**Bioretention Cell Design Review Check List**

**October 2017**

Applicant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Submitted By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Project Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Drainage Area \_\_\_\_\_\_\_\_\_\_\_\_\_SF and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Ac
2. How much of the DA is Impervious Surface \_\_\_\_\_\_\_\_\_% and \_\_\_\_\_\_\_\_\_\_\_\_\_\_SF
3. Water Quality Volume (WQv) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_CF (show calculations below or attach a copy) WQv = (P) x (Rv) x (DA) x 43,560 SF/ac x (1 ft/12in) (See Iowa SW Mgt Manual Bioretention Chapter)
4. Surface Area of Biocell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_SF (show calculations below or attach a copy)

 Af= WQv x df/ {K x (hf + df) x tf} (See Iowa SW Mgt Manual Bioretention Chapter)

1. Ponding Depth \_\_\_\_\_\_\_\_\_\_\_\_\_ inches
2. Proposed dimensions: \_\_\_\_\_\_\_\_\_ft L x \_\_\_\_\_\_\_ ft W = \_\_\_\_\_\_\_\_SF of surface area.
3. Discuss soils investigation findings (i.e. texture, degree of compaction, percolation potentials, depth to water table, contamination, etc) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Describe any pretreatment techniques provided (what practice(s) were used, how were things sized, etc) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Describe the biocell soil media. (Soil blend specified in the Iowa Stormwater Management Manual is 75-90% washed concrete sand, 0-25% topsoil, 0-10% organic material):
	1. Sand \_\_\_\_\_\_\_\_\_%
	2. Topsoil \_\_\_\_\_\_\_\_\_%
	3. Organic material \_\_\_\_\_\_\_\_\_%
3. Quantities (please attach a copy of materials calculations): 75% - 90% sand, 0-25% topsoil, 0-10% organic material)
	1. Sand \_\_\_\_\_\_\_\_ tons;
	2. Topsoil \_\_\_\_\_\_\_\_ tons or CY
	3. Compost \_\_\_\_\_\_\_\_ tons or CY
	4. 3/8” chip \_\_\_\_\_\_\_\_ tons
	5. Shredded hardwood mulch \_\_\_\_\_\_\_\_\_\_\_CF or \_\_\_\_\_\_\_\_\_\_\_\_CY
4. Depth of Rock Chamber \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_inches
5. Quantity and Type of Rock \_\_\_\_\_\_\_\_\_\_\_\_tons of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Quantity and Type of choker material \_\_\_\_\_\_\_tons of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Size of perforated drain tile \_\_\_\_\_\_\_\_\_\_\_\_\_inch
8. Does tile comply with the design guidance is Step 10 of the design procedure in the Bioretention Chapter of ISWMM \_\_\_\_\_\_\_\_\_Yes \_\_\_\_\_\_\_\_\_No
9. Separation distance from nearest foundation \_\_\_\_\_\_\_. If less than 10 ft describe water proofing methods\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Describe any pretreatment techniques provided (what practice(s) were used, how were things sized)

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1. Describe outlet for the perforated drain tile \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Describe overflow (i.e. stand pipe, swale, emergency spillway / berm notch, etc.)

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1. Spacing of plants \_\_\_\_\_\_\_\_\_\_\_\_\_
2. Size of plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Quantity of plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(Please attach a plant list and planting plan)
4. If supplemental seeding was done in the biocell describe type and quantity of seed used and the rate that was applied (i.e lbs/ac or per 1,000 SF \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Please describe the Erosion and Sediment Control measures employed if the drainage area is not stabilized or the biocell is not planted and stabilized immediately: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Please attach a map of the drainage area.
2. Please attach a plan view, profile and cross sectional drawing

***FOR REVIEWERS USE ONLY***

[ ]  This design appears to comply with the standards in the Iowa Stormwater Management Manual.

[ ]  This design does not appear to comply with the standards in the Iowa Stormwater Management Manual.

Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_