf= 0,069	
M2-7	13,500		q= 0,000 100 Q=2710,488 108,2			2,850 0,000		Pt= 3,204 Mat="S10" Pe= 0,000	
M2-8	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-8	13,500		q= 0,000 100 Q=2698,430 108,2			2,850 0,000		Pt= 3,136 Mat="S10" Pe= 0,000	
M2-9	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-9	13,500		q= 0,000 100 Q=2694,979 108,2			2,850 0,000		Pt= 3,068 Mat="S10" Pe= 0,000	
M2-10	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-10	13,500		q= 0,000 100 Q=2693,234 108,2			2,850 0,000		Pt= 3,001 Mat="S10" Pe= 0,000	
M2-11	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-11	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,933 Mat="S10" Pe= 0,000	
M2-12	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-12	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,866 Mat="S10" Pe= 0,000	
M2-13	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-13	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,798 Mat="S10" Pe= 0,000	
M2-14	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-14	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,731 Mat="S10" Pe= 0,000	
M2-15	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-15	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,663 Mat="S10" Pe= 0,000	
M2-16	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-16	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,596 Mat="S10" Pe= 0,000	
M2-17	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-17	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,528 Mat="S10" Pe= 0,000	
M2-18	13,500					2,850	C=120 0,024	Pf= 0,068	
M2-18	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,461 Mat="S10" Pe= 0,000	
M2-19	13,500					2,850	C=120 0,024	Pf= 0,068	

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M2-19	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,393 Mat="S10" Pe= 0,000	
M2-20	13,500					2,850	0,024	Pf= 0,068	
M2-20	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,326 Mat="S10" Pe= 0,000	
M2-21	13,500					2,850	0,024	Pf= 0,068	
M2-21	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,258 Mat="S10" Pe= 0,000	
M2-22	13,500					2,850	0,024	Pf= 0,068	
M2-22	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,191 Mat="S10" Pe= 0,000	
M2-23	13,500					2,850	0,024	Pf= 0,068	
M2-23	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,123 Mat="S10" Pe= 0,000	
M2-24	13,500					2,850	0,024	Pf= 0,068	
M2-24	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 2,056 Mat="S10" Pe= 0,000	
M2-25	13,500					2,850	0,024	Pf= 0,068	
M2-25	13,500		q= 0,000 100 Q=2693,189 108,2			2,850 0,000		Pt= 1,988 Mat="S10" Pe= 0,000	
M2-26	13,500					2,850	0,024	Pf= 0,068	
M2-26	13,500		q= 0,000 100 Q=2693,116 108,2			2,850 0,000		Pt= 1,921 Mat="S10" Pe= 0,000	
M2-27	13,500					2,850	0,024	Pf= 0,068	
M2-27	13,500		q= 0,000 100 Q=2692,016 108,2			2,850 0,000		Pt= 1,853 Mat="S10" Pe= 0,000	
M2-28	13,500					2,850	0,024	Pf= 0,067	
M2-28	13,500		q= 0,000 100 Q=2686,931 108,2			2,850 0,000		Pt= 1,786 Mat="S10" Pe= 0,000	
M2-29	13,500					2,850	0,024	Pf= 0,067	
M2-29	13,500		q= 0,000 100 Q=2673,504 108,2			2,850 0,000		Pt= 1,718 Mat="S10" Pe= 0,000	
M2-30	13,500					2,850	0,023	Pf= 0,067	
M2-30	13,500		q= 0,000 100 Q=2646,518 108,2			2,850 0,000		Pt= 1,652 Mat="S10" Pe= 0,000	
M2-31	13,500					2,850	0,023	Pf= 0,065	
M2-31	13,500		q= 0,000 100 Q=2600,009 108,2			2,850 0,000		Pt= 1,586 Mat="S10" Pe= 0,000	
M2-32	13,500					2,850	0,022	Pf= 0,063	
M2-32	13,500		q= 0,000 100 Q=2527,218 108,2			2,050 0,000		Pt= 1,523 Mat="S10" Pe= 0,000	
DER'	13,500					2,050	0,021	Pf= 0,043	
M2-33	13,500		q= 0,000 100 Q=1845,929 108,2			2,850 0,000		Pt= 1,469 Mat="S10" Pe= 0,000	
M2-34	13,500					2,850	0,012	Pf= 0,034	

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M2-34	13,500		q= 0,000 100 Q=1679,837 108,2			2,850 0,000	C=120	Pt= 1,436 Mat="S10" Pe= 0,000	
M2-35	13,500					2,850	0,01	Pf= 0,028	
M2-35	13,500		q= 0,000 100 Q=1348,166 108,2			2,850 0,000	C=120	Pt= 1,408 Mat="S10" Pe= 0,000	
M2-36	13,500					2,850	0,007	Pf= 0,019	
M2-36	13,500		q= 0,000 100 Q= 904,094 108,2			2,850 0,000	C=120	Pt= 1,389 Mat="S10" Pe= 0,000	
M2-37	13,500					2,850	0,003	Pf= 0,009	
M2-37	13,500		q= 0,000 100 Q= 453,001 108,2			2,850 0,000	C=120	Pt= 1,380 Mat="S10" Pe= 0,000	
M2-38	13,500					2,850	0,001	Pf= 0,002	
DER'	13,500		q= 0,000 100 Q=1957,584 108,2			0,800 0,000	C=120	Pt= 1,480 Mat="S10" Pe= 0,000	
M2-33	13,500					0,800	0,013	Pf= 0,011	
R1-1	15,750		q= 0,000 50 Q=-208,634 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,230 Mat="S10" Pe= 0,000	
R2-1	15,750					32,246	0,006	Pf= -0,185	
R1-2	15,750		q= 0,000 50 Q=-170,976 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,214 Mat="S10" Pe= 0,000	
R2-2	15,750					32,246	0,004	Pf= -0,128	
R1-3	15,750		q= 0,000 50 Q=-131,531 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,186 Mat="S10" Pe= 0,000	
R2-3	15,750					32,246	0,002	Pf= -0,079	
R1-4	15,750		q= 0,000 50 Q= -96,562 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,147 Mat="S10" Pe= 0,000	
R2-4	15,750					32,246	0,001	Pf= -0,044	
R1-5	15,750		q= 0,000 50 Q= -66,912 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,098 Mat="S10" Pe= 0,000	
R2-5	15,750					32,246	0,001	Pf= -0,023	
R1-6	15,750		q= 0,000 50 Q= -42,968 54,8		2E=3,746	28,500 3,746	C=120	Pt= 3,042 Mat="S10" Pe= 0,000	
R2-6	15,750					32,246	0,000	Pf= -0,010	
R1-7	15,750		q= 0,000 50 Q= -24,765 54,8		2E=3,746	28,500 3,746	C=120	Pt= 2,980 Mat="S10" Pe= 0,000	
R2-7	15,750					32,246	0,000	Pf= -0,004	
R1-8	15,750		q= 0,000 50 Q= -12,058 54,8		2E=3,746	28,500 3,746	C=120	Pt= 2,915 Mat="S10" Pe= 0,000	
R2-8	15,750					32,246	0	Pf= -0,001	
R1-9	15,750		q= 0,000 50 Q= -4,351 54,8		2E=3,746	28,500 3,746	C=120	Pt= 2,848 Mat="S10" Pe= 0,000	
R2-9	15,750					32,246	0	Pf= 0,000	
R1-10	15,750		q= 0,000 50 Q= -0,845 54,8		2E=3,746	28,500 3,746	C=120	Pt= 2,780 Mat="S10" Pe= 0,000	
R2-10	15,750					32,246	0	Pf= 0,000	



Pipe Information, cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
R1-11	15,750		q= 0,000 Q= -0,045	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,713 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-11	15,750								
R1-12	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,545 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-12	15,750								
R1-13	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,578 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-13	15,750								
R1-14	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,510 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-14	15,750								
R1-15	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,443 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-15	15,750								
R1-16	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,375 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-16	15,750								
R1-17	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,308 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-17	15,750								
R1-18	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,240 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-18	15,750								
R1-19	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,173 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-19	15,750								
R1-20	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,105 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-20	15,750								
R1-21	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 2,038 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-21	15,750								
R1-22	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 1,970 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-22	15,750								
R1-23	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 1,903 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-23	15,750								
R1-24	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 1,835 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-24	15,750								
R1-25	15,750		q= 0,000 Q= 0,000	50 54,8	2E=3,746	28,500 3,746 32,246	C=120 0	Pt= 1,768 Mat="S10" Pe= 0,000 Pf= 0,000	
R2-25	15,750								

Pipe Information. cont.

Node 1	Elev	Discharge	Nom	Fittings	L [M]	C factor	total (Pt)	Notes
Node 2	[M]	& Flow	i.d.	num & length	F [M]	bar/M	elev (Pe)	
		[lpm]	[mm]	[M]	T [M]		frict (Pf)	
R1-26	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,700	Mat="S10"
R2-26	15,750	Q= -0,073	54,8		3,746	C=120	Pe= 0,000	
					32,246	0	Pf= 0,000	
R1-27	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,633	Mat="S10"
R2-27	15,750	Q= -1,101	54,8		3,746	C=120	Pe= 0,000	
					32,246	0	Pf= 0,000	
R1-28	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,565	Mat="S10"
R2-28	15,750	Q= -5,085	54,8		3,746	C=120	Pe= 0,000	
					32,246	0	Pf= 0,000	
R1-29	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,496	Mat="S10"
R2-29	15,750	Q= -13,427	54,8		3,746	C=120	Pe= 0,000	
					32,246	0	Pf= -0,001	
R1-30	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,426	Mat="S10"
R2-30	15,750	Q= -26,986	54,8		3,746	C=120	Pe= 0,000	
					32,246	0,000	Pf= -0,004	
R1-31	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,352	Mat="S10"
R2-31	15,750	Q= -46,510	54,8		3,746	C=120	Pe= 0,000	
					32,246	0,000	Pf= -0,012	
R1-32	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,271	Mat="S10"
R2-32	15,750	Q= -72,790	54,8		3,746	C=120	Pe= 0,000	
					32,246	0,001	Pf= -0,026	
R1-33	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,180	Mat="S10"
R2-33	15,750	Q= -111,655	54,8		3,746	C=120	Pe= 0,000	
					32,246	0,002	Pf= -0,058	
R1-34	15,750	q= 0,000	50	2E=3,746	28,500		Pt= 1,072	Mat="S10"
R2-34	15,750	Q= -166,092	54,8		3,746	C=120	Pe= 0,000	
					32,246	0,004	Pf= -0,121	
R1-35	15,750	q= 0,000	50	1E=1,873	1,000		Pt= 0,843	Mat="S10"
L35-1	15,750	Q= 248,228	54,8		1,873	C=120	Pe= 0,000	
					2,873	0,008	Pf= 0,023	
L35-1	15,750	160 q= 144,941	50		3,000		Pt= 0,821	Mat="S10"
		Q= 103,286	54,8		0,000	C=120	Pe= 0,000	
L35-2	15,750				3,000	0,002	Pf= 0,005	
L35-2	15,750	160 q= 144,527	50		3,000		Pt= 0,816	Mat="S10"
		Q= -41,241	54,8		0,000	C=120	Pe= 0,000	
L35-3	15,750				3,000	0,000	Pf= -0,001	
L35-3	15,750	160 q= 144,603	50		3,000		Pt= 0,817	Mat="S10"
		Q= -185,844	54,8		0,000	C=120	Pe= 0,000	
L35-4	15,750				3,000	0,005	Pf= -0,014	
L35-4	15,750	160 q= 145,827	50		3,000		Pt= 0,831	Mat="S10"
		Q= -331,671	54,8		0,000	C=120	Pe= 0,000	
L35-5	15,750				3,000	0,014	Pf= -0,041	
L35-5	15,750	q= 0,000	50		3,000		Pt= 0,871	Mat="S10"
		Q= -331,671	54,8		0,000	C=120	Pe= 0,000	
L35-6	15,750				3,000	0,014	Pf= -0,041	

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
L35-6	15,750		q= 0,000 Q=-331,671	50 54,8		3,000 0,000		Pt= 0,912 Pe= 0,000	Mat="S10"
L35-7	15,750					3,000	C=120 0,014	Pf= -0,041	
L35-7	15,750		q= 0,000 Q=-331,671	50 54,8		3,000 0,000		Pt= 0,952 Pe= 0,000	Mat="S10"
L35-8	15,750					3,000	C=120 0,014	Pf= -0,041	
L35-8	15,750		q= 0,000 Q=-331,671	50 54,8		3,000 0,000		Pt= 0,993 Pe= 0,000	Mat="S10"
L35-9	15,750					3,000	C=120 0,014	Pf= -0,041	
L35-9	15,750		q= 0,000 Q=-331,671	50 54,8		3,000 0,000		Pt= 1,033 Pe= 0,000	Mat="S10"
L35-10	15,750					3,000	C=120 0,014	Pf= -0,041	
L35-10	15,750		q= 0,000 Q=-331,671	50 54,8	1E=1,873	0,500 1,873		Pt= 1,074 Pe= 0,000	Mat="S10"
R2-35	15,750					2,373	C=120 0,014	Pf= -0,032	
R1-36	15,750		q= 0,000 Q= 335,872	50 54,8	1E=1,873	1,000 1,873		Pt= 0,705 Pe= 0,000	Mat="S10"
L36-1	15,750					2,873	C=120 0,014	Pf= 0,040	
L36-1	15,750	160	q= 130,463 Q= 205,410	50 54,8		3,000 0,000		Pt= 0,665 Pe= 0,000	Mat="S10"
L36-2	15,750					3,000	C=120 0,006	Pf= 0,017	
L36-2	15,750	160	q= 128,813 Q= 76,597	50 54,8		3,000 0,000		Pt= 0,648 Pe= 0,000	Mat="S10"
L36-3	15,750					3,000	C=120 0,001	Pf= 0,003	
L36-3	15,750	160	q= 128,543 Q= -51,949	50 54,8		3,000 0,000		Pt= 0,645 Pe= 0,000	Mat="S10"
L36-4	15,750					3,000	C=120 0,000	Pf= -0,001	
L36-4	15,750	160	q= 128,676 Q=-180,624	50 54,8		3,000 0,000		Pt= 0,647 Pe= 0,000	Mat="S10"
L36-5	15,750					3,000	C=120 0,004	Pf= -0,013	
L36-5	15,750	160	q= 129,979 Q=-310,604	50 54,8		3,000 0,000		Pt= 0,660 Pe= 0,000	Mat="S10"
L36-6	15,750					3,000	C=120 0,012	Pf= -0,036	
L36-6	15,750	160	q= 133,468 Q=-444,072	50 54,8		3,000 0,000		Pt= 0,696 Pe= 0,000	Mat="S10"
L36-7	15,750					3,000	C=120 0,023	Pf= -0,070	
L36-7	15,750		q= 0,000 Q=-444,072	50 54,8		3,000 0,000		Pt= 0,765 Pe= 0,000	Mat="S10"
L36-8	15,750					3,000	C=120 0,023	Pf= -0,070	
L36-8	15,750		q= 0,000 Q=-444,072	50 54,8		3,000 0,000		Pt= 0,835 Pe= 0,000	Mat="S10"
L36-9	15,750					3,000	C=120 0,023	Pf= -0,070	
L36-9	15,750		q= 0,000 Q=-444,072	50 54,8		3,000 0,000		Pt= 0,905 Pe= 0,000	Mat="S10"
L36-10	15,750					3,000	C=120 0,023	Pf= -0,070	

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
L36-10	15,750		q= 0,000 Q=-444,072	50 54,8	1E=1,873	0,500 1,873 2,373		Pt= 0,974 Pe= 0,000 Pf= -0,055	Mat="S10"
R2-36	15,750						C=120 0,023		
R1-37	15,750		q= 0,000 Q= 312,829	50 54,8	1E=1,873	1,000 1,873 2,873		Pt= 0,669 Pe= 0,000 Pf= 0,035	Mat="S10"
L37-1	15,750						C=120 0,012		
L37-1	15,750	160	q= 127,371 Q= 185,458	50 54,8		3,000 0,000 3,000		Pt= 0,634 Pe= 0,000 Pf= 0,014	Mat="S10"
L37-2	15,750						C=120 0,005		
L37-2	15,750	160	q= 125,974 Q= 59,484	50 54,8		3,000 0,000 3,000		Pt= 0,620 Pe= 0,000 Pf= 0,002	Mat="S10"
L37-3	15,750						C=120 0,001		
L37-3	15,750	160	q= 125,803 Q= -66,319	50 54,8		3,000 0,000 3,000		Pt= 0,618 Pe= 0,000 Pf= -0,002	Mat="S10"
L37-4	15,750						C=120 0,001		
L37-4	15,750	160	q= 126,012 Q=-192,331	50 54,8		3,000 0,000 3,000		Pt= 0,620 Pe= 0,000 Pf= -0,015	Mat="S10"
L37-5	15,750						C=120 0,005		
L37-5	15,750	160	q= 127,506 Q=-319,837	50 54,8		3,000 0,000 3,000		Pt= 0,635 Pe= 0,000 Pf= -0,038	Mat="S10"
L37-6	15,750						C=120 0,013		
L37-6	15,750	160	q= 131,256 Q=-451,093	50 54,8		3,000 0,000 3,000		Pt= 0,673 Pe= 0,000 Pf= -0,072	Mat="S10"
L37-7	15,750						C=120 0,024		
L37-7	15,750		q= 0,000 Q=-451,093	50 54,8		3,000 0,000 3,000		Pt= 0,745 Pe= 0,000 Pf= -0,072	Mat="S10"
L37-8	15,750						C=120 0,024		
L37-8	15,750		q= 0,000 Q=-451,093	50 54,8		3,000 0,000 3,000		Pt= 0,816 Pe= 0,000 Pf= -0,072	Mat="S10"
L37-9	15,750						C=120 0,024		
L37-9	15,750		q= 0,000 Q=-451,093	50 54,8		3,000 0,000 3,000		Pt= 0,888 Pe= 0,000 Pf= -0,072	Mat="S10"
L37-10	15,750						C=120 0,024		
L37-10	15,750		q= 0,000 Q=-451,093	50 54,8	1E=1,873	0,500 1,873 2,373		Pt= 0,959 Pe= 0,000 Pf= -0,057	Mat="S10"
R2-37	15,750						C=120 0,024		
R1-38	15,750		q= 0,000 Q= 306,437	50 54,8	1E=1,873	1,000 1,873 2,873		Pt= 0,659 Pe= 0,000 Pf= 0,034	Mat="S10"
L38-1	15,750						C=120 0,012		
L38-1	15,750	160	q= 126,509 Q= 179,928	50 54,8		3,000 0,000 3,000		Pt= 0,625 Pe= 0,000 Pf= 0,013	Mat="S10"
L38-2	15,750						C=120 0,004		
L38-2	15,750	160	q= 125,179 Q= 54,749	50 54,8		3,000 0,000 3,000		Pt= 0,612 Pe= 0,000 Pf= 0,001	Mat="S10"
L38-3	15,750						C=120 0,000		

Pipe Information, cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
L38-3	15,750	160	q= 125,031 Q= -70,282	50 54,8		3,000 0,000 3,000		Pt= 0,611 Pe= 0,000 Pf= -0,002	Mat="S10"
L38-4	15,750						C=120 0,001		
L38-4	15,750	160	q= 125,266 Q=-195,548	50 54,8		3,000 0,000 3,000		Pt= 0,613 Pe= 0,000 Pf= -0,015	Mat="S10"
L38-5	15,750						C=120 0,005		
L38-5	15,750	160	q= 126,815 Q=-322,363	50 54,8		3,000 0,000 3,000		Pt= 0,628 Pe= 0,000 Pf= -0,038	Mat="S10"
L38-6	15,750						C=120 0,013		
L38-6	15,750	160	q= 130,639 Q=-453,001	50 54,8		3,000 0,000 3,000		Pt= 0,667 Pe= 0,000 Pf= -0,072	Mat="S10"
L38-7	15,750						C=120 0,024		
L38-7	15,750		q= 0,000 Q=-453,001	50 54,8		3,000 0,000 3,000		Pt= 0,739 Pe= 0,000 Pf= -0,072	Mat="S10"
L38-8	15,750						C=120 0,024		
L38-8	15,750		q= 0,000 Q=-453,001	50 54,8		3,000 0,000 3,000		Pt= 0,811 Pe= 0,000 Pf= -0,072	Mat="S10"
L38-9	15,750						C=120 0,024		
L38-9	15,750		q= 0,000 Q=-453,001	50 54,8		3,000 0,000 3,000		Pt= 0,883 Pe= 0,000 Pf= -0,072	Mat="S10"
L38-10	15,750						C=120 0,024		
L38-10	15,750		q= 0,000 Q=-453,001	50 54,8	1E=1,873	0,500 1,873 2,373		Pt= 0,955 Pe= 0,000 Pf= -0,057	Mat="S10"
R2-38	15,750						C=120 0,024		
M1-1	13,500		q= 0,000 Q=-208,634	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,416 Pe= 0,221 Pf= -0,034	Mat="S10"
R1-1	15,750						C=120 0,006		
M1-2	13,500		q= 0,000 Q=-170,976	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,410 Pe= 0,221 Pf= -0,024	Mat="S10"
R1-2	15,750						C=120 0,004		
M1-3	13,500		q= 0,000 Q=-131,531	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,392 Pe= 0,221 Pf= -0,015	Mat="S10"
R1-3	15,750						C=120 0,002		
M1-4	13,500		q= 0,000 Q= -96,562	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,359 Pe= 0,221 Pf= -0,008	Mat="S10"
R1-4	15,750						C=120 0,001		
M1-5	13,500		q= 0,000 Q= -66,912	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,315 Pe= 0,221 Pf= -0,004	Mat="S10"
R1-5	15,750						C=120 0,001		
M1-6	13,500		q= 0,000 Q= -42,968	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,260 Pe= 0,221 Pf= -0,002	Mat="S10"
R1-6	15,750						C=120 0,000		
M1-7	13,500		q= 0,000 Q= -24,765	50 54,8	1T=3,758	2,250 3,758 6,008		Pt= 3,200 Pe= 0,221 Pf= -0,001	Mat="S10"
R1-7	15,750						C=120 0,000		

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M1-8 R1-8	13,500 15,750		q= 0,000 Q= -12,058	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,135 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-9 R1-9	13,500 15,750		q= 0,000 Q= -4,351	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,068 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-10 R1-10	13,500 15,750		q= 0,000 Q= -0,845	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,001 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-11 R1-11	13,500 15,750		q= 0,000 Q= -0,045	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,933 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-12 R1-12	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,866 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-13 R1-13	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,798 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-14 R1-14	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,731 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-15 R1-15	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,663 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-16 R1-16	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,596 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-17 R1-17	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,528 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-18 R1-18	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,461 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-19 R1-19	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,393 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-20 R1-20	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,326 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-21 R1-21	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,258 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-22 R1-22	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,191 Pe= 0,221 Pf= 0,000	Mat="S10"

Pipe Information, cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M1-23 R1-23	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,123 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-24 R1-24	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,056 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-25 R1-25	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,988 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-26 R1-26	13,500 15,750		q= 0,000 Q= -0,073	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,921 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-27 R1-27	13,500 15,750		q= 0,000 Q= -1,101	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,853 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-28 R1-28	13,500 15,750		q= 0,000 Q= -5,085	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,785 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-29 R1-29	13,500 15,750		q= 0,000 Q= -13,427	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,717 Pe= 0,221 Pf= 0,000	Mat="S10"
M1-30 R1-30	13,500 15,750		q= 0,000 Q= -26,986	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 1,646 Pe= 0,221 Pf= -0,001	Mat="S10"
M1-31 R1-31	13,500 15,750		q= 0,000 Q= -46,510	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 1,571 Pe= 0,221 Pf= -0,002	Mat="S10"
M1-32 R1-32	13,500 15,750		q= 0,000 Q= -72,790	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,001	Pt= 1,487 Pe= 0,221 Pf= -0,005	Mat="S10"
M1-33 R1-33	13,500 15,750		q= 0,000 Q= -111,655	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,002	Pt= 1,390 Pe= 0,221 Pf= -0,011	Mat="S10"
M1-34 R1-34	13,500 15,750		q= 0,000 Q= -166,092	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,004	Pt= 1,269 Pe= 0,221 Pf= -0,023	Mat="S10"
M1-35 R1-35	13,500 15,750		q= 0,000 Q= 248,228	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,008	Pt= 1,111 Pe= 0,221 Pf= 0,047	Mat="S10"
M1-36 R1-36	13,500 15,750		q= 0,000 Q= 335,872	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,014	Pt= 1,008 Pe= 0,221 Pf= 0,083	Mat="S10"
M1-37 R1-37	13,500 15,750		q= 0,000 Q= 312,829	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,012	Pt= 0,962 Pe= 0,221 Pf= 0,073	Mat="S10"

Pipe Information, cont.

Node 1	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M1-38	13,500		q= 0,000 Q= 306,437	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,012	Pt= 0,949 Pe= 0,221 Pf= 0,070	Mat="S10"
R1-38	15,750								
M2-1	13,500		q= 0,000 Q= 208,634	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,006	Pt= 3,669 Pe= 0,221 Pf= 0,034	Mat="S10"
R2-1	15,750								
M2-2	13,500		q= 0,000 Q= 170,976	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,004	Pt= 3,586 Pe= 0,221 Pf= 0,024	Mat="S10"
R2-2	15,750								
M2-3	13,500		q= 0,000 Q= 131,531	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,002	Pt= 3,500 Pe= 0,221 Pf= 0,015	Mat="S10"
R2-3	15,750								
M2-4	13,500		q= 0,000 Q= 96,562	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,001	Pt= 3,420 Pe= 0,221 Pf= 0,008	Mat="S10"
R2-4	15,750								
M2-5	13,500		q= 0,000 Q= 66,912	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,001	Pt= 3,345 Pe= 0,221 Pf= 0,004	Mat="S10"
R2-5	15,750								
M2-6	13,500		q= 0,000 Q= 42,968	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 3,274 Pe= 0,221 Pf= 0,002	Mat="S10"
R2-6	15,750								
M2-7	13,500		q= 0,000 Q= 24,765	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 3,204 Pe= 0,221 Pf= 0,001	Mat="S10"
R2-7	15,750								
M2-8	13,500		q= 0,000 Q= 12,058	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,136 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-8	15,750								
M2-9	13,500		q= 0,000 Q= 4,351	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,068 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-9	15,750								
M2-10	13,500		q= 0,000 Q= 0,845	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 3,001 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-10	15,750								
M2-11	13,500		q= 0,000 Q= 0,045	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,933 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-11	15,750								
M2-12	13,500		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,866 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-12	15,750								
M2-13	13,500		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,798 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-13	15,750								
M2-14	13,500		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,731 Pe= 0,221 Pf= 0,000	Mat="S10"
R2-14	15,750								

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M2-15 R2-15	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,663 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-16 R2-16	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,596 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-17 R2-17	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,528 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-18 R2-18	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,461 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-19 R2-19	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,393 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-20 R2-20	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,326 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-21 R2-21	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,258 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-22 R2-22	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,191 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-23 R2-23	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,123 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-24 R2-24	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 2,056 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-25 R2-25	13,500 15,750		q= 0,000 Q= 0,000	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,988 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-26 R2-26	13,500 15,750		q= 0,000 Q= 0,073	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,921 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-27 R2-27	13,500 15,750		q= 0,000 Q= 1,101	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,853 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-28 R2-28	13,500 15,750		q= 0,000 Q= 5,085	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,786 Pe= 0,221 Pf= 0,000	Mat="S10"
M2-29 R2-29	13,500 15,750		q= 0,000 Q= 13,427	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0	Pt= 1,718 Pe= 0,221 Pf= 0,000	Mat="S10"

Pipe Information. cont.

Node 1 Node 2	Elev [M]	K-factor	Discharge & Flow [lpm]	Nom i.d. [mm]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
M2-30 R2-30	13,500 15,750		q= 0,000 Q= 26,986	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 1,652 Pe= 0,221 Pf= 0,001	Mat="S10"
M2-31 R2-31	13,500 15,750		q= 0,000 Q= 46,510	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,000	Pt= 1,586 Pe= 0,221 Pf= 0,002	Mat="S10"
M2-32 R2-32	13,500 15,750		q= 0,000 Q= 72,790	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,001	Pt= 1,523 Pe= 0,221 Pf= 0,005	Mat="S10"
M2-33 R2-33	13,500 15,750		q= 0,000 Q= 111,655	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,002	Pt= 1,469 Pe= 0,221 Pf= 0,011	Mat="S10"
M2-34 R2-34	13,500 15,750		q= 0,000 Q= 166,092	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,004	Pt= 1,436 Pe= 0,221 Pf= 0,023	Mat="S10"
M2-35 R2-35	13,500 15,750		q= 0,000 Q= 331,671	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,014	Pt= 1,408 Pe= 0,221 Pf= 0,081	Mat="S10"
M2-36 R2-36	13,500 15,750		q= 0,000 Q= 444,072	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,023	Pt= 1,389 Pe= 0,221 Pf= 0,139	Mat="S10"
M2-37 R2-37	13,500 15,750		q= 0,000 Q= 451,093	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,024	Pt= 1,380 Pe= 0,221 Pf= 0,143	Mat="S10"
M2-38 R2-38	13,500 15,750		q= 0,000 Q= 453,001	50 54,8	1T=3,758	2,250 3,758 6,008	C=120 0,024	Pt= 1,377 Pe= 0,221 Pf= 0,145	Mat="S10"
DER N6	2,000 -0,100		q= 0,000 Q=1210,204	100 108,2	1T=8,015 3E=12,023 5TN=12,023	33,400 32,061 65,461	C=120 0,005	Pt= 5,498 Pe= -0,206 Pf= 0,353	Mat="S10"
N6 N6-1	-0,100 4,450		q= 0,000 Q=1210,204	100 108,2	1E=4,008	4,550 4,008 8,558	C=120 0,005	Pt= 5,351 Pe= 0,446 Pf= 0,046	Mat="S10"
N6-1 N6-2	4,450 8,950		q= 0,000 Q= 618,621	100 108,2	1TN=2,405	4,500 2,405 6,905	C=120 0,002	Pt= 4,859 Pe= 0,441 Pf= 0,011	Mat="S10"
DER' N6'	13,500 -0,100		q= 0,000 Q= 569,634	65 66,9	1T=5,019 5TN=8,365 1E=2,509	41,550 15,893 57,443	C=120 0,014	Pt= 1,480 Pe= -1,333 Pf= 0,799	Mat="S10"
N6' N6-1'	-0,100 4,450		q= 0,000 Q= 569,634	65 66,9	1E=2,509	4,550 2,509 7,059	C=120 0,014	Pt= 2,014 Pe= 0,446 Pf= 0,098	Mat="S10"
N6-1' N6-2'	4,450 8,950		q= 0,000 Q= 199,626	65 66,9	1T=5,019	4,500 5,019 9,519	C=120 0,002	Pt= 1,470 Pe= 0,441 Pf= 0,019	Mat="S10"

Pipe Information. cont.

Node 1	Elev	Discharge	Nom	Fittings	L [M]	C factor	total (Pt)	
Node 2	[M]	& Flow	i.d.	num & length	F [M]	bar/M	elev (Pe)	Notes
		[lpm]	[mm]	[M]	T [M]		frict (Pf)	
N6-2	8,950	q= 0,000	50	1T=3,758	72,750		Pt= 4,407	Mat="S10"
N6-232	8,950	Q= 618,621	54,8		3,758	C=120	Pe= 0,000	
					76,508	0,043	Pf= 3,275	
N6-232	8,950	115 q= 122,358	50		2,300		Pt= 1,132	Mat="S10"
		Q= 496,262	54,8		0,000	C=120	Pe= 0,000	
N6-233	8,950				2,300	0,028	Pf= 0,065	
N6-233	8,950	115 q= 118,766	50		2,300		Pt= 1,067	Mat="S10"
		Q= 377,496	54,8		0,000	C=120	Pe= 0,000	
N6-234	8,950				2,300	0,017	Pf= 0,039	
N6-234	8,950	115 q= 116,547	50		2,300		Pt= 1,027	Mat="S10"
		Q= 260,949	54,8		0,000	C=120	Pe= 0,000	
N6-235	8,950				2,300	0,009	Pf= 0,020	
N6-235	8,950	115 q= 115,410	50		2,300		Pt= 1,007	Mat="S10"
		Q= 145,538	54,8		0,000	C=120	Pe= 0,000	
N6-236	8,950				2,300	0,003	Pf= 0,007	
N6-236	8,950	115 q= 115,022	50		2,300		Pt= 1,000	Mat="S10"
		Q= 30,517	54,8		0,000	C=120	Pe= 0,000	
N6-237	8,950				2,300	0,000	Pf= 0,000	
N6-237	8,950	115 q= 115,000	50		2,300		Pt= 1,000	Mat="S10"
		Q= -84,483	54,8		0,000	C=120	Pe= 0,000	
N6-238	8,950				2,300	0,001	Pf= -0,002	
N6-238	8,950	115 q= 115,142	50		1,350		Pt= 1,002	Mat="S10"
		Q=-199,626	54,8		0,000	C=120	Pe= 0,000	
N6-2'	8,950				1,350	0,005	Pf= -0,007	
N6-1	4,450	q= 0,000	50	1T=3,758	80,800		Pt= 4,859	Mat="S10"
		Q= 591,584	54,8		3,758	C=120	Pe= 0,000	
N6-171	4,450				84,558	0,039	Pf= 3,333	
N6-171	4,450	115 q= 142,082	50		2,300		Pt= 1,526	Mat="S10"
		Q= 449,501	54,8		0,000	C=120	Pe= 0,000	
N6-173	4,450				2,300	0,024	Pf= 0,055	
N6-173	4,450	115 q= 139,521	50		2,300		Pt= 1,472	Mat="S10"
		Q= 175,833	54,8		0,000	C=120	Pe= 0,000	
N6-175	4,450				2,300	0,004	Pf= 0,010	
N6-175	4,450	115 q= 139,065	50		2,300		Pt= 1,462	Mat="S10"
		Q= -96,939	54,8		0,000	C=120	Pe= 0,000	
N6-177	4,450				2,300	0,001	Pf= -0,003	
N6-177	4,450	115 q= 139,217	50		0,250		Pt= 1,466	Mat="S10"
		Q=-370,009	54,8		0,000	C=120	Pe= 0,000	
N6-1'	4,450				0,250	0,017	Pf= -0,004	
N6-171	4,450	115 q= 142,082	25		1,300		Pt= 1,526	Mat="S40"
		Q= 0,000	26,6		0,000	C=120	Pe= 0,000	
N6-172	4,450				1,300	0	Pf= 0,000	
N6-173	4,450	115 q= 139,521	25		1,300		Pt= 1,472	Mat="S40"
		Q= 134,148	26,6		0,000	C=120	Pe= 0,000	
N6-174	4,450				1,300	0,086	Pf= 0,111	



Pipe Information, cont.

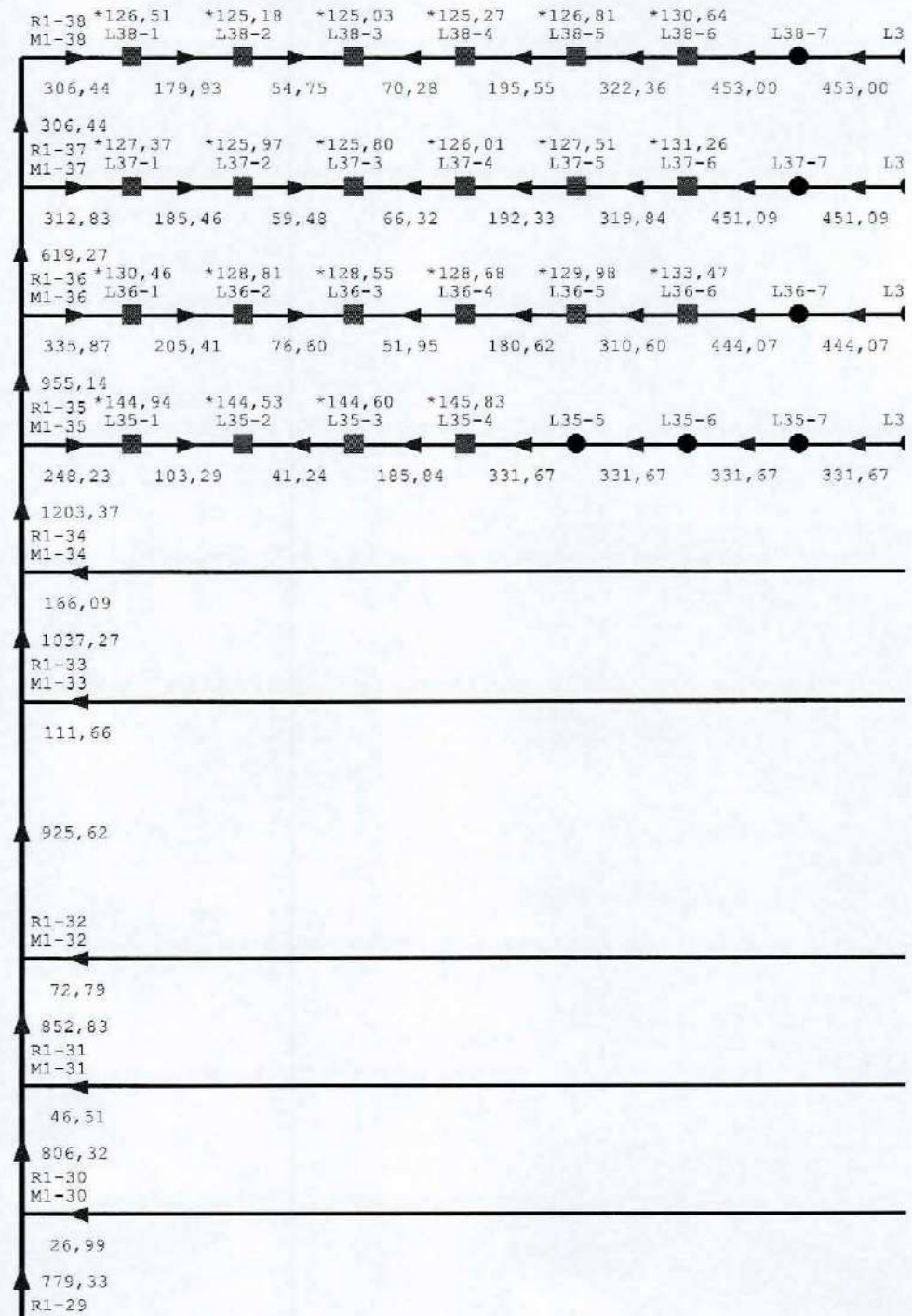
Node 1	Elev	K-factor	Discharge & Flow	Nom i.d.	Fittings num & length	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
Node 2	[M]		[lpm]	[mm]	[M]				
N6-175	4,450	115	q= 139,065 Q= 133,707	25 26,6		1,300 0,000 1,300		Pt= 1,462 Pe= 0,000 Pf= 0,111	Mat="S40"
N6-176	4,450						C=120 0,085		
N6-177	4,450	115	q= 139,217 Q= 133,853	25 26,6		1,300 0,000 1,300		Pt= 1,466 Pe= 0,000 Pf= 0,111	Mat="S40"
N6-178	4,450						C=120 0,085		

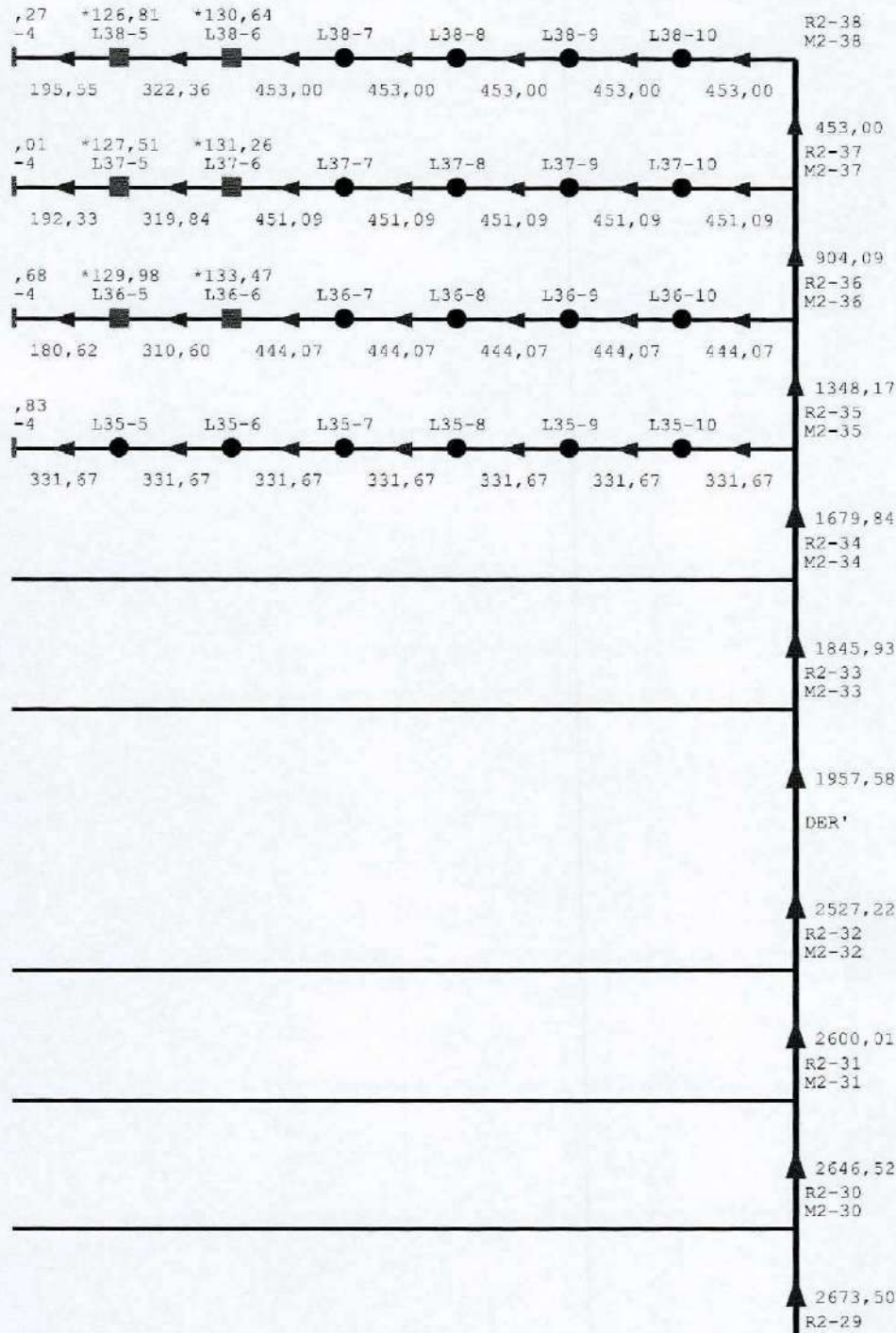
Material Codes**Pipe Material**

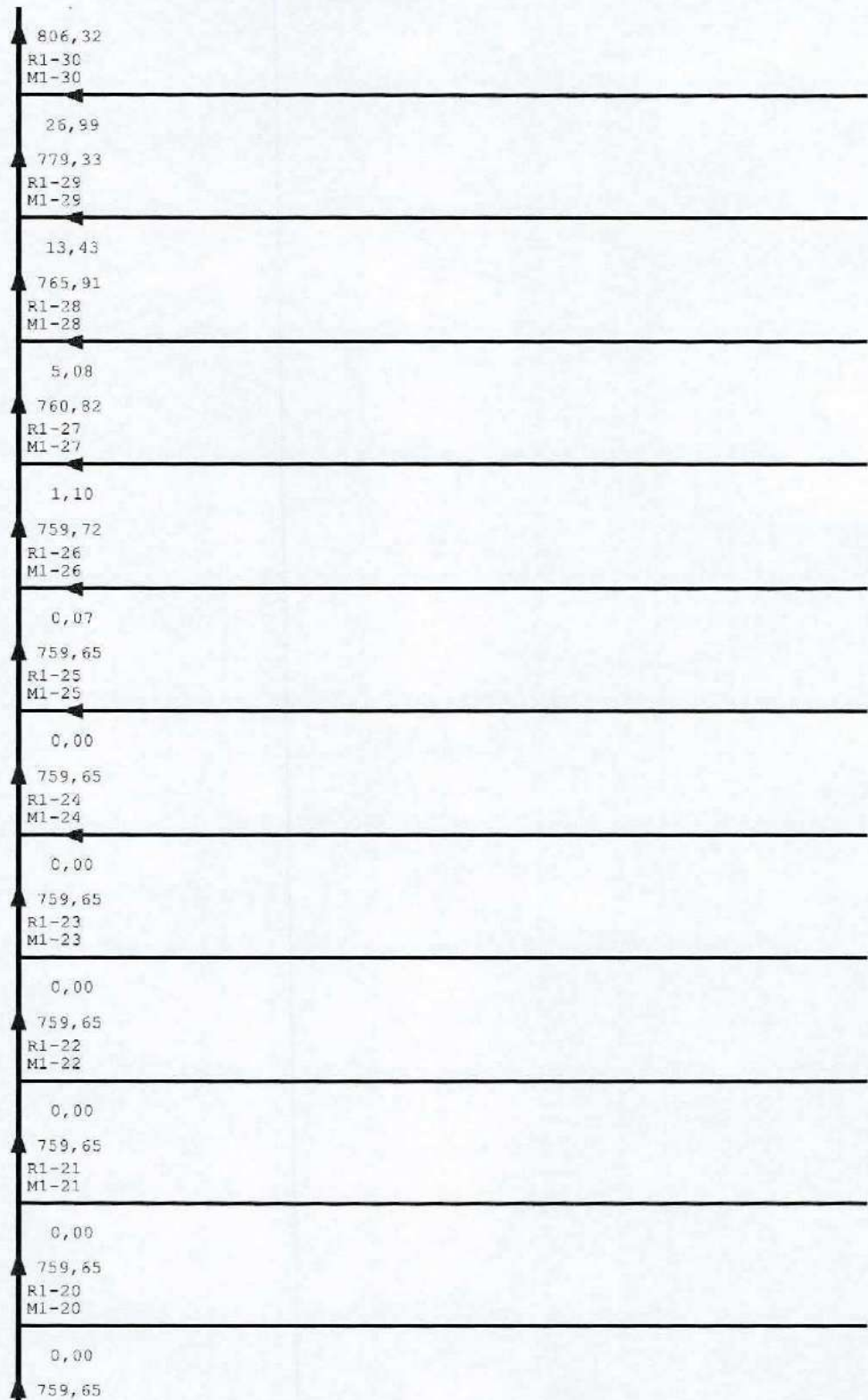
S10 - Schedule 10 Steel
S40 - Schedule 40 Steel

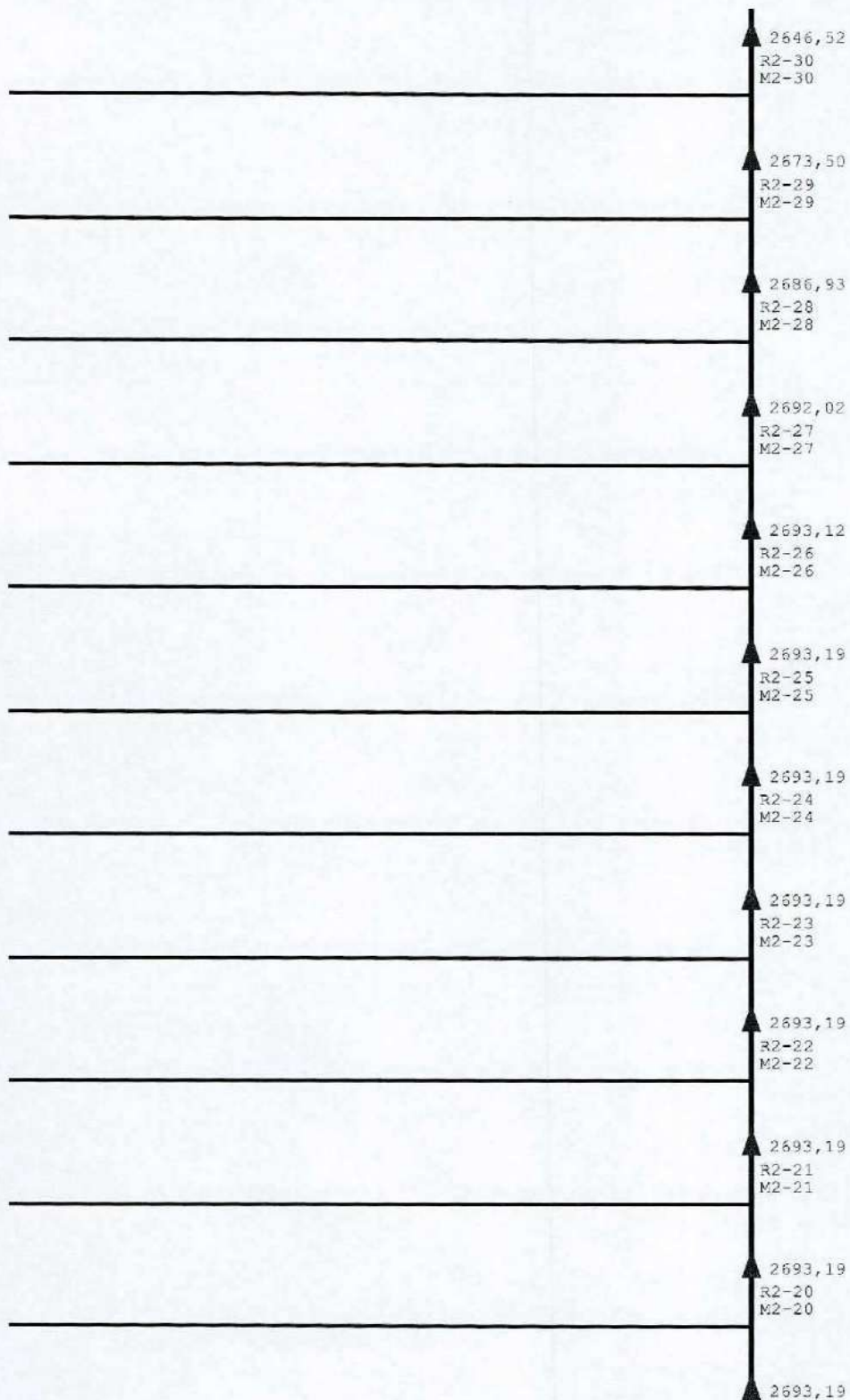
Fittings

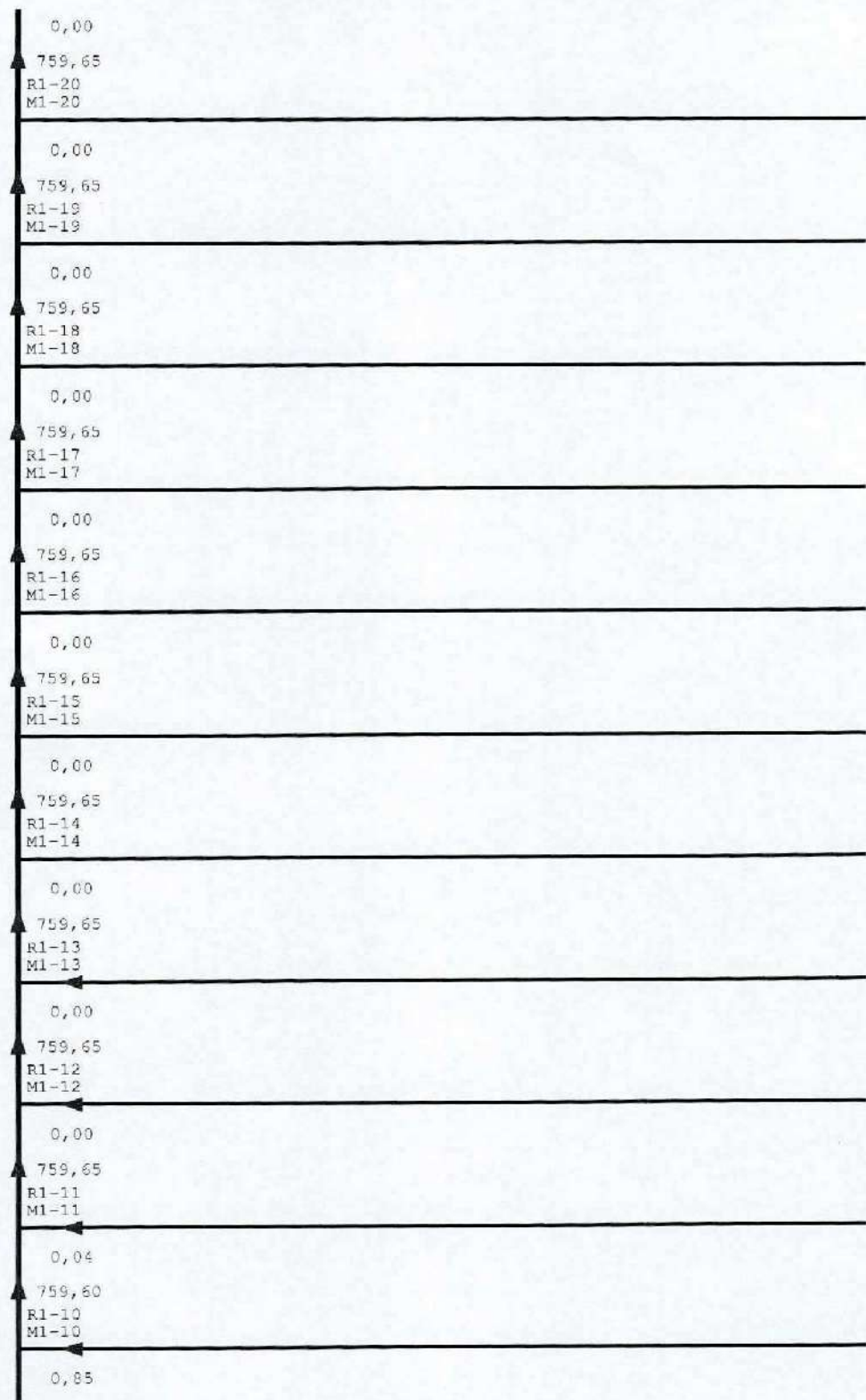
A - Alarm Valve
B - Butterfly Valve
C - Check Valve
E - Standard 90 degree elbow
G - Gate Valve
T - Tee - Flow turn 90 degrees
TN - Tee - Straight thru path

Flow Diagram (1 of 8)

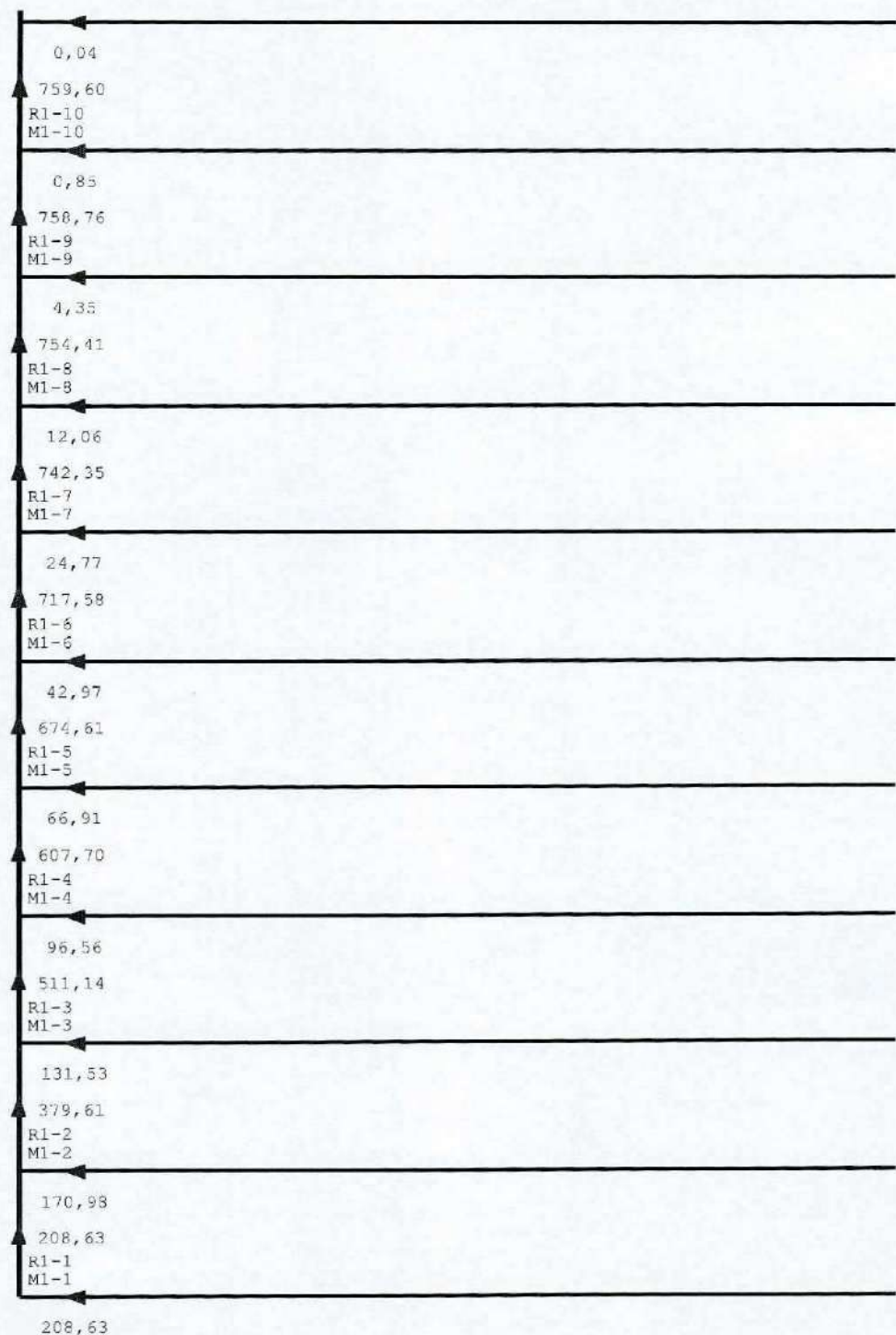
Flow Diagram (2 of 8)

Flow Diagram (3 of 8)

Flow Diagram (4 of 8)

Flow Diagram (5 of 8)

Flow Diagram (6 of 8)

Flow Diagram (7 of 8)

Flow Diagram (8 of 8)