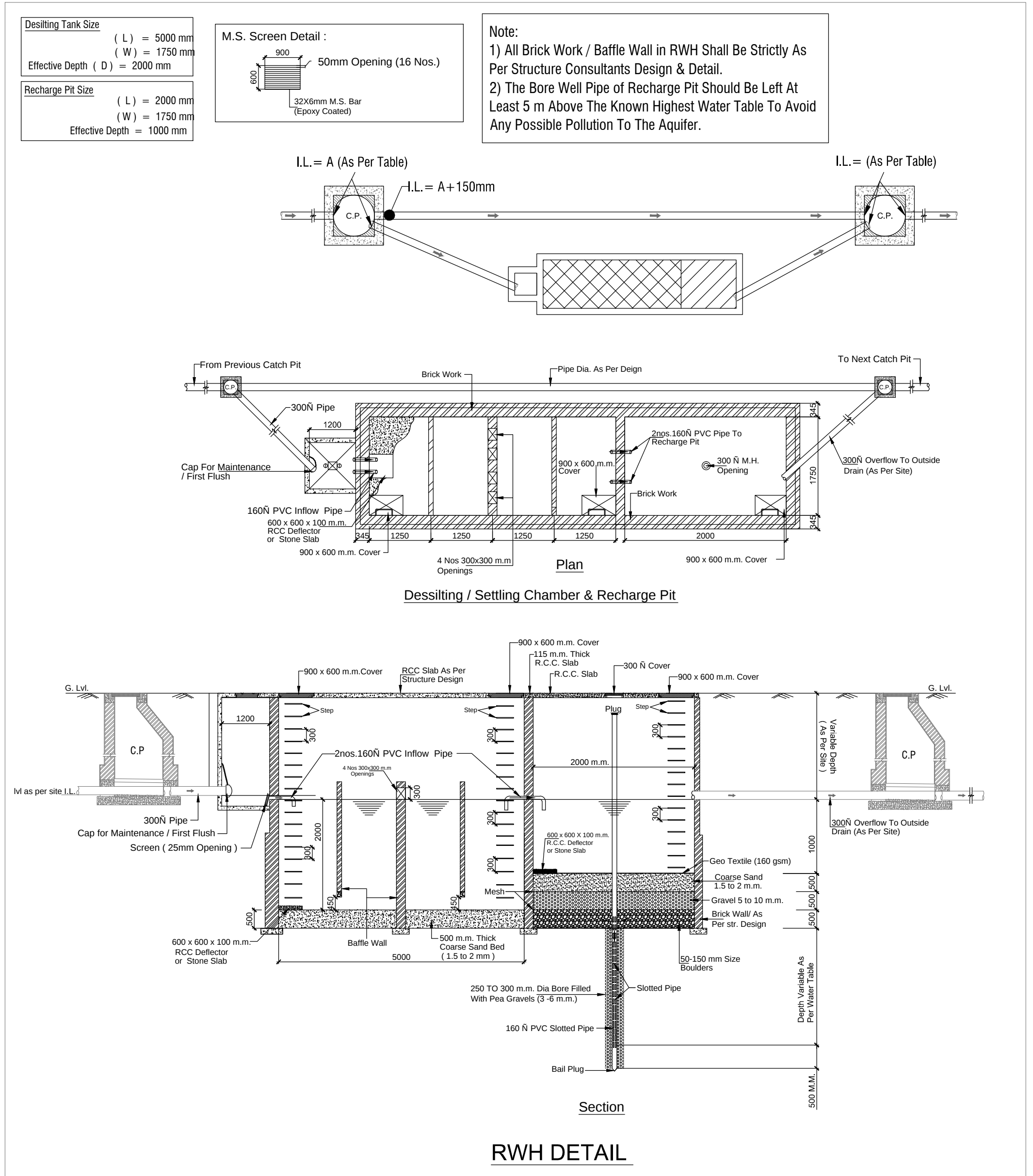




DESIGN OF DRAIN LINE - PHASE-2				
Rainfall intensity (I)	=	25	mm/hour	
Coefficient of Runoff (C)	=	0.50		
Area of Drainage district	=	1.10	Hectare	
Total Site Discharge	=	10 ³ C ¹ I ¹ A	=	138 Cu M / Hour
			or	38.19 Lt/sec
Drain Pipe Design				
Final Drain Pipe Dia Selected	=	400	mm	
Slope (1 in ...)	=	600		
Drain Design as per Manning Formula				
V	=	$3.968 \times 10^{-3} \times D^{2/3} \times S^{1/2}$		
		n		
V	=	0.80	m/sec	
D	=	Dia (mm)	=	400 mm
S	=	Slope	=	600
n	=	Manning Coefficient	=	0.011
V	=	Velocity (m/sec)		
Actual Pipe Capacity (Q) at 100% flow	=	$\frac{\pi D^2 \times V}{4}$		
	=	0.100415	m ³ /sec	
Q	=	100.42	Lt/sec	
Where -				
D	=	Dia (mm)	=	400 mm
V	=	Velocity (m/sec)	=	0.80
Q	=	Pipe Capacity (at full flow) m ³ /sec		
Total Site Discharge	=		=	38.19 Lt/sec
Actual Pipe Capacity at 100% flow	=		=	100.42 Lt/sec

DESIGN OF DRAIN LINE - PHASE-1					
Rainfall intensity (I)		=	25	mm/hour	
Coefficient of Run off (C)		=	0.50		
Area of Drainage district		=	1.36	Hectare	
Total Site Discharge	=	10 ⁶ C I A	=	170	Cu M / Hour
			=	47.22	Lt/sec
Drain Pipe Design					
Final Drain Pipe Dia Selected		=	400	mm	
Slope (1 in ...)		=	600		
Drain Design as per Manning Formula					
	V =	$3.968 \times 10^{-3} \times D^{2.3} \times S^{1/2}$			
		n			
	V =	0.80 m/sec			
	D = Dia (mm)	=	400	mm	
	S = Slope	=	600		
	n = Manning Coefficient	=	0.11		
	V = Velocity (m/sec)				
Actual Pipe Capacity (Q) at 100% flow		=	$\frac{\pi D^2 \times V}{4}$		
		=	0.100415	m ³ /sec	
	Q =		100.42	Lt/sec	
Where -					
	D = Dia (mm)	=	400	mm	
	V = Velocity (m/sec)	=	0.80		
	Q = Pipe Capacity (at full flow) m ³ /sec				
Total Site Discharge		=	47.22	Lt/sec	
Actual Pipe Capacity at 100% flow		=	100.42	Lt/sec	
Total Site Discharge is less than pipe capacity, hence 400 mm Dia DRAIN IS OK					

LEGEND :		
S.No.	SYMBOL	DESCRIPTION
1.		CATCH PIT
2.		UNDER GROUND DRAIN
3.		DESILTING TANK
4.		RECHARGE PIT

rev. no.	date	revision
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project
PROPOSED AFFORDABLE GROUP
HOUSING AT GHAZIABAD

title
SITE PLAN

EXTERNAL DRAINAGE SYSTEM

drawing released for

☐ APPROVAL	☒ SUBMISSION
☐ ADVANCE COPY	☐ CONSTRUCTION

drg. no. G D A / EX / S-02
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scale 1 : 400 designed by R.K.

date July 2015 checked by Anand Havelia

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