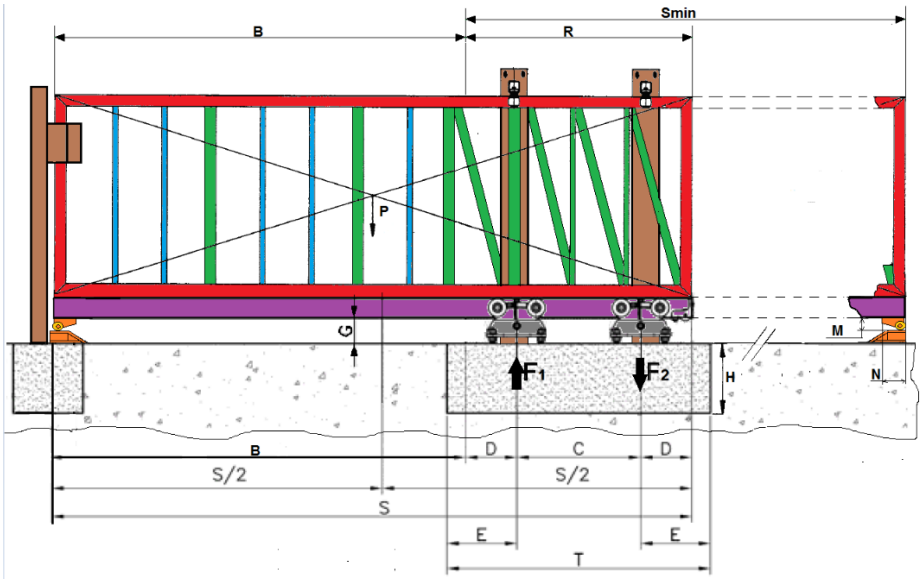
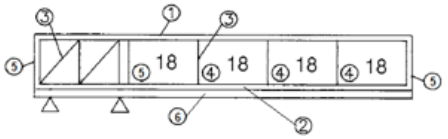


B	12	Opening (m)=B		
C	4,3	Distance between support rollers/wheels (m) (advised : Cmin=A/3)		
D	0,5	Distance between the center of the internal support roller/wheel and the gate end (necessary to accommodate the end wheel) Given by the support roller/wheel manufacturer		
E	0,75	Given by the support roller/wheel manufacturer	0,75	E=(T-C)/2
F max	40000	F max admissible for support roller/wheel to operate under optimal condition (N) - Given by the support roller/wheel manufacturer		
G	0,126	between the rail and the earth (m)		
S	17,3	Overall lenght of the gate (m) = B+R		
P	15899	Max weight of the cantilever gate (N)		
T	5,8	Minimum Lenght of the foundation (m) = 2E+C	5,8	T=R+0,5m
F1	40000	Maximum effective load acting on the support roller/wheel (N)> Compressive force (the greatest force to which the gate is subjected)		
F2	24101	Reaction force to balance the cantilever part (N) Pull force (reaction to balance the cantilever part)		
M	0,07	Height of the end stopper with roller (m)		
N	0,135	Lenght of the ned stopper with roller (m)		
R	5,3	Lenght of the extension (m) = C+2D		
Zmin	36152	Poids mini contrepoids en béton (N)		
Smin	17,3	Lenght for full opening of the gate(m)		
H	0,8	Depth of the foundation (m)		
U	0,5	Width of the foundation (m)		

Repère	Location	Designation	Qty	Lenght(mm)	linear mass (Kg/ml)	Total (Kg)	area (m^2)
1	Upper beam	Rect. Steel Tube 150 X 100 X 4 mm	1	17300	15,2	262,96	2,595
2	Lower beam	Rect. Steel Tube 150 X 100 X 4 mm	1	17300	15,2	262,96	2,595
3	Intermediate reinforcements	Square steel tube 80 X 80 X 3 mm	6	1380	7,07	58,5	0,66
5	Diagonal reinforcements	Square steel tube 80 X 80 X 3 mm	4	1852	7,07	52,4	0,59
6	vertical bars	Square steel tube 40 X 40 X 2 mm	72	1380	2,31	229,5	3,97
7	vertical beam	Rect. Steel Tube 150 X 100 X 4 mm	3	1380	15,2	62,9	0,62
8	slide Profil	Tube 120 X 110 X 7 mm	1	17300	21	363,3	2,076
							13,12

Total mass of the gate (Kg)	1292,6
Increased the mass +23% (Kg)	1590



Pmax (gate mass) in Kg

Pmax=(C*Fmax)/(C+D+(B/2)) 1590

2) Concrete mass calculation

2.1 F1=F2+P

F2=(P*B/2+D)/C

F2 = 24101 N

2.2 Cmin=P*(B/2+D)/Fmax-P

Cmin = 4,3 m

2.3 Zmin = 1.5*F2

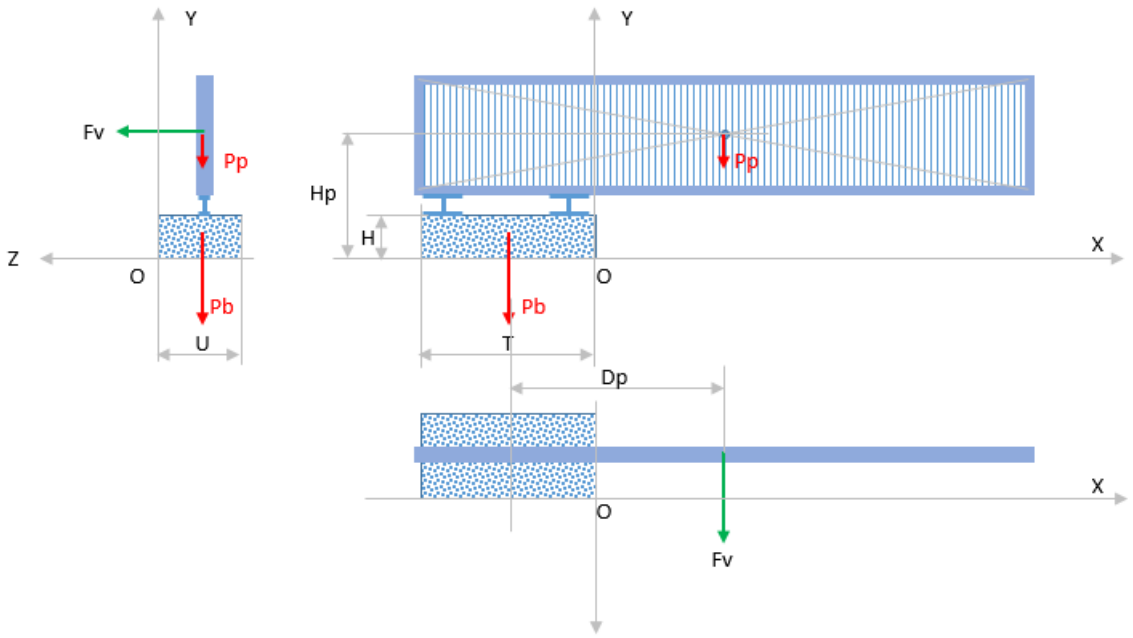
Zmin = 36152 N

2.4 Z=2000*T*U*H

reinforced Concrete Volumic Mass =
2000 ~ 2500Kg/m3 : for calcul min
2000Kg/m3

Z = reinforced concrete mass = 4630 Kg

2,3 m3 reinforced concrete



Cx	1,3		Aerodynamic coefficient
ρ	1,293	Kg/m^3	air volum mass
S	13,12	m^2	Exposed area
v	33,33	m/s	Wind speed
g	9,81	m/s/s	gravity
Pp	15597	N	cantilever gate weight
Fv	12249	N	wind force Fv = 0,5 * Cx * ρ * S *v^2
Mv	2000	kg/m^3	reinforced concrete volumic mass
Pb	45423	N	Weight of the reinforced concrete
Hp	1,026	(m)	Height Appliance of the wind force
Dp	3,356	(m)	Distance Appliance of the wind force

	120	Km/h

	Gate	Wind	Concrete	
Moment around Ox (N.m)	Mpx	Mvx	Mbx	
	-3899	12567	-11356	condition : -(Mpx+Mbx) >Mvx
Moment around Oy (N.m)	Mpy	Mvy	Mby	
	?	-41107	?	
Moment around Oz (N.m)	Mpz	Mvz	Mbz	
	-45136	0	131450	condition : Mbz > -Mpz