

Stormwater Quality Review Checklist - General

Name of Development:	
DRC or CPC No.:	
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General

<u>Ceneral</u>			
1) Map of proposed subwatershed to each subbasin provided, including total area and CN	OK 	Revise	NA
2) Drainage areas match topography	OK	Revise	NA
3) Drainage area estimates match acreages provided on map	OK	Revise	NA
4) Design flow or design volume to each STF, as appropriate	OK	Revise	NA
5) Operation and Maintenance instructions for each STF	OK	Revise	NA
6) Design drawings of all proposed STF locations	OK	Revise	NA
7) Detailed construction specifications	OK	Revise	NA
8) Location and dimensions of all proposed STF easements or tracts	OK	Revise	NA
9) Grading plan	OK	Revise	NA
10) STF projected maintenance schedule is provided; and for multi-lot subdivisions, maintenance agreements are provided per UG ordinance, Section 8-634(a).	OK	Revise	NA
11) Unique identifiers for each STF	OK	Revise	NA
12) STF phasing plan	OK	Revise	NA
13) Appropriate MARC manual worksheets submitted for level of service computations and mitigation package value rating	OK	Revise	NA
14) Value rating exceeds the required level of service	OK ——	Revise	NA
15) If a BMP is not included in Section 8 of the MARC manual, a waiver request has been submitted with supporting documentation based on Table 4.5 (p. 4-11)	OK	Revise	NA
16) CN values are in accordance with Table 4.1 (p.4-7) of the MARC manual or values are otherwise cited from TR-55. Ponds have a CN value of 98.	OK	Revise	NA
17) Post-development HSG is one group higher in runoff than pre-development unless a soil treatment plan is provided to document otherwise	OK	Revise	NA ——
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18) Exhibits submitted (at an appropriate, std., engineering scale) that graphically identify the impervious surfaces to verify the net change in impervious area between the pre-	OK	Revise	NA ———
development and post-development conditions. The acreages or square footages are called-out on each exhibit and itemized as needed.			
 Soil report from on-site geotechnical analysis or NRCS soil survey included with stormwater management study 	OK 	Revise	NA ———
 Percolation test results provided for applicable BMPs as required in Section 8 of MARC manual 	OK ——	Revise	NA
21) Plans show and specify all applicable pollution controls, management practices, and additional requirements/"recommendations" for "Hot Spots" in accordance with Appendix B of the MARC manual	OK ——	Revise ——	NA ——
22) Any supplemental documentation to support claims regarding the applicability of the	OK	Revise	NA
project to Appendix B requirements (statements, letters, etc.) has been submitted and is			
sealed, signed, and dated by the engineer and the owner's acknowledgement is signed, dated, and notarized			
23) Location and type of native vegetation (in non-structural or structural BMPs) approved by Planners, and the landscape plans (or any other plan sheets or contructuction documents) do not specify wild flowers in accordance with the Planning Department's aesthetic requirements.	OK ——	Revise ——	NA ——
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Stormwater Quality Review Checklist - Rain Gardens

Name of Development:	
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Rain Garden (RG)

1) Drainage area and RG Area match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view showing dimensions and features	OK	Revise	NA
3) Minimum 20' from WQv pool to residential building foundation, except as below	OK	Revise	NA
4) Minimum 10' from WQv pool to residential building foundation if serves 1 lot and is down gradient or no basement	OK	Revise	NA
5) Detailed cross-section	OK	Revise	NA
6) Maximum ponding depth of 6 inches is provided	OK	Revise	NA
7) Engineered soil mix (bioretention soil mix) meets spec in MARC Manual or 1:1 sand/compost mix	OK	Revise	NA
8) 6" optional planting soil layer, if provided	OK	Revise	NA
9) 24" engineered soil mix depth	OK	Revise	NA
10) Filter strip of grass (for RG receiving flow off pervious areas)	OK	Revise	NA
11) Filter strip of approved rock (for RG receiving flow off impervious areas)	OK	Revise	NA
12) 3 inches of aged shredded hardwood mulch provided	OK	Revise	NA
13) Grading plan with bottom and overflow elevations	OK	Revise	NA
 Detailed landscape plan with appropriate plant selection based on assumed inundation period 	OK	Revise	NA
15) At least 2 feet above the seasonal high water table	OK	Revise	NA
16) Overflow path or structure provided	OK	Revise	NA



Stormwater Quality Review Checklist - Infiltration Basins

Name of Development:	
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Infiltration Basins (IB)

Drainage area and IB area match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view showing plan dimensions and features	OK	Revise	NA
3) Minimum 20' from WQv pool to residential building foundation unless no basement	OK	Revise	NA
4) Minimum 100' if building is located downhill	OK	Revise	NA
5) 3:1 length to width ratio (or greater)	OK	Revise	NA
6) Sediment Pretreatment Provided	OK	Revise	NA
7) Overflows routed around the basin	OK	Revise	NA
8) Detailed cross-section	OK	Revise	NA
9) 3:1 side slope or flatter	OK	Revise	NA
10) Max ponding depth of 24"	OK	Revise	NA
11) Overflow path or structure provided	OK	Revise	NA
12) Grading plan with bottom and overflow elevations	<u></u> ОК	Revise	NA
Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA



Stormwater Quality Review Checklist - Infiltration Trenches

Name of Development: _	
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Infiltration Trenches (IT)

Drainage area and IT dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view showing plan dimensions and features	OK	Revise	NA
3) 20 foot sediment forebay or grass channel precedes trench	OK	Revise	NA
4) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK	Revise	NA
5) Infiltration rate of receiving soil is greater than or equal to 0.5 inch/hour	OK	Revise	NA
6) Soil has no greater than 40% clay content	OK	Revise	NA
7) Infiltration Trench designed as offline device	OK	Revise	NA
8) Detailed cross-section	OK	Revise	NA
9) Depth of trench between 3 and 8 feet deep	OK	Revise	NA
10) Trench filled with 1.5" to 2.5" clean stone, no limestone or shale	OK	Revise	NA
11) Filter fabric on all 4 sides of clean stone	OK	Revise	NA
12) Pea gravel filter layer on top of trench	OK	Revise	NA
13) At least 4 feet above the seasonal high water table	<u></u> ОК	Revise	NA
14) Grading plan with bottom and overflow elevations	—— ОК	Revise	NA



Stormwater Quality Review Checklist - Bioretention

Name of Development: _	
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Bioretention (BR)

1) Drainage area and BR area match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view showing plan dimensions, features, and underdrain layout	OK	Revise	NA
3) Pretreatment utilized per Section 8 of MARC manual	OK	Revise	NA
4) Length to width ratio approximately 2:1	OK	Revise	NA
5) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK	Revise	NA
6) Detailed cross-section	OK	Revise	NA
7) 6" maximum ponding depth	OK	Revise	NA
8) Engineered Soil Mix (Bioretention Soil Mix) meets spec in MARC Manual or 1:1 sand/compost mix	OK	Revise	NA
9) Engineered Soil Mix 30" minimum depth	OK	Revise	NA
10) 3 inches of aged shredded hardwood mulch provided	OK	Revise	NA
11) Side slopes 3:1 or flatter	OK	Revise	NA
12) Grading plan with bottom and overflow elevations	OK	Revise	NA
13) Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA
14) At least 2 feet above the Seasonal High Water Table	OK	Revise	NA
15) Underdrain Provided - 4" minimum perforated pipe	OK	Revise	NA
16) Underdrain pipe placed with one header and several branches or several headers such that the maximum flow path has a length of five feet when viewed in plan	OK	Revise	NA
17) One cleanout every 50' and at each end of pipe run	OK	Revise	NA



Stormwater Quality Review Checklist - Bioretention

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Tambolik County - Kansas Cita	DRC or CPC No.:			
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18) Underdrain dowr	nstream connection elevation shown	OK	Revise	NA
19) Filter fabric overl	aying gravel blanket	OK	Revise	NA
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20) Overflow path or	structure provided	OK	Revise	NA



Stormwater Quality Review Checklist - Porous Pavment

Name of Development:	
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Porous Pavement (PP)

Drainage area and PP area match Final Stormwater Mgmt Study	OK 	Revise	NA ———
2) Plan view with dimensions	OK	Revise	NA ———
3) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK 	Revise	NA ———
4) Detailed cross-section	OK 	Revise	NA ———
5) Base coarse aggregate is appropriate with fractured surfaces	OK 	Revise	NA ———
6) Aggregate has 30% open space	OK 	Revise	NA
7) At least 4 feet above the seasonal high water table	OK	Revise	NA
8) Non-woven geotextile membrane installed under aggregate	OK	Revise	NA ———
9) Specification submitted for review			
10) Overflow path or structure provided	OK 	Revise	NA ———
11) Certification of installer specified on plans	OK ——	Revise	NA ——



Stormwater Quality Review Checklist - Extended Detention Wetlands

Name of Development: _	
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Extended Detention Wetlands (EDW)

Extended Detention Wetlands (EDW)			
Drainage area and EDW area match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA
 Forebay, Micropool, Low Marsh, and High Marsh areas provided and areas meet guidance in Table 15 in BMP Manual 	OK	Revise	NA ———
4) Minimum 20 feet from 1% pool elevation to residential structure	OK	Revise	NA
5) Sediment Forebay Provided	OK	Revise	NA
6) Flow Path through the facility at least 3 times the width	OK	Revise	NA
7) 12' safety bench provided around micropool with at least 6:1 slope	OK	Revise	NA
8) Energy dissipation provided at inlet	OK	Revise	NA
9) 15' perimeter maintenance path provided	OK	Revise	NA
10) Detailed cross-section	OK	Revise	NA
11) Design WQv depth less than 24"	OK	Revise	NA
12) Vegetated slopes no steeper than 4:1	OK	Revise	NA
13) Vegetation covers 50-75% of total surface area	OK	Revise	NA
14) Dam design, if applicable, meets state criteria	OK	Revise	NA
15) Overflow path or structure provided	OK	Revise	NA
16) Grading plan with bottom and overflow elevations	OK	Revise	NA
17) Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA ———
18) 4" minimum drawdown pipe provided (40 hr. drawdown)	OK	Revise	NA
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Stormwater Quality Review Checklist - Sand Filters

Name of Development:	
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Sand Filters (SF)

Drainage area and SF dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA ——
3) Pretreatment sedimentation chamber provided	OK	Revise	NA
4) Sand Filter is offline/ higher than design flows not routed through filter	OK ——	Revise	NA ——
5) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK ——	Revise	NA ——
6) Detailed cross-section	OK ——	Revise	NA ——
7) Minimum 18"-24" filter bed	OK ——	Revise	NA ——
8) Sand conforms t ASTM C-33 or AASHTO M-6 ranges in size from 0.02" to 0.04"	OK ——	Revise	NA ——
9) 6" perforated pipe underdrain in 1.5" to 2.5" clean free-draining aggregate	OK ——	Revise	NA ——
10) Filter Fabric provided on top of 1.5" to 2.5" clean free-draining aggregate	OK ——	Revise	NA



Stormwater Quality Review Checklist - Wetland Swales

Name of Development: _	
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Wetland Swales (WS) 5 acres or less

Drainage area and WS dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA
3) Longitudinal profile	OK	Revise	NA
4) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK	Revise	NA
5) Detailed cross-section (include WQv and 1% depths/elevations)	OK	Revise	NA
6) Check dams provided if slope > 2%	OK	Revise	NA
7) Overflow path or structure provided	OK	Revise	NA
8) Grading plan with bottom and overflow elevations	OK	Revise	NA
Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA
10) Bottom width 2'-8'	OK	Revise	NA
11) Side slopes 3:1 or flatter	OK	Revise	NA
12) 18" maximum ponding depth, 12" average	OK	Revise	NA
13) 4 ft/sec maximum velocity during 50% storm; max depth ≤ 2'	OK	Revise	NA



Stormwater Quality Review Checklist - Bio-swales

Name of Development: _	
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Bio-swales (BS)

Drainage area and BS Dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA
3) Minimum 20 feet from WQv pool to residential building foundation unless no basement	OK	Revise	NA
4) Longitudinal profile	OK	Revise	NA
5) Detailed cross-section include WQv and 1% depths/elevations	OK	Revise	NA
6) Check dams provided if slope > 4%	OK	Revise	NA
7) 4" perforated underdrain pipe with 6" of 1.5" to 2.5" clean free-draining aggregate cover	OK	Revise	NA
8) Overflow path or structure provided	OK	Revise	NA
9) Grading plan with bottom and overflow elevations	OK	Revise	NA
Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA
11) Bottom width 2'-8'	OK	Revise	NA
12) Side slopes 3:1 or flatter	OK	Revise	NA
13) 30" permeable soil layer	OK	Revise	NA
14) 12" maximum ponding depth	OK	Revise	NA
15) 5 ft/sec maximum velocity during 50% storm	OK	Revise	NA



Stormwater Quality Review Checklist - Extended Wet Detention Basin

Name of Development:	
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Extended Wet Detention Basin (EWDB) (between 2 and 1000 acres)

Drainage area and EWDB area match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view showing plan dimensions and features	OK	Revise	NA
3) Pretreatment or sediment forebay provided (at least 10% of WQv)	OK	Revise	NA
4) 2:1 approximate length:width ratio	OK	Revise	NA
5) Minimum 20 feet from 1% pool elevation to residential structure	OK	Revise	NA
6) Permanent pool 4-6', no greater than 12'	OK	Revise	NA
7) Detains WQv above permanent pool	OK	Revise	NA
8) 15' perimeter maintenance path provided with slope less than 5:1	OK	Revise	NA
9) Flow path through the facility equals 3 times the width	OK	Revise	NA
10) Detailed cross-section	OK	Revise	NA
11) 10 foot wide littoral bench provided around the pond perimeter between 6" and 12" below permanent pool	OK	Revise	NA
12) Littoral bench slope no steeper than 6:1	OK ——	Revise	NA
13) Slopes 4:1 above normal pool, 3:1 below normal pool	OK	Revise	NA
14) Energy dissipaters provided at pipe outlets	OK	Revise	NA
15) Multiple stage outlet structure in accordance with Final Stormwater Mgmt Study	OK	Revise	NA
16) Overflow path or structure provided	OK	Revise	NA
17) Grading Plan with bottom and overflow elevations (WQv and 1% depths/elevations)	OK	Revise	NA



Stormwater Quality Review Checklist - Extended Wet Detention Basin

Sessie County - Kansas Citis	Name of Development: DRC or CPC No.: Address of Development: Review No.: Review Date:				
18) Detailed landscap	pe plan with appropriate plant s	election based on assumed inundation	OK	Revise	NA ———
19) Drawdown pipe provided - sized to draw down in 40 hours		OK ——	Revise	NA ———	
20) Dam Design, if applicable, meets state criteria		OK ——	Revise	NA ———	
21) Complies with UC	detention requirements		OK	Revise	NA



Stormwater Quality Review Checklist - Native Vegetation Swale

Name of Development:	
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Native Vegetation Swale (NVS) (maximum 5 acres)

Drainage area and NVS dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA
3) Longitudinal profile	OK	Revise	NA
4) 1.5% maximum longitudinal slope	OK	Revise	NA
5) Minimum 20 feet from WQv flow elevation to residential building foundation unless no basement	OK	Revise	NA
6) Detailed cross-section	OK	Revise	NA
7) Check dams provided if slope > 2.5% (1% min. slope)	OK	Revise	NA
8) Overflow path or structure provided	OK	Revise	NA
9) Grading Plan with bottom and overflow elevations (WQv and 1% depths/elevations)	OK	Revise	NA
Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA
11) Bottom width 2'-8'	OK	Revise	NA
12) Side slopes 3:1 or flatter	OK	Revise	NA
13) 4" maximum depth	OK	Revise	NA
14) 1 ft/sec maximum velocity	OK	Revise	NA
15) 4 ft/sec maximum velocity during 50% storm	OK	Revise	NA
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Stormwater Quality Review Checklist - Extended Dry Detention Basin

Name of Development: _	
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Extended Dry Detention Basin (EDDB)

Drainage area and EDDB area match Final Stormwater Mgmt Study	OK	Revise	NA
Plan view showing plan dimensions and features	OK 	Revise	NA ———
3) Pretreatment or sediment forebay provided (at least 10% of WQv)	OK	Revise	NA
4) Minimum 20 feet from 1% pool elevation to residential structure	OK	Revise	NA
5) 15' perimeter maintenance path provided	OK	Revise	NA
6) Detailed cross-section	OK	Revise	NA
7) Slopes 4:1 for facilities capturing only WQv, 3:1 for basins also capturing flood volumes	OK	Revise	NA
8) Fence required if side slopes are steeper than 5:1	OK	Revise	NA
9) Energy dissipaters provided at pipe outlets	OK	Revise	NA
10) Low flow channel provided	OK	Revise	NA
11) WQv depth 2-5'	OK	Revise	NA
12) Multiple stage outlet structure in accordance with Final Stormwater Mgmt Study and UG requirements	OK	Revise	NA
13) 15' maintenance ramp around perimeter	OK	Revise	NA
14) Overflow path or structure provided	OK	Revise	NA
15) Grading Plan with bottom and overflow elevations (WQv and 1% depths/elevations)	OK	Revise	NA
16) Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA ———
17) Complies with UG detention requirements	OK 	Revise	NA ———
18) Dam design, if applicable, meets state criteria	OK	Revise	NA
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Stormwater Quality Review Checklist - Turf Swales

Name of Development:	
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Turf Swales (TS) (maximum 5 acres)

Drainage area and TS dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
2) Plan view with dimensions	OK	Revise	NA
3) Longitudinal profile	OK	Revise	NA
Minimum 20 feet from WQv pool elevation to residential building foundation unless no basement	OK	Revise	NA
5) Detailed cross-section	ОК	Revise	NA
6) 2'-4' bottom width	OK	Revise	NA
7) Side slopes 3:1 or flatter	OK	Revise	NA
8) 1 ft/sec minimum longitudinal slope	OK	Revise	NA
9) 18" maximum depth (12" average depth)	OK	Revise	NA
10) 4 ft/sec maximum velocity during 50% storm	OK	Revise	NA
11) 4" maximum depth	OK	Revise	NA
12) Check dams provided, if required	OK	Revise	NA
13) Overflow path or structure provided	OK	Revise	NA
14) Grading Plan with bottom and overflow elevations (WQv and 1% depths/elevations)	OK	Revise	NA
Detailed landscape plan with appropriate plant selection based on assumed inundation period	OK	Revise	NA ———



Stormwater Quality Review Checklist - Proprietary Media Filtration, Hydrodynamic Separation, Baffle boxes, and Oil Grit Separators

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Proprietary Media Filtration, Hydrodynamic Separation, Baffle boxes, and Oil Grit Separators

Drainage area matches Final Stormwater Mgmt Study	OK	Revise	NA
2) Size and/or dimensions match Final Stormwater Mgmt Study	OK	Revise	NA
3) Bypass provided	OK	Revise	NA
4) Maintenance access provided	OK	Revise	NA
5) Design information provided by manufacturer	OK	Revise	NA



Stormwater Quality Review Checklist - Vegetated Filter Strips

Name of Development:	
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Vegetated Filter Strips (VFS)

Drainage area and VFS dimensions match Final Stormwater Mgmt Study	OK 	Revise	NA
2) Flow enters and exits VFS as sheet flow	OK ——	Revise	NA
3) Grades between 1% and 6%	OK ——	Revise	NA
4) 130' maximum approach length	OK ——	Revise	NA
5) VFS length=1/3 approach length	OK ——	Revise	NA ——
6) Grading Plan with bottom and overflow elevations	OK ——	Revise	NA ——
7) Detailed landscape plan with appropriate plant selection with dense, 100% coverage (based on assumed inundation period)	ОК ——	Revise	NA