• SHORELINE PRESERVATION SOCIETY •

c/o Janet Way

940 NE 147th St

Shoreline, WA 98155

January 20, 2022

Hearing Examiner

c/o Hearing Examiner Clerk @ hearingex@shorelinewa.gov

City of Shoreline

17500 Midvale Ave N

Shoreline, WA 98155

Subject: Addendum II to previous comment letter re Pulte Homes of Washington, Inc, Application No.: PLN20-0139, Permit Requested: Preliminary Formal Subdivision

Location: 2105, 2117, and 2123 N 148th St; 2116, 2122, 2132, 2142, and 2150 N 147th St; 14704, 14710 and 14718 Meridian Ave N (Parcel #7771300055, 7771300065, 7771300070, 7771300140, 7771300135, 7771300125, 7771300115, 7771300110, 7771300150, 7771300145 and 7771300060). Description of Project: Division of eleven (11) parcels of land into seventy (70) lots to facilitate development of seventy (70) townhouse units.

Dear Shoreline Hearing Examiner:

We are responding with a final comment in rebuttal to some of the testimony that was provided by the Pulte Developers at the hearing, since the record is still open.

The City of Shoreline has a very strong Stormwater Code. Low Impact Development is strongly encouraged.

The Shoreline Surface Water Manual states:

Low Impact Development. ***Low impact development*** *techniques shall be employed wherever feasible consistent with the requirements of the* ***Stormwater*** *Manual.*
When ***low impact development*** *techniques are employed, the design, construction, and ongoing*

*maintenance shall be consistent with the **Stormwater** Manual or with techniques approved by the director.*

***Low impact development** principles shall also be employed wherever feasible in planning, site layout, and implementation of **development** and redevelopment projects. **Low impact development** principles include management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and **stormwater** runoff.*

C. Emerging Technologies.

> *1. The use of emerging technologies is encouraged. Examples of emerging technologies include media filters, catch basin inserts, and engineered erosion control products.*
>
> *2. The Washington State Department of Ecology's Technology Assessment Protocol (TAPE) or Chemical Technology Assessment Protocol (CTAPE) should be consulted by project proponents to determine which emerging technologies may be appropriate for use on their project site.*
>
> *3. The director has the authority to review and approve the use of emerging technologies.*

The Pulte Civil Engineer, Gina R. Brooks, P.E. who spoke last in their responses, made some statements we feel are not fact based.

We were quite taken aback by her statement that "since the land is already in a single-family (area), there is no "Forested Area!" Really? Has she even been to the site? There are 80 huge trees shading the homes and providing a forest ecosystem and habitat and naturally infiltrating stormwater every year, right there.

And then she stated that it was not feasible because of the soils to implement LID techniques!

Well, in fact the City of Shoreline itself has many times deployed Public Works projects that utilize LID standards to provide excellent stormwater infiltration. This site could easily be designed with a competent and creative engineer, to deploy these techniques. If the Planning Director was to require it, it could be done

The City of Shoreline has utilized Natural Drainage systems many times to plant trees and practice water quality standards. In 2009-17 the Aurora Phase II and III was accomplished in a large area of town, along over two miles of highway, with "hard pan" soil. So, in order to allow natural drainage which would also promote healthy growth for the thousands of street trees planted, the SILVA Cells systems were constructed under all the sidewalks to allow the trees to grow without damaging the new sidewalks. The sidewalks were built with permeable pavement to allow infiltration.

Many other techniques were utilized as well, all along Aurora to allow stormwater to infiltrate naturally. This also allowed flexibility for intersections and entrances to the many businesses along Aurora, allowing business access. The project was termed the "hybrid" plan.

We want to point out that these statements on the Pulte development show a disappointing and non-scientific approach which not only doesn't meet the City's Comprehensive Plan, but it also fails to meet the City's own Stormwater Design standards and Sustainability Goals.

In our opinion, the civil engineer for Pulte should know this. If Shoreline could do this amazing LID project on Aurora Avenue, Pulte could be required to find a way to utilize some natural drainage systems after they are allowed to destroy an ecosystem of urban forest!(Please see attached Shoreline document)

City of Shoreline Aurora Corridor Project (shorelinewa.gov)

We want to be on the record pointing out this disappointing failure with huge consequences to the Parkwood neighborhood, Twin Ponds ecosystem and consequent environmental impacts to the Thornton Creek Watershed.

Apparently, the City's goals for massive density trump all other goals for livability and sustainability which are frequently touted, but not utilized when private developers want what they want.

We wish to register our objections and respectfully ask that you as Hearing Examiner, seriously consider the consequences of what will become of Shoreline's quality of life, the health and impacts to our citizens.

Please include this final comment in the record of this case.

Respectfully Submitted,

Janet Way, Chair

Shoreline Preservation Society

Root Box “Silva Cell” Systems

Water quality treatments being utilized on Aurora Avenue include:

- Root Boxes (“Silva Cell” Systems)
- Rain Garden Planter
- Bioswale
- “Filterra” Bioretention Systems
- Ecology Embankments
- Conventional Systems

The City of Shoreline is installing root box systems throughout the N 165th – N 185th section of the Aurora Corridor Project.

This system of modular blocks holds lightly compacted healthy soils in place, promoting root and tree growth while bearing loads for above ground streetscapes.

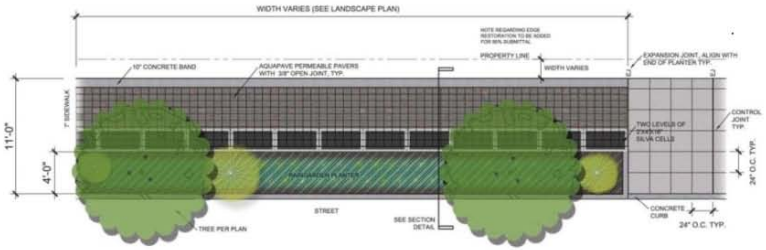
The underground system provides stormwater management allowing filtration to remove pollutants while retaining runoff to mitigate flooding and erosion.

The City's goals in utilizing this technology are:

- *To promote healthy trees*
- *Assist with water quality*
- *Provide bioretention*

SILVA CELLS + POROUS PAVERS

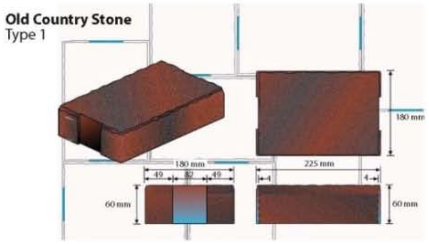
PLAN



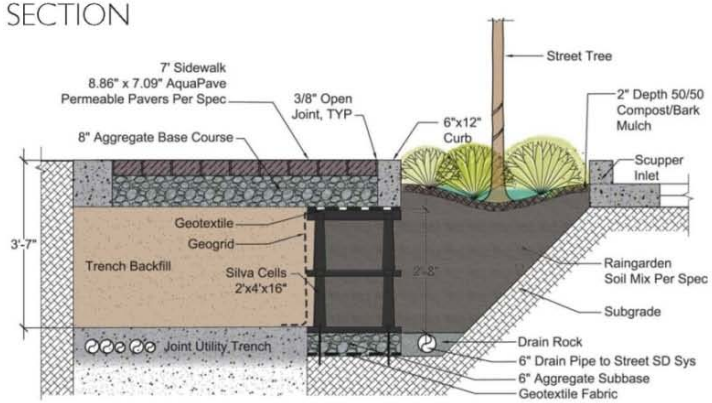
MATERIALS

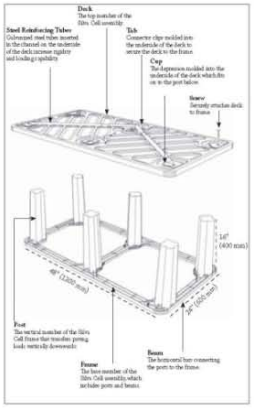
Taupe

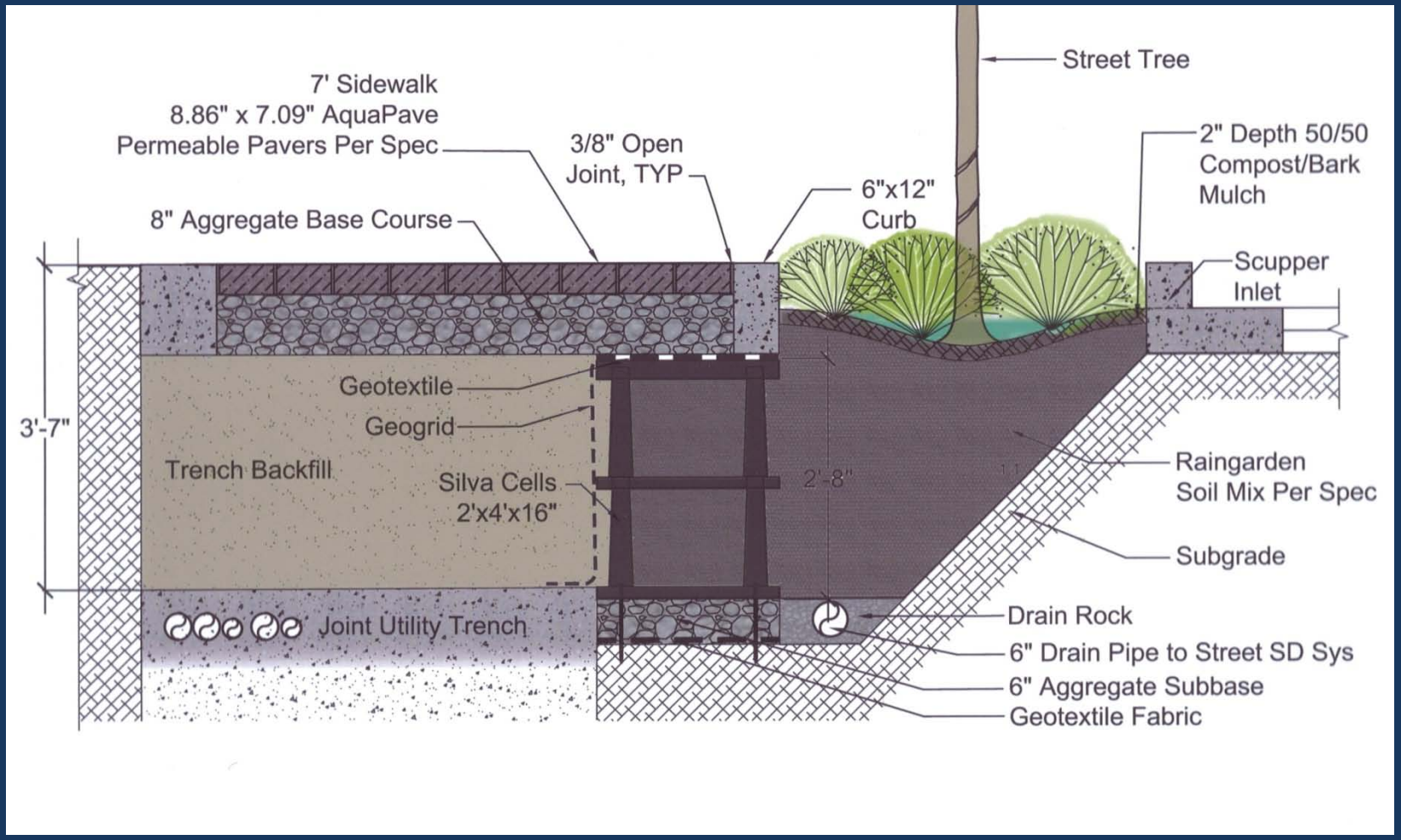
Red/Black



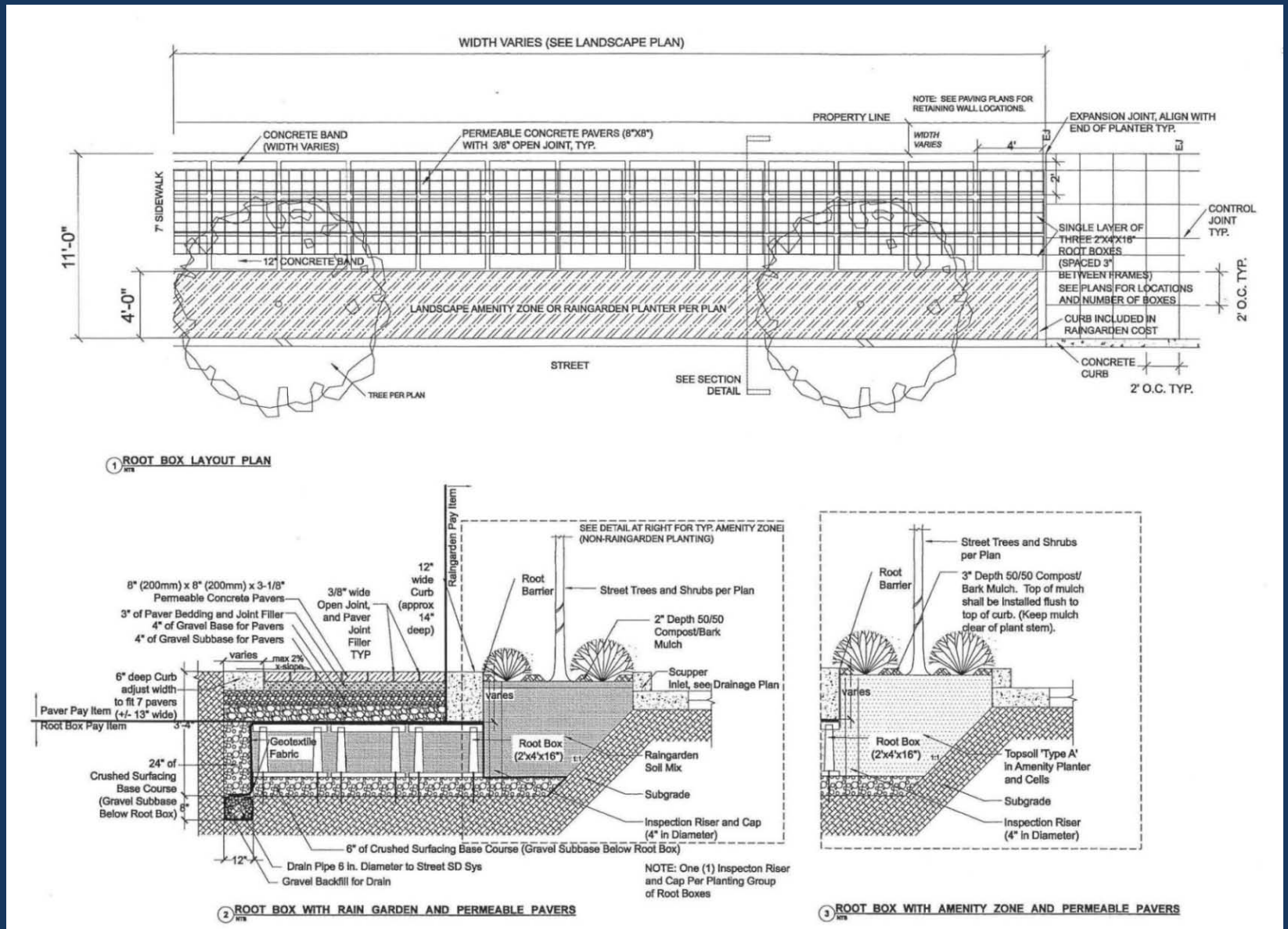
SECTION







Root box cross section



Aurora Project plan sheet

A sub base aggregate is placed in the excavated trench and compacted.

A network of frames (each with six rigid vertical posts) is positioned on the base material and anchored in place. These frames can be stacked one, two, or three high allowing for varying capacity.

Geogrid is placed around the entire system to properly hold soil in place.

“Strongbacks“ are placed on top of frames. They are only required during installation and compaction of soil to help hold frames in place .

Soil is placed between the frames.

Soil is spread with shovels and compacted by foot.

The deck is put into place right after the strongback is removed.

The deck is a rigid platform with ample openings for air and water penetration. Two diagonal channels house galvanized steel tubes to help prevent deformation.

Decks are screwed to frames.

Strongbacks are moved and reused as the work progresses.

For large areas, installation follows a progression of steps.

Progression of work.

Geotextile material is placed over the entire system.

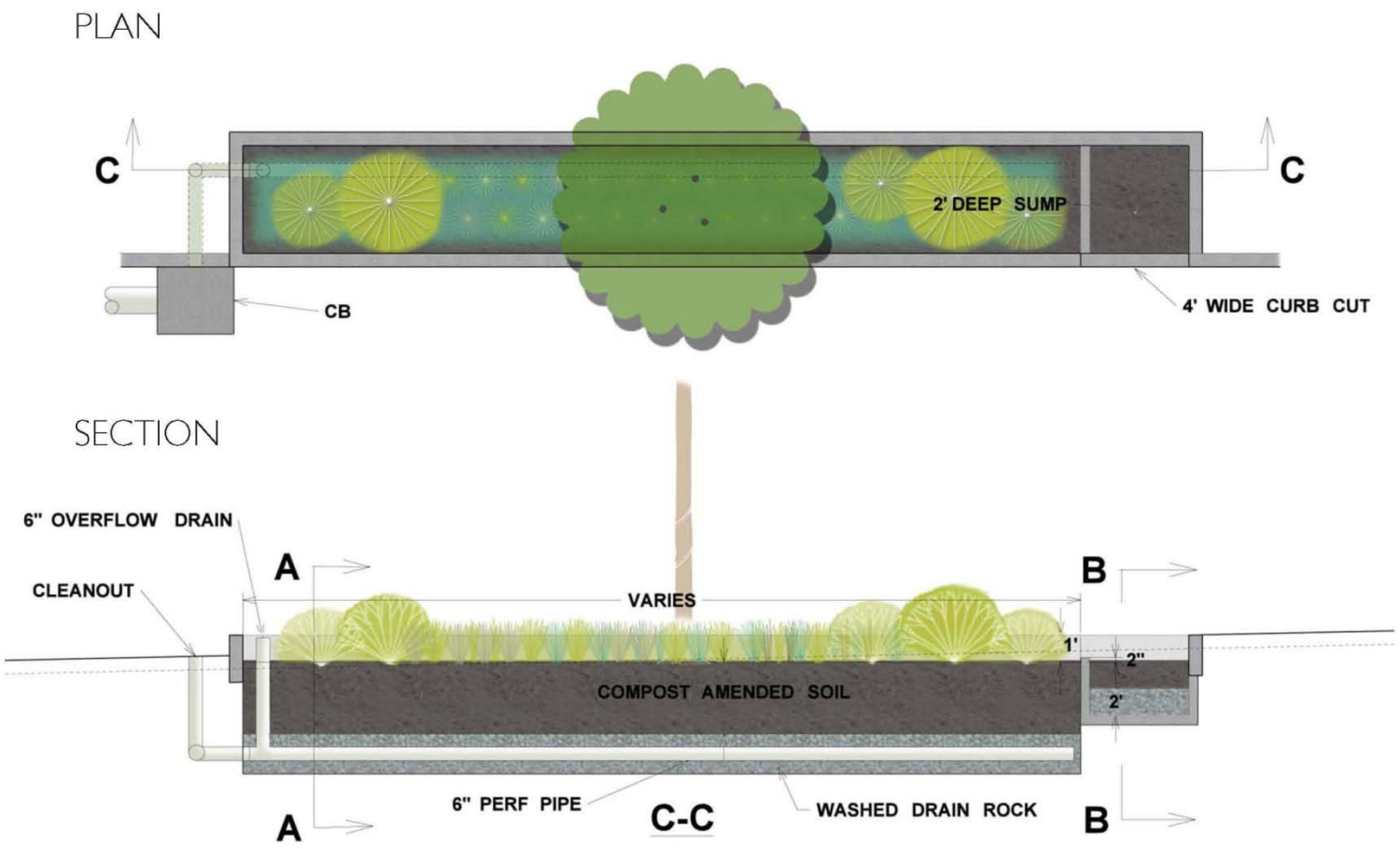
An aggregate base course is placed on top of system.

For this portion of the project, pavers spaced with gravel (allowing for infiltration) are placed over the newly installed root box system for a public sidewalk. Trees will be planted soon.

The following slides illustrate alternative stormwater management methods of capturing and retaining runoff that Shoreline is using along Aurora Avenue in addition to conventional methods of storm drains and catch basins. These methods also help to filter and clean the water they catch.

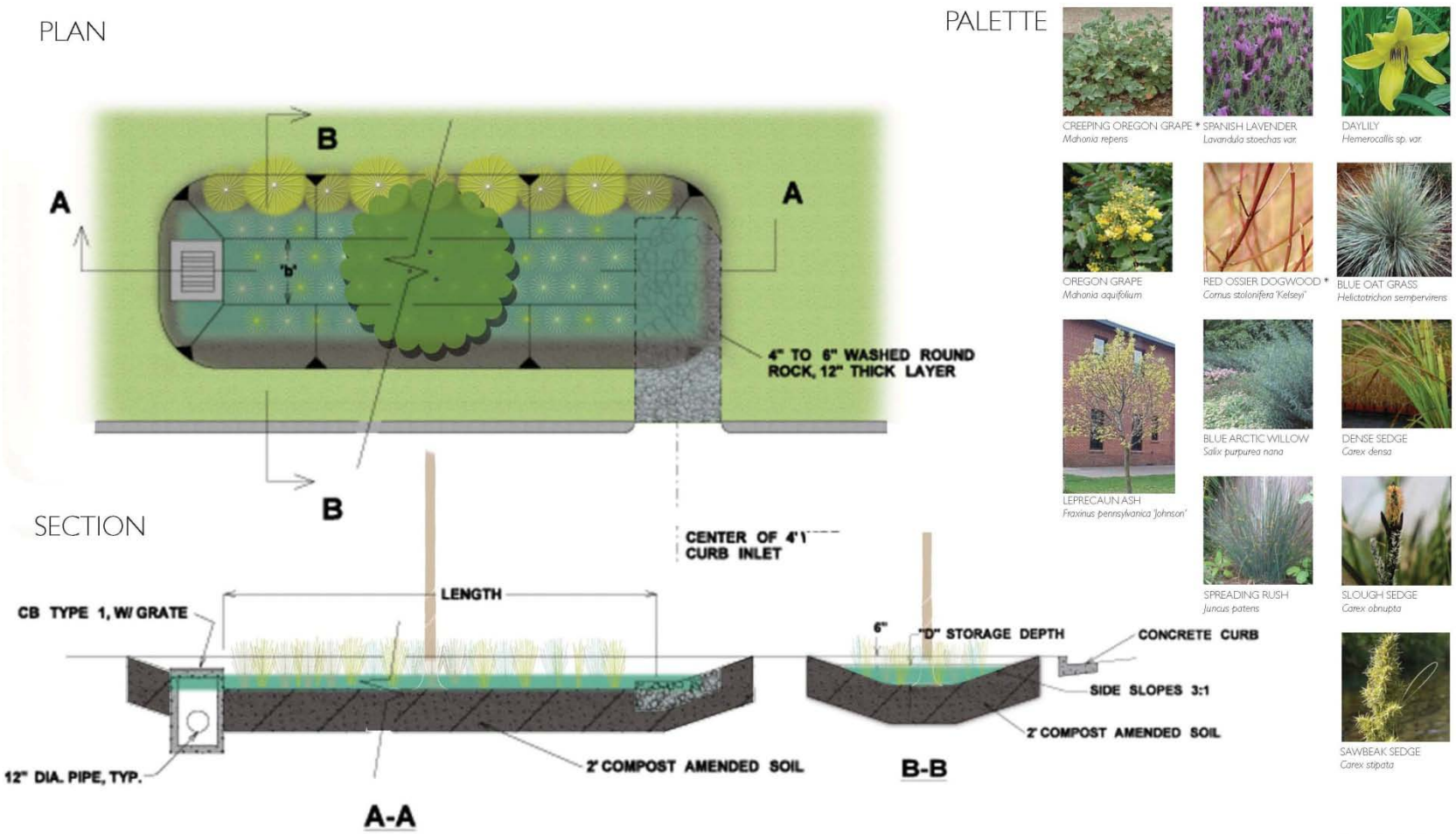
- Rain garden planters
- Bioswales
- Ecology embankments
- Filterra

RAINGARDEN PLANTERS

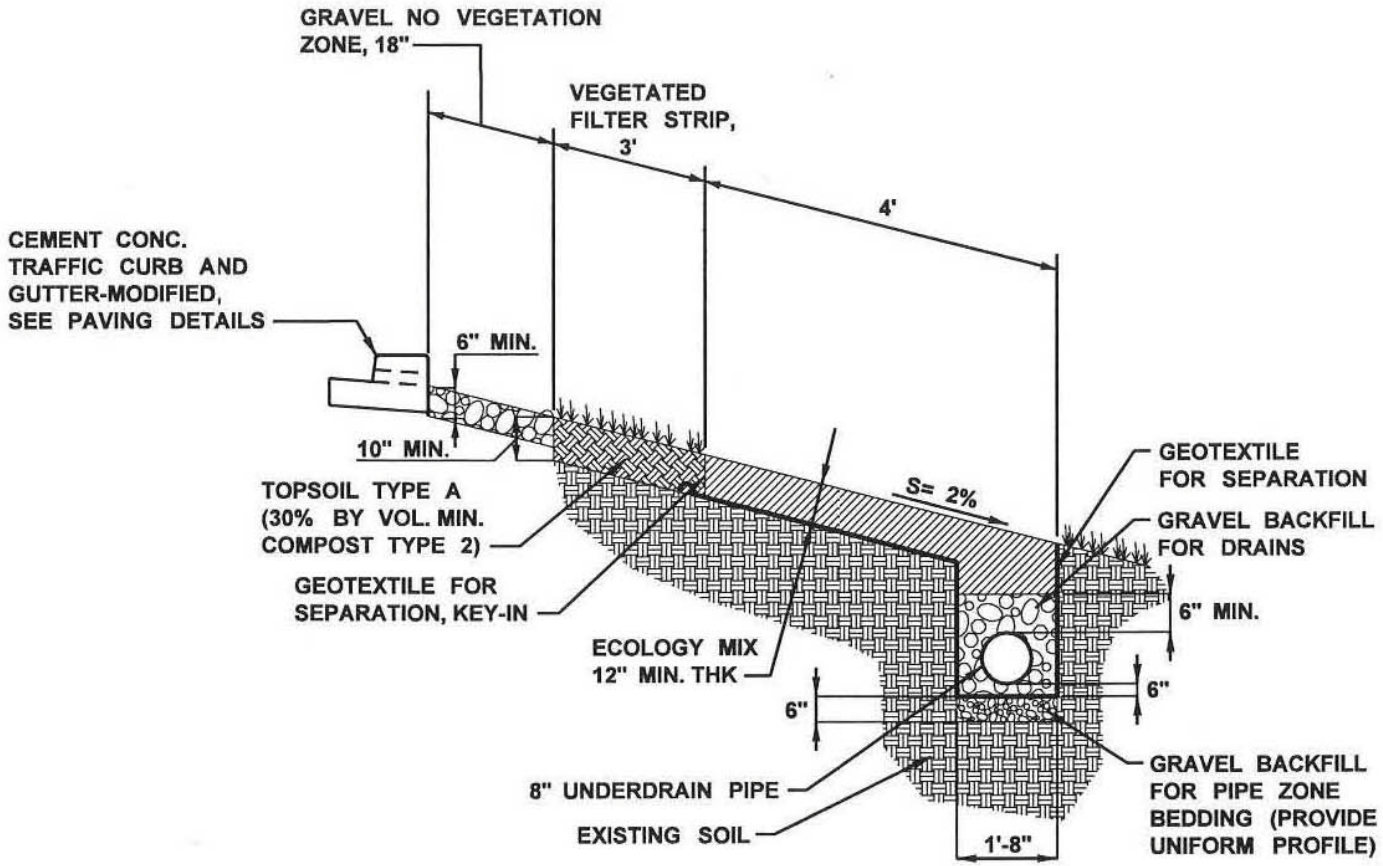


The rain garden sits in a depression where the compost-rich soils absorb water and along with water-tolerant species help retain and filter runoff.

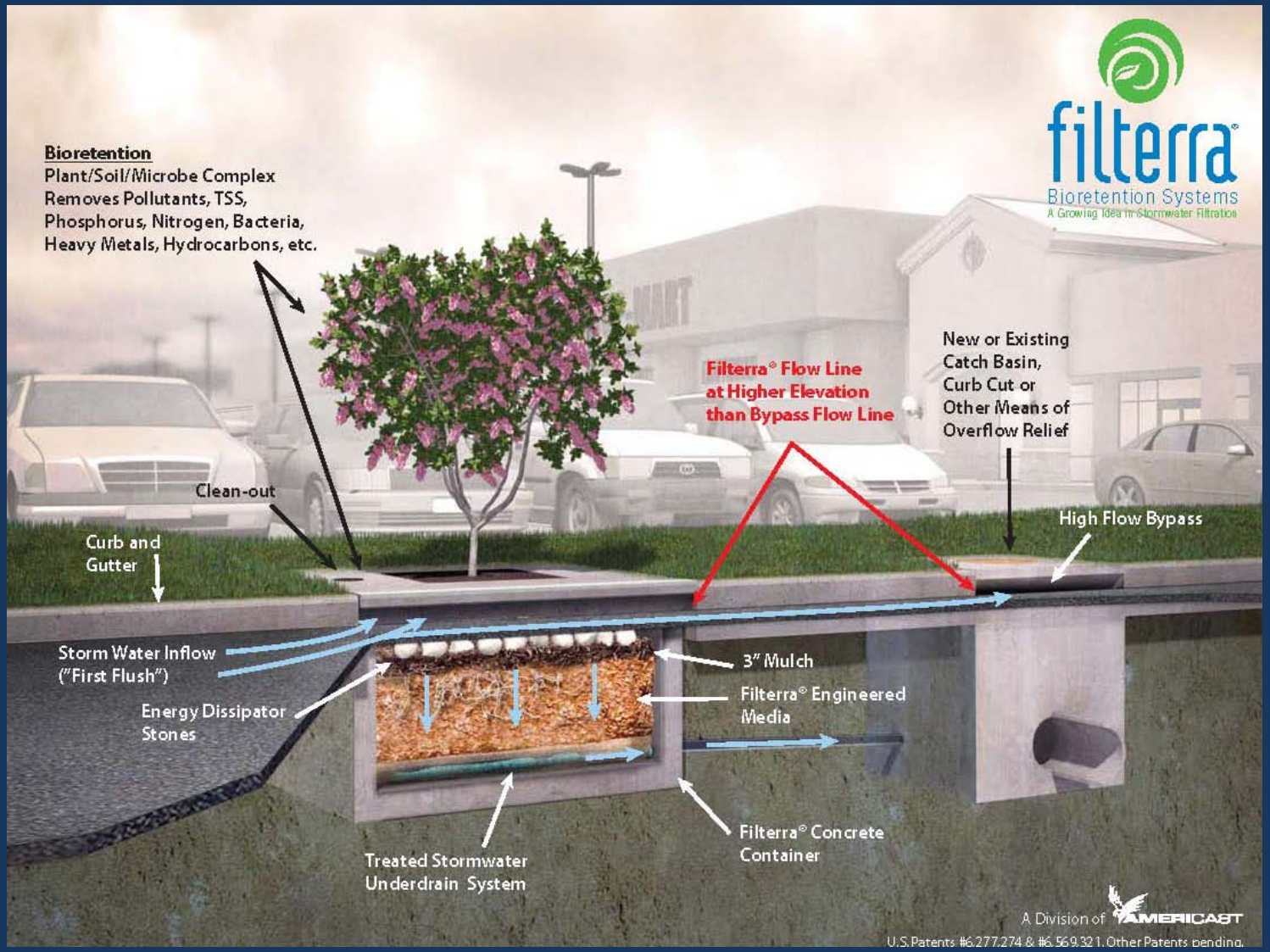
RAINGARDEN SWALES



Unlike traditional stormwater management that involves the rapid conveyance of water, low impact development (LID) is an approach that retains and infiltrates rainfall on-site. Bioswales are one component of LID that allow infiltration and filtering of stormwater run-off.



Ecology embankments are planted adjacent to a roadway shoulder to receive “sheet flow” and more naturally filter out most pollutants in the runoff.



The Filterra system adds aesthetics to the urban landscape while catching run-off through curb cuts, removing and containing key pollutants, and releasing treated water through an underdrain system to a detention storage system.