

Carroll County Supplemental Materials Specifications for Submerged Gravel Wetlands (SGWs)

Material	Specification	Size	Notes
Plantings	See Landscape Plan (At least 3 different wetland species)	N/A	Plantings are site specific and per approved landscape plan
Seed Mix	Filter Bed Mix – Use Wet Meadow Mix per MD Standards and Specifications §707. See Table 3. (13 lbs. / acre of SGW bottom)	N/A	Used with straw mulch in place of shredded hardwood mulch. Incorporate seed evenly in top ½" of planting media
Mulch	Shredded Hardwood	N/A	Aged 6 months, minimum
Straw Mulch	MD Standards and Specifications §920.04. (200 lb. minimum/micro-bioretention)	N/A	1" Straw mulch over seed bed (SGW bottom)
Geotextile	Class "C" – Apparent opening size (ASTM-D-4751), Grab Tensile Strength (ASTM-D-4632), Puncture Resistance (ASTM-D-4833)	N/A	Sides only – Not needed with no. 8 perimeter chimney and reservoir. Not on bottom unless specified on the plans
Underdrain, Choker Layer and Chimney Gravel	AASHTO M-43 No. 8 Stone	3/8" – 1/8"	Stone must be clean and washed. If used as choker layer, above no. 57 stone, 4" minimum thickness
Reservoir Gravel	AASHTO M-43 No. 8 Stone (Preferred) or No. 57 (1" – 1/4")	3/8" – 1/8"	Stone must be clean and washed
Chimney, Observation Well, and Underdrain Piping	Slotted PVC or Slotted HDPE Type "SP" Pipes Solid: Scheduled 40 PVC or HDPE Type "S"	See Plan	Refer to the Carroll County SWM Supplement Pg. 87 All pipes must be double walled (smooth core) and slotted (no circular holes). Pipes may <u>not</u> be used as chimneys when SGW surface is meadow. Replace with gravel chimney.
Sand	ASTM-C-33 (3 parts to 6 within Filter Media)	0.02" – 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock-dust" can be used for sand. Manufactured sand from approved sources may be used for filters. Manufactured sand may not be used in dams.
Soil	Engineer approved loam with 20% or less clay. (1 part to 6 within Filter Media)	N/A	
Wood Chips	Untreated "Green" (2 parts to 6 within Filter Media)	N/A	Untreated "green" wood chips
Filter/Planting Media	Comprised of 3 parts sand, 2 parts wood chips, 1 part soil	2 ft Minimum	See individual material specifications
Impervious Liner	Polyvinyl Chloride (PVC) or approved equal	30 Mil Minimum Thickness	Bottom and Sides See Carroll County Standard details and notes
Embankments & Trench Backfill (non-378)	Soils used for embankments and trench backfill shall be uniform and in accordance with MD 378 Code, except that fill material shall conform to Unified Soil Classification, GC, SC, SM, MH, ML, CH, or CL and be compacted to a density of not less than 95% of maximum dry density. Woody vegetation is prohibited on embankments.	N/A	See Earth Fill and Structure Backfill, Carroll County Construction Specifications Carroll County SWM Supplement, Page 130, Revised on County Website https://www.carrollcountymd.gov/media/3vybezvd/swm-pond-retro-1.pdf
Principal Spillway Pipe (non-378)	Shall be in accordance with MD 378 Code, except that all pipe joints are to be gasketed and completely watertight. Pipes connected to risers (inlets) shall be a single piece 20-feet long with no joints.	See Plan	See Pipe Conduits, Carroll County Construction Specifications Carroll County SWM Supplement, Page 131