Hydraulic Calculations
for

Project: CRECHE
Drawing no.:
Date: 27/11/2024

Design

Remote area number:	
Remote area location:	
Occupancy classification:	
Density:	
Area of application:	
Coverage per sprinkler:	
Type of sprinklers calculated:	
No. of sprinklers calculated:	2
Hose streams:	none outside + none inside
Total water required (including hose streams):	300,03 lpm at 3,35 bar [0,232 bar safety margin (6,5%)]
Maximum water flow velocity:	1,619 M/s
Type of system:	

Water Supply Information

Date:	
Location:	
Source:	

Contractor:	SCI FURLANETTI
Under contract with:	PREFEITURA MUNICIPAL DE SALES
Name of designer:	ENG. RAFAEL ZANATA PINTO
Authority having jurisdiction:	CORPO DE BOMBEIROS

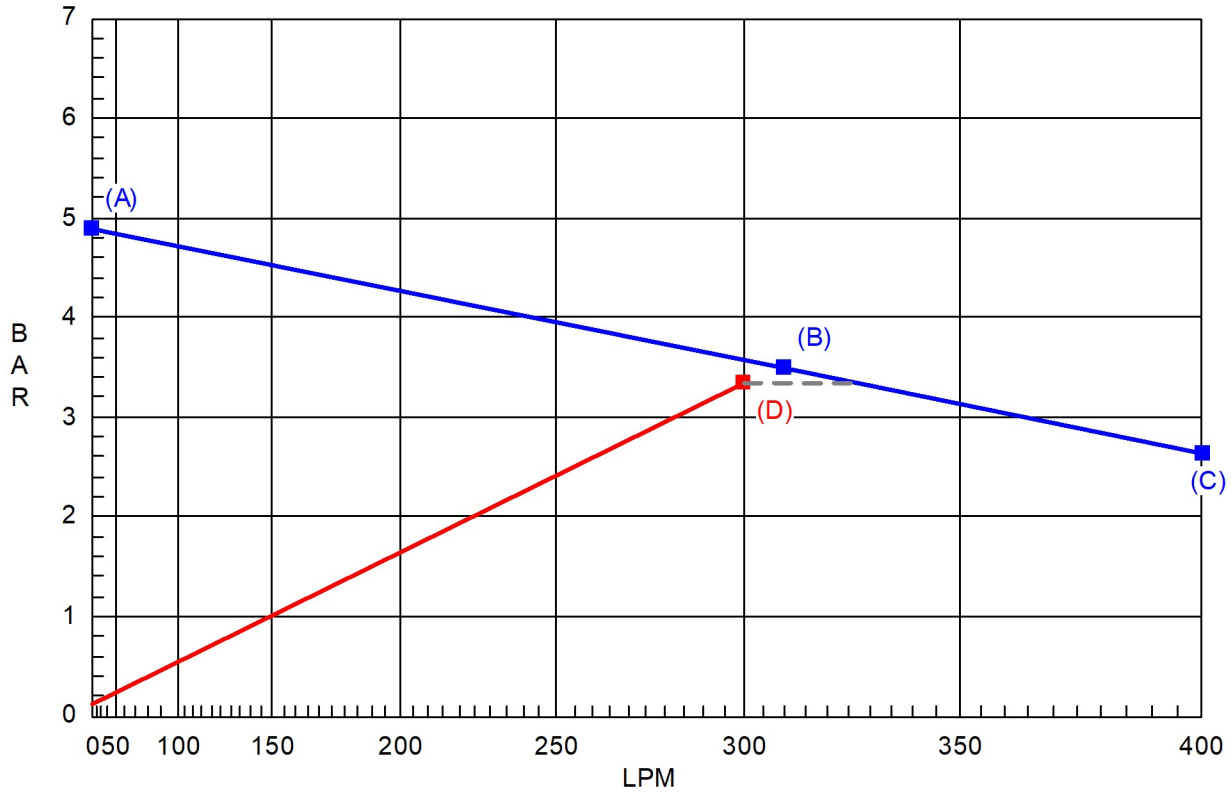
Notes

HIDRANTES TIPO 2

RAFAEL ZANATA PINTO:37880761861

Assinado de forma digital por RAFAEL ZANATA PINTO:37880761861
Dados: 2024.12.04 09:15:01 -03'00'

Hydraulic Demand Graph



Water Source:
A) 4,9 bar Static
B) 310 lpm at 3,5 bar
C) 400 lpm at 2,66 bar

Demand at Source:
D) 300 lpm at 3,35 bar

Supply Analysis

Node at	Static Pressure [bar]	Residual Pressure [bar]	Flow [lpm]	Available Pressure [bar]	Total Demand [lpm]	Required Pressure [bar]
RI	4,9	3,5	310,0	3,58	300,03	3,35

Node Analysis

Node Tag	Elev [M]	Type	Pressure [bar]	Discharge [lpm]
RI	0,000	source	3,350	-300,033
H1	1,500	K=86,60	3,000	150,000
H2	1,500	K=86,60	3,002	150,033
A	-1,000	ref	3,350	0,000
MB	0,000	ref	3,317	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. [in]	Fittings num & length [M]	L [M] F [M] T [M]	C factor bar/M	total (Pt) elev (Pe) frict (Pf)	Notes
H1	1,500	86,6	q= 150,000	2,5	1LV=18,600	37,150		Pt= 3,000	Mat="S40"
			Q=-150,000	2,469	5E=9,000	27,600	C=120	Pe= -0,245	
A	-1,000					64,750	0,002	Pf= -0,105	
H2	1,500	86,6	q= 150,033	2,5	1LV=18,600	36,200		Pt= 3,002	Mat="S40"
			Q=-150,033	2,469	3E=5,400	27,700	C=120	Pe= -0,245	
A	-1,000				1T=3,700	63,900	0,002	Pf= -0,103	
A	-1,000		q= 0,000	2,5	2TN=2,440	4,200		Pt= 3,350	Mat="S40"
			Q=-300,033	2,469	1C=4,300	7,040	C=120	Pe= 0,098	
MB	0,000				1G=0,300	11,240	0,006	Pf= -0,065	
MB	0,000		q= 0,000	2,5	1G=0,300	1,000		Pt= 3,317	Mat="S40"
			Q=-300,033	2,469	1C=4,300	4,600	C=120	Pe= 0,000	
RI	0,000					5,600	0,006	Pf= -0,033	

Material Codes

Pipe Material

S40 - Schedule 40 Steel

Fittings

C - Check Valve (Swing)
E - Standard 90 degree elbow
G - Gate Valve
T - Tee - Flow turn 90 degrees
LV - Globe Valve
TN - Tee - Straight thru path