

Volunteer

Professional

Volunteer + Professional

Quiet Remediator

Image Source: Blucolt., "hydrangeas," 4 July 2004 via Flickr, CC BY-SA 2.0





Lead has accumulated over time in our urban soils through industrial emissions, automobile, truck, and airplane emissions, and the disintegration of old paint. The Quiet Remediator is an option for lots where you believe (or know) lead may be present (or may become present) in the soil.

The soil amendments that are part of this design will help bind the lead present in soil to organic matter. As the pH in the soil rises (a result of this process) and the soil turns more acidic, the hydrangea plants in this design will turn blue. As part of this design, you can use coffee grounds to feed these flowers, change their color and stabilize your soil!

What is the lot design likely to cost?

The estimated cost of the Quiet Remediator is moderate (\$1,000 – \$2,500) and based on utilizing volunteer labor, soil amendments, and the potted plants. To save money you can buy smaller pots or plugs. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

The Quiet Remediator lot design is low-maintenance. Maintenance will include watering and weeding any new plantings particularly during times of excess heat and drought. The Field Guide recommends adding bone meal and coffee grounds to your lot at least annually but even as frequently as weekly if you have them available.

Will the installation of this lot design require a professional?

The installation of this lot design should not require professional assistance if you, with the help and support of friends, family or neighbors would like to construct this lot design. Please refer to the Step-By-Step section for guidance. If you do not have the required support or feel unable to tackle this lot design, please seek professional assistance.

How long will it take to install this lot design?

While people tackle projects in different ways and at different speeds, the Field Guide estimates installation time of this lot design to be one full weekend with the help of at least three to five healthy adults or youth. The Field Guide assumes the lot is 'construction ready,' and all equipment and materials required for lot design have been acquired and are ready to use.

For more information refer to [DFC-lots.com](https://dfc-lots.com)

Cost	\$50 - 1,000	\$1,000 - 2,500	\$2,500 - 5,500	\$5,500 +
People	Volunteer		Professional	Volunteer + Professional
Experience	Beginner		Intermediate	Advanced
Upkeep	Low		Medium	High
Stormwater	Good		Better	Best
Location	Bald or Freshly Demolished Lot in Full Sun or Part Sun			

Quiet Remediator

Examples of Hydrangea Hedge



Section



Hydrangeas over lawn - See planting arrangement options

Where Do I Grow?

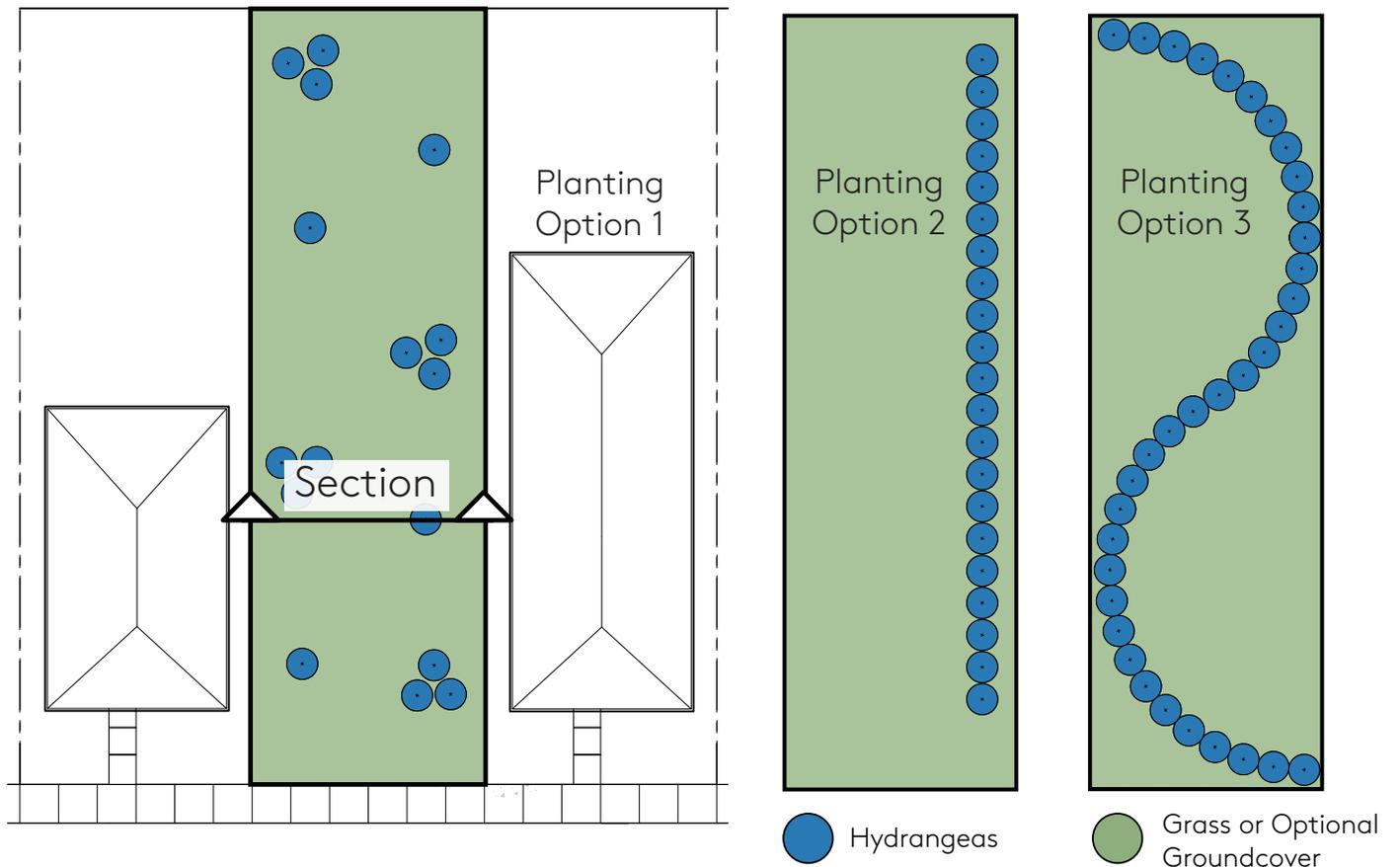


Image Source: 1) Sarah Barker, "The Dell Lawns." 17 August 2014 via Flickr, CC BY-SA 3.0; 2) Ryutaro Koma, "Hydrangea." 22 June 2013 via Flickr, CC BY-NC 2.0; 3) Nsain, "Office Coffee Compost." 25 February 2010 via Flickr, CC BY-NC-SA 2.0.

Quiet Remediator Step-By-Step

'Construction Ready'

This lot design assumes that you have prepared the lot to a 'construction ready' state.

'Construction Ready' refers to a lot that is clean and clear of trash, hazardous objects, unwanted trees, brush and vegetation, fences, and other unwanted structures.

It may be necessary to remove grass in preparation for your lot design. Refer to the Remove Your Grass box located on the right hand side of this page for more information.

Is there an available water source near your lot? Consider how and where you will access water during and after construction to ensure that your plants can establish.

If your lot is not ready for construction, refer to the [Clean + Green](#) lot design.

You can find the lot design at DFC-lots.com.

Call Before You Dig

Locate underground utilities before beginning your lot design. MISS DIG provides a free service to Michigan residents by locating and marking utilities on requested properties. Call (800) 482-7171 or 811 at least three days before you plan to start digging on your lot.

Test Your Soil

Harmful pollutants have made their way into many urban soils. To proceed with awareness, consider having your soil tested before construction. Two great options are available:

Soil testing is free to members of Keep Growing Detroit's Garden Resource Program. Call (313) 757-2635 for more information or visit detroitagriculture.net.

If you are not yet a member, you can work directly with Michigan State University's (MSU) Extension Program. They have a Home Lawn and Garden Soil Test Mailer for \$25. For more information call (888) 678-3464 or visit msusoiltest.com.

If you are concerned about the presence of lead or other contaminants in your soil, call the Michigan Department of Health and Human Services at (866) 691-5323 or (800) 424-LEAD.

Remove Your Grass

Need to remove grass in areas where you are constructing your lot design?

There are many ways to remove unwanted grass. The first is to remove the grass and its root system by digging up the grass. Another option is to cover your lot with cardboard or a plastic tarp to smother your grass in darkness. It will take several weeks, but after being covered, the dead grass will be easier to remove.

Till Safely

Before you till, inspect your lot for signs of buried concrete or rubble that was not removed during the cleanup stage. Large debris can ruin tiller blades.

When tilling, wear appropriate safety gear, such as covered boots with socks, long pants, safety glasses, dust mask, and ear protection. Make sure you understand the safe operating procedures of your tiller. Refer to the user's manual.

What You Need: Shopping List

Shopping List

The shopping list provides a breakdown of potential materials, tools, and resources required to construct this lot design.

This shopping list is designed for a single lot (30 by 100 feet).

Tools + Resources

Suggested Tools

- **Safety Gear:** Gloves, heavy work boots, tall socks, pants, long sleeve shirts, dust masks, protective eye wear, ear plugs, and hard hats (if using heavy machinery)
- **Garden Tools:** Spades, shovels, rakes, trash bags, and wheelbarrows

Potential Water Sources

- Garden Hose with potential extension hose
- Sprinkler
- Rain Barrel in addition to other water source

Field Guide Resources

Resources are available on the Field Guide's web site.

- Clean + Green
- Perennials + Grasses Planting Detail
- Bulb Planting Detail

Materials List

Materials

- **Mulch or Wood Chips**, 3 inches around the base of each shrub
- **Bone meal and Coffee**, 120 pounds of bone meal and 30 pounds of coffee grounds or tea

OR

- **Super Phosphate (0-46-0)**, 350 pounds

Planting Options

The Field Guide offers three planting options. The three options use the same plants but differ in quantity to create the desired design. Refer to page 3 for design options and page 10 for more information on the types of plants.

Planting Option 1

- **Endless Summer**, 7 pots
- **Ayesha Hydrangea**, 7 pots
- **Nikko Blue**, 7 pots

Planting Option 2

- **Endless Summer**, 6 pots
- **Ayesha Hydrangea**, 5 pots
- **Nikko Blue**, 5 pots

Planting Option 3

- **Endless Summer**, 12 pots
- **Ayesha Hydrangea**, 11 pots
- **Nikko Blue**, 11 pots

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 15 pounds of seed
- **Germination Blanket**, 4 rolls (8 by 112.5 feet)

Lead Safety

Lead is a heavy metal that is harmful to human health, especially when it is inhaled or ingested in the form of dust. Exposed children can develop serious neurological and behavioral impairments. No longer an ingredient of house paint and gasoline in the United States, lead still has many manufacturing and commercial applications. Lead has accumulated over time in our urban soils through industrial emissions, automobile, truck and airplane emissions, and the disintegration of old paint. To stay safe while installing this lot design, please follow the precautions below.

Soil Testing

The Field Guide strongly recommends having your soil tested by a laboratory before digging in. Two great options exist. Soil testing is free to members of Keep Growing Detroit's Garden Resource Program. Call (313) 757 - 2635 for more information or visit detroitagriculture.net for more information. If you are not yet a member, you can work directly with Michigan State University's (MSU) Extension Program. They have a Home Lawn and Garden Soil Test Mailer for \$25. Call (888) 678 - 3463 or visit msusoiltest.com for more information. If you are concerned about the presence of lead or other contaminants in your soil, call the Michigan Department of Health and Human Services at (866) 691-5323 or (800) 424-LEAD.

Personal Safety

Because lead is harmful to human health, follow these precautions when installing this lot design:

- Review the results of your soil test carefully. If you are not sure how to read the results, consult with a professional, or call (313) 294-LOTS.
- If your soil test shows that soil on your lot has lead in quantities over 4,000 parts per million (PPM), you should not construct this lot design yourself. Instead, you should hire someone with technical expertise in environmental remediation to treat the soil.
- Use precaution not to ingest soils or inhale dust. Wear a dust mask whenever working with dry soils or wet soil before working to eliminate dust.
- Remove soil from clothes and boots before leaving your project site. Wash all exposed skin before leaving the property. Be sure to wash your hands and face before eating, or before touching others. Keep all food and drinks off the project site until installation is complete.
- Take special care to make sure your groundcover establishes. This will help keep the soil in place and eliminate harmful dust.



1- Soil Tested in Laboratory

Additional Resources

Curious to learn more about lead in soils? These two resources, along with others, are available on the Field Guide's website:

Environmental Protection Agency

Lead in Soil: Why is it a Problem?

You Are The City

Brownfields to Greenfields: A Field Guide to Phytoremediation

Quiet Remediator Step-By-Step

Let's Start

Want to create the Quiet Remediator but don't want to hire a professional? Here are a few guiding principles to help you construct your lot design.

- Check off tasks as you go along.

Lot Design Steps

Volunteer Opportunities:

- Prepare Your Lot
- Add Soil Amendments
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

! This lot design helps to stabilize lead but does not remove lead from the soil.

Prepare Your Lot

Decide on the design option for your garden. The Field Guide offers three different suggestions for planting hydrangeas within a 30 by 100 lot, but there are many other arrangements. Be creative and construct the design that works best for you.

For this lot design, the Field Guide recommends removing all of your existing grass and plants, composting and tilling the soil, incorporating the soil amendments, and then sowing your lot with the recommended groundcover.

Adding bone meal and coffee grounds or Super Phosphate to the lot has the potential to help stabilize lead. However, it does not remove lead from the soil. **If you are planning to plant an edible garden, be sure to get your soil tested for lead and other contaminants before planting.**

This lot design helps to stabilize lead by raising pH levels. Higher pH levels create acidic soil which plants such as hydrangeas like.

Add Soil Amendments

Option 1 (Bone Meal & Coffee): Mix 120 pounds of bone meal with 30 pounds of dry (used) coffee grounds into 30 by 100 foot bare lot. The coffee grounds should be 25 percent of the mix.

Sprinkle bone meal and coffee ground mixture on top of the soil. This mixture will help stabilize any lead that may exist in the soil by making the soil more acidic.

If you do not have 30 pounds of used coffee grounds available, consider contacting a local coffee shop or restaurant and ask if they will give you their used coffee grounds. This is a good way to recycle organic materials and work with local businesses.

If you are unable to get enough coffee grounds, use Option 2.

Quiet Remediator Step-By-Step

Option 2 (Super Phosphate): Apply 350 pounds (seven 50 pound bags) of Super Phosphate (0-46-0) to a 30 by 100 foot bare lot. Super Phosphate is a soil amendment that can help stabilize lead that may exist in the soil by raising low pH levels (below 7.0). Do not use Super Phosphate if your lot drains into a lake, stream, or river.

Super Phosphate 0-46-0 can be purchased from a variety of suppliers including Washington Elevator, located in Washington, Michigan.

After selecting Option 1 or Option 2, till the soil amendment six inches into the soil. Either option will help lead and phosphorus bind into a mineral called pyrophosphate.

○ Plant Perennials

Sunny to partly sunny plantings are recommended for the Quiet Remediator. If your lot is in shade, seek alternative planting options.

Place plants in the desired location, then remove plastic pots, loosen roots, and plant.

The Field Guide recommends adding three inches of wood chips or mulch around the base of shrubs. The amount of wood chips or mulch will need to be calculated based on which of the three design options you choose. Adding wood chips or mulch will help suppress weeds.

For more guidance on planting perennials refer to the [Perennials + Grasses Planting Detail](#).



Coffee or tea grounds should be spread evenly, and any clumps should be broken up to prevent fungal growth.

○ Maintain Your Lot Design

Plants require care and maintenance to thrive. The Quiet Remediator is a manageable lot design with low-maintenance hydrangeas.

Watering and weeding around the stems of your hydrangeas is required during the first few years. Add mulch annually to help suppress weed growth.

Continue to sprinkle old coffee grounds, tea leaves, and bone meal onto your lawn and hydrangeas. Coffee grounds and tea should be mixed with a handful of garden lime and sprinkled over the ground.

Coffee grounds or tea should be spread evenly, and any clumps should be broken up to prevent fungal growth.

○ Sow Remaining Lot

To reduce dust and contact with soils, install a groundcover across your entire lot. If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow the Quiet Remediator lot design you will need approximately 15 pounds of fescue seed mix for the remaining lot and four 8 by 112.5 foot rolls of single net germination blankets.**

This family of floppy grasses is drought-resistant and requires one cutting (in August or September) per year. Fescue can be established in full sun to shade and should be seeded in spring (mid-March to mid-May) or fall (August to September).

Soil should already be loosened and prepared for seeding through tilling of lot. Apply seed mix to a damp lot.

Sow seeds by seed spreader or by hand across remaining lot. A seed rate of five pounds per 1,000 square feet is recommended.

Quiet Remediator Step-By-Step

Gently water seedlings daily until they are four to six inches in height. Placing a thin layer of straw or a germination blanket over seeded areas will help ensure that your seed establishes by keeping seeds from blowing away and protecting them from birds. Germination blankets or straw can be purchased at most nurseries and garden stores such as Detroit Farm and Garden.

When established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

Other Field Guide lot designs can be used as groundcovers. Check out the web site for additional options and ideas.

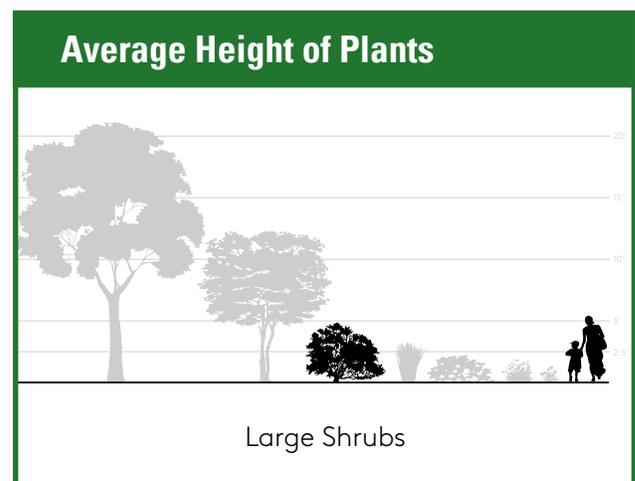
Next Level: There are several other types of plants that like acidic soil, such as rhododendrons, blueberries, and camellia. Any of these could be added to your garden. Be creative and make it your own!

If you are planning to plant an edible garden such as a vegetable patch or plan to use a blueberry bush instead of hydrangea, be sure you test your soil for lead and other contaminants chemicals before planting.

For more guidance on bulb planting refer to the [Bulb Planting Detail](#).



Visit the Resources page on the Field Guide's web site (DFC-lots.com) to discover other vendors and places to purchase plants.



Planting: Full Sun to Partial Shade



Endless Summer¹

Hydrangea macrophylla
'Endless Summer'
48" Height x 36" Width
Blooms May - August
Prune after Blooming



Ayesha Hydrangea²

Hydrangea macrophylla
'Ayesha'
48" Height x 36" Width
Blooms May - August
Prune Late Winter or
Spring



Nikko Blue³

Hydrangea macrophylla
'Nikko Blue'
48" Height x 36" Width
Blooms May - August
Prune Late Winter or
Spring

Planting Options

Option 1: 21 total plants - Endless Summer (7), Ayesha Hydrangea (7), and Nikko Blue (7); pots.

Option 2: 16 total plants - Endless Summer (6), Ayesha Hydrangea (5), and Nikko Blue (5); pots.

Option 3: 34 total plants - Endless Summer (12), Ayesha Hydrangea (11), and Nikko Blue (11); pots.

Plant Sizes



Pots: Plants can be purchased in one to five gallon pots. Size of pots can change based on availability.

Did You Know?

Professionals Can Help!

The Field Guide to Working With Lots provides a Construction Package for each lot design. The Construction Package includes information and details required for a professional to construct this design. On the Field Guide web site, use the [Construction Package](#) link located near the top of this lot design page to download and print. Your selected professional will then be able to provide a cost estimate and schedule based on the condition of your lot and the design you select.

Want to Hire Locally?

DFC-lots.com has a growing list of Detroit-based professionals and suppliers of landscape materials and services.

Still unsure of where to start?

Call (313) 294-LOTS or email fieldguide@detroitfuturecity.com for assistance.

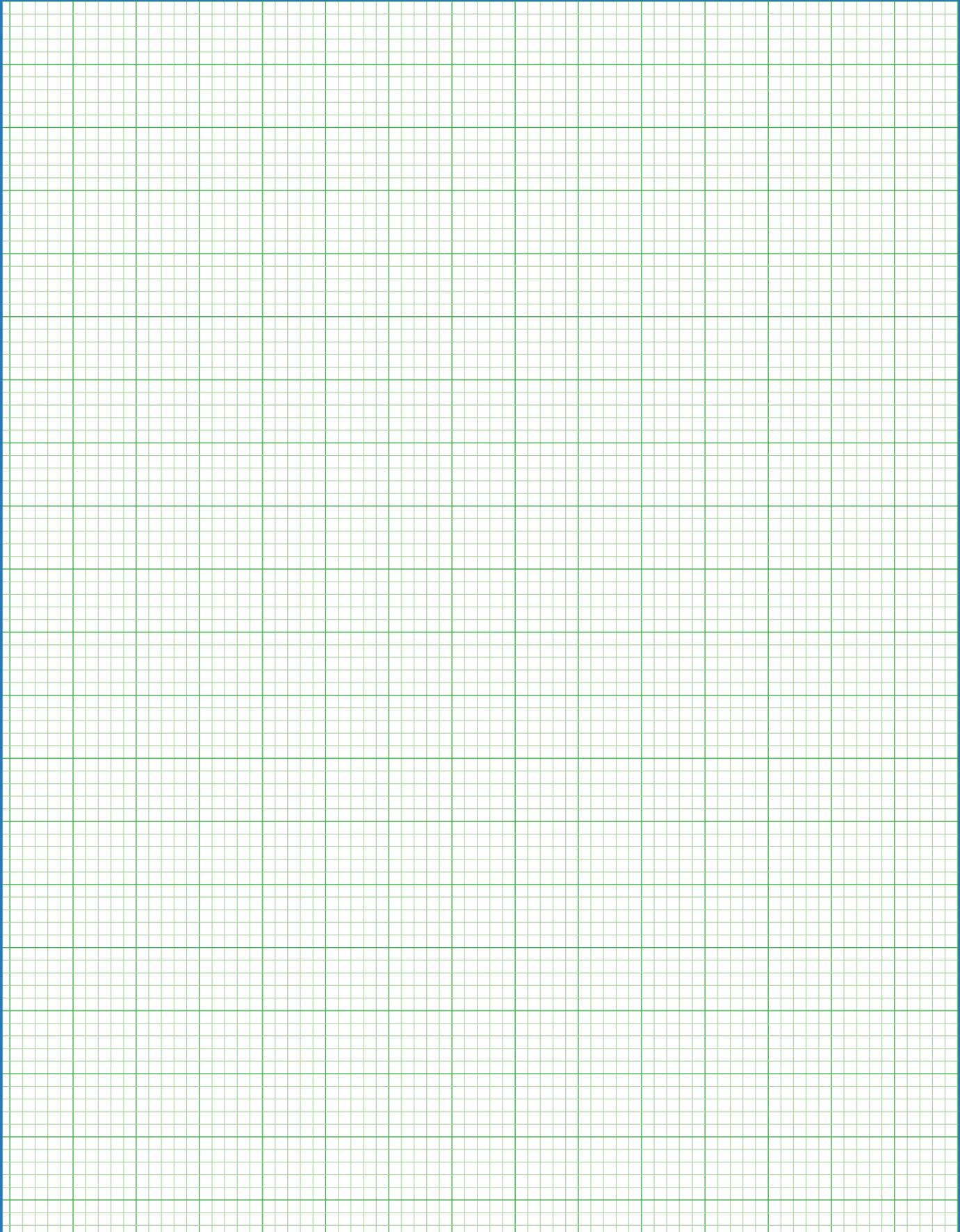
Helpful Facts

- Coffee grounds are a great pest deterrent! Sprinkle a small amount of coffee grounds around plant bases to act as a pesticide and to deter unwanted animals. It will also deter cats from using your planting area as a litter box.
- Coffee grounds are a good way to add texture and flexibility to heavy clay soils.
- Hydrangeas flowers change colors based on the pH level of the soil. Blue hydrangeas indicate highly acidic soil.
- In addition to hydrangeas, rhododendrons, camellias, blueberries, and citrus fruits like coffee grounds.

Planting Tips

- After your ground cover is established, coffee grounds and tea leaves should be mixed with a small amount of lime and sprinkled over the ground. Do not leave grounds in heaps as this can cause fungal growth.
- Water after planting and as needed.
- Weed weekly around the base of each hydrangea or as needed.
- Bone meal can be absorbed by plants growing in soil with a pH level below 7.0.
- Bone meal can be mixed with soil as an amendment before planting by adding five to six pounds for every 100 square feet.

Draw Your Lot



Quiet Remediator Field Notes



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A FIELD GUIDE

Visit DFC-lots.com
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Image Source: Amy Kay Watson, "Peas and Coffee." 29 April 2007 via Flickr CC BY-NC-SA 2.0.