

Osterville Library Rain Garden



Introduction to Project

As part of an EPA funded project to address stormwater impacts on water quality in the Three Bays, we are seeking to engage the community through education, presentations, and events. The installation of this rain garden at the Osterville Library provides a great opportunity to engage with the public and discuss the issue of stormwater management while showing them what they can do to help through a hands-on workshop to install a demonstration rain garden. The central location will allow us to reach a wide audience and the final product will provide a beautiful and aesthetically pleasing addition to this community center.

The project partners include the Association to Preserve Cape Cod (APCC), the Town of Barnstable, Three Bays Preservation and Horsley Witten Group. APCC is managing the project and will work closely with the library through final installation completing this project free of charge to the library and the public.

For further information about the larger project see the Project Summary document provided.

Benefits of a Rain Garden

What is a rain garden?

A rain garden is a shallow depression, planted with deep-rooted native grasses, flowers, and sometimes shrubs and trees that all help the rainwater soak into the ground where the plant roots help clean the water before it reaches the bay. Plants selected for a rain garden are capable of tolerating wide-ranging weather conditions from drought to deluge. Rain garden plants can have lovely blooms, so they are often visited by butterflies, bees and other pollinators. Some may have seeds and berries that help provide food for birds in the winter.

Like any garden, a rain garden will need care for the first season or two to ensure the plants get their roots established and weeds are kept at bay. Volunteers will be needed to help with watering and weeding. However, the goal is to have a rain garden full of plants so that there is no need for annual wood mulch or intensive weeding.

What is the cost?

There is zero cost to the library for the event and installation. The materials will be provided using the funding made available by the EPA grant, and work will be completed by the project team and volunteers.

After installation of the new gardens, there will be ongoing maintenance that will need to be completed for the first year to ensure the new plants are well established. This maintenance includes occasional pulling of weeds and regular watering of plants during periods without rain. After the first year, the plants should be well established and have expanded enough that watering and weeding will no longer be necessary. This maintenance could be done by the

library as part of their regular care for the property or could be done with additional assistance of volunteers.

What is the benefit?

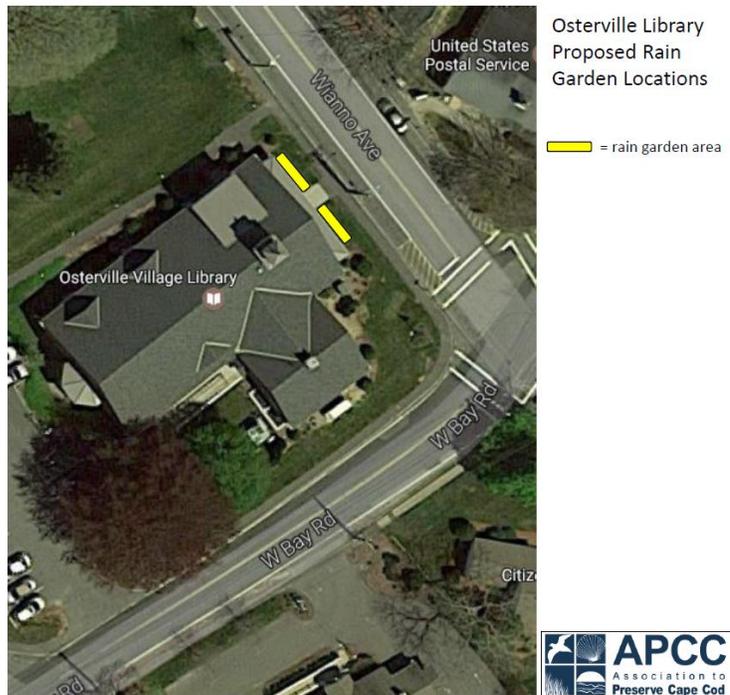
This workshop and installation provides an opportunity to engage the community, provide education about stormwater and the importance of managing it, and demonstrate the value and beauty of native plants in our landscapes. Ultimately, there will be improved stormwater treatment accomplished by way of aesthetically pleasing demonstration gardens for the community to enjoy.

Rain Garden Design

The rain garden will be located at the entrance to the library along Wianno Avenue. We will be constructing two rain gardens one on each side of the front entrance to catch rain water from the two existing gutters running off the porch roof. This will provide a nice garden bed along the edge of the front porch (without blocking the view from the rocking chairs) and will be a front and center location for people to see as it is being installed and after.

The proposed plan includes a plant palette of four different species. Based on availability of plants or your preferences this planting plan may be slightly revised to include something a little different (additional flowers or colors) or replacement the proposed plants with similar like species. The rain garden as designed will provide a grassy look with intermingled flowers that will bloom at different periods during the season. As the gardens will be located along the northeast edge of the building that does not receive full sun we have selected plants to tolerate shade. The plants selected are also those which can also deal with the both drought and wet weather conditions to thrive in periods of low rain as well as period of soaking after rain events. The plants we have selected will produce a relatively low maintenance and low growing garden that once established will provide a beautiful but easy to maintain garden space at the library entrance, and we propose to line the gardens with stones or small boulders to create a finished look.

The overall rain garden is designed to collect rain from 1 inch rain events, and takes into account soil analysis from the site plans, and a ponding depth of only 3” to keep it nice and shallow, with very gentle side slopes. The rain garden will collect and treat rain water from the porch roof removing potential pollutants that might otherwise runoff the existing lawn into storm drains and into the Three Bays with minimal treatment.



Due to the location of existing utilities on one side of the front entryway we have limited the size of the rain gardens to avoid having infiltration of rain water directly on top of the existing utility lines. To create a balanced symmetrical look and feel the rain gardens can be blended into the existing landscape with additional planting of the proposed species without digging down to add depth or encourage rain water to soak into areas with underground lines.

The existing planters would remain, but the bush located directly in front of the downspout on the left side of the entrance would be moved. The plans propose to move that adjacent to the new rain garden but it can be replanted at a location of your choice.

APCC will begin to source plants and materials for the rain garden starting next week so please let us know at your earliest convenience if you have questions or concerns about current design plan and plant selections so that we can be sure to make appropriate adjustments.

Contact Info:

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Current Work Plan:

Monday – June 12: APCC staff, interns and volunteers will be on site to break ground and dig out the areas for the rain gardens. We will relocate the existing bush and set up a tarp to temporarily hold removed soils some of which will be reused with planting and the remainder which will be removed from the site unless you have other potential use for the soil in another garden area. The area of digging will be marked off with flags until the rain garden is complete. APCC will leave information about the project and rain garden at the library to be distributed to those who want to know more.

Mon/Tues/Wed, June 12-14: Delivery of additional materials including soils, mulch for addition to garden and 100+ plants. These materials would be stored on site in preparation for the rain garden installation and workshop.

Thursday, June 15 9-11am: Rain garden workshop and installation. APCC staff will be onsite with project partners and 15 volunteers to finish installation of the rain garden. We have sent out a press release to advertise the upcoming event and will resend to media that week to encourage press attend and get photos of the event plants going into the ground. We will also continue to advertise to our memberships. We will set up a tent on site for water/snack breaks with a table for information to share to those passing by. We plan to hold the event rain or shine but in case of more extreme weather will postpone to the **rain date (Friday, June 16)**. We expect to host the entire workshop and installation event outside though if rainy may use the reserved space inside for portions of lecture.

Proposed Plants for the Rain Garden



Appalachian Sedge: Will be used along borders and edges of the rain garden.

This lovely sedge is native to eastern North America. It has a fine texture and fountain like appearance making it lovely groundcover in dry shady locations. It grows in tidy clumps making it a perfect feature for garden borders. Grows to 12 inch height. Spreads 8 inches. Will be spaced roughly 10 inches apart.



Eastern Woodfern: Will be spaced within the rain garden along with a mix of flowering plants.

This fern is a sturdy east coast native and beautiful addition to gardens with a nice forest green bouquet. It forms a lovely easy to maintain groundcover, growing in tidy clumps that will not spread. It is very tolerant of dry shade conditions but grows well in moist rich soils or part sun. Grows to height of 12-18 inches with 12-18 inch spread. Will be spaced 12 inches apart.



Purple Coneflower: Will be mixed with ferns and other flowering plants in the garden.

This popular eastern perennial has long-lasting lavender flowers. A garden classic! This plant grows well in a wide range of soil types and is highly attractive to butterflies. Blooms later in season (mid to late summer) The stems with seeds can be left standing over winter to provide food for birds and then get cut back the following spring to allow new growth. Stems can grow up to three feet tall and plants about two feet wide.



Blue Flag Iris: Will be mixed with ferns and other flowering plants in the garden.

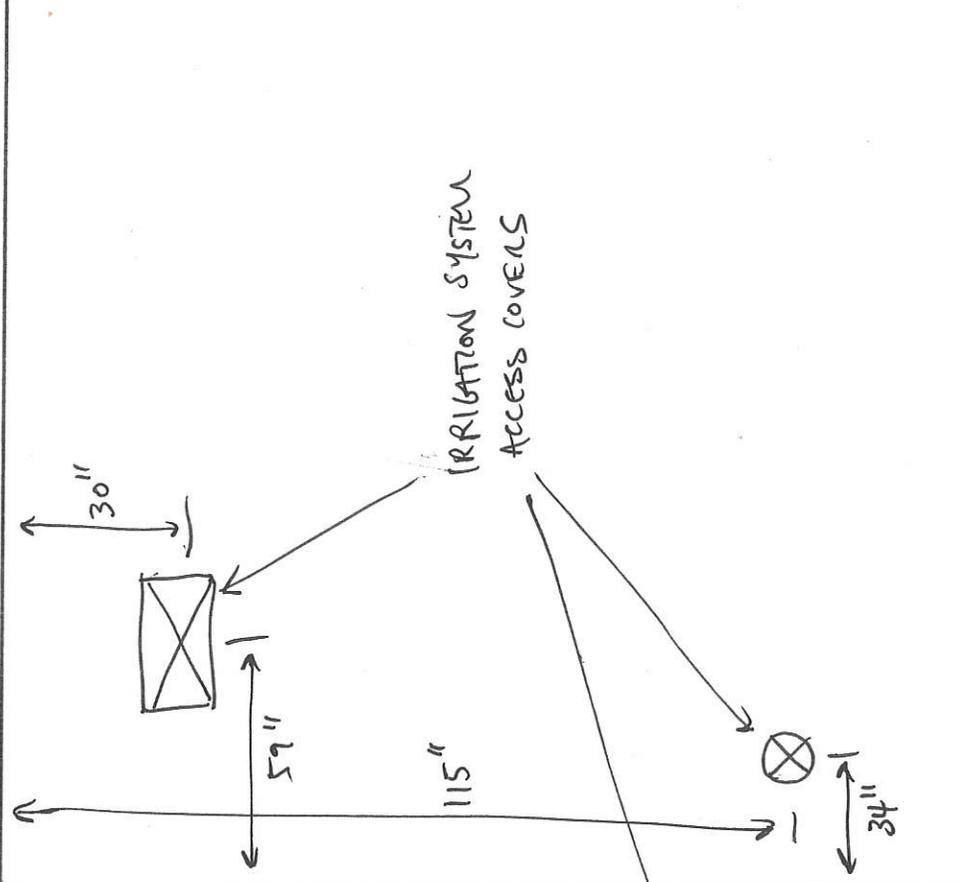
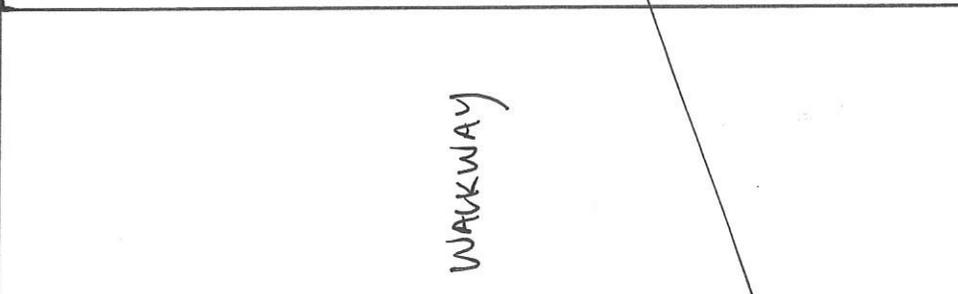
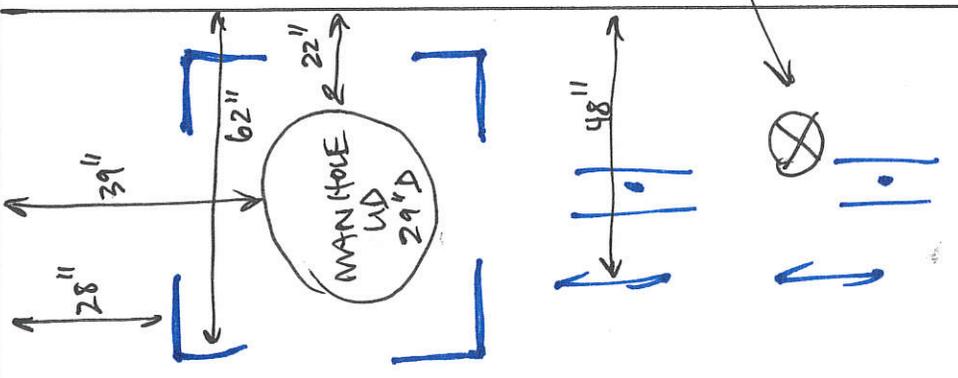
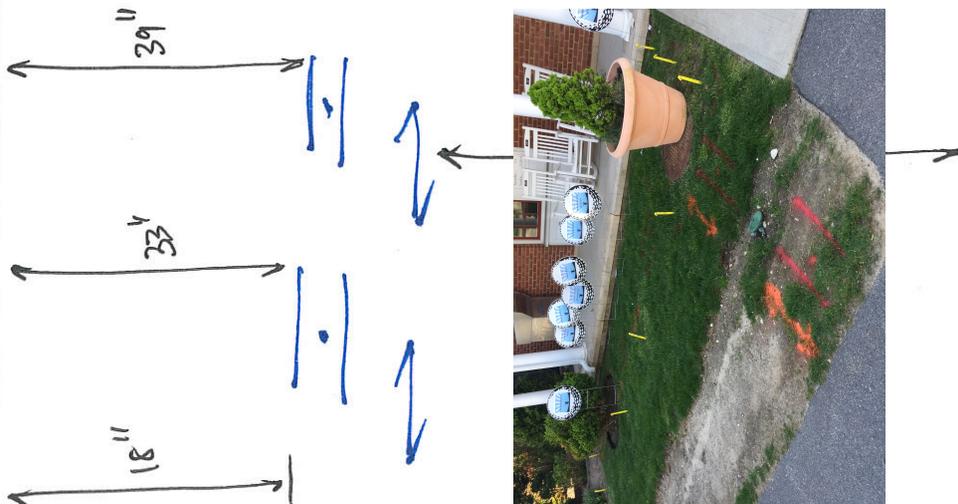
Another native perennial that produces nice bluish green leaves and lovely 3.5 inch wide blue-violet flowers. These plants do best in wet moist conditions so are perfect for a rain garden with regular soaking from rain events. Good for full sun to partial shade. This plant will bloom in May or June adding color to the garden early in the season. Grows up to 2.5 feet tall with 2-2.5 feet spread.

Alternative Plants: The following is a list of plants that may be used in addition to or in place of some of the proposed plants based on availability: sedum, columbine, butterfly weed, daylilies, sensitive fern, prairie dropseed, and poverty rush.

Dig Safe Markings of Underground Utilities

LIBRARY FRONT PORCH

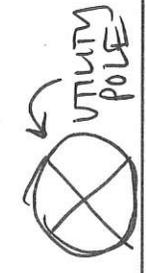
OSTERVILLE LIBRARY
RAIN GARDEN PROJECT
5/17/17 - BH



NOTE:
DIG SAFE MARKINGS
IN BLUE INK.

NOTE:
DRAWING NOT
TO SCALE.

SIDEWALK



WIAND AVENUE

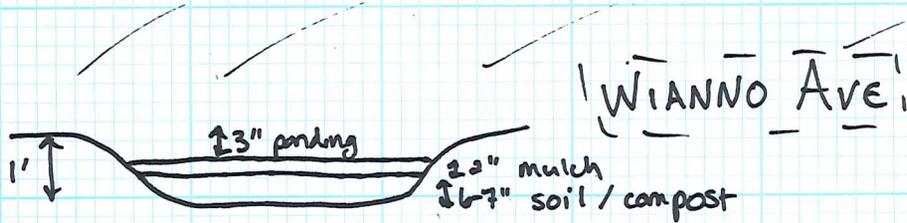
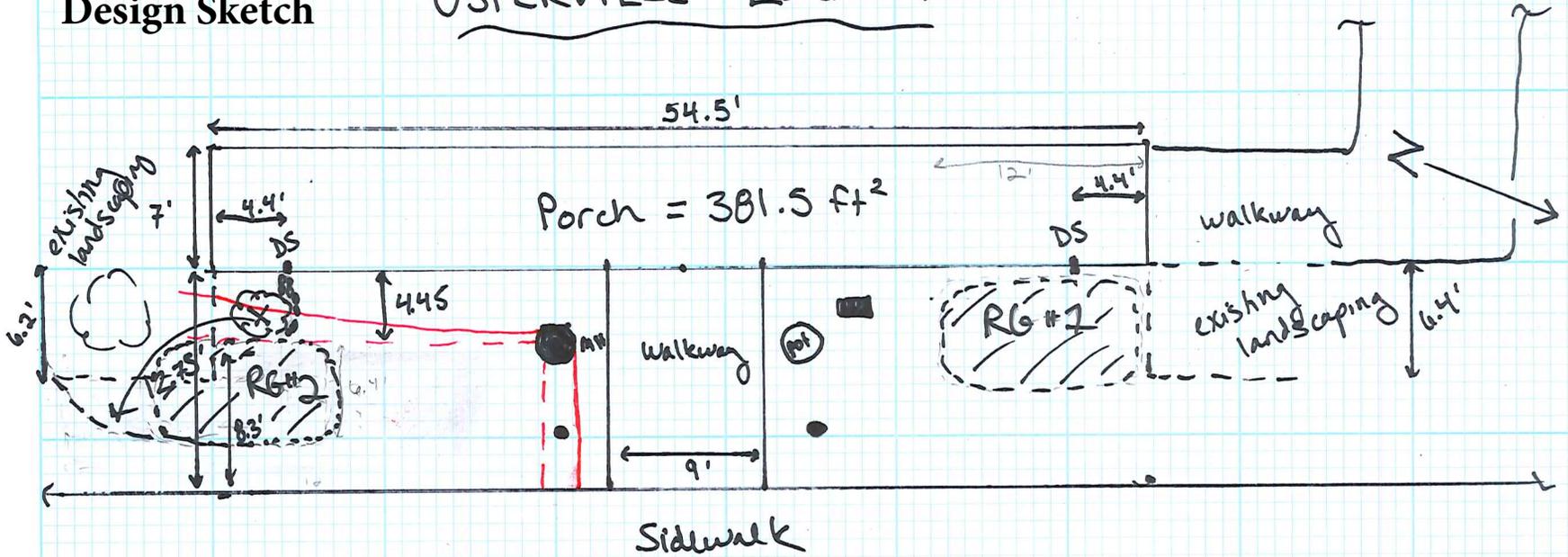
Rain Garden Design Sketch

OSTERVILLE LIBRARY

SHEET NO. _____ OF _____

PROJECT NO. _____

BOOK NO. _____



Steps:

- ① Remove sod + stockpile if reusable
- ② Excavate 1' of soil + stockpile
- ③ Mix 3" compost w/ 3-4" of existing soil in excavation
- ④ Plant
- ⑤ add mulch 1-2" around plants

RG sizing

$$V = 381.5 \text{ sf} \times \frac{1''}{12'} = 31.8 \text{ cf}$$

$$3'' \text{ RG} \rightarrow \frac{31.8 \text{ cf}}{3''/12'} = 127.2 \text{ sf}$$

2 sides of porch
each $\approx 64 \text{ sf}$

4:1 side slopes \rightarrow 1' from top to bottom horizontally

Plants

	Max Ht.	#
→ blue flag iris	18"	10
→ Cone Flower	18"	10
• sedum	18" - 24"	
• columbine	18" - 24"	
• butterfly weed	18" - 24"	
• daylilies	18" - 24"	
→ E. wood fern	12" - 18" max	15
• sensitive fern	18" - 24"	
• prairie dropseed	12" - 18"	
• Poverty Rush	12" - 18"	
→ Appalachian Sedge	12" - 18"	15



BY _____ DATE _____

CHECKED BY _____ DATE _____

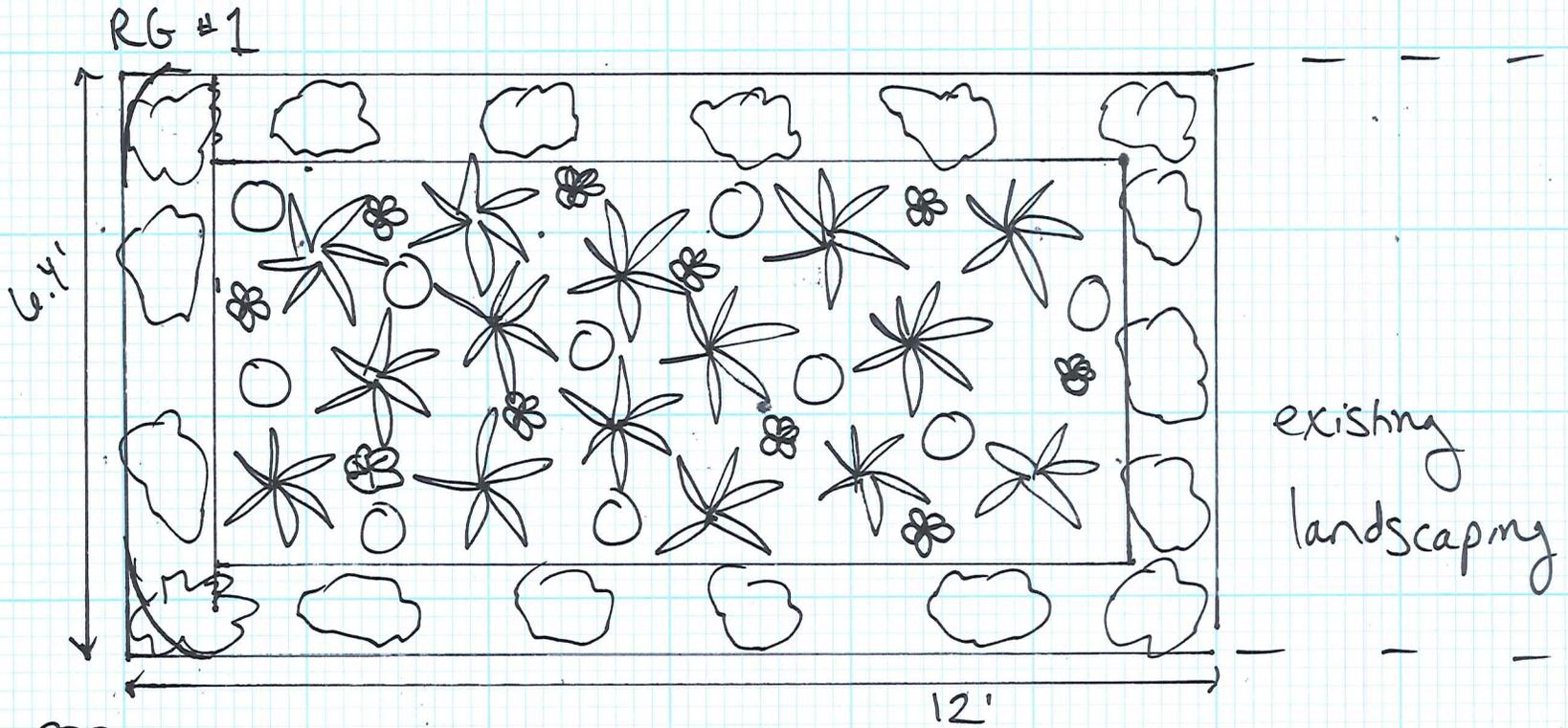
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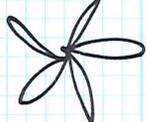
Rain Garden 1 - Right of Entrance

SHEET NO. _____ OF _____
 PROJECT NO. _____
 BOOK NO. _____



BY _____ DATE _____
 CHECKED BY _____ DATE _____
 PROJECT _____



-  = Appalachian Sedge ~ 15
-  = E. Woodfern ~ 15
-  = Purple Coneflower ~ 10
-  = Blue Flag Iris ~ 10

Use some stones/boulders for accent/
 at downspout.

Rain Garden 2 - Left of Entrance

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 PROJECT NO. _____
 BOOK NO. _____

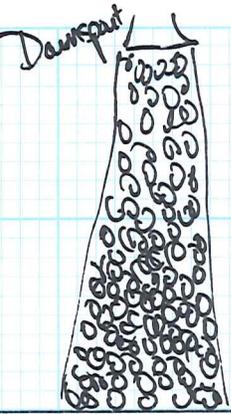


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Existing landscaping

RG # 2

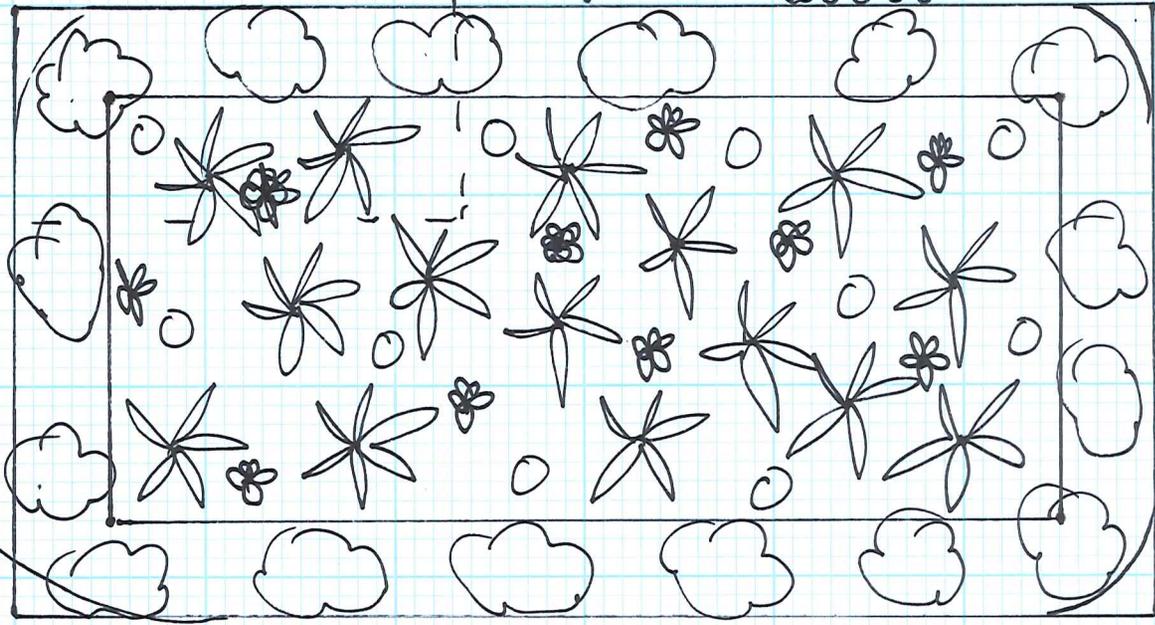
~4.5'



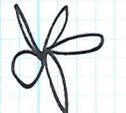
pea gravel "trench" lined w/ filter fabric

3" deep
 6" wide
 4.5' long
 = 0.56 cf

relocated bush



new edge of bed

-  = Appalachian Sedge ~ 15
-  = E. Wood Fern ~ 15
-  = Purple Cone Flower ~ 10
-  = Blue Flag Iris ~ 10