

Landscape Architecture, EPA Rainworks Challenge Design Board

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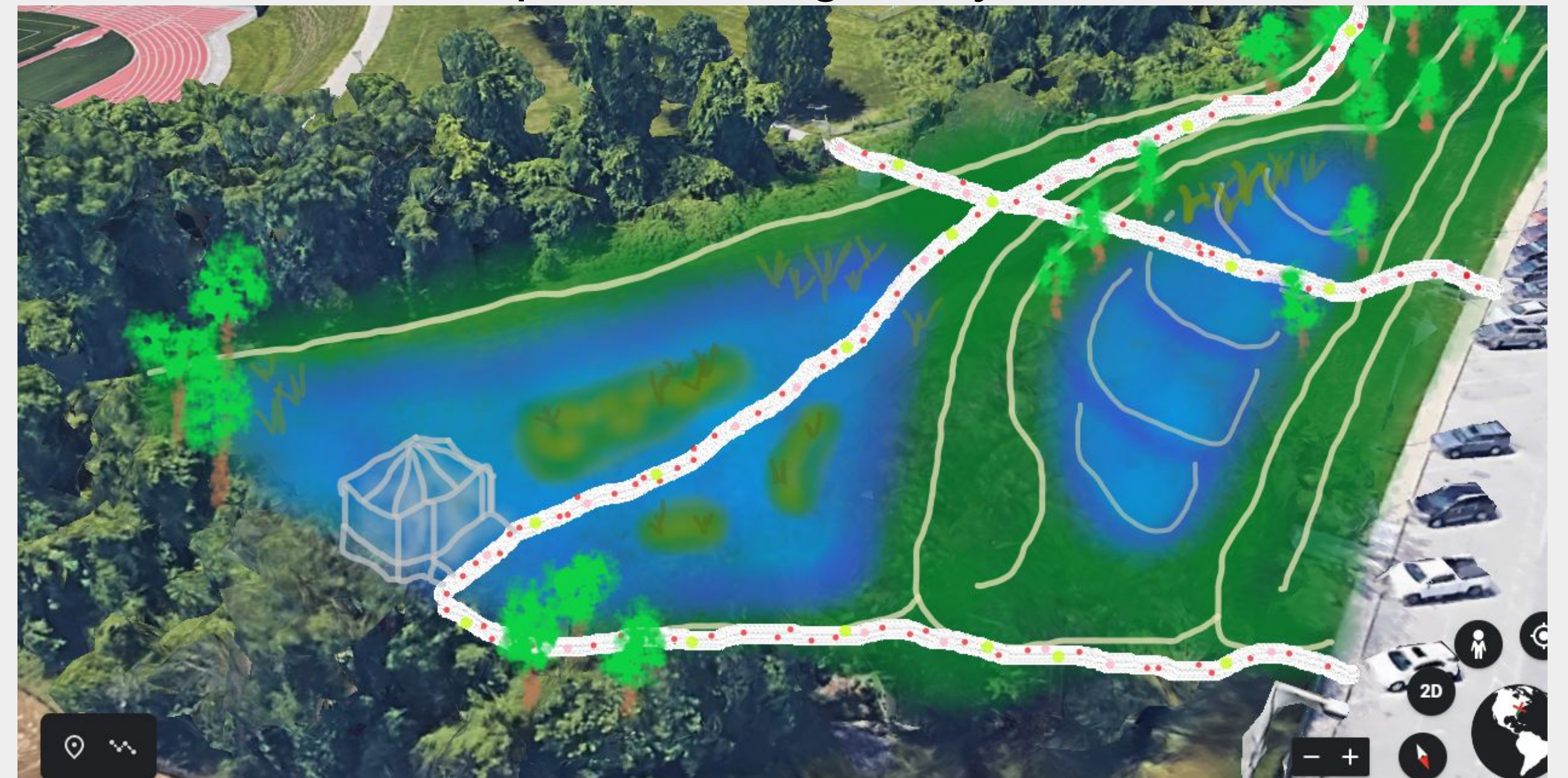
This is a site specific project design approximately 10 acres. This is a low impact design (LID) where minimal soil is moved, minimal trees are removed, and the stream is left as unaltered as possible to minimize sediment pollution. The current stream path is labeled, as well as the proposed redirection of the above ground runoff flow.

Wetland plants that are effective in runoff remediation, such as Common Waterweed, Cattails, and Pickerelweed, will be placed along the edges of and inside the wetlands and retention ponds, as well as in the floating wetlands.

Along with the standard subsurface media for SGW's, we will use topsoil cultured with micro and macroorganisms that will increase productivity and infiltration of the soil, such as earthworms, isopods, and nitrogen fixing Alphaproteobacteria.

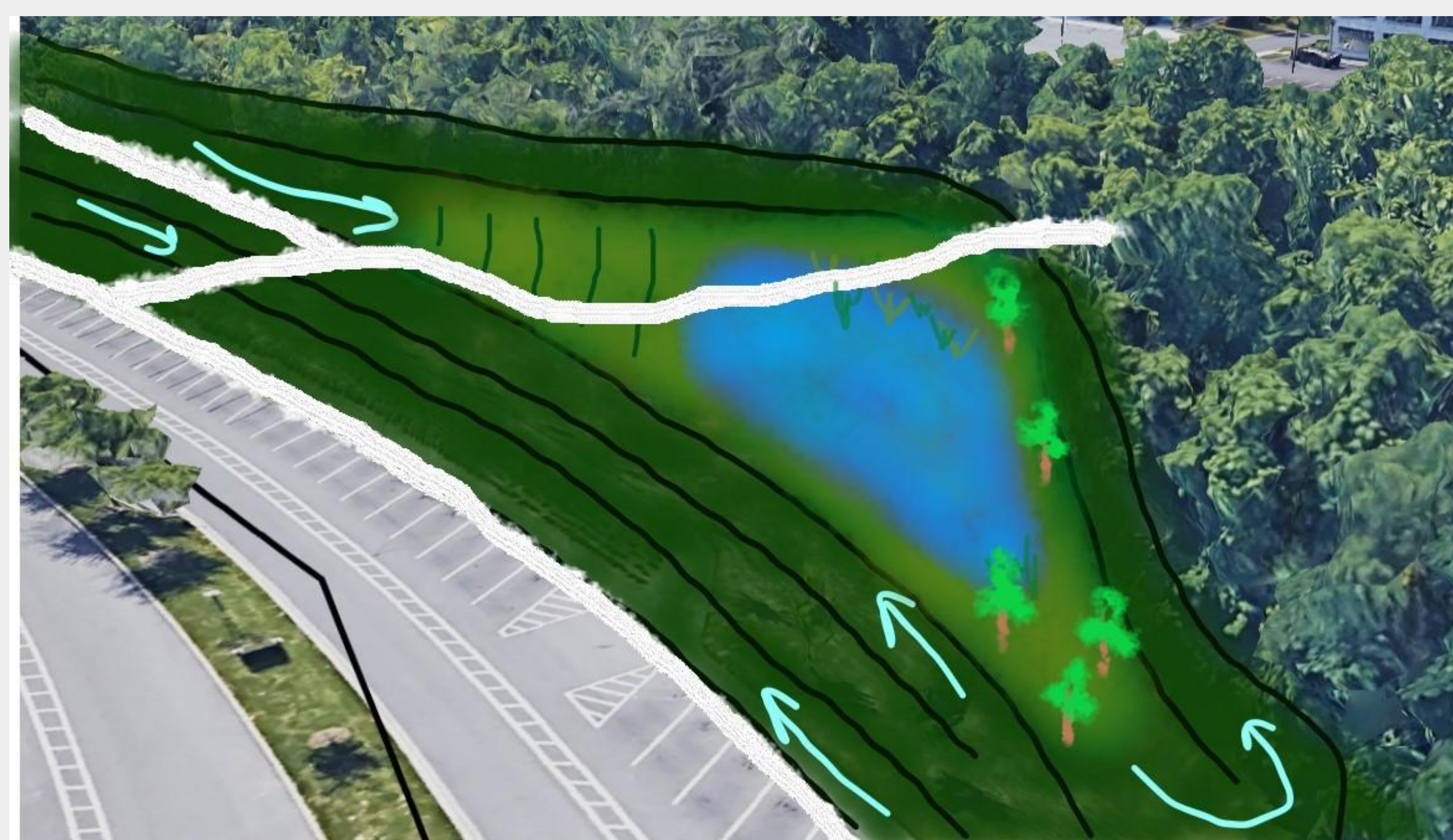
Tree Wells will be placed strategically along the flow output, and in the middle of the system between one of our wetlands, the terraces, and the retention ponds. Trees used should be a combination of wet tolerant productive species, such as Red Maples, River Birch, Weeping Willows, and Atlantic White Cedar.

Step pool retention ponds will exist along a widened terrace, and 2 retention ponds, one with a floating wetland, will exist as well. All retention ponds will have Submerged Gravel Wetland (SGW) structures underground. Monitoring structures could be placed along many site locations.



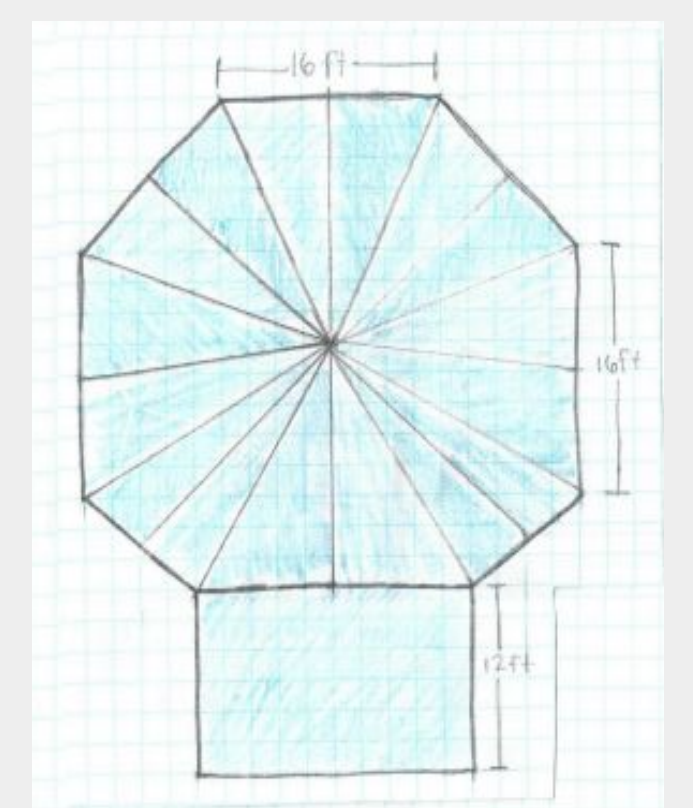
A system of terraces will exist, directing above ground runoff along their path to slow flow and increase infiltration capacity even in the case of a 100 year rain event.

Concrete retention wall borders will follow as in our design, directing the flow, while minimally altering the natural hillside that already exists.

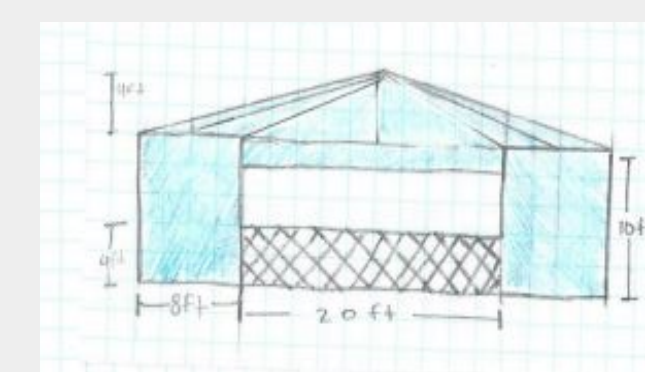


The outdoor classroom will be semi-submerged in the retention pond, with clear glass to observe the wetland. The classroom can be a versatile space that will be used for field trips for UMBC GES students or other science programs. This can also be a site to set up monitoring equipment. The monitoring component can also be used for education.

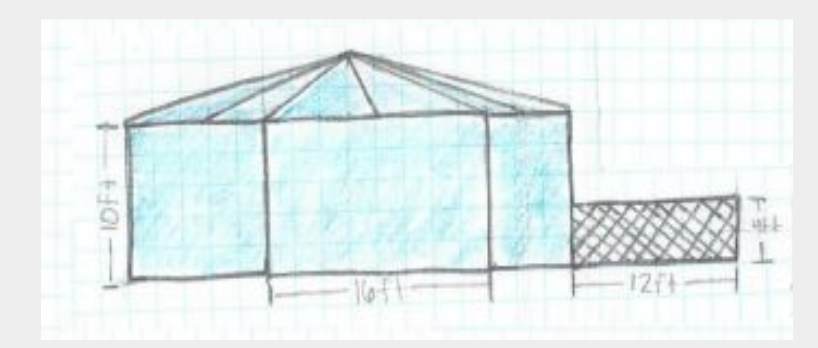
OUTDOOR CLASSROOM



TOP

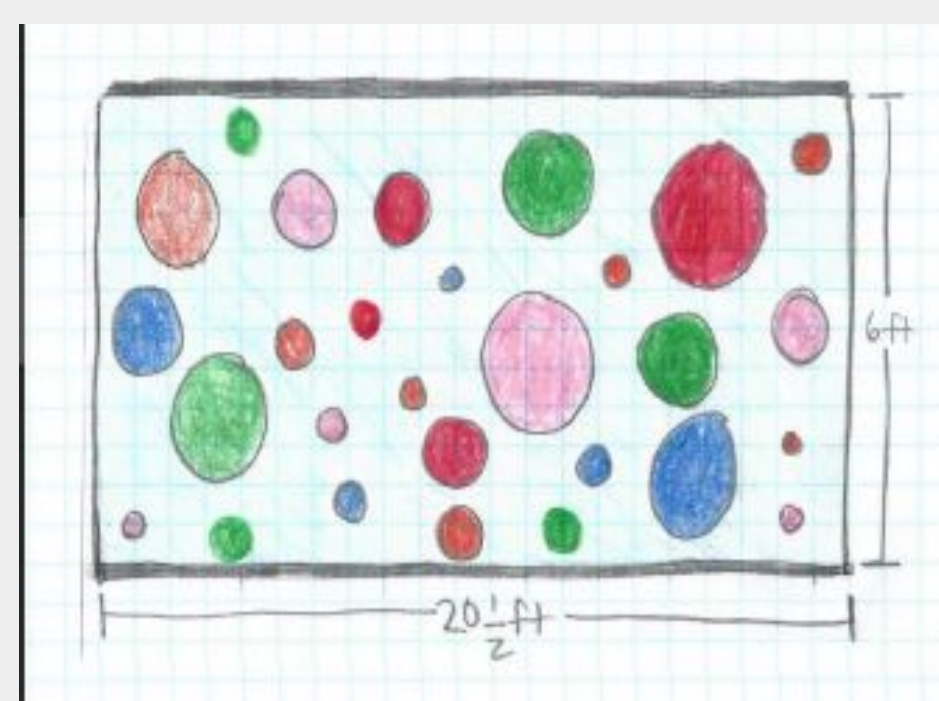


FRONT

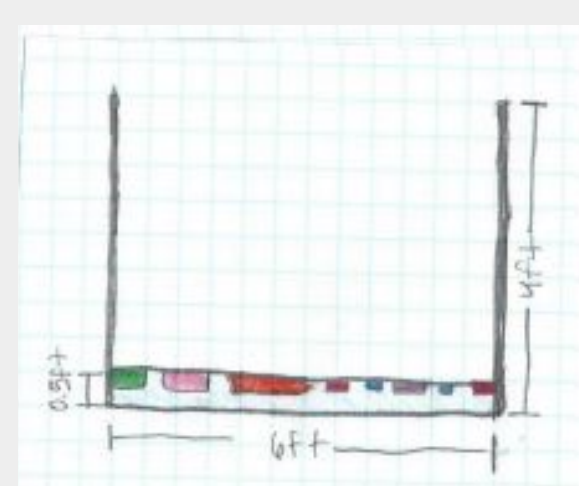


SIDE

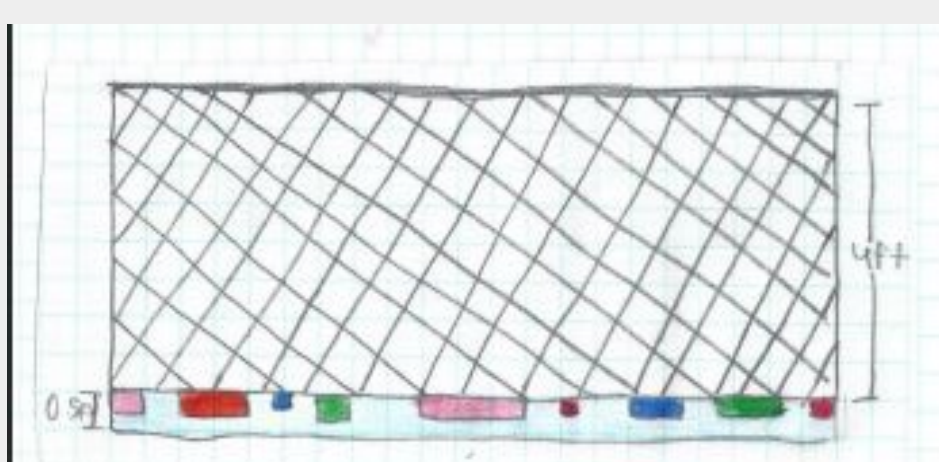
BOARDWALK



TOP



FRONT



SIDE

Materials List

- Recycled/reclaimed wood
- Recycled/reclaimed metal
- Plexiglass and multi-colored acrylic
- Bulldozers
- Bolts
- Rebar
- Trees and marsh vegetation
- Gravel, Soil, & Substrates
- PVC pipes
- Lab equipment

This will be a raised network of bridges around the entire site, they will be made of plexiglass with cut out circles filled with colored acrylic, for aesthetic value. There will be educational signs all along the boardwalk explaining the step pools, terraces, wetlands, etc. There is also a possibility for a monitoring site to be put in where there is access to the wetland. The part of the boardwalk adjacent to the street can be made of recycled/unclaimed wood since there is no value to put a clear walkway there.