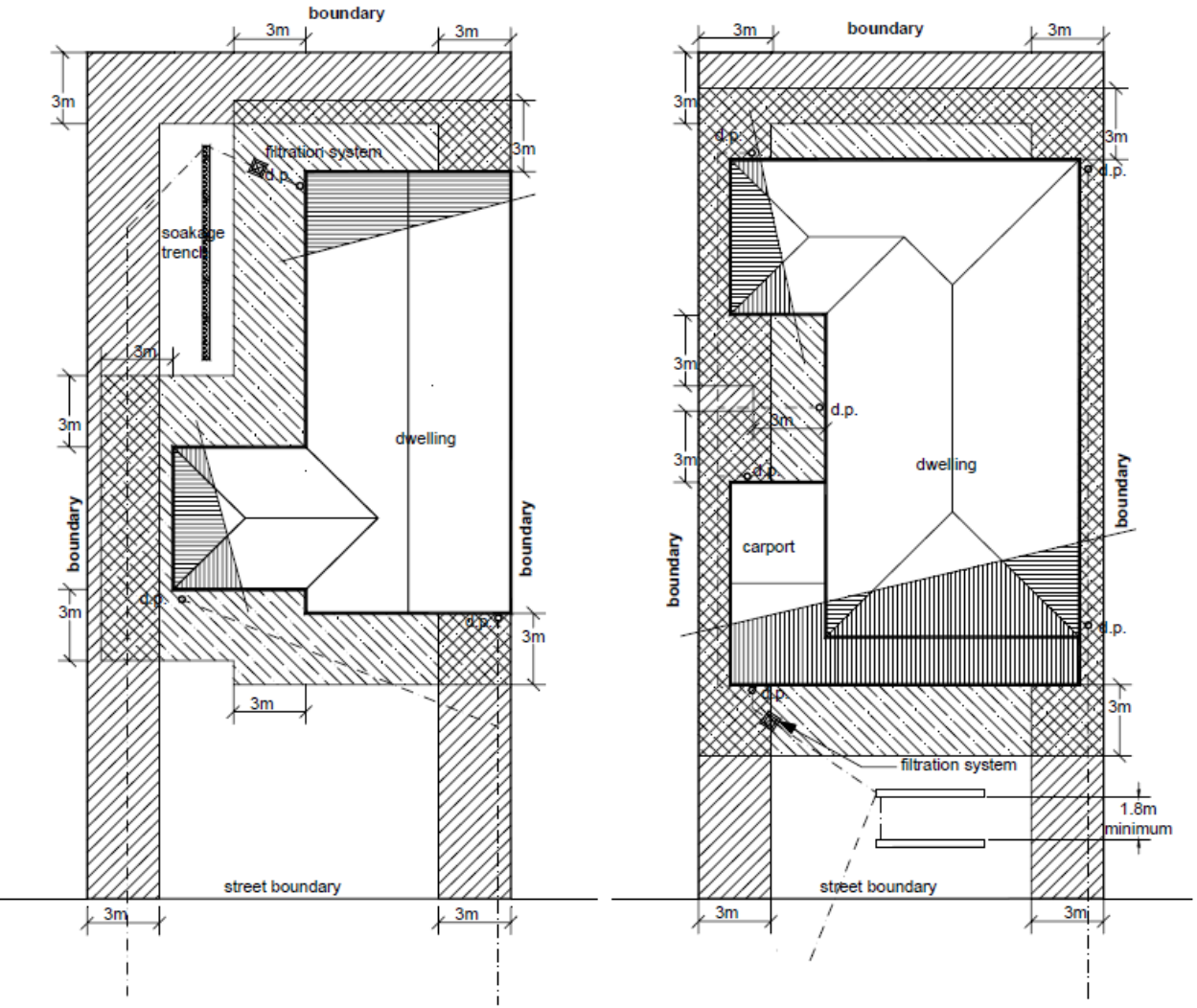
Onsite retention of stormwater via infiltration

Trench sizing & location



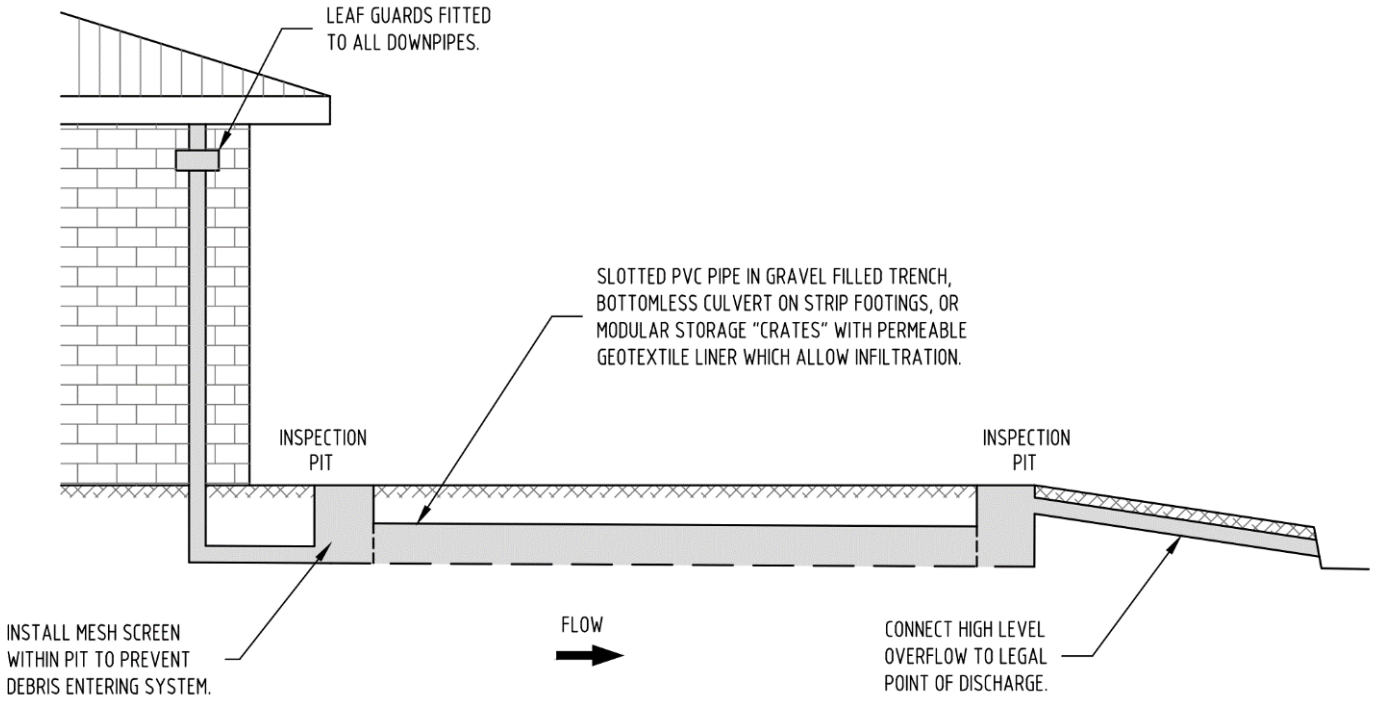
Development Act 1993
Minister's Specification
SA 78AA
September 2003
On-Site Retention of Stormwater

See for size chart in SA 78AA to determine trench:

- width
- depth
- length

For a range of connected roof/catchment areas

Infiltration soakaway trench



UNDERGROUND INFILTRATION SYSTEM

N.T.S.

NOTE: THE DESIGN AND INSTALLATION OF ALL STORMWATER SYSTEMS SHALL COMPLY WITH AS/NZS 3500.3:2018 "STORMWATER DRAINAGE".

Infiltration systems

Restoring the balance in the urban water cycle

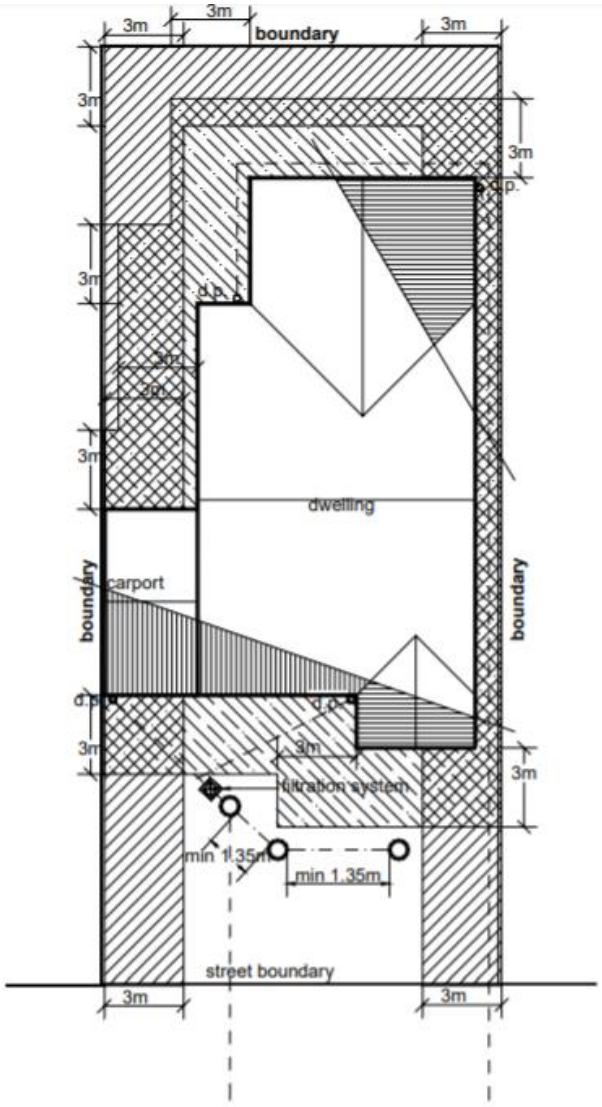
Sizing infiltration systems - Trench

Trench Dimensions (metres)		Soil Type	Catchment Area (m^2) Total required length of trench (metres)									
			20	*40*	*60*	*80*	*100*	*120*	*140*	*160*	*180*	*200*
width	**0.3**	A/S	4.7	9.4	14	19	24	28	33	38	43	47
depth	0.5	M-D	7.2	14	22	29	36	43	50	58	65	72
width	**0.3**	A/S	2.6	5.3	8.0	11	13	16	19	22	24	27
depth	1	M-D	3.8	7.6	11	15	19	23	27	30	34	38
width	**0.3**	A/S	2.2	4.5	6.8	9.1	11	14	16	18	21	23
depth	1.2	M-D	3.2	6.3	9.5	13	16	19	22	25	29	32
width	**0.6**	A/S	2.5	5.0	7.6	10	13	15	18	20	23	25
depth	0.5	M-D	3.7	7.4	11	15	19	22	26	30	33	37
width	**0.6**	A/S	1.4	2.9	4.4	5.8	7.3	8.8	10	12	13	15
depth	1	M-D	1.9	3.9	5.9	7.8	9.8	12	14	16	18	20
width	**0.6**	A/S	1.2	2.5	3.7	5.0	6.3	7.5	8.8	10	11	13
depth	1.2	M-D	1.6	3.3	4.9	6.6	8.2	9.9	12	13	15	17
width	**0.9**	A/S	1.7	3.4	5.2	6.9	8.6	10	12	14	16	17
depth	0.5	M-D	2.5	5.0	7.5	10	13	15	18	20	22	25
width	**0.9**	A/S	1.0	2.0	3.0	4.0	5.0	6.0	7.1	8.1	9.1	10
depth	1	M-D	1.3	2.6	3.9	5.3	6.6	7.9	9.2	11	12	13
width	**0.9**	A/S	0.8	1.7	2.6	3.4	4.3	5.2	6.1	6.9	7.8	8.7
depth	1.2	M-D	1.1	2.2	3.3	4.4	5.5	6.6	7.7	8.9	10	11

Total length of trench (metres), ARI = 1 in 5 year, 1 hour storm

Source: Minister's Specification SA 78AA, September 2003, On-site retention of stormwater

Pit sizing and location



Multiple wells

three x 900mm diameter wells:
two @ 0.8m deep and one @ 0.9m deep = 2.5m in total

minimum clear distance between wells = 0.9 x 1.5m = 1.35m

Notes

- Stormwater disposal including overflows as directed by the relevant authority
- Stormwater drainage system to AS/NZS 3500.3.2
- Construction of soakage wells is not permitted in these zones

WATER SENSITIVE SA

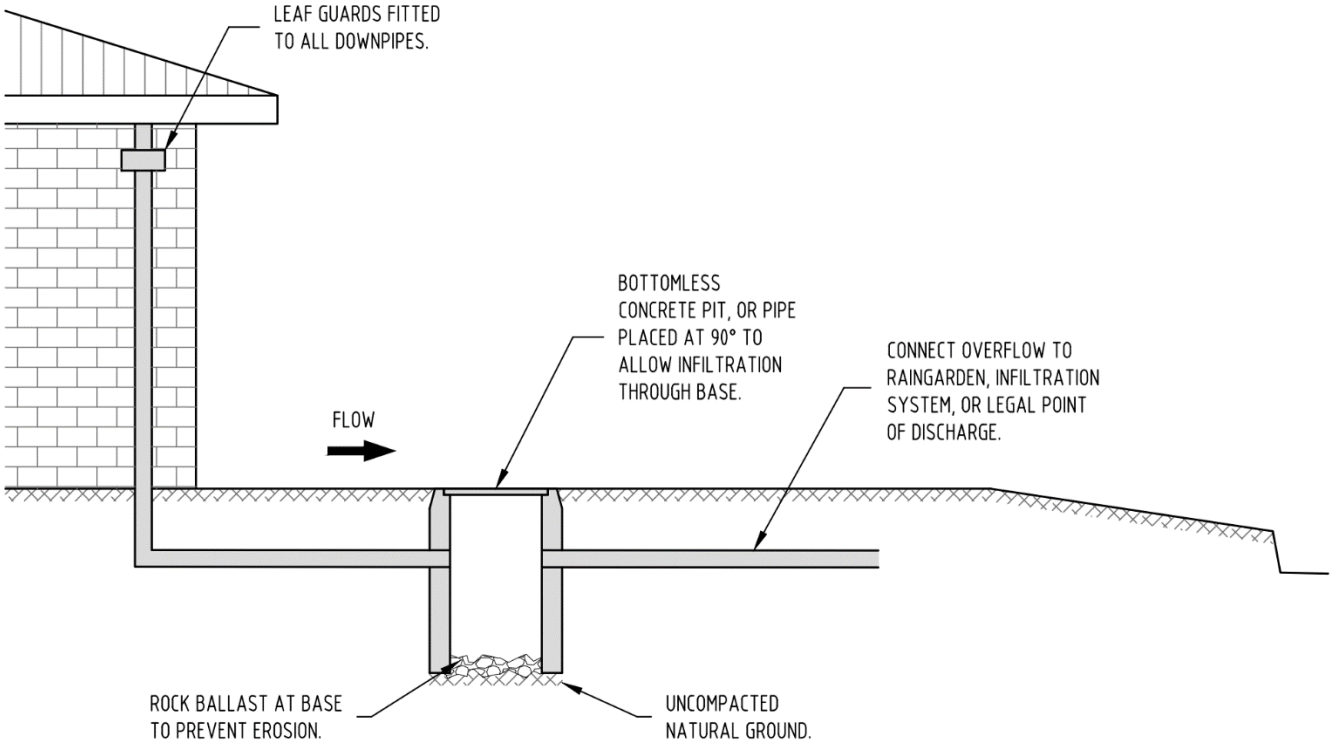
Development Act 1993
Minister's Specification
SA 78AA
September 2003
On-Site Retention of Stormwater

See for size chart in SA 78AA to determine pit:

- diameter
- depth

For a range of connected roof/catchment areas

Infiltration pit



BOTTOMLESS INFILTRATION PIT

N.T.S.

NOTE: THE DESIGN AND INSTALLATION OF ALL STORMWATER SYSTEMS SHALL COMPLY WITH AS/NZS 3500.3:2018 "STORMWATER DRAINAGE".

Infiltration pit - detail

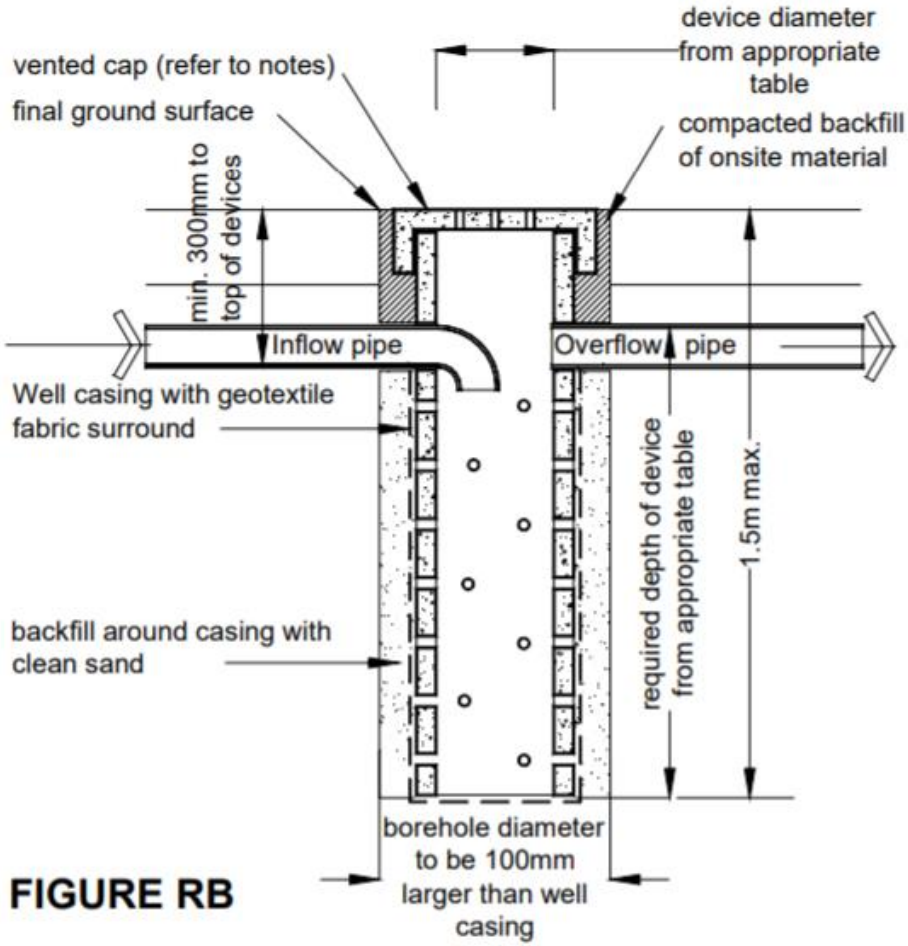


FIGURE RB

SOAKAGE WELL

Note: Figure RB is not to scale

Sizing infiltration systems - pit

Table 4-Total required depth of well (metres)
ARI = 1 in 5 year, 30 minute storm event.

Well Diameter (metres)	Soil Type	Catchment Area (m^2)									
		20	*40*	*60*	*80*	*100*	*120*	*140*	*160*	*180*	*200*
		Total required depth of well (metres)									
0.1	A/S	17	*	*	*	*	*	*	*	*	*
	M-D	33	*	*	*	*	*	*	*	*	*
0.2	A/S	5.6	11	17	23	*	*	*	*	*	*
	M-D	9.2	18	*	*	*	*	*	*	*	*
0.3	A/S	2.8	5.6	8.5	11	14	17	*	*	*	*
	M-D	4.2	7.2	13	17	*	*	*	*	*	*
0.6	A/S	0.8	1.7	2.6	3.4	4.3	5.2	6.1	6.9	7.8	8.7
	M-D	1.1	2.2	3.3	4.4	5.5	6.6	7.7	8.8	9.9	11
0.9	A/S	*	0.8	1.2	1.6	2.0	2.5	2.9	3.3	3.7	4.2
	M-D	*	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.4	4.9
1.2	A/S	*	*	0.7	0.9	1.2	1.4	1.7	1.9	2.2	2.4
	M-D	*	0.6	0.8	1.1	1.4	1.7	2.0	2.2	2.5	2.8
1.5	A/S	*	*	*	0.6	0.7	0.9	1.1	1.2	1.4	1.6
	M-D	*	*	*	0.7	0.9	1.1	1.3	1.4	1.6	1.8

* *well configuration not recommended*

On-site retention – infiltration systems

Suitable for:

1. Soil types classified (AS 2870) as:
   - Class A - sand and rock with no movement effects from moisture changes
   - Class S – slightly reactive clay
   - Class M-D - moderately reactive clay
2. Where the following conditions exist:
   - the slope of the natural ground does not exceed 1 in 10
   - the depth to rock is 1.2m or greater
   - the ground-water table is permanently below 1.5m from the natural ground surface or the final ground surface, whichever is the lowest.

NOT recommended

- on sites classified as H-D, E-D and P, includes fill, soil subject to erosion, soft soils (lack suitable load bearing)