

Example Data Summary Sheet for Infiltration Basin Design

Design Element	Design Data
Site assessment data: (see attached maps)	
Contributing drainage area to basin (subwatershed A)	120 acres
Distance to nearest private well (including off-site wells)	> 100 feet
Distance to municipal well (including off-site wells)	> 1200 feet
Wellhead protection area involved?	No
Ground slope at site of proposed basin	average 3%
Any buried or overhead utilities in the area?	No
Proposed outfall conveyance system/discharge (w/ distances)	35 ft. to CTH "U" Road ditch 1000 ft. to wetland
Any downstream roads or other structures? (describe)	Yes – 36" cmp road culvert
Floodplain, shoreland or wetlands?	No
Soil investigation data (see attached map & soil logs):	
Number of soil investigations completed	3 (in basin area)
Do elevations of test holes extend 4 ft. below proposed bottom?	Yes (see map)
Average soil texture at pond bottom elevation (USDA)	Sandy loam
Design infiltration rate at basin bottom and method of analysis	2.0 in/hr, double-ring infiltrometer
Measured infiltration rate following construction	2.2 in/hr, double-ring infiltrometer
Distance from pond bottom to bedrock	> 5 feet
Distance from BMP bottom to seasonal water table	Trench bottom 3 ft above redox.
General basin design data (see attached detailed drawings):	
Basin bottom area	1.5 acres
Effective infiltration area	1.0 acres
1% of development area (120 acres)	1.2 acres
Basin bottom elevation	elev. 899.0
Top of berm elevation (after settling) and width	elev. 904.0 / 10 feet wide
Basin storage below outlet	1.0 ac-ft
25% of 2-yr 24-hr post-development runoff volume	0.94 ac-ft
Time to completely infiltrate stored water	6 hrs
Sediment forebay size & depth	0.16 acres (13% pool size)/5 feet
Additional design features	3' x 3' x 50' rock trench

Design Basin Inflow, Outflow & Storage Data (see attached hydrographs and detail drawings)				
Inflow Peak/Volume	Maximum Outflow Rate	Max. Water Elevation	Storage Volume at Max. Elev.	Outflow Control Structures*
7.6 cfs Post 1-yr./24 hr. peak	0 (100% infiltr.)	899.6 ft.	0.7 acre feet	#1
15.9 cfs (Post 2-yr./24 hr. peak)	0.6 cfs	900.5 ft.	1.5 acre feet	#1 and 2
59.3 cfs (Post 10-yr./24 hr. peak)	15.4 cfs	902.3 ft.	4.1 acre feet	#1, 2, and 3
132 cfs (Post 100-yr./24 hr. peak)	81.6 cfs	904.0 ft.	6.4 acre feet	#1, 2, 3 and 4

* The controlling elements are summarized below (See attached detail drawing of outlet structure):

#1 = Infiltration, 2 in/hr

#2 = 12 inch orifice in outlet riser– flow line elev. @ 900.0 (1.3 ft. max. head)

#3 = 18 in wide 1.5 foot high outlet riser – flow line elev. @ 901.5 (2.5 ft. max. hydraulic head)

#4 = 18 inch diameter smooth wall RCP – flow line elev. @ 900.0 (4.0 ft. max. hydraulic head)

#5 = 10 foot wide earthen/grass emergency spillway – flow line elev. @ 902.3 (1.8 ft. max. depth)