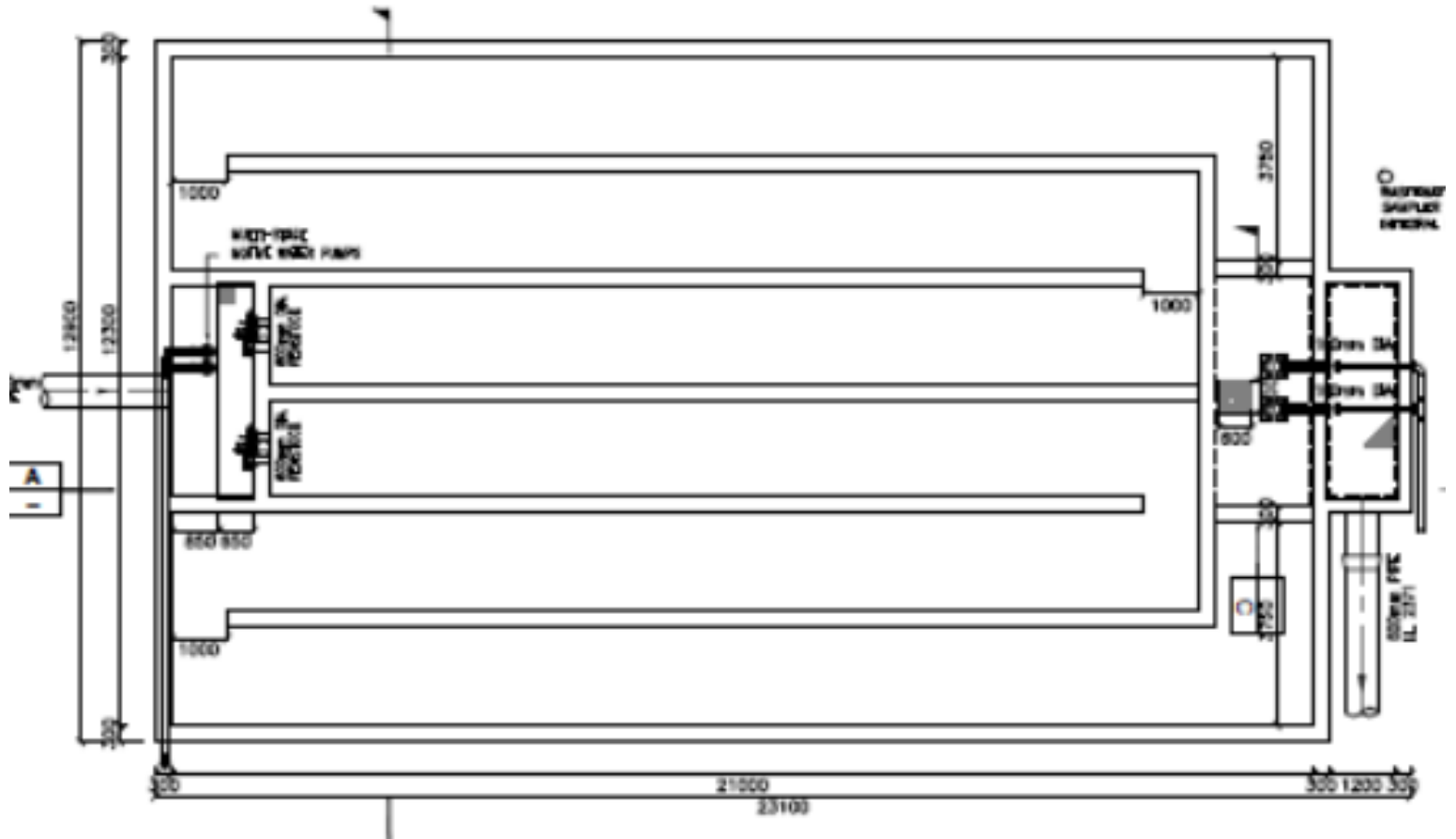
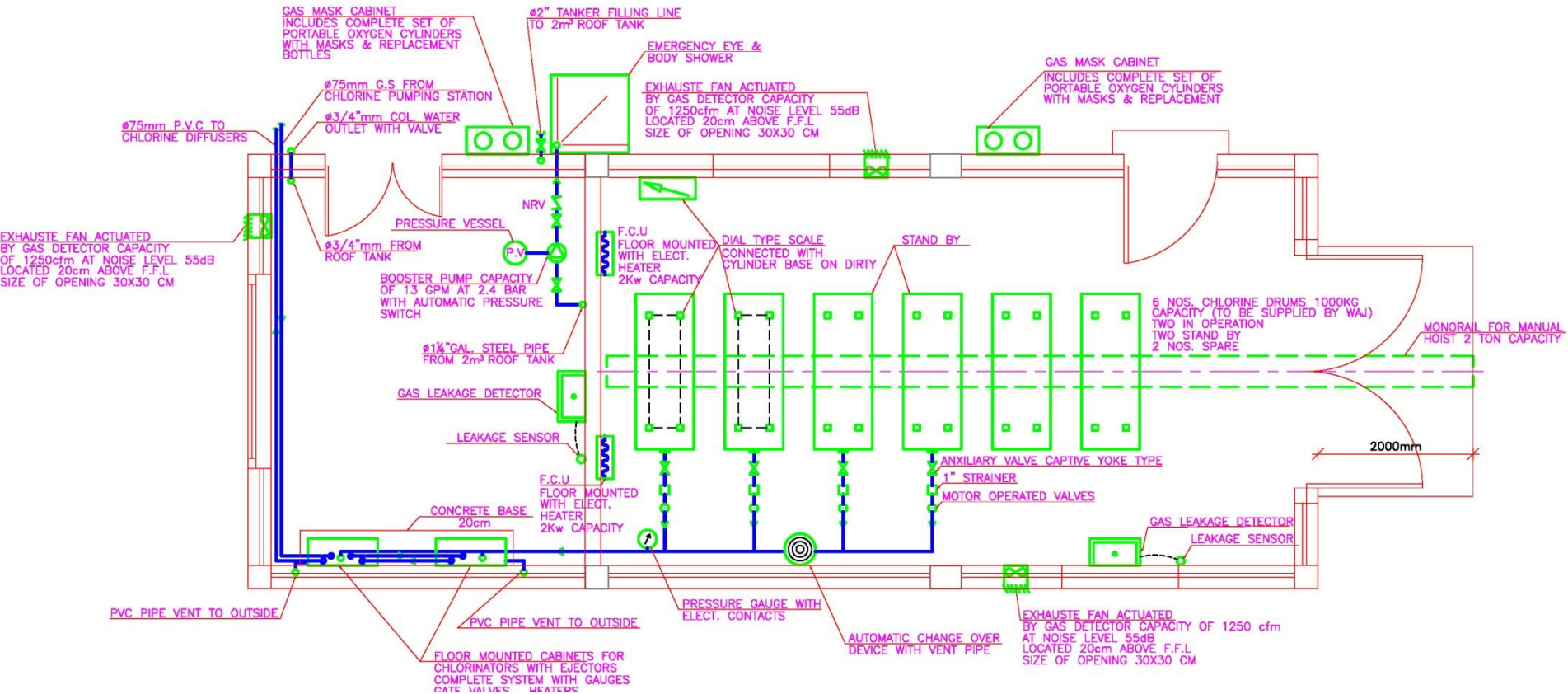


CHLORINE CONTACT BASIN



CHLORINATION ROOM



SAND FILTERS

DESIGN PARAMETERS FOR SAND FILTERS

Description	Material	Depth (mm)	Media Effective Size (mm)	Uniformity Coefficient	Filtration Rate m ³ /m ² .hour
Shallow bed	Sand	330	0.45	≤1.5	7.2
Conventional Stratified	Anthracite	750	1.3	≤1.5	9.6
	Sand	600	0.65	≤1.5	7.2
Deep bed	Sand	1200	2.5	≤1.5	12

TYPICAL BACKWASH FLOW RATES

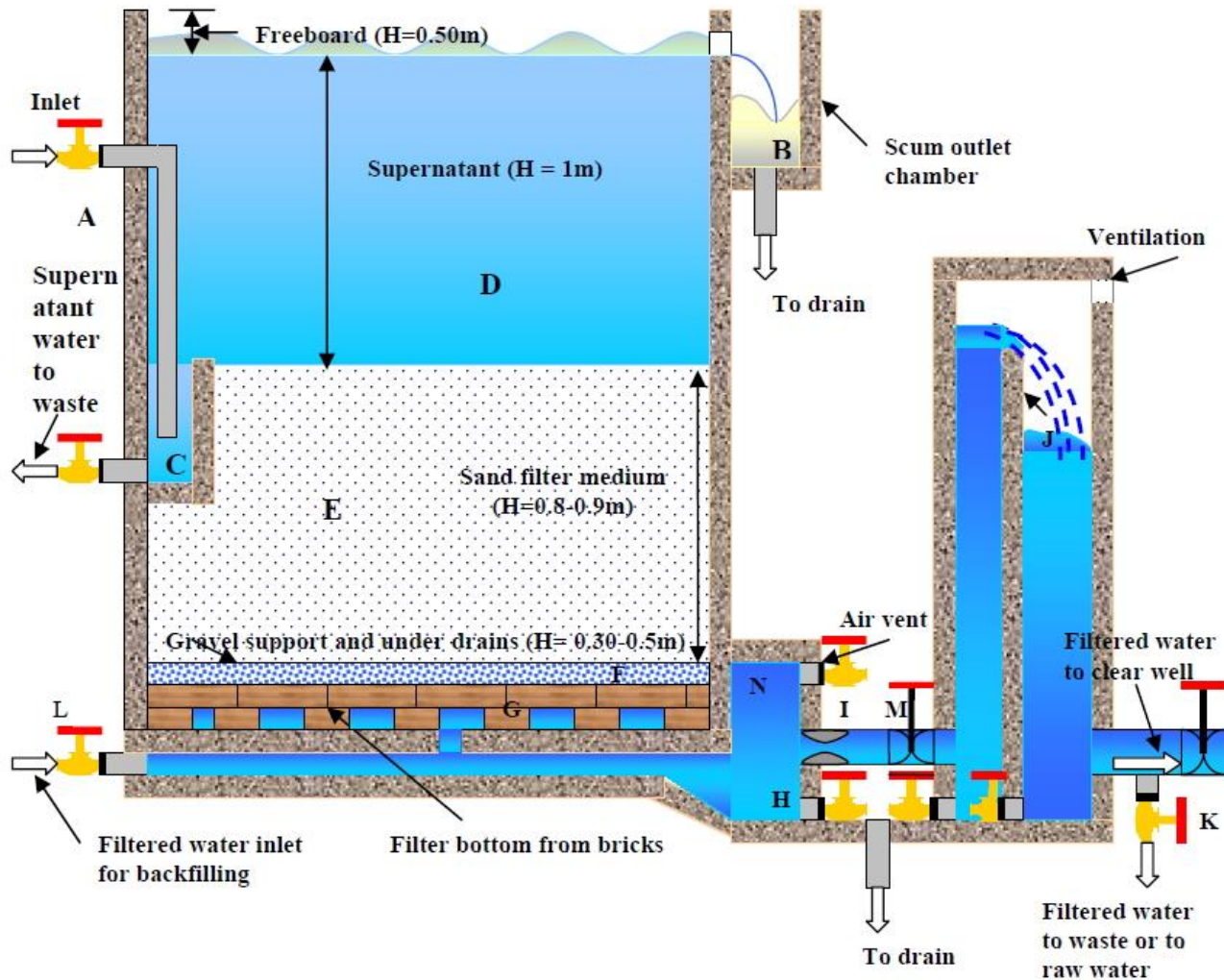
Type of filter	Minimum Backwash Velocity Needed To Fluidize Bed
	m ³ /m ² .h
Single medium(sand)	115
Dual medium(anthracite & sand)	60
Multimedia	60

EXAMPLE GRAVITY SAND FILTER SIZING

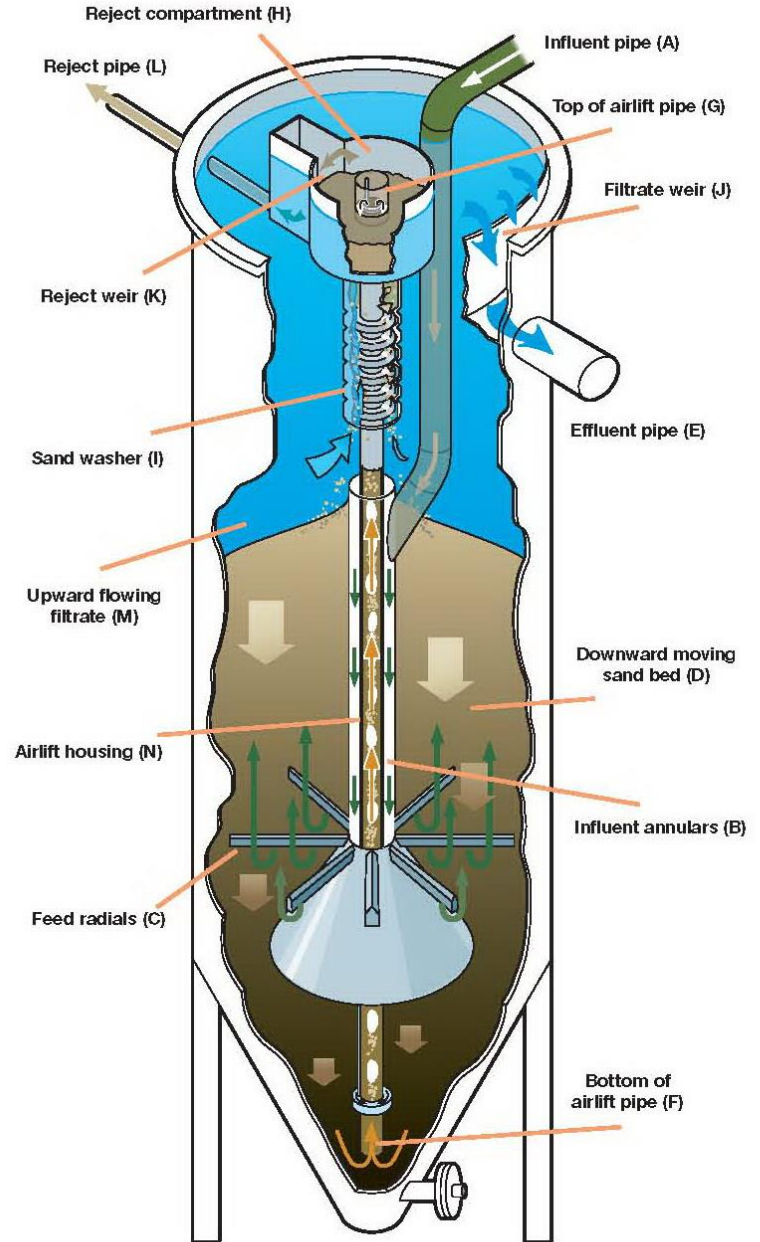
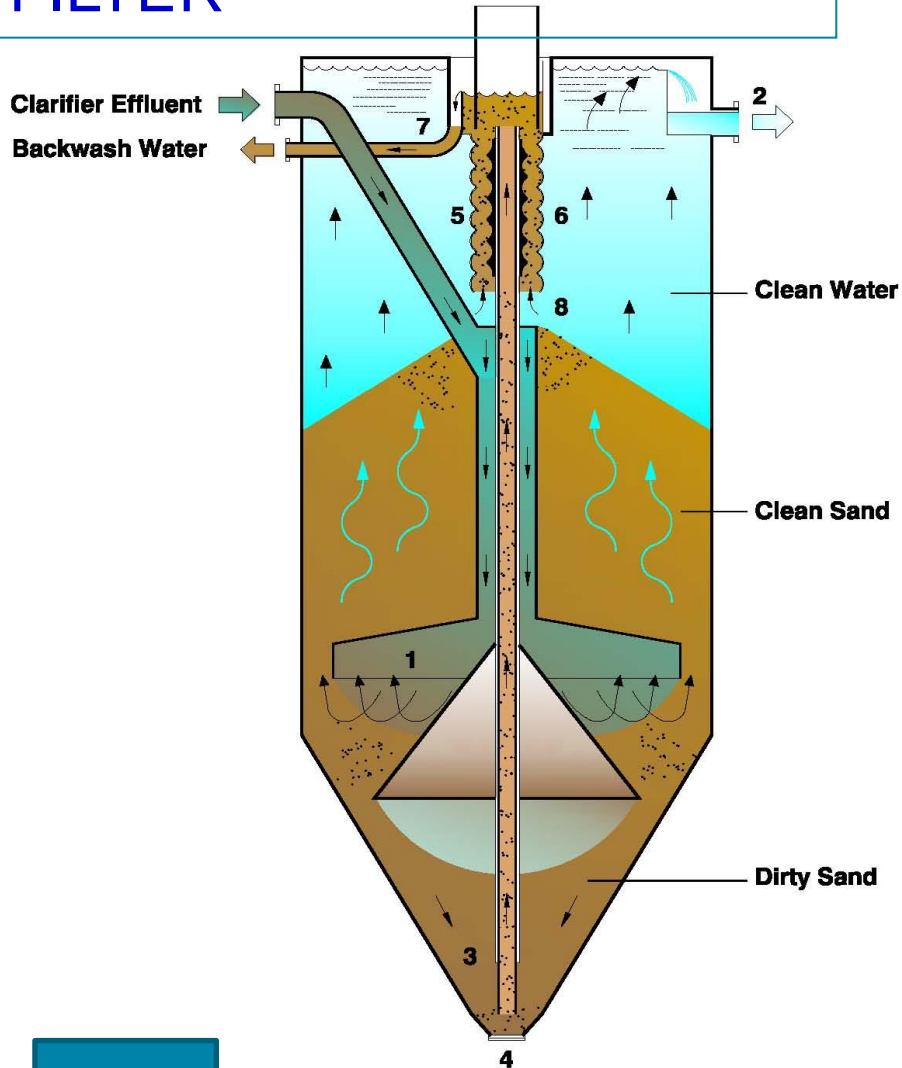
SAND FILTERS SIZING		
Average design flow	m ³ /day	10000
Peak design flow	m ³ /day	15120
Filtration velocity @Q _{peak}	m ³ /m ² .h	10
Calculated sand filters area	m ²	63
Number of filters		6
Area each filter	m ²	10.5
Length each filter	m	3.5
Width each filter	m	3
Calculated filtration velocity @Q _{av}	m ³ /m ² .h	6.6
Required backwash velocity	m/h	36
Required flow for backwash of one filter	m ³ /h	378
	l/s	105
Duration for backwash	min	15
Average sand particle diameter	mm	0.7
Uniformity coefficient		1.5

Sand
Filters

TYPICAL GRAVITY SAND FILTER



DEEP BED UPFLOW CONTINUOUS BACKWASH FILTER



3D
UPFLOW
~~SAND~~
FILTER

