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DETROIT
FUTURE
CITY

**working
with lots**

A FIELD GUIDE

DESIGNED + BUILT IN DETROIT — FIRST EDITION 2015

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Volunteer

Professional

Volunteer + Professional

3 For 1 Groundcover

Image Source: Philip Chapman-Bell, "Red Clover and Vetch." 03 June 2009 via Flickr, CC BY-NC-SA 2.0.



**working
with lots**

A FIELD GUIDE

HELLO

MY NAME IS

3 for 1 Groundcover

The 3 for 1 Groundcover offers residents a few alternative options to planting a traditional lawn.

This mix can be placed on a freshly demolished lot, a bald lot, or mixed with existing vegetation to create a healthy groundcover. The suggested plant species are drought-tolerant, so your lot will stay green all summer long without irrigation. The 3 for 1 Groundcover does not need fertilizers as the selected plants add nitrogen to the soil. Over time, the proposed groundcovers will make richer, healthier soil on your lot.

The 3 for 1 Groundcover offers additional alternatives to the City of Detroit’s current specification for post-demolition ‘greenscaping.’

For more information refer to DFC-lots.com

What is the lot design likely to cost?

The estimated cost of the 3 for 1 Groundcover is low (\$50 – \$1,000) and based on utilizing volunteer labor and the seed mix. 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 maintenance of this lot design is low. Mow selected groundcover once it reaches five inches or to height you wish to maintain. Groundcover will need to be watered during the first three weeks of germination and establishment.

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 healthy adults or youth. The Field Guide assumes the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun to Shade			

3 for 1 Groundcover

Examples of Groundcovers



1 - Grass with Clover



2 - Vetch

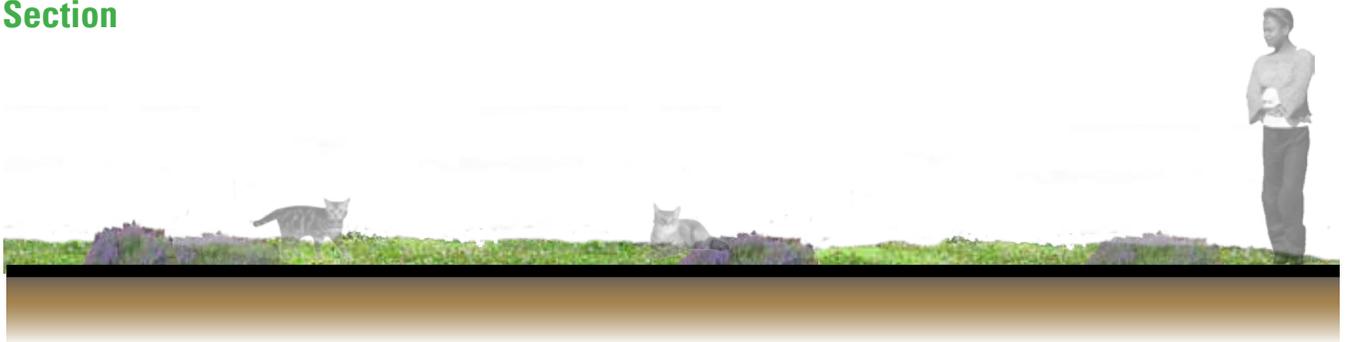


3 - Clover



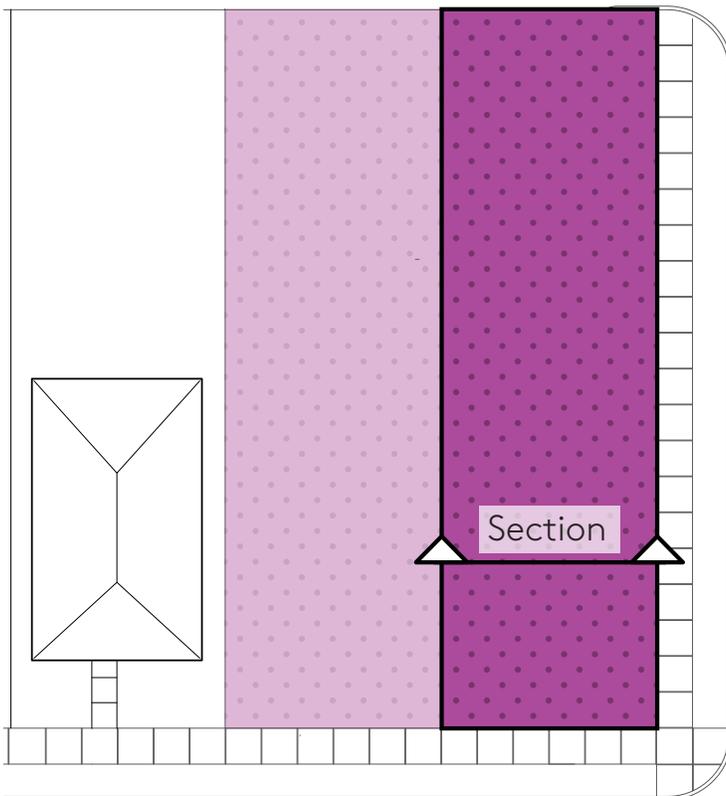
4 - Clover

Section



Clover and Catnip Groundcover

Where Do I Grow?



The 3 for 1 Groundcover can be constructed on single, double, or multiple lots and is suitable for a corner property. The image below shows white clover groundcover in a residential area.



5 - Field of White Clover



3 for 1 Groundcover

Image Source: 1) My Paw Print, "Clover Yard." 21 June 2009 via Flickr CC BY-NC 2.0; 2) Joana Roja, "Hillside of Crown Vetch." 09 June 2009 via Flickr CC BY-NC-2.0; 3) Julie Falk, "6 Field." 21 June 2006 via Flickr CC BY-NC 2.0; 4) Arthur Chapman, "Astragalus alpinus L. (Alpine Milk Vetch)." 21 June 2006 via Flickr CC BY-NC 2.0; 5) Benjamin S Tone, "Field of White Clover." 04 June 2013 via Flickr CC BY-NC - SA 2.0.

Before You Start

'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
- **Tiller,** 6 inch depth (optional)

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

Materials List

Materials

- **Germination Blanket,** 4 rolls (8 by 112.5 feet, used for any of the planting options)

Planting Option 1: Clover Mix

- **Medium Red Clover,** 0.5 pounds of seed
- **New Zealand White Clover,** 0.5 pounds of seed
- **Crimson Clover,** 0.25 pounds of seed

Planting Option 2: Clover + Catnip

- **Medium Red Clover,** 0.5 pounds of seed
- **New Zealand White Clover,** 0.5 pounds of seed
- **Catnip,** 1 ounce of seed

Planting Option 3: Clover + Fescue

- **Medium Red Clover,** 1 pound of seed
- **Low-Maintenance Fescue Mix,** 5 pounds of seed

3 for 1 Groundcover Step-By-Step

Let's Start

Want to create the 3 for 1 Demolition Groundcover 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
- Sow Meadow
- Maintain Your Lot Design

Prepare Your Lot

The Field Guide recommends a 30 by 100 foot (3000 square feet) groundcover.

The groundcover is to be maintained as an alternative lawn and mowed once it reaches five inches or to a height you wish to maintain.

If your lot is bald, you are ready to implement a lot design. Remove existing grass or vegetation if needed.

Sow Meadow

The soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Johnny's Selected Seeds is a good option for purchasing clover seeds; similar seeds are available from other suppliers. Refer to the Field Guide's Supplier Directory for additional ideas.

Suggested groundcovers will tolerate poor soil conditions including poor drainage and heat. They grow in sun to shade. Select the combination of groundcovers for your design from the planting options and seed at the following rates:

Planting Option 1 - Clover Mix: A mix of three clover species designed to provide an alternative lawn cover. It can be mowed two to three inches in height and offers a durable, soft, and walkable lawn. Minimal mowing required (one to two times per year). Recommended seed mix:

- **Medium Red Clover**, 0.5 pounds of seed
- **New Zealand White Clover**, 0.5 pounds of seed
- **Crimson Clover**, 0.25 pounds of seed

3 for 1 Groundcover Step-By-Step

Planting Option 2 - Clover + Catnip: A mix of clover species and catnip designed to brighten your lot. Catnip will grow to a height of 12 inches with flowers extending to 16 inches.

The purple flowers emerge late spring to early fall. The mix of catnip and clover will provide a lot full of both white and purple clover flowers.

This groundcover should not be mowed. Use a trimmer to keep groundcover tidy. Recommended seed mix:

- **Medium Red Clover**, 0.5 pounds of seed
- **New Zealand White Clover**, 0.5 pounds of seed
- **Catnip**, 1 ounce of seed

Planting Option 3 - Clover + Fescue: A mix of two clover species designed to provide an alternative lawn cover combined with fescue grass will help create a lawn that looks similar to a standard lawn although grasses tend to be slightly longer.

The lawn can be mowed two to three inches in height and is durable and walkable. Minimal mowing is required (e.g., one to two times per year). Recommended seed mix:

- **Medium Red Clover**, 1 pounds of seed
- **Low Maintenance Fescue Mix**, 5 pounds of seed

Once seeds have been selected and mixed, spread seed across entire lot. You can do this by hand or with a hand-cranked whirlwind seeder. You will need to do this several times to get even coverage. 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. **Four rolls of 8 by 112.5 foot single net germination blankets will cover the meadow area.** Germination blankets or straw can be purchased at nurseries and garden stores, including Detroit Farm and Garden.

You can seed 100% Low Maintenance Fescue Mix at 15 pounds per 30 by 100 lot or 100% Medium Red Clover at 1.5 pounds per 30 by 100 lot.

○ Maintain Your Lot Design

Groundcover will need to be watered during the first three weeks of germination and establishment period. Once groundcover begin growing, it requires minimal maintenance.

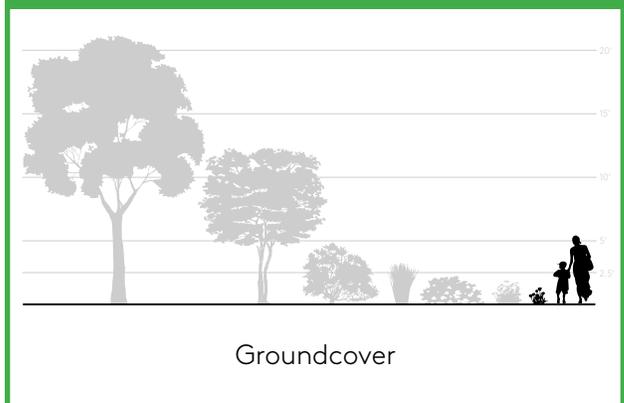
Mow groundcover once it reaches five inches or to a height you wish to maintain.

Let groundcover grow six to eight inches in the fall to help it through winter.



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

Average Height of Plants



Planting Options: Full Sun to Shade

Groundcover Options

Refer to the options listed below for seed mixes and amounts when selecting your 3 for 1 Groundcover planting option.

You can buy these seeds at Johnny's Selected Seeds.

Planting Option 1: Clover Mix

Medium Red Clover (0.5 pounds)

New Zealand White Clover (0.5 pounds)

Crimson Clover (0.25 pounds)

Planting Option 2: Clover + Catnip

Medium Red Clover (0.5 pounds)

New Zealand White Clover (0.5 pounds)

Catnip (1 package or 1 ounce)

Planting Option 3: Clover + Fescue

Medium Red Clover (1 pound)

Low Maintenance Fescue Mix (5 pounds)



Medium Red Clover¹
Trifolium pratense



New Zealand White Clover²
Trifolium repens



Crimson Clover³
Trifolium incarnatum



Catnip⁴
Nepeta cataria



Low Maintenance Fescue Mix⁵

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

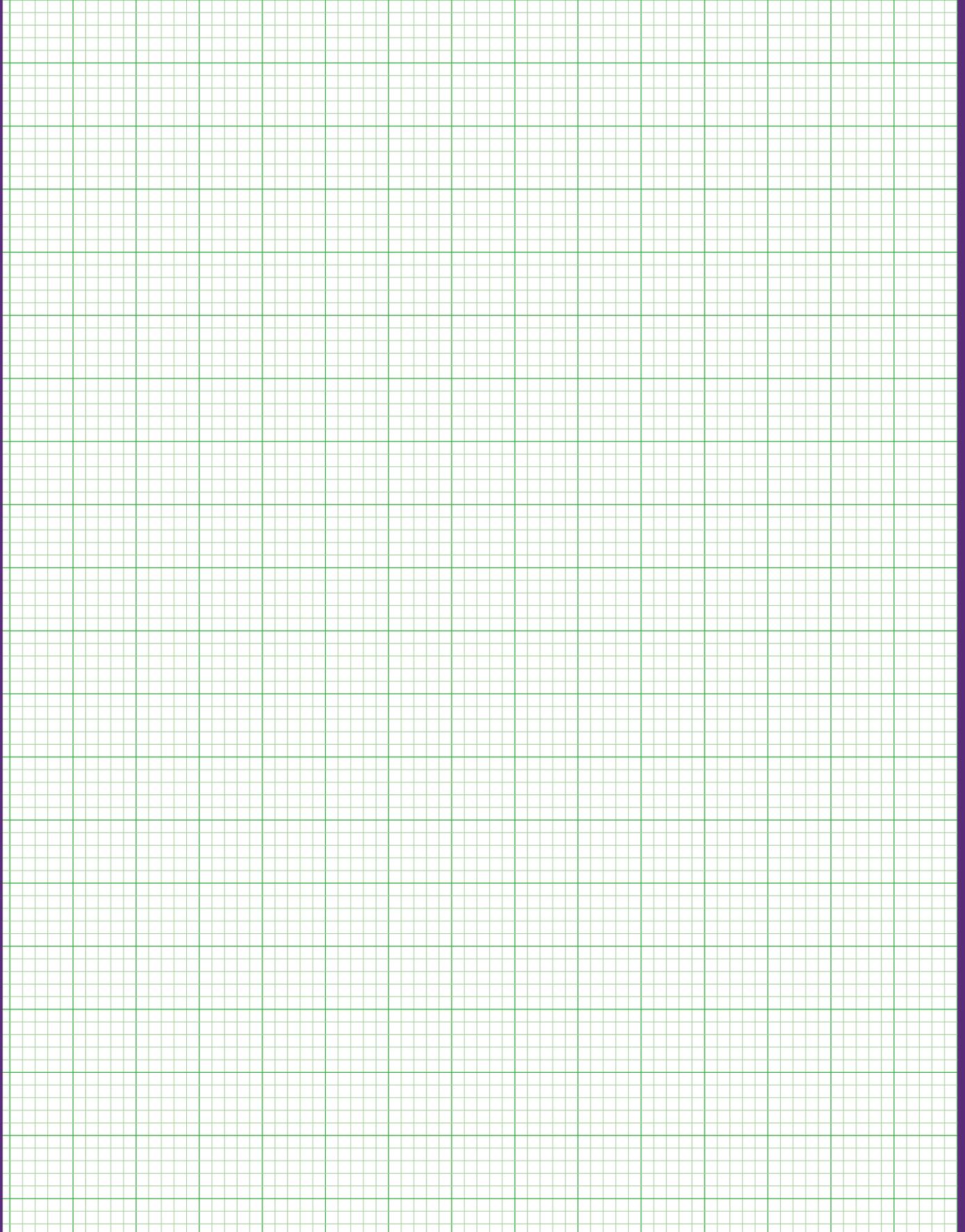
Helpful Facts

- The clover and seed mixes recommended for this lot design do not need to be fertilized.
- Clover mixes are durable yet soft to walk and play on.
- Clover mixes do not suffer from dog spots (dog urine) and are perfect for residents with pets.
- Clover adds nitrogen to the soil, improving its fertility.
- Clover can be used as green manure.
- Clover has a fibrous root system typically found within the top eight inches of soil. This root system keeps the soil loose and helps stormwater infiltrate the ground.
- Honey bees like clover. If you are interested in harvesting honey, this is the ideal groundcover as you get started with bee keeping.
- Cats love catnip. It can be dried to make cat treats.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- Clover can produce 130 to 200 pounds of nitrogen per acre and is great for short- or long-term groundcover.
- If using as green manure, be sure to till clover when blooming.
- Crimson clover is an annual. If you enjoy the beautiful red colors, re-seed your lot the following year.
- Clover tolerates poor soil conditions including minor flooding and heat, so it can be planted almost anywhere.

Draw Your Lot





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**Visit DFC-lots.com
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Image Source: Vicky Van Santen, "Field of Clover." 20 March 2008 via Flickr CC BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional



8 Mile Rain Garden

Image Source: Pat Dumas, "Ruby Throated Hummer in Bee Balm 1." 04 July 2010 via Flickr, CC BY-NC-SA 2.0.



HELLO

MY NAME IS

8 Mile Rain Garden

The 8 Mile Rain Garden design is a six inch bowl that captures stormwater and slowly releases it into the soil, keeping it from entering Detroit’s overtaxed sewerage system.

The 8 Mile Rain Garden is ideal for a homeowner looking to create a productive landscape by using their disconnected downspout to water this small garden.

This lot design includes a vibrant mixture of native and non-native plants and provides multiple planting options that have been selected to brighten property and provide habitat.

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

What is the lot design likely to cost?

The estimated cost of the 8 Mile Rain Garden is low (\$50 – \$1,000) and based on utilizing volunteer labor and potted plants. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the newly planted rain garden, particularly during the first two growing seasons while the plants establish themselves.

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 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 the completion time of this lot design to be one full weekend with the help of at least three healthy adults or youth. The Field Guide assumes the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun to Shade			

8 Mile Rain Garden

Examples of Rain Gardens



1 - Planting Perennials

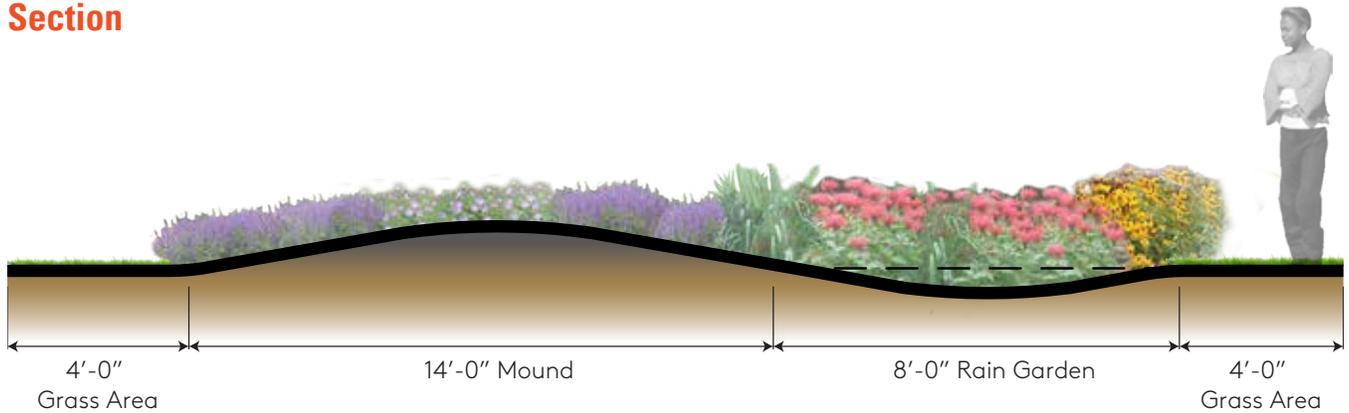


2 - Monarch Butterfly

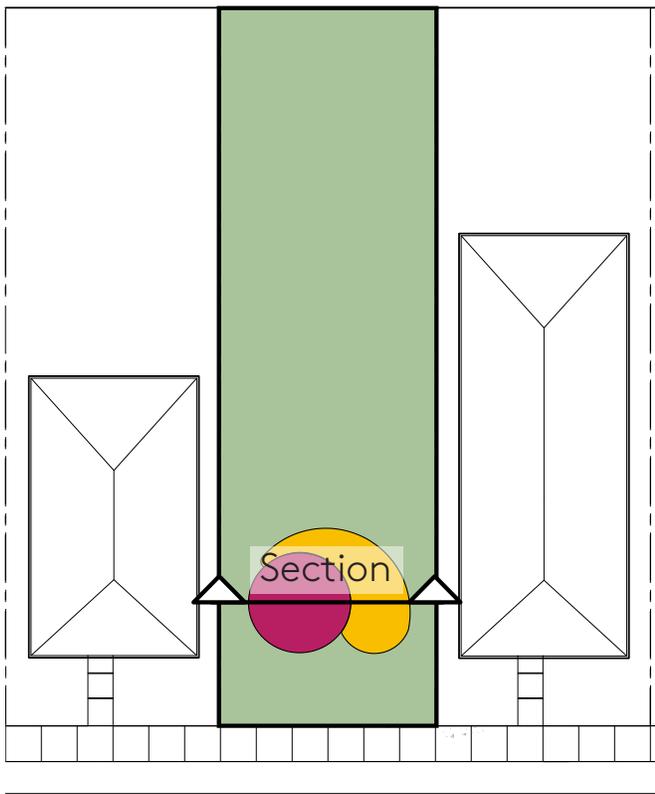


3 - Rain Garden Plantings

Section



Where Do I Grow?



The 8 Mile Rain Garden is best for single lots. Position the design close to houses, garages, or other rain water catchment areas so the rain garden can collect stormwater runoff from hard surfaces. **The 8 Mile Rain Garden is small and can be installed on several locations on your lot.** The mound is created from the soil excavated to create the rain garden.

- Mound
- Rain Garden
- Grass or Optional Groundcover

Before You Start

'Construction Ready'

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'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.

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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

- Marking Paint, Spirit Level, Tape Measure, String and Stake
- **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
- Hacksaw and Screwdriver

Potential Water Sources

- Garden Hose with potential extension hose
- Sprinkler
- Rain Barrel in addition to other water source
- Downspout Disconnect (shown in lot design)

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

- **Rain Garden Planting Soil**, 1.5 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Mulch or Wood Chips**, 1.5 cubic yards
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting Option 1: Sun

- Black-Eyed Susan, 10 pots
- Purple Cornflower, 9 pots
- Blue Flag Iris, 3 pots
- Bee Balm, 3 pots
- Switch Grass, 3 pots
- May Night Salvia, 30 pots
- Cranesbill Geranium, 31 pots
- Mixed Tulips, 50 bulbs or more

Planting Option 2: Shade

- Variegated Sweet Flag, 19 pots
- Blue Flag Iris, 5 pots
- Blue Cardinal Flower, 6 pots
- Virginia Waterleaf, 6 pots
- Variegated Bugloss, 13 pots
- Jack Frost Bugloss, 12 pots
- Variegated Siberian Bugloss, 12 pots

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 10 to 12 pounds of seed
- **Germination Blanket**, 3 rolls (8 by 112.5 feet)

8 Mile Rain Garden Step-By-Step

Let's Start

Want to create the 8 Mile Rain Garden 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
- Dig Your Rain Garden
- Disconnect Your Downspout
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

Make a Circle

Place a stake at the desired location for the center of the circle. Tie a string 10 feet long to the stake. Walk in a circle using the string to create an even-radius circle in the landscape. As you walk in the circle, mark your path on the ground. You can use these markings to help locate the edge of your rain garden.

Prepare Your Lot

Select the best location for your rain garden. The rain garden should be ten feet from any house foundation and at least five feet from the sidewalk.

A rain garden only works if water is directed into it. **The Field Guide recommends constructing your rain garden near downspouts from roofs of houses or garages or near other hard surfaces such as driveways or patios.** Ensure water flows from these surfaces into your rain garden.

Once you find the area you wish to direct into your rain garden, calculate the minimum size of your rain garden. **Your rain garden should be one square foot for every ten square feet of hardscape or stormwater area directed into your rain garden.**

The 8 Mile Rain Garden has been pre-designed for a standard single family house size in Detroit (920 to 1,350 square feet).

If your rain garden will be collecting stormwater from areas larger than 1,350 square feet, you will need to adjust the size of the rain garden or consider implementing another lot design with a larger rain garden, such as the [Friendly Fence](#). The Friendly Fence lot design can accommodate or collect stormwater runoff for roof areas up to 4,200 square feet.

After the rain garden size has been determined, use marking paint and a tape measure to map out the size, shape, and dimensions of your design.

The Field Guide recommends an approximately 22 by 17 foot area (310 square feet) for a standard single family home in Detroit. The rain garden is 155 square feet and the mound is 155 square feet.

8 Mile Rain Garden Step-By-Step

○ Dig Your Rain Garden

Once the area is ready for construction, dig one foot deep within the rain garden area and use removed soil to create a mound or other desired shape next to the rain garden area.

After removing the soil, check that the bottom of the rain garden is level. An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.

After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction. If tilling the rain garden, be aware of what is underneath the soil, such as cement, debris, or large rocks.

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.

- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to the [DWSD's How to Disconnect a Downspout](#) document.

○ Plant Perennials

This lot design provides two planting options for your rain garden, depending on whether your lot is in sun or shade.

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

The Field Guide recommends adding three inches of rain garden planting soil to your rain garden (1.5 cubic yards) and top with three inches of wood chips or mulch (1.5 cubic yards). Adding wood chips or mulch will help suppress weeds.

Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter. Mix together and place in rain garden.

Repair grass areas damaged during construction. Scarify any soil that may have been compacted, then sprinkle grass seed over damaged lawn areas. Be sure not to sprinkle the seed mix into your rain garden.

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

8 Mile Rain Garden Step-By-Step

○ Maintain Your Lot Design

A rain garden requires care and maintenance to thrive. The 8 Mile Rain Garden is a manageable size; however, watering and weeding plants regularly is still required, especially during the first two years. Be careful not to let your rain garden dry out or to be overrun by weeds. All gardens require time and commitment to flourish. The mulch or wood chips areas should be replenished or top-dressed annually.

Gardens are a work in progress. Bulbs and perennials may need to be replaced to keep gardens dynamic and playful. Be creative and make it your own!



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

Average Height of Plants



Grasses, Perennials, and Bulbs

○ Sow Remaining 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 8 Mile Rain Garden lot design you will need approximately 10 to 12 pounds of fescue seed mix for the remaining lot (2,690 square feet) and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

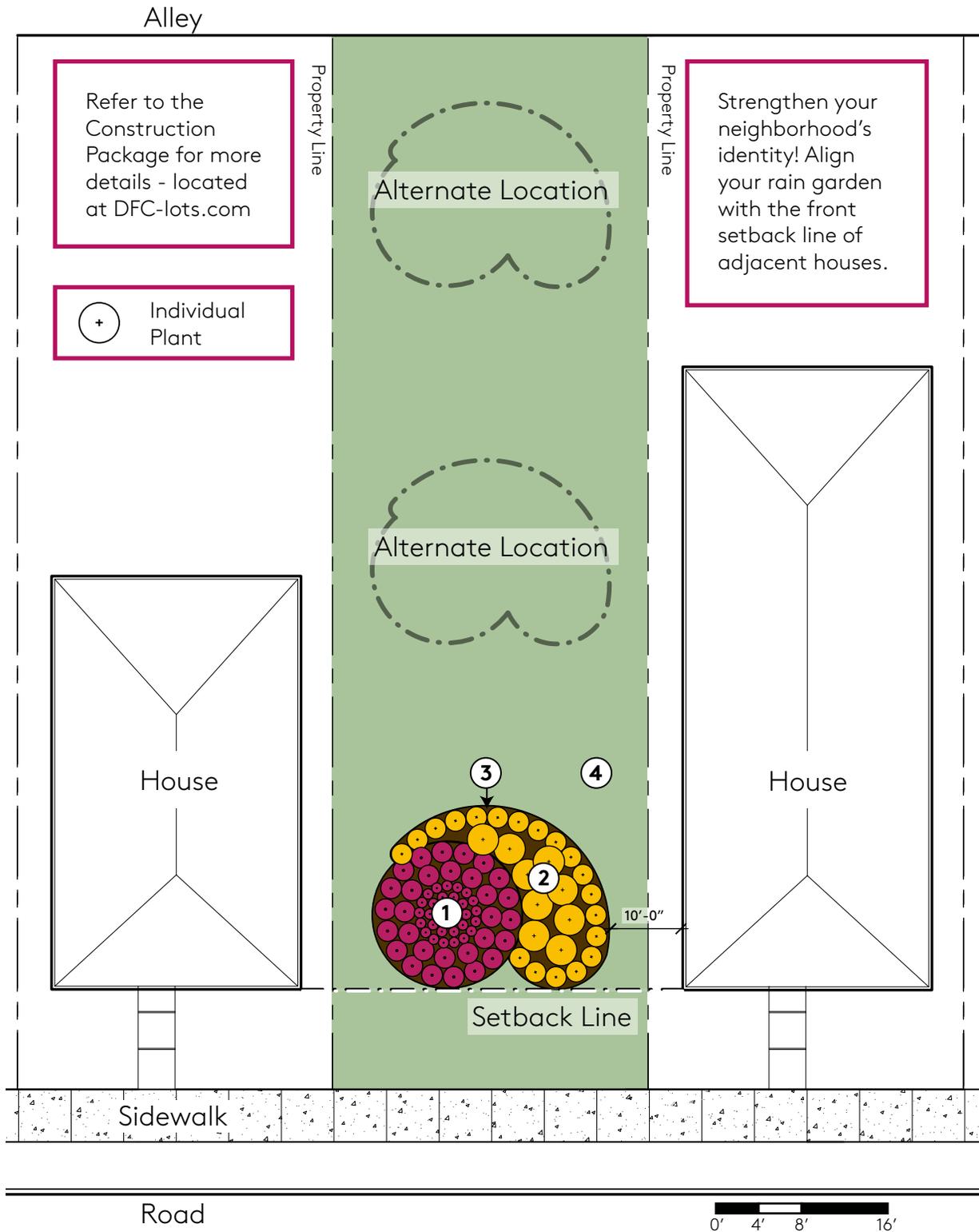
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

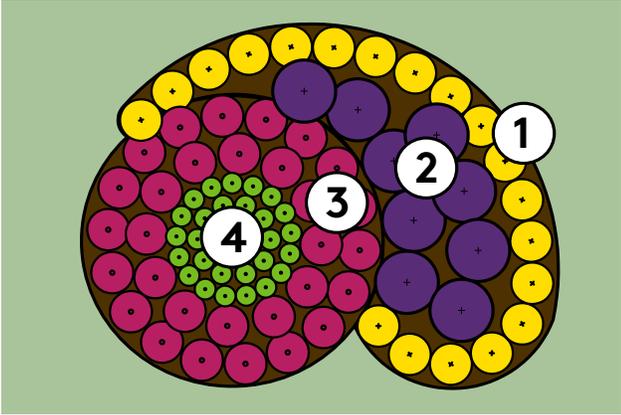
For more guidance on bulb planting refer to the [Bulb Planting Detail](#).

8 Mile Rain Garden Lot Design



- 1 Perennial on Mound
- 2 Perennial in Rain Garden
- 3 Mulch
- 4 Grass or Optional Groundcover

Planting Option 1: Full Sun To Part Sun



Black-Eyed Susan¹
Rudbeckia hirta^{*}
 24" Height x 24" Width
 Blooms June - October
 Attractive to Butterflies
Quantity: 10 pots



Purple Coneflower²
Echinacea purpurea
 24" Height x 12" Width
 Blooms July - August
 Attractive to Butterflies
Quantity: 9 pots

Key

- 1** **Black-Eyed Susan & Purple Cornflower** (Space approximately one foot apart and mix evenly.)
- 2** **Blue Flag Iris, Bee Balm & Switch Grass** (Space approximately one and one half feet apart and mix evenly.)
- 3** **May Night Salvia** (Space approximately one foot apart.)
- 4** **Cranesbill Geranium & Mixed Tulips** (Space Geraniums approximately one foot apart. Space Tulips evenly between Geraniums.)



Blue Flag Iris³
Iris virginica^{*}
 24" Height x 12" Width
 Blooms May - June
Quantity: 3 pots



Bee Balm⁴
Monarda fistulosa^{*}
 24" Height x 28" Width
 Blooms July - September
 Attractive to Butterflies
Quantity: 3 pots



Switch Grass⁵
Panicum virgatum^{*}
 48" Height x 36" Width
Quantity: 3 pots



May Night Salvia⁶
Salvia x sylvestris 'May Night'
 18" Height x 18" Width
 Blooms May - July
Quantity: 30 pots

Plant Sizes

-  **Pots:** Plants can be purchased in one to five gallon pots. Size of pots can change based on availability.
-  **Bulbs:** Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.



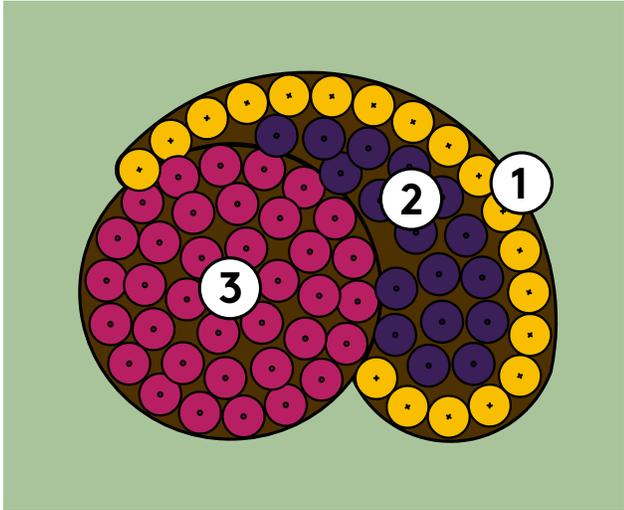
Cranesbill Geranium⁷
Geranium sanguineum
 'Alpenglow'
 18" Height x 18" Width
 Blooms May - July
Quantity: 31 pots



Mixed Tulips⁸
 14" Height x 8" Width
 Blooms April - May
Quantity: 50 bulbs or more

Image Source: 1) Parshotam Lal Tandon, "Rudbeckia hirta." 27 July 2013 via Flickr, CC BY-NC-SA 2.0; 2) Jordan Meeter, "Purple Coneflower (Echinacea purpurea)." 07 August 2008 via Flickr, CC BY 2.0; 3) Jenny Evans, "Blue Flag Iris." 28 December 2010 via Flickr, CC BY-NC 2.0; 4) Corey Seeman, "Bee Balm Flowers." 16 July 2013 via Flickr, CC BY-NC-SA 2.0; 5) tpmartins, "012." 11 July 2007 via Flickr, CC BY-NC-SA 2.0; 6) Kallerna, "Lostosalvia." 2010, Wikimedia, CC BY-NC-SA 3.0; 7) Tapio Kaisla, "Wood Cranesbill (Geranium Sylvaticum)." 18 June 2009 via Flickr, CC BY-NC-ND 2.0 UK; 8) Mookieluv, "Mixed rows of tulips." 18 April 2010 via Flickr, CC BY-NC-SA 2.0.

Planting Option 2: Part Shade to Shade



Variegated Sweet Flag¹
Acorus gramineus 'Ogon'
 12" Height x 24" Width
Quantity: 19 pots



Blue Flag Iris²
Iris virginica^{*}
 24" Height x 12" Width
 Blooms May - June
Quantity: 5 pots



Blue Cardinal Flower³
Lobelia siphilitica^{*}
 24" Height x 8" Width
 Blooms August
Quantity: 6 pots



Virginia waterleaf⁴
Hydrophyllum virginianum^{*}
 24" Height x 24" Width
 Blooms July - September
Quantity: 6 pots

Key

- 1

Variegated Sweet Flag
 (Space approximately one foot apart.)
- 2

Blue Flag Iris, Blue Cardinal Flower & Virginia Waterleaf
 (Space approximately one foot apart and mix evenly.)
- 3

Variegated Bugloss, Jack Frost Bugloss & Variegated Siberian Bugloss
 (Space approximately one foot apart and mixed evenly.)



Variegated Bugloss⁷
Brunnera macrophylla
 18" Height x 18" Width
 Blooms May - June
Quantity: 13 pots



Jack Frost Bugloss⁶
Brunnera macrophylla 'Jack Frost'
 18" Height x 18" Width
 Blooms May - June
Quantity: 12 pots

Plant Sizes

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



Variegated Siberian Bugloss⁵
Brunnera macrophylla 'variegated'
 18" Height x 18" Width
 Blooms May - June
Quantity: 12 pots

Image Source: 1) Daderot, "Botanical Specimen in the San Francisco Botanical Garden." 04 November 2013 via Wikimedia, Creative Commons CCO 1.0 Universal Public Domain Dedication; 2) David Heise, "Southern Blue Flag 01." 12 August 2007 via Flickr, CC BY-NC 2.0; 3) Fritzflohrreynolds, "Great Blue Lobelia." 23 September 2012 via Wikimedia, , CC-BY- SA 3.0; 4) Fritzflohrreynolds, "Virginia Waterleaf 2." 01 May 2013 via Wikimedia, CC-BY- SA 3.0; 5) Wouter Hagens, "Brunnera Macrophylla A." 19 May 2007 via Wikimedia, Public Domain; 6) A. Barra, "Brunnera Macrophylla, 'Jack Frost.'" May 2008 via Wikimedia, CC-BY- SA 3.0; 7) Vauban, "Brunnera macrophylla." 11 April 2006 via Wikimedia, Public Domain

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.

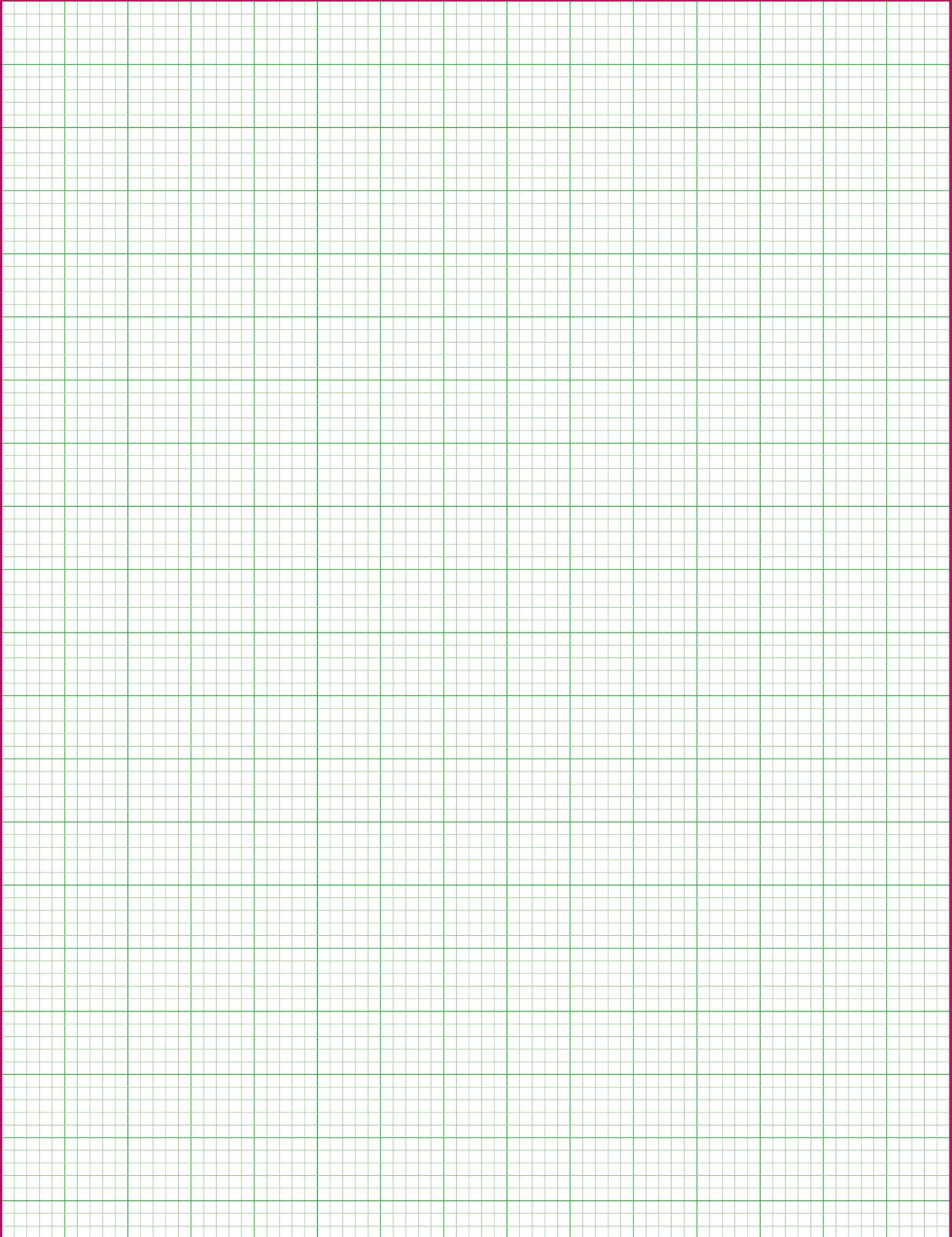
Helpful Facts

- Rain gardens are designed to decrease the amount of rainwater flowing off your roof and property into the City stormwater system.
- Rain gardens capture, hold, and release stormwater gradually back into the soil.
- The plants recommended for this lot design have been selected for their beauty, habitat creation, and local availability.
- This rain garden is designed to provide habitat and food for a variety of birds and pollinators.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.

Planting Tips

- Looking for a more cost efficient planting option? Consider a rain garden seed mix, such as ERNMIX-180 (Ernst Rain Garden Meadow Mix).
- Tulips should be planted on a mound. Do not plant in or near your rain garden as they do not do well in wet conditions.
- Water after planting and as needed. Do not allow soil to dry out.
- Weed weekly or as needed.
- To save money, ask a friend or family member if they have any plants or cuttings they are willing to donate to your rain garden.

Draw Your Lot





**DETROIT
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**working
with lots**
A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Center for Neighborhood Technology, "Rain Ready Home 1." 01 July 2014 via Flickr CC-BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional

Basement Rain Garden

Image Source: Frank Mayfield. "Carex Stricta Common" 23 May 2008 via Flickr, CC BY-SA 2.0



HELLO

MY NAME IS

Basement Rain Garden

The Basement Rain Garden is an urban rain garden designed for the footprint of a recently demolished house. This lot design can reduce the amount of soil required to fill basement holes after demolition. The limits of the rain garden fit within the footprint of a former house and transforms the basement area into stepped, planted tiers. This design can accommodate stormwater runoff for up to two houses or commercial buildings.

It is best located on a lot where two disconnected downspouts can easily be redirected into the rain garden. This lot design is also suitable for flat lots. The excavated soil can be used for other lot designs, such as Mounds of Fun, that require fill.

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

What is the lot design likely to cost?

The estimated cost of the Basement Rain Garden is over \$5,500 and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for earthwork, lot preparation, and installation of the overflow culvert. The overflow culvert requires a permit to connect to the municipal infrastructure. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering plants the newly planted rain garden, particularly during the first two growing seasons while the plants establish themselves.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to complete the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below is for volunteer opportunities listed in the Step-By-Step section only. While people tackle projects differently, the Field Guide estimates the installation time of the lot design to be one to two full weekends with a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least eight healthy adults or youth to complete this lot design. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun to Part Sun (Ideal for Lot With Recently Demolished Home)			

Basement Rain Garden

Examples of Rain Gardens

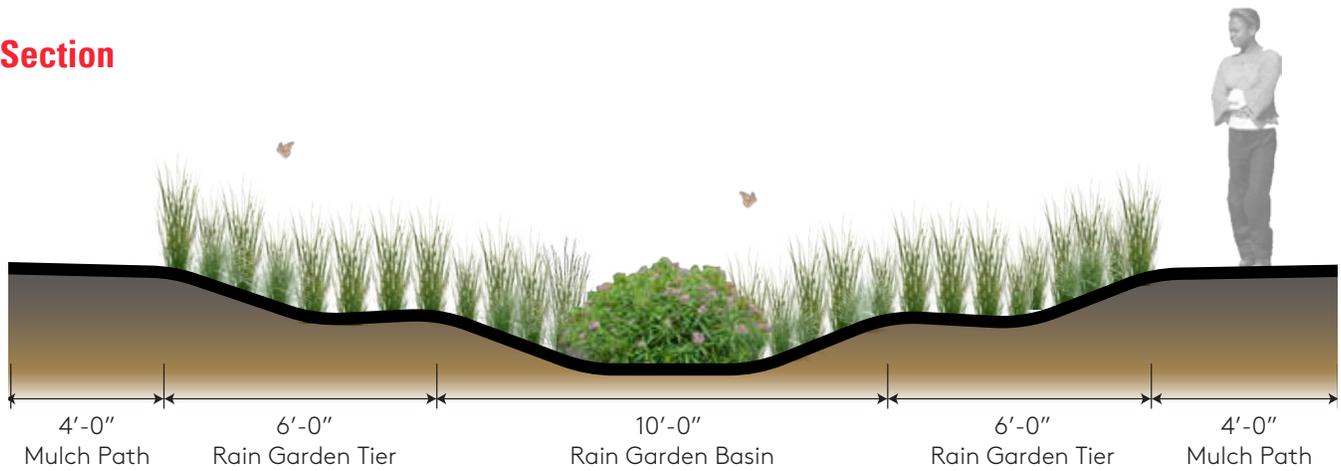


1 - Rain Garden

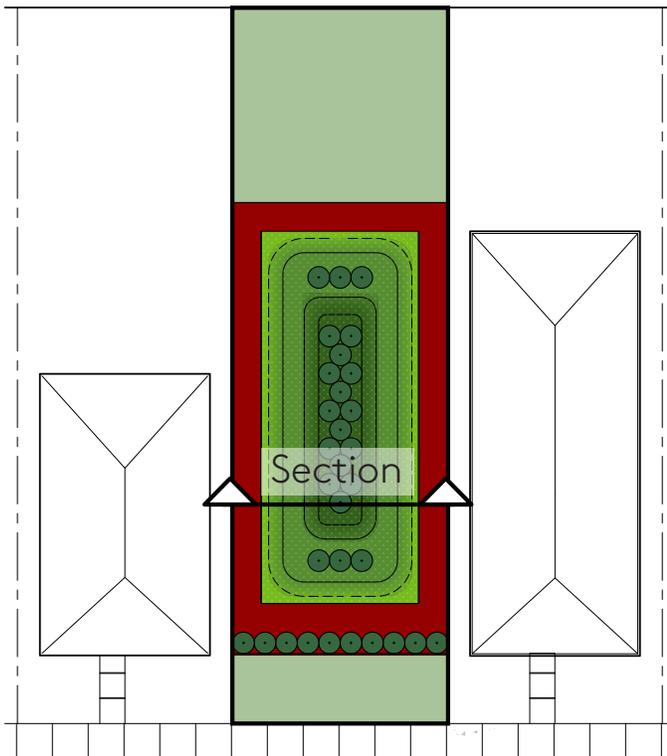


2 - Residential Rain Garden

Section



Where Do I Grow?



The Basement Rain Garden can be implemented on a single lot and is best suited for lots where a house has been recently demolished.

- Perennials
- Rain Garden Seed Mix
- Grass or Optional Groundcover
- Mulch

Image Source: 1) James Steakley, "Rain_garden_(2014).JPG" 15 July 2014 via Wikimedia, CC BY-SA 4.0; 2) Moreau1., "Bioretention_cell_rain_garden_US_winter.jpg" 24 December 2007 via Wikimedia, public Domain

Before You Start

'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 undertake 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
- Hacksaw and Screwdriver

Potential Water Sources

- Garden Hose with potential extension hose
- Sprinkler
- Downspout Disconnect (shown in lot design)

Field Guide Resources

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

- Clean + Green
- Perennials + Grasses Planting Detail

Materials List

Materials

- Imported Drainage Soil, 11.5 cubic yards
- Mulch or Wood Chips, 6 cubic yards
- Downspout Disconnect: Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting

- Swamp Milkweed, 5 pots
- Purple Cornflower, 3 pots
- Blue Flag Iris, 5 pots or bulbs
- Bee Balm, 3 pots
- Black-Eyed Susan, 5 pots
- Green Gem Boxwood, 10 pots

Rain Garden

- Rain Garden Mix, 1 pounds of seed
- Annual Cover Crop, 1 pounds of seed
- Germination Blanket, 2 rolls (8 by 112.5 feet)

Remaining Lot (Optional)

Groundcover

- Low-Maintenance Fescue Mix, 10 pounds of seed
- Germination Blanket, 3 rolls (8 by 112.5 feet)

Basement Rain Garden Step-By-Step

Let's Start

Want to create the Basement Rain Garden? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

- Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot
- Excavate + Sculpt Soil

Volunteer Opportunities:

- Plant Rain Garden
- Sow Rain Garden
- Disconnect Your Downspout
- Sow Remaining Lot
- Maintain Your Lot Design

Prepare Your Lot

The Basement Rain Garden is one of the more complex lot designs in the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot and Excavate + Sculpt Soil.

If you decide to complete this lot design without the recommended assistance of a professional, the following steps can assist you with the installation of the lot design.

- The Field Guide recommends coordinating installation of the Basement Rain Garden with the demolition process in order to reduce the amount of required imported soil.
- The Basement Rain Garden should be (minimum) 4.5 feet any from adjacent property lines and at least five foot from the sidewalk.
- You do not need to kill grass in basement as earth sculpting and imported planting soil suppress existing weeds.
- Align the front edge of the Basement Rain Garden design with the front setback line of adjacent houses. This will help strengthen your block's identity.
- The Basement Rain Garden is designed to accommodate or collect stormwater runoff from two standard single family houses up to 2,100 square feet of roof area. (The average Detroit house is 920 to 1,350 square feet.)



Annual Cover Crop is used to establish Rain Garden Mix and does not require annual re-seeding.

Basement Rain Garden Step-By-Step

○ Excavate + Sculpt Soil

Below are a few guiding principles regarding importing and sculpting the soil. These guidelines assume the lot design is being installed directly after demolition of a home; therefore, there is no required excavation of soil. The Field Guide recommends hiring a professional to complete this portion of this lot design.

The Basement Rain Garden earthwork is divided in two parts: the rain garden tiers and the rain garden basin. The rain garden basin is the lowest point of the lot design, and the tiers are located one foot above the bottom of the basin.

- **Rain Garden Basin:** The rain garden basin is two feet below the top of the lot design and is 6 by 35 feet.
- **Check that the bottom of the rain garden is level.** An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.
- After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction.
- **Fill the rain garden with 18 inches (11.5 cubic yards) of organic planting soil.** The rain garden edges should slope at 33% (1 unit of rise for 3 units of run).
- **Rain Garden Tiers:** Tiers are located one foot higher than the rain garden basin. These tiers can collect stormwater in pockets, irrigating plants along the tier.
- Use imported soil to shape basin tiers, and slope away from the rain garden basin at 5% (1 unit of rise for 20 units of run).

- All remaining slopes in the lot design should slope toward the rain garden basin at 33% (1 unit of rise to 3 units of run).
- Place three inches depth of mulch around perimeter of rain garden.

○ Plant Rain Garden

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

The Basement Rain Garden includes potted plants and Rain Garden Seed Mix. Place plants in desired location, then remove plastic pots, loosen roots, and plant.

Spread seed mix over the rain garden area after potted plants have been installed. Do not add mulch.

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

○ Sow Rain Garden

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Ernst Conservation Seeds' Rain Garden Mix (ERNMX-180) and Annual Cover Crop seed mix are good options for the Basement Rain Garden. Similar mixes are available from other suppliers.

Ernst Conservation Seeds suggests one pound of Rain Garden Mix with one pound of Annual Cover Crop per 1,000 square feet. **For the Basement Rain Garden (1,144 square feet), the Field Guide recommends one pound of Rain Garden Mix with one pound Annual Cover Crop.**

Before spreading the seed, rake the soil if it is compacted, allowing for easier seed germination and better water infiltration.

Basement Rain Garden Step-By-Step

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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.

Two roll of 8 by 112.5 foot single net germination blankets will cover the meadow areas. Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Sow Remaining Lot

If a house has recently been demolished on your lot, you will likely need groundcover for the remaining lot. If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. This family of floppy grasses is very drought resistant and requires only one cutting (in August or September) per year. The soil should already be loosened and prepared for seeding through the tilling of the lot.

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). Seed mix should be applied to a damp lot.

Sow seed across remaining lot by using a seed spreader or by hand. Spread seed mix evenly over the entire lot. You may need to do this several times over the bed. A seed rate of five pounds per 1,000 square feet is recommended. **If you follow the Basement Rain Garden lot design you will need approximately 10 pounds of seed mix for the remaining 1,500 square foot lot.**

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.

Three 8 by 112.5 foot rolls of single net germination blankets required for a 30 by 100 lot. Germination blankets or straw can be purchased at most nurseries and garden stores such as Detroit Farm and Garden.

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.

Plant bulbs (daffodils, crocuses, and snowdrops) in clusters of three to five randomly throughout grass area. (This might be a fun activity to do with children.) Bulbs should be planted in the fall.

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

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.

Basement Rain Garden Step-By-Step

- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to [DWSD's How to Disconnect a Downspout](#) document.



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

Average Height of Plants



Grasses, Shrubs, and Perennials

○ Maintain Your Lot Design

Gardens require care and maintenance to thrive and look their best! The Basement Rain Garden is a large rain garden and will require regular watering and weeding, especially during the first few years. **Do not let your rain garden dry out in the first warm season.**

In the first year, carefully weed or use a weed whacker to cut your rain garden meadow back to four to six inches whenever it reaches above ten inches in height. Be careful not to cut back the potted perennials.

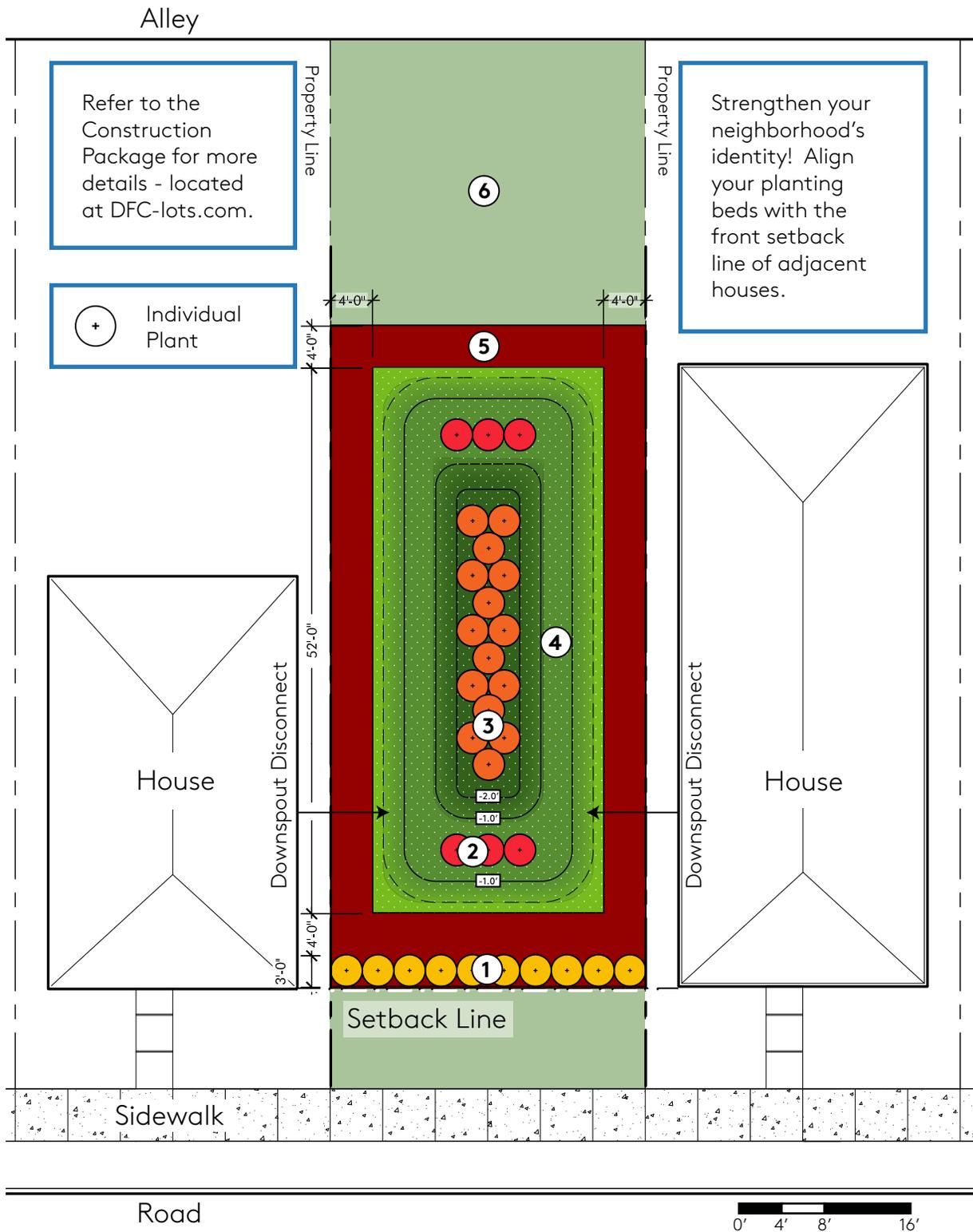
After the first year, continue weeding and weed whacking your rain garden in late fall or early spring of each year. This will keep the rain garden at its best. It will take about three years for rain garden to establish.

Low-maintenance fescue mix should be watered daily until seedlings are four to six inches in height. Once established, grass will not require supplemental watering except during unusually dry periods. Plan to water your establishing grass for three weeks following installation or until your grass is four to six inches in height.

This family of floppy grasses is very drought-resistant and requires one cutting (in August or September) per year. Fescue grasses do not get tall.

Gardens are a work in progress. Bulbs and perennials may need to be replaced to keep gardens dynamic and playful. Be creative and make it your own!

Basement Rain Garden Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

⊕ Individual Plant

Strengthen your neighborhood's identity! Align your planting beds with the front setback line of adjacent houses.

1 Hedge (Boxwood)

3 Rain Garden Basin Shrubs and Perennials

5 Mulch

2 Rain Garden Tier Perennials

4 Rain Garden Seed Mix

6 Grass or Optional Groundcover

Planting: Full Sun to Part Sun



Swamp Milkweed¹
Asclepias incarnata
 48" Height x 24" Width.
 Blooms July - August.
Quantity: 5 pots



Purple Coneflower²
Echinacea purpurea
 24" Height x 12" Width.
 Blooms July - August.
Quantity: 3 pots



Blue Flag Iris³
*Iris Virginica**
 24" Height x 12" Width.
 Blooms May - June.
Quantity: 5 pots or bulbs



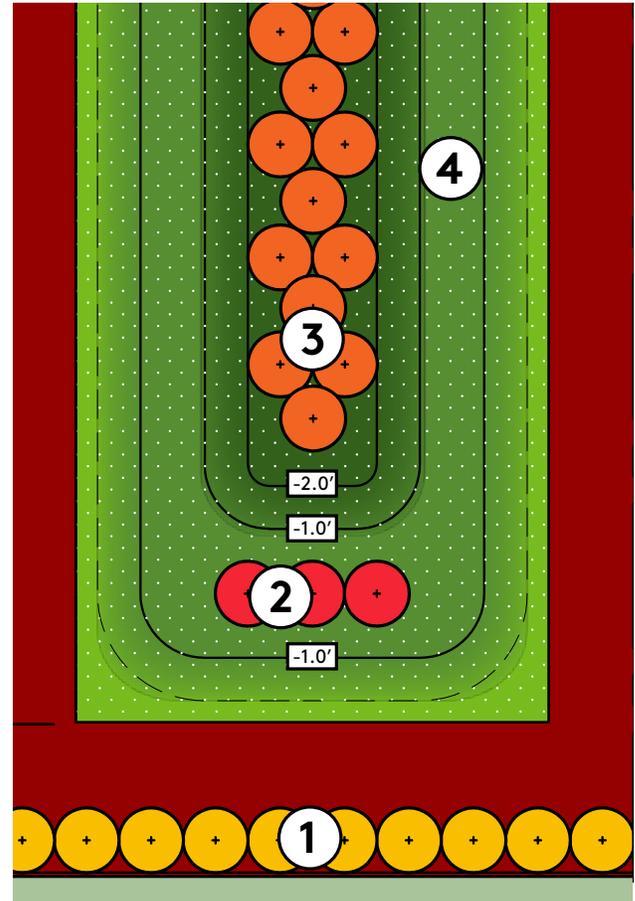
Bee Balm⁴
Monarda fistulosa
 24" Height x 28" Width.
 Blooms July - September.
Quantity: 3 pots



Black-Eyed Susan⁵
*Rudbeckia hirta**
 24" Height x 24" Width.
 Blooms June - October.
Quantity: 5 pots



Green Gem Boxwood⁶
Buxus 'Green Gem'
 24" Height x 24" Width.
Quantity: 10 pots



Key

- 1** **Boxwood Hedge**
 (Space approximately two feet apart.)
- 2** **Bee Balm & Purple Coneflower**
 (Space approximately 1.5 feet apart.)
- 3** **Swamp Milkweed, Black-Eyed Susan & Blue Flag Iris**
 (Space approximately 1.5 feet apart.)
- 4** **Rain Garden Mix**

Plant Sizes

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

Image Source: 1) PDH, "Asclepias incarnata.jpg." 03 February 2006 Public Domain; 2) Jordan Meeter, "Purple Coneflower (Echinacea purpurea)." 07 August 2008 via Flickr, CC BY 2.0; 3) Jenny Evans, "Blue Flag Iris." 28 December 2010 via Flickr, CC BY-NC 2.0; 4) Corey Seeman, "Bee Balm Flowers." 16 July 2013 via Flickr, CC BY-NC-SA 2.0; 5) Parshotam Lal Tandon, "Rudbeckia hirta." 27 July 2013 via Flickr, CC BY-NC-SA 2.0; 6) Martin Kenny, "Box Hedge - shallow DOF edition." 10 December 2011 via Flickr, CC BY-NC-SA 2.0

Planting: Full Sun to Part Sun

Rain Garden Mix

Mixing one pound of Rain Garden Mix with one pound of Annual Cover Crop seed mix is recommended for this lot design.

You can buy these seeds premixed at Ernst Conservation Seeds.

River Oats, *Chasmanthium latifolium* (38% of mix)

Virginia Wildrye, *Elymus virginicus* (20% of mix)

Fox Sedge, *Carex vulpinoidea* (10% of mix)

Purple Coneflower, *Echinacea purpurea* (4% of mix)

Tall White Beardtongue, *Penstemon digitalis* (3% of mix)

Blackeyed Susan, *Rudbeckia hirta* (3% of mix)

Lanceleaf Coreopsis, *Coreopsis lanceolata* (3% of mix)

Ohio Spiderwort, *Tradescantia ohiensis* (2% of mix)

Oxeye Sunflower, *Heliopsis helianthoides* (2% of mix)

Autumn Bentgrass, *Agrostis perennans* (2% of mix)

Partridge Pea, *Chamaecrista fasciculata* (2% of mix)

Marsh Blazing Star, *Liatis spicata* (2% of mix)

Smooth Blue Aster, *Aster laevis* (1.5% of mix)

Wild Senna, *Senna hebecarpa* (1% of mix)

New England Aster, *Aster novae-angliae* (1% of mix)

Swamp Milkweed, *Asclepias incarnata* (1% of mix)

Path Rush, *Juncus tenuis* (1% of mix)

Soft Rush, *Juncus effusus* (1% of mix)

Wild Bergamot, *Monarda fistulosa* (0.8% of mix)

Mistflower, *Eupatorium coelestinum* (0.5% of mix)

Blue False Indigo, *Baptisia australis* (0.5% of mix)

Early Goldenrod, *Solidago juncea* (0.5% of mix)

Slender Mountainmint, *Pycnanthemum tenuifolium* (0.2% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

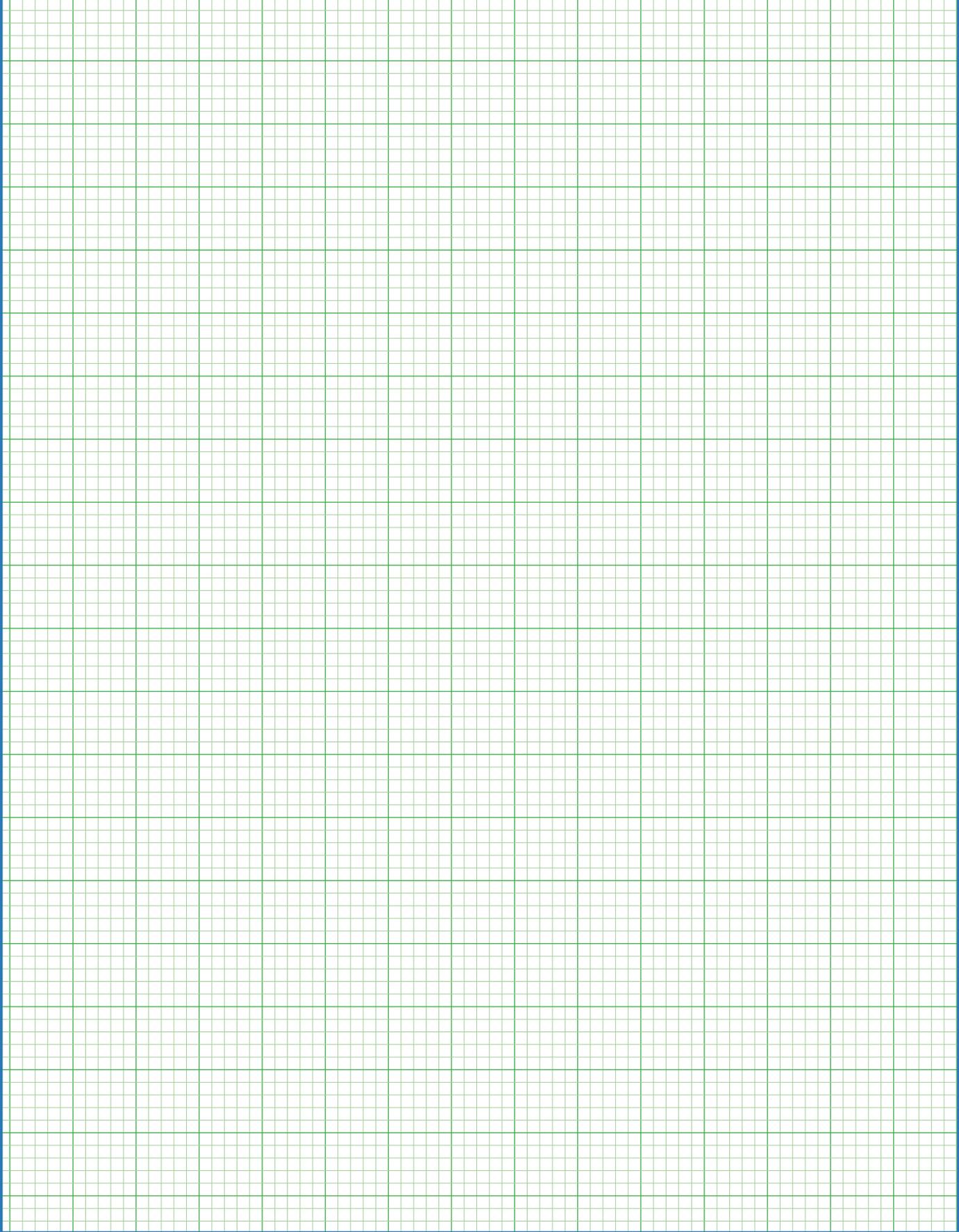
Helpful Facts

- Rain gardens are designed to decrease the amount of rainwater flowing off your roof and property into the city's storm system.
- Rain gardens capture, hold, and release stormwater back into the soil.
- This rain garden is designed to provide habitat and food for a variety of birds and pollinators.
- The recommended plants for this lot design are selected for their beauty, habitat creation, and local availability.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for the lot design.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not allow soil to dry out.
- Weed weekly or as needed.
- To save money, ask a friend or family member if they have any plants or cuttings they are willing to donate to your rain garden.

Draw Your Lot





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Image Source: James Steakley, "Rain_garden_(2014).JPG" 15 July 2014 via Wikimedia, CC BY-SA 4.0

Volunteer

Professional

Volunteer + Professional

Clay Soil Meadow

Image Source: Rachel Kramer, "A beautiful night at Millennium Park." 24 July 2013 via Flickr, CC BY 2.0.



**working
with lots**

A FIELD GUIDE

HELLO

MY NAME IS

Clay Soil Meadow

The Clay Soil Meadow is a native meadow selected for planting in heavy clay and other poor draining soils. Due to a mix of existing geology and previous building removal practices, clay soils are quite common throughout Detroit.

If you have tried planting gardens before with little luck, this lot design may be perfect for your lot. The plant mix for this meadow is selected for its ability to grow in clay soil and for the colors it will provide to your lot.

This plant mix can also be used as a substitute for meadow plantings in other lot designs.

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

What is the lot design likely to cost?

The estimated cost of the Clay Soil Meadow is low (\$50 – \$1,000) and based on utilizing volunteer labor and the seed mix. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the meadow, particularly during the first two growing seasons while the meadow establishes itself. The meadow should be mowed once a year in the late fall or early spring.

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, you can 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 the installation time of this lot design to be one full weekend with the help of at least three healthy adults or youth. The Field Guide assumes the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun or Part Sun			

Clay Soil Meadow

Examples of Clay Soil Meadow Plants



1 - Hairy Goldenrod



2 - Purple Coneflower

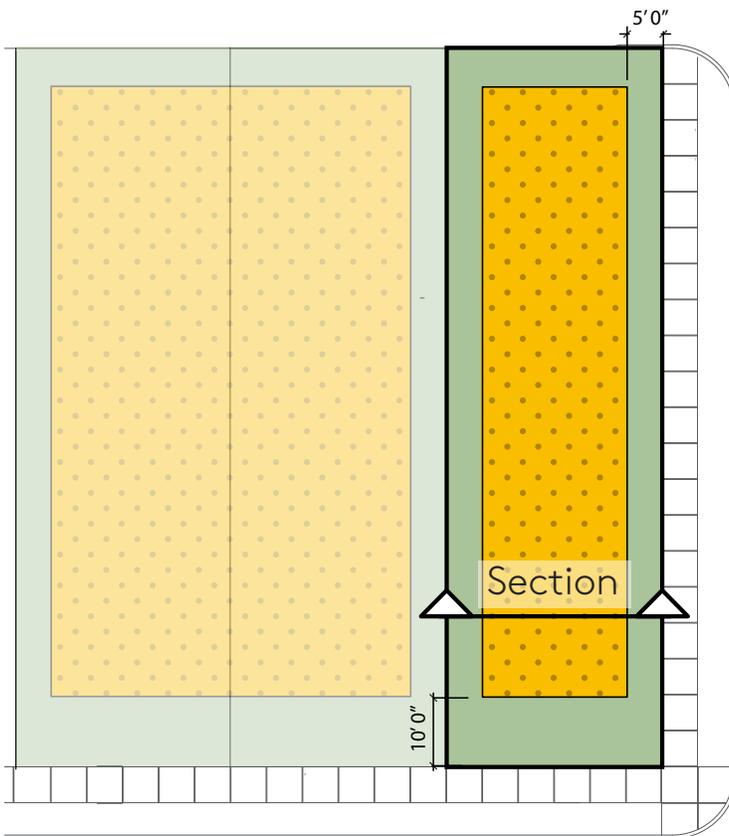


3 - Black-Eyed Susans

Section



Where Do I Grow?



The Clay Soil Meadow can be installed on single or multiple lots and is suitable for corner properties. The images below show examples of the perennials found in the recommended meadow seed mix.



4 - White Beard Tongue



5 - Goldenrod



6 - Aster

Clay Soil Meadow

Grass or Optional Groundcover

Image Source: 1) gobucks2, "Fall Day 2009." 19 September 2009 via Flickr CC-BY-NC-SA 2.0; 2) Steven Severinghaus, "Coneflower Forest." 17 July 2014 via Flickr CC BY-NC-SA 2.0; 3) Jonathan Bloy, "Field of Black-eyed susans." 18 July 2010 via Flickr, CC BY-NC-SA 2.0; 4) Bill Bumgarner, "White Beard Tongue." 18 June 2009 via Flickr, CC BY-NC-ND 2.0; 5) Psycho Delia, "Meadow Brown on Golden Rod." 13 July 2014 via Flickr, CC BY-NC 2.0; 6) Tom Potterfield, "Symphyotichum." 20 September 2012 via Flickr, CC BY-NC-SA 2.0.

Before You Start

'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

- **Marking Paint and Tape Measure**
- **Safety Gear:** Gloves, heavy work boots, tall socks, pants, long sleeve shirts, dust mask, protective eye wear, ear plugs, and hard hats (if using heavy machinery)
- **Garden Tools:** Spades, shovels, rakes, trash bags, and wheelbarrows
- **Tiller**, 6 inch depth (optional)

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

- **Germination Blankets**, 2 rolls (8 by 112.5 feet), used for the meadow area

Planting

- **Clay Mix seed mix**, 9 ounces of seed
- **Annual Cover Crop seed mix**, 14 ounces of seed

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 7 pounds of seed
- **Germination Blanket**, 2 rolls (8 by 112.5 feet)

Clay Soil Meadow Step-By-Step

Let's Start

Want to create the Clay Soil Meadow 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
- Sow Meadow
- Maintain Your Lot Design
- Sow Remaining Lot

! Annual Cover Crop is used to establish Clay Mix and does not require annual re-seeding.

Prepare Your Lot

Use marking paint and a tape measure to map out the size, shape, and dimensions of your design.

The Field Guide recommends a 20 by 90 foot (1,800 square feet) meadow with a ten foot mowing strip that aligns with the front of neighboring houses and five foot pathways along sides and back of meadow.

Sow Meadow

Soil should be prepared for seeding by scarifying, raking or tilling the soil four to six inches deep to loosen up any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Michigan Wildflower Farm's Clay Mix and Annual Cover Crop seed mix are good options for the Clay Soil Meadow; similar mixes are available from other suppliers.

Michigan Wildflower Farm suggests five ounces of Clay Mix mixed with eight ounces of Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends nine ounces of Clay Mix and 14 ounces of Annual Cover Crop seed mix for the meadow area (20 by 85 feet).**

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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.

Clay Soil Meadow Step-By-Step

Two 8 by 112.5 foot single net germination blankets will cover meadow area.

Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Maintain Your Lot Design

A meadow requires care and maintenance to thrive. The Clay Soil Meadow will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.**

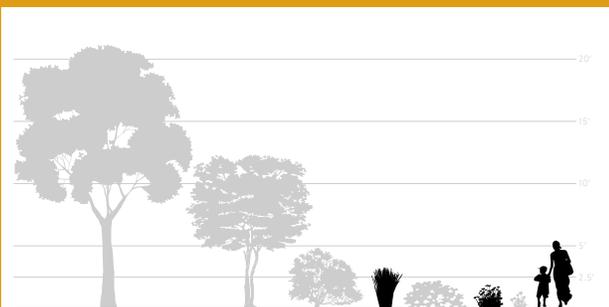
After the first year, continue weeding, and mow your meadow in late fall or early spring to keep the meadow at its best. It will take about three years for the meadow to establish.

Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional native seed mixes and plants. Be creative and make it your own!



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

Average Height of Plants



Grasses and Perennials

○ Sow Remaining 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 Clay Soil Meadow lot design you will need approximately seven pounds of fescue seed mix for the remaining lot (1,200 square feet) and two 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 be prepared for seeding by scarifying, raking or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

Sow seeds by using a seed spreader or by hand across remaining lot. The Field Guide recommends a seed rate of five pounds per 1,000 square feet. 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 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.

Once 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: If you would like to bring additional color to your grass you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Planting: Full Sun to Part Sun

Clay Mix

Mixing nine ounces of Clay Mix with 14 ounces of Annual Cover Crop seed mix is recommended for the Clay Soil Meadow lot design.

You can buy these seeds premixed at Michigan Wildflower Farm.

Tall Thimbleweed, *Anemone Virginiana*
(1% of mix)

Smooth Aster, *Aster laevis* (2% of mix)

New England Aster, *Aster novae-angliae*
(3% of mix)

Purple Coneflower, *Echinacea purpurea*
(2% of mix)

Bergamot, *Monarda fistulosa* (5% of mix)

Foxglove Beardongue, *Penstemon digitalis*
(3% of mix)

Yellow Coneflower, *Ratibidua pinnata*
(6% of mix)

Blackeyed Susan, *Rudbeckia hirta* (6% of mix)

Rosinweed, *Silphium integrifolium* (2% of mix)

Prairie Dock, *Silphium terebinthinaceum*
(3% of mix)

Stiff Goldenrod, *Solidago Rigida* (4% of mix)

Golden Alexandra, *Zizia Aurea* (3% of mix)

Big Bluestem, *Andropogon gerardii* (15% of mix)

Canada Wild Rye, *Elymus canadensis*
(10% of mix)

Switch Grass, *Panicum virgatum* (10% of mix)

Indian Grass, *Sorghastrum nutans* (3% of mix)



1 - Meadow



2 - Goldenrod in Meadow

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

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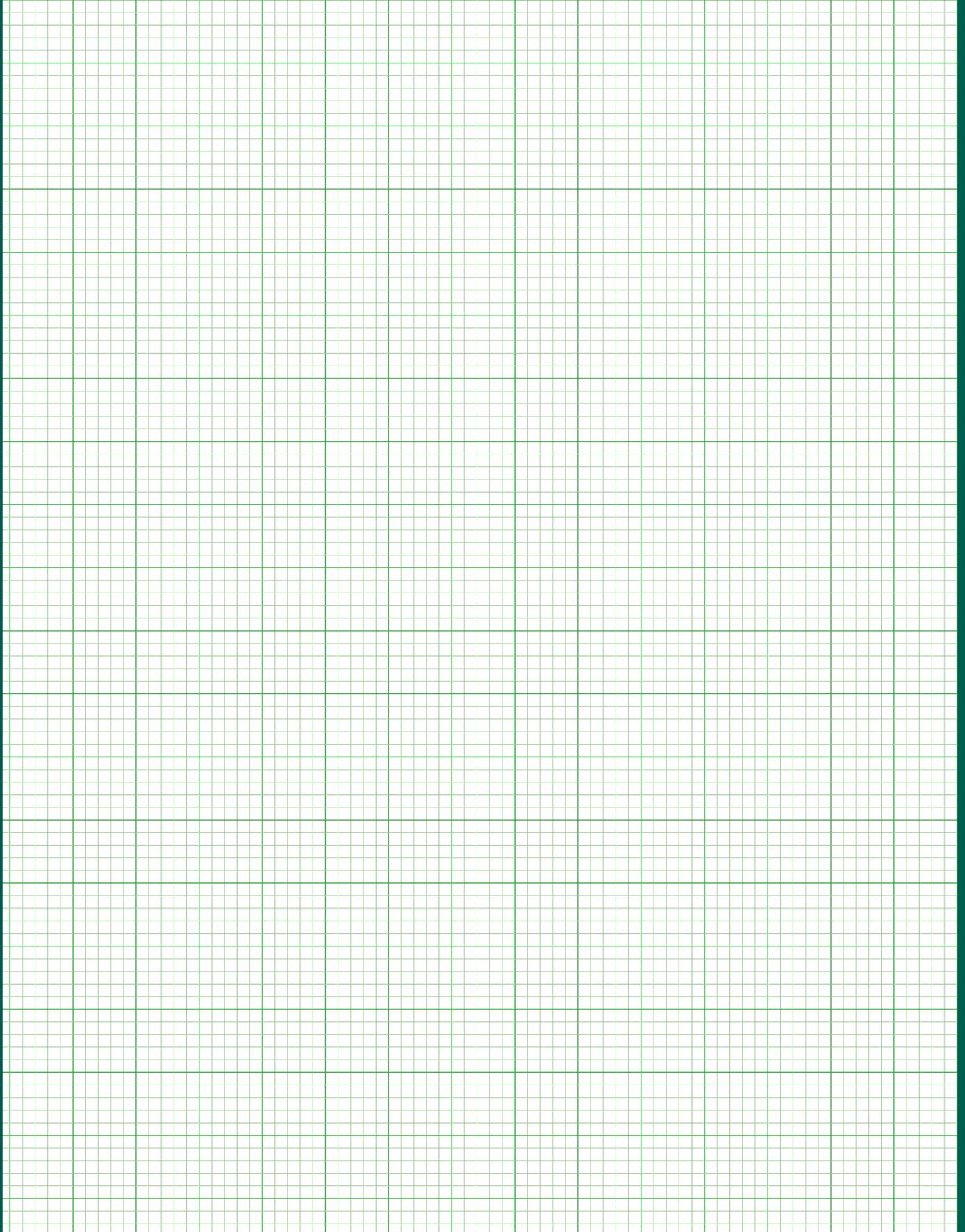
Helpful Facts

- The Clay Soil Meadow can be implemented on a single lot or extend across multiple lots.
- Native plants have deep roots that help capture, hold, and slowly release stormwater.

Planting Tips

- The best time to plant is spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed.
- Weed weekly or as needed.

Draw Your Lot





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Image Source: Tom Potterfield, "Asclepias syriaca (common milkweed)." 18 June 2014 via Flickr CC BY-NC-SA 2.0.



Volunteer

Professional

Volunteer + Professional

Clean + Green

Image Source: Jurek D., "Morning Lawn." 11 May 2007 via Flickr, CC BY-NC 2.0.





The Clean + Green lot design is a set of guiding principles to prepare a lot for a healthy and low-maintenance future. It provides information and support for many of the potential scenarios you may encounter through a cleanup process. The Clean + Green also takes any lot, in any condition, and readies it for installation of a Field Guide lot design.

The Clean + Green provides a range of principles and resources for how to treat existing conditions unique to each lot.

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

What is the lot design likely to cost?

The estimated cost of the Clean + Green is low (\$50 – \$1,000) and based on utilizing volunteer labor. The cost is dictated by the price of trash removal, waste disposal, equipment rental, and ‘green’ remediation to help create healthy soil. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This is a low-maintenance lot design. Maintenance will be dependent on what lot design or groundcover you ultimately choose to install.

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 it. 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 the installation time of this lot design to be one full weekend with the help of at least two healthy adults or youth. The Field Guide assumes that all equipment and materials required for lot design have been acquired and are ready to use.

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	Any Lot in Sun or Shade			

Clean + Green

Examples of Materials Found in Clean + Green



1 - Hand Tools



2 - Volunteer Labor



3 - Soil



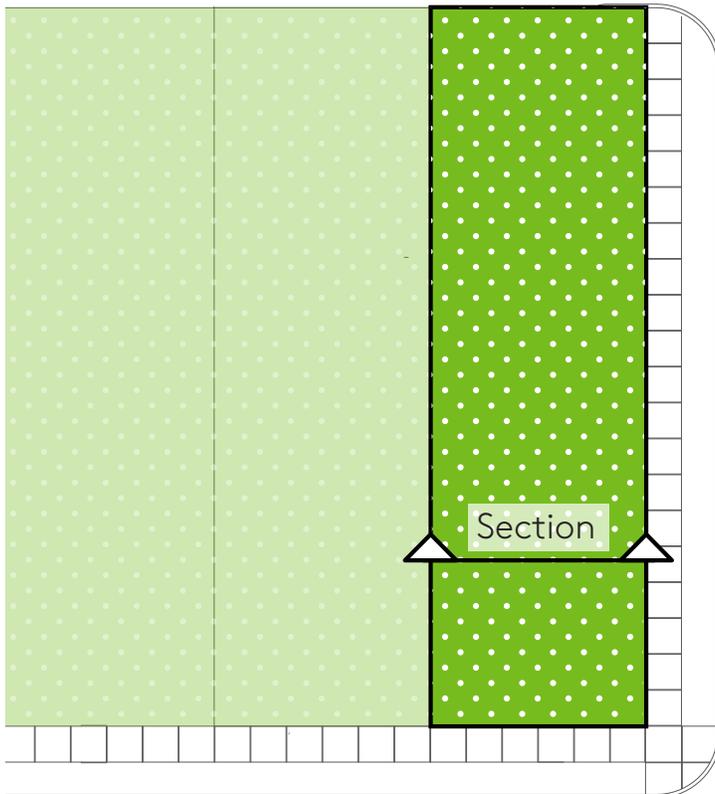
4 - Grass Area

Section



Grass Area, Full Lot coverage

Where Do I Grow?



The Clean + Green can be constructed on any lot. This design improves the safety of the lot and health of soils. Most of the action in this lot design happens below the surface.



Image Source: 1) Quietlyurban.com, "day 38: digging in the dirt" 17 May 2014 via Flickr, CC BY-ND 2.0; 2) Elizabeth Merriam., "US_Navy_090501" 1 May 2009 via Wikimedia public domain; 3) newmy51., "Divide." 12 July 2008 via Flickr, CC BY-NC-SA 2.0 ; 4) Jurek D., "Morning Lawn." 11 May 2007 via Flickr, CC BY-NC 2.0.

Before You Start + Shopping List

'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](https://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.

Shopping List

The shopping list provides 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

Suggested Tools

- **Marking Paint**
- **Safety Gear:** Gloves, heavy work boots, tall socks, pants, long sleeve shirts, protective eye wear, dust masks, ear plugs, and hard hats. Additional safety gear, such as hard hat with attached face guard and leg protection or chaps, are required for using a chainsaw.
- **Garden Tools:** Spades, shovels, rakes, trash bags, and wheelbarrows
- **Lot Clean Up Tools:** Clippers, loppers, pruning saw, chainsaw, pick axe, knife, flat shovel, chain saw, tiller, and ball cart (for moving heavy trees)

Potential Water Sources

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

Materials List

- **Low-Maintenance Fescue Mix**, 15 pounds of seed
- **Germination Blankets**, 4 rolls (8' by 112.5')
- **Bio-Organics**, 1.5 pounds (Endomycorrhizal Inoculant)

Clean + Green Step-By-Step

Let's Start

Want to create the Clean + Green 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:

- Assess Lot Condition
- Learn Soil Type
- Remove Trash
- Remove Unwanted Scrub Brush

Professional Recommended:

- Remove Dead or Dying Trees

Volunteer Opportunities:

- Remove Groundcover + Till
- Bald Lot
- Apply Mycorrhizal Inoculant
- 'Green' Your Lot
- Maintain Your Lot

Assess Lot Condition

Once you have selected a lot you wish to maintain, spend an afternoon understanding what is currently on your lot. Here are a few questions you should ask as you walk through your lot:

What types of trees or plants are growing on your lot? Can you name the species?

Does Your lot have scrub or unwanted brambles growing? Where?

Do you notice any trees or vegetation that should be removed? Do you notice any trees that are dead, have dead wood, cracks, disease, decay, are tilting or have poor form, have structural defects or anything that looks dangerous?

Are there any trees or vegetation that you would like to keep?

Do you see any native plants? How are you going to protect them in your management plan?

Clean + Green Step-By-Step

Clean Steps

○ Learn Soil Type

Before you complete steps for the Clean + Green on your lot, it is important to make sure you soil is clear from harmful chemicals or toxins that could be hazardous to your health. It is recommended that all residents have their soil tested before removing low growing vegetation, tilling, installing a lot design, or undertaking any type of activity that would disturb the soil.

If you are looking for a place to test your soil, the Field Guide recommends joining Keep Growing Detroit's Garden Resource Program where members have free access to soil testing. Another option is MSU's Extension program, which charges a small fee. Soil testing takes approximately ten days to get results.

If your soil test shows you have high amounts of lead in your soil, refer to the [Quiet Remediator](#) lot design for more safety instructions.

Soil testing is also a great opportunity to learn about the type of soil on your lot. Knowing your soil type is important when selecting plants and understanding drainage, which are especially important if you decide to implement a lot design after the Clean + Green process. ww

For more information and tips, check out the 'Discover Your Soil' activities in the printed Field Guide. You may pick-up a copy for free at the DFC Implementation Office or download and print yourself from the Resource Page.



Visit the [Discover Your Lot](#) page on the Field Guide's web site to take a quick quiz to better understand the lot type you are starting with.

○ Remove Trash

The first step in cleaning a lot is clearing a lot. Is there garbage on your lot? If so, what type?

Standard Refuse: Plastic, paper, boxes, metals, glass, etc.

Yard Waste: Organic materials such as leaves, branches, and twigs.

Bulk Refuse: Furniture, appliances, air conditioners, hot water tanks, mattresses, large toys, doors, etc.

There are several locations in Detroit that you can take bulk trash and yard waste. These locations are only open to Detroit residents with proper identification. Residents are limited to one load per household per day, not to exceed one cubic yard or 1,000 pounds. The City does not accept demolition, construction or remodeling debris, household or commercial garbage, or tree stumps.

Advanced Disposal (Brush and Bulk Collection on Detroit's West Side)

12255 Southfield Road

Detroit, MI 48228

Phone: (844) 2-DETROIT (338764)

Rizzo Services (East Side and South of I-94)

6200 Elmridge

Sterling Heights, MI 48313

Phone: (866) 772-8900

Dumps in Detroit

Davison Yard: 8221 West Davison

Southfield Yard: 12255 Southfield Service Dr.

State Farm Yard: 19715 John R

J. Fons Transfer Station: 6451 E. McNichols

Clean + Green Step-By-Step

Clean Steps

Do you have hazardous or dangerous materials on your lot? Materials such as car parts (engines, batteries, fuel, motor oil, etc.), paint, tires, ammunition, or other hazardous materials? If you have any of these types of materials, contact the City of Detroit for more information and guidance on how to safely remove these materials from your lot.

○ Remove Unwanted Scrub Brush

Once all trash is removed from your lot you can cut down any unwanted vegetation, such as scrub brush. Scrub brush generally consists of small woody trees or shrubs, grasses, and brambles. The best time to remove unwanted vegetation or to prune most plants is in the spring or fall when plants are either starting to come up or die back for the year.

Be sure to wear appropriate clothing for the job to protect you from any thorns, poison ivy, glass, or needles that might be present on a lot. You will also need a variety of tools to help assist you with the removal of unwanted scrub and vegetation. **Refer to the list of suggested safety gear and tools is provided on page 4.**

Be careful when removing scrub as you may not know what type of vegetation you are removing or if you may be disturbing something that can harm you, such as a beehive. This job is best done in pairs or groups.

○ Remove Dead or Dying Trees

Are there trees you need to remove on your lot? These might be trees that are unhealthy, unsafe, or species you do not wish to have on your lot.

Removing trees can be dangerous to you and other volunteers as well as to adjacent properties and other trees. The Field Guide recommends working with someone who has prior experience with tree removal. **A great reference is Working Safely with a Chain Saw in the Backyard Woods Guide provided by the Arbor Day Organization.**

For tree removal, be sure to wear the suggested safety gear listed on page 4. This list includes additional safety gear related to operating a chain saw. When selecting a chain saw, make sure it has the proper safety features, such as a chain brake, throttle safety latch, and chain with guard and links in good condition. If you are cutting a large tree, it will likely require guide ropes and one or two hired professionals.

Tree felling can be unpredictable. Before cutting trees, ensure trees are a safe distance from houses, roads, power lines, bodies of water, and cars. Also make sure children and adults are a safe distance away. Contact any nearby neighbors before removing large trees.

Experience in tree cutting and tree felling is required before removing any large trees. The Field Guide does not recommend undertaking this without professional assistance or support.

Clean + Green Step-By-Step

Clean Steps

○ Remove Groundcover + Till

Does your lot have existing groundcover? Do you want to keep your groundcover or would you like to remove all or a portion of it and replace it with a low-maintenance grass mix or a recommended Field Guide lot design?

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

If you do not own a tiller, you will need to rent or buy one. There are three ways you can go about tilling: a manual tiller, a push tiller, and tilling with a tractor. **Till soil at approximately six to eight inches deep if the soil is compacted, in poor condition, or if you are working with a lot that has a recently completed demolition or another soil disturbance event.** If your soil is healthy or semi-healthy, do not till as this can kill healthy bacteria that currently exists in your soil. Tilling should only be used to loosen compacted soil or existing vegetation. Once the lot is tilled, rake, and remove all clumps of existing vegetation.

Before tilling, be sure to inspect your lot for buried concrete or rubble that was not removed during the cleanup stage. Large debris can ruin tiller tines.

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

If you would like to keep your existing groundcover, you can mow this area and/or refer to the Field Guide website for lot designs that can be implemented within an existing groundcover as well as small lot designs that only require a small portion of groundcover to be removed.

Please note that tilling your existing vegetation directly into you soil will likely result in the same species growing back again, later.

○ Bald Lot

Is your lot bald? Your lot may have minimal groundcover if a house was recently demolished on your lot or because of poor, compacted soil.

If your lot has minimal vegetation due to a recent demolition but has even soil distribution, this lot is ready for a lot design.

Refer to the Field Guide web site and select the lot design you wish to implement.

If your bald lot is due to poor, compacted soil, the Field Guide recommends tilling your soils. Be sure to test your soil before tilling to determine if any harmful pollutants are present in the soil.

Clean + Green Step-By-Step

Green Steps

○ Apply Mycorrhizal Inoculant

Healthy soil is not just dirt. Soil contains a mix of microorganisms and a network of fungi which can mobilize nutrients and assist with the distribution of water - both necessary for the health of your plants.

The last step is to create healthy soil on your lot. Healthy soil will make it easy to build a Field Guide lot design or to better grow whatever plants you already have in place. The Field Guide recommends using a mycorrhizal inoculant on your lot. When selecting an inoculant brand, be sure your application includes a variety of fungi species to provide fungal diversity and a higher success rate. **One suggestion is Bio-Organics (Endomycorrhizal Inoculant), which requires 1.5 pounds per 30 by 100 foot lot.** These amendments are likely to cost between \$50 and \$75 per lot and can be purchased at most garden stores. Follow the suppliers' recommendation for the amount of Bio-Organics, or any other endomycorrhizal inoculant for your lot.

There are many ways to apply an endomycorrhizal inoculant depending on your lot. Below are a few options:

Bare Lot: If you are applying the mycorrhizal inoculant to a bare lot, mix inoculant with turf seed prior to sowing. Spread by hand or with a seed spreader.

Existing Lawn: If using to fortify existing lawn or plants, mix with water. Water is the vehicle for getting the fungi into the root bed of the plant.

Before Planting: If applying to plants, dust roots with inoculant prior to planting.

Dry powder can be spread by sprayer or, if you have more time, by watering can. Granular amendments must be applied by hand. Application rates and amounts will vary by manufacturer, so be sure to refer to the manufacturer's instructions.

○ 'Green' Your Lot

If you are planning to 'green your lot,' a low-maintenance fescue seed is a good alternative to a traditional lawn. This family of floppy grasses is very drought resistant and requires only one cutting (in August or September) per year. The soil should already be loosened and prepared for seeding after tilling the lot.

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). Seed mix should be applied to a damp lot. Sow seeds by using a seed spreader or by hand across the remaining lot. Spread seed mix evenly over entire lot. You will need to do this several times to get even coverage. A seed rate of five pounds per 1,000 square feet is recommended. **A full 30 by 100 foot lot will require approximately 15 pounds of seed mix.**

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. **Four 8 by 112.5 foot rolls of single net germination blanket required for 30 by 100 lot.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

Gently water seedlings daily until they are four to six inches in height. 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.

If you are planning on implementing a lot design, you may not need to 'green' your lot. Please refer to individual lot designs to see what the next step is for installing lot design.

Clean + Green Step-By-Step

○ Maintain Your Lot

Minimal maintenance is required for this lot design. If you have trees, be sure to monitor them throughout the year. It may be necessary to continually remove brush or trees as they die. The groundcover will require mowing once a year.

Mycorrhizae will live in the soil as long as the plants are present. There is no need to feed the fungus; that is the plant's job.

Be sure to avoid future tilling (if soil is not compacted) or adding fast release phosphorus as this will kill mycorrhizae.

When plants die and stop delivering benefits to the fungi, fungi will eventually die as well. Be sure to replant soon after plants die or you will lose both plants and fungi!

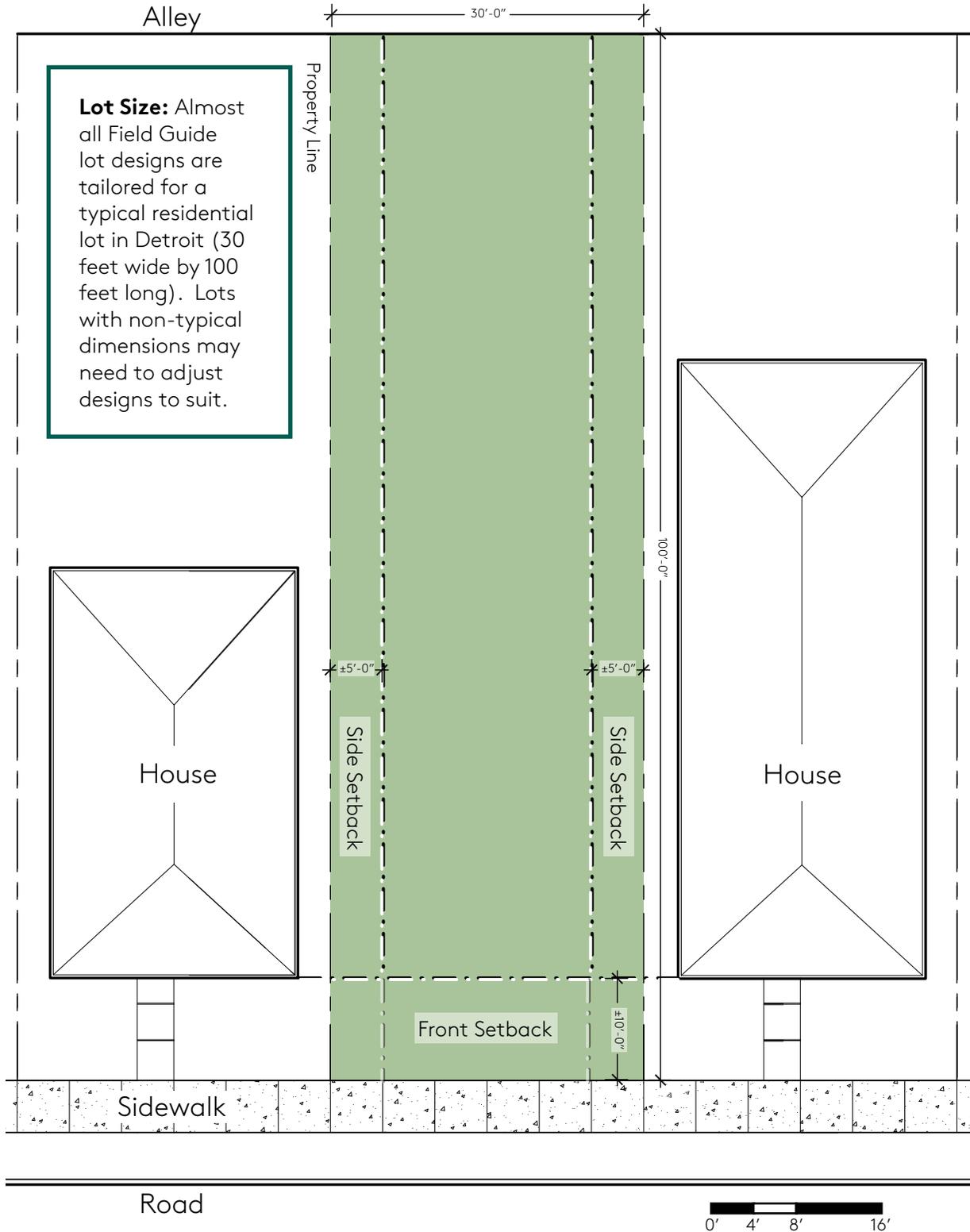
Maintain Your Sidewalk

How does the street and alley side edge of your lot look right now? If you are short on time, one of the best things you can do to introduce a 'tidy' look to your lot is to clean up curb, sidewalk, and alley edges.

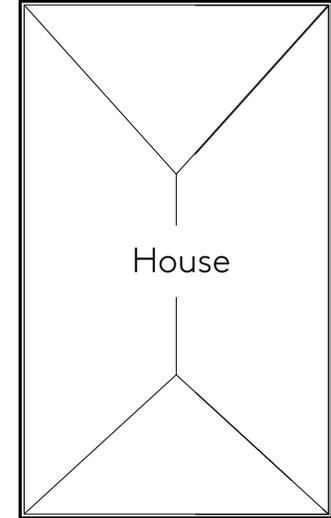
A flat shovel or a dutch hoe are the best tools for clearing away extra debris, old leaves, and weeds that may be growing along edges and seams. Be sure to remove roots when possible.

Depending on the state of your curb, sidewalk, and alley edges, this can be a large or small undertaking associated with time and energy.

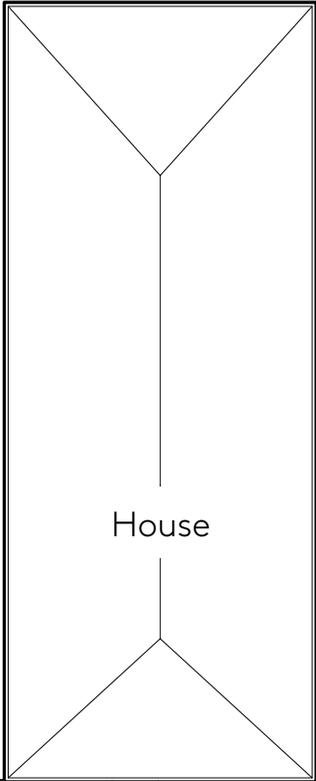
Clean + Green Lot Design



Lot Size: Almost all Field Guide lot designs are tailored for a typical residential lot in Detroit (30 feet wide by 100 feet long). Lots with non-typical dimensions may need to adjust designs to suit.



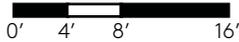
House



House

Sidewalk

Road



Front Setback: This refers to the distance between the sidewalk and the beginning of your lot design and should be consistent with adjacent houses. Front setbacks should be at minimum 10 feet.

Side Setback: This refers to the distance between the edge of your property and the beginning of your lot design. The setback will help ensure the lot design elements will not interfere with the privacy or safety of your neighbors. Side setbacks are typically five feet.

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.

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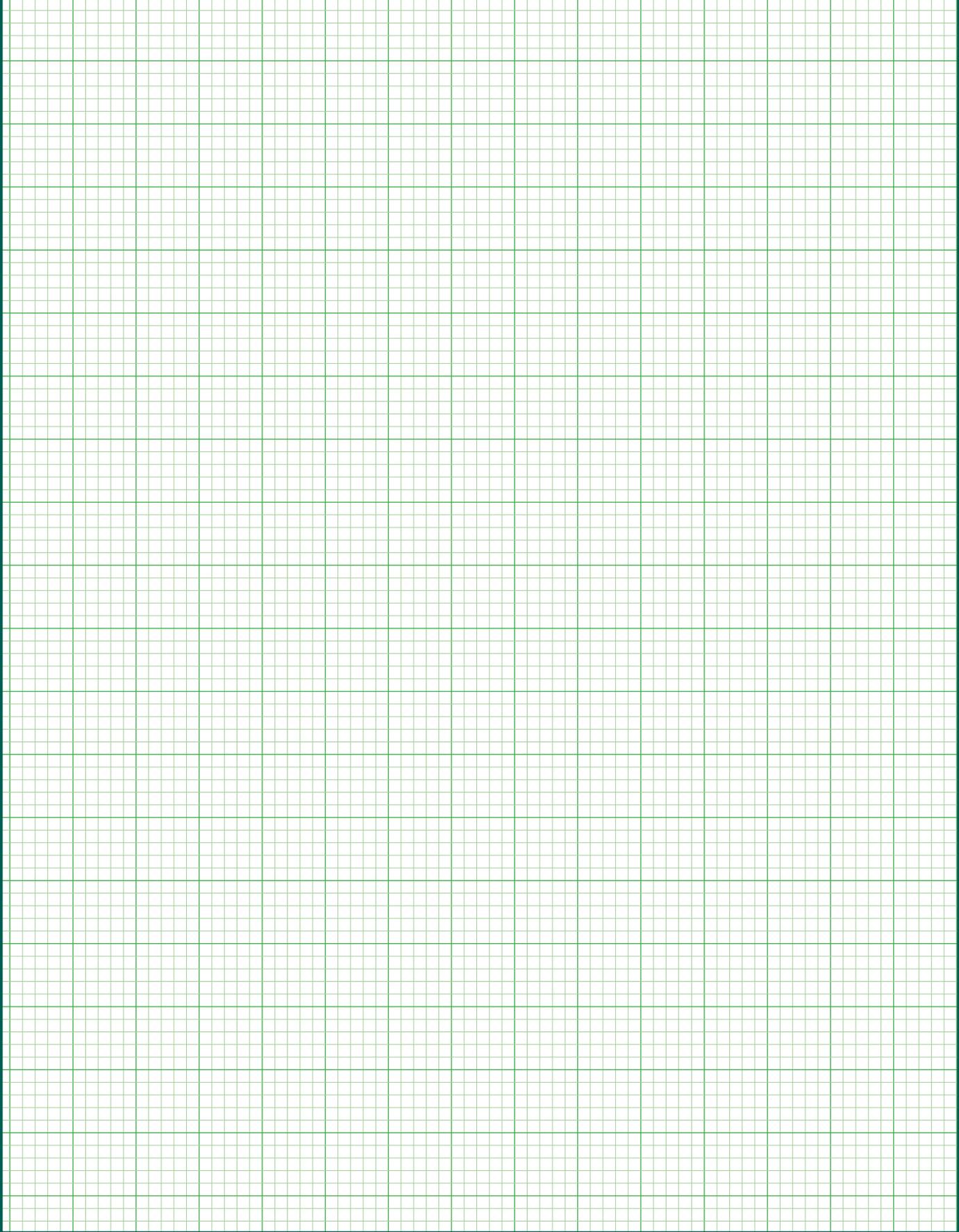
Helpful Facts

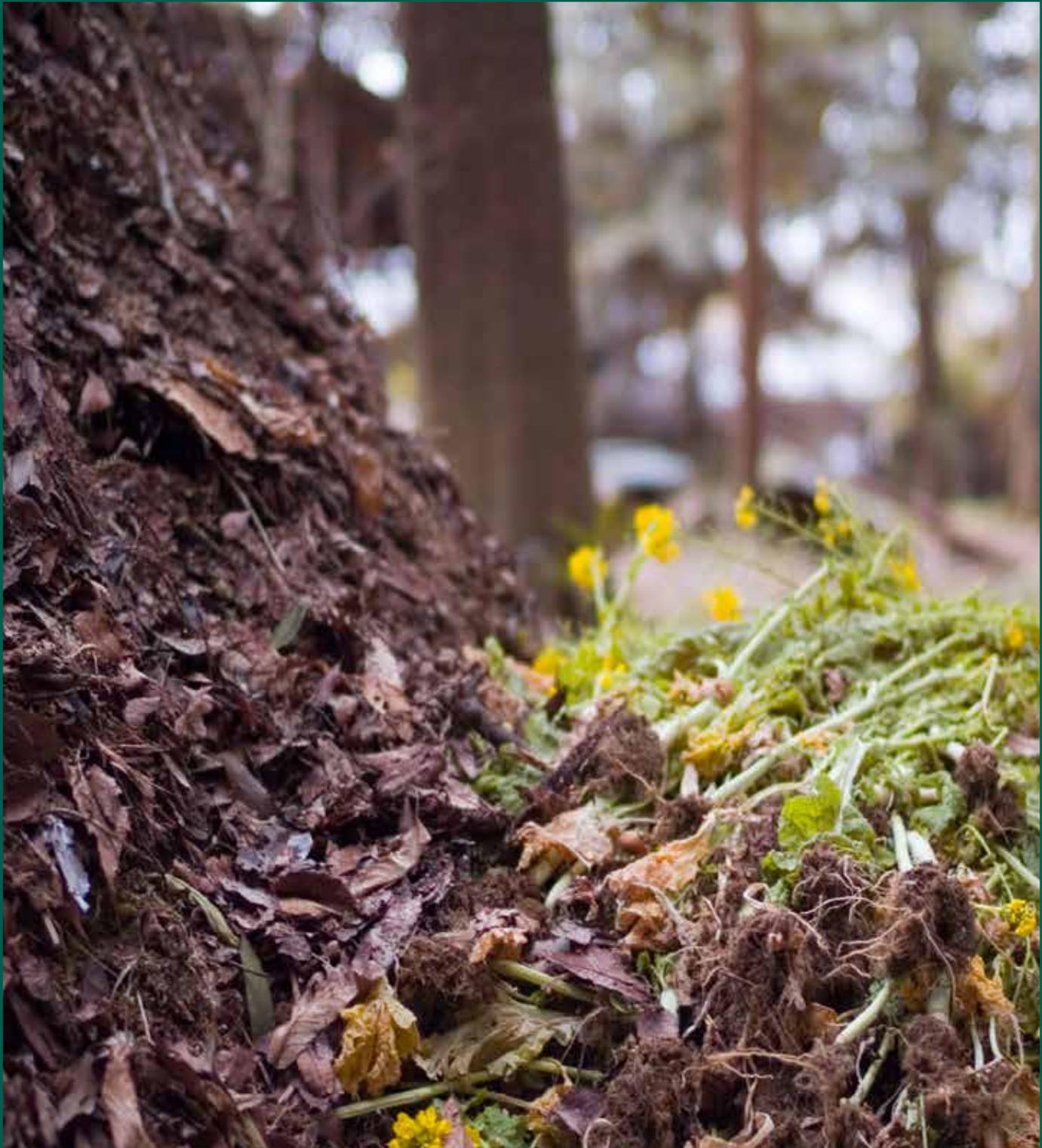
- Mycorrhizal fungi has been around for 450 million years!
- 95% of plants benefit from mycorrhizal fungi.
- There is no such thing as too much mycorrhizal fungi in your soil!
- Mycorrhizal fungi occurs naturally in the soil but can be destroyed through tilling, earthwork, construction, and even heavy foot traffic.
- Fungi is an organic amendment and not toxic, but be careful if you are allergic to fungus.

Planting Tips

- Call ahead to be sure the nursery or garden store has the materials you need for your lot design.
- If applied at the surface, cover with a mulch blanket directly after planting to shield fungi from UV ray damage.
- Avoid quick release fertilizer or fast release phosphorus with fungi as it will counteract the fungi.
- When plants die, fungi will die off next since they depend on the plants. Be sure to replant new plants soon after others die to ensure the health of your fungi network.

Draw Your Lot





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Image Source: Joi Ito, "Neighbor's Compost." 17 March 2007 via Flickr, CC BY 2.0.

Volunteer

Professional

Volunteer + Professional

Commercial Curtain

Image Source: Rachel Greenbelt, "Koelreuteria paniculata, Roosevelt Center." 16 June 2014 via Flickr, CC BY-NC-SA 2.0





The Commercial Curtain is a good option for property owners looking to stop dust from blowing through and across their lot and onto adjacent properties. This design features fragrant and flowering trees and shrubs to bring life and color to lot edges.

Similar to a traditional windbreak, this lot design provides a landscaped barrier to alleys, side roads and adjacent properties, creating a visual screen and helping to prevent illegal dumping while improving the stormwater performance of a commercial lot.

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

What is the lot design likely to cost?

The estimated cost of the Commercial Curtain is moderate (\$1,000 – \$2,500) and based on 1.5 inch diameter trees, potted plants and utilizing volunteer labor. To save money, you can buy smaller trees or pots. The cost assumes residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This is a low-maintenance lot design. Maintenance will include watering plants and newly planted trees, particularly during times of drought and excess heat.

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?

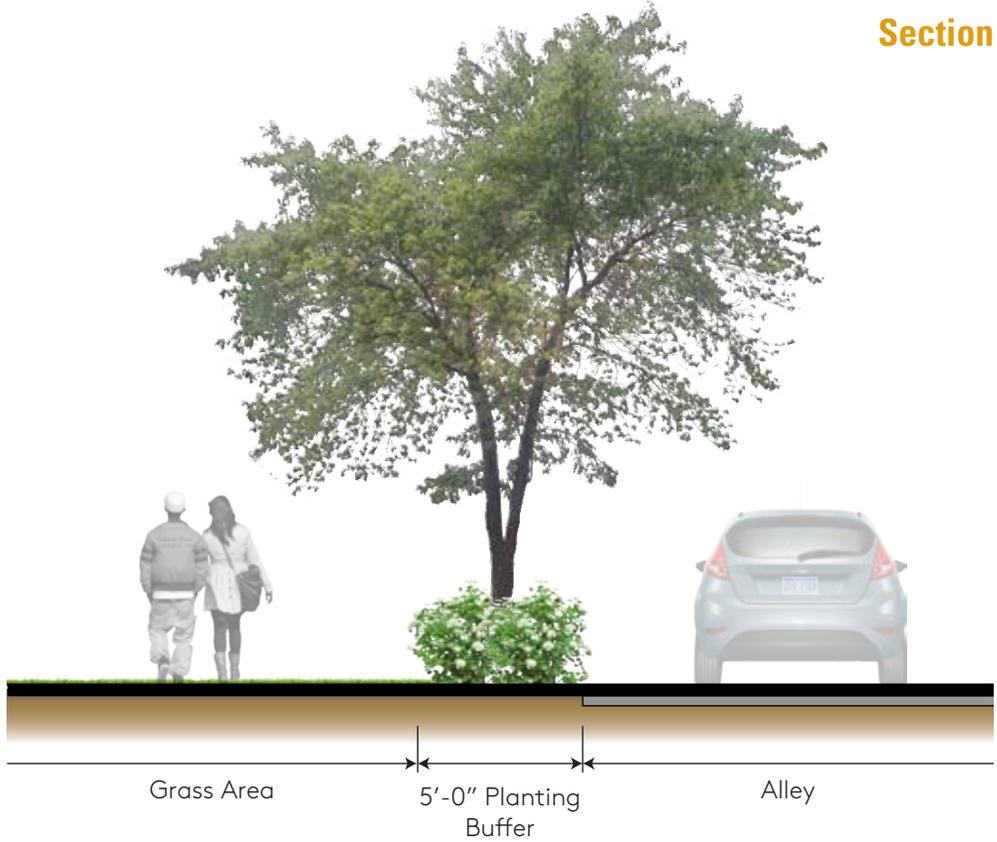
While people tackle projects in different ways and at different speeds, the Field Guide estimates installation time of this lot design to be one full weekend with the help of at least three healthy adults or youth. The Field Guide assumes the lot is ‘construction ready,’ and all equipment and materials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

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	Commercial Lot in Full Sun or Part Sun			

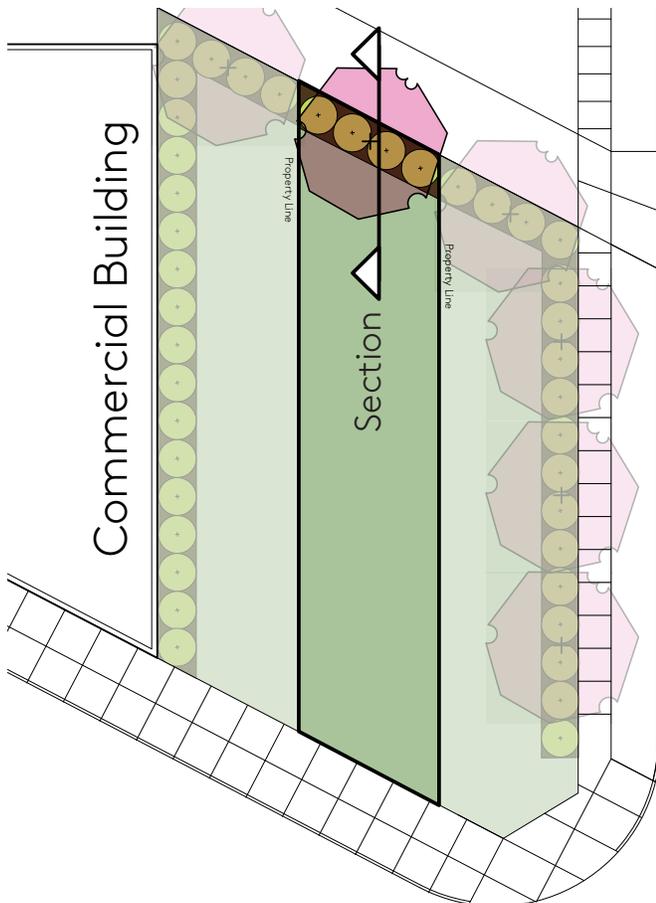
Commercial Curtain

Example of Windbreak Plantings

Section



Where Do I Grow?



The Commercial Curtain can be constructed on single or multiple lots. When installed on multiple lots, the design can create a clean landscaped edge around the perimeter of the properties. Due to the size of the particular trees selected for this lot design, it is recommended that only shrubs and bulbs be planted near buildings.

-  Flowering Tree
-  Shrub Hedge
-  Mulch and Daffodils
-  Grass or Optional Groundcover

Before You Start

'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](https://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 commercial lot (20 by 120 feet).

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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](#)
- [Tree Planting Detail](#)
- [Bulb Planting Detail](#)

Materials List

Materials

- **Mulch or Wood Chips**, 1 cubic yard

Planting

- **Golden Rain Tree**, 1 pot or Balled and Burlapped
- **Fragrant Viburnum**, 2 pots or Balled and Burlapped
- **European Cranberry Viburnum**, 2 pots or Balled and Burlapped
- **Daffodils**, 100 bulbs

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 11 to 12 pounds of seed
- **Germination Blanket**, 3 rolls (8 by 112.5 feet)

Commercial Curtain Step-By-Step

Let's Start

Want to create the Commercial Curtain 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:

- Prepare Your Lot**
- Plant Trees + Shrubs**
- Maintain Your Lot Design**
- Sow Remaining Lot**

Prepare Your Lot

Select the best location for the Commercial Curtain lot design. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. **The Field Guide recommends approximately 5 by 20 foot area (100 square feet) or the full width of your lot. The commercial lot shown on the design plan is 20 by 120 square feet.**

Minimal grass removal is required for your lot design. The Field Guide recommends removing the grass and its root system by digging up the grass.

Plant Trees + Shrubs

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

Commercial Curtain Step-By-Step

The Field Guide recommends adding three inch (1 cubic yard) depth of mulch or wood chips across the Commercial Curtain planting bed. Keep mulch or wood chips a few inches away from tree trunks.

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

○ Maintain Your Lot Design

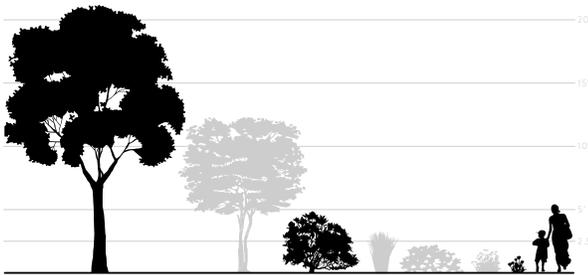
Trees and shrubs must be watered regularly during the first year. Water weekly or as needed. Add mulch annually to help suppress weed growth.

The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.



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

Average Height of Plants



Trees, Shrubs, and Bulbs

○ Sow Remaining Lot

If you are seeking a lower maintenance alternative to traditional lawn, the Field Guide recommends a fescue seed mix. If you follow Commercial Curtain lot design you will need approximately 11 to 12 pounds of fescue seed mix for the remaining commercial lot (2,400 square feet) and three 8 by 112.5 foot rolls of single net germination blankets.

This family of floppy grasses is very 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

Once 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: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

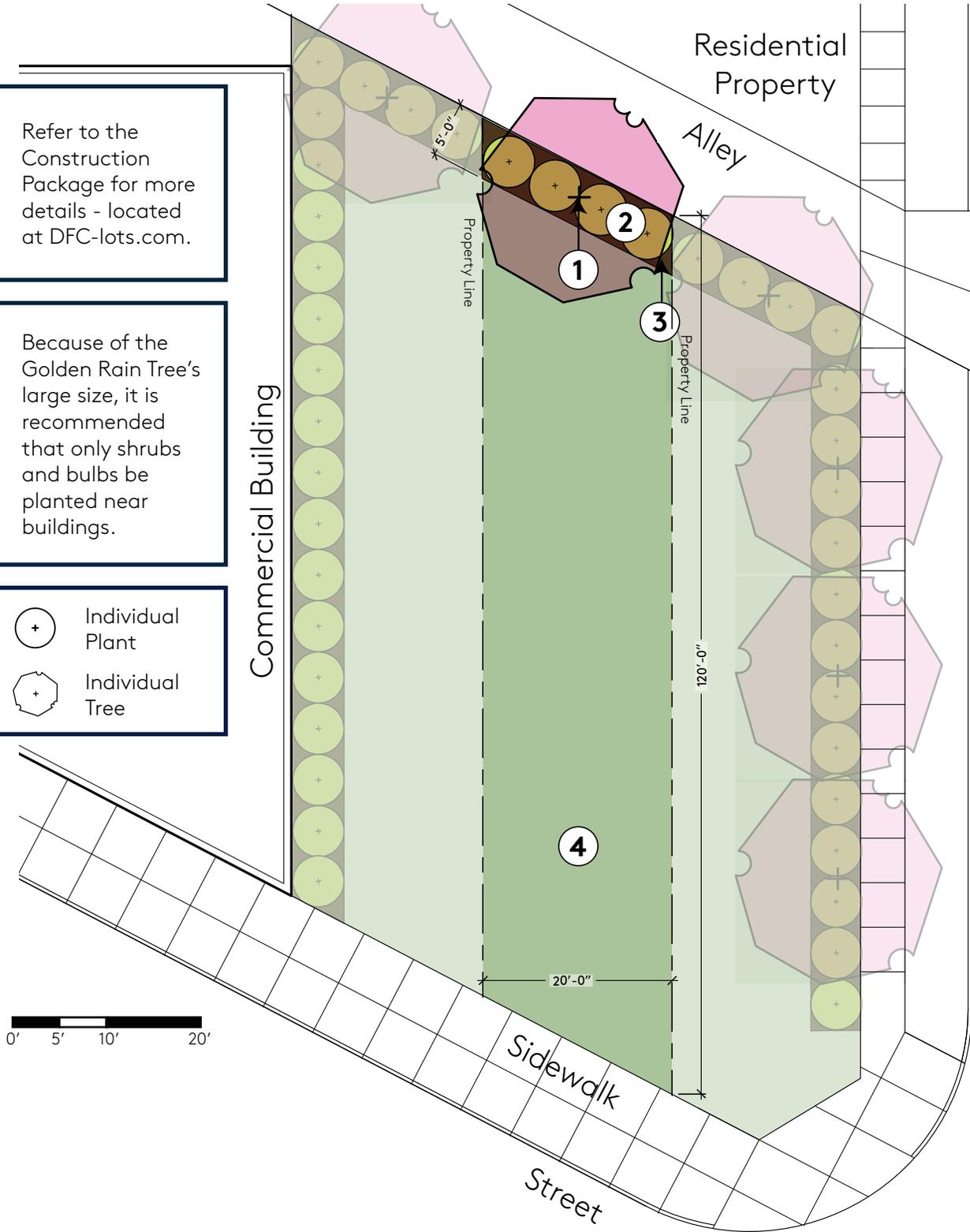
For more guidance on bulb planting refer to the [Bulb Planting Detail](#).

Commercial Curtain Lot Design

Refer to the Construction Package for more details - located at DFC-lots.com.

Because of the Golden Rain Tree's large size, it is recommended that only shrubs and bulbs be planted near buildings.

-  Individual Plant
-  Individual Tree



1 Shrub Hedge (Viburnum)

2 Shade Tree (Golden Rain Tree)

3 Mulch and Daffodils

4 Grass or Optional Groundcover

Planting: Full Sun to Part Sun



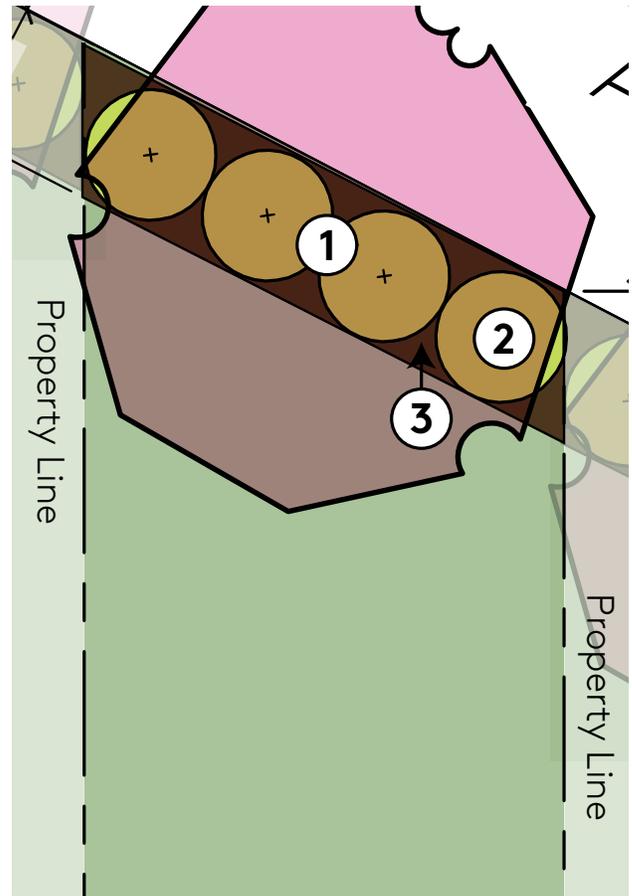
Golden Rain Tree¹
Koelreuteria paniculata
 35' Height x 35' Width.
Quantity: 1 pot or B & B

Fragrant Viburnum²
Viburnum x carlcephalum
 5' Height x 5' Width.
Quantity: 2 pots or B & B



European Cranberry Viburnum³
Viburnum opulus
 5' Height x 5' Width.
Quantity: 2 pots or B & B

Daffodils⁴
Narcissus
 15' Height x 15' Width.
Quantity: 100 bulbs



Plant Sizes

 **Pots:** 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

 **Bulbs:** Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Key

 **Golden Rain Tree**
 (Space 2.5 feet from alley.)

 **Fragrant Viburnum and European Cranberry Viburnum**
 (Space approximately five feet apart.)

 **Daffodils** (Plant randomly throughout shrub bed.)

Image Source: 1) Rachel Greenbelt, "Koelreuteria paniculata, Roosevelt Center." 16 June 2014 via Flickr, CC BY-NC-SA 2.0; 2) "Viburnum opulus A" by Wouter Hagens - Own work. Licensed under Public Domain via Wikimedia Commons 3) "Viburnum opulus 001" by H. Zell - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons; 4) Ian Britton, "Daffodils." 10 April 2010 via Flickr, CC BY-NC 2.0

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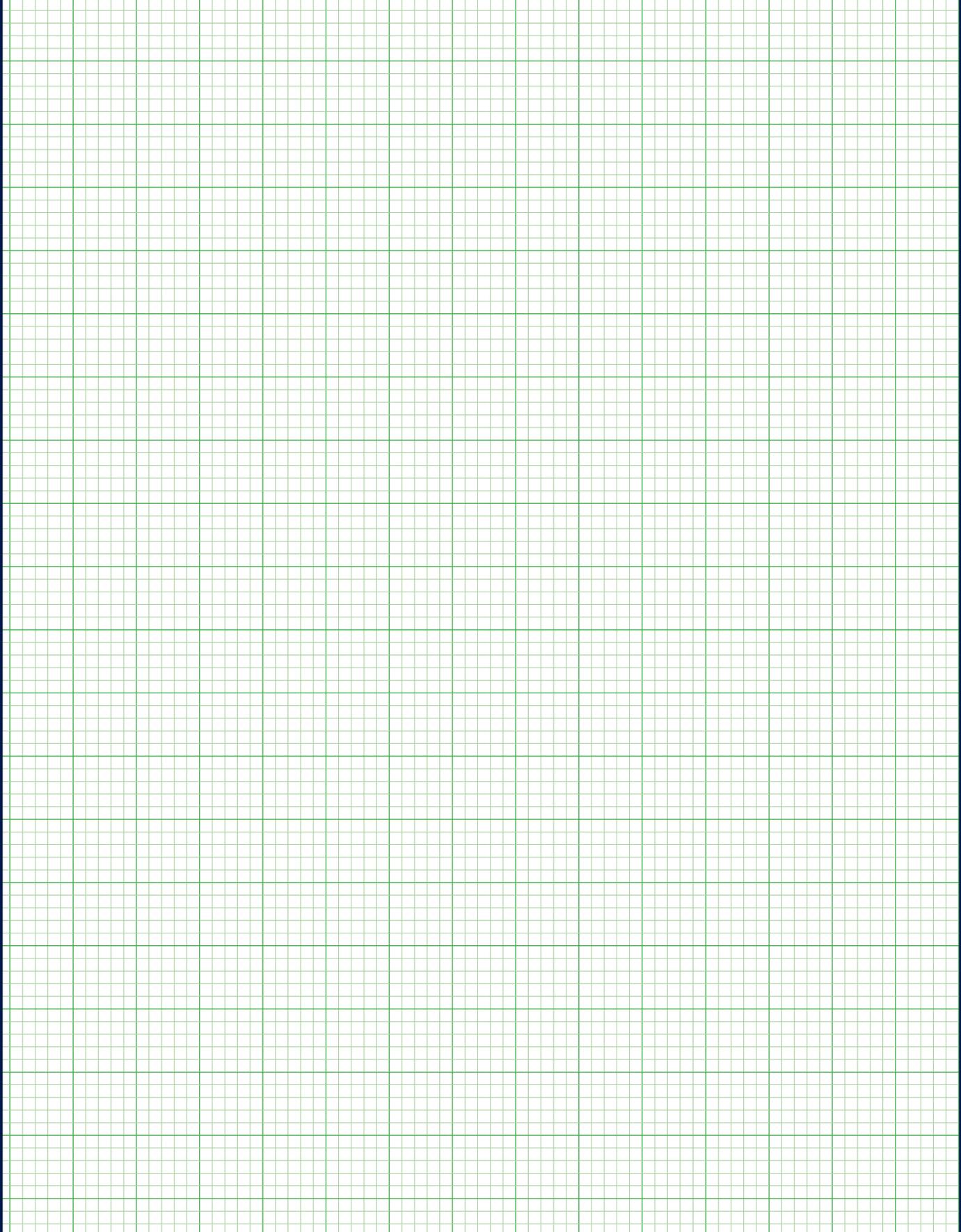
Helpful Facts

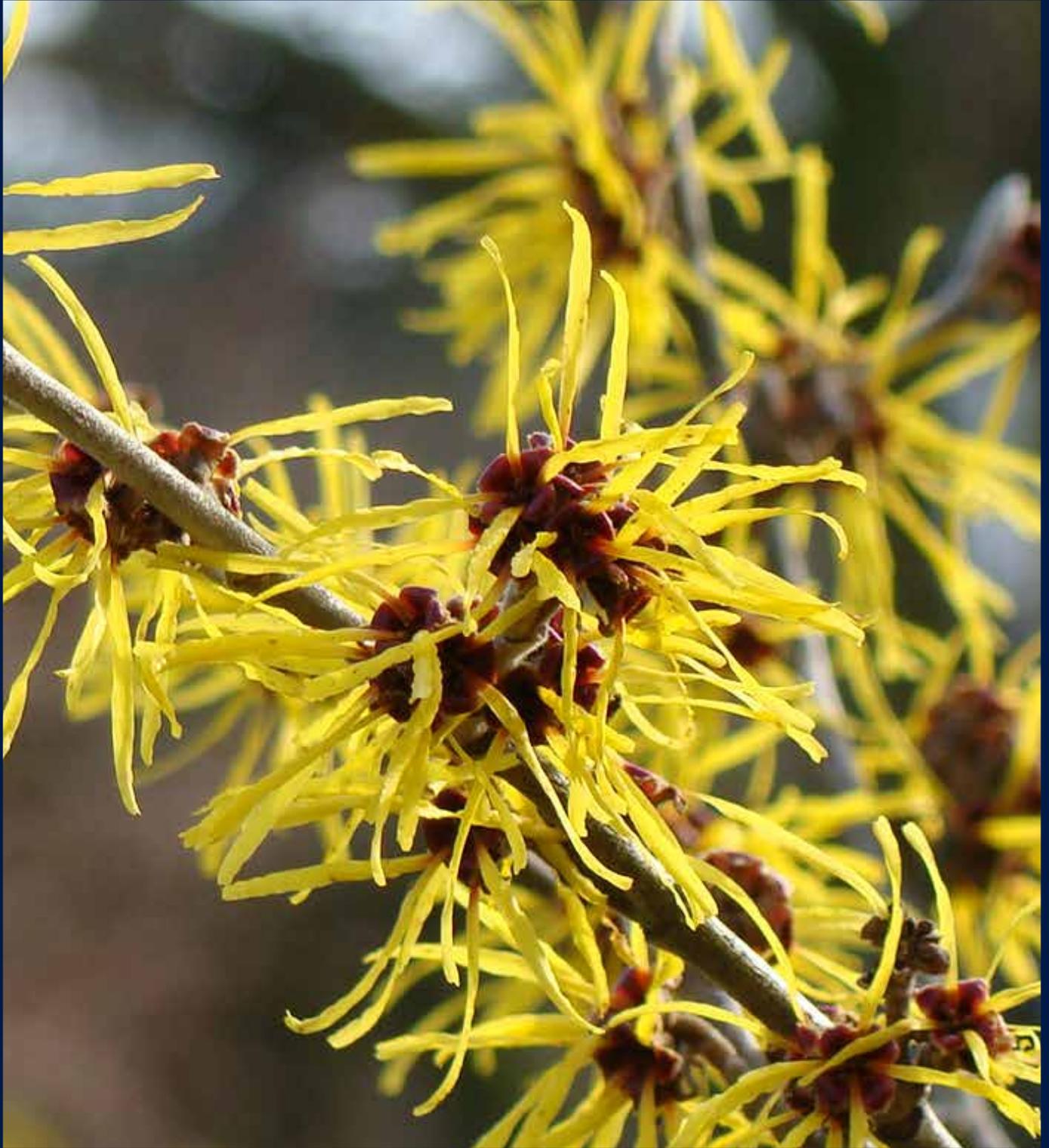
- The buffer created by the Commercial Curtain may help reduce illegal dumping on the lot.
- The buffer provides habitat for a variety of birds while screening neighboring properties.
- The selected species recommended for this lot design will flower in the spring and provide nice fall color.
- Mulch conserves water and helps protect trees and plants from mowers.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant trees and shrubs is in the spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out.
- Remove a shrub from the lot design to create or maintain a pathway through the lot.
- Inspect trees before purchasing to make sure they are healthy and well formed. This will help you select trees that are likely to survive.
- Do not plant trees under overhead wires.

Draw Your Lot





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Visit [DFC-lots.com](https://dfc-lots.com)
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Image Source: Acabashi, "Flowering snowball tree (viburnum opulus sterilis)." 04 June 2015 via Wikimedia, CC BY-SA 4.0.

Volunteer

Professional

Volunteer + Professional

Dumping Preventer

Image Source: Framboise, "Berberis." 08 May 2005 via Flickr CC BY-NC SA 2.0.





The Dumping Preventer is designed to reduce the risk of illegal dumping on your lot. A planted barrier prevents vehicles and people carrying debris from accessing the lot from the street and through the alley.

The planted hedge is spiny, thick, and is two to four feet in height, making it difficult to enter the lot. Two multi-stemmed trees are planted within the hedge. The colorful, hardy plants in this lot design create a clean edge without having to plant the entire lot.

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

What is the lot design likely to cost?

The estimated cost of the Dumping Preventer is moderate (\$1,000 – \$2,500) and based on 1.5 inch diameter trees, potted plants and utilizing volunteer labor. To save money you can buy smaller trees or pots. The cost assumes that residents or volunteers have access basic safety gear and garden tools.

How much upkeep will this lot design require?

This is a low maintenance lot design. Maintenance will include watering hedges and newly planted trees, particularly during times of drought and excess heat. You can prune hedges at any time to create desired height.

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 the lot design have been acquired and are ready to use.

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	Single or Multiple Lots in Full Sun to Shade (Lots with Illegal Dumping are Ideal)			

Dumping Preventer

Examples of Dumping Preventer Plantings

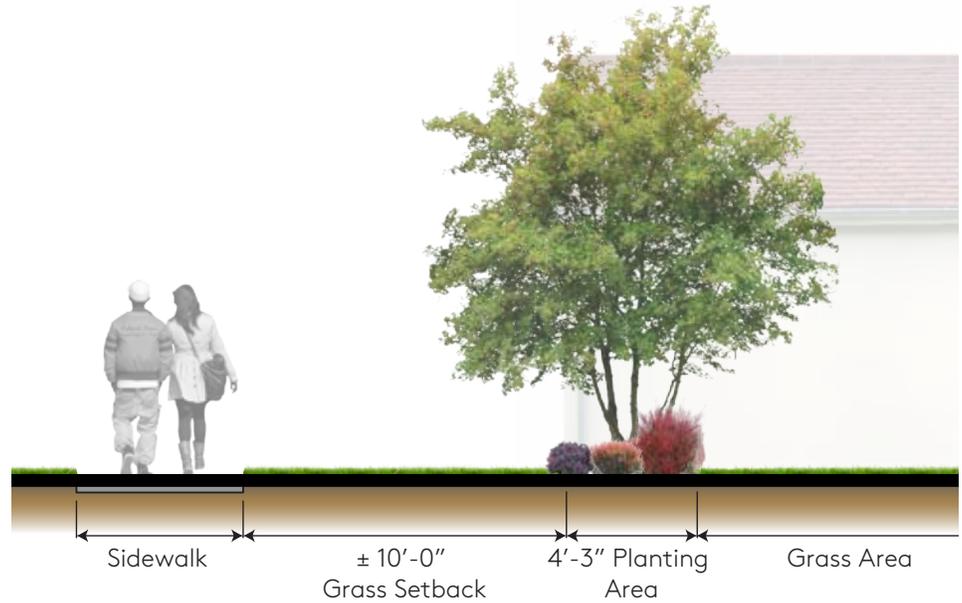
Section



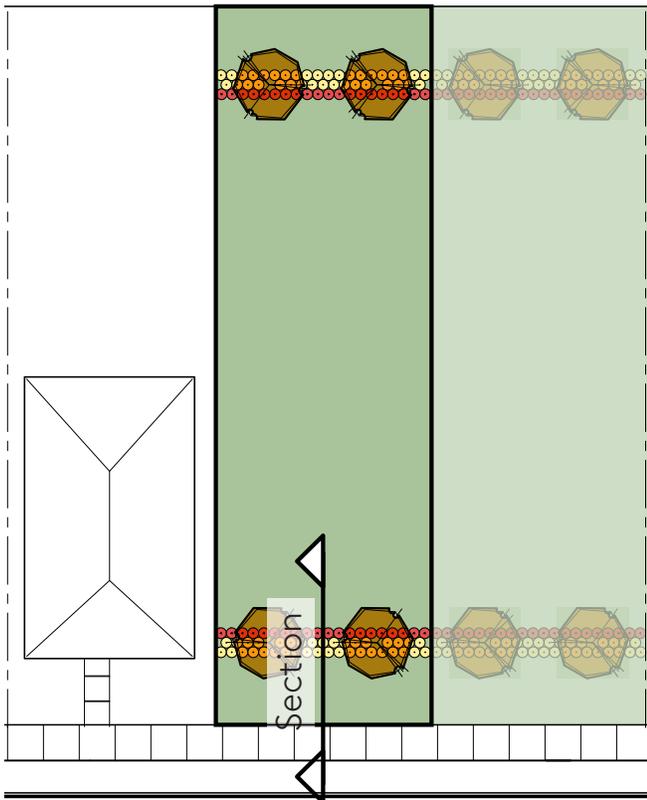
1 - Barberry Hedge



2 - Serviceberry Tree



Where Do I Grow?



The Dumping Preventer can be constructed on single or multiple lots. Multiple lots can help create a comfortable urban edge along roads and alleys. **If desired, a few plants can be removed to make a pathway into lot.** The images above show two plants: the Barberry Hedge and a Serviceberry Tree - both plants with wonderful fall color!

- Large Shrubs
- Small Shrubs
- Small Trees
- Grass or Optional Groundcover

Image Source: 1) Anneheathen. "barberry hedge" 8 May 2011 via Flickr CC By 2.0; 2) Dan Mullen. "Downy Serviceberry" 20 April 2010 via Flickr CC BY-NC-ND 2.0.

Before You Start

'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

- Marking Paint and Tape Measure
- **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
- **Ball Cart**, for moving heavy trees

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
- Tree Planting Detail
- Perennials + Grasses Planting Detail
- Bulb Planting Detail

Materials List

Materials

- Mulch or Wood Chips, 1 cubic yard

Planting

- Bagatelle Barberry, 36 pots
- Concorde Barberry, 38 pots
- Rosy Rocket Barberry, 40 pots
- Shadblow Serviceberry, 4 pots

Remaining Lot (Optional)

Groundcover

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

Dumping Preventer Step-By-Step

Let's Start

Want to create the Dumping Preventer 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**
- Plant Hedge**
- Plant Trees**
- Maintain Your Lot Design**
- Sow Remaining Lot**

Lot Preparation

Decide on the best location for your hedge. Use marking paint to map out the size, shape, and dimensions of your design. The Field Guide recommends two planting beds approximately 4.3 by 30 feet or the width of the lot.

Minimal grass removal is required for your lot design. The Field Guide recommends removing the grass and its root system by digging the grass up.

Plant Hedge

A sunny to shade planting option is recommended for Dumping Preventer.

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

The Field Guide recommends adding three inches (one cubic yard) of wood chips or mulch to planting beds. Adding wood chips or mulch will help suppress weeds.

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

Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Dumping Preventer Step-By-Step

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. Keep mulch or wood chips a few inches away from tree trunks.

The Dumping Preventer plan shows two trees approximately 7.5 feet from planting bed edge.

For more guidance on tree planting, refer to the [Tree Planting Detail](#).

○ **Maintain Your Lot Design**

Trees and plants require care and attention to thrive. Planting beds are low-maintenance; however, water and weed tree and hedges while it is getting established the first two years. **Once your hedge is established, it will shade out the majority of the weeds.** Your hedge can be pruned at any time to keep the ideal height.

The Field Guide recommends connecting with an arborist or taking a workshop on proper tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.

Dumping Preventer Step-By-Step



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

Average Height of Plants



Trees and Shrubs

○ Sow Remaining Lot

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow Dumping Preventer lot design you will need approximately 15 pounds of fescue seed mix for the remaining lot (2,742 square feet) 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

Sow seed across the remaining lot by using a seed spreader or by hand. The Field Guide recommends a seed rate of five pounds per 1,000 square feet. 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.

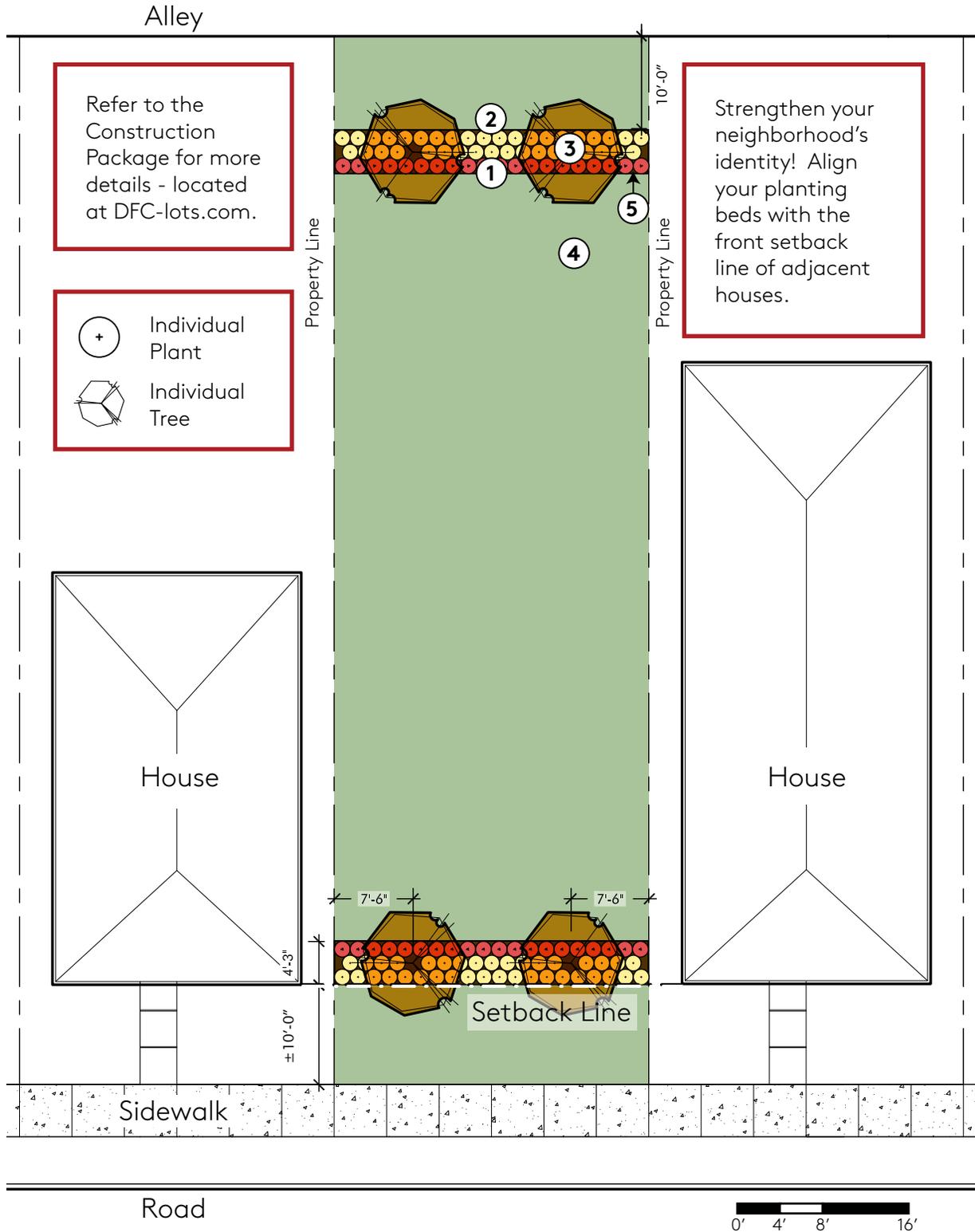
When established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Dumping Preventer Lot Design



- 1 Small Shrub
(Bagetelle & Concorde Barberry)
- 2 Large Shrub
(Rosy Rocket Barberry)
- 3 Small Tree
(Shadblow Serviceberry)
- 5 Mulch
- 4 Grass or Optional Groundcover

Planting: Sun or Shade



Bagatelle Barberry¹
Berberis thunbergii
 'Bagatelle'
 15" Height x 15" Width,
 Spiny - Prune Anytime
Quantity: 36 pots



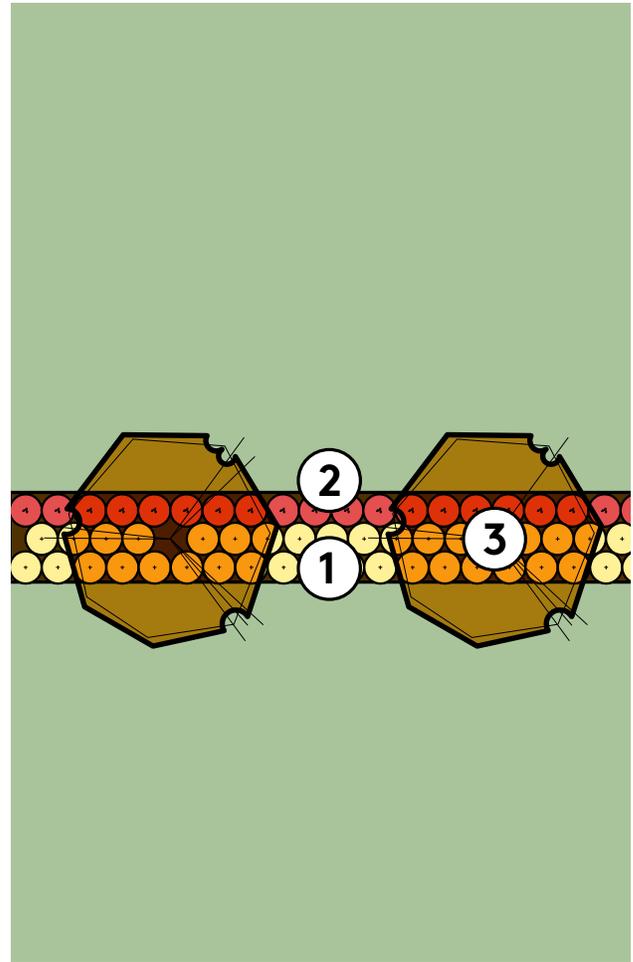
Concorde Barberry²
Berberis thunbergii
 'Concorde'
 18" Height x 24" Width
 Spiny - Prune Anytime
Quantity: 38 pots



Rosy Rocket Barberry³
Berberis thunbergii 'Rosy
 Rocket'
 48" Height x 16" Width
 Blooms in Mid-Spring
 Spiny - Prune at anytime.
Quantity: 40 pots



Shadblow Serviceberry⁴
Amelanchier canadensis
 15' Height x 15' Width
 Blooms April
Quantity: 4 pots or B & B



Plant Sizes



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

1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Key

- 1
Bagatelle Barberry & Concorde Barberry
 (Space approximately one foot apart.)
- 2
Rosy Rocket Barberry
 (Space approximately two feet apart.)
- 3
Shadblow Serviceberry
 (Space approximately 12 feet apart.)

Image Source: 1) Leonora Enking, "Berberis thunbergii 'Bagatelle.'" 27 April 2010 via Flickr CC BY-SA 2.0; 2) Megan Hansen, "Berberis thunbergii 'Concorde.'" 30 July 2010 via Flickr CC BY-SA 2.0; 3) Marie Richie, "Berberis_th-CrimsonPygmy." 11 March 2005 via Flickr CC BY-NC-SA 2.0; 4) Fairfax County., "Serviceberry (Amelanchier Canadensis)." 19 June 2005 via Flickr CC BY-NC-ND 2.0.

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.

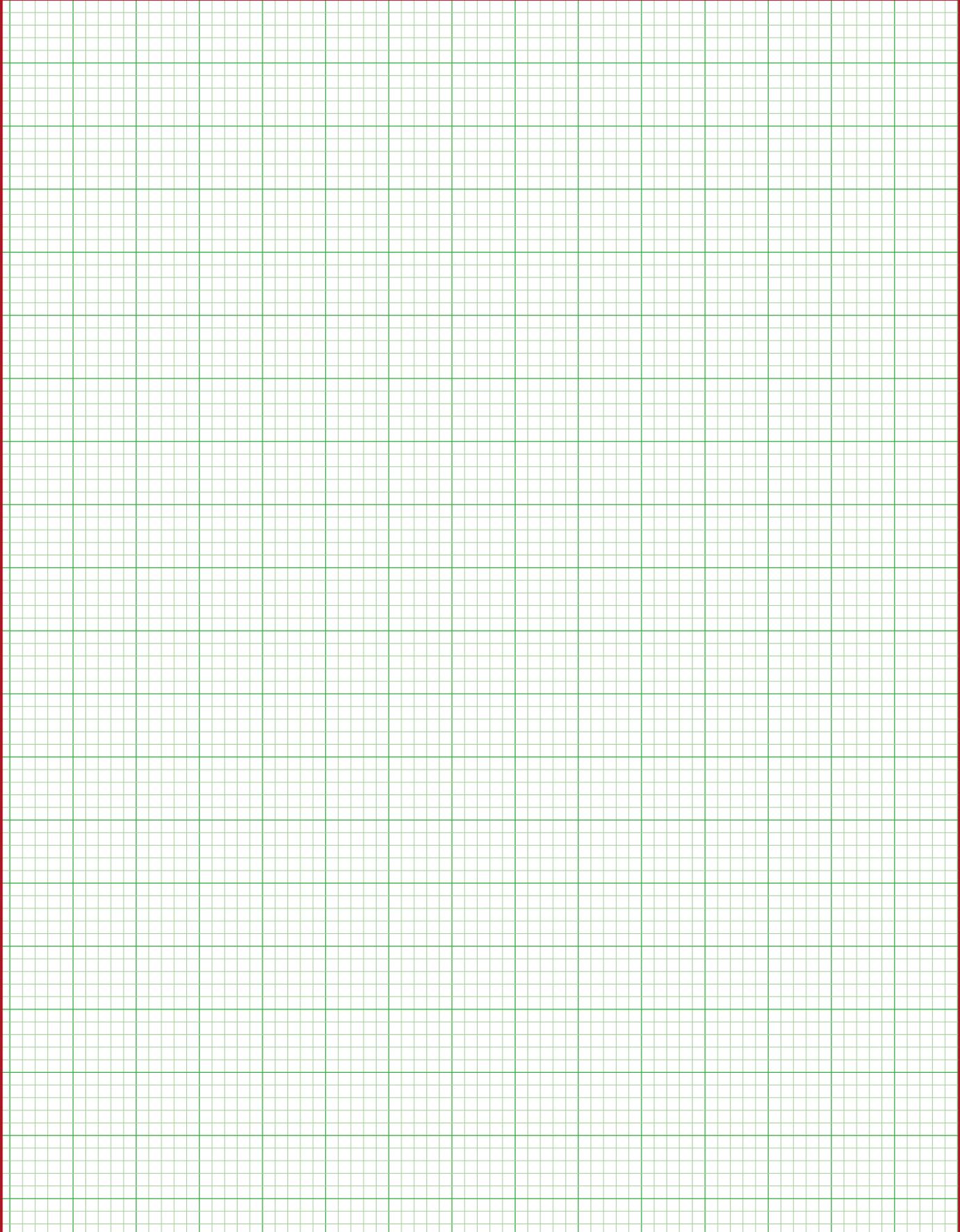
Helpful Facts

- While its primary purpose is to reduce the risk of illegal dumping, the hedge also provides habitat for a variety of birds.
- Barberry is tolerant of most soil types, fast growing, and produces colorful berries in the fall. Berries are not edible.
- Barberry shrubs are deer resistant.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out.
- Weed weekly or as needed.
- If you do not have a back alley and do not want to plant the back of your lot, just cut the planting list in half.
- To create access to the lot, a pathway can easily be created by removing one hedge.
- Add crocus and snowdrops to existing grass for a colorful lawn in spring.
- Do not plant trees under overhead wires.

Draw Your Lot





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A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Dan Mullen. "Downy Serviceberry" 20 April 2010 via Flickr CC BY-NC-ND 2.0

Volunteer

Professional

Volunteer + Professional

Forest Patcher

Image Source: Lambert, Rotherstien & Associates, "IMG_2104." Used with permission





The Forest Patcher emphasizes working with the resources at hand and on-site. This lot design is great for properties with an unruly woodland or a collection of small trees. The design pairs an investment of time and volunteer labor with a set of maintenance strategies to help you create a well-maintained forest patch.

The Forest Patcher’s guiding principles will help you manage your existing woodland through the removal of dense understory growth and dying or diseased trees, as well as with the addition of a few new trees or wildflowers. This management plan has the potential to welcome habitat, biodiversity, shade, and a naturalized aesthetic to your neighborhood.

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

What is the lot design likely to cost?

The estimated cost of the Forest Patcher is low (\$50 –\$1,000) and based on utilizing volunteer labor with possible professional assistance for tree removal. The number of trees you decide to remove or plant may impact cost. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include watering plants and trees, particularly during times of drought and excess heat. The lot should be cleaned up once a year to remove any unwanted scrub plants or damaged trees.

Will the installation of this lot design require a professional?

The installation of the Forest Patcher lot design is unlikely to require professional assistance if you, with the help and support from friends, family, or neighbors, would like to construct it; however, if you decide to remove large trees or do not have experience in handling a chain saw, the Field Guide recommends seeking professional assistance. Please refer to the Step-By-Step section for guidance on implementing this lot design. 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 the installation time of this lot design to be one full weekend with the help of at least three 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.

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	Any Lot With Existing Trees in Sun or Shade			

Forest Patcher

Examples of Woodland Edges

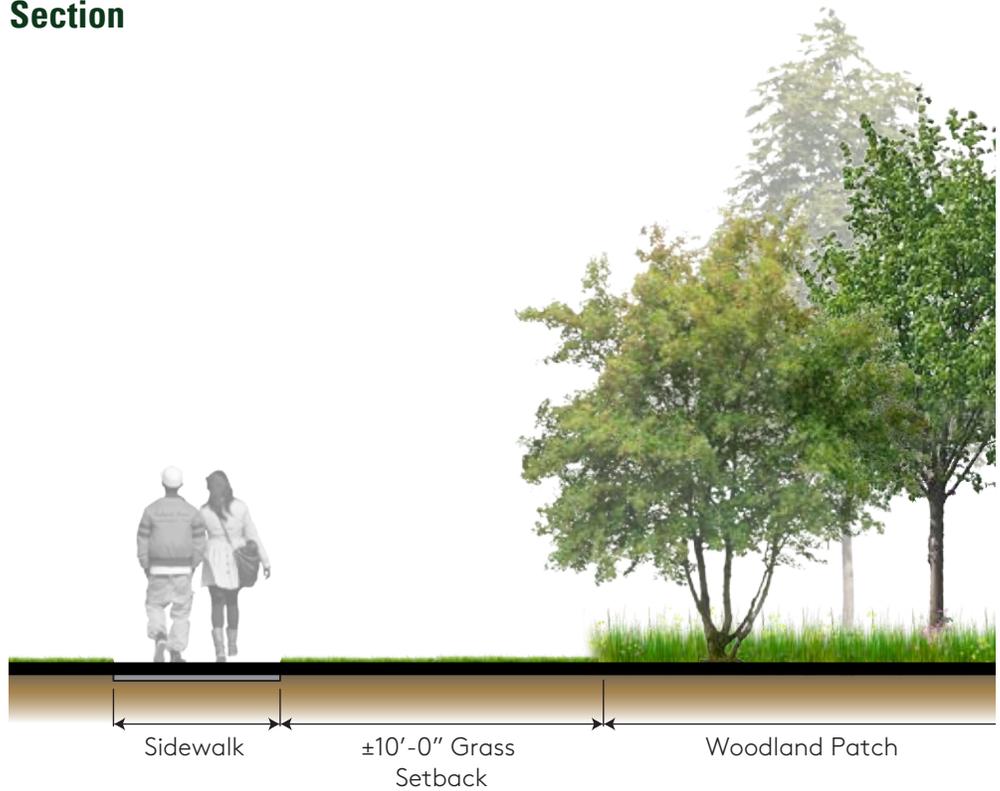


1 - Scrub Along Fence



2 - Forest Patch

Section



Where Do I Grow?



The Forest Patcher can be constructed on single or multiple lots and is suitable for properties with an existing woodland.

- Existing Forest Patch
- Woodland Floor
- Additional Trees (Optional)
- Grass or Optional Groundcover

Image Source: 1) Lambert, Rotherstien & Associates, "IMG_1487." Used with permission; 2) Lambert, Rotherstien & Associates, "IMG_1460." Used with permission.

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

Suggested Tools

- **Marking Paint**
- **Safety Gear:** Gloves, heavy work boots, tall socks, pants, long sleeve shirts, protective eye wear, dust masks, ear plugs, and hard hats. Additional safety gear, such as hard hat with attached face guard and leg protection/chaps, is recommended when using heavy machinery, such as a chainsaw.
- **Garden Tools:** Spades, shovels, rakes, trash bags, and wheelbarrows.
- **Woodland Management Tools:** Clippers, loppers, pruning saw, chainsaw, pick axe, knife, and ball cart (for moving heavy trees).

Potential Water Sources

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

Waste Removal

- **Yard Waste Removal:** Contact your local refuse service to set-up yard waste removal or make sure you have a place on your site for unwanted scrub, brush, logs, and vegetation to be legally dumped. Refer to page 8 for more information.

Materials List

Materials

- **Mulch or Wood Chips**, recommended if planting new trees but not required
- **Low-Maintenance Fescue Mix**, 7.5 pounds of seed
- **Germination Blankets**, 2 rolls (8 by 112.5 feet)

Planting Options

The Field Guide offers a variety of woodland plants for the three categories listed below. Refer to page 10 and decide if any of these planting options are right for your Forest Patcher design.

- **Understory Trees**
- **Large Trees**
- **Groundcovers and Perennials**

Resources

Field Guide Resources

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

- **Clean + Green**
- **Tree Planting Detail**

There are numerous resources and classes available to help guide you. The Greening of Detroit offers a great Citizen Forester program to interested residents.

You can also access the "Backyard Woods Guide" provided by the Arbor Day Organization. The guide is full of useful information, including [Working Safely with a Chain Saw](#), [Identify and Manage Hazardous Defects in Your Trees](#), and [Prune Your Trees to Keep Your Woods Healthy](#).

Forest Patcher Step-By-Step

Let's Start

Want to create the Forest Patcher? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design, and the steps volunteers can construct themselves.

Check off tasks as you go along.

Lot Design Steps

Volunteer Opportunities:

- Assess Woodland Condition
- Create A Clean Edge
- Remove Understory Scrub

Professional Recommended:

- Remove Dead or Dying Trees

Volunteer Opportunities:

- Add Trees
- Add Perennials
- Maintain Your Lot Design
- Sow Clean Edge

Assess Woodland Condition

Spend an afternoon assessing the existing trees and vegetation on your lot. Here are a few questions to ask as you examine your lot. Considering these questions will help you begin to develop a maintenance plan for your lot.

What types of trees or plants are growing in your woodland? Can you name the species?

Are there any trees or vegetation that you would like to keep?

Do you notice any trees or vegetation that should be removed? Do you notice any trees that are dead, have dead wood, cracks, disease, decay, are tilting, or have poor form, structural defects, or anything that looks dangerous?

Does your woodland have scrub or unwanted brambles growing?

Do you see any endangered wildflowers or wildlife? If so, how are you going to protect them in your management plan?

Forest Patcher Step-By-Step

○ Create A Clean Edge

The Field Guide recommends approximately ten feet or the existing length from the front of the house to the sidewalk to be clean and clear of unwanted scrub, trees, and vegetation, helping to keep your neighborhood looking tidy. A five foot strip clear of vegetation is also recommended along your lot's side property lines if your lot is adjacent to any houses. This will help keep branches from falling on neighboring houses or becoming a public nuisance.

It is okay to clear around a 'feature' tree (a tree you want to keep) if it is located within the front or side areas being cleared of other vegetation.

You should have a variety of tools on hand to assist you with removing scrub vegetation and removing roots from the property. Recommended tools and safety gear are listed on page 5.

Be careful when removing scrub to avoid poison ivy, beehives, or other hidden dangers. The Field Guide recommends that two people work together to remove unwanted scrub and vegetation.

○ Removing Understory Scrub

After creating the clean edge around your lot, you may need to remove additional scrub, smaller woody growth, or other grasses and brambles from your forest patch site. Removing this smaller, unwanted vegetation can enhance views through your woodland ("clearing the understory").

Clearing the understory will create open space and prepare your lot for planting new trees.

○ Remove Dead or Dying Trees

Are there trees on your lot that should be removed? These might be trees that are unhealthy, unsafe, or are species you do not wish to have on your lot.

Removing trees can be dangerous to you and other volunteers as well as to adjacent properties and nearby trees. The Field Guide recommends working with someone who has prior experience with tree removal. **A great reference is Working Safely with a Chain Saw in the Backyard Woods Guide provided by the Arbor Day Organization.**

If taking on the tree removal yourself, be sure to wear the suggested safety gear listed on page 5. This list includes additional safety gear that is especially important for operating a chain saw. When selecting a chain saw, make sure it has the proper safety features, including a chain brake, throttle safety latch, and chain with guard and links in good condition. If you are cutting a large tree, it will likely require guide ropes and one or two hired professionals.

Tree felling can be unpredictable. Before beginning to cut trees, make sure children and adults are a safe distance away and that trees are a safe distance from houses, roads, power lines, bodies of water, and cars. Also be sure to contact nearby neighbors before removing a large tree.

Experience in tree cutting and tree felling is required before removing large trees. The Field Guide does not recommend the removal of trees larger than 6 inches in diameter without professional assistance or support.

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.

Forest Patcher Step-By-Step

○ Add Trees

Does your forest patch have small clearings from removed trees or existing open space where you would like to plant a new tree? When adding trees, it is best if your new tree species adds diversity to your woodland and making sure the existing clearing is large enough for the tree you wish to plant. Consider the sun and shade tolerance of the tree species you are considering. Research tree spread to ensure it will have enough space to stay healthy as your tree grows. If your planting area is deep within your lot, consider if or how you will be able to bring the new tree to the selected site.

The Field Guide recommends a variety of trees as potential additions to your Forest Patcher woodland; however, each woodland is unique. The Field Guide encourages you to learn more and discuss your woodland with an arborist or someone knowledgeable about trees.

Trees can be purchased in pots or balled and burlapped. Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

Plant trees as soon as possible on lot. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well-watered until you can plant them. (Trees dry out fast!)

For more guidance on tree planting, refer to the [Tree Planting Detail](#).

○ Add Perennials

Would you like to add additional or new planting to the forest floor? This lot design suggests a few shade-loving groundcovers and perennials for your forest patch. If your lot is in full sun, seek alternative planting options. The suggested plants are Michigan wildflowers and require moist soil and shade.

Place plants in desired location, then remove plastic pots, loosen roots, and plant. **Woodland plants do not require mulch. Mix plants in with existing woodland plantings or scatter across the forest floor.**

If you are looking for additional woodland plants, a great reference is the [Native Plants Database](#) provided by The Native Plant Nursery LLC in Ann Arbor, Michigan.

○ Maintain Your Lot Design

This lot design requires an ongoing series of maintenance strategies. Over time and through the seasons, your 'maintenance' will be to continually evaluate the condition of your woodland, remove any unwanted species, manicure the edges, and add new species as desired. Monitoring your woodland will help keep it healthy and enjoyable throughout the year.

The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance if you need more information on woodland management.



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

Forest Patcher Step-By-Step

Brush and Bulk Collection:

Advanced Disposal (Detroit's West Side)

(844) 2-DETROIT (338764)

12255 Southfield Road

Detroit, MI 48228

Rizzo Services (East Side and South of I-94)

(866) 772-8900

6200 Elmridge

Sterling Heights, MI 48313

Detroit Waste Disposal:

The locations listed below are only open to Detroit residents with proper identification. Residents are limited to one load per household per day, not to exceed one cubic yard or 1,000 pounds. The City does not accept demolition, construction, or remodeling debris, household or commercial garbage, or tree stumps.

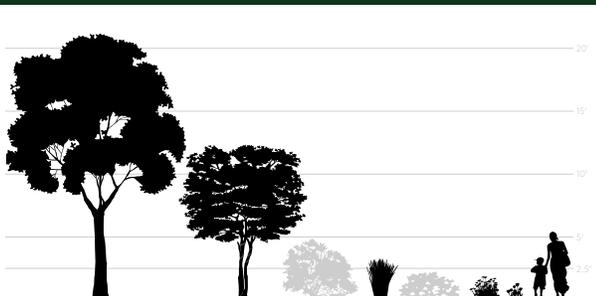
Davison Yard: 8221 West Davison

Southfield Yard: 12255 Southfield Service Dr.

State Farm Yard: 19715 John R

J. Fons Transfer Station: 6451 E. McNichols

Average Height of Plants



Trees, Grasses, Perennials, and Bulbs

○ Sow Clean Edge

After removing scrub and unwanted vegetation from the edges of your property, do you need a new groundcover? If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow the Forest Patcher lot design you will need approximately 7.5 pounds of fescue seed mix for urban edge areas (refer to plan on page 10) and two 8 by 112.5 foot rolls of single net germination blankets.**

This family of floppy grasses is very 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

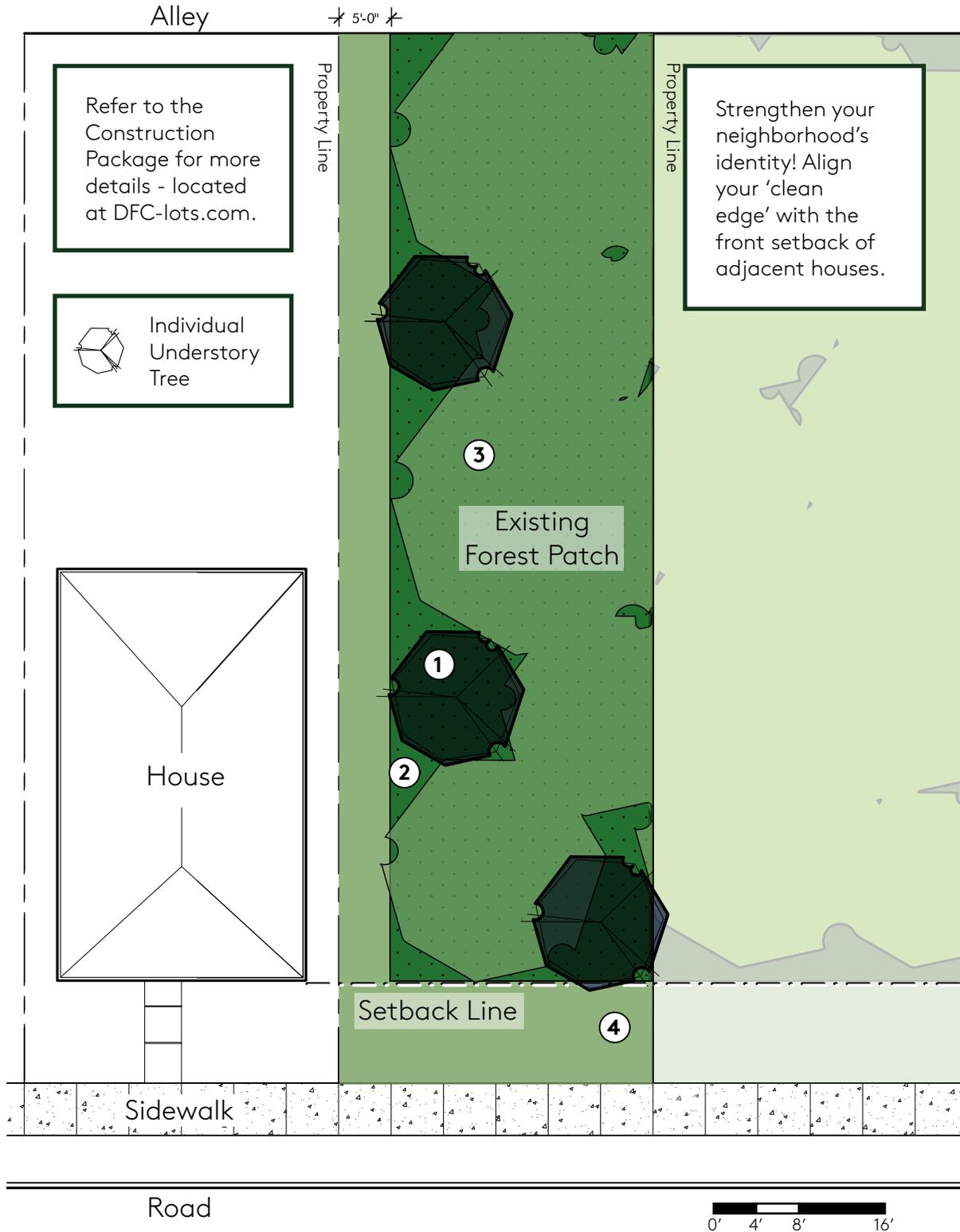
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Forest Patcher Lot Design



- 1 Additional Trees (Optional)
- 2 Woodland Floor
- 3 Existing Forest Patch
- 4 Grass or Optional Groundcover

Planting Options

Plant Options

Select the trees, perennials, and groundcovers that best suit your lot's site conditions and space requirements.

Understory Trees

- Serviceberry** *Amelanchier canadensis*
20' Height x 20' Width
- River Birch** *Betula nigra*
40' Height x 40' Width
- American Hornbeam** *Carpinus caroliniana*
20' Height x 20' Width
- Redbud** *Cercis canadensis*
25' Height x 25' Width
- Pagoda Dogwood** *Cornus alternifolia*
15' Height x 20' Width

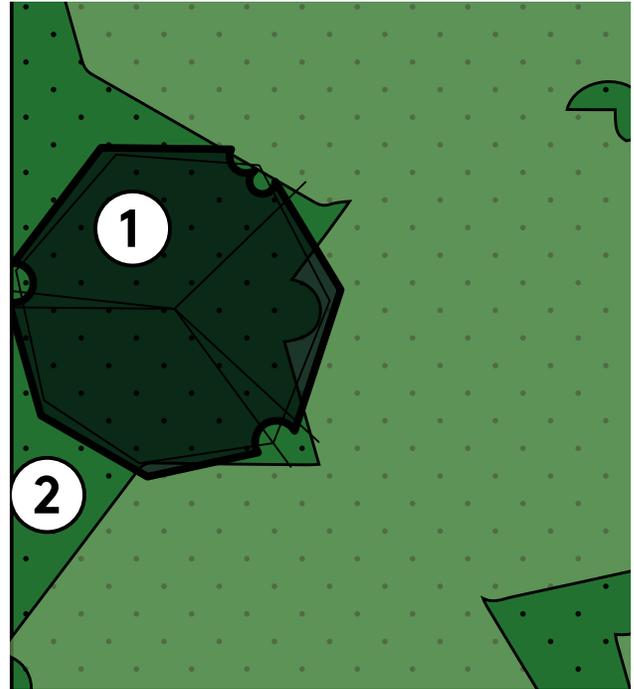
Larger Trees

- Black Gum** *Nyssa sylvatica*
40' Height x 30' Width
- Red Oak** *Quercus rubra*
60' Height x 60' Width
- American Sycamore** *Platanus occidentalis*
75' Height x 75' Width

Perennials

Some species available at White Flower Farm.

- White Trillium** *Trillium Grandiflorum*
- Dog Tooth Lily** *Erythronium pagoda*
- Spring Beauty** *Claytonia virginica*
- Liverleaf** *Hepatica*
- Wild Columbine** *Aquilegia canadensis*
- Jack-in-the-Pulpit** *Arisaema triphyllum*
- Christmas Fern** *Polygonum virginianum*
- Bloodroot** *Sanguinaria canadensis*



Key

- 1** **Additional Tree(s)** (Use understory trees in openings less than 20 feet in width. Use large trees for openings larger than 20 feet in width.)
- 2** **Additional Groundcovers + Perennials** (Use groundcovers and perennials in the list provided or alternative shade-tolerant species.)

Plant Sizes

-  **Pots:** 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).
-  Perennials can be purchased in one to five gallon pots or bulbs. 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.

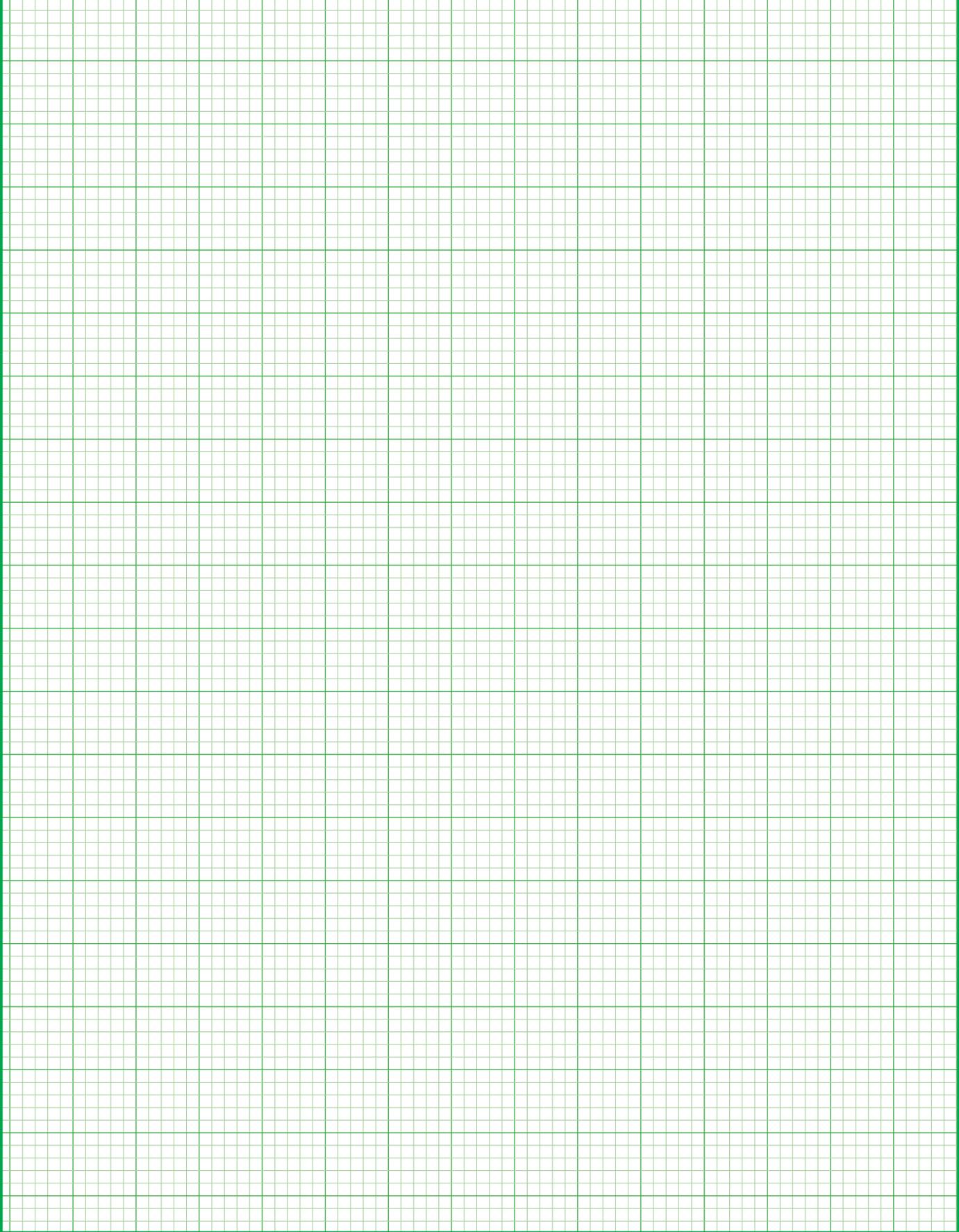
Helpful Facts

- The United States has the same acreage of woodland area today as in the year 1920 (Fact from Arbor Day Organization).
- Woodlands make and conserve fertile topsoil.
- Woodlands provide habitat and can increase wildlife population.
- If you plant Trillium, do not pick it as it can weaken the whole patch.
- Use extreme caution when operating a chain saw. Each year in the United States, 40,000 injuries or deaths are caused by chain saw use (Fact from Arbor Day Organization).

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- Water after planting and as needed.
- The best time to plant trees and shrubs is in the spring or fall.
- Do not plant in extreme heat.
- Make sure the open space within your woodland is large enough for any new trees you wish to add.
- Not all open spaces within a woodland need to be planted. Allow some sunlight to reach the forest floor.
- Plant understory planting after all scrub brush or trees have been removed.
- You do not need to pick up all fallen branches or logs as they provide homes and habitat for wildlife and fungi.
- If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Draw Your Lot





**DETROIT
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**working
with lots**
A FIELD GUIDE

**Visit DFC-lots.com
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Image Source: Bostonian13, "Nyssa_sylvatica_Bark.jpg." 08 June 2013 via Wikimedia, CC BY-SA 3.0.

Volunteer

Professional

Volunteer + Professional



Four Seasons

Image Source: Sandstein, "Aster novae-angliae 'Barr's Pink.'" 21 August 2010 via Wikimedia, CC BY-NC-SA 3.0.





The Four Seasons lot design provides four small, interchangeable landscapes ('season circles'), each reflecting one season: spring, summer, fall, and winter.

This choose-your-own-adventure style design allows you to build one or more season circles on your lot, depending upon your preference.

Each Four Season circle features an ornamental tree or shrub, crowned by a stormwater feature — a colorful, planted rain garden filled with perennials and shrubs.

This design can accommodate stormwater runoff from adjacent properties and allow water to infiltrate back into the soil within about three days.

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

What is the lot design likely to cost?

The estimated cost of the Four Seasons is high (\$2,500 – \$5,500) and based on 1.5 inch diameter trees, potted plants, and utilizing volunteer labor. To save money, you can buy smaller trees or pots. Residents can also select only one or two Four Season’s gardens or phase rain gardens over a few planting seasons. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the newly planted rain garden, particularly during the first two growing seasons while the plants establish themselves. Be careful not to let your rain garden dry out or to be overrun by weeds.

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 to two full weekends, depending on the number of volunteers and commitment to earth moving. The Field Guide recommends the help of at least 12 healthy adults or youth (3 people per rain garden) to construct this lot design. The Field Guide assumes that the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lot or Corner Lot in Full Sun or Part Sun			

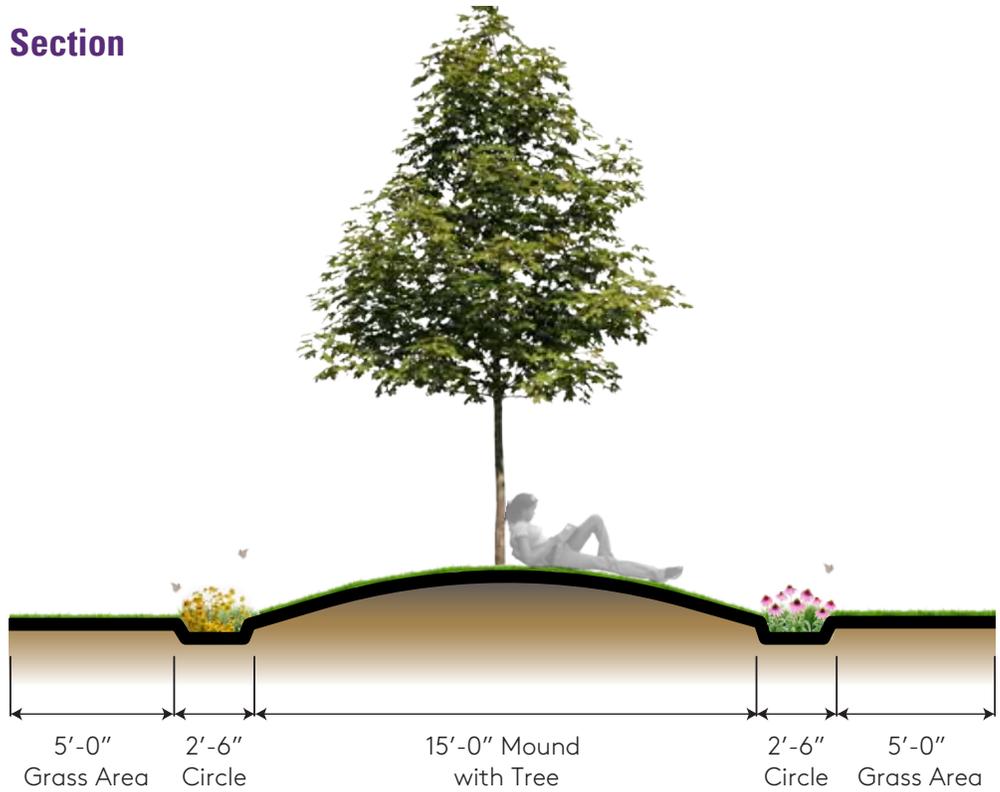
Four Seasons

Example of Season Circle

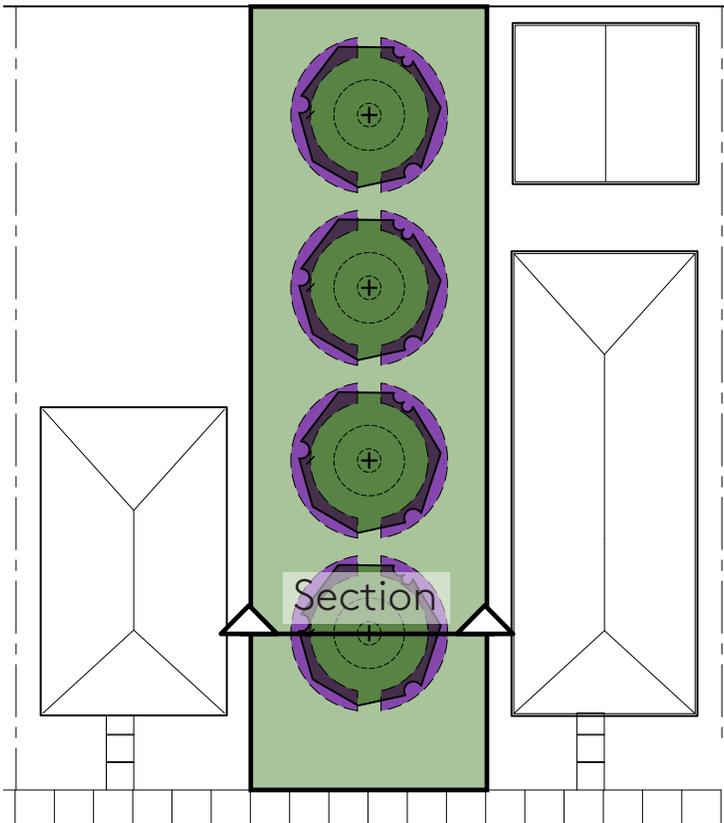


1 - Tree and Planting

Section



Where Do I Grow?



The Four Seasons is best on a single lot and can be utilized by one or two neighboring properties. Position the design close to houses, garages or another rain water catchment area so the rain garden can collect stormwater runoff.

-  Season Circle
-  Trees
-  Grass or Optional Groundcover

Image Source: 1) Polyphemus_polly, "cypress tree & knees." 26 June 2007 via Flickr CC BY-NC 2.0.

Before You Start

'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

- **Marking Paint, Spirit Level, Tape Measure, String and Stake**
- **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
- **Hacksaw and Screwdriver**
- **Ball Cart**, for moving heavy trees

Potential Water Sources

- **Garden Hose with potential extension hose**
- **Sprinkler**
- **Rain Barrel in addition to other water source**
- **Downspout Disconnect (shown in lot design)**

Field Guide Resources

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

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

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 12 to 13 pounds of seed
- **Germination Blanket**, 3 rolls (8 by 112.5 feet)

Materials List

Materials

- **Rain Garden Planting Soil**, 4.5 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Mulch and Wood Chips**, 4.5 cubic yards
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting Option 1: Spring

- **Black-Eyed Susan**, 6 pots
- **Canada Anemone**, 7 pots
- **Blue Flag Iris**, 7 pots or bulbs
- **Magnolia**, 1 pot, or balled and burlapped
- **Mixed Daffodils**, 125 bulbs
- **Mixed Crocuses**, 250 bulbs
- **Mixed Tulips**, 125 bulbs

Planting Option 2: Summer

- **Bee Balm**, 6 pots
- **Prairie Blazing Star**, 7 pots
- **Swamp Milkweed**, 7 pots
- **Pagoda Dogwood**, 1 pot
- **Mojito Mint**, 50 pots
- **Red Creeping Thyme**, 50 pots
- **Oregano**, 50 pots
- **Giant Onion**, 50 bulbs

Planting Option 3: Fall

- **New England Aster**, 5 pots
- **Switch Grass**, 5 pots
- **Giant Hyssop**, 5 pots
- **Katsura Tree**, 1 pot, or balled and burlapped
- **Butterfly Weed**, 5 pots
- **Autumn Crocuses**, 100 bulbs
- **Periwinkle**, 75 pots

Planting Option 4: Winter

- **Arctic Fire Red Twig Dogwood**, 2 pots
- **Berry Poppins Winterberry**, 3 pots
- **Mr Poppins Winterberry**, 3 pots
- **Brun's Serbians Spruce**, 1 pot, or balled and burlapped
- **European Cranberry Viburnum**, 2 pots
- **Snowdrops**, 100 bulbs
- **Mixed Lenten Roses**, 50 bulbs

Four Seasons Step-By-Step

Let's Start

Want to create the Four Seasons 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:

- Prepare Your Lot**
- Disconnect Your Downspout**
- Dig Rain Gardens + Mounds**
- Plant Trees**
- Plant Perennials + Bulbs**
- Maintain Your Lot Design**
- Sow Remaining Lot**

Make a Circle

Place a stake at the desired location for each center or proposed tree location. Tie a string 10 feet long to the stake. Walk in a circle using the string to create an even-radius circle in the landscape. As you walk in the circle, mark your path on the ground. You can use these markings to help locate the edge of your rain garden.

Prepare Your Lot

Select the best location for your Four Season rain gardens. Gardens should be ten feet from any house foundation and at least five from the sidewalk. We recommend aligning your planting beds with the front setback of adjacent houses - this will help strengthen the identity and character of your block. **This lot design offers four small rain gardens that can be constructed all at once or individually.**

A rain garden only works if water is directed into it. **The Field Guide recommends constructing your rain garden near downspouts from roofs of houses or garages or near other hard surfaces such as driveways or patios. Ensure water flows from these surfaces into your rain garden.**

Once you find the area you wish to direct into your rain garden, calculate the minimum size of your rain garden. Your rain garden should be one square foot for every ten square feet of stormwater area directed into your rain garden. **Each Four Seasons garden is approximately 122 square feet and can handle stormwater from 1,220 square feet of hard surface area.** Installation of all four rain gardens is ideal for two homeowners who are interested in sharing a side lot. The Field Guide recommends adjusting the design to meet your stormwater needs.

After the number of rain gardens has been determined, use marking paint and tape measure to map out the size, shape, and dimensions of your design. **Each Four Seasons circular garden is approximately 10 feet in diameter surrounded by a rain garden 2.5 feet wide.**

Four Seasons Step-By-Step

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to the [DWSD's How to Disconnect a Downspout](#) document.

○ Dig Rain Gardens + Mounds

Once the area is ready for construction, dig the rain garden nine inches deep.

Use the soil removed from rain garden area and create a mound in center of rain garden, as shown on the lot design plan. The mound should slope evenly on all sides. **Ensure water is flowing into the rain gardens and not onto adjacent properties.**

Edges of rain garden should slope at steep rate, while the bottom of the rain garden should be flat. Mounds and rain gardens may settle over time, and it may be necessary to reshape them using a shovel.

If you are unable to direct water into the rain garden area, don't worry! The garden will still provide habitat to butterflies and aesthetic value without downspout disconnection or stormwater collection; however, the garden will require watering regularly.

After removing soil, check that the bottom of the rain garden is level. An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.

After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches to loosen any compaction.

Add three inches (4.5 cubic yards) of rain garden planting soil to your rain garden. Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter. Mix together and place in rain garden.



Don't worry if you are unable to direct water into the rain garden area. The garden will still provide habitat to butterflies and aesthetic value as a seasonal garden.

Four Seasons Step-By-Step

○ Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred.

Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and Burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. Keep mulch or wood chips a few inches away from tree trunks.

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

○ Plant Perennials + Bulbs

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

Place plants and bulbs in the desired location, then remove plastic pots, loosen roots, and plant. Bulbs should be planted between perennials.

The Field Guide recommends adding three inches (4.5 cubic yard) of wood chips or mulch to all Four Season rain gardens. Adding wood chips or mulch will help suppress weeds.

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

○ Maintain Your Lot Design

A rain garden requires care and maintenance to thrive. The Four Seasons are four manageable size rain gardens; however, watering and weeding plants is still required, especially during the first two years. Do not let your rain garden dry out in the first warm season.

Add mulch annually to help suppress weed growth.

Trees must be watered regularly during the first year. Water weekly or when needed. **We recommend connecting with an arborist or taking a workshop on tree health and maintenance.**

Gardens are a work in progress. Bulbs and perennials may need to be replaced to keep gardens dynamic and playful. Be creative and make it your own!

Four Seasons Step-By-Step



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

Average Height of Plants



Trees, Shrubs, Perennials,
and Groundcovers

○ Sow Remaining 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 Four Seasons lot design you will need approximately 12 to 13 pounds of fescue seed mix for the remaining lot (2,500 square feet) and three 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 be prepared for seeding by scarifying, raking or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

Sow seed across the remaining lot by using a seed spreader or by hand. The Field Guide recommends a seed rate of five pounds per 1,000 square feet. 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.

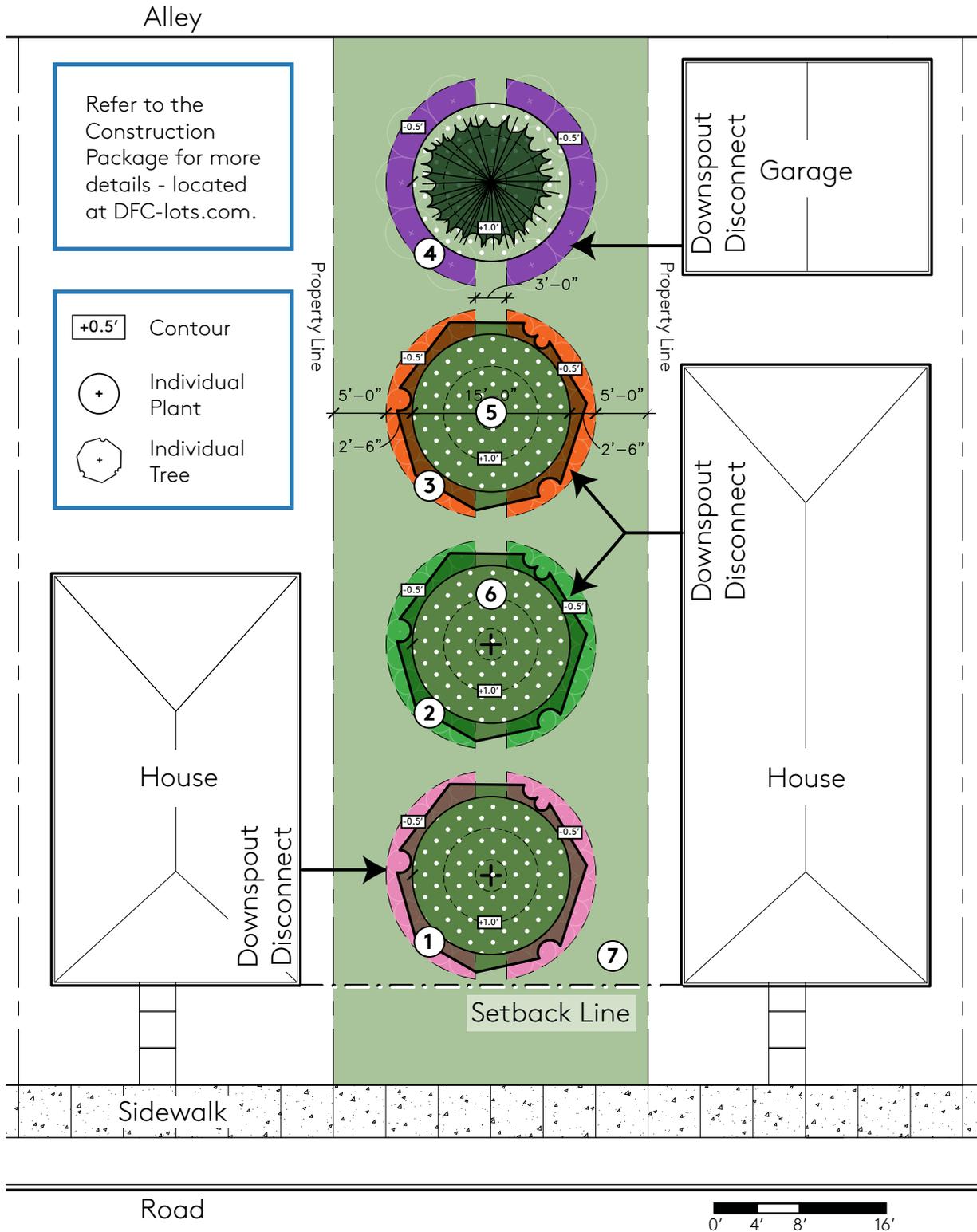
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Four Seasons Lot Design



- | | | | |
|----------------------------------|----------------------------------|-------------------------------|--|
| 1 Perennial Moat (Spring) | 3 Perennial Moat (Fall) | 5 Tree | 7 Grass or Optional Groundcover |
| 2 Perennial Moat (Summer) | 4 Perennial Moat (Winter) | 6 Seasonal Groundcover | |

Planting Option 1: Spring



Black-Eyed Susan¹
Rudbeckia hirta^{*}
 24" Height x 24" Width
 Blooms June - October
Quantity: 6 pots



Canada Anemone²
Anemone canadensis^{*}
 24" Height x 30" Width
 Blooms April - June
Quantity: 7 pots



Blue Flag Iris³
Iris virginica^{*}
 24" Height x 12" Width
 Blooms May - June
Quantity: 7 pots or bulbs



Ann Magnolia⁴
Magnolia 'Ann'
 10' Height x 10' Width
 Blooms mid-Spring
 Requires Moist Soil
Quantity: 1 pot or B & B



Mixed Daffodils⁵
Narcissus
 18" Height x 24" Width
 Blooms in spring
Quantity: 125 bulbs



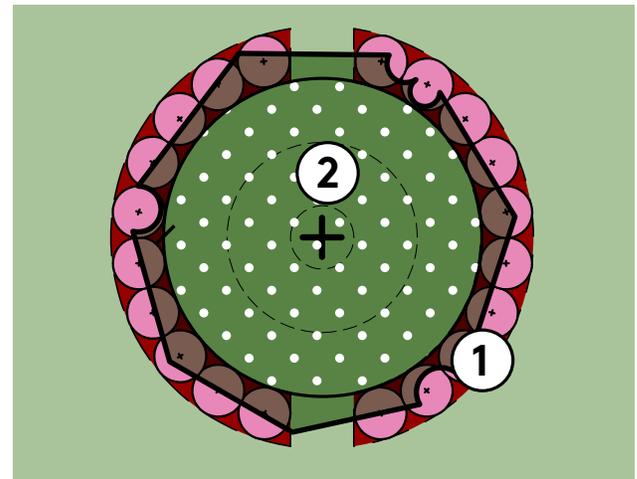
Mixed Crocuses⁶
Crocuses
 4" Height x 4" Width
 Blooms in spring
Quantity: 250 bulbs



Mixed Tulips⁷
 14" Height x 8" Width
 Blooms April - May
 Doesn't Like Wet Soil
Quantity: 125 bulbs

Key

- 1
Black-Eyed Susan, Canada Anemone & Blue Flag Iris (Space approximately two feet apart and mix evenly.)
- 2
Ann Magnolia, Mixed Daffodils, Mixed Crocuses & Mixed Tulips (Space bulbs approximately one foot apart and mix evenly.)



Plant Sizes

- Pots:** Plants can be purchased in one to five gallon pots. The size of pots can change based on availability. 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).
- Bulbs:** Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Image Source: 1) Parshotam Lal Tandon, "Rudbeckia hirta." 27 July 2013 via Flickr CC BY-NC-SA 2.0; 2) Kallerna, "Canada anemone (Anemone canadensis)." 2010 via Wikimedia CC BY-NC-SA 3.0; 3) Jenny Evans, "Blue Flag Iris." 28 December 2010 via Flickr CC BY-NC 2.0; 4) Joana Roja, "Magnolia Beauty." 24 March 2008 via Flickr CC BY-NC 2.0; 5) Plashing Vole, "Mixed daffodils 2." 8 April 2011 via Flickr, CC BY-NC-SA 2.0; 6) Rachelgreenbelt, "jdy072 bpl Crocus Mixed epl Blo." 13 March 2011 via Flickr, CC BY-NC-SA 2.0; 7) MookieLuv., "mixed rows of tulips" 18 April 2010 via Flickr, CC BY-NC SA 2.0

Planting Option 2: Summer



Bee Balm¹
Monarda fistulosa^{*}
 24" Height x 28" Width
 Blooms July - September
 Attractive to Butterflies
Quantity: 6 pots



Prairie Blazing Star²
Liatis spicata^{*}
 24" Height x 12" Width
 Blooms July - August
Quantity: 7 pots



Swamp Milkweed³
Asclepias incarnata^{*}
 48" Height x 24" Width
 Blooms July - August
 Attractive to Butterflies
Quantity: 7 pots



Pagoda Dogwood⁴
Cornus alternifolia
 15' Height x 20' Width
 Blooms April
Quantity: 1 pot



Mojito Mint⁵
Mentha x villosa 'Mojito'
 24" Height x 24" Width
 Invasive if Left Unchecked
Quantity: 50 pots



Red Creeping Thyme⁶
Thymus praecox 'coccineus'
 2" Height x 3" Width
 Blooms in June - July
Quantity: 50 pots



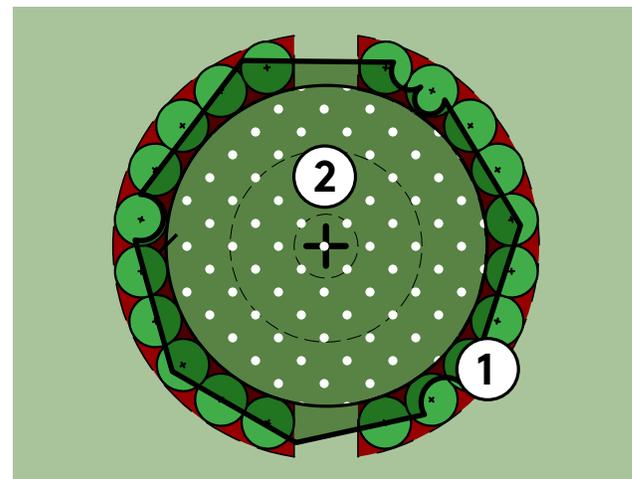
Oregano⁷
Origanum vulgare
 18" Height x 24" Width
Quantity: 50 pots



Giant Onion⁸
Allium giganteum
 12" Height x 12" Width
 Blooms in Summer
Quantity: 50 bulbs

Key

- 1
Bee Balm, Prairie Blazing Star & Swamp Milkweed (Space approximately two feet apart and mix evenly.)
- 2
Pagoda Tree, Mojito Mint, Red Creeping Thyme, Oregano & Giant Onion (Space groundcover appropriately one foot apart and mix evenly.)



Plant Sizes

- Pots:** Plants can be purchased in one to five gallon pots. The size of pots can change based on availability. Mint, Thyme and Oregano can be purchased in smaller, four inch pots.
- Bulbs:** Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Image Source: 1) Corey Seeman, "Bee Balm Flowers." 16 July 2013 via Flickr CC BY-NC-SA 2.0; 2) H. Zell, "Liatis_spicata_001.jpg." 16 July 2009 via Wikimedia CC BY-SA 3.0; 3) PDH, "Asclepias_incarinata.jpg." 03 February 2006 Public Domain; 4) Rob Routledge, "Cornus Alternifolia." 04 June 2012 via Wikimedia, CC BY 3.0; 5) Edsel Little, "Oberlin Summer - Mint." 29 May 2011 via Flickr CC BY-SA 2.0; 6) Marilylle Soveran, "Creeping thyme." 27 June 2015 via Flickr, CC BY-NC 2.0; 7) Rae Allen, "DSC01402 Oregano." 3 November 2004 via Flickr, CC BY-NC-SA 2.0; 8) Stefan 1080, "Allium." 26 May 2014 via Flickr CC BY-NC-SA 2.0

Planting Option 3: Fall



New England Aster¹
Aster novae-angliae
 36" Height x 24" Width
 Blooms August - September
Quantity: 5 pots



Switch Grass²
Panicum virgatum⁺
 48" Height x 36" Width
Quantity: 5 pots



Giant Hyssop³
Agastache x 'Blue Fortune'
 24" Height x 18" Width
 Blooms July - September
Quantity: 5 pots



Katsura Tree⁴
Cercidiphyllum japonicum
 50' Height x 30' Width
 Fall color
Quantity: 1 pot or B & B



Butterfly Weed⁵
Asclepias tuberosa
 24" Height x 32" Width
 Butterflies Love This Plant
Quantity: 5 pots



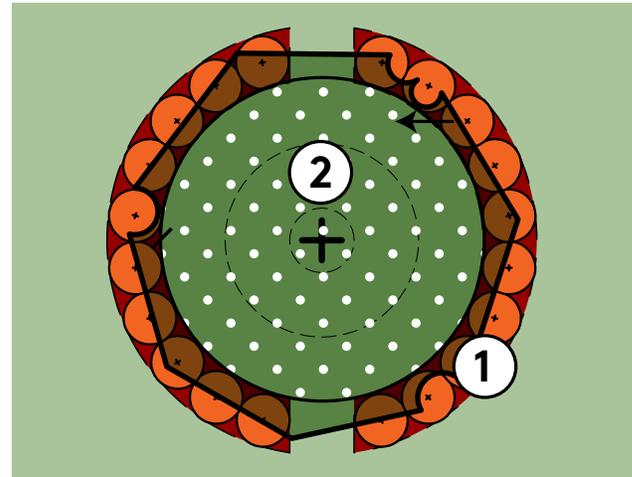
Autumn Crocuses⁶
Colchicum cilicicum
 4" Height x 4" Width
 Blooms September - October
Quantity: 100 bulbs



Periwinkle⁷
Vinca minor
 4" Height x 24" Width
 Blooms May - July
Quantity: 75 pots

Key

- 1
New England Aster, Switch Grass, Giant Hyssop & Butterfly Weed (Space approximately two feet apart and mix evenly.)
- 2
Katsura Tree, Autumn Crocus & Periwinkle (Space groundcover appropriately one foot apart and mix evenly.)



Plant Sizes



Pots: Plants can be purchased in one to five gallon pots. The size of pots can change based on availability. 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B). Periwinkle can be purchased in smaller, four inch pots.



Bulbs: Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Image Source: 1) Sandstein, "Barr's Pink." 21 August 2010 via Wikimedia CC by 3.0; 2) Tpmartins, "012." 11 July 2007 via Flickr CC BY-NC-SA 2.0; 3) "—char—", "bumblebee back." 18 July 2008 via Flickr CC BY-NC 2.0; 4) Steven Severinghaus, "Fall Katsura Tree Leaves." 08 November 2014 via Flickr CC BY-NC-SA 2.0; 5) Martin LaBar, "Orange spotted butterfly on butterflyweed." 3 June 2008 via Flickr, CC BY-NC 2.0; 6) Carol, "The autumn crocus IMG_5061." 15 September 2014 via Flickr CC BY-NC-SA 2.0; 7) H. Zell, "Vinca minor, Apocynaceae, Lesser Periwinkle, habitus; Karlsruhe, Germany." 14 April 2009 via Wikimedia CC BY-SA 3.0

Planting Option 4: Winter



Arctic Fire Red Twig Dogwood¹
Cornus stoloinifera 'Farrow'
 48" Height x 36" Width
 Blooms June - October
Quantity: 2 pots



Berry Poppins Winterberry²
Ilex verticillata 'Farrow Pop'
 36" Height x 36" Width
 Blooms June - July
Quantity: 3 pots



Mr Poppins Winterberry³
Ilex verticillata 'Mr Poppins'
 36" Height x 36" Width
 Blooms June - July
Quantity: 3 pots



Bruns Serbians Spruce⁴
Picea omorika 'Bruns'
 30' Height x 10' Width
Quantity: 1 pot or B & B



European Cranberry Viburnum⁵
Viburnum opulus
 10' Height x 10' Width
Quantity: 2 pots



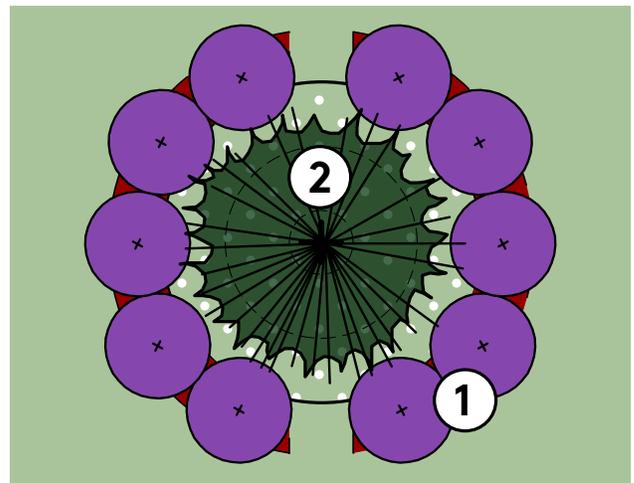
Snowdrops⁶
Galanthus nivalis
 4" Height x 4" Width
 Blooms in March - April
Quantity: 100 bulbs



Mixed Lenten Roses⁷
Helleborus 'Red Lady', Helleborus 'Blue Lady', Helleborus 'walhelivor', Helleborous 'Pink Lady', Helleborus niger 'Jacob'
 Varies: Approximately 12" Height x 18" Width
 Blooms Early Spring
Quantity: 50 bulbs

Key

- 1
Artic Fire Red Twig Dogwood, Winterberry species & European Cranberry Viburnum
 (Space approximately four feet apart and mix evenly.)
- 2
Bruns Serbian Spruce, Snowdrops & Helleborus species
 (Space bulbs approximately one foot apart and mix evenly.)



Plant Sizes



Pots: Plants can be purchased in one to five gallon pots. The size of pots can change based on availability. 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).



Bulbs: Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Image Source: 1) Mwms1916, "Red twig dogwood, arboretum." 12 April 2014 via Flickr CC BY-NC-ND 2.0; 2) Nick Sarebi, "Winter Berries." 14 December 2009 via Wikimedia CC BY 2.0; 3) SB_Johnny, "Ilex_verticillata_fruits_and_foliage_1." --- via Wikimedia CC BY-SA 3.0; 4) Rasbak, "Picea_omorika.jpg." 08 September 2004 via Wikimedia CC BY-SA 3.0; 5) H. Zell, "Viburnum opulus, Adoxaceae." 09 May 2009 via Wikimedia, CC BY-SA 3.0; 6) Gideon Chilton, "Snowdrops - Little Oakley." 16 February 2014 via Flickr, CC BY-NC 2.0; 7) Filip Vervisch, "Helleborus-zaterdag 28 februari 2009 173107." 28 February 2009 via Flickr, CC BY-NC-SA 2.0

Did You Know?

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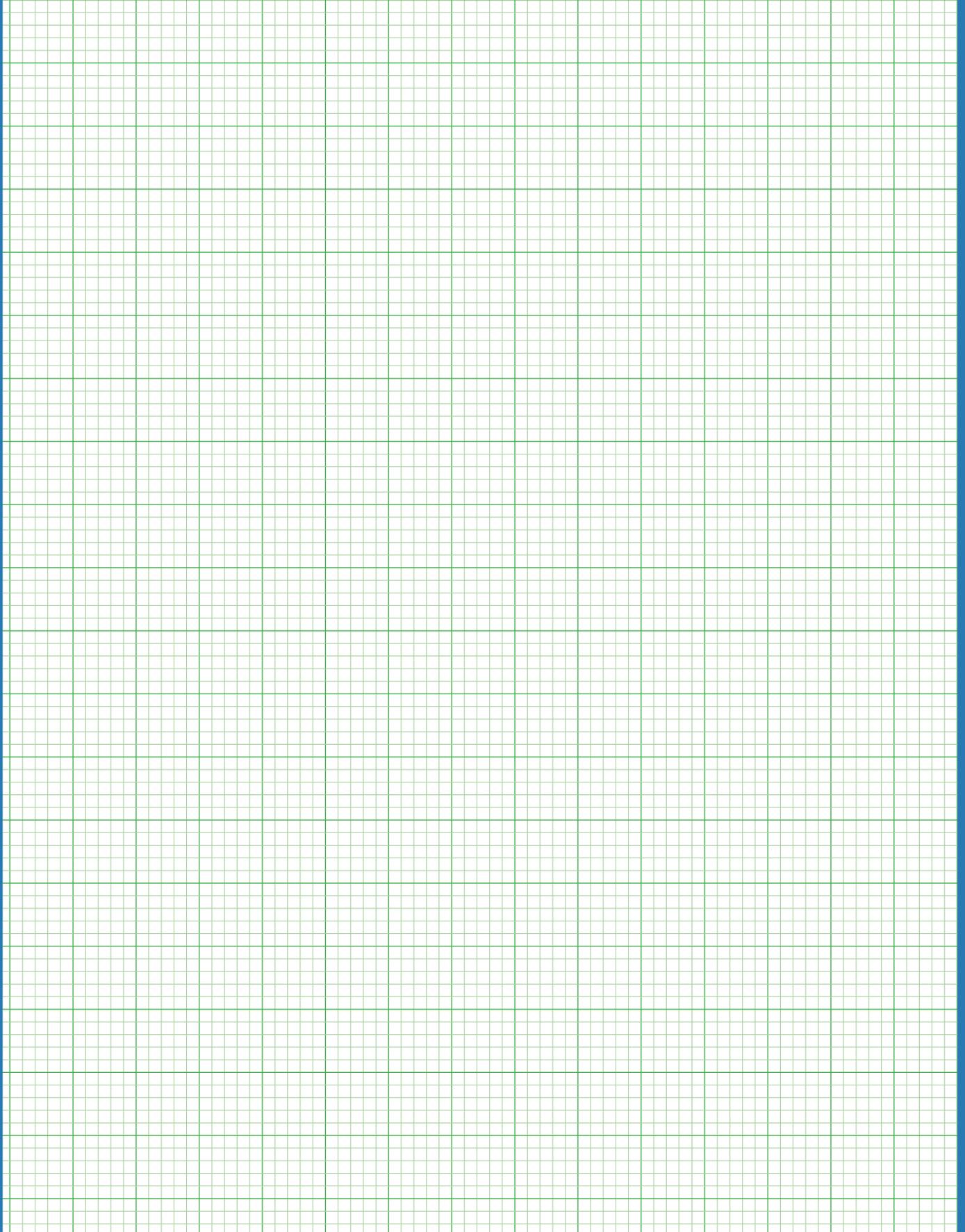
Helpful Facts

- Rain gardens are designed to decrease the amount of rainwater flowing off your roof and property into the City stormwater system.
- Rain gardens capture, hold, and release stormwater gradually back into the soil.
- The plants recommended for this lot design have been selected for their beauty, habitat creation, and local availability.
- This rain garden is designed to provide habitat and food for a variety of birds and pollinators.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.
- Working together, the Four Seasons provide year-round interest and vibrancy.

Planting Tips

- Looking for a more cost efficient planting option? Consider a rain garden seed mix, such as ERNMIX-180 (Ernst Rain Garden Meadow Mix).
- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant is spring or fall. Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out. Weed weekly or as needed.

Draw Your Lot





**DETROIT
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with lots**
A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Mwms1916, "Red twig dogwood, arboretum." 12 April 2014 via Flickr CC BY-NC-ND 2.0.

Volunteer

Professional

Volunteer + Professional

Friendly Fence

Image Source: Raul654., "Hydrangea Macrophylla Bigleaf Hydrangea1.jpg" 1 May 2005 via Wikimedia, CC-BY-SA 3.0



HELLO

MY NAME IS

Friendly Fence

The Friendly Fence is a large rain garden with a twist. The design captures stormwater and slowly releases it into the soil, keeping water from entering into Detroit’s sewer system.

The Friendly Fence is ideal for two homeowners who are interested in sharing a side lot. The design has been sized to accommodate rainwater from up to two houses.

A serpentine hedge divides the lot - one side of the hedge has a rain garden while the other has a grassy mound. The plants in the Friendly Fence are a mix of well-suited native and non-native species, selected for beautification, habitat creation, and broad availability.

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

What is the lot design likely to cost?

The estimated cost of the Friendly Fence is high (\$2,500 – \$5,500) and based on utilizing volunteer and professional labor. Residents can save money by hand digging the rain garden, but keep in mind, a rain garden of this size could require a significant number of volunteers. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the newly planted rain garden, particularly during the first two growing seasons while the plants establish themselves.

Will installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to complete the planting portion of this lot design. Refer to the Step-By-Step section for guidance on the recommended professional and volunteer steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below only accounts for volunteer opportunities listed in the Step-By-Step section. While people tackle projects differently, the Field Guide estimates the installation time of the lot design to be one to two full weekends, utilizing a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least ten healthy adults or youth to construct this lot design. The Field Guide assumes that the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

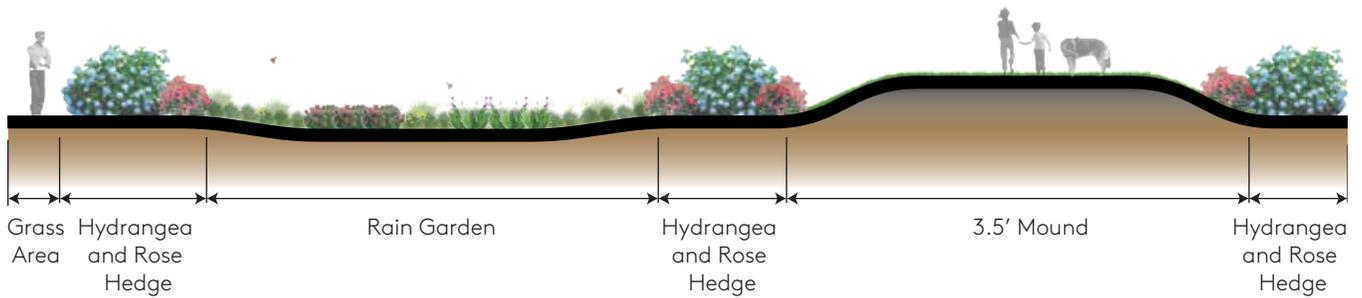
Cost	\$50 - 1,000	\$1,000 - 2,500	\$2,500 - 5,500	\$5,500 +
People	Volunteer	Professional	Volunteer + Professional	
Experience	Beginner	Intermediate	Advanced	
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Residential Lot in Full Sun to Shade (Between Two Houses is Ideal)			

Friendly Fence

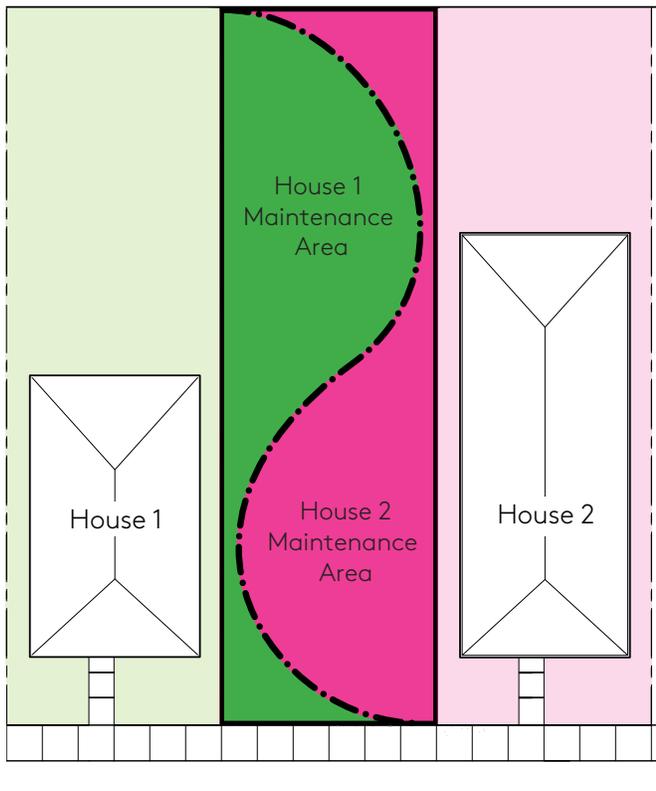
Examples of Friendly Fence Plants



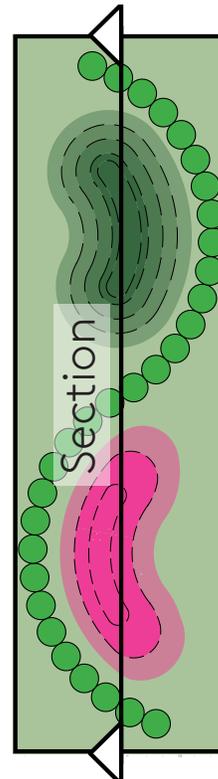
Section



Where Do I Grow?



Lot Design



The Friendly Fence design is ideal for two homeowners who are interested in sharing the side lot. The design can be amended to create two rain gardens.

- Rain Garden
- Mound
- Hedge
- Grass or Optional Groundcover

Before You Start

'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

- **Marking Paint, Spirit Level, Tape Measure, String and Stake**
- **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
- **Hacksaw and Screwdriver**
- **Tiller, 6 inch depth**

Potential Water Sources

- Garden Hose with possible extension hose
- Sprinkler
- Rain Barrel in addition to other water source
- Downspout Disconnect (shown in lot design)

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

- **Rain Garden Planting Soil**, 23 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Mulch or Wood Chips**, 11 cubic yards
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp (one set per house)

Planting

- **Endless Summer**, 9 pots
- **White Annabelle**, 9 pots
- **Pink Bella Anna**, 9 pots
- **Double Knockout Rose**, 38 pots
- **Variegated Sweet Flag**, 58 pots
- **Red Velvet Yarrow**, 3 pots
- **Blue Flag Iris**, 14 pots
- **Bee Balm**, 7 pots
- **Black-Eyed Susan**, 10 pots
- **Purple Coneflower**, 10 pots

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 8 pounds of seed
- **Germination Blankets**, 2 rolls (8 by 112.5 feet)

Friendly Fence Step-By-Step

Let's Start

Want to create the Friendly Fence? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

- Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot
- Create Rain Garden + Mound

Volunteer Opportunities:

- Disconnect Your Downspout
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

Make a Circle

Place a stake at the desired location of each center or proposed tree location. Tie a string 10 feet long to the stake. Walk in a circle using the string to create an even-radius circle in the landscape. As you walk in the circle, mark your path on the ground. You can use these markings to help locate the edge of your rain garden.

Prepare Your Lot

Although the Friendly Fence is not one of the more complex lot designs within the Field Guide, it may require specialized equipment and experience to undertake the excavation and earth shaping. It is recommended that you hire a professional for these steps: Prepare Your Lot and Create Rain Garden + Mound.

If you decide to construct this lot design without the recommended assistance of a professional, the Field Guide has provided guiding principles below to help assist you with the installation of the lot design.

- This lot design utilizes a majority of the 30 by 100 foot lot.
- Friendly Fence should be constructed as shown in the lot design plan to ensure the rain garden and mound are the correct depth and height. Ensure a setback of ten feet from adjacent lots and sidewalks.
- For the rain garden to work, water must be directed into it. **The Field Guide recommends constructing your rain garden near downspouts from roofs of houses or garages or near other hard surfaces such as driveways or patios.** Ensure water flows from these surfaces into your rain garden.
- Your rain garden should be one square foot for every ten square feet of hardscape or stormwater area directed into your rain garden. **The Field Guide recommends an approximately 12 by 35 foot rain garden (420 square feet) and an approximately 35 by 15 foot mound (525 square feet).**
- **The Friendly Fence is designed to accommodate or collect stormwater runoff from two standard single family houses up to 4,200 square feet of roof area.** (The average Detroit house is 920 to 1,350 square feet.)
- Once you locate your rain garden and mounds, use marking paint and measuring tape to map out the size, shape, and dimensions of your design.

Friendly Fence Step-By-Step

○ Create Rain Garden + Mound

The Field Guide recommends hiring a professional for this lot design or at least to complete the earthwork. The lot design can also be dug and sculpted by hand, but will require a large group of volunteers.

Dig the rain garden approximately 2.5 feet deep. The mound is created from soil excavated from the rain garden, limiting the need to haul soil off site.

After removing soil, check that the bottom of the rain garden is level. An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.

After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches to loosen up any compaction.

Fill the rain garden with 18 inches (23 cubic yards) of rain garden planting soil to create a one foot depression. Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter. Mix together and place in rain garden.

The rain garden edges should slope at 50% (1 unit of rise for 2 units of run) under the hedge area, and slope 33% (1 unit of rise to 3 units of run) on the other side of the rain garden.

After the rain garden size has been determined, use marking paint and a tape measure to map out the size, shape, and dimensions of your design.

Use the soil removed from the rain garden area to create a 3 foot and 6 inch high mound as shown on the plan.

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to the [DWSD's How to Disconnect a Downspout](#) document.



The Friendly Fence can accommodate or collect stormwater runoff for areas up to 4,200 square feet.

Friendly Fence Step-By-Step

○ Plant Perennials

Sunny to partly-sunny plantings are recommended for the Friendly Fence. If your lot is in shade seek alternate planting options.

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

The Field Guide recommends adding three inches (11 cubic yards) of wood chips or organic mulch to the rain garden and underneath the serpentine hedge. Use four cubic yards of mulch for the rain garden. Adding wood chips or mulch will help suppress weeds.

Repair grass areas damaged during construction. Scarify soil that may have been compacted, and sprinkle grass seed over damaged lawn areas. Be sure not to sprinkle the seed mix into your rain garden.

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

○ Maintain Your Lot Design

A rain garden requires care and maintenance to thrive. The Friendly Fence is a large rain garden and will require regular watering and weeding, especially during the first few years. **Do not let your rain garden dry out in the first warm season.** Add mulch annually to help suppress weed growth.

Rain gardens are a work in progress. Perennials may need to be replaced to keep gardens dynamic and playful. Be creative and make it your own!

Friendly Fence Step-By-Step



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

Average Height of Plants



Shrubs and Perennials

○ Sow Remaining 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 Friendly Fence lot design you will need approximately eight pounds of fescue seed mix for the remaining lot (1,461 square feet) and two 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

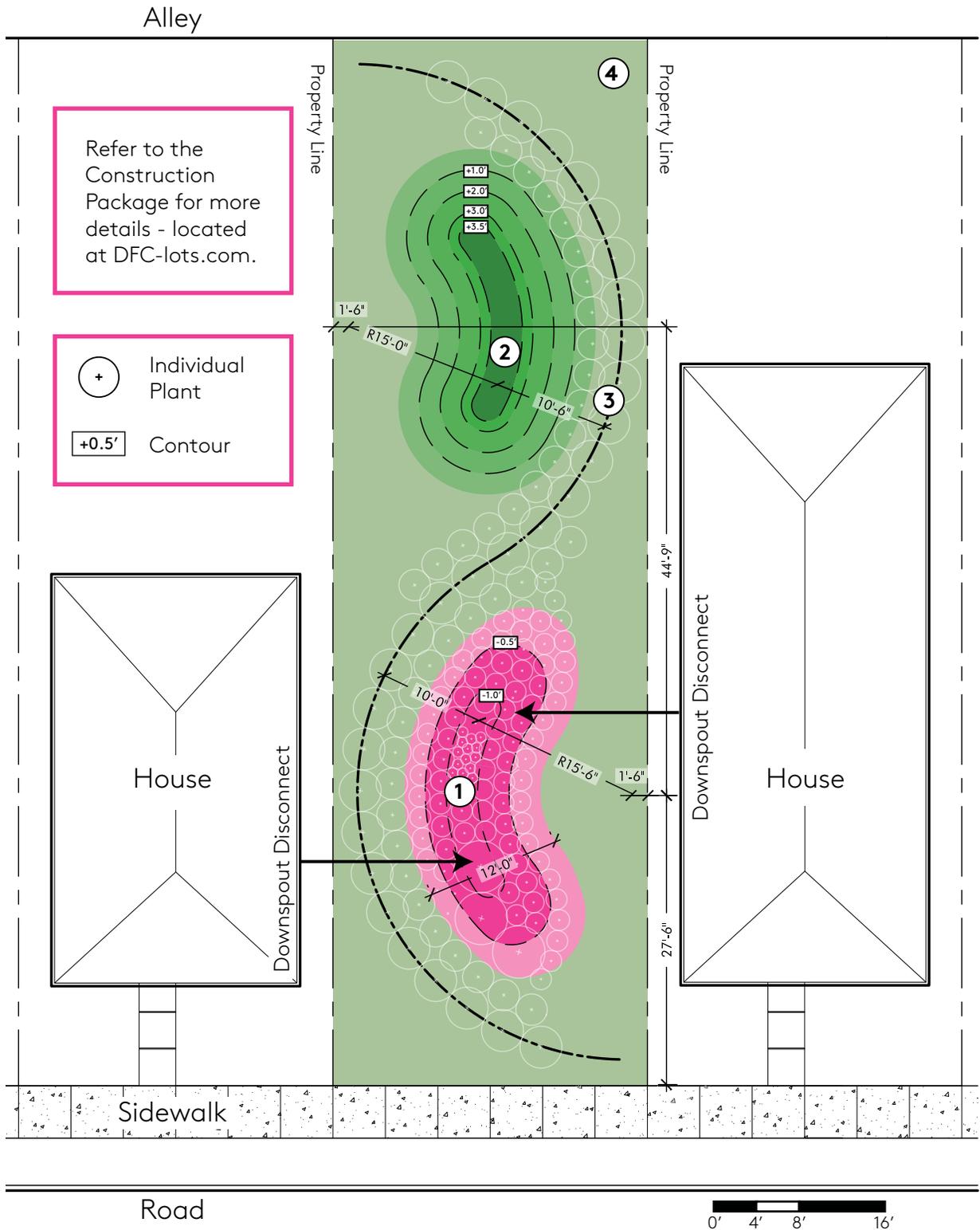
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Friendly Fence Lot Design



- 1 Rain Garden
- 2 Mound
- 3 Serpentine Hedge
- 4 Grass or Optional Groundcover

Planting: Sun To Part Sun



Endless Summer¹
Hydrangea macrophylla
'Endless Summer'
48" Height x 36" Width
Blooms May - August
Prune After Blooming
Quantity: 9 pots



White Annabelle²
Hydrangea arborescens
'Annabelle'
48" Height x 36" Width
Blooms May - August
Prune Late Winter or
Spring
Quantity: 9 pots



Pink Bella Anna³
Hydrangea arborescens
'Bella Anna'
48" Height x 36" Width
Blooms May - August
Prune Late Winter or
spring
Quantity: 9 pots



Double Knockout Rose⁴
Rosa 'Radtko'
36" Height x 24" Width
Blooms May - August
Prune Early Spring
Quantity: 38 pots



Variegated Sweet Flag⁵
Acorus gramineus 'Ogon'
12" Height x 24" Width
Spreading Groundcover
Quantity: 58 pots



Red Velvet Yarrow⁶
Achillea 'Red Velvet'
12" Height x 60" Width
Blooms June - September
Attractive to Butterflies
Quantity: 3 pots



Blue Flag Iris⁷
Iris virginica
24" Height x 12" Width
Blooms May - June
Quantity: 14 pots



Bee Balm⁸
Monarda fistulosa
24" Height x 28" Width
Blooms July - September
Attractive to Butterflies
Quantity: 7 pots



Black -Eyed Susan⁹
Rudbeckia hirta
24" Height x 24" Width
Blooms June - October
Attractive to Butterflies
Quantity: 10 pots



Purple Coneflower¹⁰
Echinacea purpurea
24" Height x 12" Width
Blooms July - August
Attractive to Butterflies
Quantity: 10 pots

Plant Sizes



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

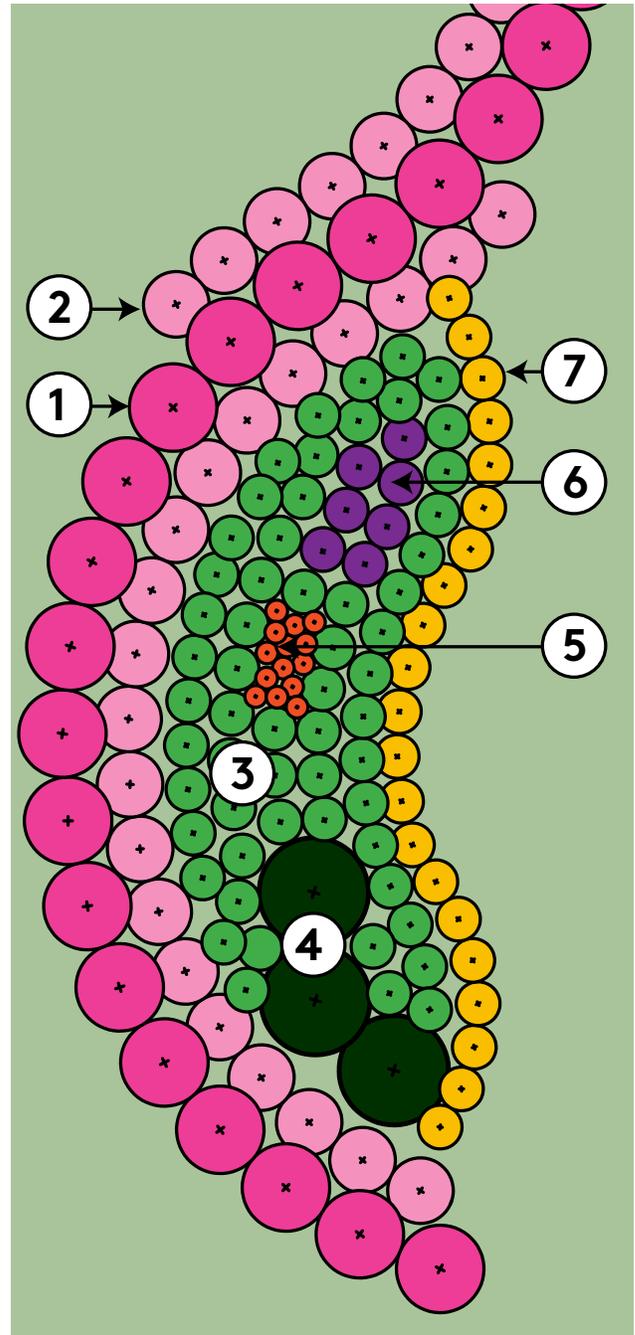


The larger the pot, the greater the immediate impact your design will have when first installed.

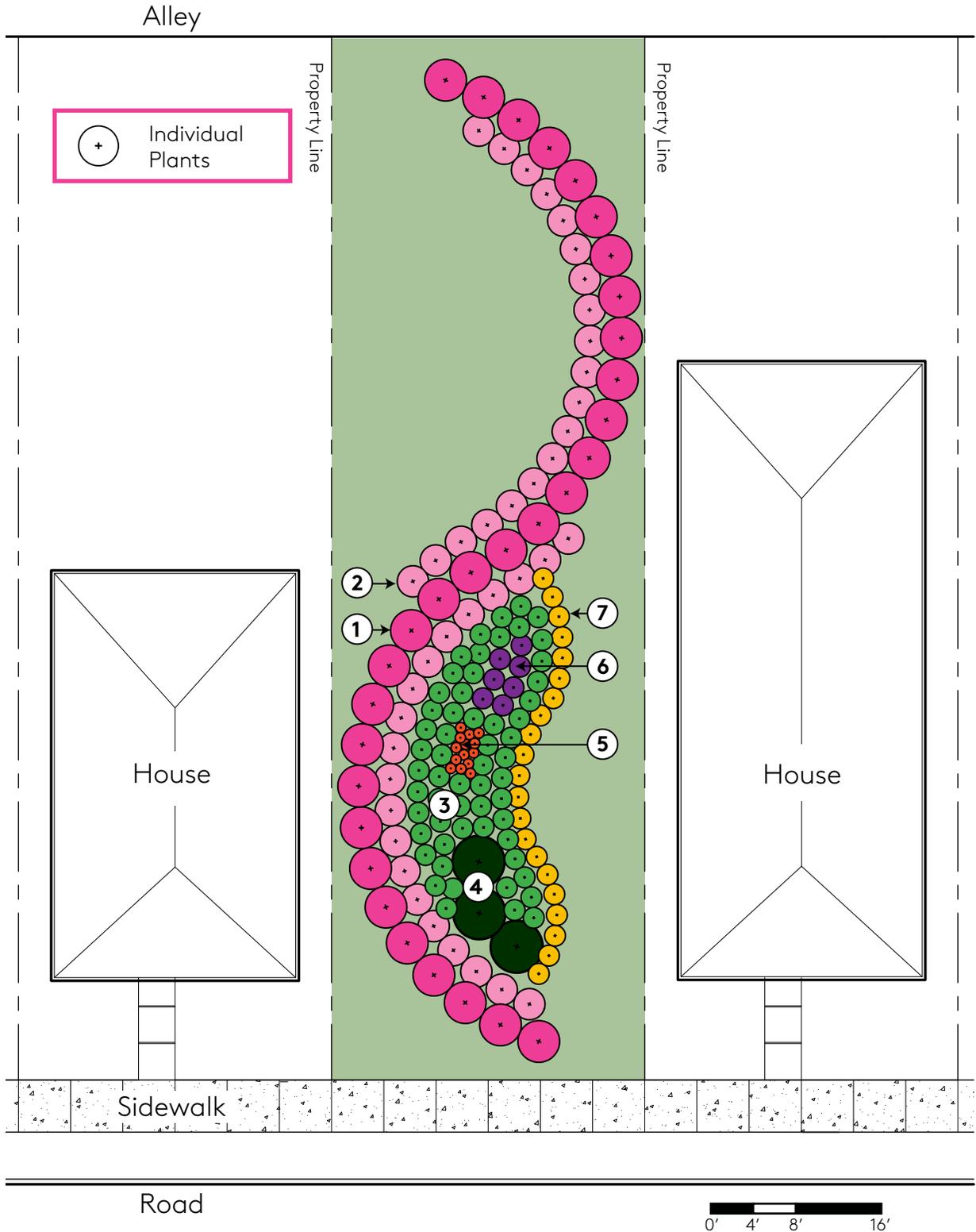
Planting: Sun To Part Sun

Key

- 1
Hydrangeas: Endless Summer, White Annabelle, & Pink Bella Anna (Space approximately three feet apart and mix evenly.)
- 2
Double Knockout Rose (Space approximately three feet apart.)
- 3
Variegated Sweet Flag (Space approximately two feet apart.)
- 4
Red Velvet Yarrow (Space approximately four feet apart.)
- 5
Blue Flag Iris (Space approximately one foot apart.)
- 6
Bee Balm (Space approximately two feet apart.)
- 7
Black-Eyed Susan & Purple Coneflower (Space approximately two feet apart.)



Friendly Fence Planting Design



- | | | | |
|---|--|---|--|
| <p>1 Hydrangea</p> <p>2 Knockout Rose</p> | <p>3 Variegated Sweet Flag</p> <p>4 Yarrow</p> | <p>5 Iris</p> <p>6 Bee Balm</p> | <p>7 Black-Eyed Susan & Purple Coneflower</p> <p>8 Grass or Optional Groundcover</p> |
|---|--|---|--|

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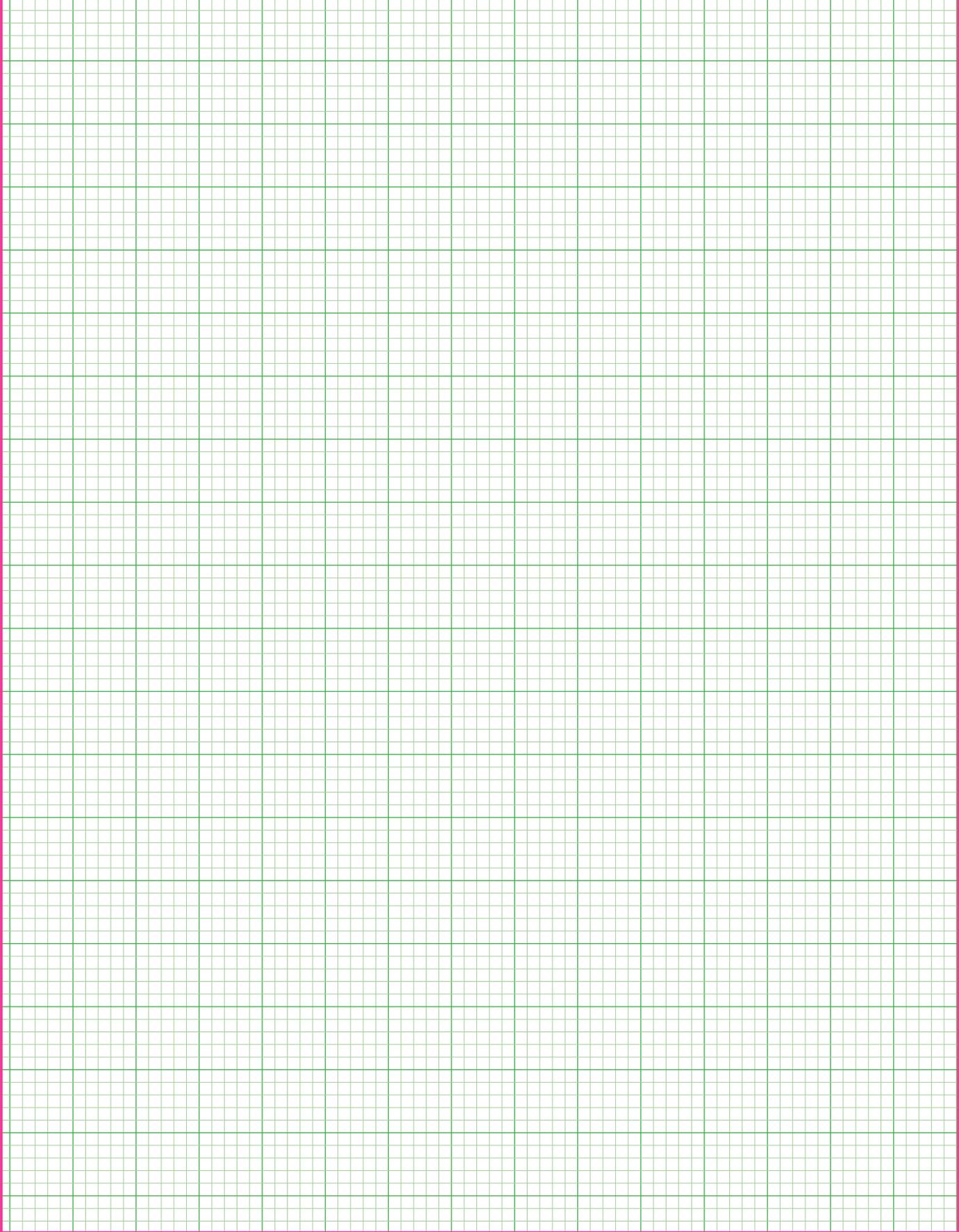
Helpful Facts

- The recommended plants for this lot design are selected for their beauty, habitat creation, and local availability.
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- Rain gardens capture, hold, and release stormwater gradually back into the soil.
- This rain garden is designed to provide habitat and food for a variety of birds and pollinators.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- To save money, ask a friend or family member if they have any plants or cuttings they are willing to donate to your rain garden.
- Looking for a more cost efficient planting option? Consider a rain garden seed mix, such as ERNMIX-180 (Ernst Rain Garden Meadow Mix).
- The best time to plant is spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not allow soil to dry out.
- Weed weekly or as needed.

Draw Your Lot





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Image Source: Isamiga76, "Roses & Hortensias." 10 July 2009 via Flickr CC BY 2.0

Volunteer

Professional

Volunteer + Professional

Front Parking Partner

Image Source: Immanuel Giel. "Rasenpflasterstein_1.jpg" 25 September 2007 via Wikimedia, Public Domain



HELLO

MY NAME IS

Front Parking Partner

The Front Parking Partner lot design provides parking for two vehicles that can be used by one resident or shared between two neighboring houses.

This is not a typical parking area. The parking surface is designed to allow water to infiltrate instead of running off into the street and into Detroit’s overtaxed sewerage system.

Colorful plantings are suggested in front of and behind the parking area to help screen vehicles from the road.

This lot design includes a curb cut which requires city permitting. You or your contractor will need to obtain a permit from the city before building this design.

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

What is the lot design likely to cost?

The estimated cost of the Front Parking Partner is over \$5,501 and based on volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork and installation of the parking pad. Planting can be completed by a professional or by volunteers. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include watering plants and newly planted trees, particularly during times of drought and excess heat, pruning trees and shrubs, and general upkeep of the parking area.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family or neighbors, would like to construct the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below is for volunteer opportunities listed in step-by-step section only. While people tackle projects differently, the Field Guide estimates installation time of the lot design to be one to two full weekends with volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least five healthy adults or youth to construct this lot design. The Field Guide assumes that the lot is ‘construction ready,’ and all equipment and materials required for lot design have been acquired and are ready to go.

Cost	\$50 - 1,000	\$1,001 - 2,500	\$2,501 - 5,500	\$5,500 +
People	Volunteer	Professional	Volunteer + Professional	
Experience	Beginner	Intermediate	Advanced	
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Residential Lot in Sun or Shade (Between Two Residential Houses is Ideal)			

Front Parking Partner

Examples of Driveways Materials

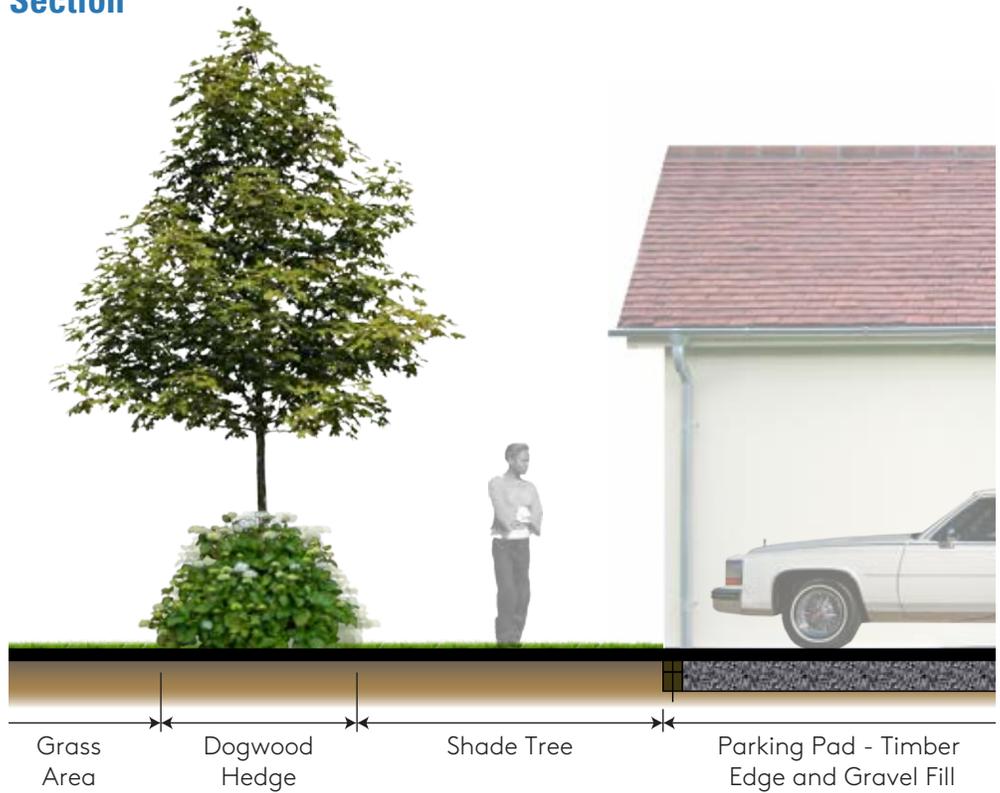


1 - Divided Driveway

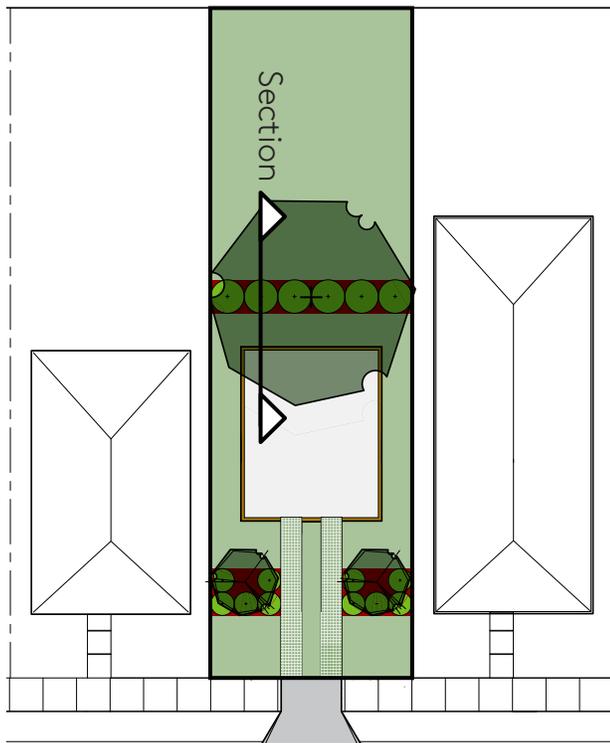


2 - Grass Paver

Section



Where Do I Grow?



The Front Parking Partner can be constructed on a single lot and can be utilized by one or two neighboring properties.

- Trees
- Shrubs
- Parking Pad
- Grass or Optional Groundcover

Before You Start

'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

- **Marking Paint & Tape Measure**
- **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
- **Ball Cart**, for moving heavy trees
- **Drill, Power Saw, and Sledge Hammer**

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**
- **Tree Planting Detail**
- **Perennials + Grasses Planting Detail**
- **Bulb Planting Detail**

Materials List

Materials

- **Geo-fabric**, 750 square feet, 4 ounce non-woven
- **Timber Edging**, 24 boards, 8 feet by 8 inches by 8 inches, pressure treated or cedar boards
- **Edging Stakes**, 48 stakes, ¾ inch by 18 inch round steel
- **Parking Pad Stone**, 8 cubic yards of MDOT 6A stone
- **Grass Paver Aggregate Base**, 7 cubic yards of MDOT 21AA crushed stone
- **Grass Paver Setting Bed**, 1 cubic yard of MDOT 2NS sand
- **Topsoil**, 1 cubic yard
- **Mulch or Wood Chips**, 3 cubic yards

Planting

- **Knockout Roses**, 12 pots or Balled & Burlapped
- **Amur Maple**, 2 pots or Balled & Burlapped
- **Scarlet Oak**, 1 pots or Balled & Burlapped
- **Red Twig Dogwood**, 6 pots or Balled & Burlapped

Remaining Lot (Optional)

Groundcover

- **Low-maintenance Fescue Mix**, 10 pounds of seeds
- **Germination Blanket**, 2 rolls (8 by 112.5 feet)

Front Parking Partner Step-By-Step

Let's Start

Want to create the Front Parking Partner? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design, and the steps volunteers can construct themselves.

Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot**
- Install Curb Cut**
- Create Parking Pad**
- Install Grass Pavers**

Volunteer Opportunities:

- Plant Trees**
- Plant Perennials**
- Maintain Your Lot Design**
- Sow Remaining Lot**

Prepare Your Lot

The Front Parking Partner is one of the more complex lot designs within the Field Guide. It is recommended that you hire a professional for the following steps: Prepare Your Lot, Install Curb Cut, Create Parking Pad, and Install Grass Pavers.

If you decide to construct this lot design without the recommended assistance of a professional, the guiding principles below are provided to assist you with the installation of the lot design.

- This lot design utilizes a little more than half of a single lot, a 30 by 60 foot area.
- The Front Parking Partner should be constructed as shown in the plan to ensure parking area and planting set back the proper distance (ten feet) from adjacent properties and sidewalks.
- The parking pad should be placed five feet from adjacent property lines and at least ten feet from the sidewalk.
- Before constructing the Front Parking Partner, ensure your lot and street are clean and clear of obstacles and is safe for you to drive to and from your proposed parking area.
- The lot design creates extra soil, that will need to be hauled off site and disposed of properly. An alternative is to incorporate the extra soil into the rear portion of your lot.
- Use marking paint and a tape measure to map out the size, shape, and dimensions of your parking area.

Front Parking Partner Step-By-Step

○ Install Curb Cut

The Field Guide recommends hiring a professional to obtain the Right-Of-Way permit and construct a concrete curb cut to City of Detroit Standards.

For more guidance on permits refer to [City of Detroit, Applying For Permits](#) section on their web site.

○ Create Parking Pad

Follow the following guiding principles for installing the parking pad:

- **Excavate a 26 by 21 foot area to a depth of one foot.** Remove all stones and roots to create a level area and compact soil.
- **Timber Edging:** You will need 24, 8 feet by 8 inches by 8 inches pressure-treated or cedar boards. Set the bottom row of timber edging, level, and cut boards to fit.
- Pre-drill holes for round steel stakes, using two holes per timber for bottom set of timber edging.
- Embed stakes into the predrilled holes using a sledge hammer. You will need 48, ¾ inch by 18 inch round steel stakes for edging.
- Set second layer of timber edging on top of the first row, staggering joints between top and bottom timbers.
- Cut boards to fit.
- Pre-drill holes through top timber edging, making sure to avoid the stakes already installed into bottom timbers.
- Embed stakes through both timber courses.
- **Parking Pad:** Place the four ounce non-woven geo-fabric across pad area and up sides, leaving six to nine inches lip (500 square feet).
- For the parking pad, fill parking area with 12 inches of MDOT 6A stone (eight cubic yards).

○ Install Grass Pavers

Follow the following guiding principles for installing the grass pavers:

- Driveway strips require the excavation of a ten foot and three inch wide area for the full length of the driveway, centered on the parking pad.
- Compact soil subgrade, and cover bottom with non-woven geotextile fabric (250 square feet).
- Fill excavation with nine inches of MDOT 21AA crushed stone base, installing in 3.5 inch lifts and compacting each lift (seven cubic yards).
- Place one inch of MDOT 2NS sand as a leveling course over the compacted aggregate (one cubic yard).
- The driveway median should be three feet wide with driveway strips two feet and six inches wide on either side.
- Install edge restraints along grass paver edges and embed stakes into the crushed aggregate base.
- Cover all exposed sand with three inches of topsoil, and spread grass seed (one cubic yard).

Stone Size Defined

MDOT 6A Stone refers to stone sizes generally ⅜ of an inch to 1-½ inches in size.

MDOT 21AA refers to stone that is generally smaller than a ½ inch in size.

MDOT 2NS refers to sand that is generally ⅜ inch in size.

Front Parking Partner Step-By-Step

○ Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends three foot diameter by three inch depth of compost or organic mulch around trees, keeping mulch a few inches away from tree trunks.

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

○ Plant Perennials

A sunny to partly sunny planting option is recommended for the Front Parking Partner as trees will not provide deep shade for approximately ten years. If your lot is currently located in shade, seek alternative planting options.

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

The Field Guide recommends two front planting areas (seven by 10.5 feet) and one back planting area (five feet by 30 feet).

Place three inches of mulch or wood chips to the front and back of planting areas (three cubic yards for all beds). Front planting areas require one-half cubic yards of mulch or wood chips per bed. Adding mulch or wood chips will help suppress weeds.

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

○ Maintain Your Lot Design

The parking area requires minimal maintenance; however, plants need care and maintenance to thrive and look their best. Water and weed plants regularly, especially during the first few years. Prune roses in late winter and maples in fall. You can prune the Dogwood any time.

Front Parking Partner Step-By-Step



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

Average Height of Plants



Trees, Large and Small Shrubs

○ Sow Remaining 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 Front Parking Partner lot design you will need approximately 10 pounds of fescue seed mix for the remaining lot (1,500 square feet) and two 8 by 112.5 foot rolls of single net germination blankets.**

This family of floppy grasses is very 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

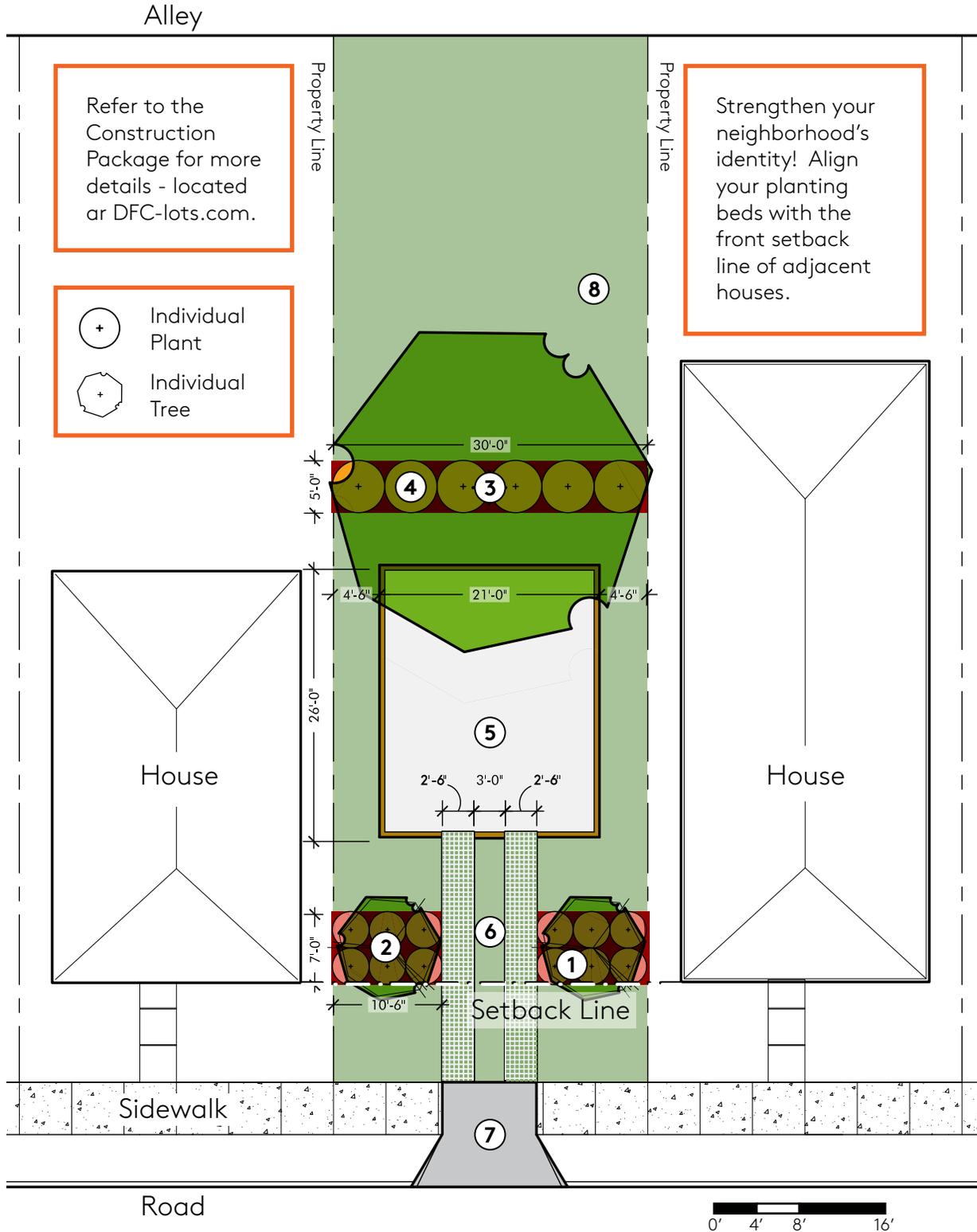
When established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Front Parking Partner Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

Strengthen your neighborhood's identity! Align your planting beds with the front setback line of adjacent houses.

- + Individual Plant
- + Individual Tree

- | | | | |
|---|--|---|---|
| <p>1 Flowering Shrub (Rose)</p> <p>2 Ornamental Tree (Amur Maple)</p> | <p>3 Shade Tree (Scarlet Oak)</p> <p>4 Hedge (Dogwood)</p> | <p>5 Parking Pad</p> <p>6 Grass Paver</p> | <p>7 Concrete Drive Approach</p> <p>8 Grass or Optional Groundcover</p> |
|---|--|---|---|

Planting: Full Sun to Part Sun



Knockout Rose¹
Rosa 'Radtko'
 3' Height x 3' Width.
Quantity: 12 pots or B & B



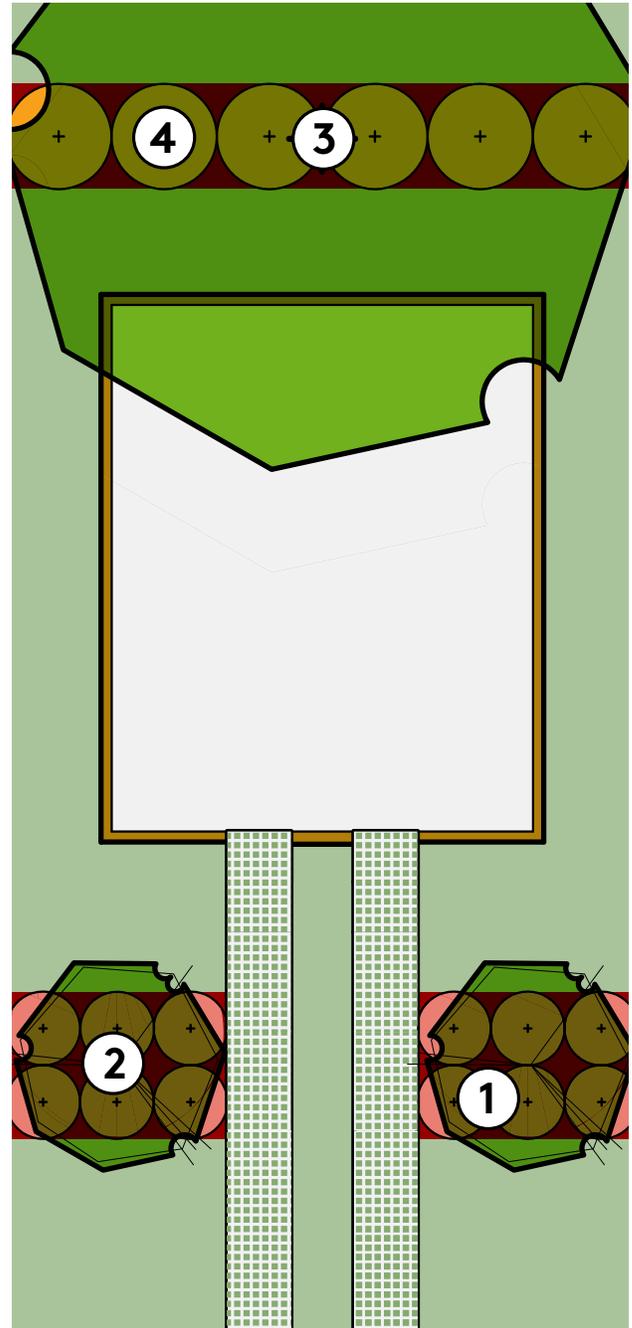
Amur Maple²
Acer ginnala
 20' Height x 20' Width.
Quantity: 2 pots or B & B



Scarlet Oak³
Quercus coccinea
 70' Height x 50' Width.
Quantity: 1 pot or B & B



Red Twig Dogwood⁴
Cornus alba 'Bailhalo'
 5' Height x 5' Width.
Quantity: 6 pots or B & B



Key

- 1

Knockout Rose
 (Space approximately three and one half feet apart.)
- 2

Amur Maple
 (Small trees shown in front perennial bed.)
- 3

Scarlet Oak
 (Large tree shown in back perennial bed.)
- 4

Red Twig Dogwood
 (Space approximately five feet apart.)

Plant Sizes

Pots: 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Image Source: 1) Jim the Photographer, "Red Knockout Roses." 19 May 2011 via Flickr, CC BY 2.0; 2) F.D. Richards, "Amur Maple." 24 October 2013 via Flickr, CC BY-SA 2.0; 3) Jean-Pol Grandmont, "Feuilles du Chêne écarlate - Quercus coccinea." 04 October 2008 via Wikimedia, CC BY-SA 3.0; 4) Nicokolas Titkov, "Cornus alba genus, Swida alba." 01 June 2013 via Flickr, CC BY-SA 2.0.

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

- Permits can be obtained through the City of Detroit's Public Works Department, Traffic Engineering section. Check out the City's web site for detailed information on cost and what you will need to bring with you to apply for your permit.
- General troubleshooting resources are available for permitting in the City of Detroit and Wayne County on the Field Guide's 'Resource' page.

Planting Tips

- Water after planting and as needed. Do not let soil dry out.
- Weed weekly or as needed.
- The best time to plant trees and shrubs is in the spring or fall.
- Do not plant in extreme heat. Early mornings or evenings are ideal.
- Mulch helps protect trees and plants from mowers and conserves water.
- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.

Front Parking Partner Notes

A large grid area for taking notes, enclosed in a thick orange border. The grid consists of small squares, typical of graph paper, and is intended for handwritten notes related to front parking partners.



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A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Jean-Pol Grandmont, "Feuilles du Chêne écarlate - Quercus coccinea." 04 October 2008 via Wikimedia, CC BY-SA 3.0

A photograph of a pheasant standing in a meadow filled with yellow buttercup flowers and green grass. The pheasant has a dark head with a red crest and a body with brown and white mottled patterns. Three semi-transparent grey banners with white text are overlaid on the top left of the image.

Volunteer

Professional

Volunteer + Professional

Grassland Habitat Maker

Image Source: Nick O'doherty, "Pheasant in hay meadow 2." 23 May 2009 via Flickr CC BY 2.0.



HELLO

MY NAME IS

Grassland Habitat Maker

The Grassland Habitat Maker is a native meadow designed to provide habitat for birds including pheasants, bobolinks and lark sparrow. With a warm palette of late summer and fall bloom colors, the Grassland Habitat Maker offers Detroiters one way to create a habitat for migratory and local bird populations that are currently in decline. The full site planting with an optional mowing strip fits nicely on a single lot but accomplishes even more for the birds with two three touching lots.

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

What is the lot design likely to cost?

The estimated cost of the Grassland Habitat Maker is low (\$50 – \$1,000) and based on utilizing volunteer labor and the seed mix. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the meadow, particularly during the first two growing seasons while the meadow establishes itself. The meadow should be mowed once a year in the late fall or early spring.

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, are willing to construct this lot design. 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, you can 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 the installation time of this lot design to be one full weekend with the help of at least three healthy adults or youth. The Field Guide assumes the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Single, Double, or Multiple Lots in Full Sun or Part Sun			

Grassland Habitat Maker

Examples of Grassland Animal Species



1 - Cottontail Rabbit



2 - Wild Pheasant



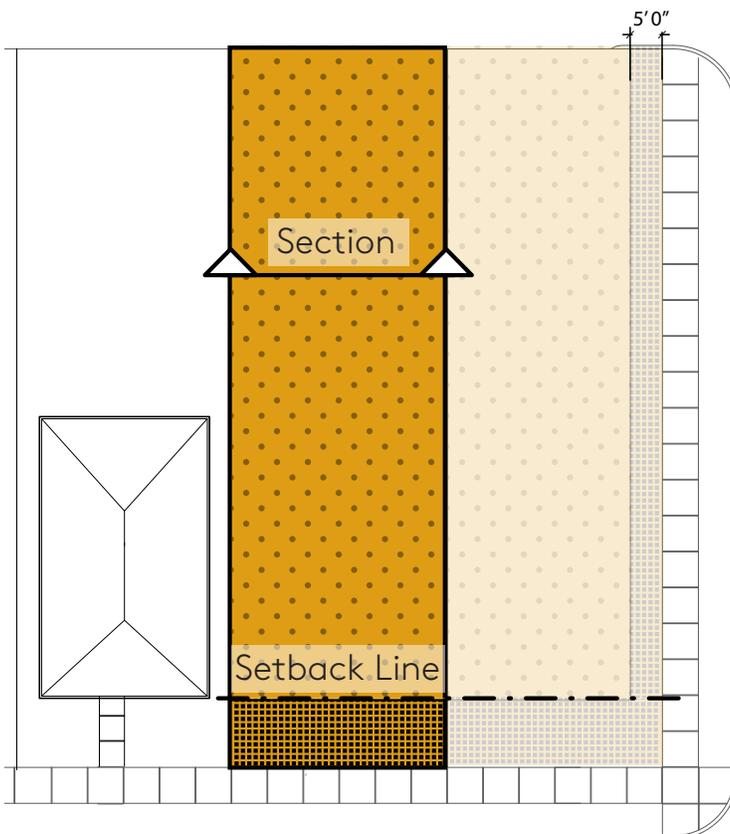
3 - Bobolink Bird

Section



Native Grassland Meadow

Where Do I Grow?



The Grassland Habitat Maker can be constructed on single, double, or multiple lots and is suitable for corner properties. Strengthen your block's identity by aligning the edge of your meadow with the front setback of the adjacent structures.



4 - Black Eyed Susan



5 - Showy Trefoil



6 - Coreopsis

-  Recommended Mowing Strip
-  Native Grassland Meadow

Image Source: 1) Neil Jansen, "Bunnies vs. 100mm macro." 26 April 2010 via Flickr, CC BY-NC-SA 2.0; 2) Mark Lehigh, "Attention!" 17 March 2012 via Flickr, CC BY-NC-SA 2.0; 3) Brian Henderson, "Bobolinks." 18 June 2014 via Flickr, CC BY-NC 2.0; 4) Matt Lavin, "Rudbeckia hirta." 14 September 2010 via Flickr, CC BY-SA 2.0; 5) Dan Mullen, "Showy Tick-trefoil, Canadian Tick-trefoil." 17 August 2012 via Flickr, CC BY-NC-ND 2.0; 6) Bithead, "Wildflower." 24 June 2007 via Flickr, CC BY-NC-SA 2.0.

Before You Start

'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).

Materials List

Materials

- **Germination Blankets**, 4 rolls (8 by 112.5 feet), used for the meadow area

Planting

- **Native Grassland Meadow seed mix**, 3 pounds of seed
- **Annual Cover Crop seed mix**, 3 pounds of seed

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- **Tiller**, 6 inch depth (optional)

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

Grassland Habitat Maker Step-By-Step

Let's Start

Want to create the Grassland Habitat Maker 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
- Sow Meadow
- Maintain Your Lot Design

 **Annual Cover Crop is used to establish the Native Grassland Meadow and does not require annual re-seeding.**

Prepare Your Lot

Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. The Field Guide recommends different design sizes for various applications:

Corner Lot: 25 by 90 foot grassland on corner lots with a recommended ten foot wide mowing strip that aligns with the front setback of neighboring houses. A five to ten foot wide mowing strip is recommended along the side of adjacent roads.

Residential Areas: 30 by 90 foot grassland on residential lots, allowing for an approximately ten foot wide mowing strip that aligns with the front setback of neighboring houses.

Conservation Area: 30 by 100 foot grassland across multiple lots in areas away from houses.

Sow Meadow

Soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid-October to end of November). Ernst Conservation Seed's Native Grassland Meadow seed mix and Annual Cover Crop seed mix are good options for the Grassland Habitat Maker; similar mixes are available from other suppliers.

Ernst Conservation Seed's Mix suggests one pound of Native Grassland Meadow seed mix with one pounds of Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends three pounds of Native Grassland Meadow seed mix and three pounds of Annual Cover Crop seed mix for the meadow area (30 by 100 feet).**

Grassland Habitat Maker Step-By-Step

Once seeds have been mixed, spread seed across entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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. **Four 8 by 112.5 foot single net germination blankets will cover the meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Maintain Your Lot Design

A meadow requires care and maintenance to thrive. The Grassland Habitat Maker will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.**

After the first year, continue weeding, and mow your meadow in late fall or early spring to keep the meadow at its best. It will take about three years for the meadow to fully establish.

Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional native seed mixes and plants. Be creative and make it your own!



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

Average Height of Plants



Planting: Full Sun to Part Sun

Native Grassland Meadow (Eastern Native Habitat & CREP Mix, ERNMX - 173)

Mixing three pounds of Native Grassland Meadow seed mix with three pounds of Annual Cover Crop seed mix is recommended for the Grassland Habitat Maker lot design.

You can buy these seeds premixed at Ernst Conservation Seeds.

Big Bluestem 'Niagra', *Andropogon gerardii*, 'Niagra' (40% of mix)

Partridge Pea, *Chamaecrista fasciculata* (8% of mix)

Purple Coneflower, *Echinacea purpurea* (2% of mix)

Virginia Wildrye, *Elymus virginicus* (25% of mix)

Oxeye Sunflower, *Heliopsis helianthoides* (2% of mix)

Switchgrass 'Shelter', *Panicum virgatum* 'Shelter' (15% of mix)

Blackeyed Susan, *Rudbeckia hirta* (3% of mix)

Indiangrass, *Sorghastrum nutans* (5% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.



Grassland Meadow with Pheasants

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.

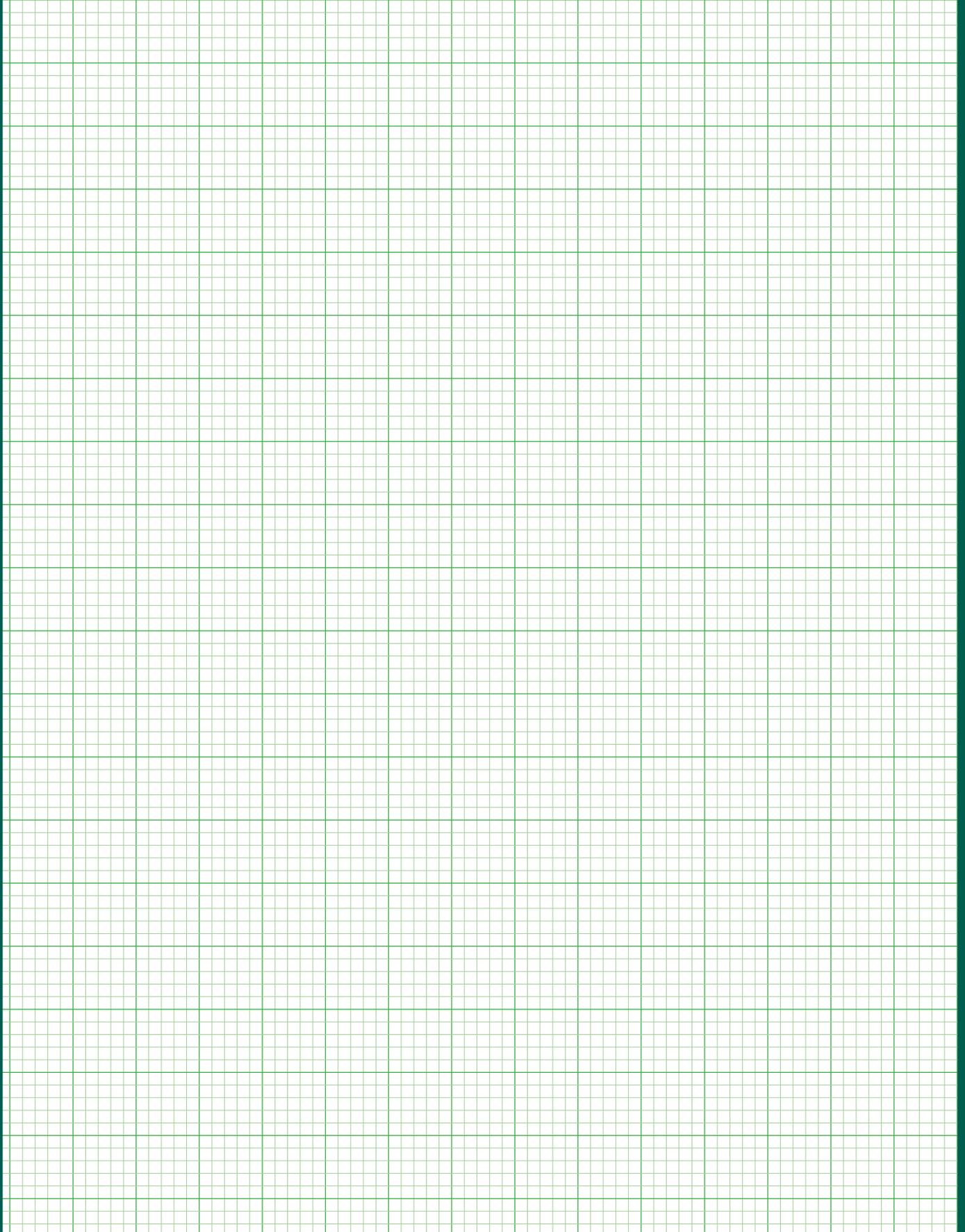
Helpful Facts

- Native plants have deep roots that help capture, hold, and slowly release stormwater.
- Grasslands provide habitat to pheasants, bobolinks, lark sparrow, and other birds.
- The Grassland Habitat Maker offers the opportunity to help endangered wildlife such as the lark sparrow. Create a habitat type that is currently in decline!
- Birdhouses are a welcome addition to this lot design.
- You can learn more about birds that live or migrate through Southeast Michigan through Cornell's Ornithology Lab.

Planting Tips

- The best time to plant is spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed.
- Weed weekly or as needed.
- Hydroseeding is a great way to seed large areas rapidly.
- Do not mow grassland during critical breeding or nesting periods. The Field Guide recommends mowing between July 15 and August 31 to reduce the chance of destroying bird nests.

Draw Your Lot





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Image Source: Neil Jansen., "Bunnies vs. 100mm macro" 26 April 2010 via Flickr, CC-BY-NC-SA

Volunteer

Professional!

Volunteer + Professional

Gravel Garden

Image Source: Leonard G., "Living roof of the California Academy of Science, Golden Gate Park." 30 October 2008 via Wikimedia, public domain.



HELLO

MY NAME IS

Gravel Garden

The Gravel Garden embraces the poor, rocky soils of commercial lots in Detroit by taking the green roof aesthetic of colorful succulents and bringing it down to street level. On the ground, these plants can provide similar stormwater benefits while being visible to all.

Sedum are tolerant of extreme heat, cold, and drought. These tough and colorful plants thrive in low-nutrient environments and provide a bright mix of colors and textures. This lot design will encourage the succulents to grow in habitats similar to but distinct from a green roof.

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

What is the lot design likely to cost?

The estimated cost of the Gravel Garden is high (\$2,500 – \$5,500) and based on utilizing volunteer labor and sedum sod mats. To save money, you can reduce the number of mats; however, it will take longer for the mats to establish and a smaller number of mats may not have the desired visual impact. The cost assumes that residents or volunteers have access basic safety gear and garden tools.

How much upkeep will this lot design require?

The maintenance of this lot design is low and is minimal once established. Water sedum sod mats extensively, at least four times per week during the first four weeks of installation to help mats establish in their new environment.

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 healthy adults or youth. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for lot design have been acquired and are ready to use.

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	Commercial Lot in Full Sun or Part Sun			

Gravel Garden

Examples of Sedum Groundcovers



1 - Sedum Planting

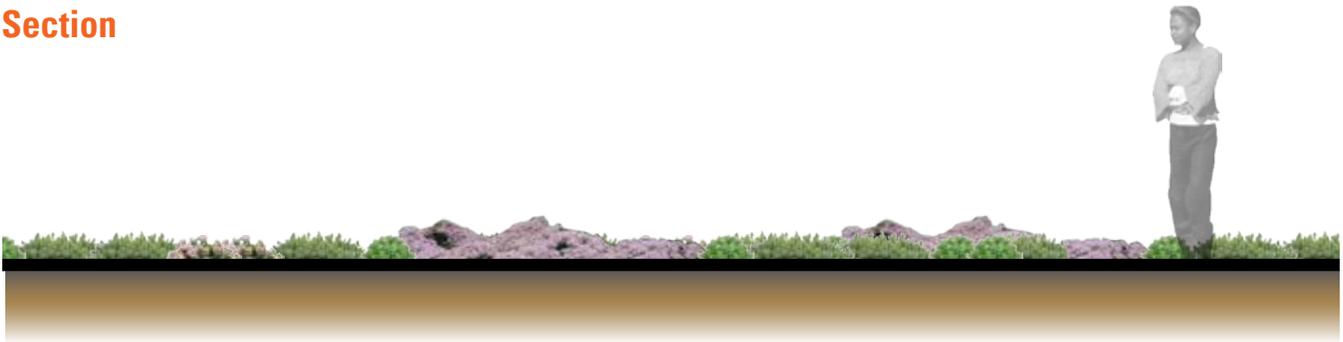


2 - Mixed Sedum Groundcover



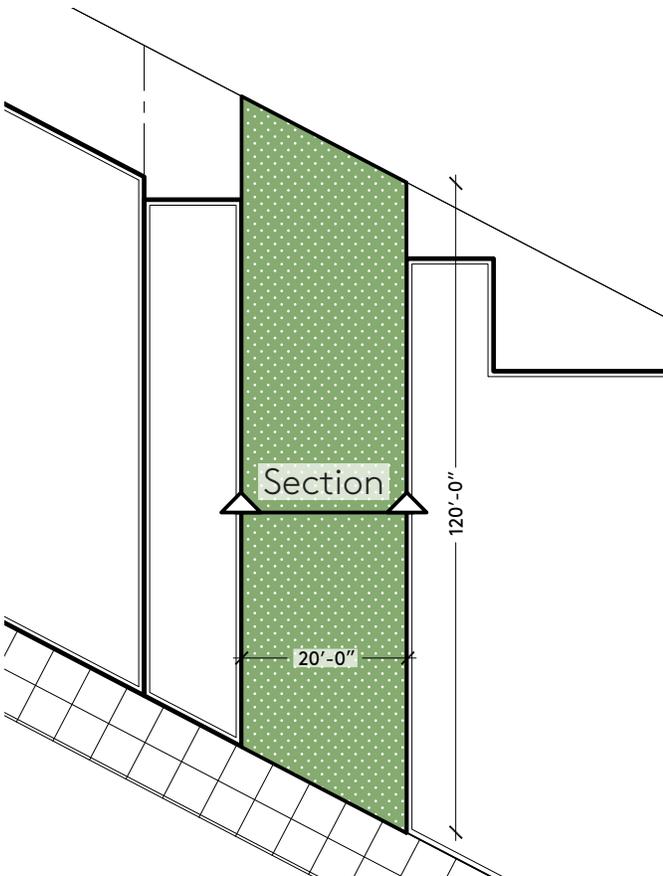
3 - Sedum on Roof

Section



Sedum Groundcover

Where Do I Grow?



The Gravel Garden can be constructed on single or multiple lots. This design is ideal for commercial lots, properties with little to no activity, and properties that are visible from roads, such as corner lots.



Image Source: 1) Lambert, Rotherstien & Associates, "DSC_0401." Used with permission 2) Ryan Somma, "an example of a green roof project." 20 November 2011 via Wikimedia, CC BY-SA 2.0; 3) Lambert, Rotherstien & Associates, "roof_porn." Used with permission

Before You Start

'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 commercial lot (20 by 120 feet).

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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**

Materials List

Materials

- **Sedum Sod Mats**, 300 (10 by 20 inch) mats

Gravel Garden Step-By-Step

Let's Start

Want to create the Gravel Garden 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
- Select Sedum Sod Mats
- Install Sedum Sod Mats
- Maintain Your Lot Design

Prepare Your Lot

Select the best location for your Gravel Garden. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. The Field Guide recommends using a full 20 by 120 foot lot.

This design is suitable for lots with poor or gravel soils. The soil quality on commercial lots varies greatly in Detroit. For lots with minimal vegetation, remove weeds by hand. If the lot is covered with healthy grass or a significant amount of vegetation, you may want to consider a different lot design or select an option from Remove Your Grass on page 4.

Although sedum do not require much in the way of soil, they do need surfaces and crevices into which their roots can grow. Soil should be prepared for planting by scarifying or raking to loosen any compaction, allowing for easier plant growth and better water infiltration.

Select Sedum Sod Mats

For instant impact and easy installation, the Field Guide encourages you to consider covering your lot with pre-grown sedum sod mats.

A sedum sod mat is pre-grown with a mix of sedum plants and soil, covered at the bottom with jute or another porous fiber.

There are multiple suppliers of sedum sod mats suitable for the Gravel Garden. One such Michigan-based supplier is LiveRoof. LiveRoof offers two pre-grown sedum sod mats, Greenfast Mix or Lemon Zest Mix, which the Field Guide recommends for groundcover.

To manage costs, the Field Guide recommends buying 300 sedum sod mats (Greenfast Mix or Lemon Zest Mix), allowing for 420 square feet of coverage on your 2,400 square foot lot.

Gravel Garden Step-By-Step

○ Install Sedum Sod Mats

Sedum sod mats are typically ten inches by 20 inches in size. Cut mats in half to create a total of 600 mats, resulting in ten inch squares. Space mats evenly across the site with 14 inches between mats. **This will create a grid 10 squares wide by 60 squares long.** Cutting mats in half and covering your lot evenly will allow sedum to grow together over time, reducing cost. If you are willing to spend more, you can purchase more mats, and your lot will be covered more quickly.

Press mats firmly into the ground, making sure the bottom of the mat touches the ground. Water extensively during the first weeks, and continue to water regularly through the first year.

An alternative to the grid arrangement is to cluster mats in areas of your choosing, creating full coverage in some areas and little coverage in others. You can also incorporate paths and benches to make the space usable. Do not walk on sedum. Be creative and make the Gravel Garden your own unique design!

○ Maintain Your Lot Design

Sedum requires care and maintenance to establish. Water sedum sod mats extensively, at least four times a week during the first four weeks of installation. **The ideal watering detail would include 30 minutes of light irrigation per day for the first month following installation.**

Watering during the first month will help the mats establish in their new environment. Once established, the mats will require little to no maintenance.

Alternative Sedum Groundcover

Another option for the Gravel Garden lot design installation is to use sedum cuttings instead of sedum sod mats. Using cuttings is a technique for propagating plants by 'cutting' a piece of the stem or root source from an established plant. The cuttings can be scattered across lot to grow. While cuttings are a great option for spreading groundcover, it may be difficult to acquire sedum cuttings for this lot design.

If using cuttings, it is recommended that a professional be hired to hydromulch the entire lot before spreading cuttings. This will provide a nutrient-rich base that sedum can use for establishment. Hydromulch reduces moisture evaporation from the soil, making it easier for cuttings or seeds to grow.



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

Average Height of Plants



Sedum Groundcover

Planting Options: Full Sun to Part Sun

Sedum Sod Mats Species List

Pregrown Sedum Sod Mats (Greenfast Mix or Lemon Zest Mix) are available from LiveRoof and other Michigan companies.

1. Greenfast Mix

Sedum acre 'Aureum'

Sedum album 'Chloroticum'

Sedum album 'Green Ice'

Sedum spurium 'Green Mantle'

Sedum reflexum Spring Green

Sedum spurium 'Album Superbum'

Sedum spurium 'John Creech'

Sedum spurium 'Pink Jewel'

2. Lemon Zest Mix

Sedum acre 'Aureum'

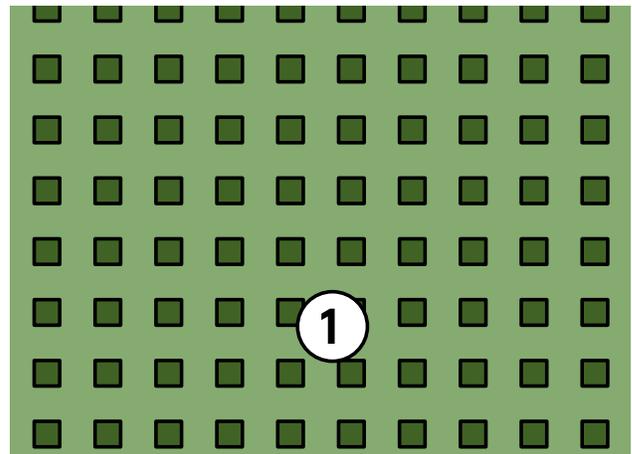
Sedum album 'Chloroticum'

Sedum ellacombianum 'Variegatum'

Sedum rupestre 'Angelina'

Sedum reflexum Moonshadow

Sedum spurium Moonshine



Key



Sedum Groundcover

(Space ten inch squares 14 inches apart across entire lot.)

Plant Sizes



Mats: Plants can be purchased in Sedum Sod Mats. Press into ground by hand.



Cuttings: Plants can be purchased in individual cuttings. Spread by hand.



Seeds: Some sedums can be purchased in seed form. Spread by hand.

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.

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Helpful Facts

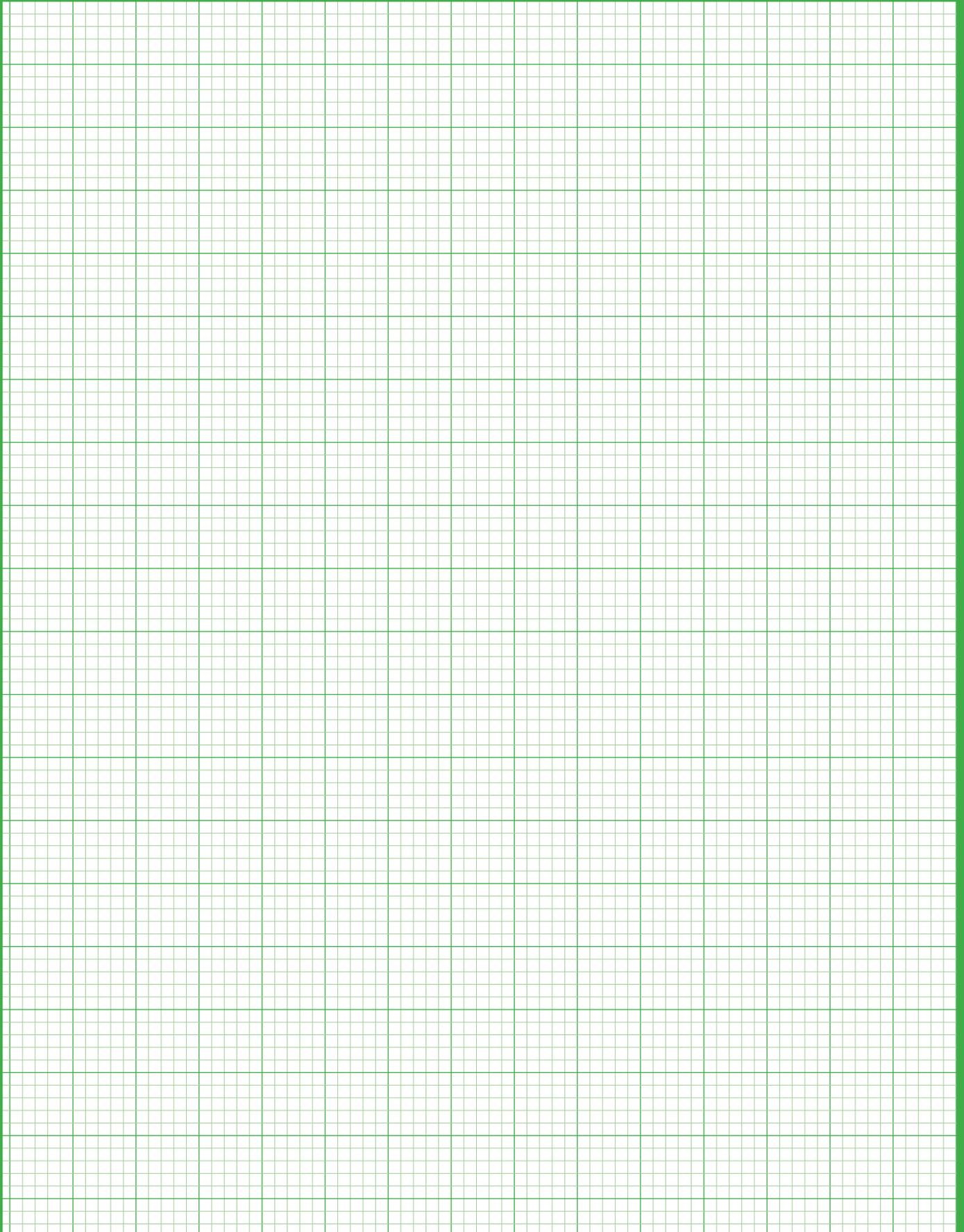
Green roofs have many benefits, some of which can be translated to the ground, including:

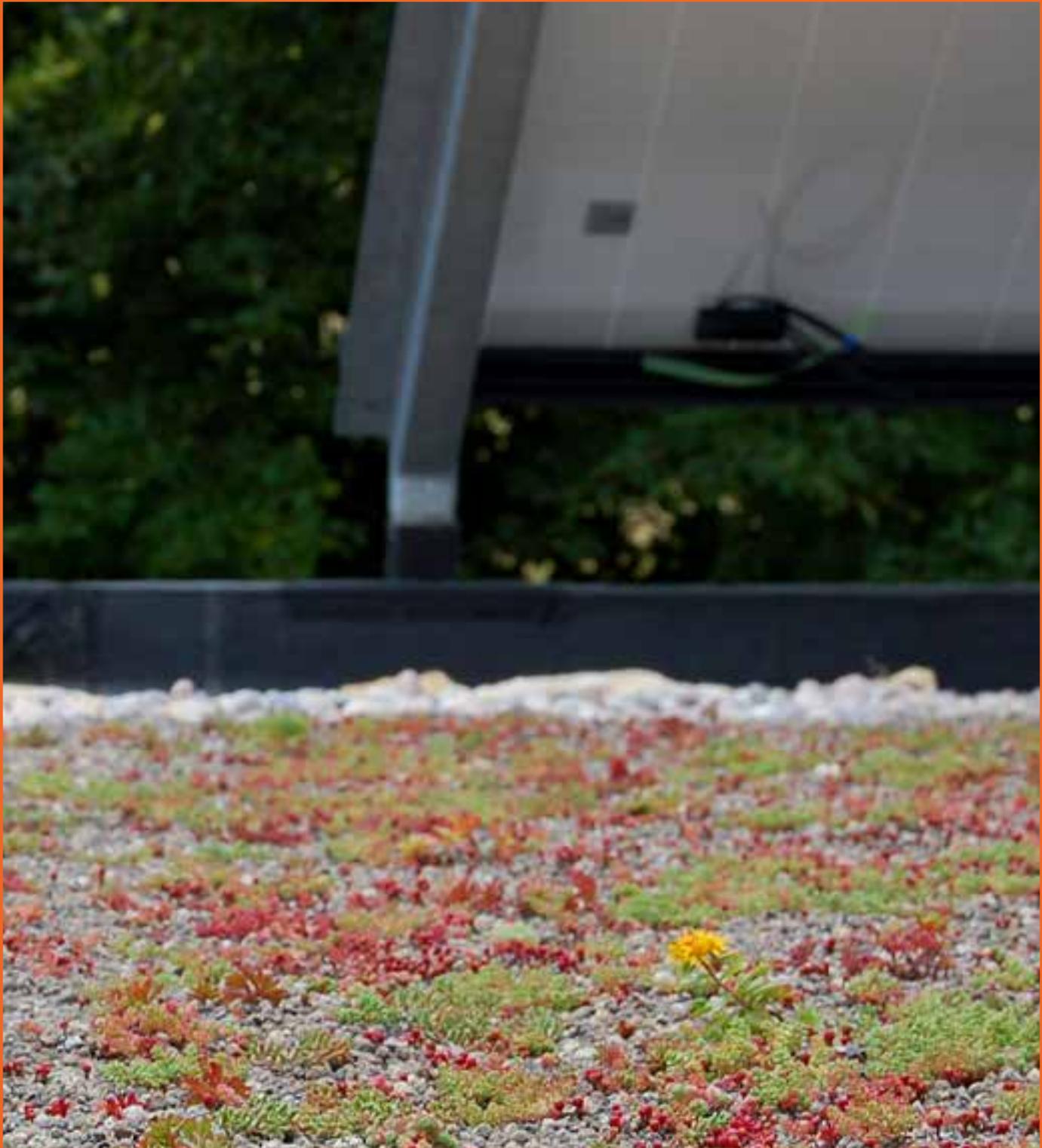
- Capturing stormwater and preventing runoff through the soil, the aggregate, and sedum roots and leaves;
- Reducing impermeable surfaces and shielding the ground from absorbing heat from the sun;
- Attracting pollinators, which in turn helps keep other plants healthy.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant sedum sod mats is in the spring or fall.
- Do not plant sedum sod mats in extreme heat.
- Press sedum sod mats firmly into the ground. Make sure the bottom of sod mat touches the soil.
- Plan to water extensively during the first three weeks to ensure plants establish.
- Lot may require weeding until sedum covers entire lot.

Draw Your Lot





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Image Source: Thingermejig, "Green roof with Sedum plants and solar panels." 02 August 2007, via wikimedia CC-BY-SA-2.0.

Volunteer

Professional

Volunteer + Professional



Hedge Fund

Image Source: Lambert, Rotherstien & Associates, "Hantz Tree Installation." Used by permission.



HELLO

MY NAME IS

Hedge Fund

The Hedge Fund lot design creates organized spaces for growing trees that can later be sold and transplanted to another site. This is well-suited for those who would like to have a hands-on approach to both maintaining and potentially selling trees.

This lot design takes advantage of land available to increase tree production activity in Detroit, while considering the full season visual and spatial impact of scattered, neighborhood-based tree nurseries.

The mix of hedges and tree planting areas create clean edges, pathways for maintenance and preserves views through the lot.

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

What is the lot design likely to cost?

The estimated cost of the Hedge Fund is high (\$2,500 – 5,500) and based on 1.5 inch diameter trees, potted plants, and utilizing volunteer labor. To save money, you can buy smaller trees or pots. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

A high level of maintenance is required for this lot design. A commitment to regular monitoring of the trees and plants is needed to ensure the health and proper form of these plants being grown for profit. Maintenance will include watering plants, particularly during times of drought or excess heat, pruning trees and shrubs, and regular inspection of your plant material as it matures.

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 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 five healthy adults or youth. The Field Guide assumes that the lot is 'construction ready,' and all research, equipment and materials required for lot design have been acquired and are ready to use.

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	Residential or Commercial Side Lot in Full Sun to Part Sun			

Hedge Fund

Examples of Tree Nurseries

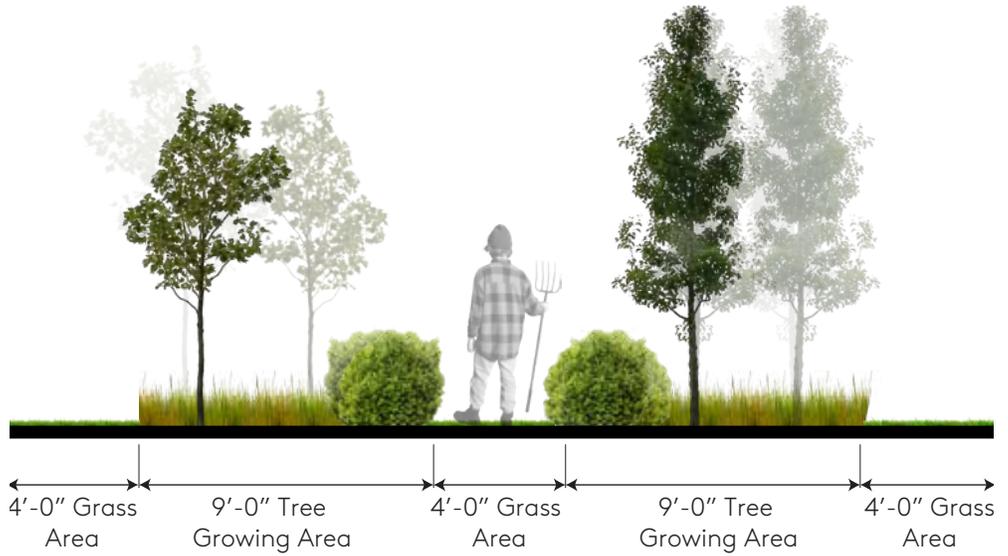


1 - Container Grown Plants

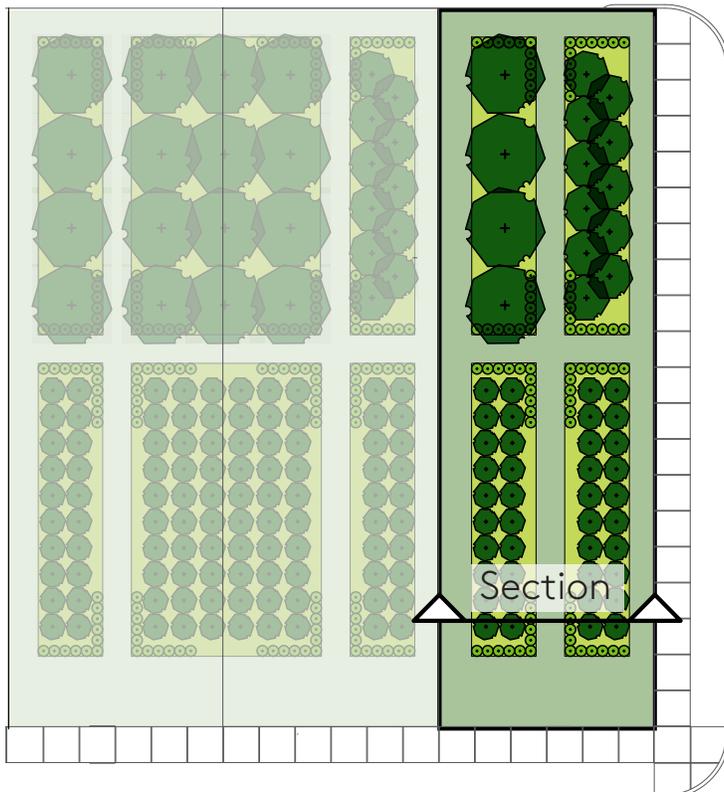


2 - Row of Small Trees

Section



Where Do I Grow?



The Hedge Fund can be installed on single or multiple lots and is suitable for corner properties.

- Tree
- Woodland Edge Seed Mix
- Grass or Optional Groundcover

Before You Start

'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

- **Marking Paint and Tape Measure**
- **Safety Gear:** Gloves, heavy work boots, tall socks, pants, long sleeve shirts, dust mask, protective eye wear, ear plugs, and hard hats (if using heavy machinery)
- **Garden Tools:** Spades, shovels, rakes, trash bags, and wheelbarrows
- **Ball Cart**, for moving heavy trees

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
- Tree Planting Detail
- Perennials + Grasses Planting Detail
- Bulb Planting Detail

Materials List

Materials

- **Mulch or Wood Chips**, 2 cubic yards

Planting

- **Woodland Edge Seed Mix**, 9 ounces of seed
- **Annual Cover Crop seed mix**, 12 ounces of seed
- **Germination Blankets**, 2 rolls (8 by 112.5 feet)
- **Boxwood**, 88 pots

Refer to page 10 for tree suggestions.

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 8 pounds of seed
- **Germination Blanket**, 2 rolls (8 by 112.5 feet)

Hedge Fund Step-By-Step

Let's Start

Want to create the Hedge Fund 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:

- Research + Prepare Your Lot**
- Plant Hedge**
- Sow Meadow**
- Plant + Grow Trees**
- Maintain Your Lot Design**
- Sow Remaining Lot**

 **Libraries are a great resource for researching horticulture and seeking advice on starting a small business.**

 **Annual Cover Crop is used to establish the Woodland Edge Seed Mix and does not require annual re-seeding.**

Research + Prepare Your Lot

This lot design will require property owners to research and learn more about horticulture — the practice of cultivating plant material, specifically trees and shrubs for this lot design. This will allow you to become a better steward of the species you will be growing.

Spend time conducting research to ensure you are prepared for this lot design. Horticulture can be rewarding and potentially lucrative. Greater understanding and preparedness can result in healthier trees.

If you are planning to use this lot design to generate income, make sure you understand the costs involved in starting, maintaining, and selling trees. Speak to someone with small business experience and seek advice on how to create a sustainable business model.

Once you have a strong understanding of horticulture, running a small business, and have selected a lot or multiple lots, it is time to start installation. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. **The Field Guide recommends four (9 by 41 foot) nursery beds.**

Plant Hedge

A sunny to shade planting option is recommended for Hedge Fund.

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

The Field Guide recommends adding three inches (two cubic yards) of wood chips or mulch to planting beds. Adding wood chips or mulch will help suppress weeds.

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

Hedge Fund Step-By-Step

○ Sow Meadow

Soil should be prepared for seeding by scarifying, raking or tilling the soil four to six inches deep to loosen up any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid-October to end of November). Michigan Wildflower Farm's Woodland Edge seed mix and Annual Cover Crop seed mix are good options for the Hedge Fund; similar mixes are available from other suppliers.

Michigan Wildflower Farm suggests five ounces of Woodland Edge mixed with eight ounces of Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends nine ounces of Woodland Edge seed mix and 12 ounces of Annual Cover Crop seed mix for four meadow areas (1,539 square feet).**

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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. **Two 8 by 112.5 foot single net germination blankets will cover the meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Plant + Grow Trees

Follow the best practices explored through your research conducted for the Hedge Fund lot design. The Field Guide has a few additional recommendations for getting started:

You can choose to grow trees from seed or from liners. Liners are to trees what plugs are to perennials – small immature plants which require care and time to grow into mature plants. Liners vary in size, but are usually 1.5 to three feet in height and two to three years old. **Using liners will eliminate some of the delicate care required to grow trees from seed but will be more expensive.**

Growing from seed is the less expensive option for starting your Hedge Fund. The Field Guide encourages you to pick whichever option is best for you.

Trees cannot survive the winter in an above-ground container (their roots will freeze!). Either plant trees in the ground or bring them indoors.

Transplanting, or moving a plant from one location to another, should only be undertaken while the plant is dormant. For deciduous trees, this means they have no leaves. In Michigan, transplanting should take place between mid-November and early spring.

During the spring of the year you plan to sell the trees, transplant the trees into a container, or ball and burlap while the plant is still dormant.

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

Hedge Fund Step-By-Step

○ Maintain Your Lot Design

Trees and shrubs must be watered regularly during the first year. Water weekly or as needed.

Trees: Trees require care and attention to thrive. The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.

Meadow: The Woodland Edge seed mix will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.**

After the first year, continue weeding and mow your meadow in late fall or early spring. This will keep the meadow at its best. It will take about three years for the meadow to establish.



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

Average Height of Plants



Trees, Shrubs and Hedge

○ Sow Remaining 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 Hedge Fund lot design you will need approximately eight pounds of fescue seed mix for the remaining lot (1,461 square feet) and two 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

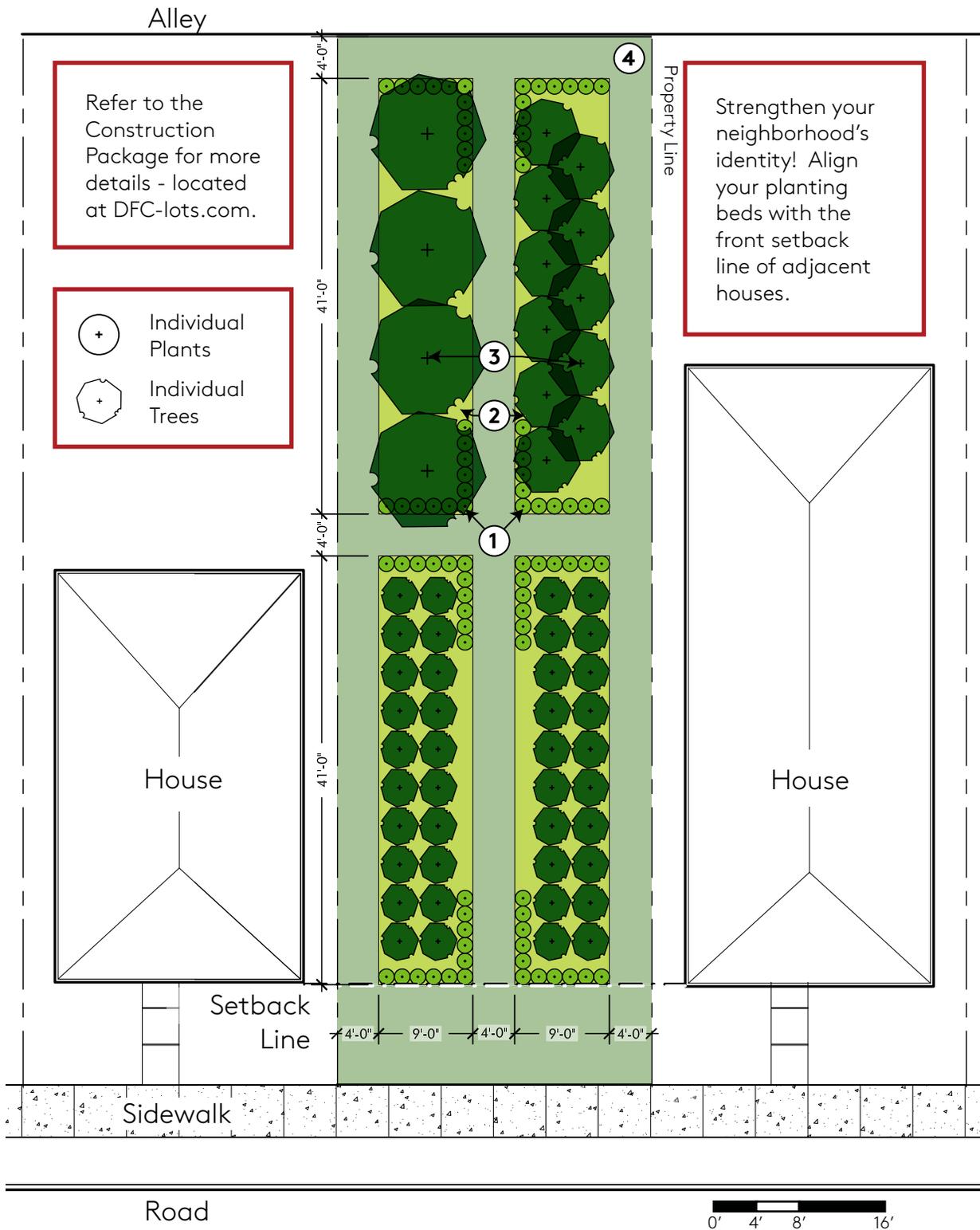
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Hedge Fund Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

- + Individual Plants
- + Individual Trees

Strengthen your neighborhood's identity! Align your planting beds with the front setback line of adjacent houses.

1

Hedge (Boxwood)

2

Woodland Edge Seed Mix

3

Tree

4

Grass or Optional Groundcover

Hedge Fund Planting Options

Tree Options

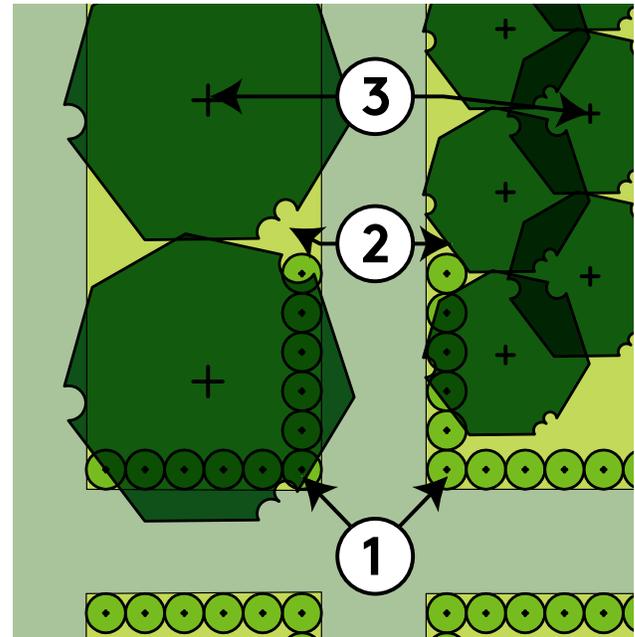
Selecting trees for your nursery requires research and a strong business plan. Your nursery is likely to have a mix of quick and slow growing trees. Here is a list trees to consider:

Quick Growing Trees

- **Red Maple**, *Acer rubrum*
- **Zelkova**, *Zelkova serrata*
- **Pin Oak**, *Quercas palustris*
- **Sweetgum**, *Nyssa sylvatica*
- **Yellowood**, *Cladrastis kentuckea*
- **Chinkapin Oak**, *Quercus meuhlenbergii*
- **Serviceberry (Ornamental tree)**, *Amelanchier canadensis*
- **Yoshino Cherry (Ornamental Tree)**, *Prunus Yedoensis*
- **Amur Maple (Ornamental Tree)**, *Acer ginnala*

Slow Growing Trees

- **Black Walnut**, *Juglans nigra*
- **Linden**, *Tilia americana*
- **Tulip Tree**, *Liriodendron tulipifera*
- **English Oak**, *Quercus robur*
- **Katsura Tree (Ornamental Tree)**, *Cercidiphyllum japonicum*
- **Japanese Tree Lilac (Ornamental Tree)**, *Syringa reticulata*



Key

- 1** **Boxwood**
(Space approximately 1.5 feet apart.)
- 2** **Woodland Edge Seed Mix**
- 3** **Tree**
(See the suggested list at left.)

Plant Sizes

-  **Pots & Seeds:** Trees can be purchased in a variety of forms, including pots, liners and seeds.
- 



Chicagoland Green Boxwood¹

Buxus x 'Glencoe'
3' Height x 3' Width
Slow Growing
Quantity: 88 pots

Hedge Fund Planting

Woodland Edge Mix

Mixing nine ounces of Woodland Edge Mix with 12 ounces of Annual Cover Crop seed mix is recommended for the Hedge Fund lot design.

You can buy these seeds premixed at Michigan Wildflower Farm.

Canada Wild Rye, *Elymus canadensis* (30% of mix)

Bottlebrush Grass, *Hystrix patula* (10% of mix)

Little Bluestem, *Schizachyrium scoparium* (22% of mix)

Bergamot, *Monarda fistulosa* (4% of mix)

Foxglove Beardtongue, *Penstemon digitalis* (4% of mix)

Snakeroot, *Eupatorium rugosum* (4% of mix)

Wild Columbine, *Aquilegia canadensis* (4% of mix)

June Grass, *Koeleria cristata* (3% of mix)

Purple Meadow Rue, *Thalictrum dasycarpum* (3% of mix)

Bluestem Goldenrod, *Solidago caesia* (2% of mix)

Heart-Leaved Aster, *Aster cordifolius* (2% of mix)

Tall Bellflower, *Campanula americana* (2% of mix)

Showy Tick Trefoil, *Desmodium canadense* (2% of mix)

Nodding Wild Onion, *Allium cernuum* (2% of mix)

Woodland Sunflower, *Helianthus divaricatus* (2% of mix)

Canada Anemone, *Anemone canadensis* (1% of mix)

Tall Thimbleweed, *Aquilegia virginiana* (1% of mix)

Wild Geranium, *Geranium maculatum* (1% of mix)

Hairy Beardtongue, *Penstemon hirsutus* (1% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

Did You Know?

Professionals Can Help!

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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.

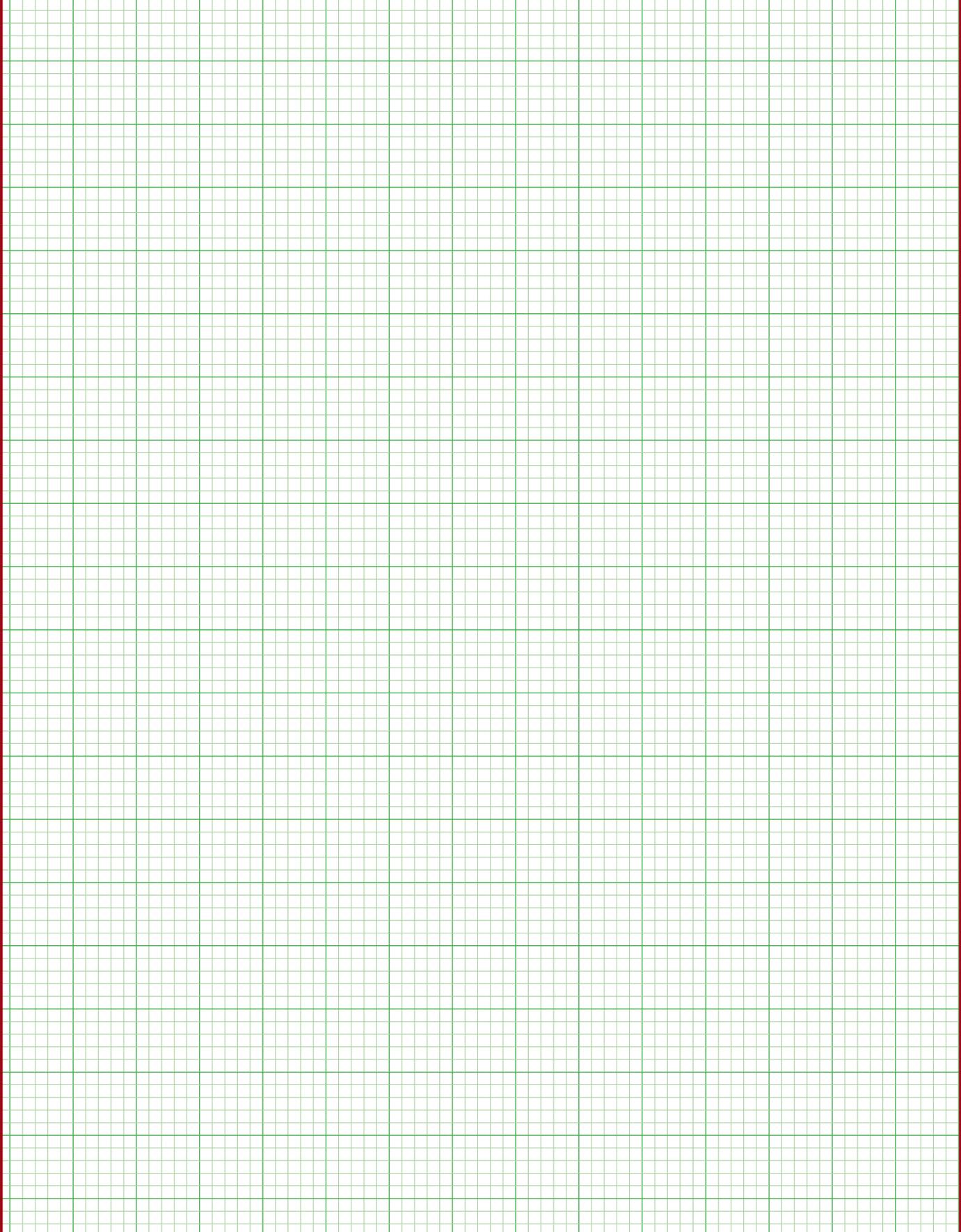
Helpful Facts

- SEMCOG's Regional Green Infrastructure plan calls for a significant increase in tree canopy across Detroit.
- Trees increase in value over time. They can be purchased very inexpensively at a young age but can be sold for much more in only a few years as they grow larger.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- Inspect trees before purchasing to be sure they are healthy and well formed. This will help you select trees that are likely to survive.
- Using liners will avoid the delicate requirements of raising trees from seed.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water trees during planting and as needed.
- If mulching around trees, do not place too close (less than three inches) to the tree trunk. This will help keep trees free of disease.
- Do not plant trees under overhead wires.

Draw Your Lot





**DETROIT
FUTURE
CITY**

**working
with lots**
A FIELD GUIDE

Visit DFC-lots.com
#DFClots

Image Source: Challenge Detroit Fellow, "Grandmont Rosedale Tree Nursery." 13 June 2014, Owned by Detroit Future City.

Volunteer

Professional

Volunteer + Professional

Holland Maze

Image Source: Illia Frenkel, "Purple Tulips." 26 September 2014 via Flickr, CC BY-NC-SA 2.0.





The Holland Maze lot design is a playful adaptation of the tulip fields found in the Netherlands. The lot design consists of a series of mounds planted with tulips, lavender and geraniums. The planted mounds create a bold pattern that makes a statement from afar.

The Holland Maze features bright summer colors and includes a small rain garden that captures water from the lot or from portions of an adjacent property.

This lot design can be installed on a single lot or, for greater impact, on multiple lots.

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

What is the lot design likely to cost?

The estimated cost of the Holland Maze is over \$5,500 and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for earthwork and lot preparation. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

A high level of maintenance is required for the Holland Maze design to look its best. Maintenance will include weeding and watering plants, particularly during times of drought or excessive heat.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family or neighbors, would like to complete the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for several steps of the installation. The projected installation time listed below is estimated for the volunteer opportunities detailed in the Step-By-Step section only. While people tackle projects differently, the Field Guide estimates the installation time of this lot design to be one to two full weekends with a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least 10 healthy adults or youth to complete this lot design. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Single, Double, or Multiple Lots in Full Sun or Part Sun			

Holland Maze

Examples of Planted Mazes



1 - Lavender Hedge

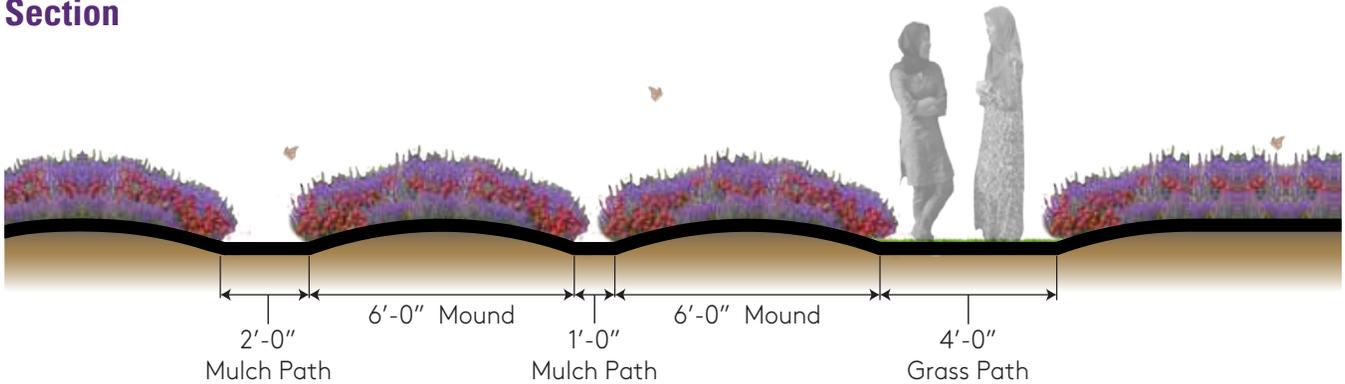


2 - Tulip Maze

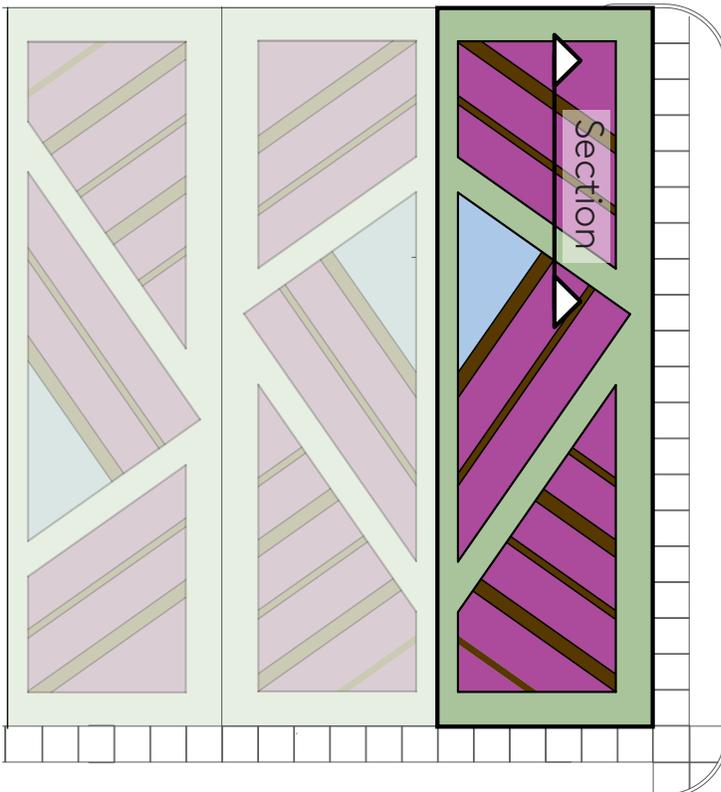


3 - Lavender

Section



Where Do I Grow?



The Holland Maze can be installed on single, double, or multiple lots and is suitable for corner properties. The image below shows an example of mounds planted with tulips.



4 - Tulip Rows

- Planted Mounds
- Rain Garden
- Mulch Pathways
- Grass or Optional Groundcover Pathways

Image Source: 1) Lori Quillen (SVLover), "Mt Shasta Lavender Farm." 21 June 2014 via WeatherUnderground, license unknown; 2) Peter Toshio, "At the Park: Tulip Garden." 10 April 2011 via Flickr, All Rights Reserved; 3) Peter Reed, "Lavender." 02 July 2006 via Flickr, Creative Commons Attribution-NonCommercial 2.0 Generic; 4) Peter M Graham, "Tulip_070." 21 April 2007 via Flickr, Creative Commons Attribution-NonCommercial 2.0 Generic.

Before You Start

'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

- **Marking Paint, Spirit Level, and Tape Measure**
- **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
- **Hacksaw and Screwdriver**
- **Tiller**, 6 inch depth

Potential Water Sources

- Garden Hose with possible extension hose
- Sprinkler
- Rain Barrel in addition to other water source
- Downspout Disconnect (shown in lot design)

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

- **Rain Garden Planting Soil**, 1.5 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Mulch or Wood Chips**, 4 cubic yards (rain garden and mulch pathways)
- **Bonemeal or Pine Bark**, 1 bag
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting

- **Violet Intrigue Lavender**, 69 pots
- **English Lavender**, 69 pots
- **Giant Hyssop**, 70 pots
- **Mixed Tulips**, 520 bulbs
- **Rozanne Cranesbill**, 30 pots
- **Cranesbill Geranium**, 30 pots
- **Purple Cranesbill**, 31 pots
- **Mixed Poppies**, 1 pound of seed
- **Blue Chip Jr. Butterfly Bush**, 16 pots

Pathway Groundcover:

- **Low-Maintenance Fescue Mix**, 6.5 pounds of seed
- **Germination Blanket**, 3 rolls (4 by 112.5 feet)

Holland Maze Step-By-Step

Let's Start

Want to create the Holland Maze? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot
- Create Mounds + Mulch Pathways
- Dig Rain Garden

Volunteer Opportunities:

- Disconnect Your Downspout
- Plant Perennials + Bulbs
- Sow Poppies
- Grass Pathways
- Maintain Your Lot

Prepare Your Lot

The Holland Maze is one of the more complex lot designs in the Field Guide.

It is recommended that you hire a professional for these steps: Prepare Your Lot, Create Mounds + Mulch Pathways, and Dig Rain Garden.

If you decide to construct this lot design without the recommended assistance of a professional, the Field Guide has provided guiding principles below to help assist you with the installation of the lot design.

This lot design utilizes a full 30 by 100 foot single lot. For greater impact, the Field Guide recommends implementing the design on multiple lots.

Till the existing soil six inches deep to loosen the ground. Once the area is ready for construction, use marking paint and a tape measure to map out the size, shape, and dimensions of the Holland Maze design.

Create Mounds + Mulch Pathways

To create mulch pathways, excavate four inches of soil. Pathways are a combination of one foot and two foot widths of varying lengths. **Add three inches (2.5 cubic yards) of wood chips or mulch to the excavated mulch pathways.** The mulch pathways are designed for easy access to the plant beds for weeding and stormwater collection.

Use excavated soil to build mounds up to a maximum height of six inches. The six inches of mounded earth will form six foot wide planting beds.

Holland Maze Step-By-Step

○ Dig Rain Garden

Once the area is ready for construction, dig out one foot within the rain garden area and place removed soil on adjacent mounds. The rain garden is approximately 150 square feet.

A rain garden only works if water is directed into it. **The Field Guide recommends constructing your rain garden near downspouts from roofs of houses or garages or near other hard surfaces such as driveways or patios.** Ensure water flows from these surfaces into your rain garden.

Your rain garden should be one square foot for every ten square feet of stormwater area directed into your rain garden. If you are unable to direct water into the rain garden area, don't worry! The garden will still provide habitat to butterflies and aesthetic value as a small garden.

After removing the soil, check that the bottom of the rain garden is level. An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.

After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches to loosen up any compaction.

Add three inches (1.5 cubic yards) of rain garden planting soil to your rain garden and top with three inches (1.5 cubic yards) of wood chips or mulch after planting. Adding wood chips or mulch will help suppress weeds.

Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter. Mix together and place in rain garden.

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to the [DWSD's How to Disconnect a Downspout](#) document.



Don't worry if you are unable to direct water into the rain garden area. The garden will still provide habitat to butterflies and aesthetic value as a small garden.

Holland Maze Step-By-Step

○ Plant Perennials + Bulbs

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

Add a small handful of pine bark, bone meal or organic food to the soil while planting lavender cultivars and tulips. This will give perennials and bulbs a nutrient boost.

Place plants and bulbs in the desired location, then remove plastic pots, loosen roots, and plant. Bulbs should be planted between perennials.

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

○ Sow Poppies

Soil should already be loosened and prepared for seeding after tilling and sculpting the mounds. **If the soil is compacted, rake the mounds - this will allow for easier seed germination and better water infiltration.**

Seeding should take place in either spring (mid-May to mid-June) or fall (mid-October to end of November). There are multiple suppliers of poppy seed mixes suitable for the Holland Maze design. American Meadow's California Poppy Seeds Splendid Mix is one recommended example.

American Meadow suggests 0.5 pounds of California Poppy Seeds Splendid Mix per 1,000 square feet. **The Field Guide recommends one pound of California Poppy Seeds Splendid Mix for all perennial beds in the lot design.**

Spread seeds across all perennial beds. You can do this by hand or with a hand-cranked whirlwind seeder. It is likely that you will need to do this several times over the bed. Gently water seedlings daily until they are four to six inches in height. **Poppies should grow between perennials and add color and texture to your garden. Poppies are best seeded after the perennials have been planted when the beds require no additional construction.**

○ Grass Pathways

Turf pathways are best seeded after all work and clean up has taken place on the lot. The Field Guide recommends a fescue seed mix for a low-maintenance lawn alternative. 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). Seed mix should be applied to damp lot.

Sow seeds by using a seed spreader or by hand across the grass pathways. You may need to do this several times to get even coverage. The Field Guide recommends a seed rate of five pounds per 1,000 square feet. **If you follow the Holland Maze lot design, you will need approximately 6.5 pounds of fescue seed mix for the grass pathways (1,278 square feet).**

Do not sprinkle seeds on planting mounds or on mulch beds. 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, including Detroit Farm and Garden. **A 30 by 100 foot lot will require three 4 by 112.5 feet single net germination blankets.**

Gently water seedlings daily until they are four to six inches in height. Once 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.

Holland Maze Step-By-Step

○ Maintain Your Lot Design

Plants require care and maintenance to thrive. **Water and weed plants regularly, especially during the first few years.**

As mulch pathways biodegrade into soil, place the newly created soil onto the mounds. This new soil will be rich in nutrients and a welcome food source for established plants. Add new mulch to pathways and continue the process throughout garden's life span.

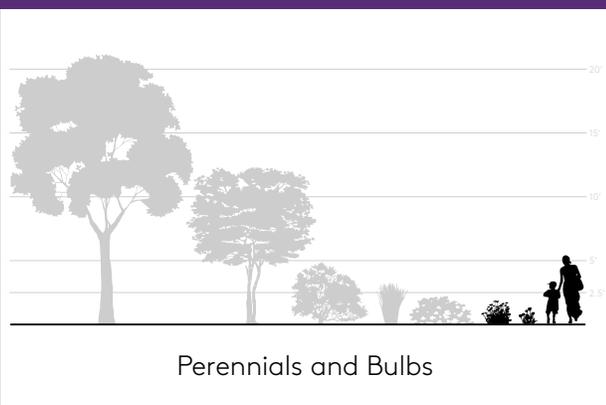
Low-maintenance fescue mix should be watered daily until seedlings are four to six inches in height. Once established, grass will not require supplemental watering except during unusually dry periods.

Rain gardens are a work in progress. Bulbs and perennials may need to be replaced to keep the garden dynamic and playful. Be creative and make it your own!

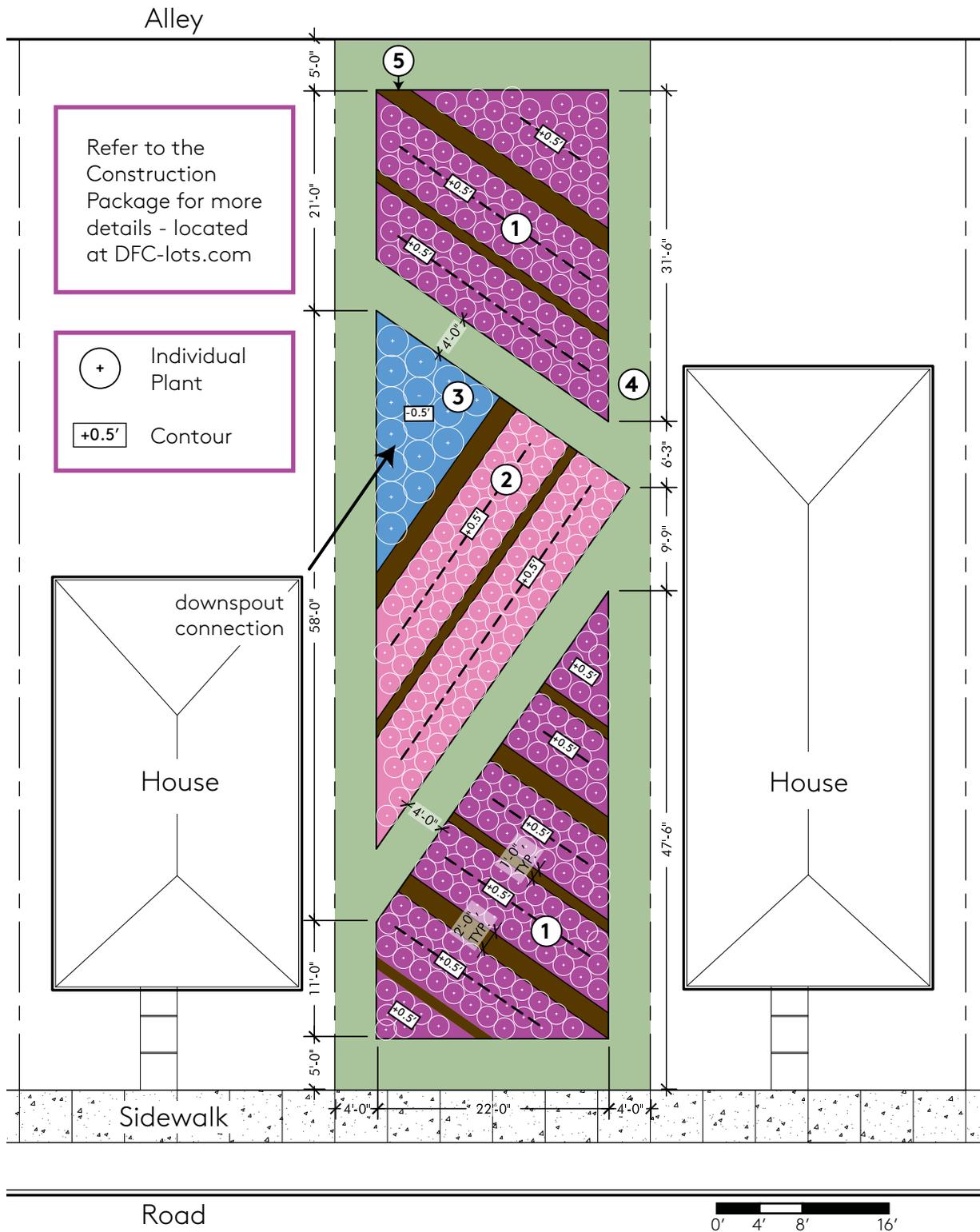


Visit the Resources page on the Field Guide's web site (DFC-lots.com) to discover other vendors and places to purchase plants.

Average Height of Plants



Holland Maze Lot Design



- 1
 Planted Mound (Lavender & Tulips)
- 2
 Planted Mound (Geraniums & Poppies)
- 3
 Rain Garden
- 5
 Mulch Pathway
- 4
 Grass or Optional Groundcover

Planting: Full Sun to Part Sun



Violet Intrigue Lavender¹
Lavendula angustifolia
 'Violet Intrigue'
 24" Height x 18" Width
 Blooms July - August
 Fragrant Flowers
Quantity: 69 pots



English Lavender²
Lavendula angustifolia
 'Hidcote'
 24" Height x 18" Width
 Blooms July - August
 Fragrant Flowers
Quantity: 69 pots



Giant Hyssop³
Agastache 'Blue Fortune'
 24" Height x 18" Width
 Blooms July - September
 Fragrant Flowers
Quantity: 70 pots



Mixed Tulips⁴
 14" Height x 8" Width
 Blooms April - May
 Avoid Planting in Wet Soil Conditions
Quantity: 520 bulbs



Rozanne Geranium⁵
Geranium 'Rozanne'
 18" Height x 18" Width
 Blooms May - July
Quantity: 30 pots



Cranesbill Geranium⁶
Geranium sanguineum
 18" Height x 18" Width
 Blooms May - July
Quantity: 30 pots



Purple Cranesbill⁷
*Geranium magnificum**
 18" Height x 18" Width,
 Blooms May - July
Quantity: 30 pots



Mixed Poppies⁸
 18" Height x 12" Width
 Blooms May - June
Quantity: 1 lb. of seed



Blue Chip Jr. Butterfly Bush⁹
Buddleia davidii 'Blue Chip Jr.'
 18" Height x 18" Width
 Blooms June - August
 Attractive to Butterflies
Quantity: 16 pots

Plant Sizes



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



Bulbs: Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.



Seeds: Mixed poppies can be purchased in seed form.



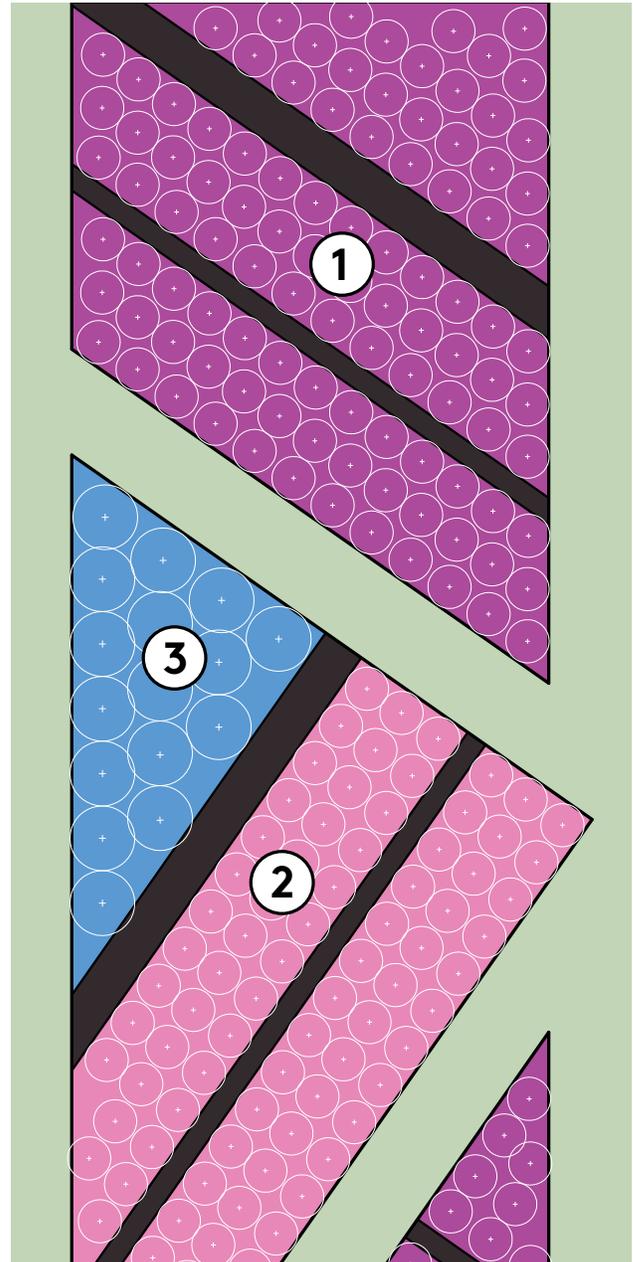
The larger the pot, the greater the impact your design will have when first installed.

Image Source: 1) Lavender Blue, "Limbo Poet Having a Break for a While." 07 July 2007 via Flickr, CC BY-NC 2.0; 2) Peter Reed, "Lavender." 02 July 2006 via Flickr, CC BY-NC 2.0; 3) "—char—", "Bumblebee back." 18 July 2008 via Flickr, CC BY-NC 2.0; 4) MookieLuv, "Mixed rows of tulips." 18 April 2010 via Flickr, CC BY-NC 2.0; 5) "Mwms1916", "'Rozanne' geranium blooms." 21 June 2012 via Flickr, CC BY-NC 2.0; 6) Tapio Kaisla, "Wood Cranesbill (Geranium Sylvaticum)." 18 June 2009 via Flickr, CC BY-NC-ND 2.0 UK; 7) "Color Line", "Rosestorkneeb - Geranium magnificum No 2." 21 June 2005 via Flickr, CC BY-NC 2.0; 8) Becca Taylor, "Mixed Poppies." 07 June 2005 via Flickr, CC BY-NC 2.0; 9) Ptelea "Buddleja davidii 'Dart's Purple Rain'" 28 July 2012 via Wikimedia, CC BY-SA 3.0

Planting: Full Sun to Part Sun

Key

- 1** **Lavender (Violet Intrigue & English), Giant Hyssop, & Mixed Tulips** (Space lavender approximately two feet apart and mix evenly. Space tulips evenly between Lavender.)
- 2** **Geranium (Rozanne & Cranesbill) & Poppies** (Space geraniums approximately two feet apart and mix evenly. Sprinkle poppies over perennial bed after geraniums have been planted.)
- 3** **Blue Chip Jr. Butterfly Bush** (Space approximately three feet apart and mix evenly.)



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Still unsure of where to start?

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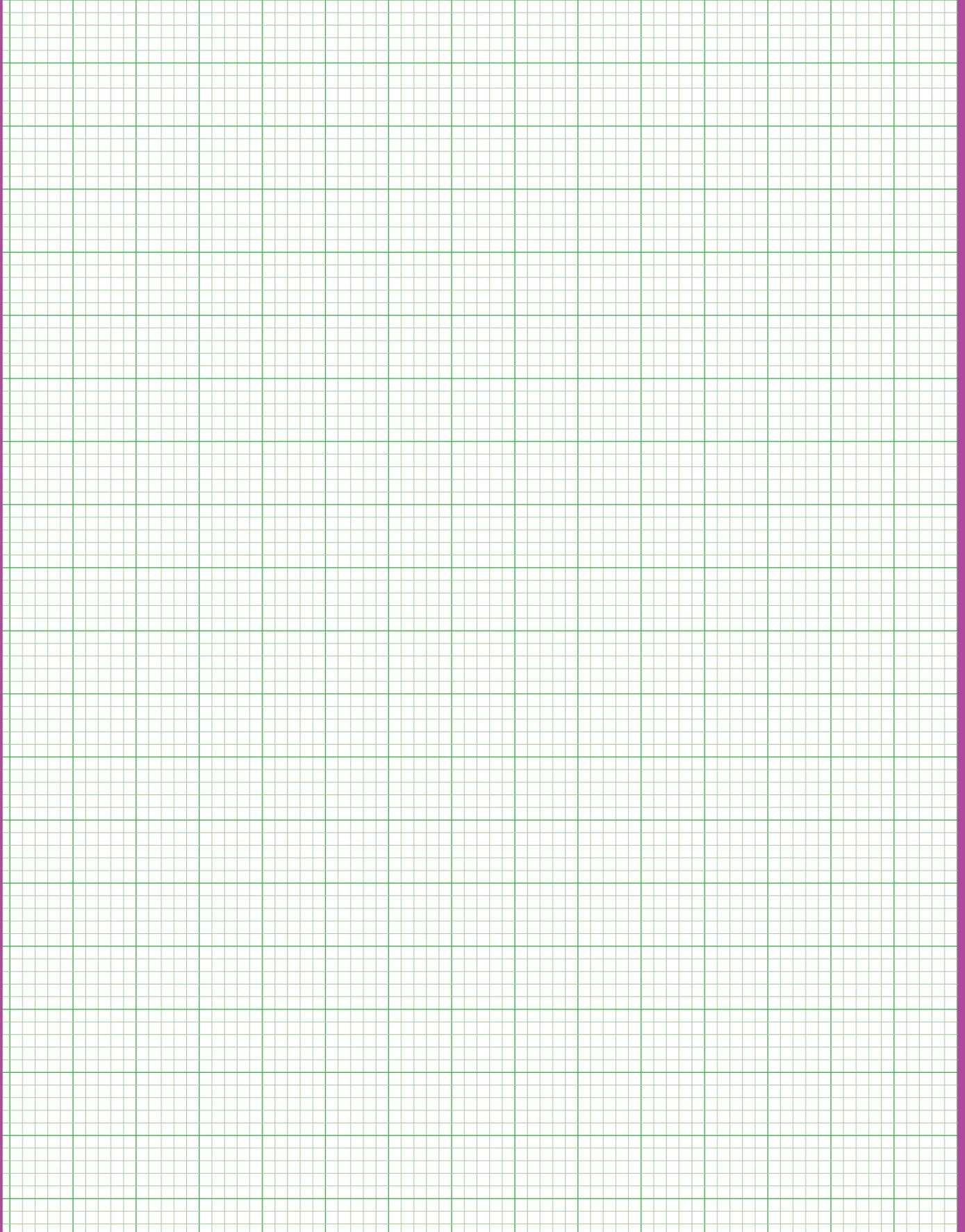
Helpful Facts

- Tulips still grow after they are cut and continue to bloom for 3 to 7 days in a vase.
- There are currently about 150 species of tulip bulbs with a total of 3,000 different varieties; **however, not all tulips will grow in Michigan.** Make sure you speak to a professional before purchasing tulips for your lot design.
- The recommended plants for this lot design have been selected for beauty, habitat creation, and local availability.
- Lavender can be harvested for oil.
- Rain gardens capture, hold, and release stormwater gradually back into the soil.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out.
- Weed weekly or as needed.
- Sprinkle a handful of pine bark, bone meal, or organic bulb food in hole with tulips for added nutrients.

Draw Your Lot





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A FIELD GUIDE

**Visit [DFC-lots.com](https://dfc-lots.com)
#DFClots**

Image Source: Peter Toshiro, "At the Park: Tulip Garden." 10 April 2011 via Flickr, All Rights Reserved.

Volunteer

Professional

Volunteer + Professional

Infiltrator

Image Source: Dmitry Marochko, "Birch Grove." 31 May 2009 via Flickr, CC BY-NC-SA 2.0





The Infilltrator provides a unique ‘fill’ amenity within the footprint of a recently demolished house — a luscious green rain garden that can manage stormwater from the roofs of up to two neighboring houses.

This lot design incorporates the City of Detroit’s alternative fill practices as the drainage base for a new type of drainage system. The alternative fill consists of concrete foundations, walls, etc. excavated from recently demolished house and crushed in place. The Infilltrator takes advantage of the porous space existing between the large aggregate by creating a rain garden. This lot design has a sun and shade planting option.

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

What is the lot design likely to cost?

The estimated cost of the Infilltrator is over \$5,500 and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for earthworks, lot preparation, and installation of the basement fill. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

Two planting options are provided and both will require a medium level of maintenance to thrive. Refer to maintenance list on page 9 for each planting option maintenance requirements.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family or neighbors, would like to construct the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not have the required support or feel unable to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below is for volunteer opportunities listed in step-by-step section only. While people tackle projects differently, the Field Guide estimates installation time of the lot design to be one to two full weekends with volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least five to eight healthy adults or youth to complete this lot design. The Field Guide assumes that the lot is ‘construction ready,’ and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lots in Full Sun to Shade			

Infilltrator

Examples of Shade Plantings

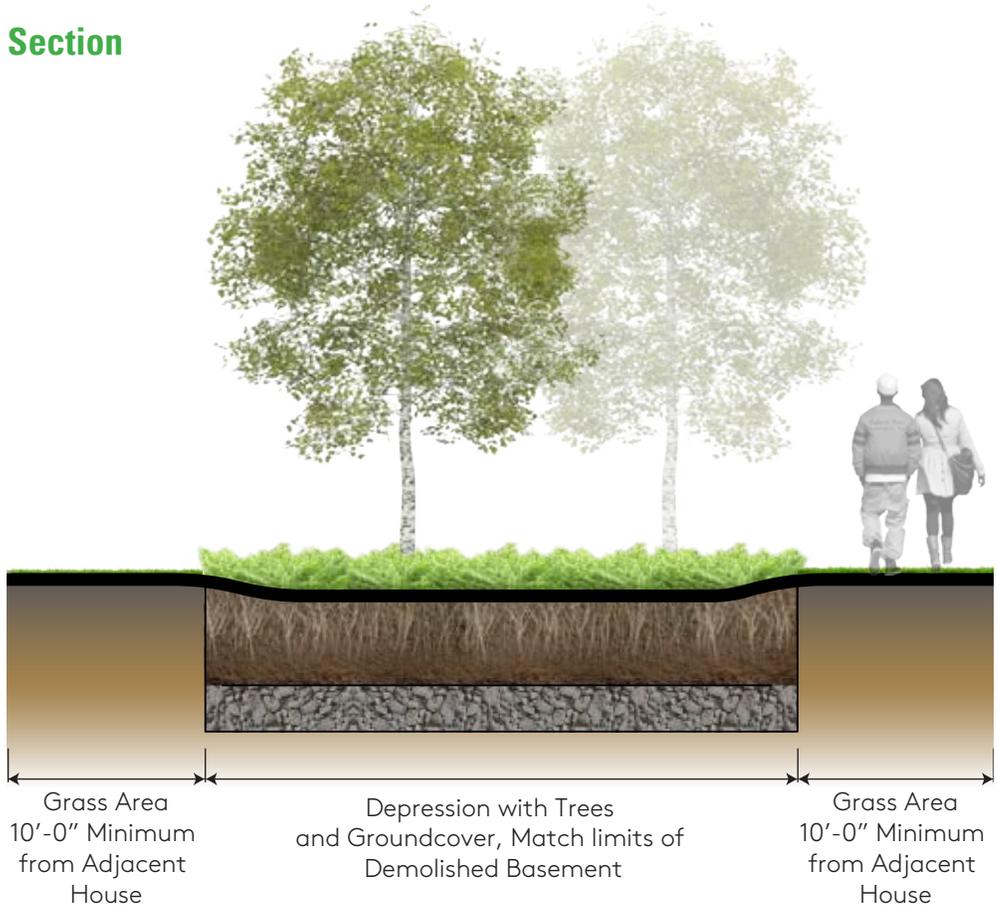


1 - Birch Grove

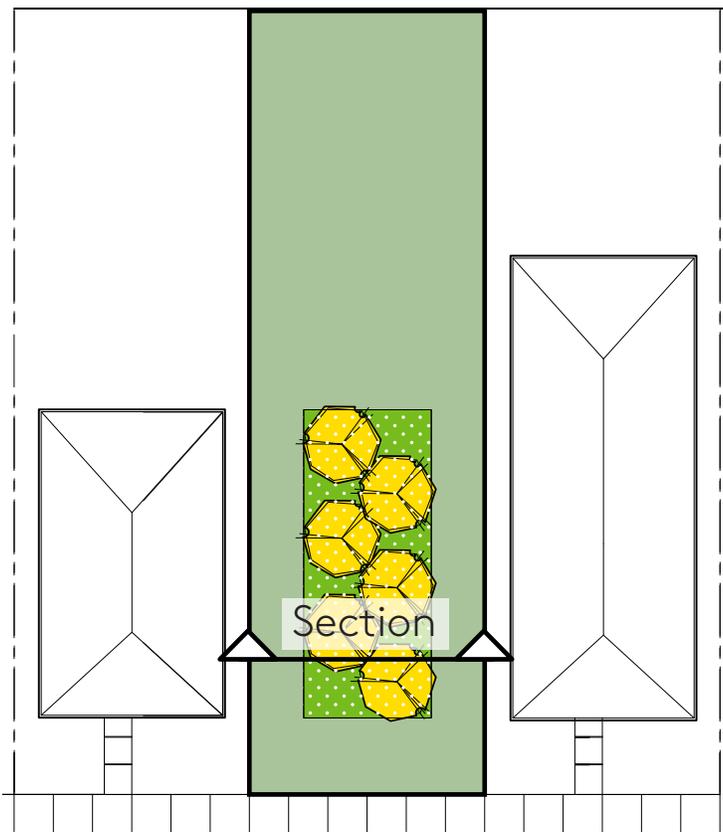


2 - Forget Me Not

Section



Where Do I Grow?



The Infilltrator is best constructed on a single lot and ideal for lots with recently demolished houses.

- Groundcover
- Tree
- Grass or Optional Groundcover

Before You Start

'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
- **Hacksaw and Screwdriver**
- **Truck,** for hauling imported soil, geofabric and City of Detroit Approved Alternative Fill
- **Ball Cart,** for moving heavy trees

Potential Water Sources

- Garden Hose with potential extension hose
- Sprinkler
- Rain Barrel in addition to other water source
- Downspout Disconnect (shown in lot design)

Field Guide Resources

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

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

Materials List

Materials

- **Geofabric,** amount to be determined by basement size
- **Organic Drainage Soil,** amount to be determined by basement size
- **City of Detroit Approved Alternative Fill,** 1 foot depth, amount to be determined by basement size
- **Mulch or Wood Chips,** Three inch depth of mulch required, amount to be determined by basement size
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting Option 1: Shade

- **Northern Maidenhair Fern,** 750 plugs
- **Lady Fern,** 750 plugs
- **Jack Frost Bugloss,** 750 plugs
- **Variegated Bugloss,** 750 plugs
- **Birch Trees,** 6 pots or balled and burlapped

Planting Option 2: Sun

- **Septic Field Wildflower Mix,** 1 pound of seed
- **Germination Blanket,** 1 roll (8 by 112.5 feet)

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix,** 11 to 13 pounds of seed
- **Germination Blanket,** 3 roll (8 by 112.5 feet)

Infiltrator Step-By-Step

Let's Start

Want to create the Infiltrator? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

 Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

Prepare Your Lot

Infill Basement

Volunteer Opportunities:

**Planting Option 1 (Shade):
Plant Trees**

**Planting Option 1 (Shade):
Plant Perennials**

**Planting Option 2 (Sun):
Sow Meadow**

Disconnect Your Downspout

Maintain Your Lot Design

Sow Remaining Lot

 **This lot design provides two planting options depending on whether your lot is in sun or shade.**

Prepare Your Lot

The Infiltrator is one of the more complex lot designs within the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot and Infill Basement.

If you decide to construct this lot design without the recommended assistance of a professional, the Field Guide has provided guiding principles below to help assist you with the installation of the lot design.

- The Field Guide recommends creating this design on a lot where a house has recently been demolished and a basement hole is present and unfilled.
- The basement footprint is to be utilized as the size, shape, and dimensions of the Infiltrator lot design. The Infiltrator can be created without an existing or open basement but will require soil excavation.
- The Infiltrator should be (minimum) ten feet from any adjacent houses, five feet from adjacent property lines and at least five feet from the sidewalk.
- You do not need to kill grass in an open basement as earth sculpting and imported planting soil will suppress existing weeds.
- Soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration.
- The Infiltrator can function as a rain garden or as a unique garden without the collection of stormwater. If the Infiltrator is to function as a rain garden, there should be (minimum) of one square foot for every ten square feet of stormwater area directed into your rain garden. **The Infiltrator size shown on the included plan (640 square feet) can easily handle stormwater for two standard single family house sizes in Detroit. This rain garden is also large enough to collect stormwater from some commercial properties.**

Infilltrator Step-By-Step

○ Infill Basement

The following are a few guiding principles for importing and backfilling an open basement hole. The Field Guide recommends hiring a professional to complete the earthworks portion of this lot design.

- Demolished basement depths can vary, and no two sites are the same.
 - Calculate the length, height, and depth of basement to determine the amount of fill required.
 - **Place geofabric on bottom and sides of basement and fill one foot depth (or required depth for basement) with City of Detroit approved alternative fill (crushed foundation) on top of geofabric.**
 - City of Detroit approved alternative fill must be at least three feet below grade. Crushed foundation should not be larger than eight inches.
 - Once geofabric is in place, wrap geofabric around top of alternative fill (like a burrito).
 - Fill remainder of the hole with imported organic drainage soil or until it is filled six inches below adjacent grade for drainage or rain garden.
-

○ Planting Option 1 (Shade): Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred.

Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. Keep wood chips or mulch a few inches away from tree trunks.

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

Infiltrator Step-By-Step

○ **Planting Option 1 (Shade): Plant Perennials**

Partly sunny to shade plantings are recommended for this Infiltrator shade option.

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

The Field Guide recommends adding three inches of wood chips or mulch to the Infiltrator area. The amount of wood chips or mulch should be determined by the basement size. Adding wood chips or mulch will help suppress weeds.

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

○ **Planting Option 2 (Sun): Sow Basement Meadow**

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Nativescape's Septic Field seed mix is a good option for the Infiltrator; similar mixes are available from other suppliers. No cover crop is required for the seed mix.

Although the seed mix is not being used over a septic field, the Septic Field Seed Mix is ideal for the basement meadow due to its great drainage capabilities.

Nativescape suggests one pound of Septic Field Seed Mix per 1,000 square feet. **The Field Guide recommends one pound of Septic Field Seed Mix for the Infiltrator area (16 by 40 feet).**

Once seeds have been mixed, spread seed across the Infiltrator area. You can do this by hand or with a hand-cranked whirlwind seeder. You will need to do this several times to get even coverage.

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 your seed establishes by keeping seeds from blowing away and protecting them from birds. **One 8 by 112.5 foot single net germination blanket will cover the meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ **Disconnect Your Downspout**

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.

Infiltrator Step-By-Step

- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to [DWSD's How to Disconnect a Downspout](#) document.

○ Maintain Your Lot Design

Plants require care and maintenance to thrive. Both planting options (shade or sun) will require weeding and watering.

Planting Option 1 (Shade): Trees must be watered especially in the first year. Water weekly or as needed. **The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance.** The Greening of Detroit offers a great Citizen Forester program to interested residents.

Perennial plants will require watering and weeding until it becomes established.

Planting Option 2 (Sun): The meadow will require mowing in the first year. Cut your meadow back to four to six inches whenever it reaches above ten inches in height.

After the first year, it is recommended to continue weeding and to mow your meadow in late fall or early spring to keep the meadow at its best. It will take about three years for the meadow to fully establish.

Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional plants, plugs, or seed mixes. Be creative and make it your own!

Infiltrator Step-By-Step



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

Average Height of Plants



Small Trees, Perennials, and Bulbs

○ Sow Remaining 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 Infiltrator lot design you will need approximately 11 to 13 pounds of fescue seed mix for the remaining lot (2,360 square feet) and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

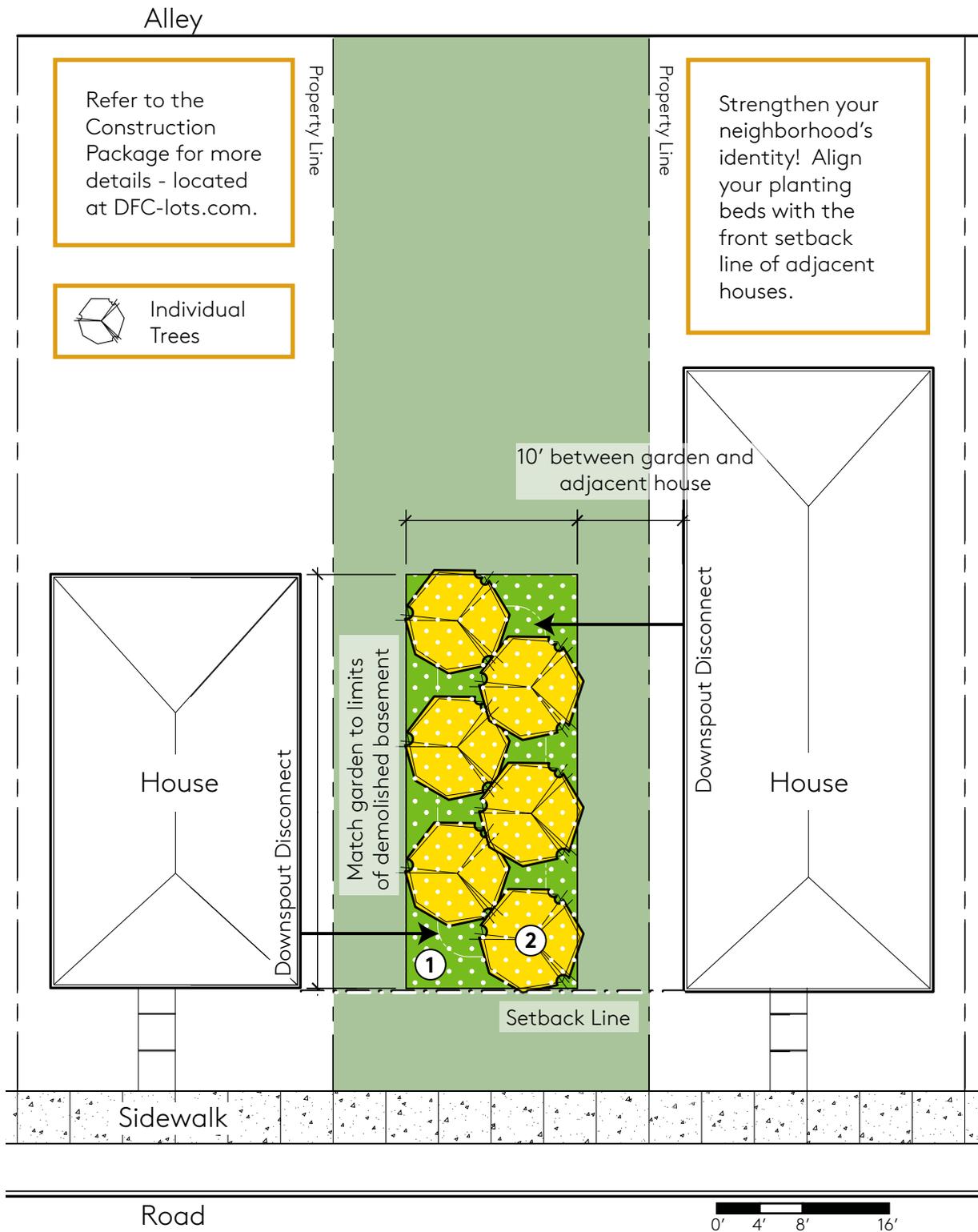
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Infiltrator Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

Individual Trees

Strengthen your neighborhood's identity! Align your planting beds with the front setback line of adjacent houses.

10' between garden and adjacent house

Match garden to limits of demolished basement

1 Groundcover (Ferns and Bugloss)

2 Tree (Birch)

3 Grass or Optional Groundcover

Planting Option 1: Part Sun to Shade



Northern Maidenhair Fern¹
Adiantum pedatum
 18" Height x 24" Width
 Deciduous Fern
Quantity: 750 plugs



Lady Fern²
Athyrium filix-femina
 18" Height x 24" Width
 Deciduous Fern
Quantity: 750 plugs



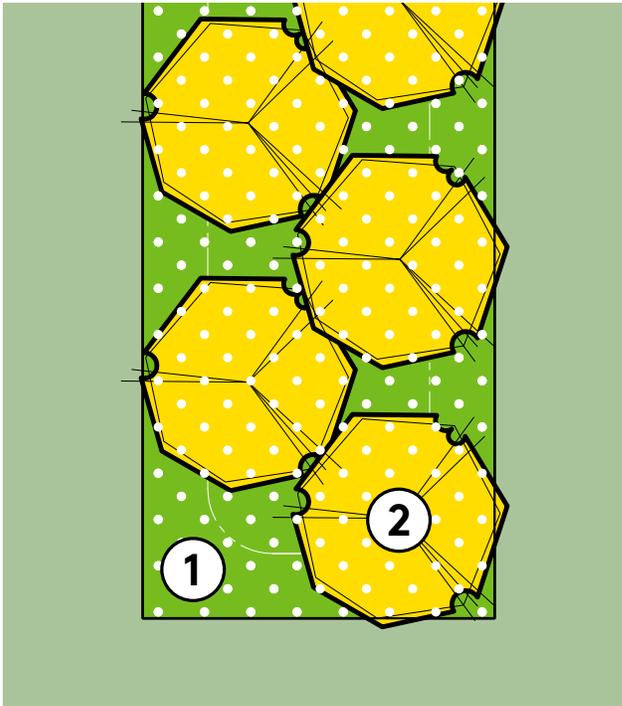
Jack Frost Bugloss³
Brunnera macrophylla
 'Jack Frost'
 18" Height x 18" Width
 Blooms May - June
Quantity: 750 plugs



Variegated Bugloss⁴
Brunnera macrophylla
 18" Height x 18" Width
 Blooms May - June
Quantity: 750 plugs



Paper Birch⁵
Betula papyrifera
 50' Height x 30' Width
Quantity: 6 plots or B & B



Key

- 1
Northern Maidenhair Ferns, Lady Fern, Jack Frost Bugloss & Variegated Bugloss
 (Space approximately five per square feet and mix evenly.)
- 2
Paper Birch
 (Trees should be spaced approximately 10 to 15 feet apart.)

Plant Sizes

- Pots:** 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).
- Plugs:** Plants can be purchased in plug form or in pots. Plant one plug per square foot.

Image Source: 1) Zen Sutherland, "Northern Maidenhair Fern." 04 June 2005 via Flickr, CC BY-NC-SA 2.0; 2) Brewbooks, "Athyrium distentifolium americanum." 09 September 2012 via Flickr, CC BY-SA 2.0; 3) A. Barra, "Brunnera Macrophylla, 'Jack Frost.'" May 2008 via Wikimedia, Creative Commons Attribution-Share Alike 4.0 International 3.0 Unported, 2.5, 2.0, 1.0 Generic; 4) Vauban, "Brunnera macrophylla." 11 April 2006 via Wikimedia, Public Domain; 5) Erin Malone, "Nct_43." 06 October 2012 via Flickr, CC BY-NC- SA 2.0.

Planting Option 2: Full Sun to Part Sun

Septic Field Wildflower Mix

One pound of Septic Field Seed Mix is recommended for the Infilltrator lot design.

You can buy these seeds premixed at Nativescape.

Temporary Grasses (75% of Mix)

Seed Oats, *Avena sativa*

Annual Rye, *Lolium multiflorum*

Native Grasses (20% of Mix)

Sideoats Grama, *Bouteloua curtipendula*

Junegrass, *Koeleria macrantha*

Little Bluestem, *Schizachyrium scoparium*

Sand Dropseed, *Sporobolus cryptandrus*

Prairie Dropseed, *Sporobolus heterolepis*

Native Wildflowers (5% of Mix)

Butterfly Weed, *Asclepias tuberosa*

Wormwood, *Artemisia campestris*

Lanceleaf Coreopsis, *Coreopsis lanceolata*

Bee Balm, *Monarda fistulosa*

Dotted Mint, *Monarda punctata*

Roundhead Bushclover, *Lespedeza capitata*

Rough Blazing Star, *Liatis aspera*

Wild Lupine, *Lupinus perennis*

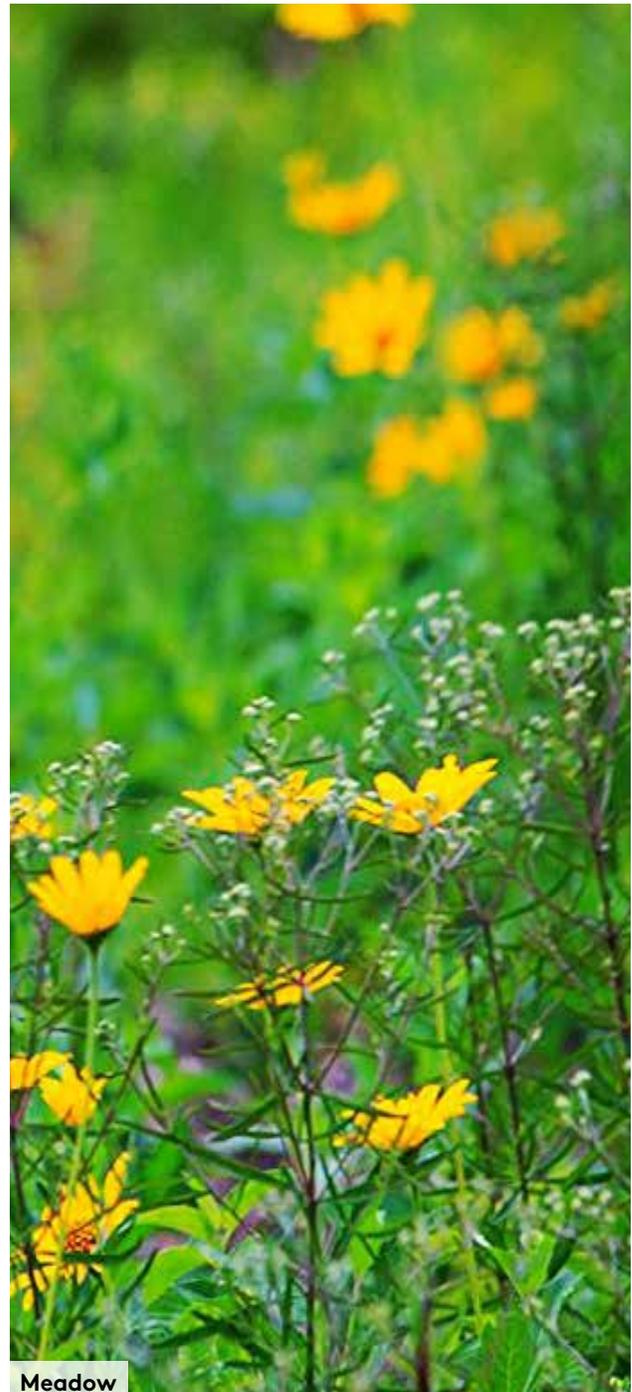
White Beard Tongue, *Penstemon digitalis*

Black-Eye Susan, *Rudbeckia hirta*

Stiff Goldenrod, *Solidago rigida*

Showy Goldenrod, *Solidago speciosa*

Hoary Vervain, *Verbena stricta*



Meadow

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

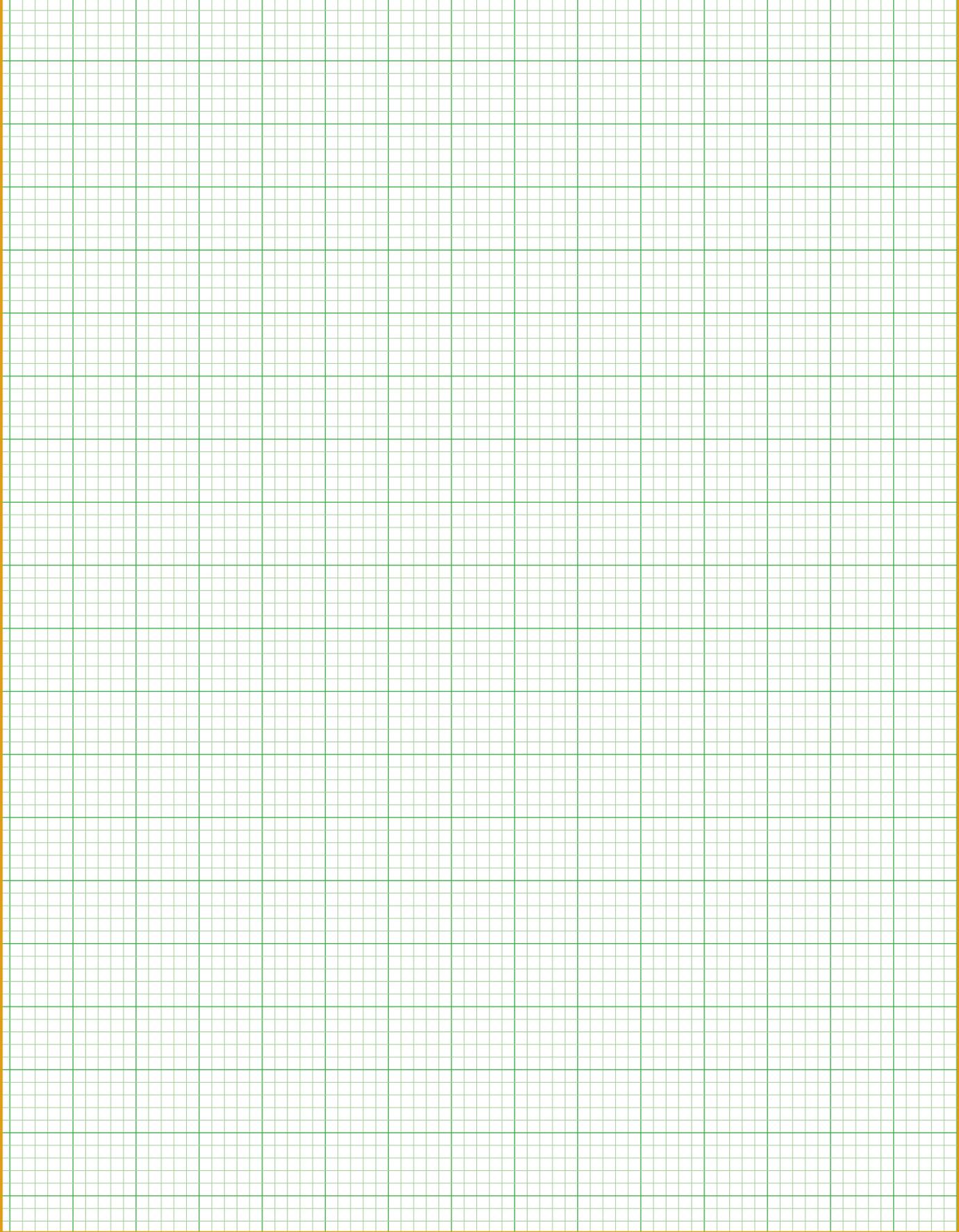
Helpful Facts

- Birch trees can grow to 40 to 50 feet in height.
- Birch trees were used by Native Americans to make birch bark canoes.
- Lanceleaf Coreopsis is a Michigan native wildflower.
- Although they look like normal plants, ferns reproduce using spores!
- Septic Wildflower Mix can be used as an alternative seed mix for other lot designs. (Remember that the quantity of seed you will need changes with the size of the area you are planting!)

Planting Tips

- Inspect trees before purchasing to make sure they are healthy and well-formed. This will help you select trees that are likely to survive.
- Do not plant trees under overhead wires.
- Water trees during planting and as needed.
- If mulching around trees, do not place too close (less than three inches) from tree trunk. This will help keep the tree free of disease.
- Birch trees have very shallow root systems, making them sensitive to heating of soil. Ferns and bugloss planting should help with this; however, be sure to monitor birch trees and water if it is a hot summer.
- Birch trees grow well in full or partial sunshine.

Draw Your Lot





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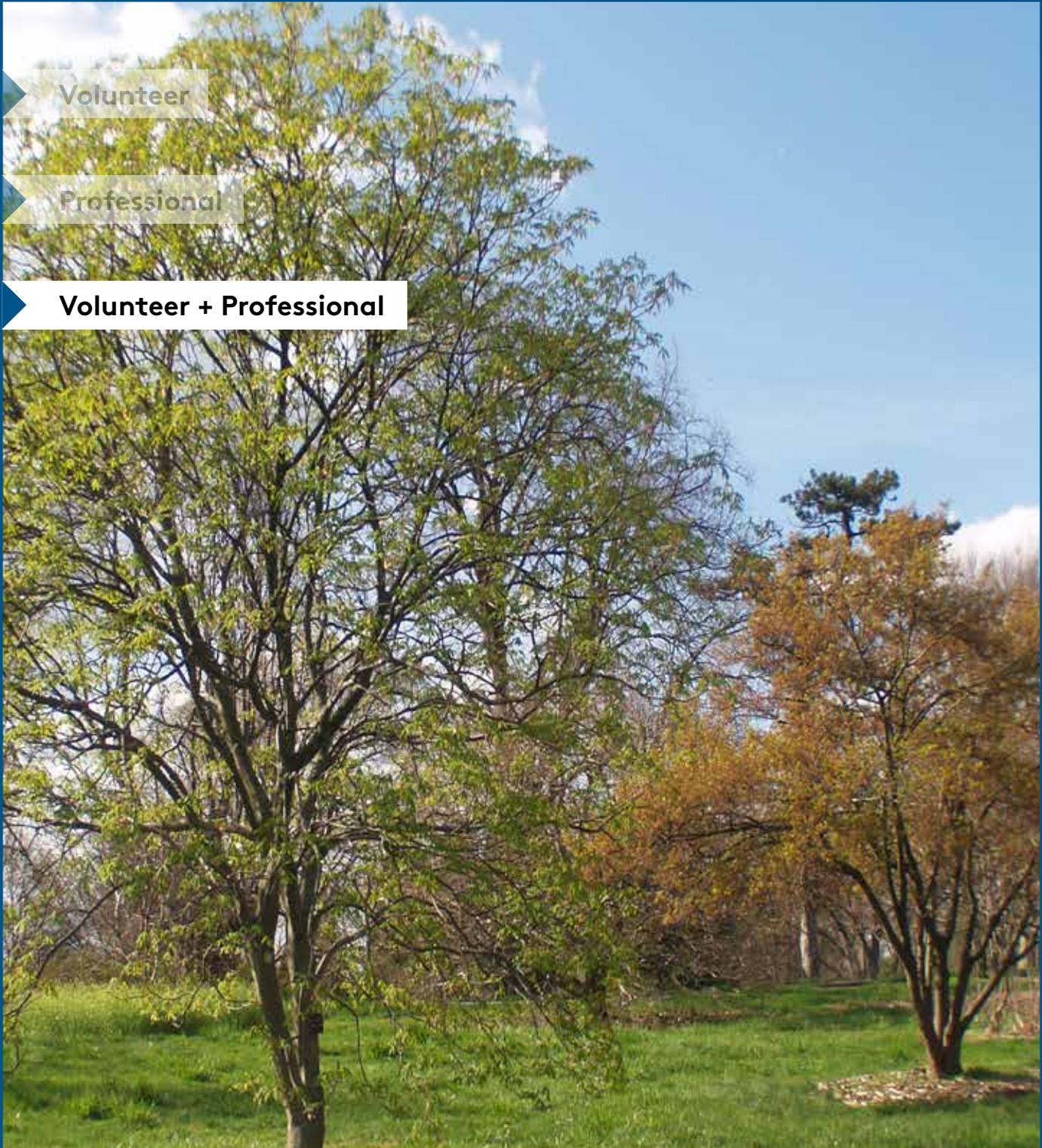
**Visit DFC-lots.com
#DFClots**

Image Source: Brewbooks, "Athyrium distentifolium americanum." 09 September 2012 via Flickr, CC BY- SA 2.0

Volunteer

Professional

Volunteer + Professional



Laundry to Landscape

Image Source: Maggie_and_her_camera, "Aesculus x pavia (Red Buckeye)." 14 April 2008 via Flickr CC BY-NC 2.0.



HELLO

MY NAME IS

Laundry to Landscape

The Laundry to Landscape lot design can save water and money with its graywater harvesting system.

This lot design requires you to work with an experienced professional to disconnect your washing machine wastewater, or 'graywater', and re-route the water to your garden through pipes and trenches. Instead of traveling underground through the City's hard pipes, the graywater can stay on site and irrigate the trees and plants on your lot.

Laundry to Landscape will save water while providing a beautiful landscape amenity.

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

What is the lot design likely to cost?

The estimated cost of the Laundry to Landscape is moderate (\$1,000 – \$2,500) and based on utilizing volunteer and professional labor, permit requirements, plumbing, and trees. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This is a low-maintenance lot design. Trees will be watered by grey water from the washing machine.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps of this lot design, unless you have experience with or a desire to learn about plumbing. The Field Guide identifies volunteer opportunities if you, with the help and support from friends, family or neighbors would like to construct the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps for this lot design. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the full project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below is for volunteer opportunities listed in step-by-step section only. While people tackle projects differently, the Field Guide estimates installation time of the lot design to be one to two full weekends with volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least eight healthy adults or youth to complete this lot design. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun to Part Sun (Next to Occupied House is Ideal)			

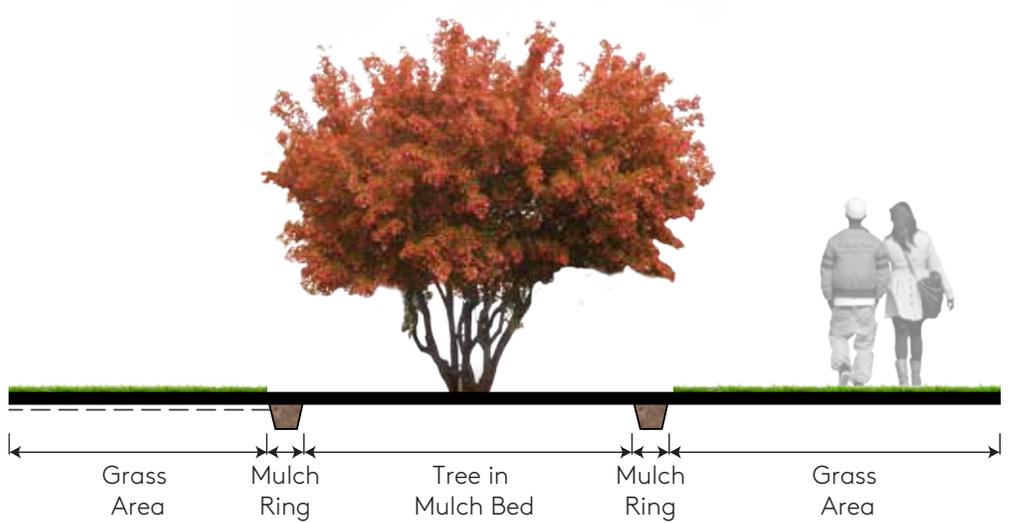
Laundry to Landscape

Examples of Trees with Mulch Rings

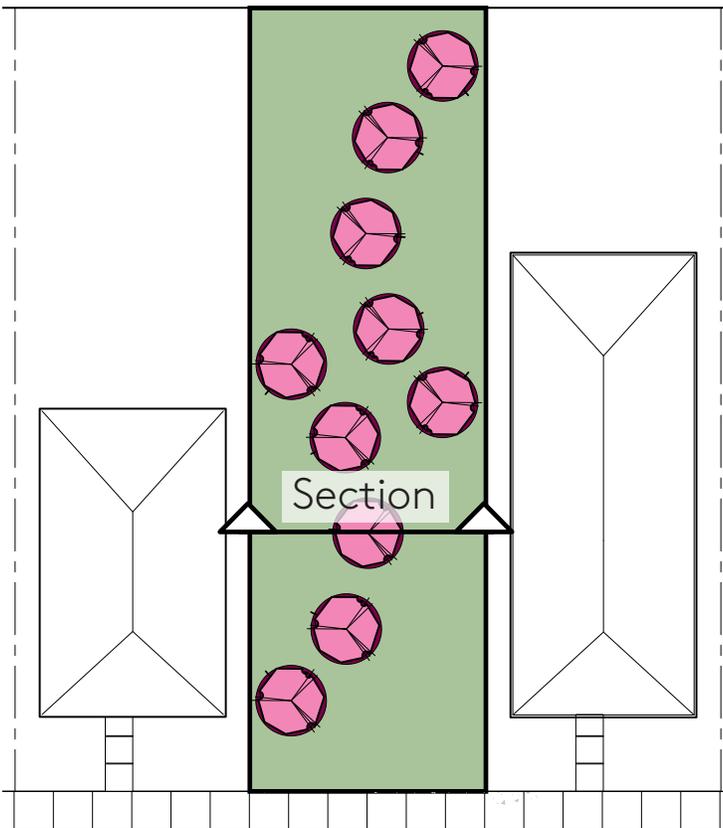


1 - Trees with Mulch Rings

Section



Where Do I Grow?



The Laundry to Landscape can be constructed on a single lot and can be utilized by one or two neighboring properties. Position near houses to reduce the length of irrigation piping required.

- Trees
- Mulch Bed
- Grass or Optional Groundcover

What Is Graywater?

Graywater is wastewater produced by household tasks, such as showering, bathing, running the sink to wash hands or dishes, and using the washing machine to do laundry.

This water contains soap but is otherwise clean. Most often this water flows into Detroit's sewerage system and is then treated at a wastewater treatment plant. The amount of water used for these tasks can add up quickly and can be expensive for the city to treat!

This lot design is engineered to utilize graywater as an irrigation source for the landscape. This will reduce the amount of wastewater the city treats, reduce the amount of potable water required for irrigation, and will keep your garden looking healthy.

You should consult the San Francisco Graywater Design Manual before installing this lot design.



1 - Irrigation Installation



2 - Graywater Garden

Additional Resources

There are additional ways to utilize graywater in your household and to reduce the amount of water you use. Check out some of these resources for more information.

**Washtenaw County Water
Quality Programs**

**City of Chicago Water
Reuse Handbook**

**California Department
of Water Resources Graywater Guide**

Before You Start

'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.

Laundry to Landscape Step-By-Step

Let's Start

Want to create the Laundry to Landscape? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

Check off tasks as you go along.

Guiding Principles

Professional Recommended:

Research + Prepare Your Lot

Volunteer Opportunities:

Plant Trees + Create Mulch Ring

Maintain Your Lot Design

Sow Remaining Lot

Research + Prepare Your Lot

Before beginning this lot design, carefully read the San Francisco Graywater Design Manual. The manual explains how to modify your household plumbing in a way that allows water from your washing machine to irrigate your outdoor landscape. [The San Francisco Graywater Design Manual](#) provides a shopping list and step-by-step instructions to creating a Laundry to Landscape lot design.

Not sure if Laundry to Landscape is the right lot design for you? Here are a few guiding principles to help you understand the project:

- Awareness and understanding of the location and proximity of your washing machine to the proposed Laundry to Landscape lot location is important. Ideally, the washing machine is located near an exterior wall since you will need to route your piping outdoors to the Laundry to Landscape lot site.

If the washing machine is on an interior wall, check to see if there is a crawlspace or basement where the pipe could be run outside.

If your washing machine is in your basement, you will likely require a pump.

If your washing machine is on the first floor, you can use its internal pump to move water up to 50 feet, but be careful! Overworking your washing machine's internal pump can damage your machine. Refer to the San Francisco Graywater Design Manual's section on pumped systems for more information.

- Make sure you locate all pipes, wires, and studs that may be located near your washing machine connection. Take care to avoid cutting any of these during the installation.

Laundry to Landscape Step-By-Step

- Check to be sure your landscape bed is low enough for water to flow into it **when connected**. If your washing machine and connection point are lower than your landscape bed, you will need to install an additional pump.
 - **Connecting your washing machine to your irrigation system is a great way to reuse water, but be sure to take careful inventory of what cleaning product you use so as not to harm your plants.** Certain soaps and bleaches will need to be substituted for more eco-friendly products. Do not construct this lot design if your washing machine is not operating properly.
 - **This lot design should be tailored to meet the needs of your household.** The number of washing machine cycles you complete on a single day should equal the number of mulch rings on your site. For example, if you wash five loads of laundry one day, you can irrigate five mulch rings.
 - **Decide on the tree arrangement on your lot. Existing trees can be integrated into this lot design, and the Field Guide plan is only one possibility. Be creative and make it your own!**
-

○ Plant Trees + Create Mulch Ring

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred.

Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and Burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. Keep wood chips or mulch a few inches away from tree trunks.

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

Laundry to Landscape Step-By-Step

○ Maintain Your Lot Design

Check irrigation components regularly to ensure they are working properly. As long as they are working properly, there will be no need for additional tree watering.

Trees require care and attention to thrive.

The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.

To maintain your system during the winter months, switch your valve to drain into the sewer.



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

Average Height of Plants



Large and Small Trees

○ Sow Remaining 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 Laundry to Landscape lot design you will need approximately 10 to 12 pounds of fescue seed mix for the remaining lot and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

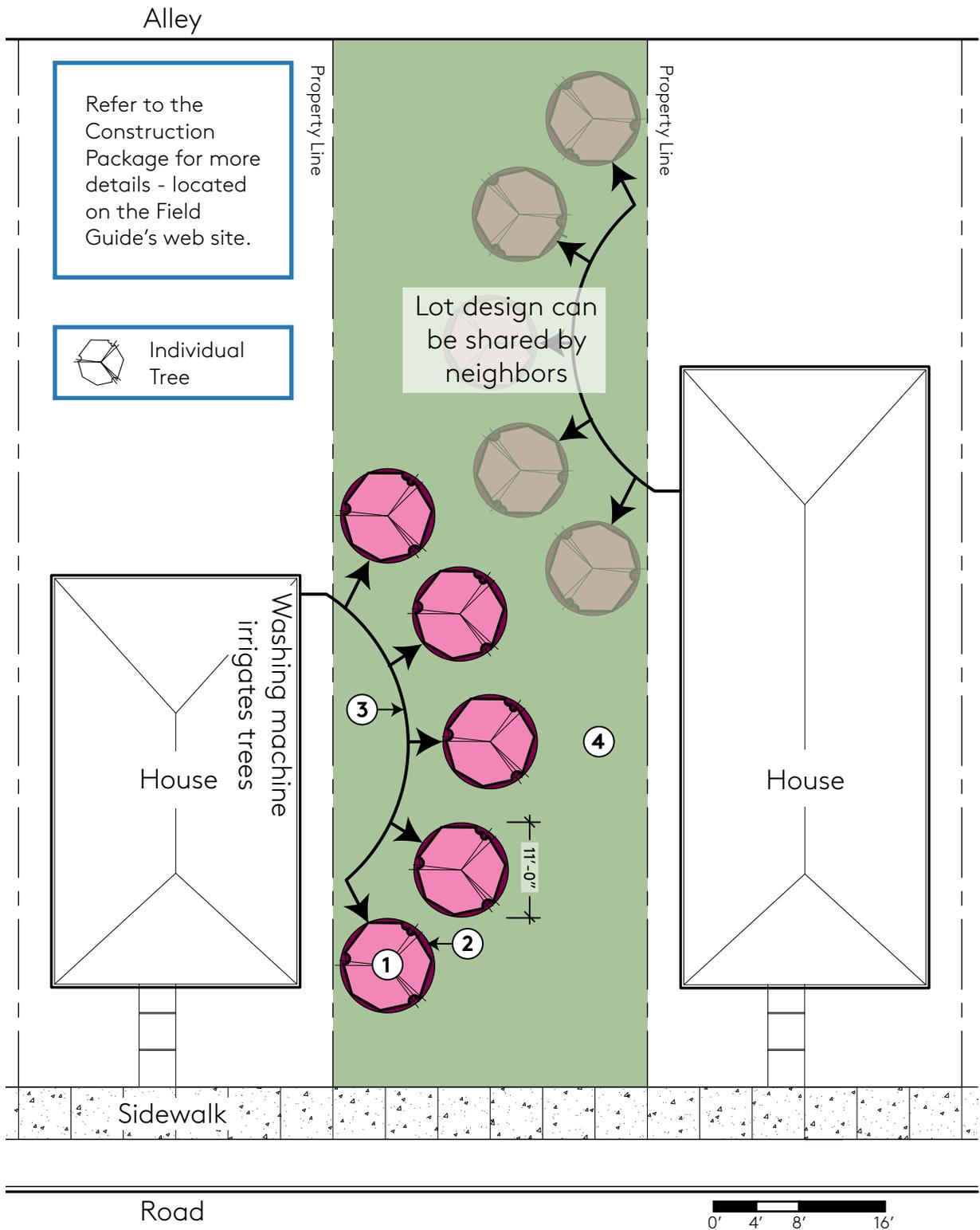
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Laundry to Landscape Lot Design

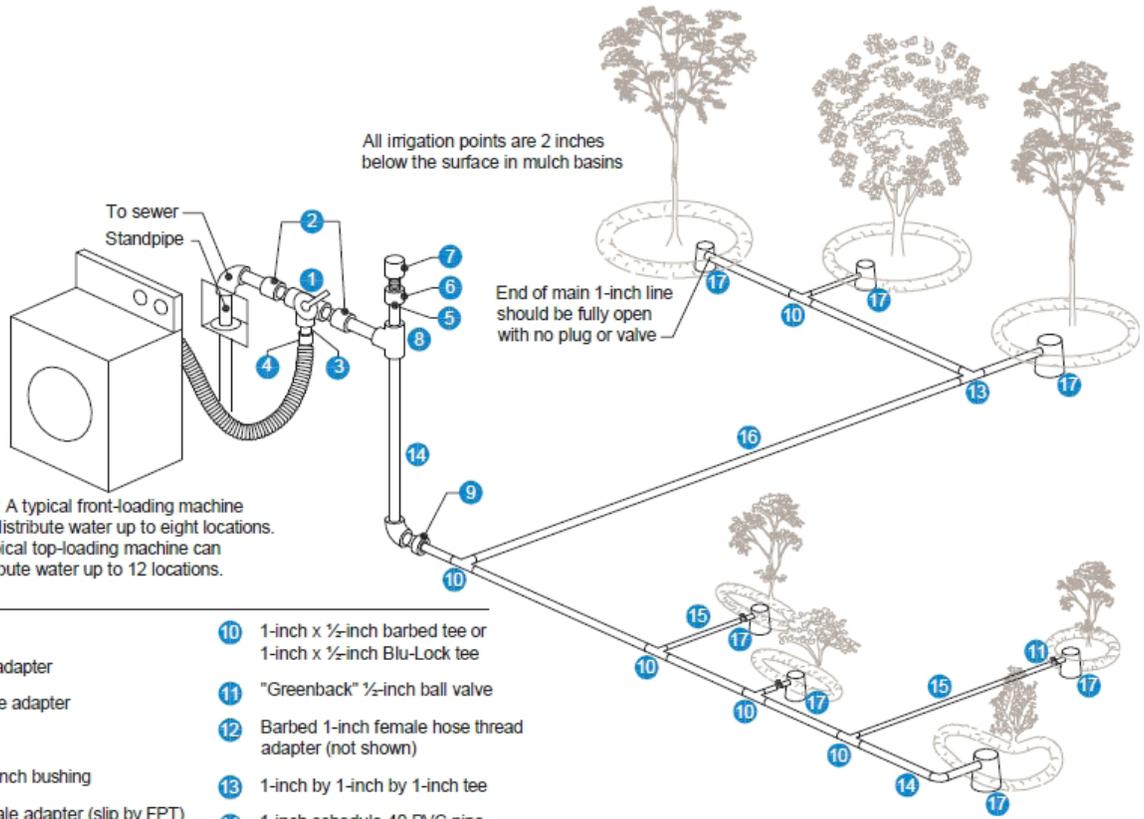


- 1 Tree
- 2 Mulch Ring
- 3 Irrigation Line, Connected to Washing Machine
- 4 Grass or Optional Groundcover

San Francisco Graywater Design Manual Diagram

Irrigation Hookup Diagram

This diagram, created by San Francisco Public Utilities Commission, shows the necessary hookups to create the irrigation component of this lot design.



Note: A typical front-loading machine can distribute water up to eight locations. A typical top-loading machine can distribute water up to 12 locations.

Legend

- | | |
|---|---|
| <ul style="list-style-type: none"> 1 3-way valve 2 PVC 1-inch male adapter 3 1-inch barbed male adapter 4 Hose clamp 5 PVC 1-inch x 1½-inch bushing 6 PVC 1½-inch female adapter (slip by FPT) 7 Auto vent (or air admittance valve) 8 1-inch PVC tee 9 1-inch barbed x slip adapter | <ul style="list-style-type: none"> 10 1-inch x ½-inch barbed tee or 1-inch x ½-inch Blu-Lock tee 11 "Greenback" ½-inch ball valve 12 Barbed 1-inch female hose thread adapter (not shown) 13 1-inch by 1-inch by 1-inch tee 14 1-inch schedule 40 PVC pipe 15 ½-inch poly tubing 16 1-inch HDPE tubing 17 Mulch shield or valve box |
|---|---|

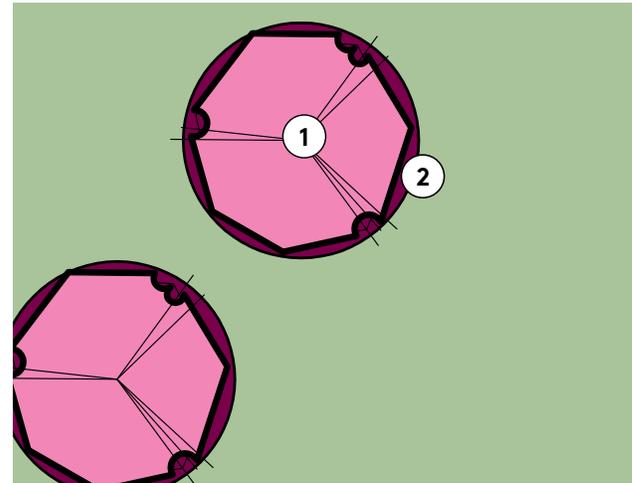
Planting: Full Sun to Part Sun



Red Buckeye¹
Aesculus pavia
 15' Height x 15' Width
 Blooms April - May
Quantity: pots or B & B



Autumn Brilliance Serviceberry²
Amelanchier x grandiflora
 20' Height x 20' Width
 Blooms April
Quantity: pots or B & B



Shiloh Splash River Birch³
Betula nigra 'Shiloh Splash'
 30' Height x 15' Width
 Blooms April - May
Quantity: pots or B & B



Pagoda Dogwood⁴
Cornus alternifolia
 15' Height x 20' Width
 Blooms April
Quantity: pots or B & B

Key

- 1
Trees: Red Buckeye, Autumn Brilliance Serviceberry, Shiloh Splash River Birch, Pagoda Dogwood, Sweet Gum, or Smoke Bush
- 2
Mulch Ring



Sweet Gum⁵
Liquidambar styraciflua
 70' Height x 50' Width
 Requires Moist Soil
Quantity: pots or B & B



Smoke Bush⁶
Cotinus coggygia (royal purple)
 10' Height x 10' Width,
 Excellent fall color
Quantity: pots or B & B

Plant Sizes

- Pots:** 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).



Tulip Tree⁷
Liriodendron tulipifera
 90' Height x 50' Width
 Blooms mid-Spring
Quantity: pots or B & B

!

For this lot design, residents can select a single species, a variety of species, or another species not shown here.

Image Source: 1) A. Barra, "Aesculus pavia 'Splendens'" May 2004 via Wikimedia CC BY 3.0; 2) Paul Woods, "Amelanchier in bloom 1." 13 April 2013 via Flickr, CC BY-NC-SA 2.0; 3) Sue Sweeny, "River Birch." 2005 via Wikimedia, CC BY-SA 3.0; 4) Rob Routledge, "Cornus Alternifolia." 04 June 2012 via Wikimedia, CC BY 3.0; 5) Steve Severinghaus, "Fall Sweet Gum Leaves." 14 November 2014 via Flickr, CC BY-NC-SA 2.0; 6) Tapir Girl, "Smoke Tree." 14 June 2007 via Flickr, CC BY-NC-SA 2.0; 7) David Andersen, "Tulip Heave II." 18 April 2010 via Flickr, CC BY-NC-SA 2.0

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.

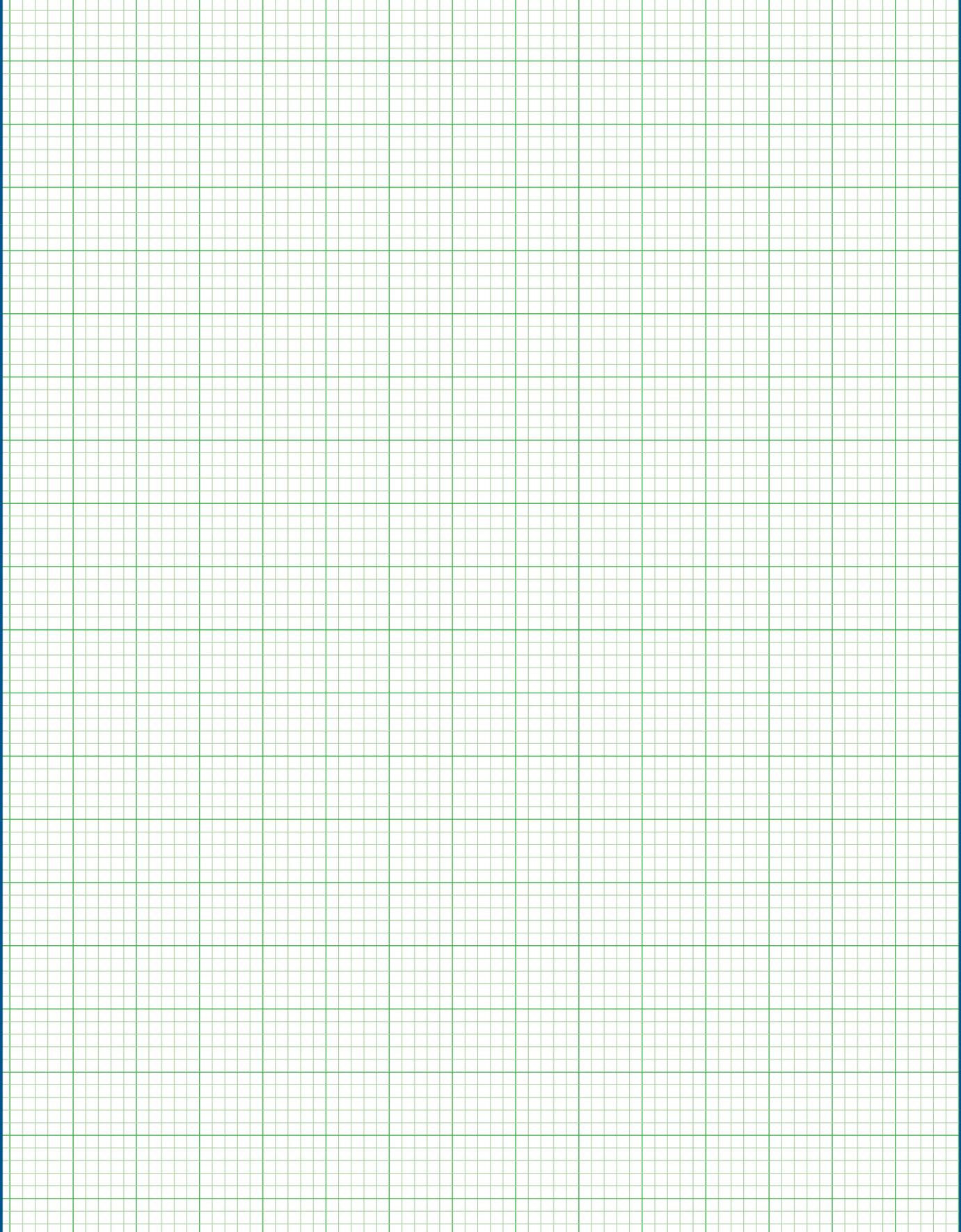
Helpful Facts

- This design utilizes water from household washing machines to irrigate the landscape.
- Similar designs have been installed successfully in San Francisco.
- Keeping washing machine water out of the municipal sewer will reduce chemicals and energy needed to treat wastewater.
- Graywater Action is a wonderful bilingual resource for understanding a range of ways you can better manage graywater on your property.
- Read a great report on the five-year impact of graywater irrigation on plants at aciscience.org

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for lot design.
- The best time to plant trees and shrubs is in the spring or fall.
- Do not plant in extreme heat.
- Inspect trees before purchasing to be sure they are healthy and well-formed. This will help you select trees that will be more likely to survive.
- When mulching around trees, do not place mulch too close (less than three inches) to the tree trunk. This will protect the tree from disease.
- Do not plant trees under overhead wires.

Draw Your Lot





**DETROIT
FUTURE
CITY**

**working
with lots**
A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Paul Woods, "Amelanchier in bloom 1." 13 April 2010 via Flickr, CC BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional



Mix 'N Match Meadow

Image Source: Peter Gorman, "Rough Blazing-Star," 01 September 2008 via Flickr, CC BY-NC-SA 2.0.





The Mix 'N Match Meadow is a Michigan native meadow designed for single color impact.

The two plant mix choices in this meadow are easy to grow, and will add color to your block while creating habitat and attracting birds and bees. This pollinator friendly design offers two color options: purple and yellow. The Mix 'N Match Meadow is guaranteed to brighten any lot!

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

What is the lot design likely to cost?

The estimated cost of the Mix 'N Match Meadow is high (\$2,500 – \$5,500) and based on utilizing volunteer labor, seed mix, and 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?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the meadow, particularly during the first two growing seasons while the meadow establishes itself. The meadow should be mowed once a year in the late fall or early spring. The hedge should be pruned annually once it reaches the desired height.

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. 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 the 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 the lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun or Part Sun			

Mix 'N Match Meadow

Examples of Hedges with Meadow Plantings



1 - Boxwood



2 - Hedge Around Meadow

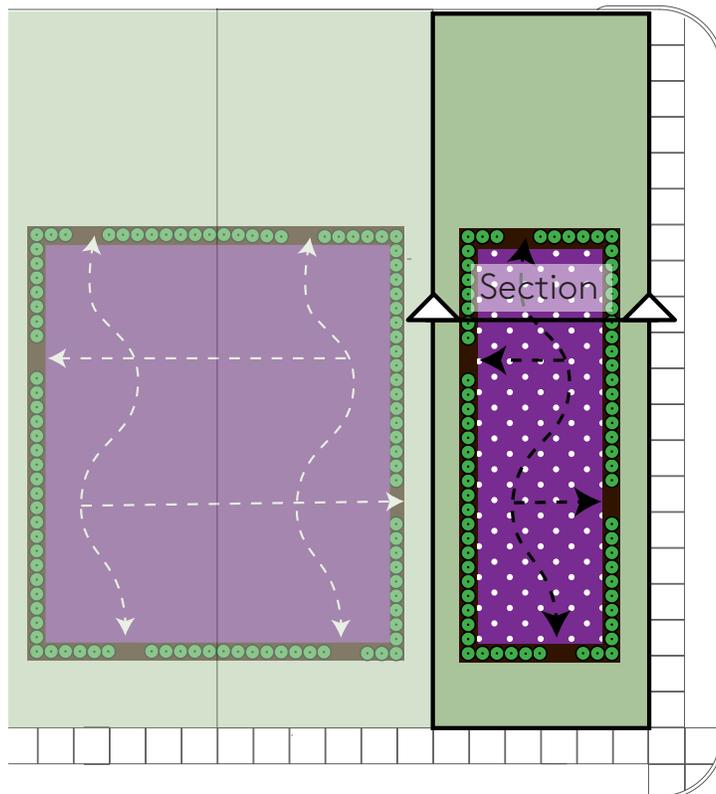


3 - Hedge Around Perennials

Section



Where Do I Grow?



The Mix 'N Match Meadow can be constructed on a single lot or multiple lots and is suitable for a corner property. The images below show examples of wildflowers included in the purple meadow option.



4 - Blazing Star



5 - Aster



6 - Purple Cone Flower

- Evergreen Hedge
- Mix 'N Match Meadow
- Mulch
- Grass or Optional Groundcover

Image Source: 1) Martin Kenny, "Box Hedge - shallow DOF edition." 10 December 2011 via Flickr, CC BY-NC-SA 2.0; 2) J.-H. Jansen, "Schultenhof Mettingen Bauerngarten 8.jpg." July 2010 via Wikimedia, CC BY-NC-SA 2.0; 3) Flipsockgrrl, "Hedging the blues." 19 November 2011 via Flickr, CC BY-NC-SA 2.0; 4) Peter Gorman, "Rough Blazing-Star." 01 September 2008 via Flickr, CC BY-NC-SA 2.0; 5) Tom Potterfield., "Symphyotrichum leave 'Bluebird'" 25 September 2011 via Flickr, CC-BY-NC-SA 2.0; 6) Jordan Meeter., "Purple Coneflower (Echinacea purpurea)." 07 August 2008 via Flickr, CC-BY-2.0

Before You Start

'Construction Ready'

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

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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.

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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

- **Marking Paint and Tape Measure**
- **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
- **Tiller**, 6 inch depth (optional)

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**, 5 cubic yards
- **Germination Blankets**, 2 rolls (8 by 112.5 feet), used for the meadow area

Purple or Yellow Meadow Planting Options

- **Purple or Yellow Meadow seed mix**, 7 ounces of seed
- **Annual Cover Crop**, 10 ounces of seed
- **Green Gem Boxwood**, 68 pots

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 9 pounds of seed
- **Germination Blanket**, 2 rolls (8 by 112.5 feet)

Mix 'N Match Meadow Step-By-Step

Let's Start

Want to create the Mix 'N Match Meadow 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:

- Prepare Your Lot
- Plant Hedge
- Sow Meadow
- Maintain Your Lot Design
- Sow Remaining Lot

 **Annual Cover Crop is used to establish the Purple or Yellow Meadow and does not require annual re-seeding.**

Prepare Your Lot

Select the best location for your meadow. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design.

The Field Guide recommends a 60 by 22 foot (1,320 square feet) meadow enclosed by a hedge.

Plant Hedge

Sunny to partly-sunny plantings are recommended for the hedge. If your lot is in shade, seek alternate planting options.

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

The Field Guide recommends adding three inches (5 cubic yards) of wood chips or mulch to the hedge area. Do not place mulch on top of seed bed as this would restrict germination. Adding wood chips or mulch will help suppress weeds.

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

Sow Meadow

The soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen up any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid-October to end of November). Michigan Wildflower Farm's Purple or Yellow seed mix and Annual Cover Crop seed mix are good options for the Mix 'N Match Meadow; similar mixes are available from other suppliers.

Mix 'N Match Meadow Step-By-Step

The Purple and Yellow Meadow mixes are not standard seed mixes but can be assembled by seed nurseries, including the Michigan Wildflower Farm.

Michigan Wildflower Farm suggests five ounces of Purple or Yellow Meadow seed mix mixed with eight ounces of Annual Cover Crop seed mix per 1,000 square feet. **For the meadow area in this lot design (60 by 22 feet), the Field Guide recommends seven ounces of either Purple or Yellow Meadow seed mix and ten ounces of Annual Cover Crop seed mix.**

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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. **Two 8 by 112.5 foot single net germination blankets will cover the meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Maintain Your Lot Design

A meadow requires care and maintenance to thrive. The Mix 'N Match Meadow will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.**

After the first year, continue weeding, and mow your meadow in late fall or early spring to keep the meadow at its best. It will take about three years for the meadow to establish.

The hedge is low-maintenance; however, it will require water and weeding while it is getting established within the first two years. **Once your hedge is established, it will shade out the majority of weeds.** Your hedge can be pruned at any time to create the desired height. Add mulch annually to help suppress weed growth.

Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional native seed mixes and plants. Be creative and make it your own!

Mix 'N Match Meadow Step-By-Step



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

Average Height of Plants



Grasses, Small Shrubs, and Perennials

○ Sow Remaining 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 Mix 'N Match Meadow lot design you will need approximately nine pounds of fescue seed mix for the remaining lot (1,680 square feet) and two 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen up any compaction. This will allow for easier seed germination and better water infiltration. Apply seed mix to damp lot.

Sow seed across the remaining lot by using a seed spreader or by hand. The Field Guide recommends a seed rate of five pounds per 1,000 square feet. 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.

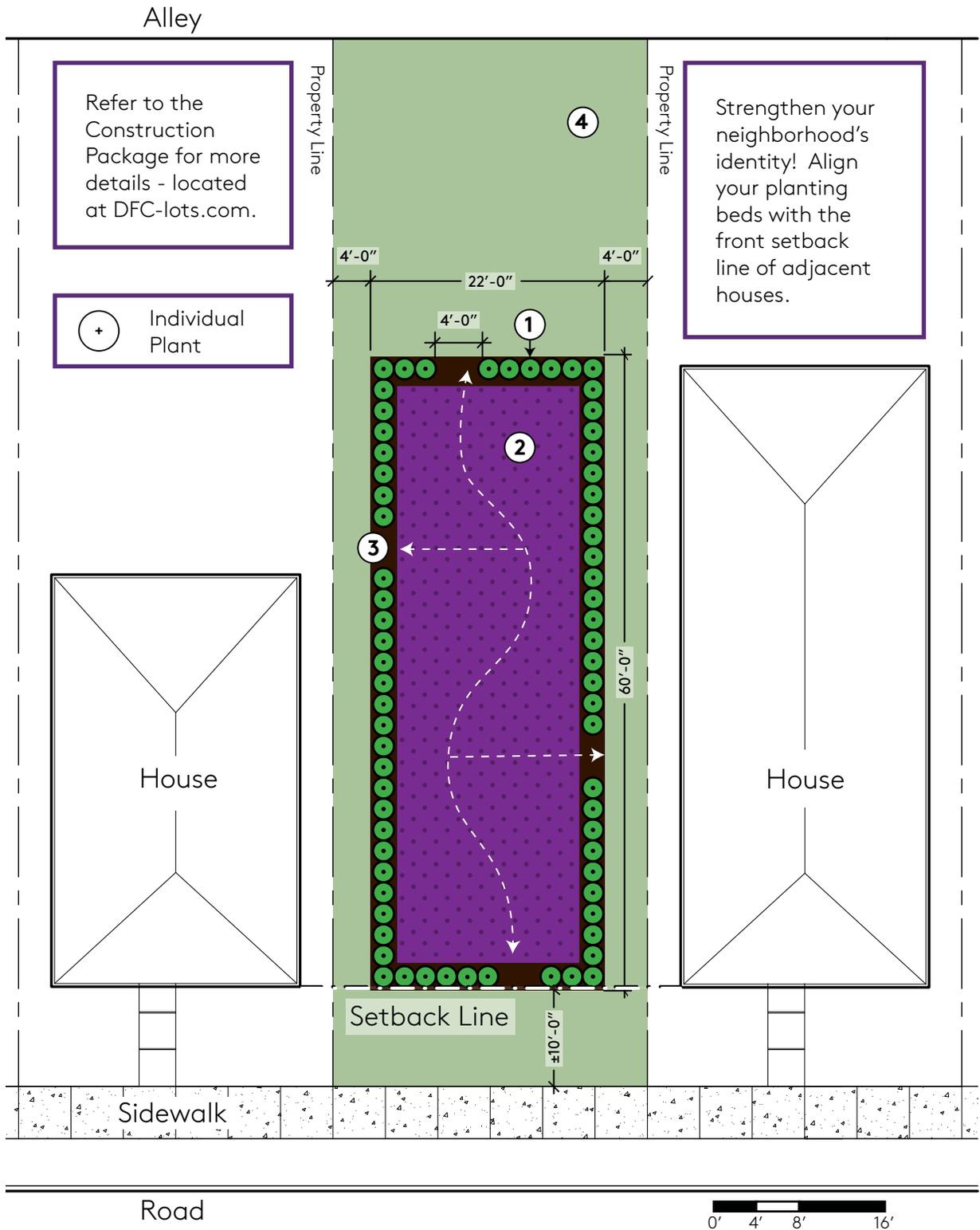
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Mix 'N Match Meadow Lot Design



- 1 Hedge (Boxwood)
- 2 Mix 'N Match Meadow
- 3 Mulch
- 4 Grass or Optional Groundcover

Planting Option 1: Full Sun to Part Sun



Common Milkweed¹
Asclepia syriaca⁺



Smooth Aster²
Aster laevis⁺



Rough Blazing Star³
Liatris aspera⁺



Bee Balm⁴
Monarda fistulosa⁺



New England Aster⁵
Aster novae - angliae⁺



Purple Coneflower⁶
Echinacea purpurea



Little Bluestem⁷
Schizachyrium scoparius⁺



Green Gem Boxwood⁸
Buxus 'Green Gem'
24" Height x 24" Width
Quantity: 68 pots

Purple Meadow

Mixing seven ounces of Purple Meadow seed mix with ten ounces of Annual Cover Crop seed mix is recommended for the Purple Meadow lot design.

The Purple Meadow is not a standard seed mix but can be assembled by Michigan Wildflower Farms.

Common Milkweed, *Asclepias syriaca* (5% of mix)

Smooth Aster, *Aster laevis* (15% of mix)

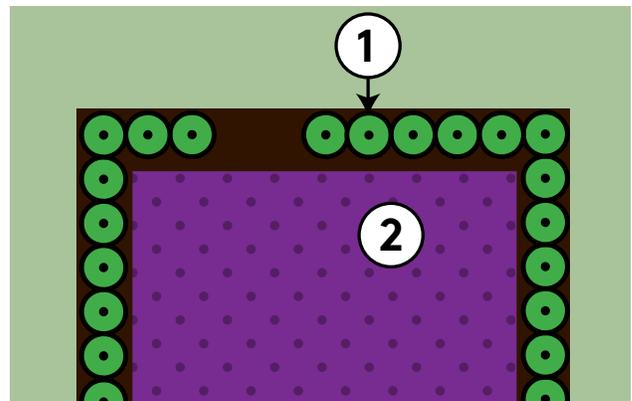
New England Aster, *Aster novae-angliae* (15% of mix)

Purple Coneflower, *Echinacea purpurea* (20% of mix)

Rough Blazing Star, *Liatris aspera* (10% of mix)

Bergamot, *Monarda fistulosa* (15% of mix)

Little Bluestem, *Schizachyrium scoparius* (20% of mix)



Key

1 **Green Gem Boxwood**
(Space approximately two feet apart.)

2 **Purple Meadow**
(Seven ounces of Purple Meadow seed mix with ten ounces of Annual Cover Crop seed mix.)

Plant Sizes



Seeds: All plants (except Boxwood) can be purchased in seed form.



Pots: Boxwood can be purchased in one to five gallon pots. The size of pots can change based on availability.

Planting Option 2: Full Sun to Part Sun



Lanceleaf Coreopsis¹
*Coreopsis lanceolata**



Smooth Oxeye²
*Heliopsis helianthoides**



Black-Eyed Susan⁵
*Rudbeckia hirta**



Goldenrod⁴
*Solidago rigida & Solidago speciosa**



Evening Primrose³
*Oenothera biennis**



Yellow Coneflower⁴
Ratibida pinnata



Little Bluestem⁷
*Schizachyrium scoparium**



Green Gem Boxwood⁸
Buxus 'Green Gem'
24" Height x 24" Width
Quantity: 68 pots

Yellow Meadow

Mixing seven ounces of Yellow Meadow seed mix with ten ounces of Annual Cover Crop seed mix is recommended for the Yellow Meadow lot design.

The Yellow Meadow is not a standard seed mix but can be assembled by Michigan Wildflower Farms.

Lanceleaf Coreopsis, *Coreopsis lanceolata* (20% of mix)

Smooth Oxeye, *Heliopsis helianthoides* (15% of mix)

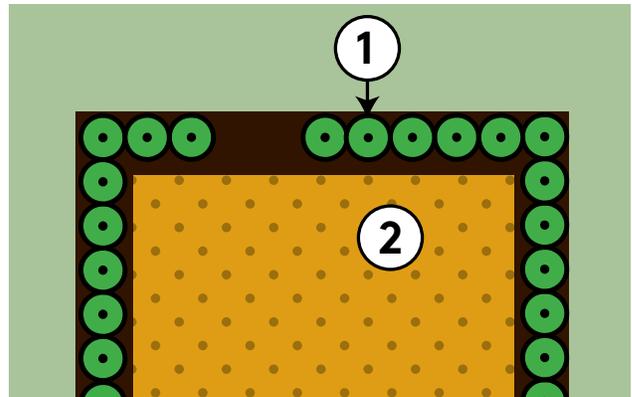
Evening Primrose, *Oenothera biennis* (5% of mix)

Yellow Coneflower, *Ratibida pinnata* (12.5% of mix)

Black-Eyed Susan, *Rudbeckia hirta* (12.5% of mix)

Goldenrod, *Solidago rigida & Solidago speciosa* (15% of mix)

Little Bluestem, *Schizachyrium scoparium* (20% of mix)



Key



Green Gem Boxwood
(Perennials should be spaced approximately two feet apart.)



Yellow Meadow
(Seven ounces of Yellow Meadow seed mix with ten ounces of Annual Cover Crop seed mix.)

Plant Sizes



Seeds: All plants (except Boxwood) can be purchased in seed form.



Pots: Boxwood can be purchased in one to five gallon pots. The 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.

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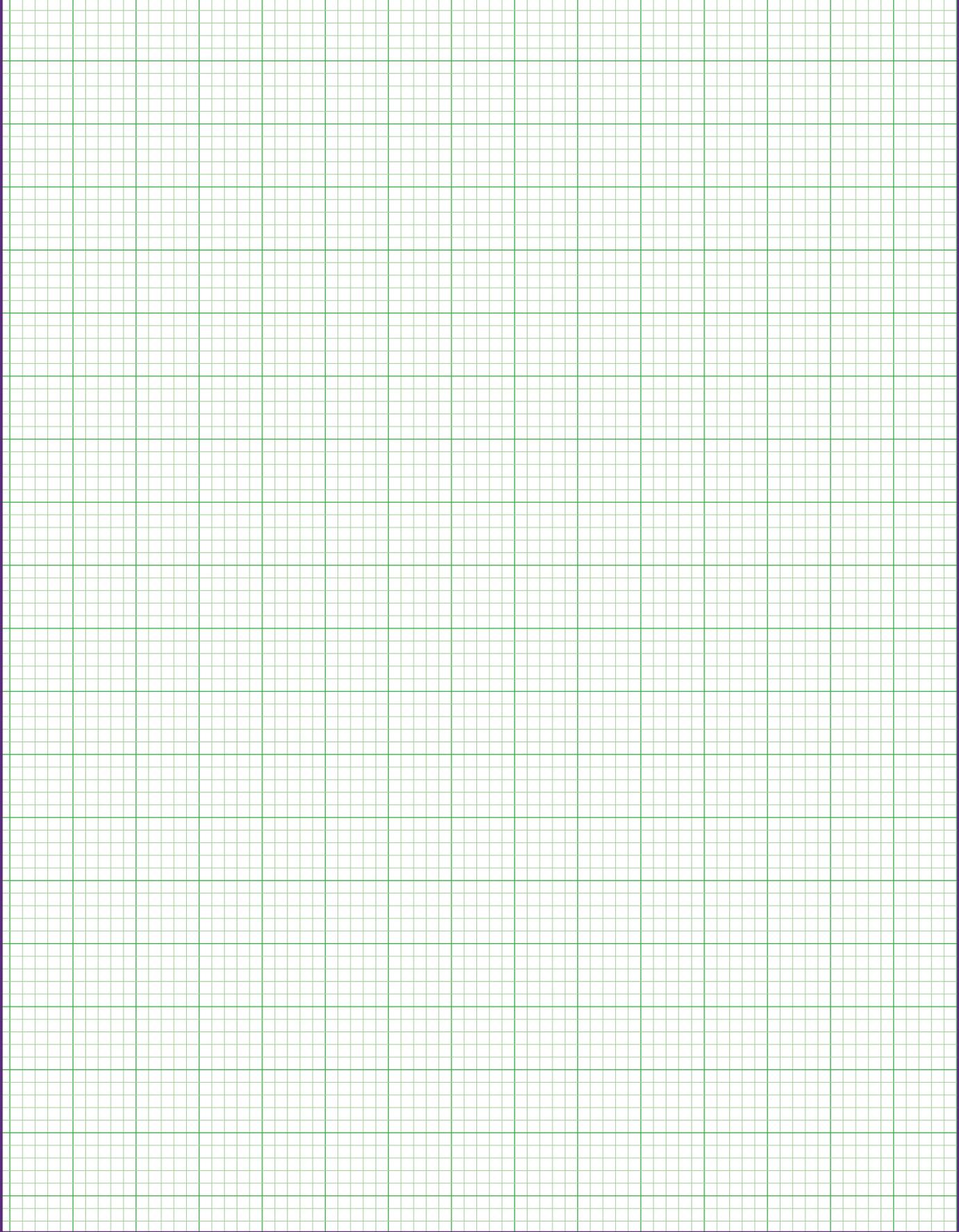
Helpful Facts

- The recommended plants for this lot design will attract Monarch Butterflies and other Detroit pollinators.
- Native plants have deep roots that help capture, hold, and slowly release stormwater.

Planting Tips

- The lot design offers two planting options: purple and yellow.
- A single color meadow offers a unique color display.
- Curious about a different color? Contact The Field Guide for additional assistance or check out one of the local seed mix distributors in the Resources area of the Field Guide's web site.
- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant is spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed.
- Weed weekly or as needed.
- Adding one inch of compost to seeded areas will help enrich the soil.

Draw Your Lot





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**Visit DFC-lots.com
#DFClots**

Image Source: gobucks2, "Fall Day 2009." 19 September 2009 via Flickr CC-BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional

Mounds of Fun

Image Source: Julia Manzerova. "Maya Lin" 8 August 2009 via Flickr, CC BY-NC-SA 2.0





This lot design features three large mounds of varying sizes. The mounds can be constructed for a number of activities, such as a dog park, sculptural art space, or informal playground.

The Mounds of Fun is suitable for a single lot, but can be more versatile and have a greater impact if implemented across multiple lots, creating a unique landscape.

The mound design is ideal for a community park or playground. The back mound is designed to accommodate a childrens' slide.

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

What is the lot design likely to cost?

The estimated cost of the Mounds of Fun is high (\$2,500 – \$5,500) and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork and lot preparation. Planting can be completed by a professional or by volunteers. 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 maintenance of this lot design is medium. While establishing, low-maintenance fescue will require weekly watering and weeding. The lawn should be mowed once a year in the early fall; however, the shape and slope of the mounds may make mowing difficult with a standard mower. Consider using a weed whip or other special equipment when mowing mounds.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to undertake the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on the recommended professional and volunteer steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

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 two 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.

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	Residential Lot in Sun to Shade (near a school or community hub is ideal)			

Mounds of Fun

Examples of Earthen Mounds

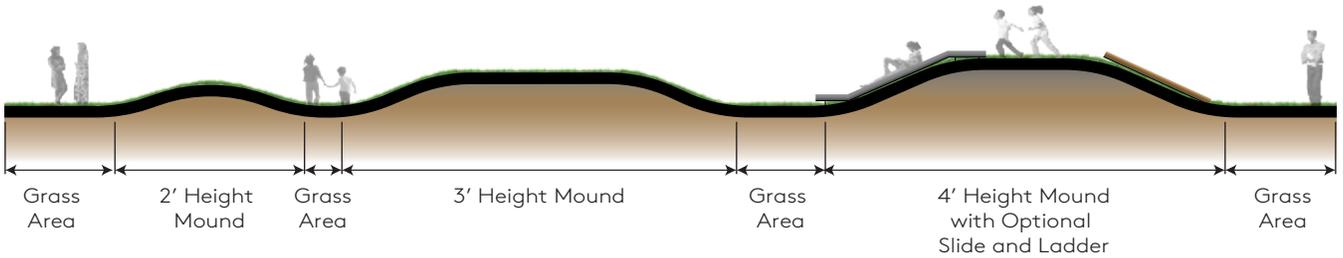


1 - Installation by Artist Maya Lin

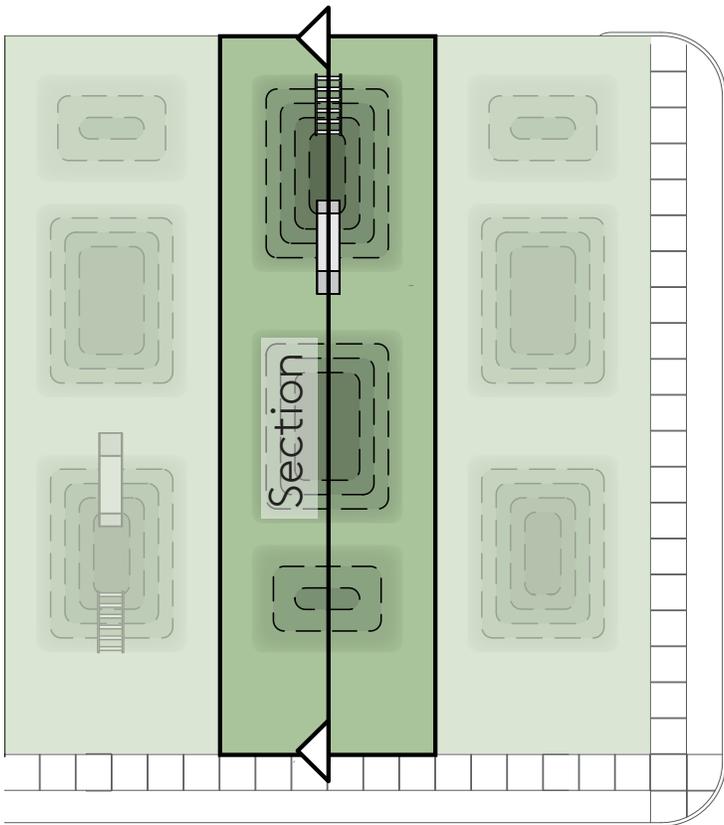


2 - Slide on Hill

Section



Where Do I Grow?



Mounds of Fun can be constructed on single or multiple lots and is suitable for corner properties. If placed on a corner lot or near a busy street, do not install the childrens' slide.

-  Earthen Mounds
-  Slide (Optional)
-  Ladder (Optional)
-  Grass or Optional Groundcover

Image Source: 1) Nolan Sandberg, "Wave Fields." Owned by DFC; 2) www.alfeko.cz.jpg

Before You Start

'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).

Materials List

Materials

- Clean, Imported Soil, 52 cubic yards
- Topsoil, 38 cubic yards

Remaining Lot (Optional)

Groundcover

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

Refer to page 10 for alternative groundcovers.

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- **Earth Moving Machinery:** Dump truck for soil and soil sculpting machinery, such as skid loader (if professional is not hired)
- **Trimmer or Special Mower,** for mowing mounds

Potential Water Sources

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

Field Guide Resources

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

- Clean + Green
- Bulb Planting Detail

Mounds of Fun Step-By-Step

Let's Start

Want to create the Mounds of Fun? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

- Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot**
- Import + Sculpt Mounds**

Volunteer Opportunities:

- Sow Groundcover**
- Maintain Your Lot Design**

Prepare Your Lot

Mounds of Fun is one of the more complex lot designs in the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot and Import + Sculpt Mounds.

The Field Guide recommends to complete this lot design with the assistance of a professional. The Field Guide provides guiding principles below to help assist you with the installation of the lot design.

- This lot design utilizes a full 30 by 100 foot lot.
- Mounds of Fun should be constructed as shown on the plan to ensure mounds are the correct height and distance from adjacent lots or sidewalks.
- The base of a mound should be 4.5 feet away from adjacent property lines and at least ten feet from sidewalks.
- Use marking paint and a tape measure to map out the size, shape, and dimensions of the mounds.
- You do not need to kill grass in the lot as tilling will naturally help with grass removal.
- A childrens' play slide can be attached to the back mound. Consult a professional for installation requirements.
- Installation of play equipment with footings may require a permit from the City of Detroit's Buildings, Safety Engineering and Environmental Department (BSEED).

Mounds of Fun Step-By-Step

○ Import + Sculpt Mounds

The following are a few guiding principles for importing and sculpting the soil mounds. The Field Guide recommends hiring a professional to complete the earthwork portion of this lot design.

- Till the full 30 by 100 lot approximately six to eight inches in depth. Remove large clumps of grass, groundcover, and other forms of vegetation. The lot should be re-tilled after mounds have been constructed to remove compaction from heavy equipment during construction.
- **The three mounds require 52 cubic yards of clean, imported soil plus four inches (38 cubic yards) of topsoil for planting.**
- Special machinery should be used to sculpt the mounds.
- Mounds should be constructed according to the Construction Package. Refer to page 13 for more information.
- The two foot height mound is 21 by 15 feet (315 square feet) and has a 33% slope.
- The three foot height mound is 21 by 27 feet (567 square feet) and has a 50% slope.
- The four foot height mound is 21 by 27 foot Six inches (377.5 square feet) and has a 50% slope.
- Leave approximately 10 feet between any sidewalk and beginning of a mound.



A list of seed mixes are provided on pages 10 if you are interested in alternative groundcovers to low-maintenance fescue mix.

○ Sow Groundcover

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. This family of floppy grasses is drought resistant and requires one cutting (in August or September) per year. The soil will be loosened and prepared for seeding through tilling of the lot after the mounds have been sculpted.

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). Seed mix should be applied to a damp lot. Sow seeds by using a seed spreader or by hand across the remaining lot. Spread seed mix evenly over entire lot. You may need to do this several times to get even coverage. A seed rate of five pounds per 1,000 square feet is recommended. **If you follow the Mounds of Fun lot design you will need approximately 15 pounds of seed mix for full 30 by 100 lot.**

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. **Four 8 by 112.5 foot rolls of single net germination blankets will be required for a 30 by 100 lot.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

Gently water seedlings daily until they are four to six inches in height. 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: If you would like to bring additional color to your grass, plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Mounds of Fun Step-By-Step

○ Maintain Your Lot Design

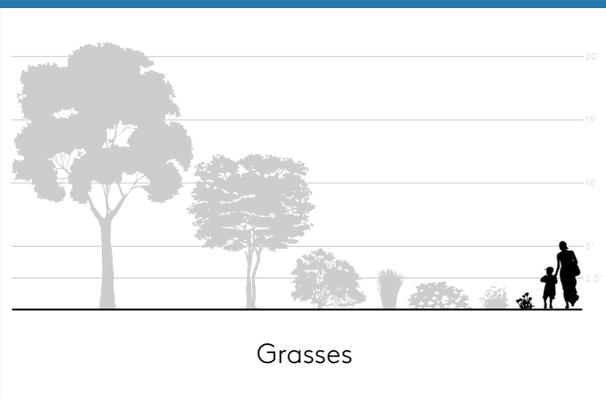
Fescue grasses do not grow tall and should only need to be mowed once per year. The mounds' shape and slope may make mowing difficult with a standard mower. Consider using a weed whip or other special equipment when mowing the mounds. Always use caution when mowing slopes and follow manufacturers recommendations.

Once established, grass will not require supplemental watering except during unusually dry periods. **Plan to water your establishing grass for three weeks following installation or until your grass is four to six inches in height.**

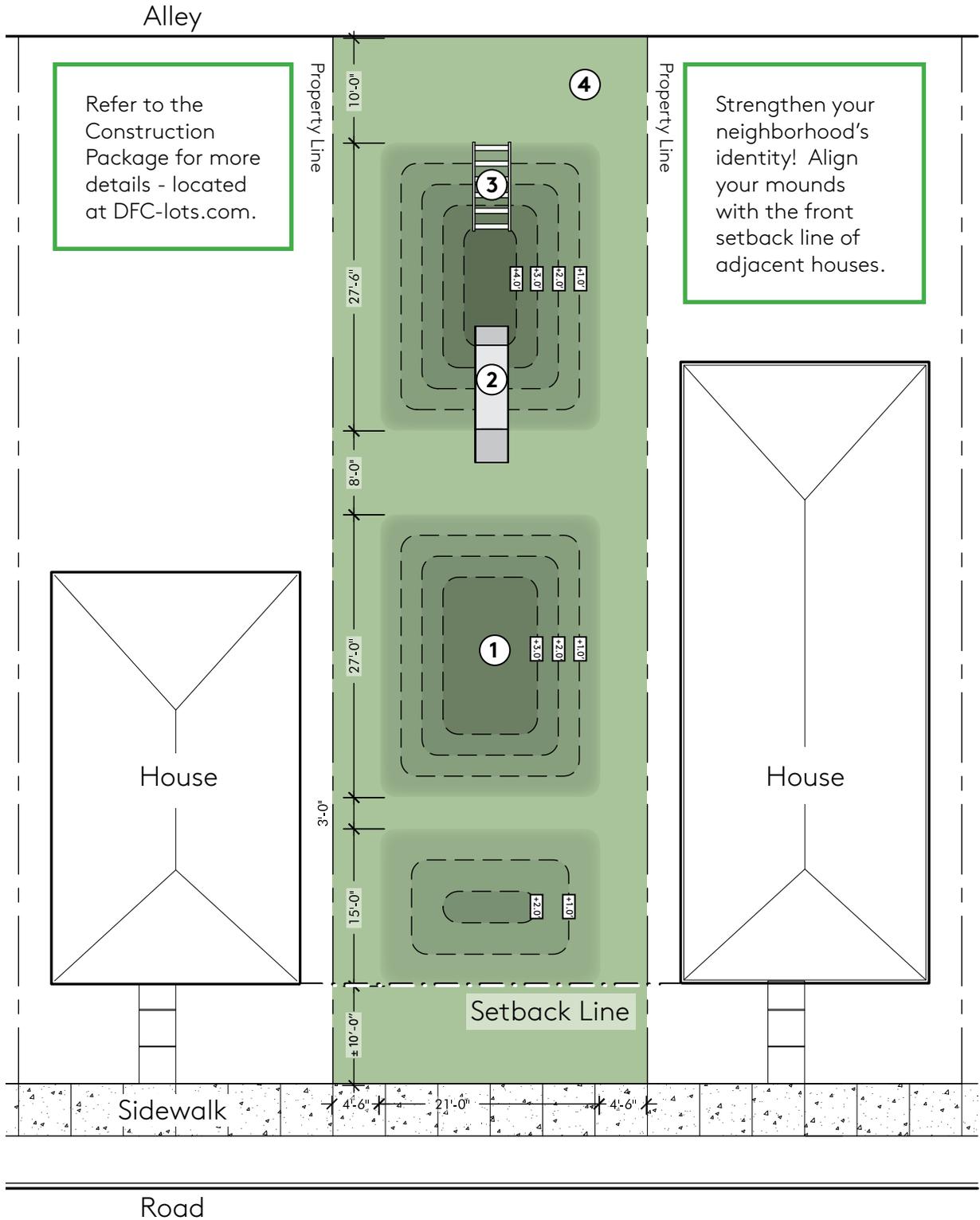


Visit the Resources page on the Field Guide's web site (DFC-lots.com) to discover other vendors and places to purchase plants.

Average Height of Plants



Mounds of Fun Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

Strengthen your neighborhood's identity! Align your mounds with the front setback line of adjacent houses.

- 1 Earthen Mound
- 2 Slide (Optional)
- 3 Ladder (Optional)
- 4 Grass or Optional Groundcover

Planting: Alternative Groundcover

For More Information

If you are seeking a more interesting groundcover than a low-maintenance fescue, try one of the alternative options listed on this page.

For more information on using any of the seed mixes on this page, refer to the lot designs below on the Field Guide web site:

Partially Shaded Area Roadside Seed Mix

Refer to [Syrup Maker](#) lot design

Native Grassland Meadow

Refer to [Grassland Habitat Maker](#) lot design

Butterfly Garden Mix

Refer to [Native Butterfly Meadow](#) lot design

Clay Mix

Refer to [Clay Soil Mix](#) lot design

These seed mixes, additional groundcovers, and lot designs can be found at [DFC-lots.com](#).

Seed Mix for Part Sun to Shade

Partially Shaded Area Roadside Seed Mix

Mixing two pounds of Partially Shaded Area Roadside Seed Mix (ERNMX-140) with three pounds of Annual Cover Crop seed mix is recommended (oats or grain rye depending on sowing season) if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Native Grassland Meadow

Mixing three pounds of Native Grassland Meadow seed mix (Eastern Native Habitat & CREP, ERNMX - 173) with three pounds of Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Butterfly Garden Mix

Mixing 15 ounces Butterfly Garden Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Seed Mix for Full Sun to Part Sun

Clay Mix

Mixing 15 ounces Clay Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Plant Sizes



Seeds: All plants can be purchased in seed form.

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Professionals Can Help

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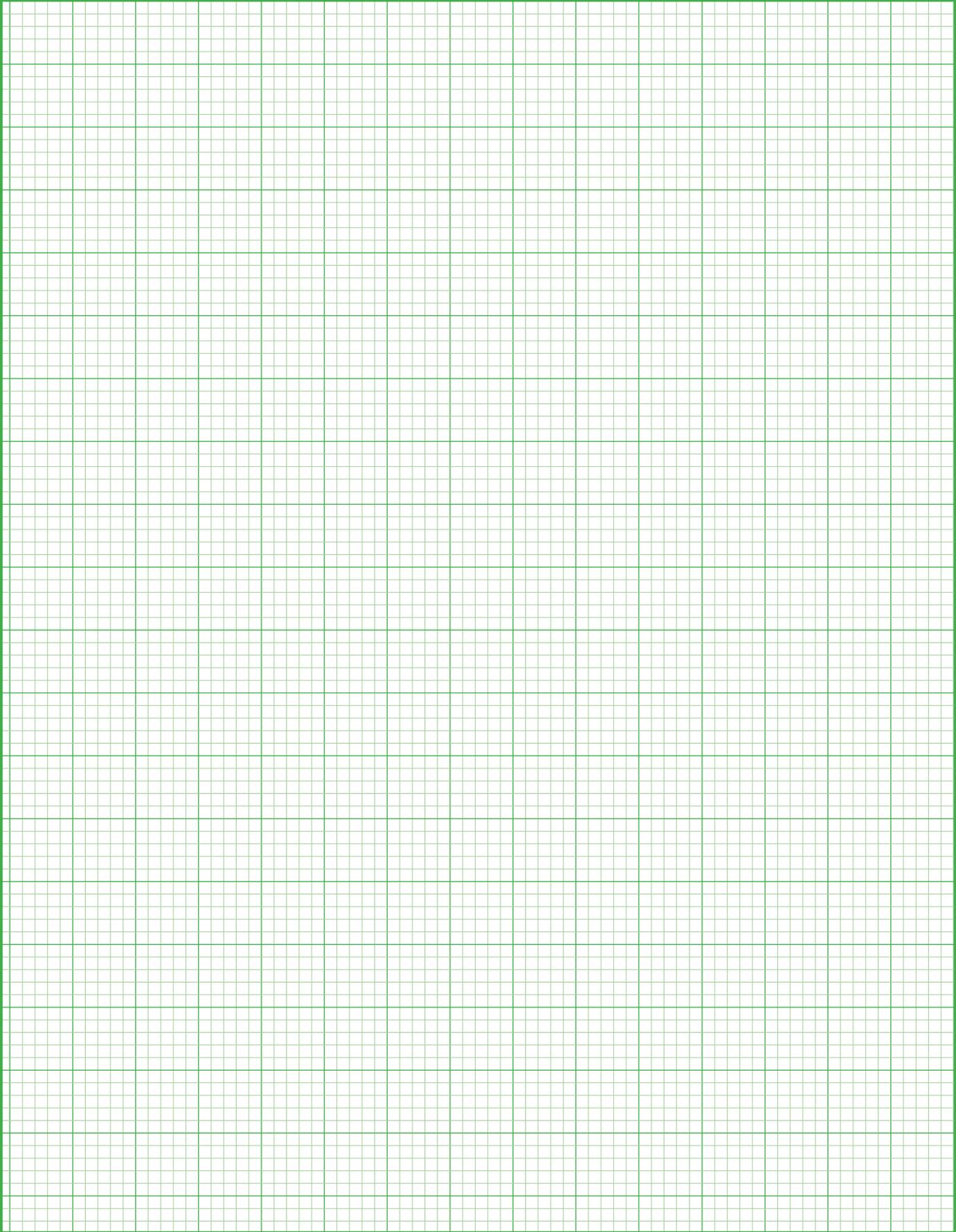
Helpful Facts

- The tallest mound (four feet in height) in this lot design can accommodate a small childrens' slide. Check out Kaiser & Kuhne's web site for more information and images of hill slides.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- Add bulbs such as crocus, snowdrops, or daffodils to mounds or grass for additional color.
- Mounds can be planted with a variety of groundcovers such as Creeping Phlox, Periwinkle, Bishop's Weed, or Bugleweed instead of grass. If any of these alternatives are planted, the mound would no longer be available for play or walking on.
- To create a taller appearance, plant ornamental grasses such as Pampas Grass, Fountain Grass, Feather Reed Grass, Little Bluestem, Switch Grass, or Maiden Grasses. This limits access for recreation and play.
- The best time to plant trees and shrubs is spring or fall.
- Do not sow seed mix in extreme heat.
- Water after planting and as needed.
- Do not attempt earthworks or earth moving following a rain event.

Draw Your Lot





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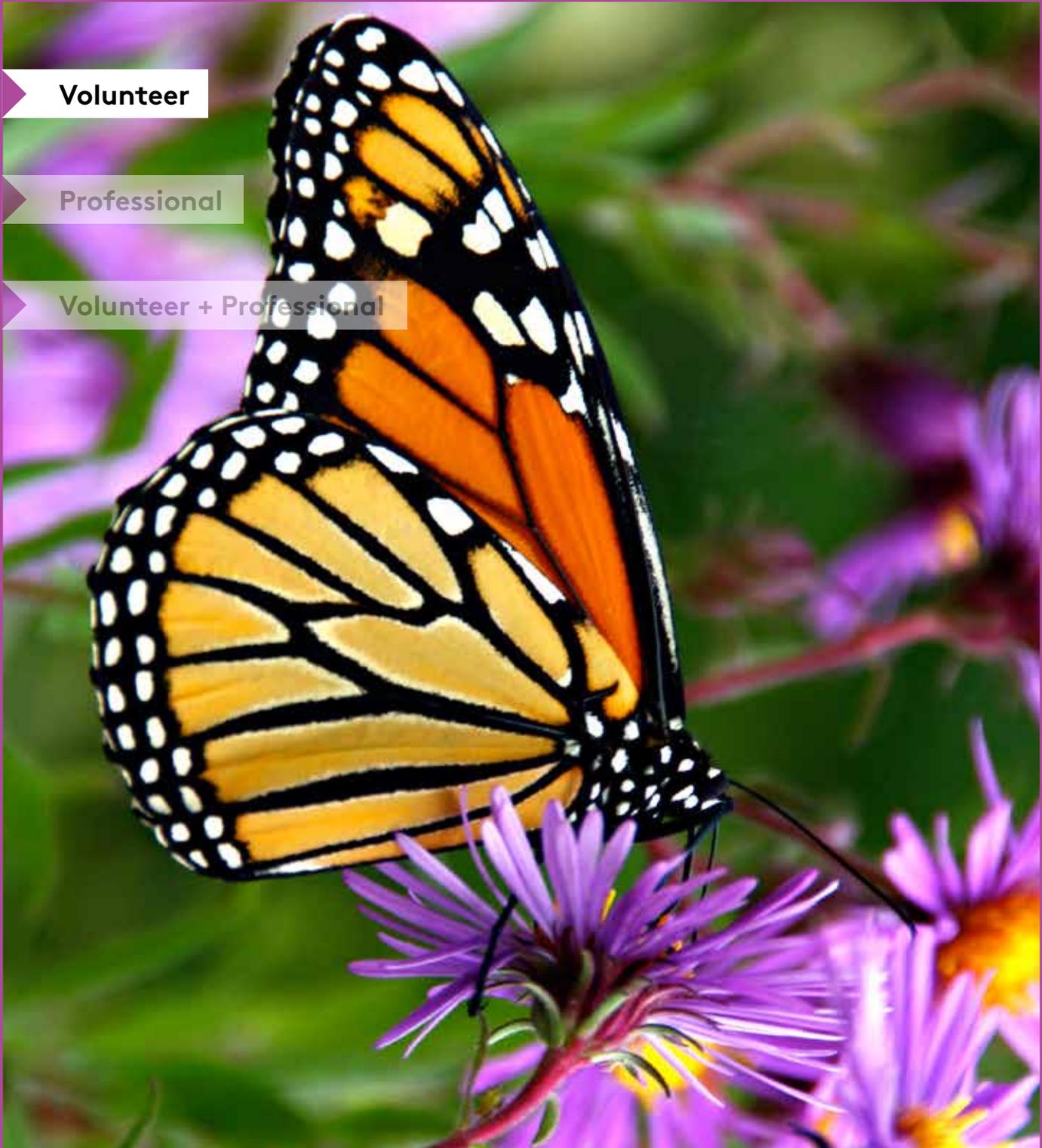
**Visit DFC-lots.com
#DFClots**

Image Source: Olangdees, "Sun Yat Sen Memorial Park, Sai Ying Pun, Hong Kong." 06 May 2012 via Wikimedia, CC BY-SA 3.0.

Volunteer

Professional

Volunteer + Professional



Native Butterfly Meadow

Image Source: Liz West, "Monarch." 16 September 2008 via Flickr, CC-BY-2.0





The Native Butterfly Meadow is a Michigan native meadow designed for beautification, habitat creation and to attract pollinators, like the Monarch butterfly.

The Monarch butterfly lays eggs exclusively on the milkweed plant and feeds on the nectar of Coneflower, Blazing Star and Goldenrod, all plants that are included in this lot design.

Bordered by a clean, perennial edge, this meadow offers a friendly addition to every neighborhood.

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

What is the lot design likely to cost?

The estimated cost of the Native Butterfly Meadow is high (\$2,500–\$5,500) and based on utilizing volunteer labor, seed mix, and 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?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering the meadow and perennial beds, particularly during the first two growing seasons while the plants establish themselves. The meadow should be mowed once a year in the late fall or early spring.

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. 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 the 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 the lot design have been acquired and are ready to use.

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	Residential Side Lot in Full Sun or Part Sun			

Native Butterfly Meadow

Examples of Butterfly Meadows



1- Perennial Bed

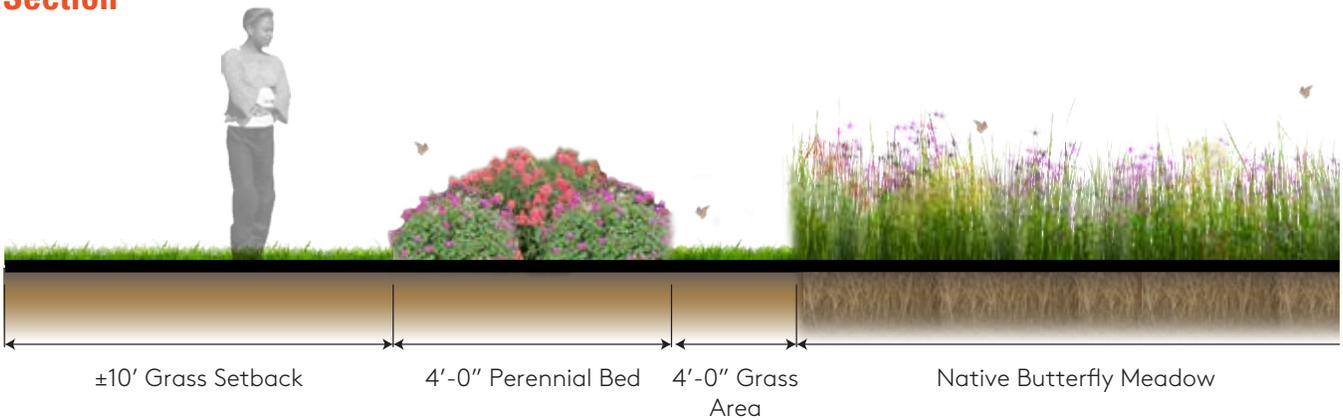


2 - Meadow with Coneflower

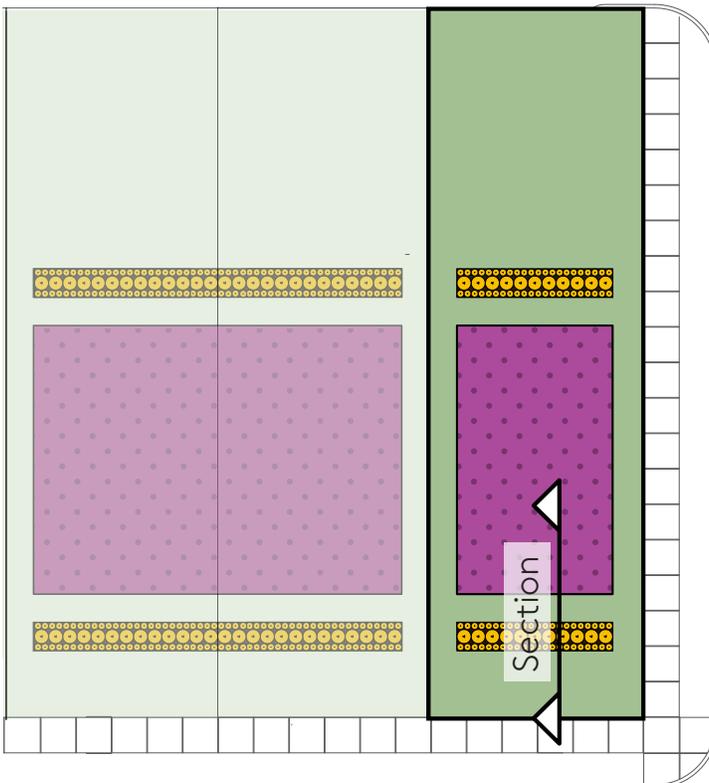


3 - Geranium

Section



Where Do I Grow?



The Native Butterfly Meadow can be installed on single, double, or multiple lots and is suitable for corner properties. The meadow area and perennial bed can be extended to cover two or more lots.

- Perennials
- Native Butterfly Meadow
- Mulch
- Grass or Optional Groundcover

Before You Start

'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

- **Marking Paint and Tape Measure**
- **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
- **Tiller**, 6 inch depth (optional)

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**, 1 cubic yards
- **Germination Blankets**, 1 roll (8 by 112.5 feet), used for the meadow area

Planting

- **Butterfly Garden Mix seed mix**, 5 ounces of seed
- **Annual Cover Crop seed mix**, 8 ounces of seed
- **Wild Geranium**, 88 pots
- **Yarrow**, 10 pots
- **Common Daylily**, 12 pots

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 10 pounds of seed
- **Germination Blanket**, 3 rolls (8 by 112.5 feet)

Native Butterfly Meadow Step-By-Step

Let's Start

Want to create the Native Butterfly Meadow 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
- Sow Meadow
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

! Annual Cover Crop is used to establish the Butterfly Garden Mix and does not require annual re-seeding.

Prepare Your Lot

Select the best location for your meadow. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. **The Field Guide recommends a 22 by 38 foot (836 square feet) meadow with two 22 by 4 foot (88 square feet per bed) perennial beds.**

Sow Meadow

Soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid-October to end of November). Michigan Wildflower Farm's Native Butterfly Garden Mix and Annual Cover Crop seed mix are good options for the Native Butterfly Garden; similar mixes are available from other suppliers.

Michigan Wildflower Farm suggests five ounces of Butterfly Garden Mix seed mix mixed with eight ounces of Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends five ounces of Butterfly Garden Mix seed mix and eight ounces of Annual Cover Crop seed mix for the meadow area, even though area is less than 1,000 square feet.**

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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. **A single 8 by 112.5 foot roll of single net germination blanket will cover meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

Native Butterfly Meadow Step-By-Step

○ Plant Perennials

Sunny to partly-sunny plantings are recommended for the perennial beds. If your lot is in shade, seek alternate planting options.

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

The Field Guide recommends adding **three inches (1 cubic yard) of wood chips or mulch over each perennial bed**. Adding wood chips or mulch will help suppress weeds.

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

○ Maintain Your Lot Design

A meadow require care and maintenance to thrive. The Native Butterfly Meadow will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.**

After the first year, continue weeding, and mow your meadow in late fall or early spring. This will keep the meadow at its best. It will take about three years for the meadow to establish.

Perennial beds are low-maintenance; however, watering and weeding plants regularly is still required, especially during the first two years. The mulch or wood chips areas should be replenished or top-dressed annually.

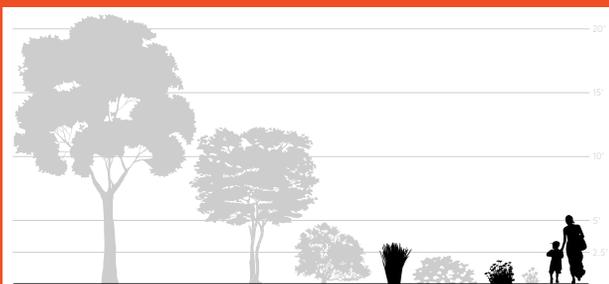
Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional native seed mixes and plants. Be creative and make it your own!

Native Butterfly Meadow Step-By-Step



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

Average Height of Plants



Grasses and Perennials

○ Sow Remaining 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 Native Butterfly Meadow lot design you will need approximately ten pounds of fescue seed mix for the remaining lot (1,988 square feet) and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

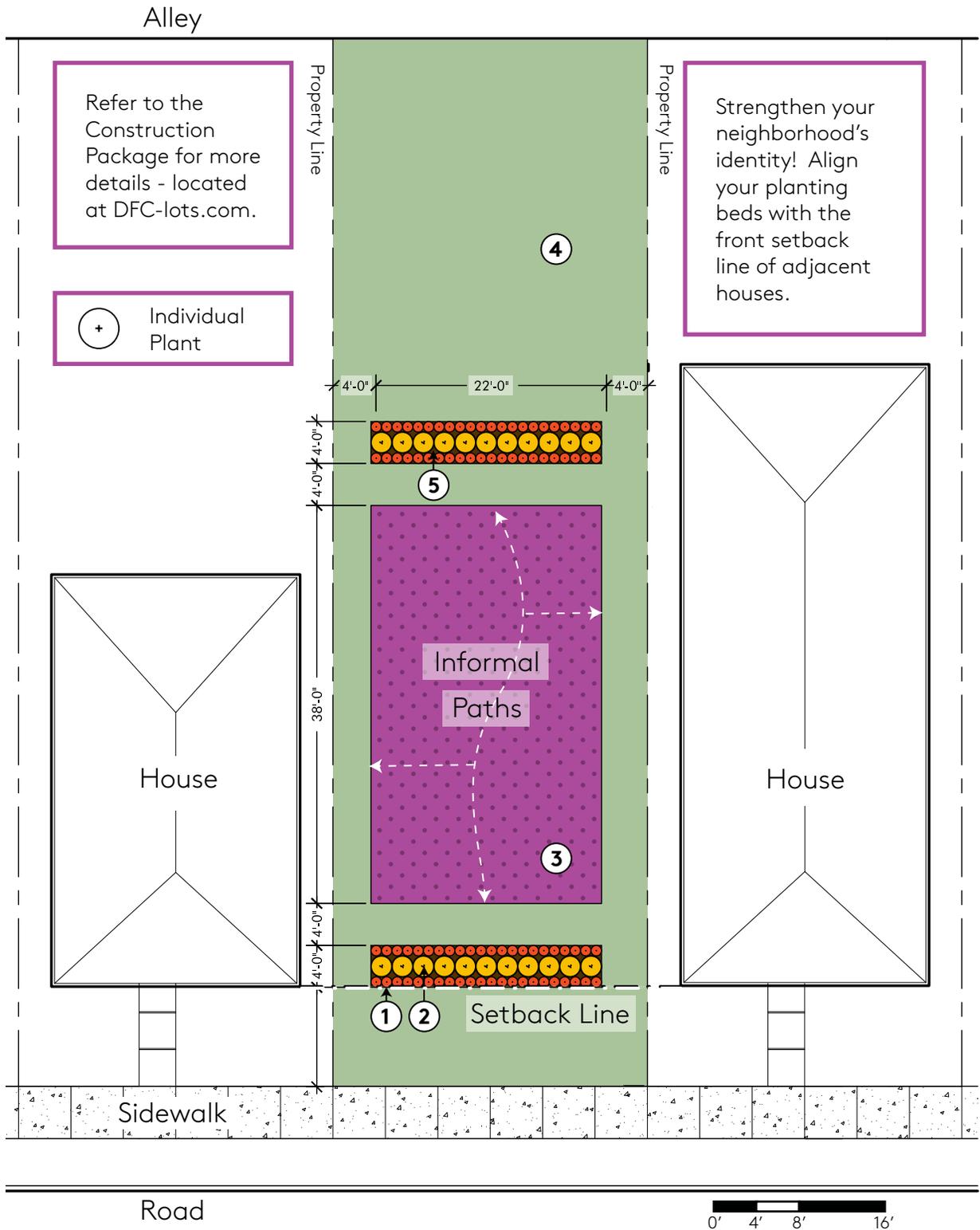
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Native Butterfly Meadow Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

⊕ Individual Plant

Strengthen your neighborhood's identity! Align your planting beds with the front setback line of adjacent houses.

- 1 Perennial (Geraniums)
- 3 Native Butterfly Meadow
- 5 Mulch
- 2 Perennial (Yarrow & Daylily)
- 4 Grass or Optional Groundcover

Planting: Full Sun to Part Sun



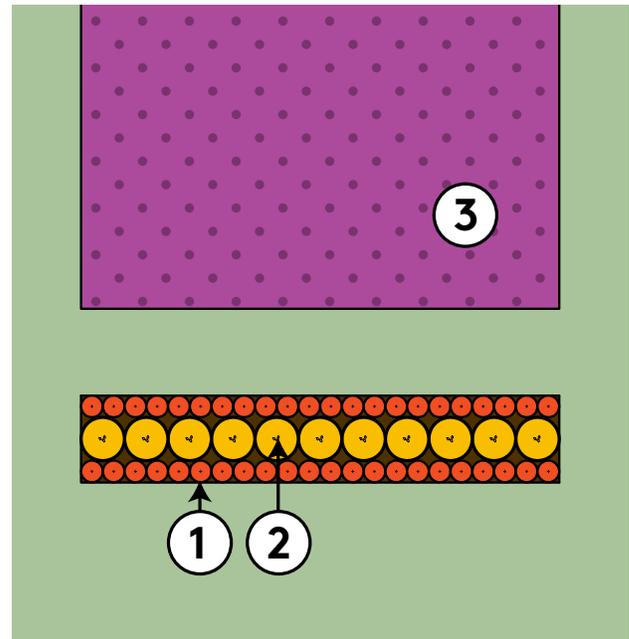
Wild Geranium¹
Geranium maculatum^{*}
 12" Height x 12" Width
 Blooms May - June
Quantity: 88 pots



Yarrow²
Achillea millefolium
 24" Height x 24" Width
 Blooms June - September
Quantity: 10 pots



Common Daylily³
Hemerocallis fulva^{*}
 28" Height x 24" Width
 Blooms June - July
Quantity: 12 pots



Key

- 1 Wild Geranium**
 (Space approximately one foot apart.)
- 2 Yarrow & Common Daylilies**
 (Space approximately three feet apart and mix evenly.)
- 3 Native Butterfly Meadow**
 (Five ounces Butterfly Garden Mix with eight ounces Annual Cover Crop seed mix spread over meadow area.)

Plant Sizes

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

Image Source: 1) Dave Govoni, "April Garden: Wild Geranium." 28 April 2011 via Flickr, CC BY-NC-SA 2.0; 2) Stefano, "Achillea millefolium." 29 June 2012 via Flickr, CC BY-NC-SA 2.0; 3) Stefano, "Hemerocallis fulva." 29 June 2012 via Flickr, CC BY-NC-SA 2.0.

Planting: Full Sun to Part Sun

Butterfly Garden Mix

Mixing five ounces of Butterfly Garden Mix with eight ounces of Annual Cover Crop seed mix is recommended for the Native Butterfly Meadow lot design.

You can buy these seeds premixed at Michigan Wildflower Farm.

Wild Columbine, *Aquilegia canadensis* (4% of mix)

Common Milkweed, *Asclepias syriaca* (2% of mix)

Butterflyweed, *Asclepias tuberosa* (2% of mix)

New England Aster, *Aster novae-angliae* (4% of mix)

Coreopsis Lanceolata, *Lanceleaved coreopsis* (3% of mix)

Showy Tick Trefoil, *Desmodium canadense* (2% of mix)

Purple Coneflower, *Echinacea purpurea* (3% of mix)

Rough Blazing Star, *Liatris aspera* (2% of mix)

Bergamot, *Monarda fistulosa* (3% of mix)

Horsemint, *Monarda punctata* (2% of mix)

Yellow Coneflower, *Ratibidua pinnata* (2% of mix)

Blackeyed Susan, *Rudbeckia hirta* (4% of mix)

Stiff Goldenrod, *Solidago Rigida* (2% of mix)

Golden Alexandra, *Zizia Aurea* (3% of mix)

Canada Wild Rye, *Elymus canadensis* (15% of mix)

Indian Grass, *Sorghastrum nutans* (30% of mix)

Little Bluestem, *Schizachyrium scoparius* (15% of mix)



Urban Meadow

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

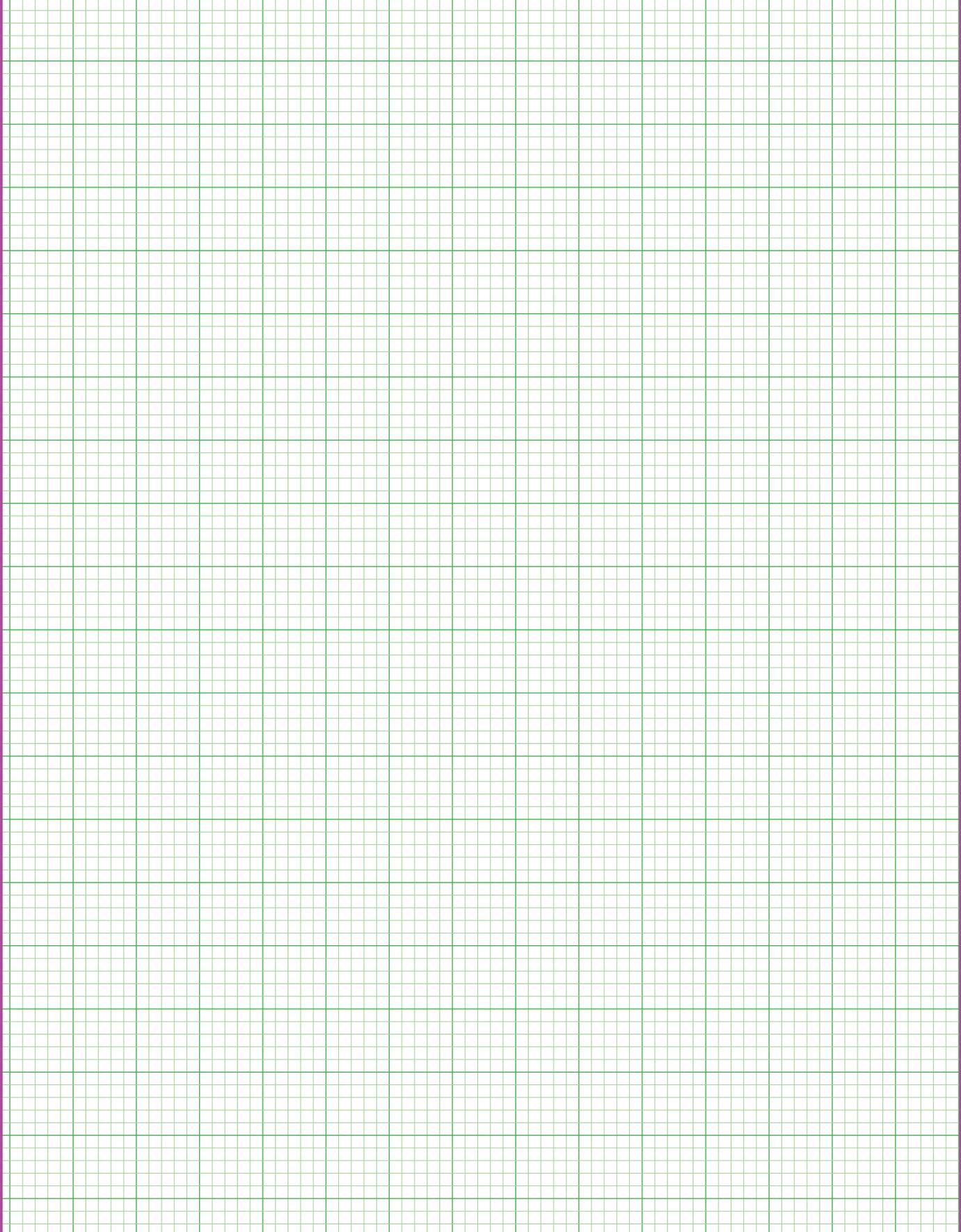
Helpful Facts

- The plants recommended for this lot design attract Monarch butterflies and other Detroit pollinators.
- Native plants have deep roots that help capture, hold, and slowly release stormwater.
- Native perennials and meadows help create a colorful garden.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- An alternative seed mix is a Butterfly and Hummingbird Garden Mix, such as ERNMIX-179 or equivalent.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out.
- Weed weekly or as needed.

Draw Your Lot





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#DFClots**

Image Source: JR P., "Cardinal Flower and Ironweed in a Meadow near Floyd, Virginia." 07 August 2010 via Flickr CC BY-NC 2.0.

Volunteer

Professional

Volunteer + Professional

Organic Bowl

Image Source: Vmenkov., "North-Bend-Uplands-Runoff-pond-3942.jpg" 5 May 2007 via Wikimedia CC BY-SA 3.0





The Organic Bowl is your opportunity to create a dynamic recreational amenity in your community! This lot design occupies a double lot and is perfect for a neighborhood group or organization that wants space for community gatherings, picnics, or a place for children to play.

The design includes a large open area just below street level, providing some separation from the adjacent traffic. The low area doubles as green infrastructure with the ability to collect stormwater from any neighboring houses.

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

What is the lot design likely to cost?

The estimated cost of the Organic Bowl is over \$5,500 and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork, lot preparation, and installation of the overflow culvert. The overflow culvert requires a permit to connect to the municipal infrastructure. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include weeding and watering plants in the newly planted rain garden, particularly during the first two growing seasons while the plants establish themselves.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to complete the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on the recommended professional and volunteer steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for several steps of installation. The projected installation time listed below is only estimated for the volunteer opportunities listed in the Step-By-Step section. While people tackle projects differently, the Field Guide estimates the installation time of the lot design to be one to two full weekends with a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least eight healthy adults or youth to complete this lot design. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for lot design have been acquired and are ready to go.

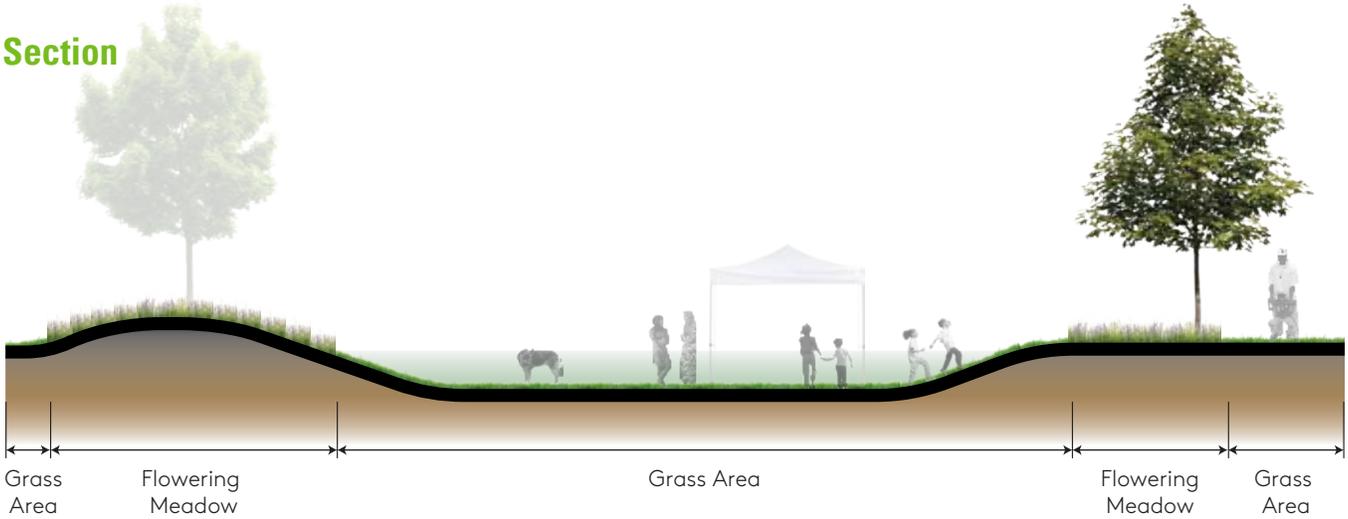
Cost	\$50 - 1,000	\$1,000 - 2,500	\$2,500 - 5,500	\$5,500 +
People	Volunteer	Professional	Volunteer + Professional	
Experience	Beginner	Intermediate	Advanced	
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Double Lot in Full Sun or Partial Sun (Near School or Community Hub is Ideal)			

Organic Bowl

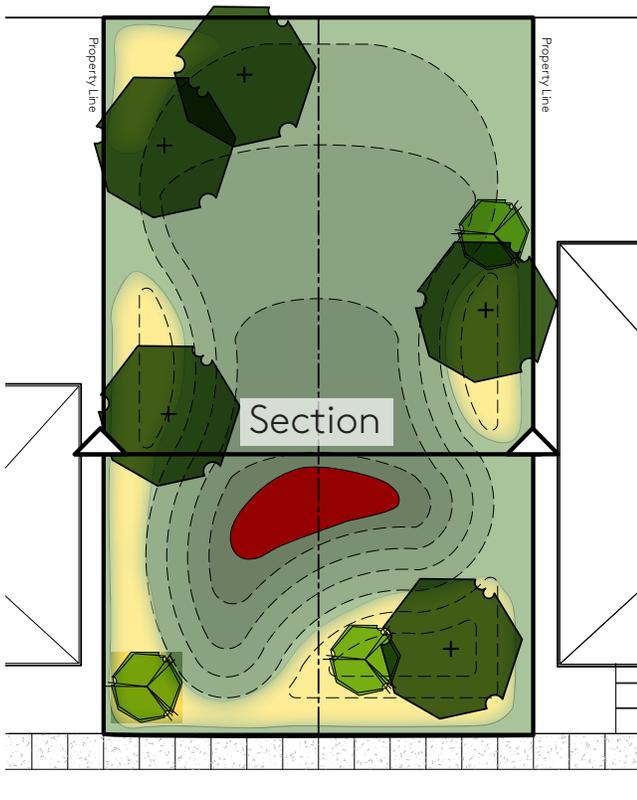
Examples of Earthwork



Section



Where Do I Grow?



The Organic Bowl is best on a double lot and has the potential to become a neighborhood amenity.

-  Rain Garden
-  Trees
-  Ornamental Trees and Shrubs
-  Flowering Meadow
-  Grass or Optional Groundcover

Before You Start

'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 double lot (60 by 100 feet).

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- **Hacksaw and Screwdriver**

Potential Water Sources

- **Garden Hose with potential extension hose**
- **Sprinkler**
- **Downspout Disconnect (shown in lot design)**

Field Guide Resources

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

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

Materials List

Materials

- **Soil Removal**, 225 cubic yards, approximately 9 truck loads of soil
- **Rain Garden Planting Soil**, 10 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Mulch or Wood Chips**, 1.5 cubic yards
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap, and hose clamp

Planting

- **Black-Eyed Susan**, 5 pots
- **Purple Coneflower**, 6 pots
- **Smooth Aster**, 2 pots
- **New England Aster**, 2 pots
- **Blue Flag Iris**, 4 pots or bulbs
- **Bee Balm**, 4 pots
- **Common Milkweed**, 2 pots or bulbs
- **Swamp Milkweed**, 3 pots or bulbs
- **Yarrow**, 3 pots or bulbs
- **Amur Maple**, 3 pots or Balled and Burlapped
- **Scarlet Oak**, 3 pots or Balled and Burlapped
- **American Sycamore**, 2 pots or Balled and Burlapped
- **Mixed Daffodils**, 200 bulbs
- **Snowdrops**, 200 bulbs
- **Mixed Crocuses**, 150 bulbs
- **Autumn Crocuses**, 150 bulbs

Meadow

- **Clay Mix**, 1 pound of seed
- **Germination Blanket**, 1 roll (8 by 112.5 feet)

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 26 pounds of seed
- **Germination Blanket**, 6 rolls (8 by 112.5 feet)

Organic Bowl Step-By-Step

Let's Start

Want to create the Organic Bowl? The Field Guide recommends hiring a professional for all tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design. Only undertake installing the design yourself if you have professional construction experience.

Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot**
- Excavate + Sculpt Bowl**
- Create Rain Garden**

Volunteer Opportunities:

- Plant Perennials**
- Plant Trees**
- Sow Meadow**
- Sow Groundcover + Bulbs**
- Maintain Your Lot Design**
- Disconnect Your Downspout**

Prepare Your Lot

The Organic Bowl is one of the more complex lot designs within the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot, Excavate + Sculpt Bowl, and Create Rain Garden.

If you decide to construct this lot design without the recommended assistance of a professional, the guiding principles below can assist you with the installation of the lot design.

- This lot design utilizes a double lot, 60 by 100 feet.
- The Organic Bowl should be constructed as shown on the design plan to ensure the bowl is the correct depth and setback distance from adjacent lots and sidewalks.
- The Organic Bowl should be a minimum of five feet away from adjacent property lines and at least five foot from sidewalks.
- Use a string and stakes to map out the size, shape, and dimensions of your design.
- You do not need to kill grass in the lot you wish to construct the Organic Bowl as tilling and earth moving will naturally help with grass removal.
- For the Organic Bowl's rain garden to work, water must be directed into it. **The Field Guide recommends constructing your rain garden near downspouts from roofs of houses or garages or near other hard surfaces, such as driveways or patios.** Ensure water flows from these surfaces into your rain garden.
- Your rain garden should be one square foot for every ten square feet of hardscape or stormwater area directed into your rain garden. **The Field Guide recommends an approximately 10 by 18 foot rain garden (180 square feet).**
- The Organic Bowl is designed to collect stormwater runoff from a single standard single family houses up to 1,800 square feet of roof area. (The average Detroit house is 920 to 1,350 square feet.)

Organic Bowl Step-By-Step

○ Excavate + Sculpt Soil

The Field Guide recommends hiring a professional for the excavation and sculpting of soil. Here are a few guiding principles for this step:

- **This lot design creates extra soil, approximately 225 cubic yards, which must be hauled off site and disposed of properly.**
- Special machinery is required to sculpt the bowl.
- Slope begins a minimum of 5 feet from the property line.
- All slopes should not exceed 33% (maximum) slope to allow for safe mowing.
- The bowl should slope from the alley towards the rain garden at 5%.

○ Create Rain Garden

The Field Guide recommends hiring a professional to complete the rain garden installation. Here are a few guiding principles for this step:

- The rain garden will be 180 square feet.
- Dig the rain garden approximately 2.5 feet deep.
- **After removing soil, check that the bottom of the rain garden is level.** An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.
- **After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction.**
- **Fill the rain garden with 18 inches (ten cubic yards) of rain garden planting soil.** Ensure all points of the bowl slope towards the rain garden.

- Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter. Mix together and place in rain garden.
- Use the soil removed from the rain garden area to create one foot high mounds around the bowl, as shown on the design plan.

○ Plant Perennials

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

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

The Field Guide recommends three inches (1.5 cubic yard) of wood chips or mulch under perennial plantings. Adding wood chips or mulch will help suppress weeds.

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

○ Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees and large shrubs can be purchased in pots or balled and burlapped. If you decide to plant larger trees, the Field Guide recommends speaking with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Organic Bowl Step-By-Step

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground. The Field Guide recommends three foot diameter by three inch depth of mulch or wood chips around trees. **0.5 cubic yards of mulch total is recommended for eight trees.** Keep mulch a few inches away from tree trunks.

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

○ Sow Meadow

The meadow area has several unique sections. Together, these areas total 800 square feet.

Soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Nativescape's Clay Mix seed mix is a good option for the Organic Bowl; similar mixes are available from other suppliers.

Nativescape suggests one pound of Clay Mix seed mix per 1,000 square feet. **The Field Guide recommends one pound of Clay Mix for meadow area (800 square feet).** Annual Cover Crop is not required for the seed mix.

Once seeds have been mixed, spread seed across the entire meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You will need to do this several times to get even coverage. 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.

A single roll of 8 by 112.5 foot single net germination blanket will cover the meadow areas. Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Sow Groundcover + Bulbs

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. This family of floppy grasses is very drought resistant and requires only one cutting (in August or September) per year. The soil should already be loosened and prepared for seeding through tilling of lot.

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). Seed mix should be applied to a damp lot. Sow seeds by seed spreader or by hand across remaining lot. Spread seed mix evenly over entire lot. You may need to do this several times over the bed to get even coverage. A seed rate of five pounds per 1,000 square feet is recommended. **If you follow Organic Bowl lot design, you will need approximately 26 pounds of seed mix for full 60 by 100 lot.**

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. **Six 8 by 112.5 foot rolls of single net germination blankets required for 30 by 100 lot.**

Organic Bowl Step-By-Step

Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

One fescue seed mix that the Field Guide recommends is Eco-Turf Low Maintenance Fescue Mix, which can be purchased through Michigan Wildflower Farm.

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

Plant bulbs (daffodils, crocuses, and snowdrops) in clusters of three to five randomly throughout grass area. (This can be a fun activity to do with children!) Bulbs should be planted in the fall.

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

○ Maintain Your Lot Design

Landscapes require care and maintenance to thrive. Here's how to maintain the different sections of the lot design:

Meadow: The Organic Bowl meadow will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.** After the first year, continue weeding, and mow your meadow in late fall or early spring to keep the meadow at its best. It will take about three years for the meadow to establish.

Meadows are a work in progress. If you feel your meadow needs more color, it is okay to add additional native seeds and seed mixes.

Rain Garden: The Organic Bowl rain garden is a manageable size; however, watering and weeding plants is still required especially during the first two years. **Do not let your rain garden dry out in the first warm season.** Add mulch annually to help suppress weed growth.

Gardens are a work in progress. Bulbs and perennials may need to be replaced to keep gardens dynamic and playful.

Grass: Low-Maintenance Fescue Mix should be watered daily until seedlings are four to six inches in height. Once established, grass will not require supplemental watering except during unusually dry periods. Fescue grasses do not grow tall and should only need to be mowed one time per year.

The Organic Bowl's shape and slopes may make mowing difficult with a standard mower. Consider using a weed whip or other special equipment when mowing the mounds. Always use caution when mowing slopes and follow the manufacturers' recommendations.

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.

Organic Bowl Step-By-Step

- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to the [DWSD's How to Disconnect a Downspout](#) document.



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

Average Height of Plants



Tree, Shrub, and Perennials

Organic Bowl Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

-  Individual Plant
-  Individual Ornamental Tree
-  Individual Shade Tree

- | | | | |
|---|---|--|---|
|  1 Ornamental Tree (Amur Maple) |  3 Shade Tree (Scarlot Oak) |  5 Rain Garden |  7 Access Route from Sidewalk |
|  2 Shade Tree (Sycamore) |  4 Meadow (Clay Mix) |  6 Grass or Optional Groundcover | |

Planting: Full Sun to Part Sun



Black-Eyed Susan¹
Rudbeckia hirta
24" Height x 24" Width.
Blooms June - October.
Quantity: 5 pots



Purple Coneflower²
Echinacea purpurea
24" Height x 12" Width.
Blooms July - August
Quantity: 6 pots



Smooth Aster³
Aster laevis
12" Height x 18" Width.
Blooms August - September
Quantity: 2 pots



New England Aster⁴
Aster novae-angliae
12" Height x 18" Width.
Blooms August - September
Quantity: 2 pots



Blue Flag Iris⁵
Iris Virginica
24" Height x 12" Width.
Blooms May - June.
Quantity: 4 pots or bulbs



Bee Balm⁶
Monarda fistulosa
24" Height x 28" Width.
Blooms July - September.
Quantity: 4 pots



Common Milkweed⁷
Asclepias syriaca
48" Height x 24" Width.
Blooms July - August.
Quantity: 2 pots



Swamp Milkweed⁸
Asclepias incarnata
48" Height x 24" Width.
Blooms July - August.
Quantity: 3 pots



Yarrow⁹
Achillea millefolium
24" Height x 24" Width
Blooms June - September
Quantity: 3 pots



Amur Maple¹⁰
Acer ginnala
20' Height x 20' Width.
Quantity: 3 pots or B & B



Scarlet Oak¹¹
Quercus coccinea
70' Height x 50' Width.
Quantity: 3 pots or B & B



American Sycamore¹²
Platanus occidentalis
24" Height x 28" Width.
Blooms July - September.
Quantity: 2 pots or B & B



Mixed Daffodils¹³
Narcissus
18" Height x 24" Width
Blooms in spring
Quantity: 200 bulbs



Snowdrops¹⁴
Galanthus nivalis
4" Height x 4" Width
Blooms in March - April
Quantity: 200 bulbs



Mixed Crocuses¹⁵
Crocuses
4" Height x 4" Width
Blooms in spring
Quantity: 150 bulbs



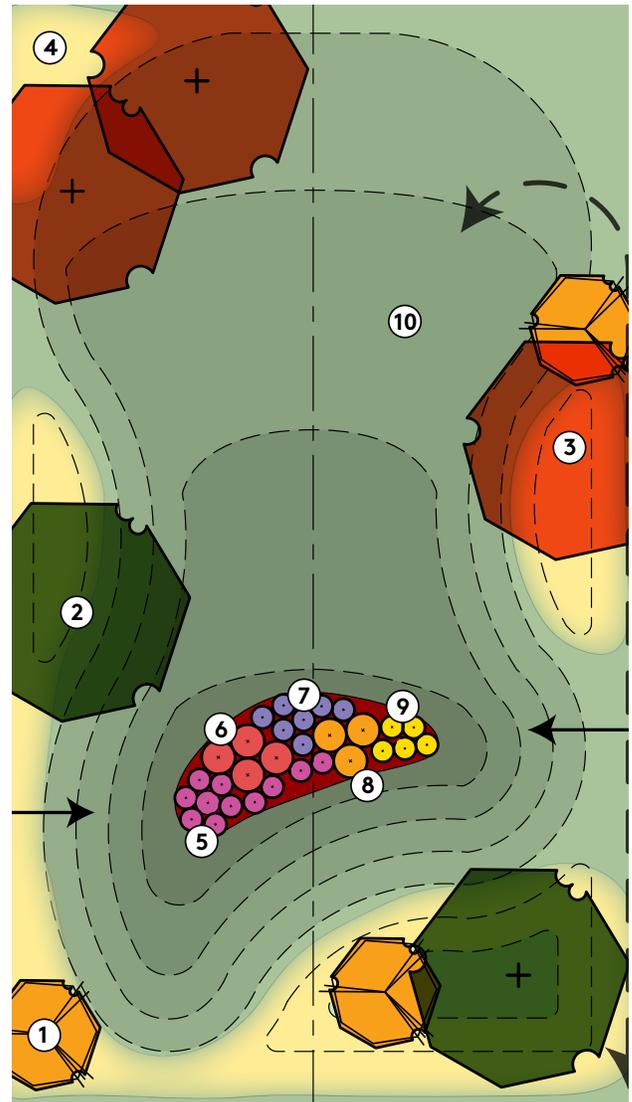
Autumn Crocuses¹⁶
Colchicum cilicicum
4" Height x 4" Width
Blooms September - October
Quantity: 150 bulbs

1) Parshotam Lal Tandon, "Rudbeckia hirta." 27 July 2013 via Flickr, CC BY-NC-SA 2.0; 2) Jordan Meeter, "Purple Coneflower (Echinacea purpurea)." 07 August 2008 via Flickr, CC BY 2.0; 3) Tom Potterfield, "Symphyotrichum leave 'Bluebird.'" 25 September 2011 via Flickr, CC BY-NC-SA 2.0; 4) Tom Potterfield, "Symphyotrichum." 20 September 2012 via Flickr, CC BY-NC-SA 2.0; 5) Jenny Evans, "Blue Flag Iris." 28 December 2010 via Flickr, CC BY-NC 2.0; 6) Corey Seeman, "Bee Balm Flowers." 16 July 2013 via Flickr, CC BY-NC-SA 2.0; 7) Peter Gorman, "Common Milkweed and Friends." 24 June 2007 via Flickr, CC BY-NC-SA 2.0; 8) PDH, "Asclepias incarnata.jpg." 03 February 2006 Public Domain; 9) Stefano, "Achillea millefolium." 29 June 2012 via Flickr, CC BY-NC-SA 2.0; 10) F.D. Richards, "Amur Maple." 24 October 2013 via Flickr, CC BY-SA 2.0; 11) Jean-Pol Grandmont, "Feuilles du Chêne écarlate - Quercus coccinea." 04 October 2008 via Wikimedia, CC BY-SA 3.0; 12) Georges Janssoone JoJan, "Plantanus Orientalis." 22 April 2007 via Wikimedia, Public Domain; 13) Plashing Vole, "Mixed daffodils 2." 8 April 2011 via Flickr, CC BY-NC-SA 2.0; 14) Gideon Chilton, "Snowdrops - Little Oakley." 16 February 2014 via Flickr, CC BY-NC 2.0; 15) Rachelgreenbelt, "jdy072 bpl Crocus Mixed epl Blo." 13 March 2011 via Flickr, CC BY-NC-SA 2.0; 16) Carol, "The autumn crocus IMG_5061." 15 September 2014 via Flickr CC BY-NC-SA 2.0

Planting: Full Sun to Part Sun

Key

- 1** Amur Maple
- 2** American Sycamore
- 3** Scarlet Oak
- 4** Clay Mix (for meadow areas)
- 5** Black-Eyed Susan & Purple Coneflower
- 6** Smooth Aster & New England Aster
- 7** Blue Flag Iris & Bee Balm
- 8** Yarrow
- 9** Common Milkweed & Swamp Milkweed
- 10** Mixed Daffodils, Snowdrops, Mixed Crocuses, and Autumn Crocuses (Mix bulbs and plant randomly throughout grass area.)



Plant Sizes



Pots: 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Plants can be purchased in one to five gallon pots. The size of pots can change based on availability.



Bulbs: Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.

Planting: Full Sun to Part Sun

Clay Mix

One pound of Clay Mix is recommended for the Organic Bowl lot design.

You can buy these seeds premixed at Nativescapes.

Temporary Grasses (60%)

Seed Oats, *Avena sativa*

Annual Rye, *Lolium multiflorum*

Native Grasses and Sedges (10%)

Big Bluestem Grass, *Andropogon gerardii*

Canada Wild Rye, *Elymus canadensis*

Switch Grass, *Panicum virgatum*

Little Bluestem, *Schizachyrium scoparium*

Indian Grass, *Sorghastrum nutans*

New England Aster, *Aster novae-angliae*

Heath Aster, *Aster pilosus*

Boneset, *Eupatorium perfoliatum*

Dense Blazing Star, *Liatris spicata*

Great Blue Lobelia, *Lobelia siphilitica*

Bergamot (Beebalm), *Monarda fistulosa*

Smooth Panstemon, *Penstemon digitalis*

Mountain Mint, *Pycnanthemum virginianum*

Yellow Coneflower, *Ratibida pinnata*

Black-eyed Susan, *Rudbeckia hirta*

Lance-leaved Goldenrod, *Solidago graminifolia*

Ohio Goldenrod, *Solidago ohioensis*

Riddell's Goldenrod, *Solidago riddellii*

Blue Vervain, *Verbena hastata*

Plant Sizes



Seeds: All plants can be purchased in seed form.

Did You Know?

Professionals Can Help!

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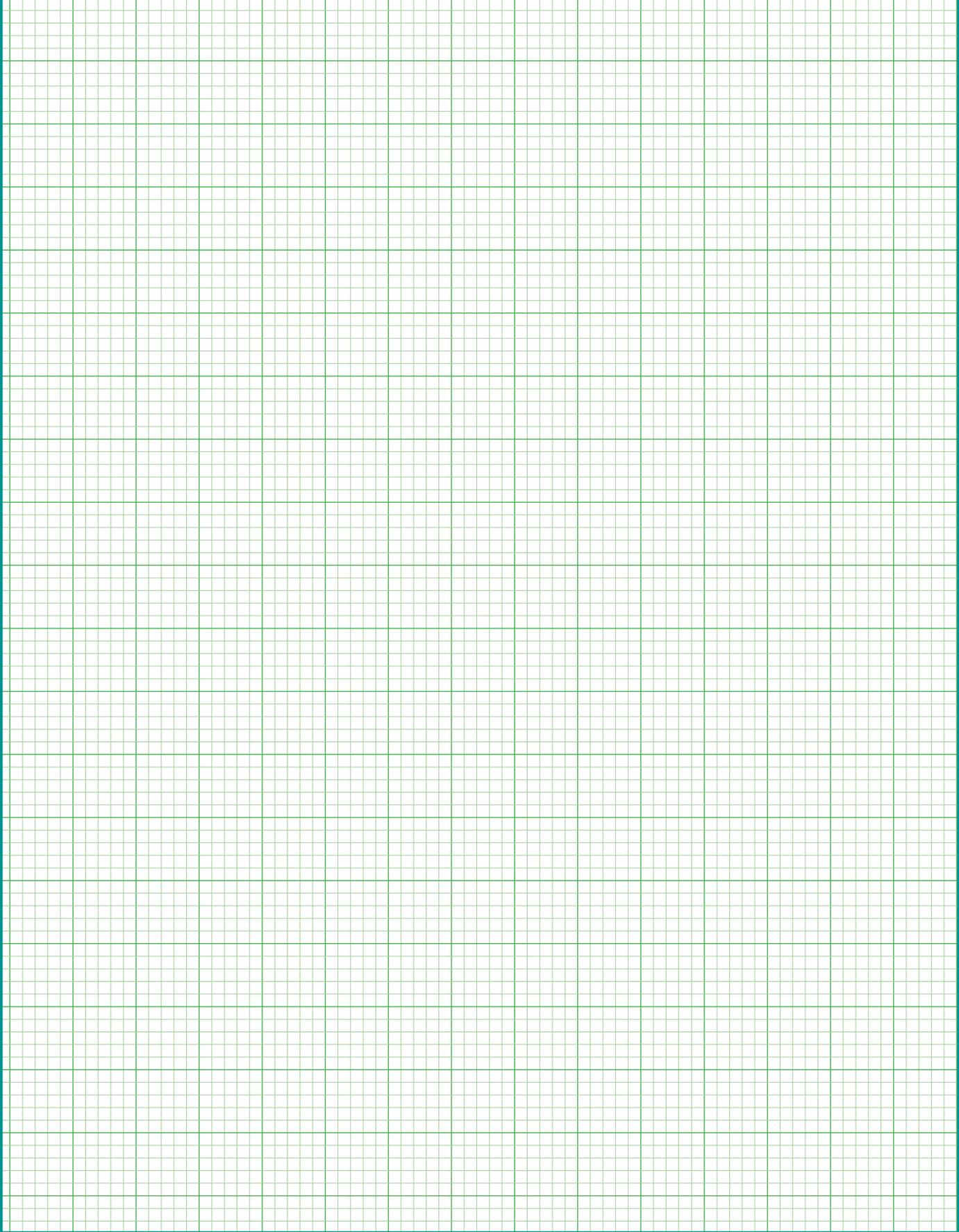
Helpful Facts

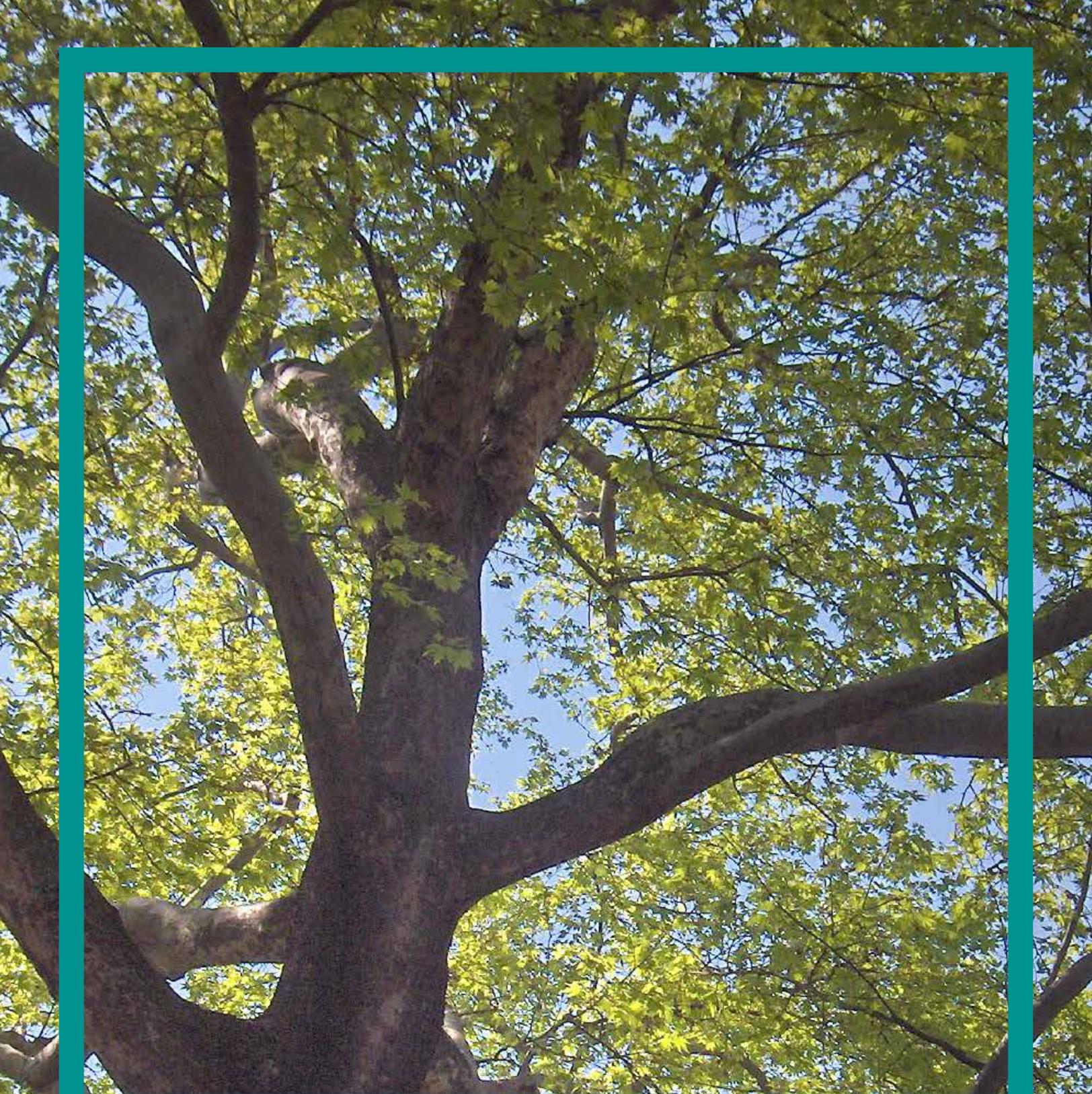
- Rain gardens are designed to decrease the amount of rainwater flowing off your roof and property into the city's storm system.
- Rain gardens capture, hold, and release stormwater back into the ground.
- This rain garden is designed to provide habitat and food for a variety of butterflies and birds.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- Native Bee Balm can be difficult to find. You can substitute a different cultivar if necessary.
- Not interested in the Clay Mix? An alternative is a Butterfly and Hummingbird Garden Mix, such as ERNMIX-179 or equivalent.
- Looking for a more cost efficient planting option? Consider a rain garden seed mix, such as ERNMIX-180 (Ernst Rain Garden Meadow Mix).
- The recommended trees for this lot design are 1.5 inches in diameter. To save money, you can purchase smaller trees.
- To save money, ask a friend or family member if they have any plants or cuttings they are willing to donate to your rain garden.
- Inspect trees before purchasing to make sure they are healthy and are well formed. This will help you select trees that are more likely to survive.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- If mulching around trees, do not place mulch too close (less than three inches) to tree trunks. This will help keep trees free of disease.

Draw Your Lot





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Image Source: Georges Jansoone JoJan, "Plantanus Orientalis." 22 April 2007 via Wikimedia, Public Domain

Volunteer

Professional

Volunteer + Professional

Paisley Patch

Image Source: TM Weddle, "Ravine - Ajuga - April 25." 25 April 2010 via Flickr CC BY-NC-SA 2.0.





The Paisley Patch is a collection of inexpensive and diverse groundcovers that can be inserted into your lawn to create landscape patterns. It is up to you to be creative in arranging your paisley planting areas.

The plants recommended in the lot design were selected for low height and their ability to spread. Take care that these species do not spread to other lots.

Over time and through your selected design and maintenance choices, the patches can grow together into a low-maintenance lawn or remain as distinct perennial beds.

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

What is the lot design likely to cost?

The estimated cost of the Paisley Patch is low to moderate (\$50 – \$2,500) and based on utilizing volunteer labor and potted plants or plugs. The Paisley Patch offers several different design options, and cost will depend on the design selected. 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 maintenance of this lot design is low. Groundcover can be mowed at a high setting into a maintained lawn, left to spread freely on your lot, or controlled in planting beds. Groundcover will need to be watered during the first three weeks of germination and establishment.

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 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.

Cost	\$50 - 1,000	\$1,001 - 2,500	\$2,501 - 5,500	\$5,500 +
People	Volunteer	Professional	Volunteer + Professional	
Experience	Beginner	Intermediate	Advanced	
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Residential Lot in Sun or Shade			

Paisley Patch

Examples of Paisley Patch Plantings

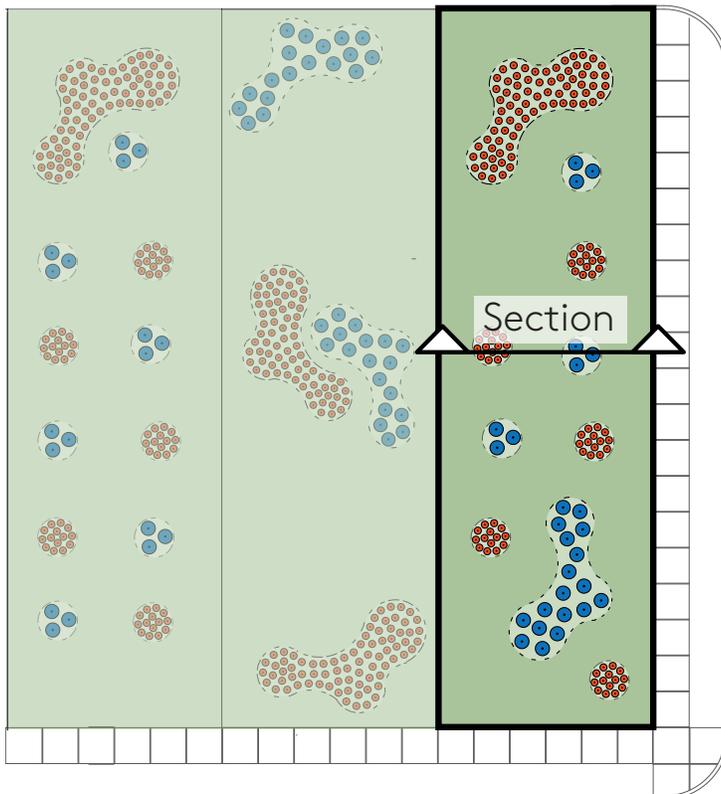


Section



Paisley Groundcover

Where Do I Grow?



The Paisley Patch can be constructed on single or multiple lots and is suitable for corner properties. Each lot can have a unique pattern or the pattern could be repeated over multiple lots.

-  Groundcover 1
-  Groundcover 2
-  Grass or Optional Groundcover

Before You Start

'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 undertake this lot design.

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

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- Sprinkler
- Rain Barrel in addition to other water source

Field Guide Worksheets

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

Materials List

Quantities of plants are not provided. Residents are encouraged to create their own design and mix and match plants. Be creative!

Planting Option 1: Sun

- Mojito Mint
- Lemon Balm
- Spearmint
- Six Hills Giant Catmint
- Walker's Low Catmint
- Oregano
- Red Creeping Thyme

Planting Option 2: Shade

- Caitlin's Giant Bugleweed
- Bronze Beauty Bugleweed
- Bressingham Ruby Bergenia
- Jack Frost Bugloss
- Lily of the Valley

Remaining Lot (Optional)

Groundcover

- Low Maintenance Fescue Mix, 10 to 11 pounds of seeds
- Germination Blanket, 3 rolls (8 by 112.5 feet)

Paisley Patch Step-By-Step

Let's Start

Want to create the Paisley Patch 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:

- Prepare Your Lot
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

Prepare Your Lot

The Paisley Patch can be planted anywhere on your lot. The plants recommended for this lot design have been selected for their color, texture, and ability to spread.

When spreading on your lot, ensure groundcovers do not spread to adjacent properties. The Field Guide recommends planting plants within existing grass or groundcover. Dig out the grass and vegetation in the areas you wish to plant.

If your lot is mainly bare soil or you wish to remove grass, refer to Remove Your Grass on page 5. You may choose to select a different lot design or need purchase plants in seed form.

Plant Perennials

This lot design provides two planting options for your lot depending on whether your lot is in sun or shade. After choosing a planting option, place plants in the desired location, then remove plastic pots, loosen roots, and plant. Remove grass or vegetation a few feet around the area of planted perennials to remove competing plants, giving the new ones a chance to establish.

If you would like plants to spread throughout the lot, provide space between planting patches throughout the lot so they can grow towards each other over time.

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

Paisley Groundcover Step-By-Step

○ Maintain Your Lot Design

The Paisley Patch requires minimal maintenance. It can be mowed into a maintained lawn, left to spread across your lot, or controlled in a planting bed.

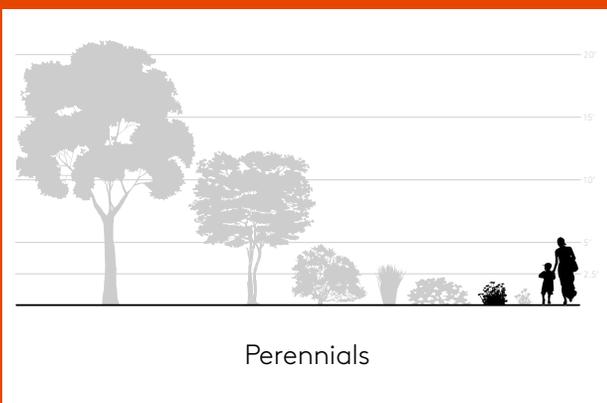
Water and weed around plants as they become established. Once established, watering plants will only be required during exceptionally dry periods.

Mow lawn at a high setting (six inch height) to allow groundcover to continue to grow, providing interest and color to your lot.



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

Average Height of Plants



○ Sow Remaining Lot

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **The amount of low maintenance fescue mix seed required for remaining lot will depend on the number of plants selected and planted. If you are following one of the recommended Paisley Patch designs, you will need approximately 10 to 11 pounds for the remaining lot and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

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: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Planting Option 1: Full Sun to Part Sun



Mojito Mint¹
Mentha x villosa 'Mojito'
 24" Height x 24" Width
 Attractive to Butterflies
Available in pots or plugs



Lemon Balm²
Melissa officinalis
 36" Height x 60" Width
 Attractive to Butterflies
Available in pots or plugs



Spearmint³
Mentha spicata
 24" Height x 36" Width
 Attractive to Bees and Butterflies
Available in pots or plugs



Six Hills Giant Catmint⁴
Nepeta x faassenii
'Six Hills Giant'
 36" Height x 48" Width
 Attractive to Butterflies
 Attractive to Cats
Available in pots



Walker's Low Catmint⁵
Nepeta x faassenii
'Walker's Low'
 12" Height x 12" Width
 Attractive to Butterflies
 Attractive to Cats
Available in pots or plugs

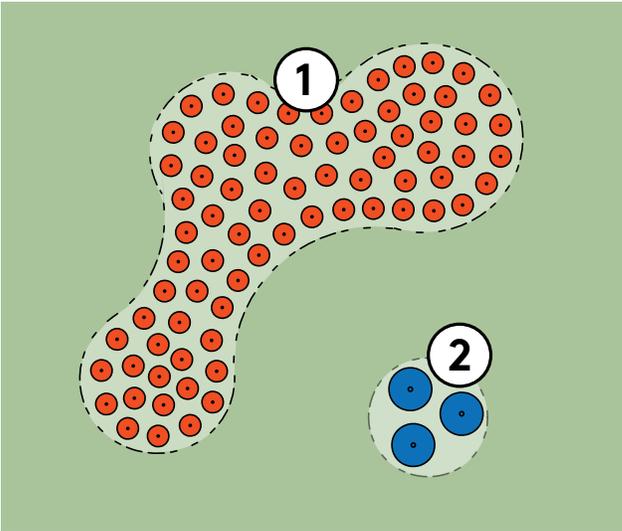


Oregano⁶
Origanum vulgare
 18" Height x 24" Width
 Attractive to Butterflies
Available in pots or plugs



Red Creeping Thyme⁷
Thymus praecox
'coccineus'
 2" Height x 3" Width
Available in pots or plugs

Quantities of plants are not provided. Residents are encouraged to create their own design and mix and match plants. Be creative!



Key

- 1
Mojito Mint, Lemon Balm, Spearmint, Oregano & Red Creeping Thyme (Space approximately 1.5 feet apart and mix evenly.)
- 2
Six Hills Giant Catmint & Walker's Low Catmint (Spaced approximately two feet apart and mix evenly.)

Plant Sizes

- Pots:** Plants can be purchased in one to five gallon pots. Size of pots can change based on availability.
- Plugs:** Plants can be purchased in plug form as a less expensive alternative to pots. Plant one plug per square foot.
- Seeds:** All plants can be purchased in seed form; however, this is not suggested unless your lot is bald.

Image Source: 1) Edsel Little, "Oberlin Summer - Mint." 29 May 2011 via Flickr CC BY-SA 2.0; 2) Strata Chalup, "Lemon-balm-close-texture.jpg." 25 May 2007 via Flickr CC BY-NC-SA 2.0; 3) Borislav Dimitrov, "Spearmint." 26 May 2012 via Flickr CC BY-NC-SA 2.0; 4) Elliott Brown, "Kingston Lacy Gardens - Kingston Lacy Estate - Six Hills Giant." 27 June 2013 via Flickr CC BY 2.0; 5) Jim, the Photographer, "Catmint (Nepeta racemosa)." 19 May 2010 via Flickr CC BY 2.0; 6) Rae Allen, "DSC01402 Oregano." 03 November 2004 via Flickr CC BY-NC-SA 2.0; 7) Marillyle Soveran, "Creeping thyme." 27 June 2015 via Flickr CC BY-NC 2.0.

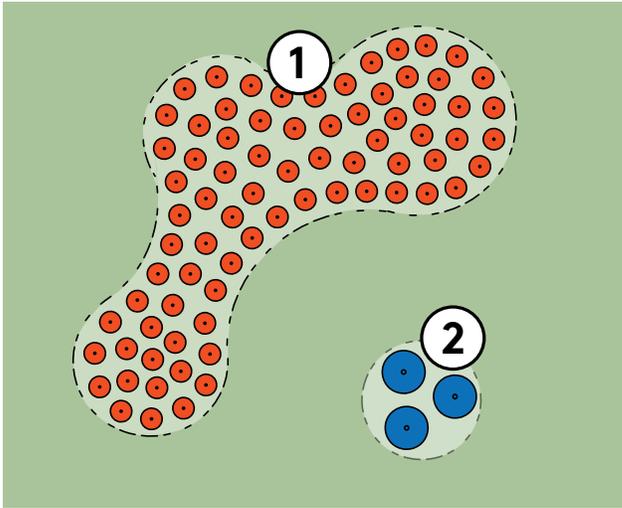
Planting Option 2: Shade & Partial Shade



Caitlin's Giant Bugleweed¹
Ajuga reptans 'Caitlin's Giant'
 12" Height x 24" Width
 Attractive to Butterflies
Available in pots or plugs



Bronze Beauty Bugleweed²
Ajuga reptans 'Bronze Beauty'
 8" Height x 18" Width
 Attractive to Butterflies
Available in pots or plugs



Bressingham Ruby Bergenia³
Bergenia 'Bressingham Ruby'
 14" Height x 12" Width
 Blooms May - June
Available in pots or plugs



Jack Frost Bugloss⁴
Brunnera macrophylla 'Jack Frost'
 18" Height x 18" Width
 Blooms May - June
Available in pots or plugs

Key

- 1
Caitlin's Giant Bugleweed and Bronze Beauty Bugleweed
 (Perennials should be spaced approximately 1.5 feet apart and mixed.)
- 2
Bressingham Ruby Bergenia, Jack Frost Bugloss, and Lily of the Valley (Perennials should be spaced approximately two feet apart.)



Lily of the Valley⁵
Convallaria majalis
 8" Height x 24" Width
Available in pots or bulbs

Quantities of plants are not provided. Residents are encouraged to create their own design and mix and match plants. Be creative!

Plant Sizes

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Image Source: 1) Rachelgreenbelt, "Ajuga reptans, singleplant, yard in greenbelt, jdy173." 22 June 2014 via Flickr CC BY-NC-SA 2.0; 2) Christine Majul, "Bronze beauty in summer." 08 May 2008 via Flickr CC BY 2.0; 3) Daniel, "Bergenia Flowers." 02 March 2009 via Flickr CC BY-NC-SA 2.0; 4) A. Barra, "Brunnera macrophylla 'Jack Frost.'" May 2008 via Wikimedia CC BY-NC-SA 4.0; 5) Stefan Soderstrom, "Lily-of-the-valley's." 17 May 2007 via Flickr CC BY-NC-SA 2.0.

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Helpful Facts

- Mojito Mint, Lemon Balm, Catnip, and Spearmint are herbs. They can be made into tea.
- Cats love catnip. Dried catnip can be made into cat treats.
- Lily of the Valley is fragrant. In large clusters, this plant can make your lot smell wonderful!
- Lily of the Valley is poisonous. Do not eat or mix with edible plants.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- For visual impact, plants should be clustered together.
- The best time to plant is in the spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let soil dry out.
- Mow lawn at high setting (six inch height) to allow groundcover to provide interest and color in your lawn.

Paisley Patch Notes

A large grid area for taking notes, framed by a thick blue border. The grid consists of small squares, typical of graph paper, and is intended for recording observations or data related to the Paisley Patch.



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Image Source: Strata Chalup, "Lemon-balm-close-texture.jpg." 25 May 2007 via Flickr CC BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional

Party Lot

Image Source: Magnus Manske, "Lilac." N/A Date via Wikimedia CC BY 1.0.





The Party Lot brings new activity to a neighborhood by providing a small pocket park, family gathering space, or community hub.

The Party Lot is best installed across multiple lots. When joined together, the perennial beds create outdoor rooms and spaces that can be used for a variety of activities, such as graduations, weddings, or birthday parties, family reunions, and other community get-togethers.

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

What is the lot design likely to cost?

The estimated cost of the Party Lot is moderate (\$1,000 –\$2,500) and based on utilizing volunteer labor 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?

This is a medium maintenance lot design. Maintenance will include watering plants and newly planted trees, particularly during times of drought and excess heat.

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.

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	Across Multiple Lots in Full Sun or Part Sun			

Party Lot

Example of Party Lot Plantings



2 - Lilac



3 - Periwinkle

Section



Where Do I Grow?



The Party Lot can be installed on a single lot or extended across multiple lots. It is also suitable for corner properties.

-  Evergreen Tree
-  Shade Tree and Shrub
-  Groundcover
-  Grass or Optional Groundcover

Before You Start

'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); however, the Party Lot is best installed on multiple lots.

Tools + Resources

Suggested Tools

- Marking Paint and Tape Measure
- **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
- Tree Planting Detail
- Perennials + Grasses Planting Detail
- Bulb Planting Detail

Materials List

Materials

- Mulch or Wood Chips, 5 cubic yards

Planting

- Autumn Brilliance Serviceberry, 1 pot
- Yellowwood, 2 pots
- Bruns Serbian Spruce, 1 pot
- Sunny Knockout Rose, 11 pots
- Common Lilac, 2 pots
- Periwinkle, 240 plugs

Remaining Lot (Optional)

Groundcover

- Low-Maintenance Fescue Mix, 12 pounds of seed
- Germination Blanket, 3 rolls (8 by 112.5 feet)

Party Lot Step-By-Step

Let's Start

Want to create the Party Lot 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**
- Plant Trees**
- Plant Perennials**
- Maintain Your Lot Design**
- Sow Remaining Lot**

Prepare Your Lot

This lot design utilizes a full 30 by 100 foot lot; however, the Field Guide recommends implementing the design on multiple lots to create a larger, more usable community space.

Select the best location for the Party Lot perennial beds. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design.

Minimal grass removal is required for your lot design. The Field Guide recommends removing the grass and its root system by digging the grass up. If implementing the design across multiple lots, a different grass removal method may be required. Refer to Remove Your Grass on page 4 for more information.

Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, you can plant smaller or larger trees if you prefer. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Party Lot Step-By-Step

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends three foot diameter by three inch depth of mulch or wood chips around trees, keeping it a few inches away from tree trunks.

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

○ Plant Perennials

Sunny to partly sunny plantings are recommended for the Party Lot. 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 three inches (5 cubic yards) of mulch or wood chips to the three planting beds, as shown on plan. Adding mulch or wood chips will help suppress weeds.

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

○ Maintain Your Lot Design

Trees and shrubs are relatively low-maintenance. Water and weed plants while they are getting established. Once your shrubs and groundcover are established, they will shade out the majority of any weeds. Rose can be pruned in late winter as well as lilac after it is done flowering.

Add mulch or wood chips annually to areas without groundcover to help suppress weed growth.

Party Lot Step-By-Step



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

Average Height of Plants



Trees, Shrubs, and Groundcover

○ Sow Remaining 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 Party Lot lot design you will need approximately 12 pounds of fescue seed mix for the remaining lot and three 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

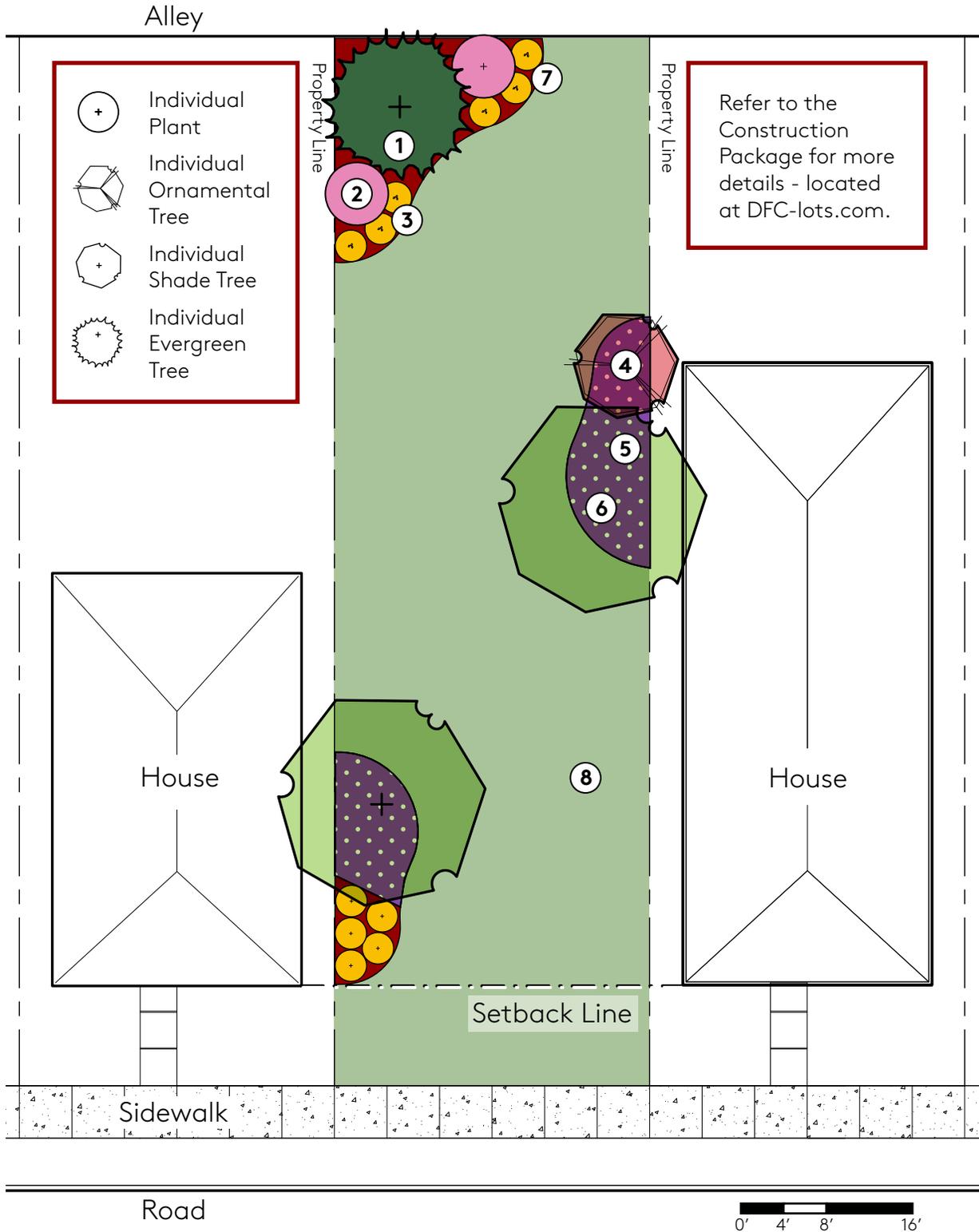
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Party Lot Lot Design



- | | | | |
|--|---|-----------------------------------|--|
| 1 Evergreen Tree (Serbian Spruce) | 3 Flowering Shrub (Rose) | 5 Groundcover (Periwinkle) | 7 Mulch |
| 2 Flowering Shrub (Lilac) | 4 Ornamental Tree (Serviceberry) | 6 Shade Tree (Yellowwood) | 8 Grass or Optional Groundcover |

Planting: Full Sun to Part Sun



Autumn Brilliance Serviceberry¹
Amelanchier x grandiflora
 25' Height x 15' Width
 Blooms April
Quantity: 1 pot



Yellowwood²
Cladrastis kentuckea
 40' Height x 40' Width
 Blooms May
Quantity: 2 pots



Bruns Serbian Spruce³
Picea omorika 'Bruns'
 30' Height x 10' Width
Quantity: 1 pot



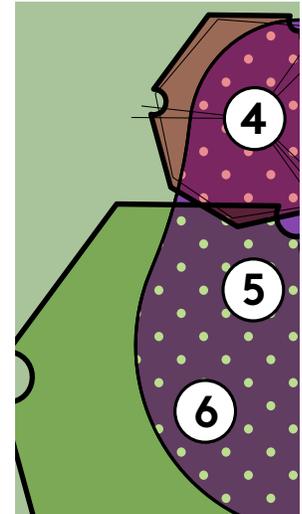
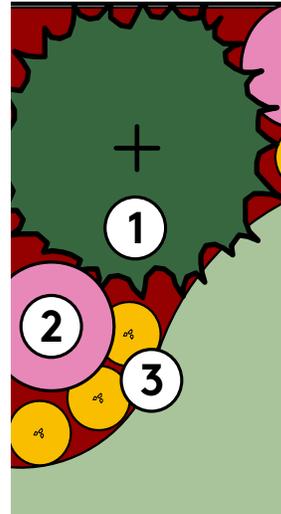
Sunny Knockout Rose⁴
Rosa x 'Sunny'
 3' Height x 3' Width
Quantity: 11 pots



Common Lilac⁵
Syringa vulgaris
 12' Height x 9' Width
Quantity: 2 pots



Periwinkle⁶
Vinca minor
 6" Height
Quantity: 240 plugs



Key

- 1 **Bruns Serbian Spruce**
- 2 **Common Lilac**
- 3 **Sunny Knockout Rose**
(Space approximately three feet apart.)
- 4 **Autumn Brilliance Serviceberry**
- 5 **Periwinkle Groundcover**
(Space plugs approximately one foot apart.)
- 6 **Yellowwood**

Plant Sizes



Pots: Plants can be purchased in one to five gallon pots. The size of pots can change based on availability. 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).



Plugs: Plants can be purchased in plug form as a less expensive alternative to pots. Plant one plug per square foot.

Image Source: 1) Paul Woods, "Amelanchier in bloom 1." 13 April 2013 via Flickr, CC BY-NC- SA 2.0; 2) Chhe, "Cladrastis kentuckea." 06 June 2009 via Wikimedia, public domain; 3) Rasbak, "Picea omorika." 08 September 2004 via Wikimedia, CC BY-SA 3.0; 4) Tvaubtzku1234, "Rose Sunny Sky." 2013 via Wikimedia, CC0 1.0; 5) LtPowers, "Syringa vulgaris (common Lilac) cultivar 'Flower City.'" 15 May 2013 via Wikimedia, CC BY-SA 3.0; 6) H. Zell, "Vinca minor, Apocynaceae, Lesser Periwinkle, habitus; Karlsruhe, Germany." 14 April 2009 via Wikimedia, CC BY-SA 3.0.

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.

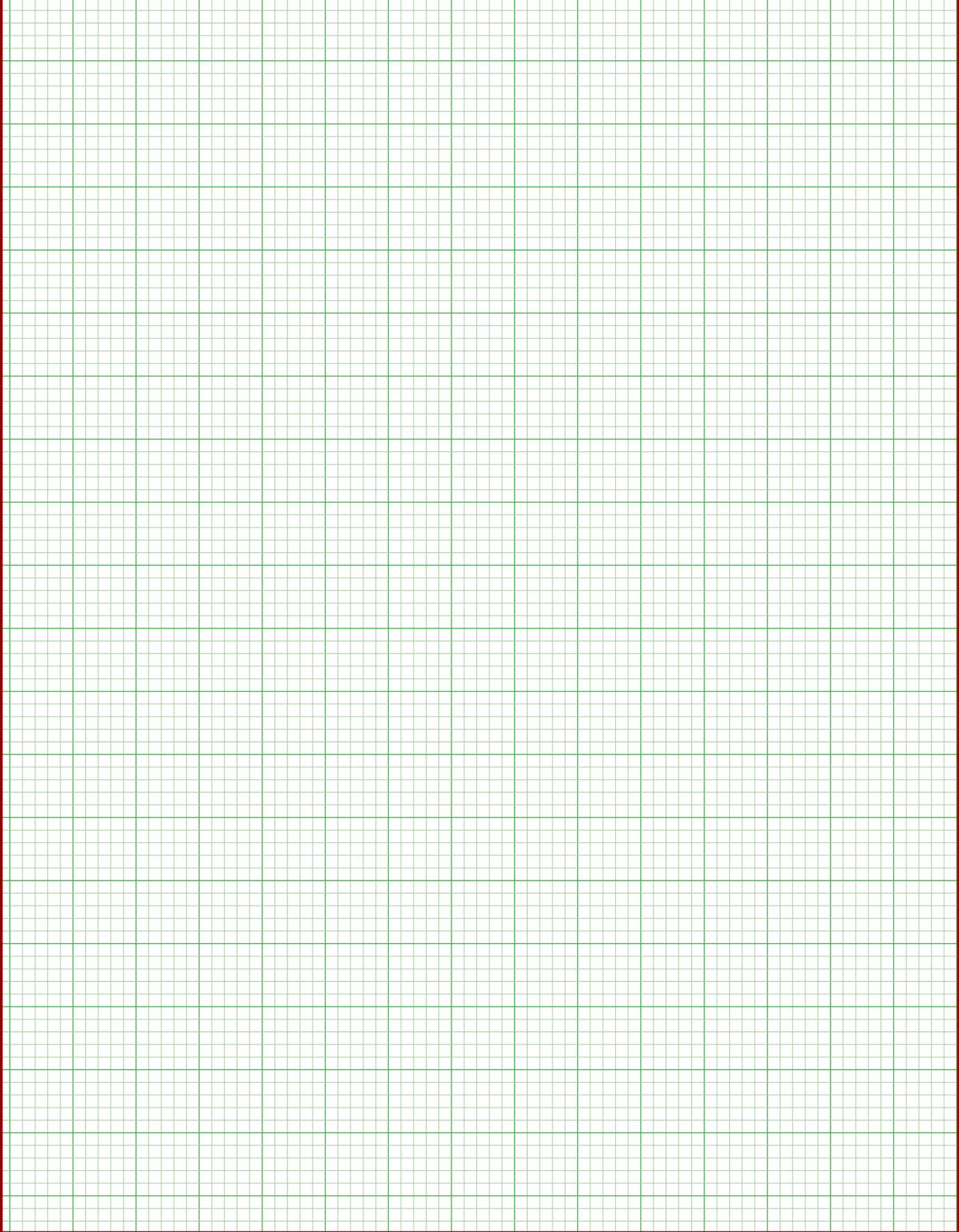
Helpful Facts

- The plant species recommended for this lot design will flower in the spring and provide a mix of bright fall colors.
- Landscape areas can provide habitat for a variety of birds.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant trees and shrubs is the spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed. Do not let plants dry out.
- Weed weekly or as needed.
- Mulch and wood chips help protect trees and plants from mowers and conserves water.
- If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Draw Your Lot





**DETROIT
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CITY**

**working
with lots**
A FIELD GUIDE

**Visit [DFC-lots.com](https://dfc-lots.com)
#DFClots**

Image Source: H. Zell. "Vinca minor, Apocynaceae, Lesser Periwinkle, habitus; Karlsruhe, Germany" 14 April 2009, via Wikimedia, CC BY-SA 3.0

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?

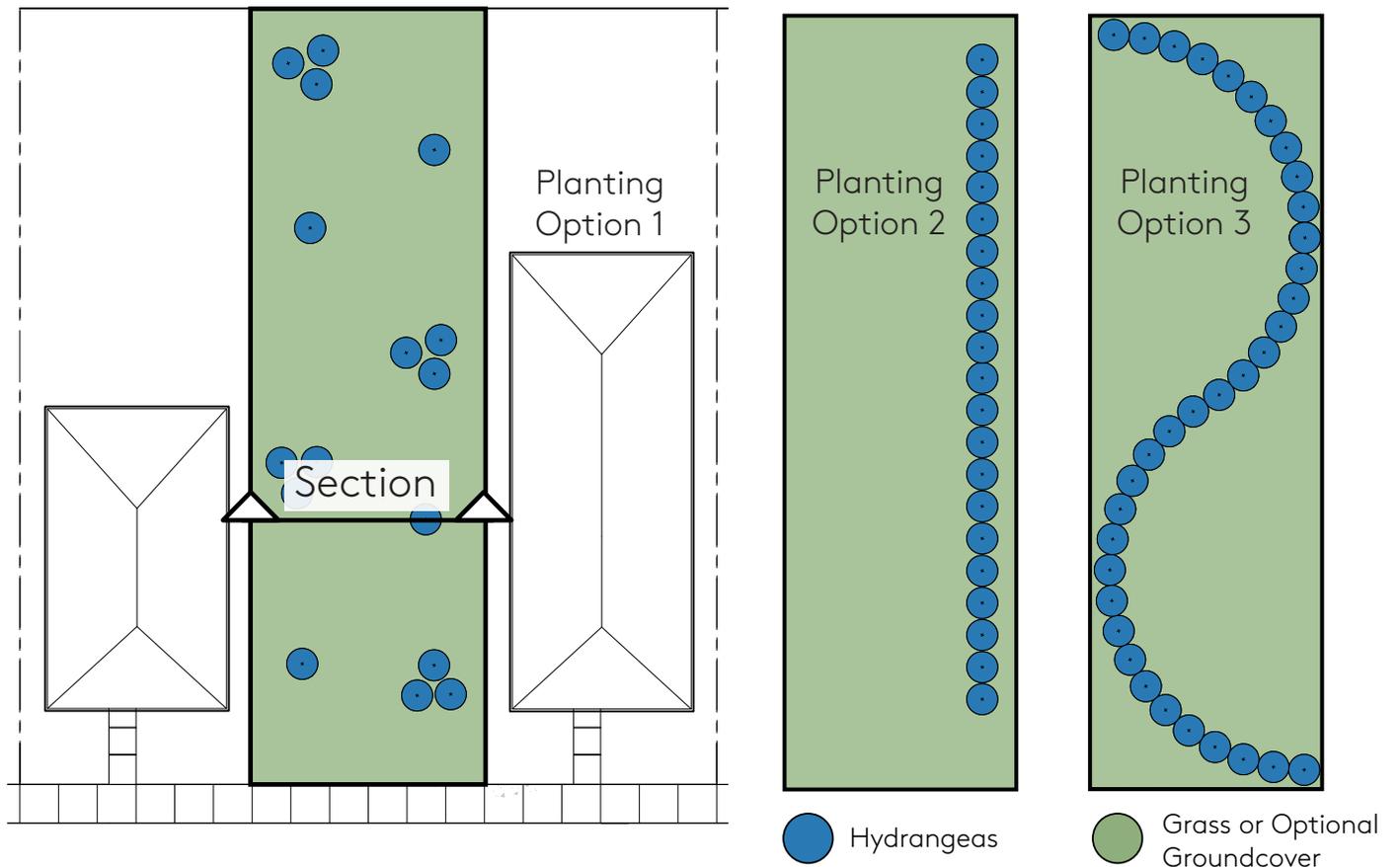


Image Source: 1) Sarah Barker, "The Dell Lawns." 17 August 2014 via Flickr, CC BY-SA 3.0; 2) Ryutaro Koma, "Hydrangea." 22 June 2013 via Flickr, CC BY-NC 2.0; 3) Nsain, "Office Coffee Compost." 25 February 2010 via Flickr, CC BY-NC-SA 2.0.

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.

Average Height of Plants



Large Shrubs

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?

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Still unsure of where to start?

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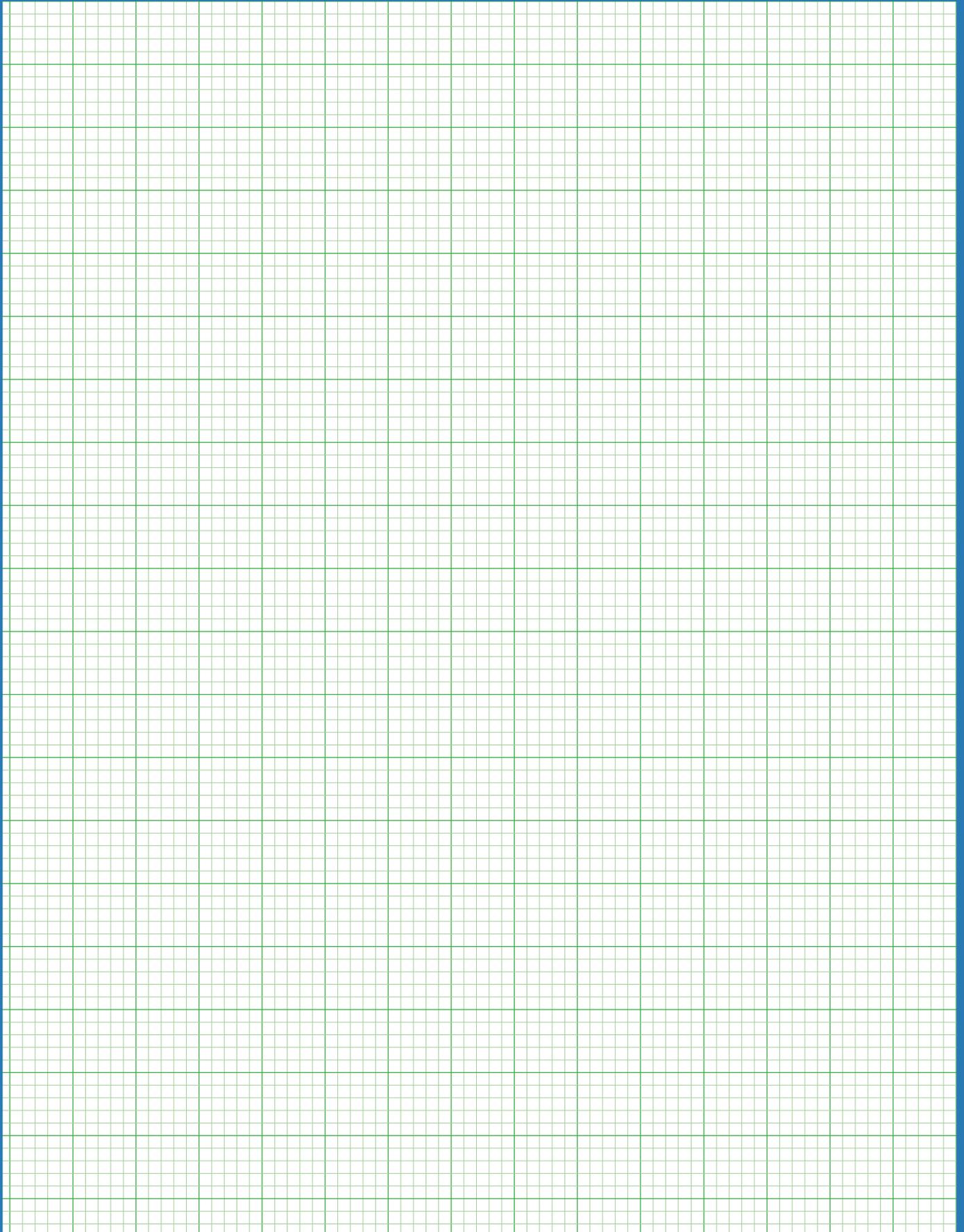
Helpful Facts

- 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





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

Volunteer

Professional

Volunteer + Professional

Rear Parking Partner

Image Source: Jean-Pol Grandmont, "Feuilles du Chêne écarlate - Quercus coccinea." 04 October 2008 via Wikimedia, CC BY-SA 3.0





The Rear Parking Partner can transform your lot into an amenity for responsible residential parking. This lot design provides a single parking space, though it can be enlarged to accommodate two vehicles. It is accessible from the alley and aligns with adjacent garages. The parking pad allows water to infiltrate the ground instead of running off into Detroit’s overtaxed sewerage system.

The design occupies only a small portion of the lot, allowing space for other landscape amenities and activities on the rest of your lot. This lot is a great design to share with a neighbor who also wants off-street parking!

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

What is the lot design likely to cost?

The estimated cost of the Rear Parking Partner is high (\$2,500 – \$5,500) and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork and installation of the parking pad. Planting can be completed by a professional or by volunteers. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a medium level of maintenance to thrive. Maintenance will include watering plants and newly planted trees, particularly during times of drought and excess heat, pruning trees and shrubs, and general upkeep of the parking area.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to undertake the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for the completion of several steps. The projected installation time listed below only accounts for the volunteer opportunities listed in the Step-By-Step section. While people tackle projects differently, the Field Guide estimates the installation time of this lot design to be one to two full weekends with a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends at least five healthy adults or youth to undertake this lot design. The Field Guide assumes that the lot is ‘construction ready,’ and all equipment and materials required for lot design have been acquired and are ready to use.

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	Residential Lot in Full Sun to Part Sun (Near One or Two Residential Houses is Ideal)			

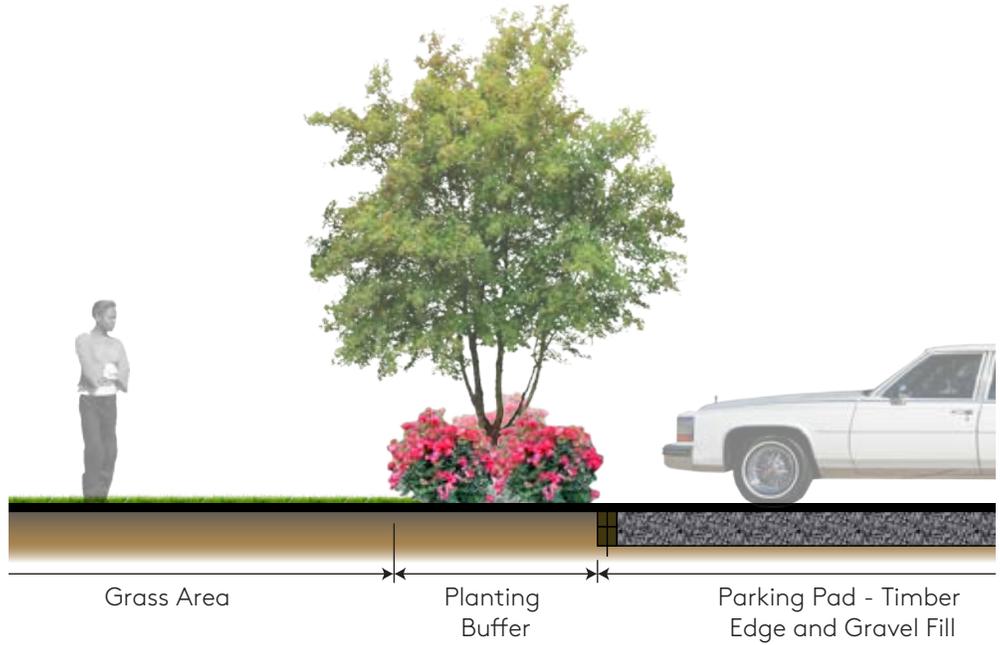
Rear Parking Partner

Example of Rose Hedge

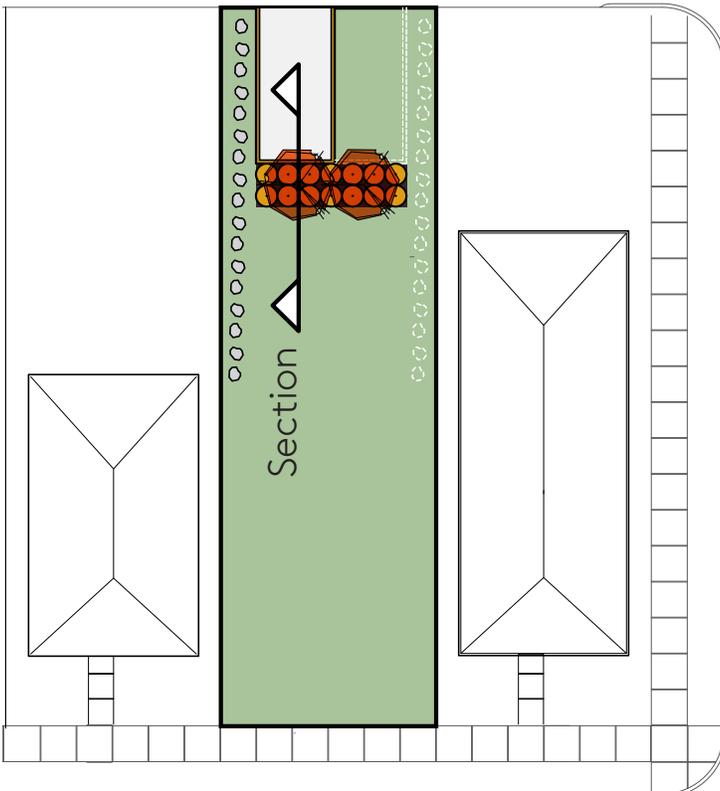
Section



1 - Roses



Where Do I Grow?



The Rear Parking Partner can be constructed on a single lot and can be utilized by one or two neighboring properties.

- Shrubs
- Trees
- Mulch
- Parking Pad
- Grass

Before You Start

'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

- Making Paint and Tape Measure
- **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
- Drill, Power Saw, and Sledge Hammer

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
- Tree Planting Detail
- Perennials + Grasses Planting Detail
- Bulb Planting Detail

Materials List

Materials

- **Geo-fabric**, 220 square feet, 4 ounce non-woven
- **Timber Edging**, 14 boards, 8 feet by 8 inches by 8 inches pressure treated or cedar
- **Edging Stakes**, 32 stakes, ¾ inch by 18 inch round steel
- **Parking Pad Stone**, 8 cubic yards of MDOT 6A stone
- **Mulch or Wood Chips**, 3 cubic yards

Planting

- **Knockout Roses**, 14 pots or Balled & Burlapped
- **Amur Maple**, 2 pots or Balled & Burlapped

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 12 pounds of seed
- **Germination Blanket**, 2 rolls (8 by 112.5 feet)

Rear Parking Partner Step-By-Step

Let's Start

Want to create the Rear Parking Partner? The Field Guide recommends hiring a professional for some tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design and the steps appropriate for volunteers.

Check off tasks as you go along.

Lot Design Steps

Professional Recommended:

- Prepare Your Lot
- Create Parking Pad

Volunteer Opportunities:

- Plant Trees
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

Prepare Your Lot

The Rear Parking Partner is one of the more complex lot designs within the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot and Create Parking Pad.

If you decide to construct this lot design without the recommended assistance of a professional, the following guiding principles can help assist you with the installation of the lot design.

- This lot design utilizes back portion of the lot, 11 by 20 foot parking area with six by 21 feet planting bed.
- The Rear Parking Partner should be constructed as shown on the design plan to ensure the parking area and planting are the correct setback from adjacent lots.
- The parking pad should be minimum of five feet any from side property lines.
- Before you construct the Rear Parking Partner, make sure your lot and alley are clean and clear of obstacles and is safe for you to drive to and from your proposed parking area.
- Lot design creates extra soil, which must be hauled off site or disposed of. An alternative is to incorporate the extra soil into the front portion of your lot.
- Use marking paint and a tape measure to map out the size, shape, and dimensions of your parking area.

Rear Parking Partner Step-By-Step

○ Create Parking Pad

Follow these guiding principles for installation of the parking pad:

- The lot design shows a single parking pad; however, it can be extended to include two parking spaces. This lot design is for a single parking pad. **Excavate 11 by 20 foot area to a depth of one foot.** Remove all stones and roots to create a level area and compact soil.
- **Timber Edging:** You will need 14, 8 feet by 8 inches by 8 inches pressure treated or cedar boards. Set the bottom row of timber edging and level, then cut boards to fit. Timber edging will be required around all edges except along the alley edge.
- Pre-drill holes for round steel stakes, using two holes per timber for the bottom set of timber edging.
- Embed stakes into pre-drilled holes using a sledge hammer.
- Set second layer of timber edging on top of first row, staggering joints between top and bottom timbers.
- Cut boards to fit.
- Pre-drill holes through top timber edging, making sure to avoid the stakes already installed into bottom timbers.
- Embed stakes through both timber courses. You will need 32, ¾ inch by 18 inch round steel stakes for edging.
- **Parking Pad:** Place 4 ounce non-woven geofabric across pad area and up sides leaving six to nine inches lip (220 square feet).
- For a single parking pad, fill parking area with 12 inches of MDOT 6A stone (eight cubic yards). MDOT 6A Stone refers to stone sizes generally ⅔ of an inch to 1-½ inches in size.

○ Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred.

Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top ⅓ of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends three foot diameter by three inch depth of mulch or wood chips around trees. Keep mulch a few inches away from tree trunks.

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

Rear Parking Partner Step-By-Step

○ Plant Perennials

A sunny to partly sunny planting option is recommended for Rear Parking Partner. If your lot is in shade, seek alternative planting options.

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

Place three inches of mulch or wood chips to 6 foot planting bed (3 cubic yards). Add mulch or wood chips to help suppress weeds.

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

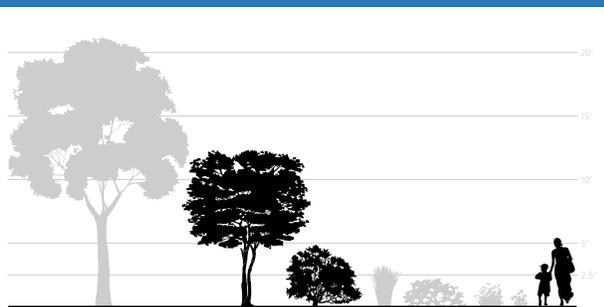
○ Maintain Your Lot Design

The parking area requires minimal maintenance; however, the plants will need care and maintenance to thrive and look their best. Water and weed plants regularly, especially during the first few years. Prune roses in late winter and maples in fall.



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

Average Height of Plants



Small Trees and Shrubs

○ Sow Remaining 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 Rear Parking Partner lot design, you will need approximately 12 pounds of fescue seed mix for the remaining lot (1,500 square feet) and two 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

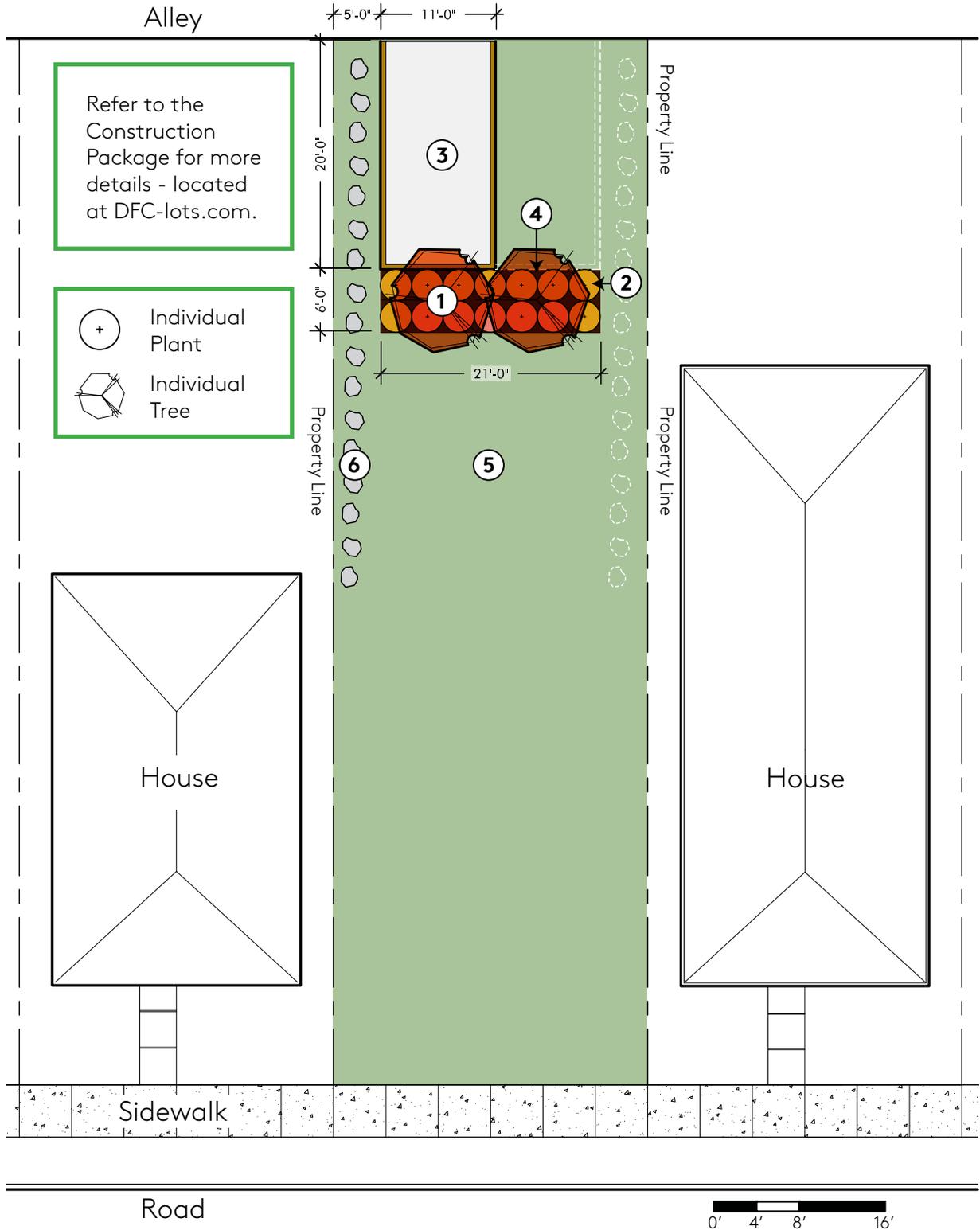
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Rear Parking Partner Lot Design



Refer to the Construction Package for more details - located at DFC-lots.com.

- + Individual Plant
- + Individual Tree

1 Ornamental Tree (Amur Maple)

3 Parking Pad

5 Grass or Optional Groundcover

2 Flowering Hedge (Rose)

4 Mulch

6 Stone Path (Optional)

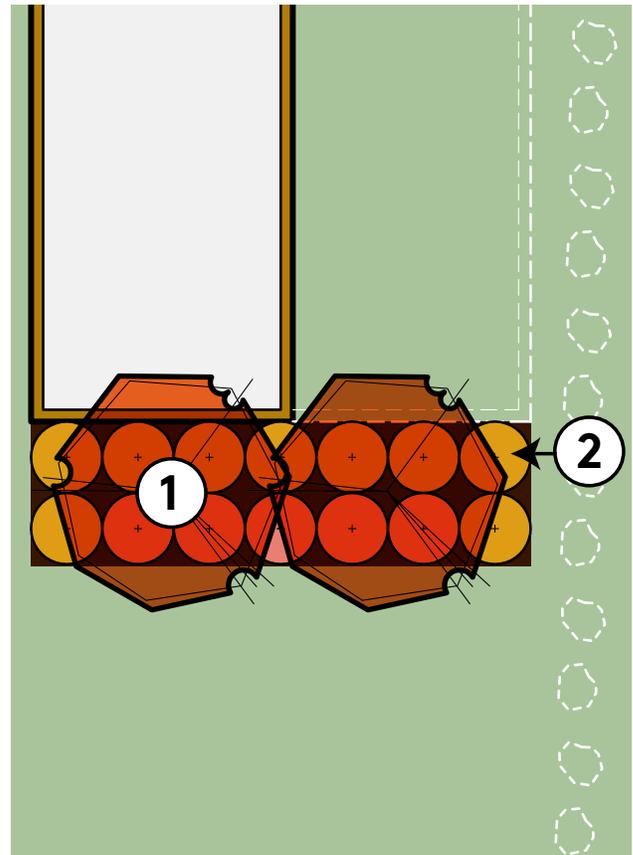
Planting Option: Full Sun to Part Sun



Amur Maple 'Flame'¹
Acer ginnala 'Flame'
 20' Height x 20' Width
Quantity: 2 pots or B & B



Knockout Rose²
Rosa 'Radtko'
 3' Height x 3' Width
Quantity: 14 pots



Plant Sizes



Pots: Roses can be purchased in one to five gallon pots. The size of pots can change based on availability.

1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Key



Amur Maple
 (Space approximately nine feet apart.)



Knockout Rose Hedge
 (Space approximately three feet apart.)

Did You Know?

Professionals Can Help!

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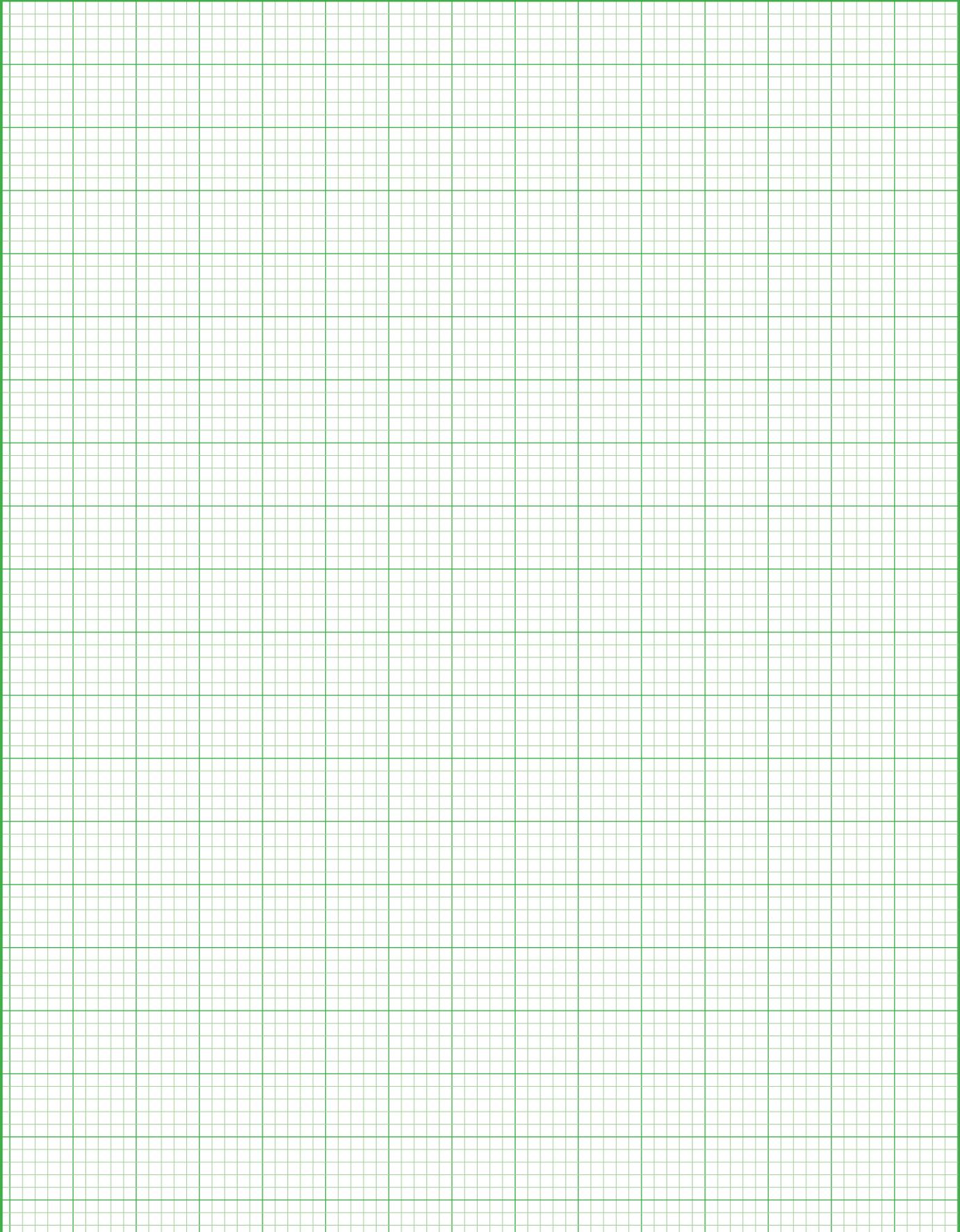
Helpful Facts

- Cedar wood is a slow decaying wood and does not need to be stained or treated.
- The Flame Amur Maple is a multi-stemmed deciduous tree with bright red fall color and summer fruits.

Planting Tips

- Call ahead to make sure nursery or garden store has the plants you need for lot design.
- The best time to plant trees and shrubs is spring or fall.
- Do not plant in extreme heat. Early mornings or evenings are ideal.
- Water after planting and as needed. Do not let soil dry out.
- Weed weekly or as needed.
- Prune roses in early spring.
- Prune maple in late summer after the leaves have fully developed.
- Mulch conserves water and helps protect trees and plants from mowers.
- You can purchase additional mulch or create a stepping stone pathway from alley parking lot to your house.

Draw Your Lot





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Image Source: Tony Alter. "Red_Double_Knockout_Rose_close." 12 April 2010 via Wikimedia, CC BY 2.0

Volunteer

Professional

Volunteer + Professional



Ring Around the Garden

Image Source: Sosanna., "Redbud_Bee.JPG" 30 March 2015 via Wikimedia CC BY-SA 4.0



HELLO

MY NAME IS

Ring Around the Garden

The Ring Around the Garden is a circular rain garden designed for a double lot. Due to its large size, the Ring Around the Garden is suitable for stormwater collection from large impervious areas, such as large parking lots, schools, churches and warehouses.

The soil pile excavated from the rain garden creates a center mound to be planted with colorful spring blooms. The Field Guide encourages you to make this lot design your own by adding ornamental trees, sculptures, or other unique features on the mound.

This design requires integration with municipal systems and is a great choice for those looking to play a role in green infrastructure!

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

What is the lot design likely to cost?

The estimated cost of the Ring Around the Garden is over \$5,500 and based on volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork and lot preparation. Planting can be completed by a professional or by volunteers. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This lot design requires a high level of maintenance to thrive. Maintenance will include weeding and watering the plants, trees, and large-scale rain garden, particularly during the first two years while the plants establish themselves.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family, or neighbors, would like to construct the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on the recommended professional and volunteer steps. If you do not feel able to tackle the volunteer aspect of this lot design, a professional can construct the entire project.

How long will it take to install this lot design?

This lot design requires a professional for several steps of the installation. The projected installation time listed below only accounts for the volunteer opportunities listed in the Step-By-Step section. While people tackle projects differently, the Field Guide estimates the installation time of the lot design to be one weekend with a volunteer group organized by a knowledgeable lot leader. The Field Guide recommends the help of at least eight healthy adults or youth to construct this lot design. The Field Guide assumes that the lot is 'construction ready,' and all equipment and materials required for lot design have been acquired and are ready to use.

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	Double Lot in Full Sun or Part Sun (Near School or Community Hub is Ideal)			

Ring Around the Garden

Examples

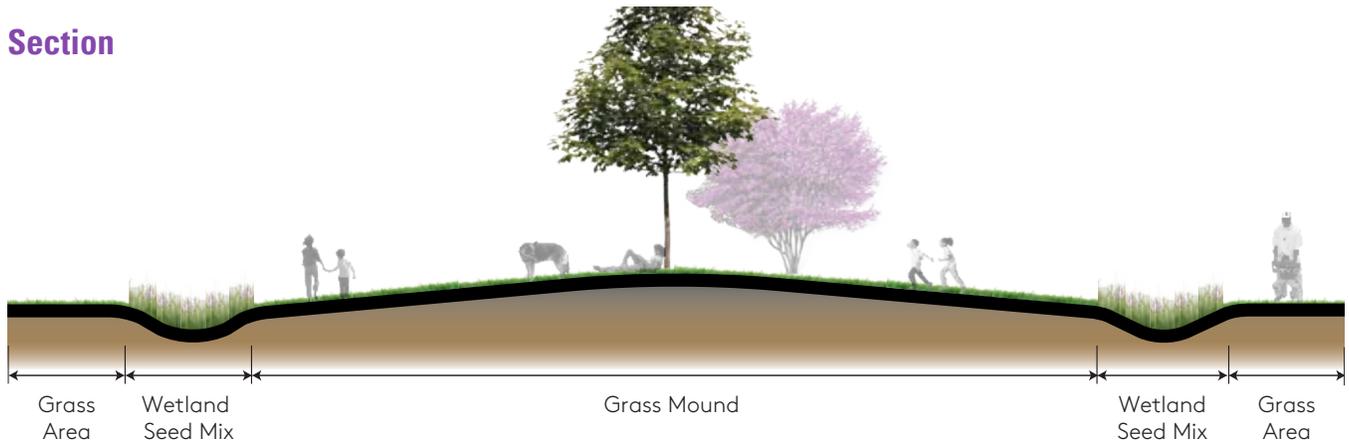


1 - NORA Project

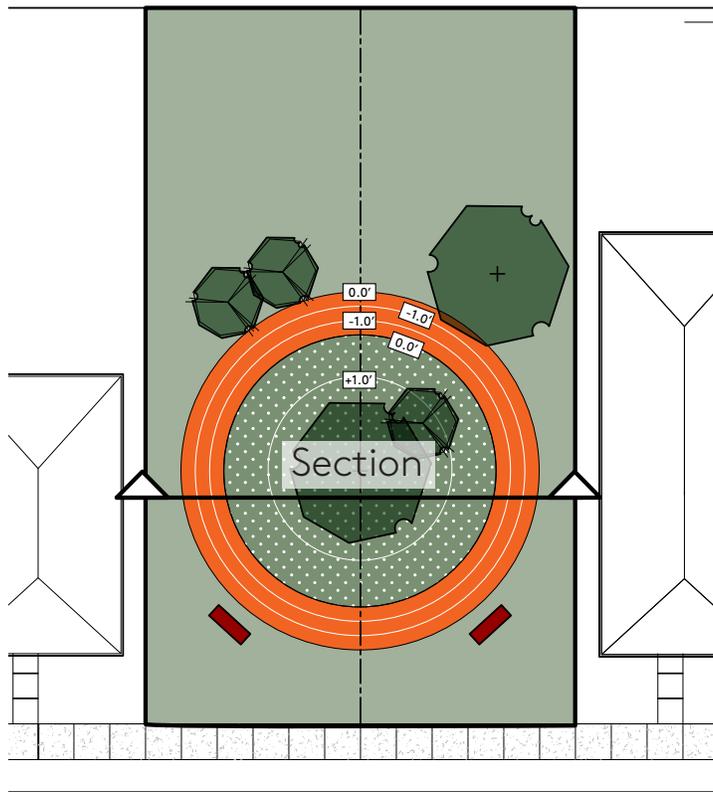


2 - Crocuses around Tree

Section



Where Do I Grow?



The Ring Around the Garden is best suited for double lots or corner lots. Its most effective use would be to collect stormwater from at least one large-scale commercial or institutional parking lot or roof.

- Rain Garden Seed Mix
- Tree
- Planted Mound
- Grass or Groundcover
- Benches (Optional)

Before You Start

'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 double lot (60 by 100 feet).

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- **Hacksaw and Screwdriver**
- **Earth Moving Machinery:** Skid loader or backhoe
- **Ball Cart**, for moving heavy trees

Potential Water Sources

- Garden Hose with potential extension hose
- Sprinkler
- Rain Barrel in addition to other water source
- Downspout Disconnect (shown in lot design)

Field Guide Resources

Resources are available on the Field Guide's website.

- **Clean + Green**
- **Tree Planting Detail**
- **Bulb Planting Detail**

Materials List

Materials

- **Mulch or Wood Chips**, 0.5 cubic yards
- **Rain Garden Planting Soil**, 46 cubic yards (50% sand, 25% topsoil, and 25% compost or leaf litter)
- **Downspout Disconnect:** Standpipe cap, downspout elbow, downspout connection pipe, rubber cap and hose clamp

Planting

- **Autumn Brilliance Serviceberry**, 2 pots or Balled and Burlapped
- **Eastern Redbud**, 1 pot or Balled and Burlapped
- **American Sycamore**, 2 pot or Balled and Burlapped
- **Mixed Daffodils**, 100 bulbs
- **Mixed Crocuses**, 150 bulbs
- **Autumn Crocuses**, 150 bulbs
- **Snowdrops**, 200 bulbs
- **Periwinkle**, 100 pots or plugs
- **Giant Onion**, 100 bulbs
- **Mixed Lenten Roses**, 100 bulbs

Rain Garden Seed Mix

- **Rain Garden Seed Mix**, 0.5 pound of seed
- **Annual Cover Crop**, 1 pound of seed
- **Germination Blanket**, 2 rolls (6.5 by 112.5 feet)

Remaining Lot (Optional)

Groundcover

- **Low-Maintenance Fescue Mix**, 26 pounds of seed
- **Germination Blanket**, 6 rolls (8 by 112.5 feet)

Ring Around the Garden Step-By-Step

Let's Start

Want to create the Ring Around the Garden? The Field Guide recommends hiring a professional for all tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design. Only undertake installing the design yourself if you have professional construction experience.

- Check off tasks as you go along.

Lot Design Steps

Professional:

- Prepare Your Lot
- Excavate + Sculpt Soil

Volunteer Opportunities:

- Plant Trees
- Sow Rain Garden
- Disconnect Your Downspout
- Maintain Your Lot
- Sow Remaining Lot

Make a Circle

Place a stake at the desired location for the center of circle. Tie a string 10 feet long to the stake. Walk in a circle using the string to create an even-radius circle in the landscape. As you walk in the circle, mark your path on the ground. You can use these markings to help locate the edge of your rain garden.

Prepare Your Lot

The Ring Around the Garden is one of the more complex lot designs in the Field Guide. It is recommended that you hire a professional for these steps: Prepare Your Lot and Excavate + Sculpt Soil.

If you decide to complete this lot design without the recommended assistance of a professional, the guiding principles below are provided to help assist you with the installation of the lot design.

- This lot design utilizes a double lot, typically 60 by 100 feet.
- The Ring Around the Garden should be constructed as shown in the lot design plan on page 10 to ensure the rain garden and mound are the correct depth and height.
- The Ring Around the Garden should be a minimum of 10 feet from any adjacent building and at least five feet from sidewalks and property lines.
- For the rain garden to work, water must be directed into it. **The Field Guide recommends constructing your rain garden near a downspout from the roof of a large building, such as a school, church, or museum, or near hard surfaces like a parking lot.** Ensure water flows from these surfaces into your rain garden circle.
- Your rain garden should be one square foot for every ten square feet of hardscape or stormwater area directed into your rain garden. **The Field Guide recommends your rain garden circle be a total of approximately 830 square feet.**
- The Ring Around the Garden is designed to accommodate or collect stormwater runoff from up to 8,300 square feet of roof or hard surfaces.

Ring Around the Garden Step-By-Step

- If the stormwater collection area is larger than 8,300 square feet, you will either need to adjust rain garden to accommodate a larger stormwater capacity or install an overflow culvert, which will require permitting and integration into the municipal infrastructure.
- The Ring Around the Garden shown on the design plan is 50 feet in diameter, measuring from the outer edges of the stormwater circle.
- Once you decide on a location for your rain garden and mounds, use marking paint and a tape measure to map out the size, shape, and dimensions of your design. Need help creating a circle? Refer to Make a Circle on page 6.
- You do not need to kill grass in the lot you wish to construct the Ring Around the Garden as tilling and earth moving will naturally help with grass removal.

○ Excavate + Sculpt Soil

The Field Guide recommends hiring a professional for completing the earthwork portion of the lot design. Alternatively, the rain garden can be dug and sculpted by hand but will require a large group of volunteers.

- Dig the rain garden approximately 2.5 feet deep. The mound is created from soil excavated from the rain garden, avoiding the need to haul soil off site.
- **After removing soil, check that the bottom of the rain garden is level.** An easy way to check this is with a string level or a spirit level attached to a two-by-four board. A level bottom is important to maximize infiltration and minimize the chance of standing water in the rain garden.
- **After leveling the bottom, the soil should be prepared by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction.**
- **Fill the rain garden with 18 inches (46 cubic yards) of rain garden planting soil to create a one foot depression.**

- Rain garden planting soil should consist of approximately 50% sand, 25% topsoil, and 25% compost or leaf litter.
- Mix together and place in rain garden. Rain garden edges should slope at 33% (1 unit of rise for 3 units of run).
- **Ensure water does not flow onto adjacent properties.**

○ Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees and large shrubs can be purchased in pots or balled and burlapped. If you decide to plant larger trees, the Field Guide recommends speaking with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

Ring Around the Garden Step-By-Step

The Field Guide recommends three foot diameter by three inch depth of wood chips or mulch around trees. **0.5 cubic yards of mulch is recommended for five trees.** Keep mulch a few inches away from tree trunks.

For more guidance on tree planting, refer to the [Tree Planting Detail](#).

○ Sow Rain Garden

Soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Ernst Conservation Seed's Rain Garden Mix and Annual Cover Crop seed mix are good options for the Ring Around the Garden; similar mixes are available from other suppliers.

Ernst Conservation Seed's Mix suggests 0.5 pounds of Rain Garden Mix with 0.7 pounds of Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends 0.5 pounds of Rain Garden Mix and one pound of Annual Cover Crop seed mix for the rain garden circle (830 square feet).**

Once seeds have been mixed, spread seed evenly across the rain garden circle. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. 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. **Two 6.5 by 112.5 foot single net germination blankets will cover meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Disconnect Your Downspout

One of the easiest ways to collect stormwater is by disconnecting your downspout and directing it into your rain garden.

Before you start, remember that disconnected downspouts should extend at least six feet from any house foundation and five feet from adjacent property or public sidewalk. Avoid disconnecting downspouts where they might discharge water across walkways, patios, or driveways or where they might be a tripping hazard. Do not disconnect directly over a septic system.

Follow these steps to help you redirect your roof water into your rain garden.

- Measure the existing downspout, and mark it approximately nine inches above sewer connection or standpipe.
- Cut with a hacksaw and remove cut piece.
- Plug or cap the sewer standpipe with a rubber cap secured by a hose clamp. Use screwdriver to tighten and secure cap.
- Attach elbow joint over the downspout.
- Add downspout extension to elbow joint. Extension should be length needed to carry water away from house and towards rain garden.
- Secure pieces with sheet metal screws at each joint.
- Use plastic or concrete splashblocks, rocks, flagstone, or boulders at the end of the downspout to control erosion of soil and plants in the rain garden from stormwater.

For more information, refer to [DWSD's How to Disconnect a Downspout](#) document.

Ring Around the Garden Step-By-Step

○ Maintain Your Lot Design

A rain garden requires care and maintenance to thrive.

Rain Garden: Rain gardens will require weeding, watering, and mowing. In the first year, cut back to four to six inches whenever plants reach above ten inches in height. After the first year, continue weeding and mowing your rain garden in late fall or early spring to keep the rain garden at its best. It will take about three years for the rain garden to establish. Rain gardens are a work in progress. If you feel yours needs more color, it is okay to add additional native seeds and seed mixes.

! Annual Cover Crop is used to establish the Rain Garden Seed Mix and does not require annual re-seeding.

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

Average Height of Plants



Trees, Grasses, and Perennials

○ Sow Remaining 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 Ring Around the Garden lot design you will need approximately 26 pounds of fescue seed mix for the remaining lot and six 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

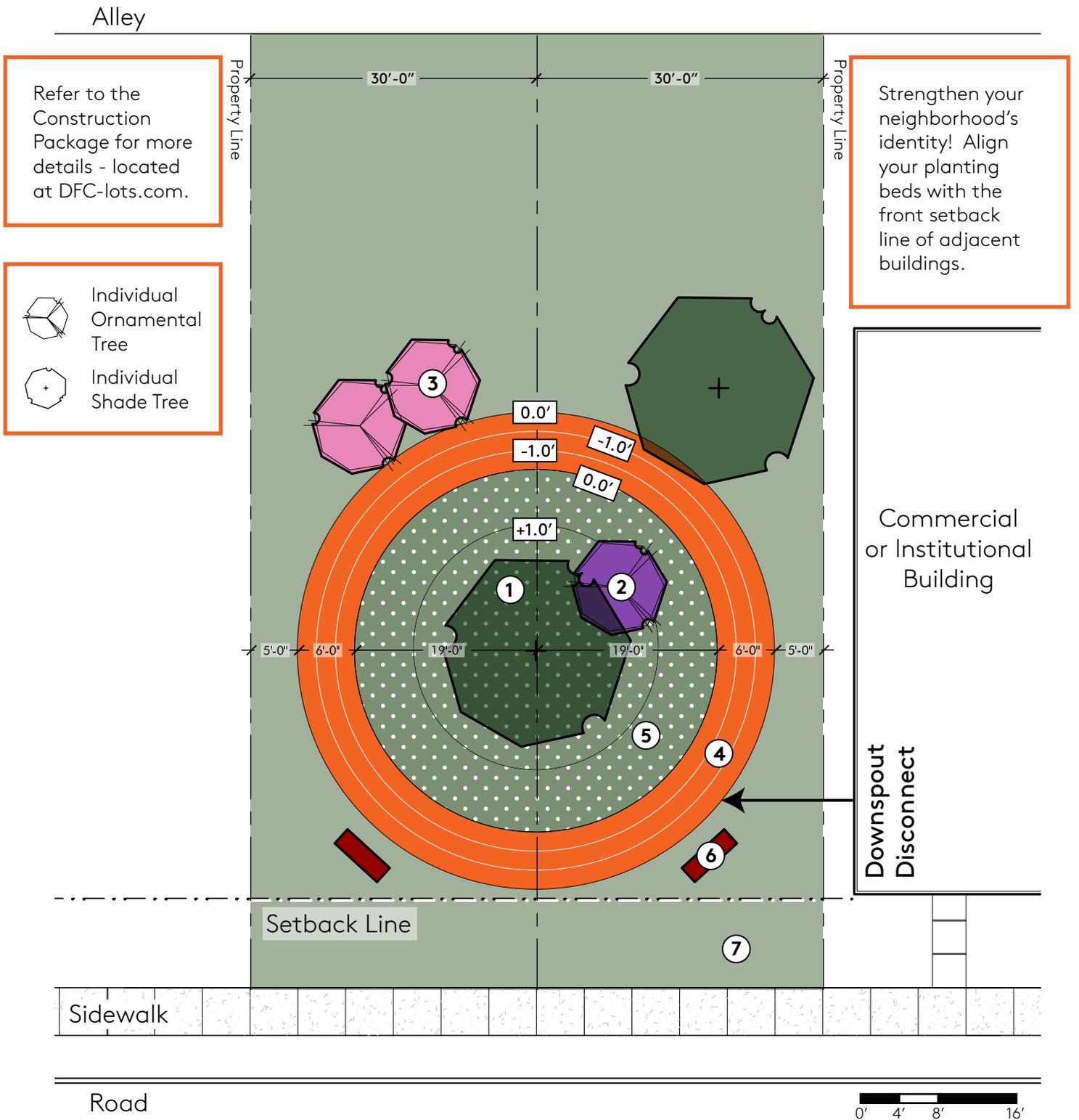
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Ring Around the Garden Lot Design



- | | | | |
|-----------------------------------|---|--|--|
| 1 Shade Tree (Sycamore) | 3 Ornamental Tree (Serviceberry) | 5 Planted Mound (Bulbs and Groundcover) | 7 Grass or Optional Groundcover |
| 2 Ornamental Tree (Redbud) | 4 Rain Garden Seed Mix | 6 Bench (Optional) | |

Planting: Full Sun to Part Sun



Autumn Brilliance Serviceberry¹
Amelanchier x grandiflora
 25' Height x 15' Width.
 Blooms April.
Quantity: 2 pots or B & B



Eastern Redbud Tree²
Cercis canadensis
 15' Height x 20' Width.
Quantity: 1 pot or B & B



American Sycamore³
Platanus occidentalis
 60' Height x 50' Width.
Quantity: 2 pots or B & B



Mixed Daffodils⁴
Narcissus
 18" Height x 24" Width
 Blooms in spring
Quantity: 100 bulbs



Mixed Crocuses⁵
Crocuses
 4" Height x 4" Width
 Blooms in spring
Quantity: 150 bulbs



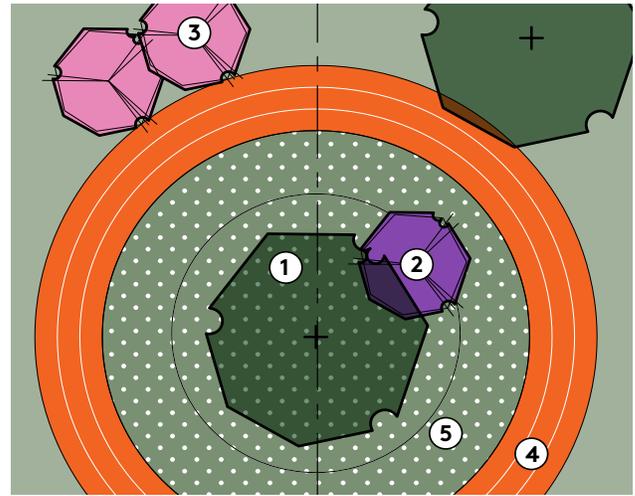
Autumn Crocuses⁶
Colchicum cilicicum
 4" Height x 4" Width
 Blooms September - October
Quantity: 150 bulbs



Snowdrops⁷
Galanthus nivalis
 4" Height x 4" Width
 Blooms in March - April
Quantity: 200 bulbs



Periwinkle⁸
Vinca minor
 4" Height x 24" Width
 Blooms May - July
Quantity: 100 pots



Key

- 1 **American Sycamore**
- 2 **Eastern Redbud Tree**
- 3 **Serviceberry Tree**
- 4 **Rain Garden Mix**
- 5 **Bulbs + Groundcover (Mixed Daffodils, Mixed Crocuses, Autumn Crocuses, Snowdrops, Periwinkle, Giant Onion, and Mixed Lenten Roses)**



Giant Onion⁹
Allium giganteum
 12" Height x 12" Width
 Blooms in Summer
Quantity: 100 bulbs



Mixed Lenten Roses¹⁰
Helleborus 'Red Lady', 'walhelivor', 'Pink Lady', and Helleborus niger 'Jacob'
 Varies: Approximately 12" Height x 18" Width
Quantity: 100 bulbs

Image Source: 1) Paul Woods, "Amelanchier in bloom 1." 13 April 2013 via Flickr, CC BY-NC-SA 2.0; 2) BETTY., "American_Eastern_Redbud_Tree" 8 April 2007 via Wikimedia, CC BY 2.0; 3) Georges Jansoone JoJan, "Platanus Orientalis." 22 April 2007 via Wikimedia, Public Domain. 4) Plashing Vole, "Mixed daffodils 2." 8 April 2011 via Flickr, CC BY-NC-SA 2.0; 5) Rachelgreenbelt, "jdy072 bpl Crocus Mixed epl Blo." 13 March 2011 via Flickr, CC BY-NC-SA 2.0; 6) Carol, "The autumn crocus IMG_5061." 15 September 2014 via Flickr CC BY-NC-SA 2.0; 7) Gideon Chilton, "Snowdrops - Little Oakley." 16 February 2014 via Flickr, CC BY-NC 2.0; 8) H. Zell, "Vinca minor, Apocynaceae, Lesser Periwinkle, habitus; Karlsruhe, Germany." 14 April 2009 via Wikimedia CC BY-SA 3.0 9) Stefan 1080, "Allium." 26 May 2014 via Flickr CC BY-NC-SA 2.0 10) Filip Vervisch, "Helleborus-zaterdag 28 februari 2009 173107." 28 February 2009 via Flickr, CC BY-NC-SA 2.0

Planting: Full Sun to Part Sun

Rain Garden Mix

Mixing 0.5 pounds of Rain Garden Mix with one pound of Annual Cover Crop seed mix is recommended for this lot design.

You can buy these seeds premixed at Ernst Conservation Seeds.

River Oats, *Chasmanthium latifolium* (38% of mix)

Virginia Wildrye, *Elymus virginicus* (20% of mix)

Fox Sedge, *Carex vulpinoidea* (10% of mix)

Purple Coneflower, *Echinacea purpurea* (4% of mix)

Tall White Beardtongue, *Penstemon digitalis* (3% of mix)

Blackeyed Susan, *Rudbeckia hirta* (3% of mix)

Lanceleaf Coreopsis, *Coreopsis lanceolata* (3% of mix)

Ohio Spiderwort, *Tradescantia ohiensis* (2% of mix)

Oxeye Sunflower, *Heliopsis helianthoides* (2% of mix)

Autumn Bentgrass, *Agrostis perennans* (2% of mix)

Partridge Pea, *Chamaecrista fasciculata* (2% of mix)

Marsh Blazing Star, *Liatris spicata* (2% of mix)

Smooth Blue Aster, *Aster laevis* (1.5% of mix)

Wild Senna, *Senna hebecarpa* (1% of mix)

New England Aster, *Aster novae-angliae* (1% of mix)

Swamp Milkweed, *Asclepias incarnata* (1% of mix)

Path Rush, *Juncus tenuis* (1% of mix)

Soft Rush, *Juncus effusus* (1% of mix)

Wild Bergamot, *Monarda fistulosa* (0.8% of mix)

Mistflower, *Eupatorium coelestinum* (0.5% of mix)

Blue False Indigo, *Baptisia australis* (0.5% of mix)

Early Goldenrod, *Solidago juncea* (0.5% of mix)

Slender Mountainmint, *Pycnanthemum tenuifolium* (0.2% of mix)

Plant Sizes



Pots: 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Groundcovers can be purchased in one to five gallon pots. The size of pots can change based on availability.



Bulbs: Bulbs are cheaper if purchased in bulk. You can find bulk bags at garden stores.



Seeds: Rain Garden Mix can be purchased in seed form.

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.

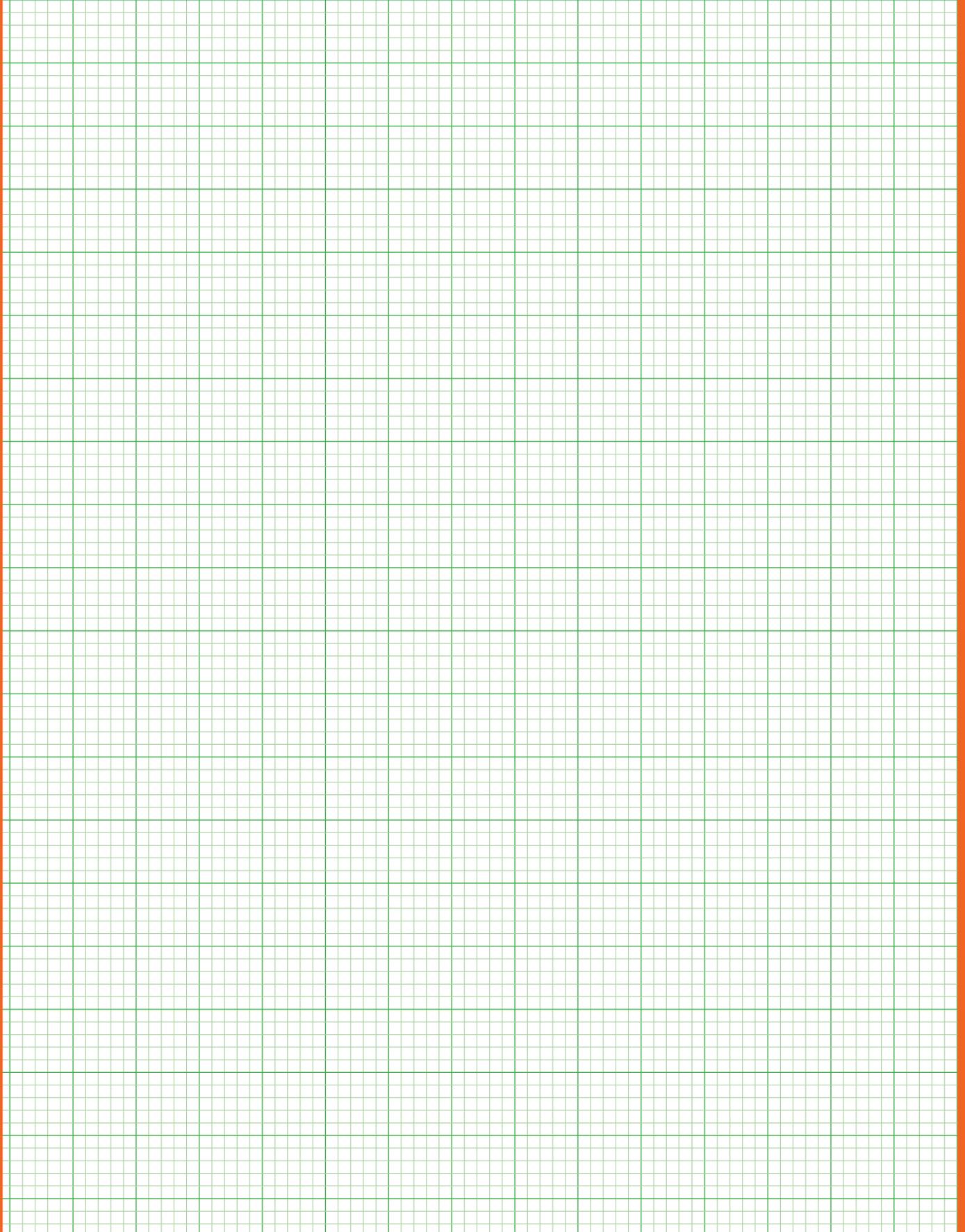
Helpful Facts

- Rain gardens capture, hold, and release stormwater gradually back into the soil.
- This rain garden is designed to provide habitat and food for a variety of birds and pollinators.
- Looking for more information on rain gardens? The Sierra Club of Detroit has been running a rain garden program since 2012 and is happy to help.
- The plants recommended for this lot design have been selected for their beauty, habitat creation, and local availability.

Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- To save money, ask a friend or family member if they have any plants or cuttings they are willing to donate to your rain garden.
- Inspect trees before purchasing, to make sure they are healthy and are well formed. This will help you select trees that are likely to survive.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed.
- If mulching around trees, do not place mulch too close (less than three inches) to tree trunk. This will help keep the tree free of disease.

Draw Your Lot





**DETROIT
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**Visit DFC-lots.com
#DFClots**

Image Source: Jeff Hart., "Platanus_occidentalis_Bloomington.jpg" 10 January 2010 via Wikimedia, CC BY 2.0

Volunteer

Professional

Volunteer + Professional

Shade Maker

Image Source: Tjukka2, "In the park." 24 May 2012 CC BY-NC SA 2.0.





The Shade Maker offers a neighborhood-friendly tapestry of small and large trees. In time, these trees will grow into a dense canopy, reducing lot maintenance by 'shading out' the under-story plant growth. The shade created by the Shade Maker will also screen windows and cool houses during the summer months, creating savings on household energy costs.

As they reach maturity, trees planted on the west side of a house can reduce summertime electricity use by up to 30%.¹ Whether you are interested in reduced lot maintenance or in household energy savings, the Shade Maker offers a unique forest. In time, this lot design will create a new ecosystem for a variety of plants and animals

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

What is the lot design likely to cost?

The estimated cost of the Shade Maker is high (\$2,500 – 5,500) and based on 1.5 inch diameter trees and utilizing volunteer labor. To save money, you can buy smaller size trees. 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 Shade Maker is a low-maintenance lot design. Maintenance will include watering newly planted trees, particularly during times of drought and excess heat.

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.

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	Residential or Business Side Lot in Part Sun to Shade			

Reference: 1) Geoffrey Donovan, Research Forester (www.treehugger.com).

Shade Maker

Examples of Shade Trees



1 - Horsechestnut



2 - Redbud



3 - Sugar Maple

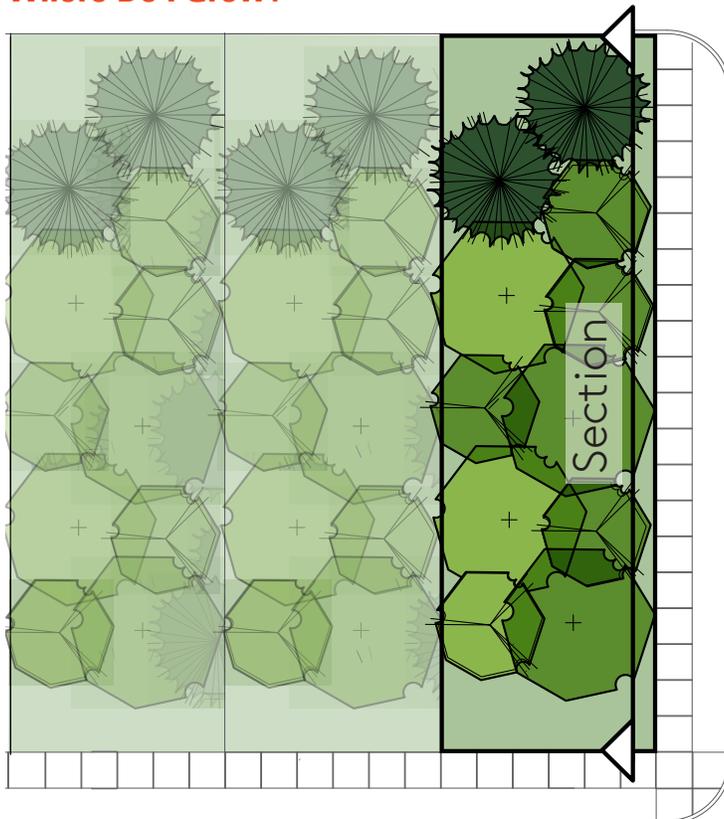


4 - Hawthorn

Section



Where Do I Grow?



The Shade Maker can be constructed on single or multiple lots and is suitable for corner properties.

- Coniferous Trees (green all year long)
- Deciduous Tree (loses leaves in fall)
- Grass or Optional Groundcover

Image Source: 1) Darkroom Daze, "Horse Chestnut." 02 May 2011 via Flickr, CC BY-NC-SA 2.0; 2) Teddy Llovet, "Figueras Mountain Rd." 13 April 2009 via Flickr, CC BY-NC 2.0; 3) RW Sinclair, "Sugar Maple." 16 October 2010 via Flickr, CC BY-NC-SA 2.0; 4) Aaron_eos_photography, "Hawthorn." 09 July 2004 via Flickr, CC BY-SA 2.0.

Before You Start

'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

- **Marking Paint and Tape Measure**
- **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
- **Truck,** to pick-up trees and mulch
- **Ball Cart,** for moving heavy trees

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**
- **Tree Planting Detail**
- **Bulb Planting Detail**

Materials List

Materials

- **Mulch or Wood Chips,** 1 cubic yard

Planting

- **Redbud,** 1 pot or balled and burlapped
- **Sugar Maple,** 2 pots or balled and burlapped
- **Black Cherry,** 2 pots or balled and burlapped
- **Horse Chestnut,** 2 pots or balled and burlapped
- **Hawthorn,** 2 pots or balled and burlapped
- **Balsam Fir,** 2 pots or balled and burlapped

Remaining Lot (Optional)

Groundcover

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

Refer to page 11 and 12 for alternative groundcovers.

Shade Maker Step-By-Step

Let's Start

Want to create the Shade Maker 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**
- Plant Trees**
- Maintain Your Lot Design**
- Sow Lot Underneath Trees**

Prepare Your Lot

Decide on the best location for your Shade Maker. The Field Guide recommends utilizing the full 30 by 100 foot lot (3,000 square feet).

You do not need to remove grass in the lot unless you would prefer to sow a low-maintenance fescue mix or an alternative groundcover underneath your trees.

Use marking paint and tape measure to mark the locations you wish to plant your trees.

Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees, speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

Shade Maker Step-By-Step

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. **One cubic yard of wood chips or mulch is recommended for 11 trees.** Keeping wood chips or mulch a few inches away from tree trunks.

Plant trees randomly or staggered throughout the lot, making sure all trees are approximately 15 to 20 feet apart to give trees room to grow.

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

○ **Maintain Your Lot Design**

Trees require care and attention to thrive. Trees must be watered regularly during the first year. Water weekly or as needed.

The Field Guide recommends connecting with an arborist or taking a workshop on proper tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.

Shade Maker Step-By-Step



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

Average Height of Plants



Large and Small Trees

○ Sow Lot Underneath Trees

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow the Shade Maker lot design you will need approximately 15 pounds of fescue seed mix for the full lot (3,000 square feet) 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

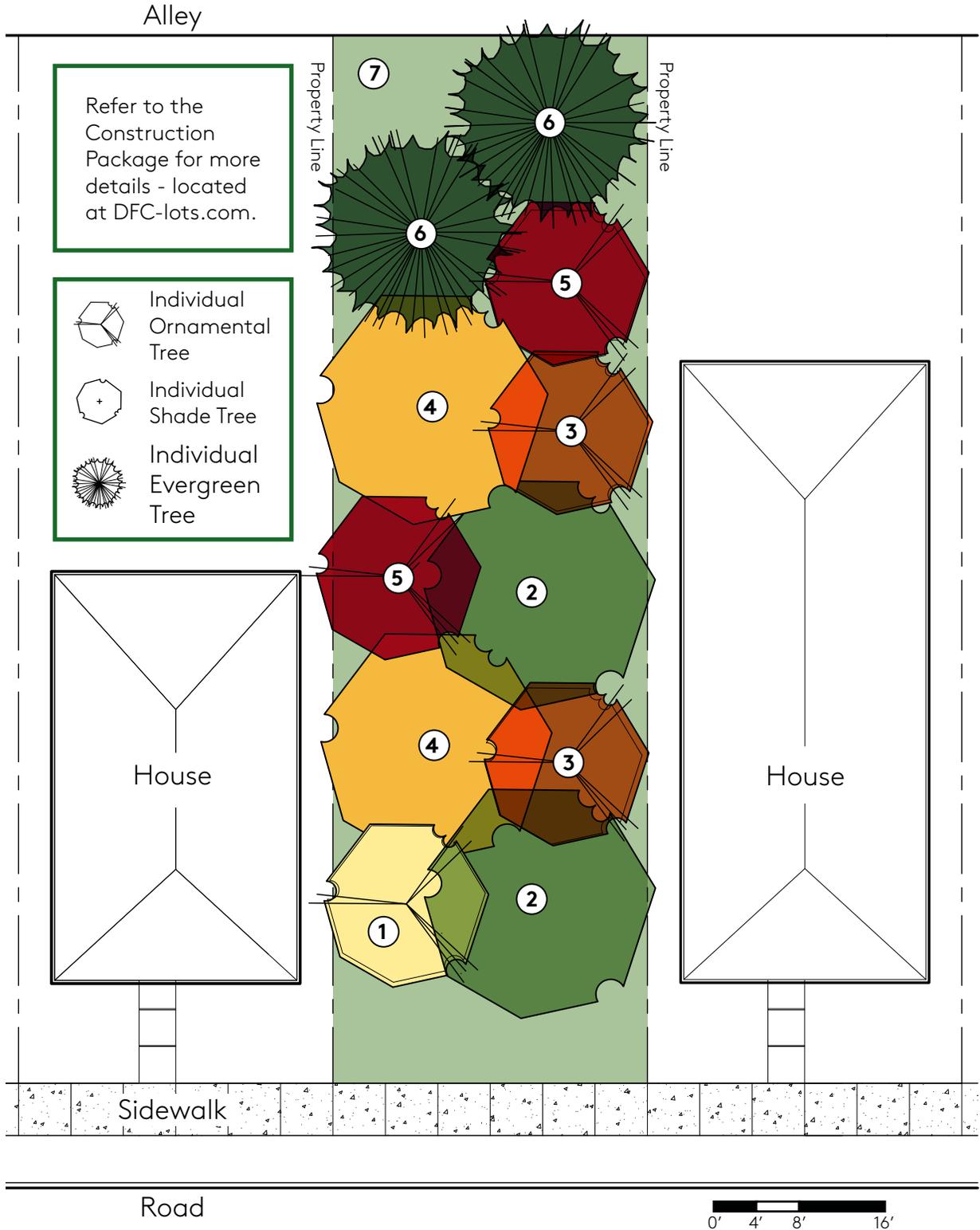
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can always plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Shade Maker Lot Design



- | | | | |
|---|--|--|---|
| <p>1 Ornamental Tree (Redbud)</p> <p>2 Shade Tree (Sugar Maple)</p> | <p>3 Ornamental Tree (Black Cherry)</p> <p>4 Shade Tree (Horse Chestnut)</p> | <p>5 Ornamental Tree (Hawthorn)</p> <p>6 Evergreen Tree (Balsam Fir)</p> | <p>7 Grass or Optional Groundcover</p> |
|---|--|--|---|

Planting



Redbud¹

*Ceris canadensis**

20' Height x 25' Width

Blooms March - April

Prune after Flowering

Fall Color

Quantity: 1 pot or B & B



Sugar Maple²

*Acer saccharum**

60' Height x 50' Width

Best for Producing Maple

Syrup

Quantity: 2 pots or B & B



Black Cherry³

*Prunus serotina**

50' Height x 30' Width

Blooms April - May

Fall Color

Quantity: 2 pots or B & B



Horse Chestnut⁴

Aesculus hippocastanum

40' Height x 40' Width

Blooms Spring

Quantity: 2 pots or B & B



Hawthorn⁵

*Crataegus spp**

25' Height x 20' Width

Blooms Spring

Fall Color

Quantity: 2 pots or B & B



Balsam fir⁶

*Abies balsamea**

50' Height x 20' Width

Quantity: 2 pots or B & B

Plant Sizes



Pots: 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Planting: Alternative Groundcover

Seed Mix for Underneath Trees

Partially Shaded Mix

Mixing two pounds of Partially Shaded Area Roadside Seed Mix (ERNMX -140) with three pounds of Annual Cover Crop seed mix is recommended if selected as lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Little Bluestem, *Schizachyrium scoparium*, Fort Indiantown (32% of mix)

Virginia Wildrye, *Elymus virginicus* (20% of mix)

Autumn Bentgrass, *Agrostis perennans* (20% of mix)

Purple Coneflower, *Echinacea purpurea* (5% of mix)

Partridge Pea, *Chamaecrista fasciculata* (4% of mix)

Tall White Beardtongue, *Penstemon digitalis* (3% of mix)

Marsh Blazing Star, *Liatris spicata* (3% of mix)

Blackeyed Susan, *Rudbeckia hirta* (2% of mix)

Oxeye Sunflower, *Heliopsis helianthoides* (2% of mix)

Prairie Dock, *Silphium terebinthinaceum* (3% of mix)

Slender Bushcover, *Lespedeza virginica* (1.5% of mix)

Ohio Spiderwort, *Tradescantia ohiensis* (1% of mix)

White Wood Aster, *Aster divaricatus* (1% of mix)

Eastern Columbine, *Aquilegia canadensis* (1% of mix)

Thimbleweed, *Anemone virginiana* (1% of mix)

Browneyed Susan, *Rudbeckia triloba* (1% of mix)

Blue False Indigo, *Baptisia australis* (0.8% of mix)

White Goldenrod, *Solidago bicolor* (0.5% of mix)

Wild Bergamot, *Monarda fistulosa* (0.5% of mix)

Zigzag Goldenrod, *Solidago flexicaulis* (0.5% of mix)

Hoary Mountainmint, *Pycnanthemum incanum* (0.2% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

Planting: Alternative Groundcover

Seed Mix for Underneath Trees

Non-Native Woods Mix

Mixing six pounds of Right-of-Way Non-Native Woods Mix seed mix (ERNMX-132) with three pounds of Annual Cover Crop seed mix is recommended (oats or grain rye depending on sowing season) if selected as lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Creeping Red Fescue, *Festuca rubra*
(30% of mix)

Timothy 'Climax', *Phleum pratense*,
'Climax' (20% of mix)

Perennial Ryegrass 'Homerun', *Lolium perenne*, 'Homerun' (20% of mix)

Ticklegrass, *Agrostis scabra* (18% of mix)

Alsike Clover, *Trifolium hybridum* (12% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

Did You Know?

Professionals Can Help!

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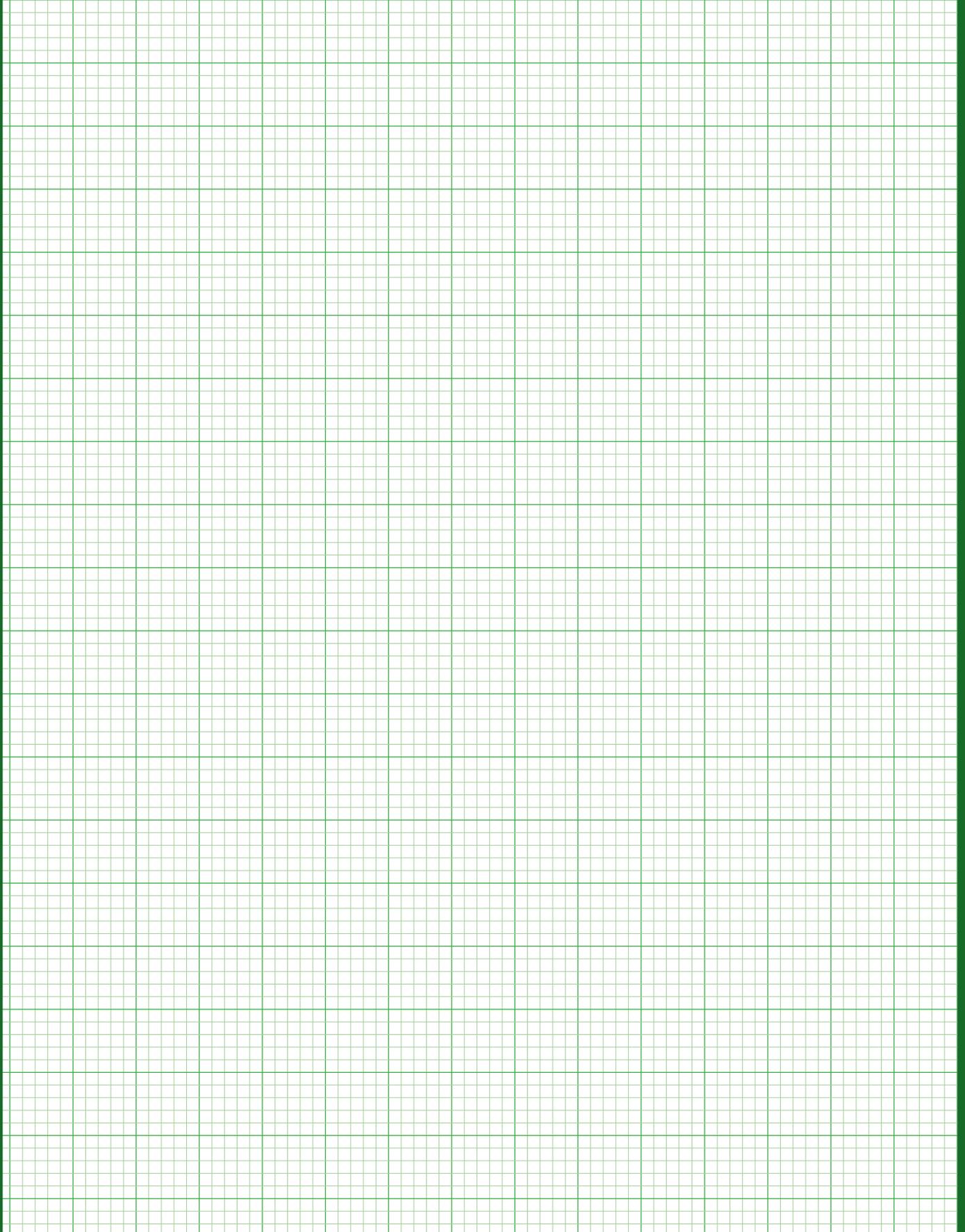
Helpful Facts

- Maple trees have beautiful fall colors and Sugar Maples can be used to make maple syrup.
- The seeds from a Horse Chestnut are used for a popular children's game called conkers in Britain and Ireland.
- Horse Chestnut seeds, leaf, bark, and flowers are poisonous. Do not eat them!
- Hawthorn is commonly used as an ornamental tree or hedge.
- Redbud, Black Cherry, Horse Chestnut, and Hawthorn produce berries or fruit that are enjoyed by a variety of songbirds.

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for your lot design.
- Inspect trees before purchasing to make sure they are healthy and are well formed. This will help you select trees that are likely to survive.
- The best time to plant is in spring or fall.
- Water trees during planting and as needed. Do not plant in extreme heat.
- If mulching around trees, do not place mulch any closer than three inches from the tree trunk. This will help keep the tree free of disease.
- It is recommended that trees purchased for this lot design are 1.5 inches in diameter. To save money, you can also purchase smaller trees or whips.
- Do not plant trees under overhead wires. Trees can grow 40 to 50 feet in height.

Draw Your Lot





**DETROIT
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A FIELD GUIDE

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Image Source: Baerchen57, "Ein Park in Gold." 04 November 2011 via Flickr CC BY-NC-SA 2.0.

Volunteer

Professional

Volunteer + Professional



Snowmelter

Image Source: Hormiguita Viajera mir., "Snow day in Adams Morgan," 5 March 2015, via Flickr CC BY 2.0





The Snowmelter is a commercial or neighborhood infrastructural element designed to better manage snow as it accumulates.

The Snowmelter is shaped to hold snow that is collected from local snowplowing activities and keep it on the lot until the warm spring weather. This design allows water from the melting snow to infiltrate into the ground instead of draining directly into the city’s sewerage system.

This lot design has a unique palette of functional and beautiful plantings, from a salt tolerant meadow to a ‘living snow fence’ designed to create a clean street edge and boundary between properties.

What is the lot design likely to cost?

The estimated cost of the Snowmelter is over \$5,500 and based on utilizing volunteer and professional labor. The Field Guide recommends hiring a professional for the earthwork and lot preparation. Planting can be completed by a professional or by volunteers. 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 maintenance of the Snowmelter lot design is high. This lot design requires removal of sediment and debris annually and the regrading and seeding of the landscape area to remove any channels that form at the bottom following the spring thaw. Weed and water shrubs, plants, and meadow especially in the first two growing seasons while plants are getting established.

Will the installation of this lot design require a professional?

The installation of this lot design will require professional assistance for the first few steps. The Field Guide identifies volunteer opportunities if you, with the help and support of friends, family or neighbors, would like to take on the planting portion of this lot design. Please refer to the Step-By-Step section for guidance on professional and volunteer recommended steps. If you do not have enough support or feel unable to tackle the volunteer aspect of this lot design, a professional can build the entire design.

How long will it take to install this lot design?

This lot design requires the upport of a professional for the completion of several steps. Coordinate with the selected professional to determine projected installation time for their completed work.

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

Cost	\$50 - 1,000	\$1,001 - 2,500	\$2,501 - 5,500	\$5,500 +
People	Volunteer	Professional		Volunteer + Professional
Experience	Volunteer experience is not applicable because a professional is recommended.			
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Residential or Commercial Double Lot in Full Sun or Part Sun			

Snowmelter

This lot design gives street snow a place to go - off the street!

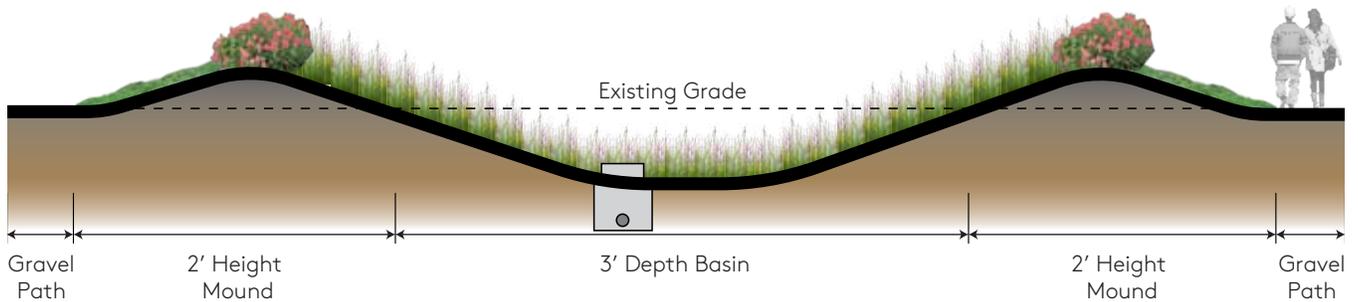


1 - Cars Covered in Snow

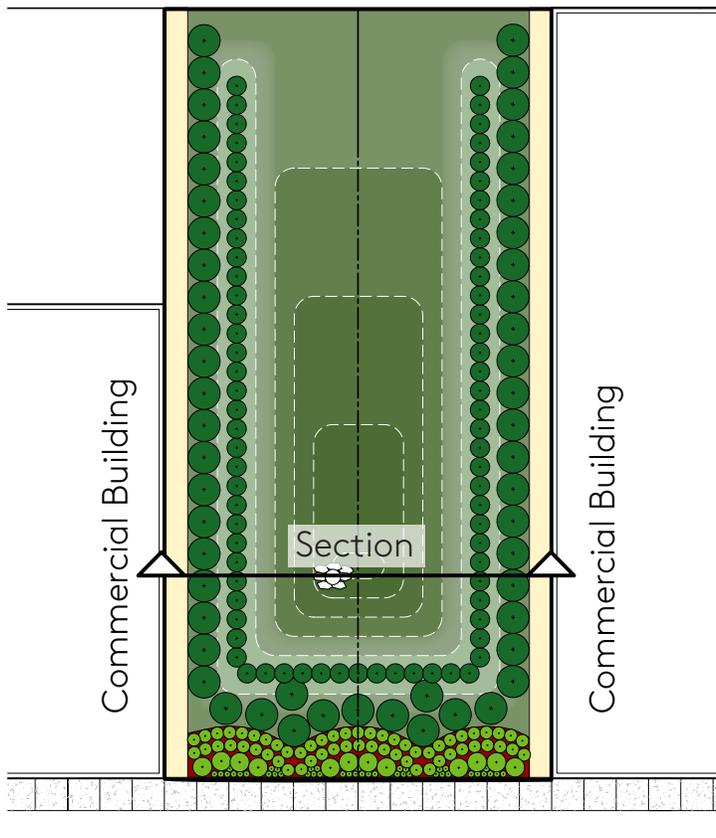


2 - Walking Through Snow

Section



Where Do I Grow?



The Snowmelter is designed for a double residential or commercial lot and works well on corners, too. The lot size shown is a 60' by 120' lot.

- Groundcover Shrubs
- Street-Edge Plantings
- Meadow Groundcover
- Mulch
- Gravel Path

Before You Start

'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 double commercial lot (60 by 120 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

Field Guide Resources

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

- [Clean + Green](#)
- [Perennials + Grasses Planting Detail](#)

Materials List

Materials

- **Mulch or Wood Chips**, 3 cubic yards

Planting

- **Stella De Oro Daylily**, 41 pots
- **Double Knockout Rose**, 12 pots
- **Karl Forester Feather Reed Grass**, 54 pots
- **Gro-Lo Sumac**, 58 pots
- **Double Play Artist Spiraea**, 25 pots
- **Golden Princess Spiraea**, 25 pots
- **Lemon Princess Spiraea**, 25 pots
- **Daffodils**, 500 bulbs

Salt Tolerant Meadow Mix

- **Detroit Basin Floor Mix for Wet Areas**, 3 pounds of seeds
- **Annual Cover Crop**, 6 pounds of Grain Rye
- **Germination Blanket**, 8 rolls (8 by 112.5 feet)

Snowmelter Step-By-Step

Let's Start

Want to create the Snowmelter? The Field Guide recommends hiring a professional for all tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design. Only undertake installing the design yourself if you have professional construction experience.

- Check off tasks as you go along.

Lot Design Steps

Professional:

- Prepare Your Lot
- Excavate, Sculpt Soil + Add Culvert
- Plant Perennials
- Sow Salt Tolerant Meadow
- Maintain Your Lot Design

Prepare Your Lot

The Snowmelter is one of the more complex lot designs within the Field Guide. It is recommended that you hire a professional for all steps.

Below are a few guiding principles to help assist you with understanding the overall installation process of the lot design. Remember to direct your contractor to the Construction Package, located on DFC-lots.com (same web-page as this lot design).

This lot design utilizes a double, 60 by 120 foot commercial or residential lot.

- Ensure the edges of the Snowmelter area are the correct setback distance from adjacent lots and sidewalks. The beginning of the mound slope should be a minimum of five feet from adjacent property lines and at least five feet from sidewalks.
- The Snowmelter should be constructed as shown in the Construction Package. Refer to page 12 for more information.
- You do not need to kill grass in the lot you wish to construct the Snowmelter as tilling and earth moving will naturally help with grass removal.

Excavate, Sculpt Soil + Add Culvert

The Field Guide recommends hiring a professional for sculpting soil and engineering stormwater management. Refer to the Snowmelter Construction Package for more information. Below are a few guiding principles:

- This lot design can be used on a double lot on residential or commercial property. If on residential property, special design considerations are required to make sure that melting snow will not be a public nuisance to adjacent properties and that property setbacks are followed.
- This lot design should have at least 60 foot property frontage and can be installed on lots up to 120 feet wide.

Snowmelter Step-By-Step

- Snow storage should be at least 150 feet from wells and 200 feet from any municipal or community water supply to protect drinking water.
- Avoid piling snow on or near surface water (rivers, lakes, wetlands, streams, etc.).
- The storage basin is 5 feet deep in total - containing 2 foot mounds above grade and a 3 foot deep basin below grade. It should not be accessed if there is significant standing water.
- It may be necessary to install an overflow catch basin six inches above the lowest point on the bottom level of the infiltration area. Place 12 to 14 inches of stone around overflow catch basin.
- If installed, the overflow culvert will require permitting and integration into municipal infrastructure.
- The surface area for piling snow should use a Cellular Eco-Grid system on a 5% slope towards the storage basin to stabilize the soil.
- Collected snow can be deposited into the storage basin. Drain toward the storage infiltration area. Water within the infiltration area can percolate into the ground or be collected in a culvert.
- The bigger the infiltration area, the better it is for drainage. Make sure the infiltration area is level.
- Gravel walks can be added on either side of berms to allow access through the site and to provide an edge for maintenance and garbage collection. It may be necessary to install an overflow culvert which will require permitting and integration into municipal infrastructure.
- An engineer should be consulted to calculate and design the storage and infiltration system.

○ Plant Perennials

Sunny to partly sunny plantings are recommended for the Snowmelter. The planting is a mix of hardy shrubs and perennials to maintain an attractive frontage for the Snowmelter. If your lot is in shade, seek alternative planting options.

Place hardy shrubs along perimeter of the Snowmelter, as shown on the design plan, to create a 'living snow fence.' The living snow fence surrounds the basin to help keep snow from blowing onto adjacent property.

For potted plants, place plants in desired location, then remove plastic pots, loosen roots, and plant.

The Field Guide recommends adding three inches (3 cubic yards) of mulch or wood chips to perennial beds. Adding mulch and wood chips will help suppress weeds.

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

Volunteer Opportunities

Due to the complex installation of this design and the importance of establishing functional planting, it is advised to have a professional install the meadow and 'living fence.'

Volunteers may complete street-edge and bulb planting. Additional bulbs, such as snowdrops or crocuses, can be added to the design if volunteers are interested in a day of planting!



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

Snowmelter Step-By-Step

○ Sow Salt Tolerant Meadow

Soil should be prepared for seeding by scarifying, raking or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the correct size of machinery for the job.

Street snow usually has a high salt content and a salt tolerant meadow mix is suggested for this lot design.

Seeding should take place in either spring (mid-May to mid-June) or fall (mid October to end of November). Ernst Conservation Seed's Detroit Basin Floor Mix for Wet Areas and Annual Cover Crop seed mix are good options for the Snowmelter. Similar mixes are also available from other suppliers.

Ernst Conservation Seed's Mix suggests 0.5 pounds of basin mix with one pounds of Grain Rye Annual Cover Crop seed mix per 1,000 square feet. **The Field Guide recommends three pounds of basin mix and six pounds of Grain Rye Annual Cover Crop seed mix for a 60 by 120 lot (6000 square feet).**

Once seeds have been mixed, spread seed across the meadow area. You can do this by hand or with a hand-cranked whirlwind seeder. You will need to do this several times to get even coverage. 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. **Eight rolls of 8 by 112.5 foot single net germination blankets will cover meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Gardens.

○ Maintain Your Lot Design

The Snowmelter is designed to be a productive landscape. To ensure it continues working well, your lot design will require monitoring and maintenance over time.

After the spring thaw occurs, remove accumulated sediments and debris from the basin. If channels have formed from snowmelting processes, any regrading and replanting to correct this should occur in the late spring or the fall.

This lot design should be placed in a well-lit area for safety as plantings can obscure views into the storage basin of the Snowmelter. Take care to ensure sight lines are not blocked.

The meadow will require weeding, watering, and mowing. **In the first year, cut your meadow back to four to six inches whenever it reaches above ten inches in height.** After the first year, continue weeding and mow your meadow in late fall or early spring. This will keep the meadow at its best. It will take about three years for the meadow to establish.

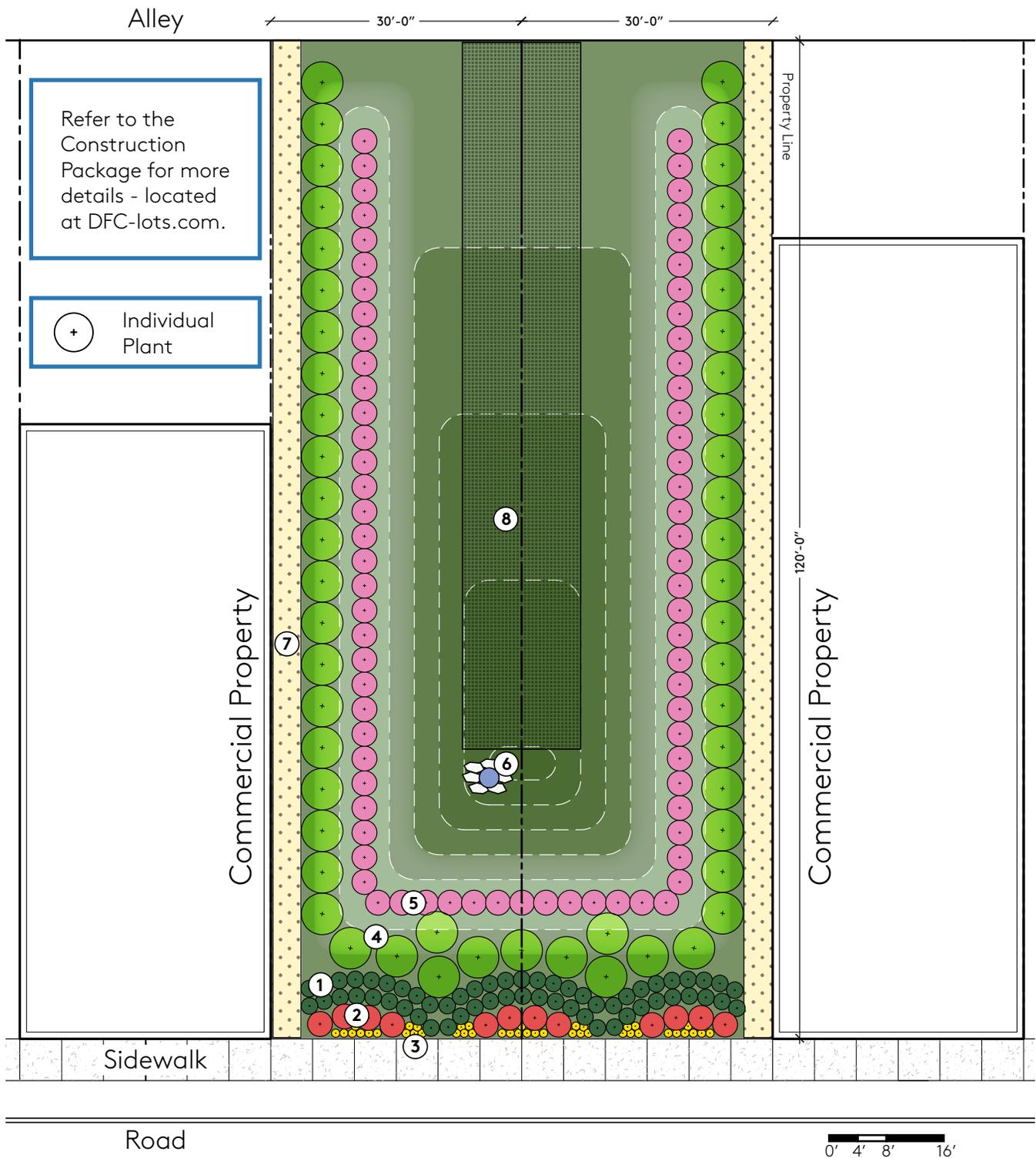
Due to the Snowmelter's shape and slopes, special machinery may be require for mowing. Always use caution when mowing slopes, and follow manufacturers' recommendations.

Average Height of Plants



Shrubs, Grasses, and Perennials

Snowmelter Lot Design



- | | | | |
|--|---|--|---|
| <p>1 Ornamental Grass (Feather Reed)</p> <p>2 Flowering Hedge (Rose)</p> | <p>3 Flowering Perennial (Daylily)</p> <p>4 Groundcover (Sumac)</p> | <p>5 Flowering Hedge (Spiraea)</p> <p>6 Overflow Drain</p> | <p>7 Gravel Path</p> <p>8 Grass Paver</p> |
|--|---|--|---|

Planting: Full Sun to Part Sun



Stella De Oro Daylily¹
Hemerocallis x 'Stella de Oro'
 18' Height x 1' Width.
Quantity: 41 pots



Double Knockout Rose²
Rosa x 'Radtko'
 3' Height x 3' Width.
Quantity: 12 pots



Karl Foerster Feather Reed Grass³
Calamagrostis acutiflora 'Karl Foerster'
 4' Height x 1.5' Width.
Quantity: 54 pots



Gro-Lo Sumac⁴
Rhus aromatica 'Gro-Low'
 9" Height x 5' Width.
Quantity: 58 pots



Double Play Artist Spiraea⁵
Spiraea japonica 'Galen'
 2.5' Height x 2.5' Width.
Quantity: 25 pots



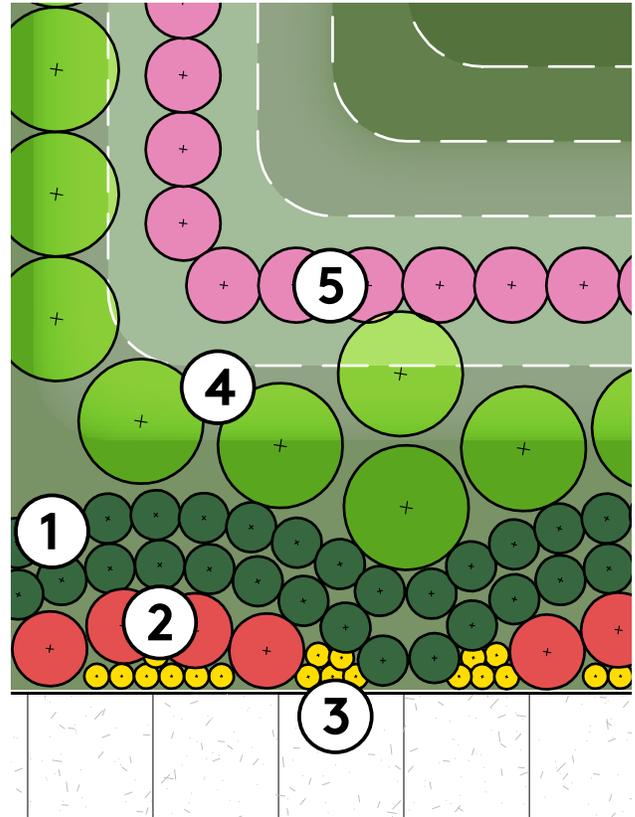
Golden Princess Spiraea⁶
Spiraea japonica 'Golden Princess'
 3' Height x 4' Width
Quantity: 25 pots



Lemon Princess Spiraea⁷
Spiraea japonica 'Lemon Princess'
 2' Height x 3' Width.
Quantity: 25 pots



Mixed Daffodils⁸
Narcissus
 18" Height x 24" Width
 Blooms in spring
Quantity: 500 bulbs



Key

- 1
Karl Foerster Feather Reed Grass (Space approximately two feet apart.)
- 2
Double Knock Out Rose (Space approximately three feet apart.)
- 3
Stella De Oro Daylily (Space approximately one foot apart.)
- 4
Gro Low Sumac (Space approximately five apart.)
- 5
Double Play Artist, Golden Princess & Lemon Princess Spiraea (Space approximately three feet apart.)

Daffodils should be mixed at random throughout all planting areas.

Image Source: 1) Thomas G. Graf. "Hemerocallis_Stella_de_Oro.jpg" 18 December 2004 via Wikimedia CC BY-SA 3.0; 2) A Yee, "Knockout Roses." 05 January 2014 via Flickr, CC BY 2.0; 3) Daryl Mitchell, "Calamagrostis_x_acutiflora_%27Karl_Foerster%27.jpg" 2 October 2009 via Wikimedia CC BY-SA 2.0; 4) Bruce Marlin, "Rhus_aromatica_foliage_catkins.jpg" 25 October 2010 via Wikimedia CC BY-SA 3.0; 5) NetPS Plant Finder; 6) NetPS Plant Finder; 7) NetPS Plant Finder; 8) Plashing Vole, "Mixed daffodils 2." 8 April 2011 via Flickr, CC BY-NC-SA 2.0

Planting: Full Sun to Part Sun

Salt Tolerant Meadow Mix

Mixing three pounds of Detroit Basin Floor Mix for Wet Areas with six pounds of Grain Rye Annual Cover Crop is recommended for the Snowmelter lot design.

You can buy these seeds premixed at Ernst Conservation Seeds.

Deertongue Tioga, *Panicum clandestinum* (33% of mix)

Virginia Wildrye, *Elymus virginicus* (18% of mix)

Fox Sedge, *Carex vulpinoidea* (15% of mix)

Lurid Sedge, *Carex lurida* (5% of mix)

Blunt Broomsedge, *Carex scoparia* (5% of mix)

Blue Vervain, *Verbena hastata* (3% of mix)

Hop Sedge, *Carex lupulina* (3% of mix)

Cosmos Sedge, *Carex comosa* (2% of mix)

Soft Rush, *Juncus effusus* (2% of mix)

Green Bulrush, *Scirpus atrovirens* (2% of mix)

Golden Alexanders, *Zizia aurea* (2% of mix)

Ox-Eye Sunflower, *Heliopsis helianthoides* (2% of mix)

New England Aster, *Aster novae-angliae* (1.5% of mix)

Tall White Beardtongue, *Penstemon digitalis* (1% of mix)

Awl Sedge, *Carex stipata* (1% of mix)

Narrow Leaved Mountain Mint, *Sisyrinchium angustifolium* (1% of mix)

Path Rush, *Juncus tenuis* (1% of mix)

Swamp Milkweed, *Asclepias incarnata* (0.5% of mix)

Wild Bergamot FIG, *Monarda fistulosa* (0.5% of mix)

Narrow Leaved Mountain Mint, *Pycnanthemum tenuifolium* (0.3% of mix)

Tall White Beardtongue, *Penstemon digitalis* (1% of mix)

Ditch Stonecrop, *Penthorum sedoides* (0.4% of mix)

Blue Lobelia, *Lobelia siphilitica* (0.4% of mix)

Monkeyflower, *Mimulus ringens* (0.4% of mix)

Plant Sizes



Pots: Plants shown on page 10 can be purchased in one to five gallon pot. Size of pots can change based on availability.



Bulbs: Daffodils are cheaper if purchased in bulk. You can find bulk bags at garden stores.



Seeds: Only Salt Tolerant Meadow Mix can be purchased in seed form.

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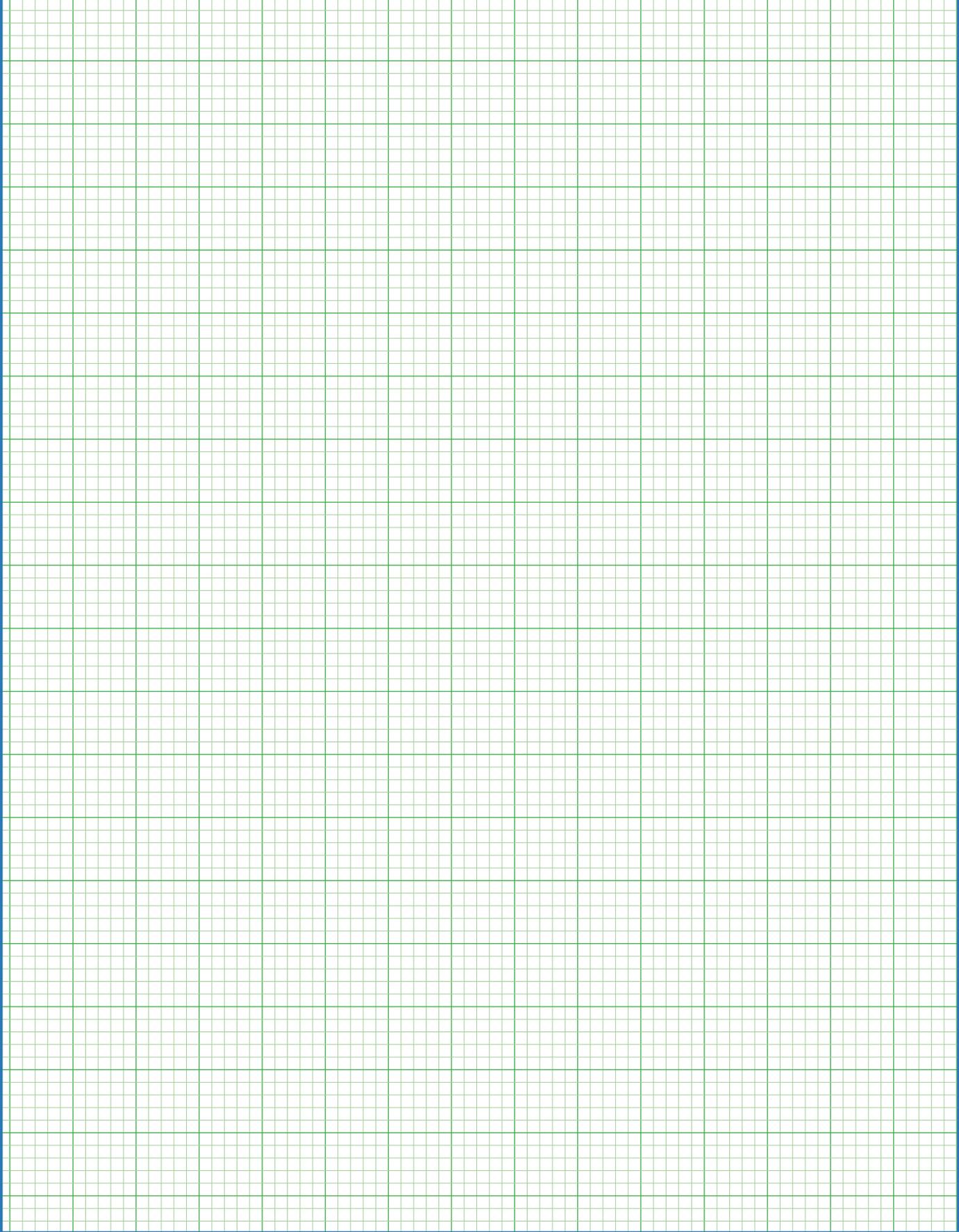
Did You Know

- Snowstorms over 5 inches a day usually occur a couple times a year in Detroit. A major blizzard can accumulate up to 10 inches of snow in one day.
- The heaviest storms are most likely to happen in January or February.
- Detroit has on average of thirteen days where new snow totals at least one inch.
- The 'living snow fence' in this lot design will help contain snow and keep snow from blowing onto adjacent property.

Planting Tips

- Water plants during exceptionally dry periods.
- Monitor plants every spring and fall. Replace damaged plantings to keep the 'living snow fence' in operating order.
- Looking for a dry, salt-tolerant meadow mix? Consider Detroit Dry Basin Area Mix. Mix has been designed by Ernst Conservation Seeds.

Draw Your Lot





**DETROIT
FUTURE
CITY**

**working
with lots**
A FIELD GUIDE

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#DFClots**

Image Source: Pingswept., "Snow_pile_minuteman_bike_path," 22 March 2005, via Wikimedia CC BY-SA 2.0

Volunteer

Professional

Volunteer + Professional

Soil Builder

Image Source: U.S. Fish and Wildlife Service, "Coreopsis close-up." 09 June 2012 via Flickr, CC BY 2.0.



HELLO

MY NAME IS

Soil Builder

The Soil Builder offers an inexpensive, hands-on approach to improving the soils on your lot. The Soil Builder is an environmentally-friendly alternative to chemical-based fertilizers, pesticides, and fungicides.

This fertilizer is not harmful to insects, wildlife, plants, soil, or humans and can be used on vegetable gardens, flowers, trees, and lawns to provide extra nutritional boost! Two compost recipes are provided to suit the size of your planting area.

The Field Guide provides some suggestions for a groundcover; however, the primary intent of this design is to improve the soils for whatever you may choose to grow next on your lot.

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

What is the lot design likely to cost?

The estimated cost of the Soil Builder is low (\$50–\$1,000) and based on utilizing volunteer labor and the seed mix. 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 maintenance of the Soil Builder lot design is low as soil amendments are easy to make and add to your garden. The Soil Builder can be used as a soil amendment before installing a lot design or after to provide additional nutrients to your garden. You can apply soil amendments to your garden one time, weekly, or annually depending on your soil needs and maintenance preference.

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 day with the help of at least one or two 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 go.

Cost	\$50 - 1,000	\$1,001 - 2,500	\$2,501 - 5,500	\$5,500 +
People	Volunteer	Professional	Volunteer + Professional	
Experience	Beginner	Intermediate	Advanced	
Upkeep	Low	Medium	High	
Stormwater	Good	Better	Best	
Location	Clay Soil Lot With a Patient Lot-Tender in Sun or Shade			

Soil Builder

Examples of Composting Materials

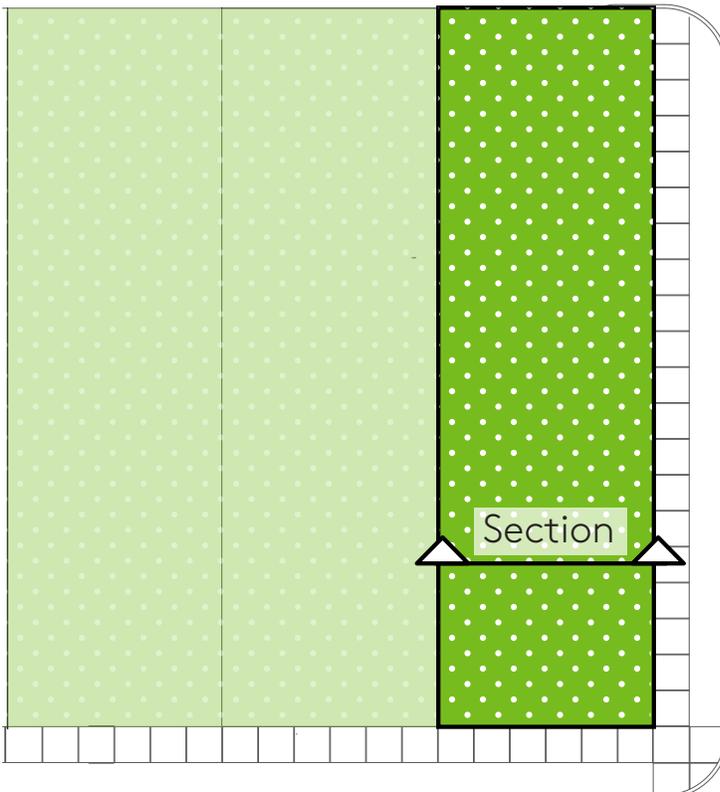


Section



Lawn, Full Lot coverage

Where Do I Grow?



The Soil Builder can be implemented on single or multiple lots and is suitable for any property.

 Soil Builder Area

Image Source: 1) Theornamentalist, "Water in spray bottle." 19 March 2013 via Wikimedia, CC BY-SA 3.0; 2) Holger Casselmann, "Home made terra preta." 31 March 2012 via Wikimedia, CC BY-SA 3.0; 3) SuSanA Secretariat, "Compost as faeces covering material in UDDT." 10 December 2006 via Wikimedia, CC BY 2.0;

Before You Start

'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 undertake 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, and protective eye wear

Field Guide Resources

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

- [Clean + Green](#)
- [Bulb Planting Detail](#)

Materials Defined

- **Airstone and Air Pump:** A system used to improve water and air circulation within aquariums. Available to purchase at most pet stores.
- **Backpack Sprayer:** A plastic container with an attached sprayer that can be strapped to your back. The plastic container will hold the Soil Builder and is an easy way to handle heavy liquids instead of carrying in a plastic watering can. Available to purchase at local retail or garden stores.
- **Cheese Cloth:** A loose-woven gauze-like cotton cloth. The cloth is used as a 'tight' strainer as it only allows liquid through.
- **Compost:** A mixture of organic material used as a plant fertilizer. Available to purchase at local retail or garden stores.
- **Fish Seaweed Fertilizer:** Ground-up fish in the form of a liquid. You can buy a pint of fish seaweed at local retail or garden stores.
- **Humic Acid:** Aged, dead plant matter, such as soil, peat, and coal, that can be purchased in liquid or granular form. Available to purchase at local retail or garden stores.
- **Inoculant:** Agricultural amendments to promote plant health. You can buy Garden Combination Inoculant at agricultural or garden stores or make your own. Inoculants have an annual expiration date and should be used soon after purchase.
- **Nylon Stocking or Meshed Bag:** Thin, cloth-like material that allows air or water to pass through easily. You can use a womens' nylon stocking or small mesh bag similar to a tea bag. Both items can be purchased at local retail stores.
- **Unsulphured Molasses:** A by-product of beating sugarcane, grapes, or sugar beets. Available to purchase at local retail or garden stores.

Materials

A Lot of Soil Builder

- **5 Gallon Bucket**, 2 buckets
- **Humic Acid**, 1 tablespoon
- **Water**, 5 gallons of bottled water or non-chlorinated water
- **Airstone and Air Pump**
- **Inoculant**, 1 cup of worm castings or aerobic compost, such as decaying organic matter from existing compost bin
- **Food Mix**, ¼ cup of unsulphured molasses, Fish Seaweed Fertilizer
- **Nylon Stocking or Meshed Bag**
- **Cheese Cloth or Strainer**
- **Watering can or backpack sprayer**

A Little Soil Builder

- **5 Gallon Bucket**, 2 buckets
- **Non-Chlorinated Water**, 5 gallons
- **Compost**, ⅓ of 5 gallon bucket
- **Cheese Cloth or Strainer**
- **Watering can or backpack sprayer**

Groundcover (Optional)

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

Soil Builder Step-By-Step

Let's Start

Want to create the Soil Builder 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:

- Prepare Your Lot**
- Make A Lot of Soil Builder**
- Make A Little Soil Builder**
- Sow Lot + Maintain**
- Sow Low-Maintenance Fescue Mix**

Bioremediation

In the simplest terms, bioremediation is the process of breaking down harmful chemicals that exist in the soil. Aerobic bacteria, nematodes, fungi, and protozoa are very tiny organisms that make the bioremediation process happen.

Materials Defined

Don't know what 'inoculant' is? Refer to page 5 for the definitions of key materials found in these recipes.

Prepare Your Lot

Soil Builder is an environmentally-friendly alternative to chemical-based fertilizer, pesticides, and fungicides.

Soil Builder can be used on existing lawns and gardens or used as a soil supplement before constructing another Field Guide lot design. If you prefer to remove your existing vegetation and sow a groundcover, refer to Remove Your Grass on page 4. If you are not interested in a groundcover, refer to the Field Guide web site for variety of lot designs you could install on your lot.

This lot design offers two types of Soil Builder: A Lot of Soil Builder and A Little Soil Builder.

A Lot of Soil Builder is a recipe designed to provide oxygen-rich, culture-containing aerobic bacteria, nematodes, fungi, and protozoa. This combination of beneficial microorganisms provide bioremediation properties and help improve the overall quality of the soil.

A Little Soil Builder is a simpler compost recipe than A Lot of Soil Builder but has the same beneficial fungi and microorganisms to help improve overall quality of soil. A Little Soil Builder can be used on individual plants, vegetables, flowers, and trees.

Make A Lot of Soil Builder

A Lot of Soil Builder Recipe is based on a recipe found in [Earth Repair by Leila Darwish](#), a great resource for organic ways to heal the soil and earth.

This recipe is for 5 gallons of Soil Builder. It is likely to require a few batches to cover the full lot. It is best applied over several applications and seasons.

To make A Lot of Soil Builder, preheat over the stove 1 cup of inoculant, allowing it to mix together but being careful not to let it burn. Preheating will increase its fungal power.

Soil Builder Step-By-Step

Remove from the stove and add one tablespoon of humic acid. Humic acid is produced by biodegradation of dead organic matter. You can purchase humic acid and other ingredients listed in recipe at garden stores, including Detroit Farm and Garden.

Place mixture on shallow tray (to cool evenly) and let sit for three days. **On day three, fill a five gallon bucket with bottled water or other non-chlorinated water.** The water temperature should be between 55 and 80°F. **Put the airstone in the bottom of the five gallon bucket, attach the air pump, and let the mixture start churning or coming to a rolling boil.** The mixture needs oxygen - if it is not bubbling or churning, you will need to use a stronger air pump.

Place inoculant and food mix (¼ cup of unsulphured molasses and Fish Seaweed Fertilizer) in a nylon stocking or mesh bag, tie the end, and suspend it in the water. Let the mixture sit for approximately 24 hours. **Do not let the mixture sit for more than 36 hours.** If the mixture smells sharply, do not use; the mixture has either received insufficient oxygen or too much food. The Soil Builder should smell earthy and sweet. A soil biology test is recommended on your first few batches to make sure microbes are being produced. You can purchase this at most retail or garden stores.

Place cheese cloth or strainer over the second five gallon bucket, then pour mixture through a strainer to remove large debris. This step is important to ensure your sprayer or watering can does not clog.

Place mixture in watering can or backpack strayer. Water or spray mixture evenly over your lot. It is likely to require a few batches to cover a full lot.

You can use this mixture through the spring, summer, and fall. The more you spray your lot, the healthier it will become! Creating a compost pile will provide you with a source of inoculant. Wash bucket, pump, and spray with non-toxic, environmentally-friendly, biodegradable cleaner once you finish spraying.

○ Make A Little Soil Builder

This recipe is based on a recipe found on [Home Composting Made Easy](#). A Little Soil Builder is a simple compost recipe best used on individual plants or small planting beds, such as vegetables, flowers, and trees.

Fill a five gallon bucket ⅓ full of compost, then add bottled water or other non-chlorinated water to the top of the bucket.

Mix and let the mixture brew for approximately three to four days, stirring it occasionally.

Place cheese cloth or strainer over the second five gallon bucket, then pour the mixture through strainer to remove large debris. This step is important to ensure your sprayer or watering can does not clog.

Place mixture in a watering can or backpack sprayer. Use mixture immediately for maximum benefit around root systems of hardy shrubs, trees, and established plants. For delicate or potted plants, the Field Guide recommends diluting the mixture further. When diluted, the Soil Builder should be light brown or the color of a light cup of tea.

Wash bucket, pump, and spray with non-toxic, environmentally-friendly, biodegradable cleaner once you finish spraying.

Soil Builder Step-By-Step

○ Sow Lot + Maintain

If your lot is bald or you plan on sowing a different groundcover than the one currently growing on your lot, the Field Guide recommends a low-maintenance fescue mix. **Refer to box on right for guidance on sowing low-maintenance fescue mix or page 9 for alternative groundcover options.**

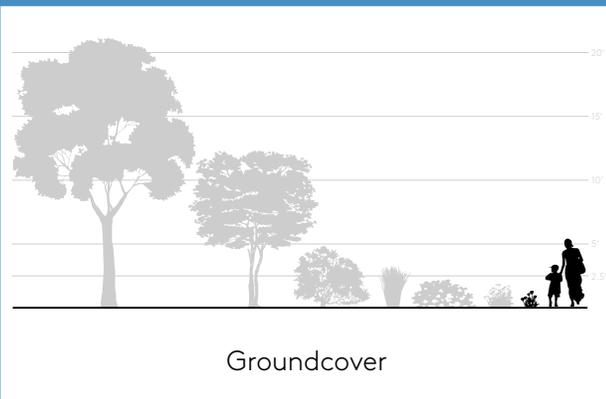
Looking for more than a groundcover for your lot? Check out the Field Guide web site for lot designs.

The Soil Builder does not require maintenance; however, any groundcover or lot design you may decide to construct will. Refer to individual lot designs for more information.



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

Average Height of Plants



○ Sow Low-Maintenance Fescue Mix

If you are seeking a lower-maintenance alternative to traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow the Soil Builder 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

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: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Planting: Alternative Groundcover

For More Information

If you are seeking a more interesting groundcover than a low-maintenance fescue, try one of the alternative options listed on this page.

For more information on using any of the seed mixes on this page, refer to the lot designs below on the Field Guide web site:

Partially Shaded Area Roadside Seed Mix

Refer to [Syrup Maker](#) lot design

Native Grassland Meadow

Refer to [Grassland Habitat Maker](#) lot design

Butterfly Garden Mix

Refer to [Native Butterfly Meadow](#) lot design

Clay Mix

Refer to [Clay Soil Mix](#) lot design

These seed mixes, additional groundcovers, and lot designs can be found at DFC-lots.com.

Seed Mix for Part Sun to Shade

Partially Shaded Area Roadside Seed Mix

Mixing two pounds of Partially Shaded Area Roadside Seed Mix (ERNMX-140) with three pounds of Annual Cover Crop seed mix is recommended (oats or grain rye depending on sowing season) if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Native Grassland Meadow

Mixing three pounds of Native Grassland Meadow seed mix (Eastern Native Habitat & CREP, ERNMX - 173) with three pounds of Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Butterfly Garden Mix

Mixing 15 ounces Butterfly Garden Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Seed Mix for Full Sun to Part Sun

Clay Mix

Mixing 15 ounces Clay Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Plant Sizes



Seeds: All plants can be purchased in seed form.

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.

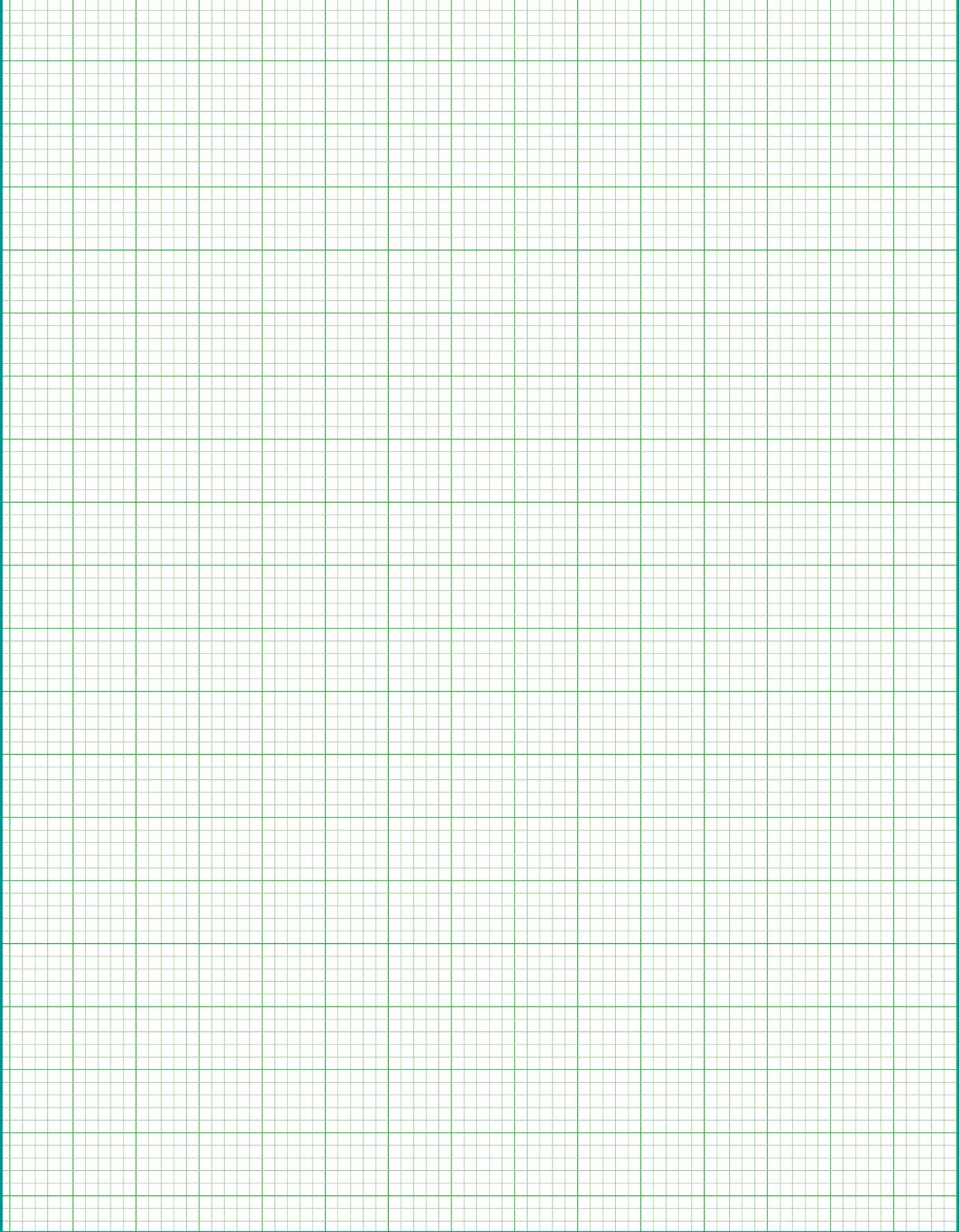
Helpful Facts

- Unfinished Soil Builder or old compost may be nutritionally deficient and should not be used on individual plants.
- A Little Soil Builder can be mixed and used within one hour as a mild fertilizer.
- Soil Builder is ready to use when the mixture smells "yeasty."

Planting Tips

- You can use Soil Builder as root drench, applying it directly to the soil around plants or as a foliar (leaf) spray.
- If using on individual plants, you can add $\frac{1}{8}$ teaspoon vegetable oil or mild dishwashing liquid per gallon to help the mixture stick to the leaves.
- Annual Crop Cover seed mix is used to help establish initial seed mix. It does not need to be reseeded annually.

Draw Your Lot

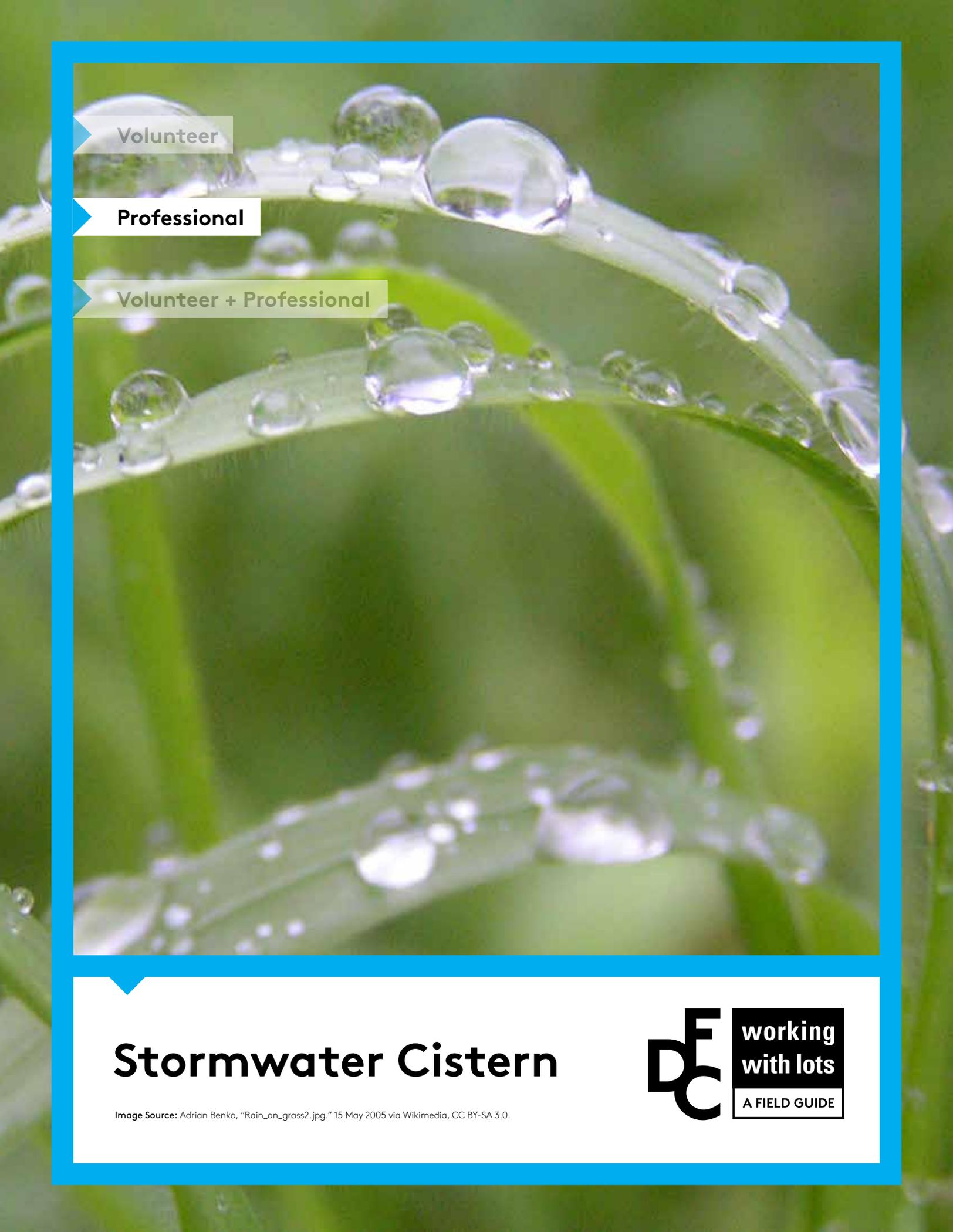




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Image Source: Chhe, "A picture of Carex pensylvanica." 25 July 2009 via Wikimedia, Public Domain.



Volunteer

Professional

Volunteer + Professional

Stormwater Cistern

Image Source: Adrian Benko, "Rain_on_grass2.jpg." 15 May 2005 via Wikimedia, CC BY-SA 3.0.





The Stormwater Cistern offers Detroiters a moderately “off-the-grid” solution to stormwater collection, management, and reuse.

Stormwater collected in the cistern is suitable for any household, business, or outdoor use where potable (drinkable) water is not required, for example irrigation and car washing.

This lot design enables households and businesses to take initiative and participate in water conservation activities on their own lot.

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

What is the lot design likely to cost?

The estimated cost of the Stormwater Cistern is over \$5,500 and based on utilizing professional labor. The Field Guide recommends hiring a professional for lot preparation and installation, as the size and scale of the cistern will depend on the individual resident’s stormwater catchment area.

How much upkeep will this lot design require?

The maintenance of this lot design depends on the complexity of the stormwater cistern system selected. The City of Detroit requires all rain barrels and cisterns installed to include a filtering system. Cisterns usually require monitoring every few months to ensure no sediment or bacteria is contaminating the cistern.

Will the installation of this lot design require a professional?

The installation will require professional assistance for all steps of this lot design as it requires significant earth moving, earth sculpting, and engineering. Please refer to the Step-By-Step section for guidance and professional installation requirements for the lot design. This will help when you to discuss installation times and costs with the selected professional.

How long will it take to install this lot design?

This lot design requires a professional for all steps of the installation. Coordinate with the selected professional to determine projected installation time for their completed work. The Field Guide does not recommend undertaking this project on a community volunteer level.

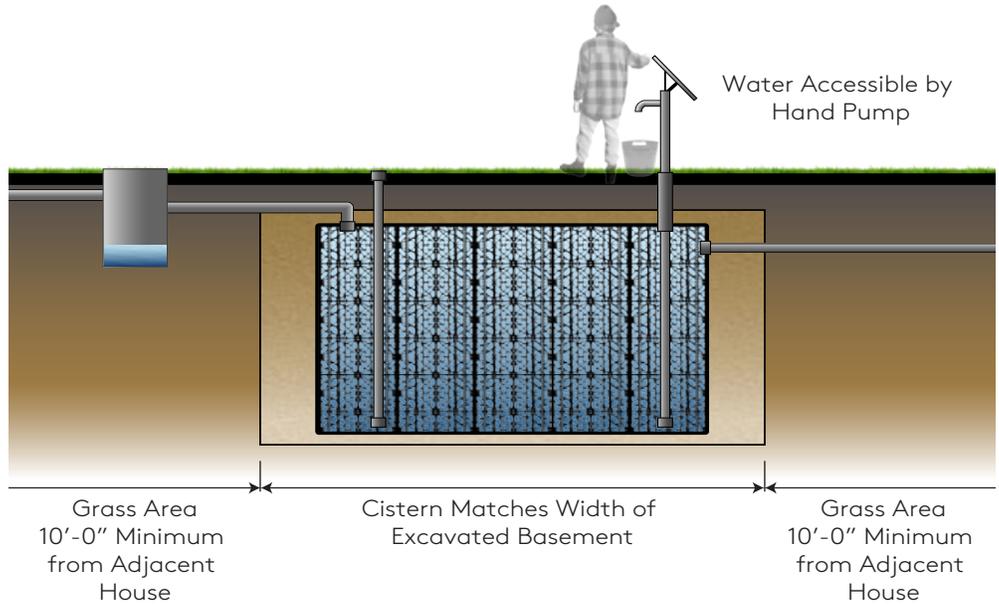
Cost	\$50 - 1,000	\$1,000 - 2,500	\$2,500 - 5,500	\$5,500 +
People	Volunteer	Professional		Volunteer + Professional
Experience	Volunteer experience is not applicable because a professional is recommended.			
Upkeep	Low	Medium		High
Stormwater	Good	Better		Best
Location	Residential or Commercial Lot in Sun or Shade			

Stormwater Cistern

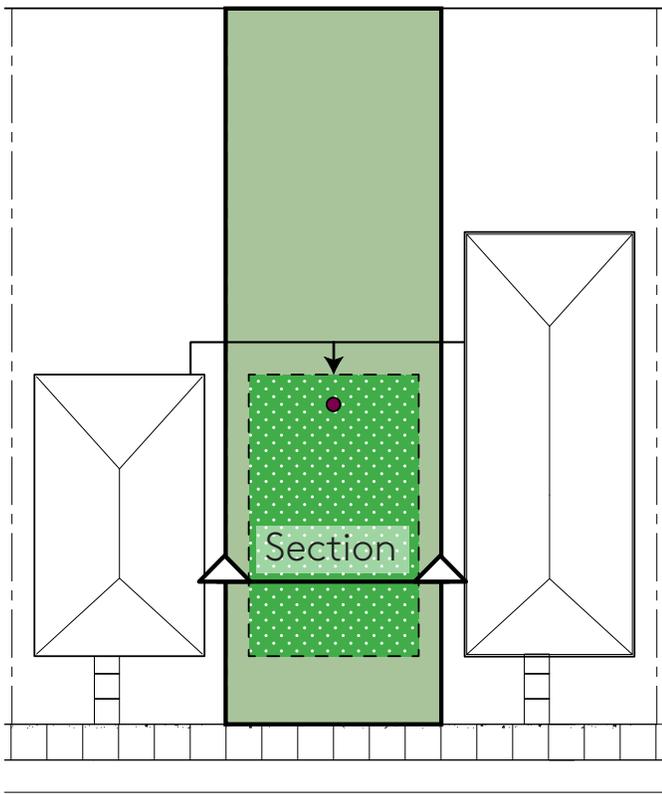
Example of Below-Ground Stormwater Cistern



1 - Installation of below-ground cistern



Where Do I Grow?



The Stormwater Cistern can be constructed on a single residential or commercial lot and utilized by one or two neighboring properties.

-  Stormwater Cistern (Below ground)
-  Hand Pump
-  Grass or Optional Groundcover

Before You Start

'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:

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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.

Stormwater Cistern Step-By-Step

Let's Start

Want to create the Stormwater Cistern? The Field Guide recommends hiring a professional for all tasks. Here are a few guiding principles to help you understand the tasks involved in the lot design. Only undertake installing the design yourself if you have professional construction experience.

Check off tasks as you go along.

Guiding Principles

Professional Recommended:

- Types of Cisterns**
- Harvest Rain**
- Find Catchment Area**
- Select Cistern Use**
- Install a Rain Barrel**
- Maintain Cistern**

Types of Cisterns

A cistern is a waterproof receptacle that stores water for future use. Cisterns are usually designed to catch stormwater. There are two main types of cisterns: above-ground and below-ground.

Above-ground cisterns are cheaper to install than below-ground cisterns; however, if a house is going to be removed on the lot next door, talk to a professional about how to utilize the unfilled basement area for cistern placement. An electrical hand pump will be required with below-ground cistern.

If you decide to add a cistern to your lot, you will need to engage a professional to help ensure the design is engineered and installed to an adequate standard. Residents and community members can play important roles in planning, researching, and fund-raising for this project.

If you are considering installing a cistern, here are a few variable to explore with the assistance of a professional:

- Rainfall Availability
- Roof-Catchment Area
- Cistern Size and Usage
- Rain Barrels

Harvest Rain

Detroit's annual rainfall is 32 to 34 inches. 98% of the storms are 2 inches or less. Keep in mind not all rain water can be captured for reuse.

Ask your professional or lot engineer to estimate the amount of annual rainfall that can be collected from your roof-catchment area. A professional can help you estimate what size and type of cistern is best for long-term benefits, such as reducing your water bill.

Exploring Stormwater Cistern

○ Find Catchment Area

It is important to purchase the correct size cistern according to your needs and the water availability of your catchment area. Speak to a professional to find out what size, shape and location works best for your catchment area. The following are a few guiding principles on cistern catchment areas:

- If your catchment area is relatively small, consider a small cistern or rain barrel.
- Cisterns should be located close to the water source being used, typically the house.
- Below-ground cisterns are recommended in colder climates like Michigan. This will help prevent the water from freezing during the winter and will provide cool water during summer months.
- Cisterns should be at least ten feet from sewage and drainage lines and 50 feet away from non-watertight sewer lines, drains, septic tanks, and animal stables.
- Avoid placing cisterns in areas subject to flooding.
- Remember to contact Miss Dig at 811 to determine if there are any subsurface infrastructure conflicts on your lot.
- Above-ground cisterns can be used for both water harvesting and detention storage by oversizing the cistern and then poking a hole in the upper side of the cistern. The volume below the hole is a permanent water storage for water reuse applications. The volume above the hole is temporary detention storage as the hole acts as a flow regulator to slowly release the water.

○ Select Cistern Use

It is important to know how you would like to use the water from your cistern. **Are you planning to re-use water for household uses or landscape irrigation?**

Currently, the plumbing and building codes in Detroit present a major barrier to using cistern-stored water for traditional household uses. If you are still interested in re-using water for household use, speak to a professional or consider the [Laundry to Landscape](#) lot design, available on the Field Guide web site, as a possible alternative.

The Field Guide recommends using the cistern for landscape irrigation. The following are a few guiding principles to help you estimate the size of cistern you may need:

- To estimate the proper cistern size, use one gallon for every one inch of rain fall. Catchment area (square feet) x 1/12 (1 inch shown in feet) x 0.90 (runoff coefficient) x 7.48 (cubic feet shown in gallons). For example a 1,000 square foot catchment area would produce about 560 gallons of water in a one-inch rain event. (Information on cistern landscape irrigation calculation has been obtained from the [Rainwater Cisterns](#) document by the City of Chicago Department of Environment.)
- Lawn, shrubs, plants, and trees require roughly one inch of water per week. For example, a 3,000 square foot lot would require 1,800 gallons of water per week; therefore, you would need a 1,800 gallon cistern for your lot.
- Another way to figure out the size of the cistern needed is to look at your water bill and calculate monthly water use. This should give you an accurate measure of water supply and demand.

Exploring Stormwater Cistern

○ Install a Rain Barrel

If you are not interested in installing a large-scale cistern, a simpler alternative to collecting rain water is to connect your downspout to a rain barrel.

An average rain barrel collects about 55 gallons of water, and its overflow can be designed to connect to a rain garden.

A 55 gallon rain barrel will provide enough water to maintain small residential gardens. Residents must use water in the rain barrel regularly so it has capacity to collect water during the next rainfall. An alternative is to attach a soaker hose to the rain barrel. The soaker hose lets the water out very slowly and can be placed strategically to allow the barrel to irrigate nearby plants. Underneath the roof soffit where plants usually do not get enough rain water is a good location for placing a soaker hose. This arrangement helps empty rain barrels and prepares them for the next stormwater collection.

The Field Guide recommends connecting with the [Sierra Club of Detroit](#) to learn more about rain barrels.

○ Maintain Cistern

Cistern water should be used regularly. Visually inspect your cistern for leaks or damages on a seasonal basis.

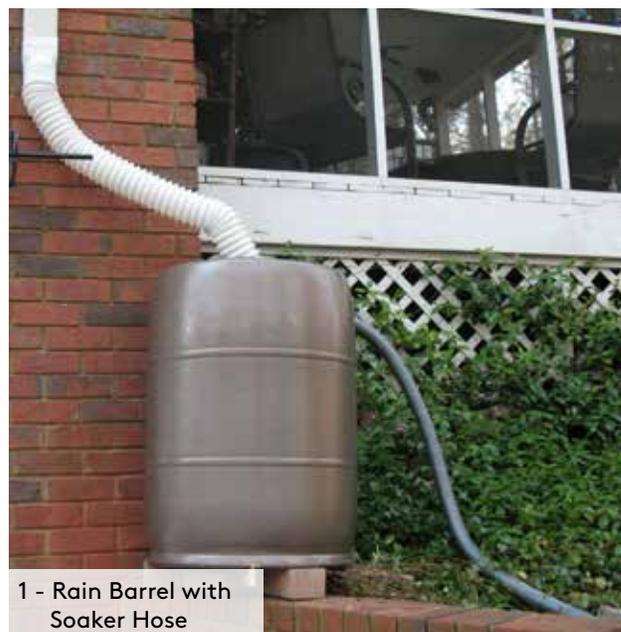
In the winter months, empty above-ground cisterns. Check the cistern's screens, filters, and hoses for debris. More complex cisterns will require additional maintenance.

Understanding the Plan

The lot design plan on the following page illustrates key elements related to a below-ground cistern and their potential location on a 30 by 100 lot.

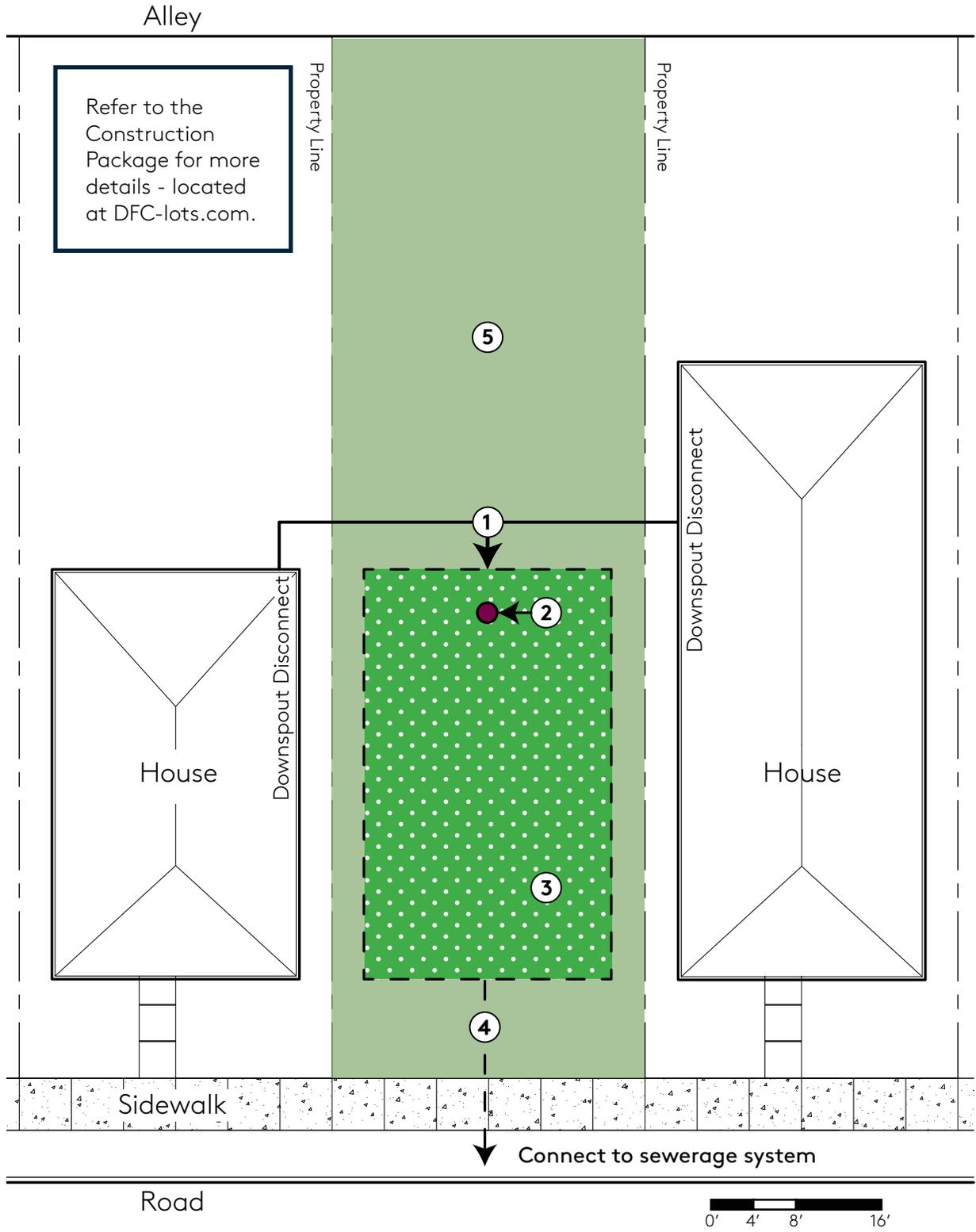
If possible, the Field Guide recommends utilizing the demolition process to construct the cistern in a basement hole before it is filled. This method can save time and money otherwise involved in excavation.

The plan also shows a hand pump which can be added to the cistern to pump water for use. The pump should be placed in the location that works best with your landscape.



1 - Rain Barrel with Soaker Hose

Stormwater Cistern Lot Design



- 1 Sedimentation Trap (Below ground)
- 2 Hand Pump
- 4 Below ground Drain (Culvert)
- 5 Grass or Optional Groundcover
- 3 Stormwater Cistern (Below ground)

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?

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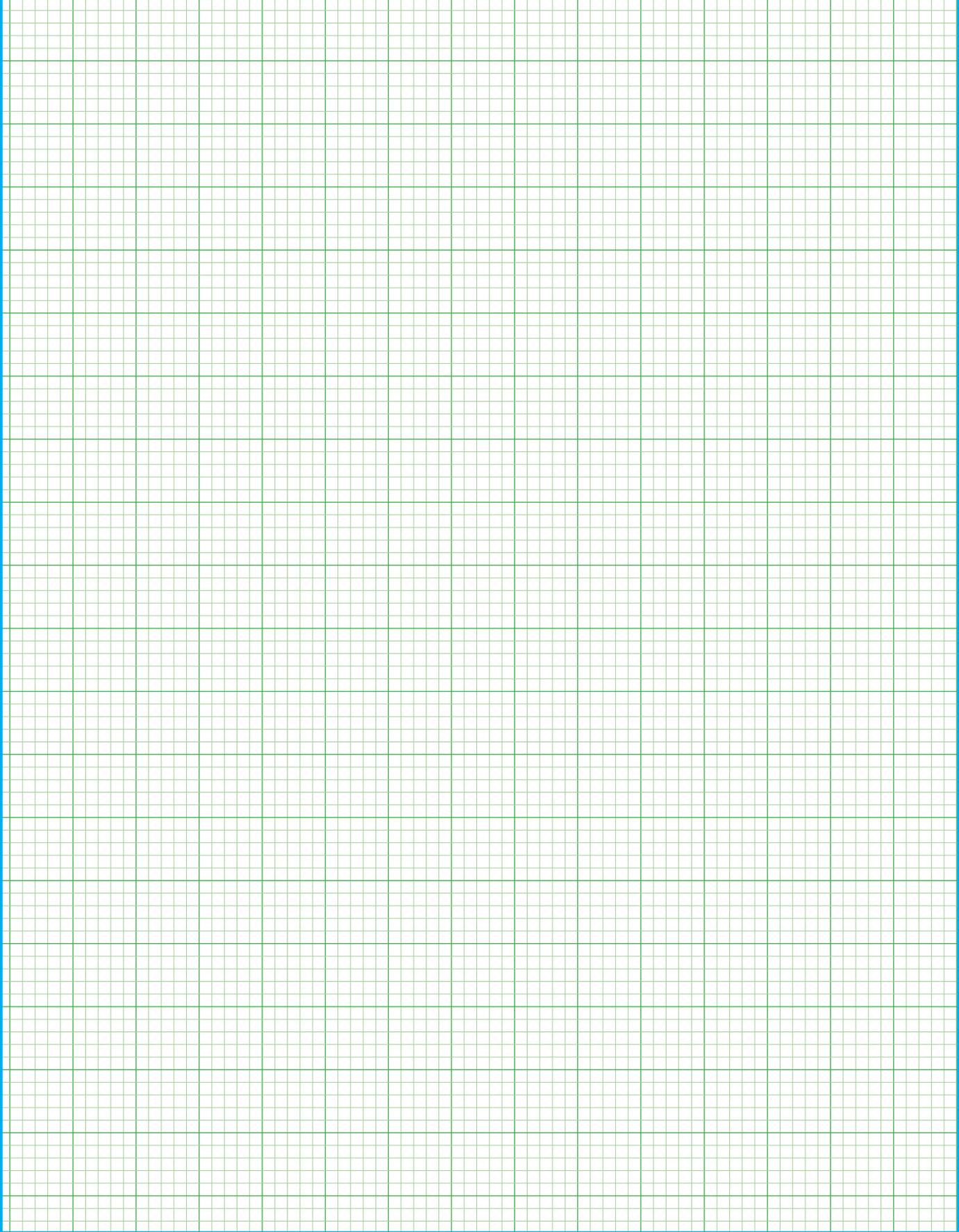
Still unsure of where to start?

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

Helpful Facts

- Cisterns and rain barrels keep stormwater on your lot for reuse instead of entering the City's sewerage system.
- Using water stored in a cistern can save money on your water bill.
- Collecting rainwater in a cistern or rain barrel can help reduce the risk of basement flooding.
- Plants prefer rain water to tap water. Tap water contains chlorine that can inhibit the health of your plants.

Draw Your Lot





**DETROIT
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A FIELD GUIDE

**Visit DFC-lots.com
#DFClots**

Image Source: Massimo Catarinella, "Raindrops on a window of a building in Amsterdam, The Netherlands." 06 December 2008 via Wikimedia, CC BY-SA 3.0.

Volunteer

Professional

Volunteer + Professional



Summer Soil Booster

Image Source: Tom Potterfield, "Sorghastrum nutans (Indian grass) mowed path edge." 13 August 2014 CC BY-NC-SA 2.0.



**working
with lots**

A FIELD GUIDE



The Summer Soil Booster is an affordable planting strategy to protect and enrich soil. This design is a temporary strategy that adds value while you decide on the next step for your lot. This lot design provides two planting options, both of which grow rapidly during the summer months.

Farmers use these cover crop type plants to replenish nutrients in the soil. Typically, these cover crops hold farmers' valuable soil in place after annual crops have been harvested. Before planting crops the following spring, the warm season grasses are turned into the soil for an added nutrient boost. In a traditional agricultural practice, this is referred to as 'green manure.'

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

What is the lot design likely to cost?

The estimated cost of the Summer Soil Booster is low (\$50 - \$1,000) and based on utilizing volunteer labor and the seed mix. 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 maintenance of this lot design is low and is minimal unless you decide to maintain warm season grasses for longer than one planting season.

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 it. 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 healthy adults or youth. The Field Guide assumes the lot is 'construction ready,' and all equipment and materials required for the lot design have been acquired and are ready to use.

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	Residential Lots in Full Sun or Part Sun			

Summer Soil Booster

Examples of Flowering Cover Crops



1 - Annual Candy Tuft



2 - Coreopsis



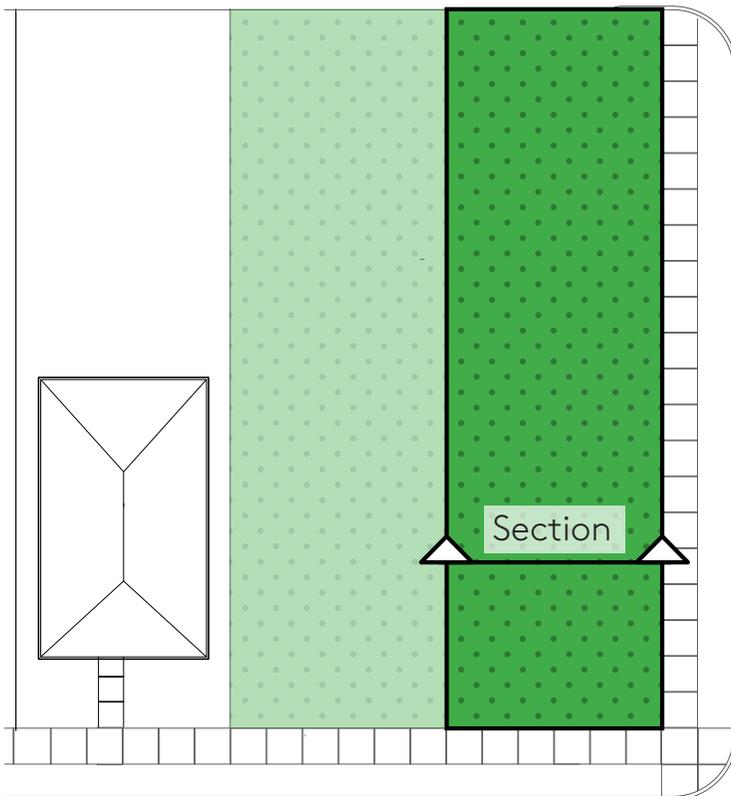
3 - Rocket Larkspur

Section



Warm Season Cover Crop

Where Do I Grow?



The Summer Soil Booster can be installed on single, double, or multiple lots and is suitable for corner properties. The image below shows Warm Season Cover Crop grass fully covering the ground, reducing soil erosion.



4 - Warm Season Cover Crop

 Warm Season Cover Crop

Before You Start

'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

- **Marking Paint and Tape Measure**
- **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
- **Tiller**, 6 inch depth (optional)

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**

Materials List

Materials

- **Germination Blankets**, 4 rolls (8 by 112.5 feet), used for the cover crop area

Cover Crop Options

- **Flowering Annuals Cover Crop**, 15 ounces of seed

OR

- **Native Warm Season Grass Mix**, 3 pounds of seed

Summer Soil Booster Step-By-Step

Let's Start

Want to create the Summer Soil Booster 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:

- Prepare Your Lot
- Select Cover Crop
- Sow Cover Crop
- Maintain Your Lot Design

Prepare Your Lot

Decide on the best location for Summer Soil Booster. **The Field Guide recommends using the full 30 by 100 foot lot.**

This lot design is well suited for lots with exposed soil and is a good solution if you are preparing your lot for another design in the future.

Select Cover Crop

There are multiple suppliers of cover crop seed mixes suitable for Summer Soil Booster. Flowering Annuals Cover Crop or Native Warm Season Grass Mix can be purchased through Michigan Wildflower Farm.

Flowering Annuals Cover Crop: The non-native flowering annuals provide one season of year-long vibrant color. This type of mix is used by the Michigan Department of Transportation as a temporary groundcover to reduce soil erosion and exposed soil. This seed mix will not survive Michigan's winter. Cover crop will need to be replanted the following year, or you may decide to select a different groundcover or lot design.

Michigan Wildflower Farm suggests 7.5 ounces of mixed per 1,500 square feet. **The Field Guide recommends 15 ounces of Flowering Annuals Cover Crop for a full lot (30 by 100 feet).**

Native Warm Season Grass Mix: This seed mix can be used for one to five seasons and provides a grassy, naturalized appearance. This seed mix is 70% oats and 30% native warm season grasses.

This seed mix can be used as an annual or short-term groundcover as the warm season grasses will return the following year if you decide to keep the cover crop for a second season. This seed mix is tolerant of most soils and grows well in full sun to partial shade.

Summer Soil Booster Step-By-Step

Ernst Conversation Seeds suggests one pound of seed mix per 1,000 square feet. **Three pounds of Native Warm Season Grass Mix (ERNMX-117) should be used for a full lot (30 by 100 feet).**

○ Sow Cover Crop

The soil should be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration.

Seeding should take place in spring (mid-May to mid-June). There are multiple suppliers of cover crop seed mixes; however, if you decide to select one of the Summer Soil Booster mixes, use the seed mix amounts provided in above sections (Flowering Annuals Cover Crop and Native Warm Season Grass Mix).

Spread seeds across the entire lot. You can do this by hand or with a hand-cranked whirlwind seeder. You may need to do this several times to get even coverage. Water daily until seedlings are four to six inches in height.

Place a thin layer of straw or a germination blanket over seeded areas to help ensure that your seed establishes. **Four rolls of 8 by 112.5 foot single net germination blankets will cover the meadow area.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

○ Maintain Your Lot Design

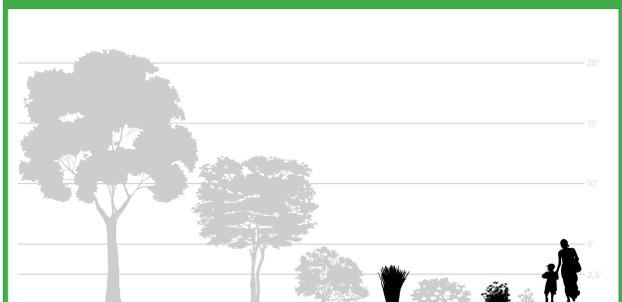
The recommended Summer Soil Booster seed mixes will require watering, especially as seeds germinate.

The Flowering Annual Cover Crop will require minimal maintenance. If Native Warm Season Grass Mix is used for two to five years, cut grasses back to four to six inches whenever they reach above ten inches in height. After the first year, continue weeding, and mow your meadow in late fall or early spring to keep grasses looking their best.



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

Average Height of Plants



Grasses and Perennials

Planting: Full Sun to Part Sun

Flowering Annuals Cover Crop

15 ounces of Flowering Annuals Cover Crop is recommended for the Summer Soil Booster lot design.

This mix can be assembled by Michigan Wildflower Farm.

Annual Candy Tuft, *Iberis umbellata* (31.25% of mix)

Rocket Larkspur, *Delphinium consolida* 'Rocket' (25.02% of mix)

Annual Baby's Breath, *Gypsophila elegans* (25.01% of mix)

Plains Coreopsis, *Coreopsis tinctoria* (6.24% of mix)

Dwarf Spurred Snapdragon, *Linaria maroccana* (6.24% of mix)

Catchly, *Silene species* (6.24% of mix)



1 - Catchly

Native Warm Season Grass Mix

Three pounds of Warm Season Grass Mix (ERNMX-111) is recommended for the Summer Soil Booster lot design.

This mix can be assembled by Ernst Conservation Seeds.

Oats, *Avena sativa* (70% of mix)

Indiangrass, *Sorghastrum nutans* (10% of mix)

Little Bluestem 'Camper', *Schizachyrium scoparium* 'Camper' (10% of mix)

Big Bluestem 'Southlow', *Andropogon gerardii* 'Southlow' (5% of mix)

Switchgrass 'Cave-In-Rock', *Aster novae-angliae* (0.04% of mix)

Showy Tick Trefoil, *Desmodium canadense* (0.02% of mix)



2 - Native Warm Season Grasses

Plant Sizes



Seeds: All plants can be purchased in seed form.

Did You Know?

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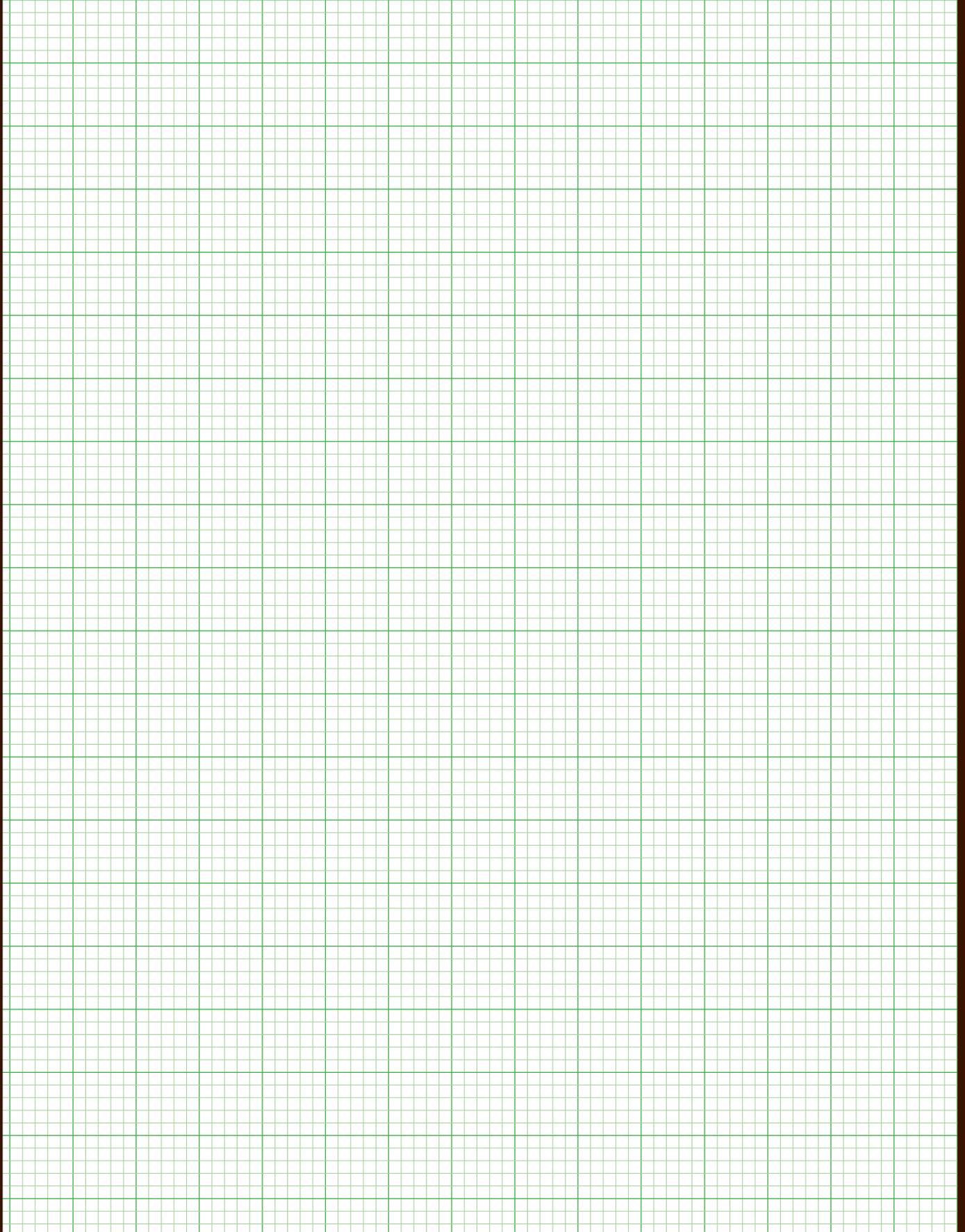
Helpful Facts

- The Summer Soil Booster is a great use for temporary groundcover.
- The Summer Soil Booster plants can take time to germinate but will grow quickly once they sprout.
- Warm season plantings have multiple uses and benefits, including biomass creation and conservation cover.

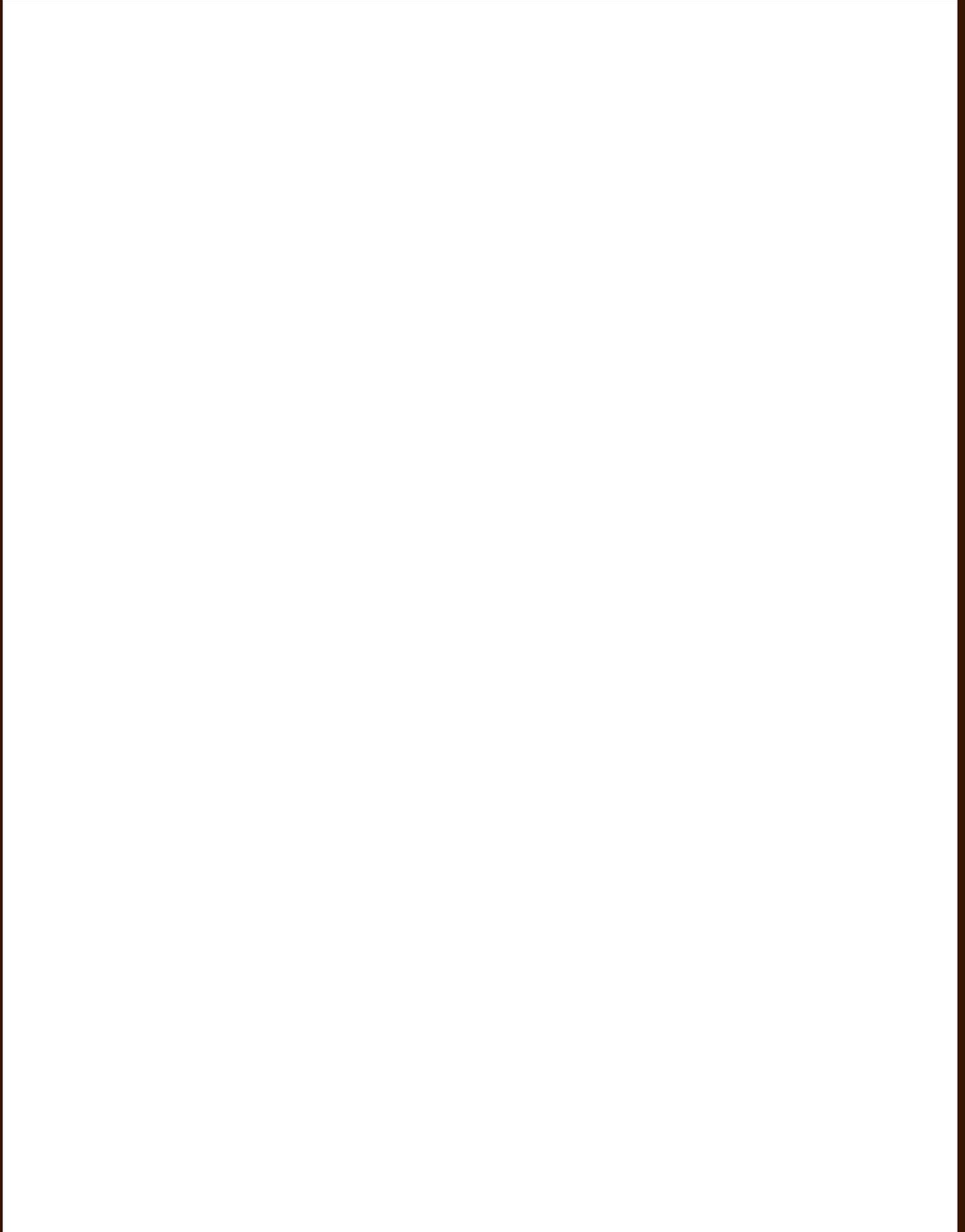
Planting Tips

- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant is spring or fall.
- Do not plant in extreme heat. Water after planting and as needed.
- Weed weekly or as needed.
- Nitrogen fertilizers should not be applied to warm season plantings.

Draw Your Lot



Summer Soil Booster Field Notes

A large, empty rectangular box with a dark brown border, intended for field notes. The box is currently blank, providing space for the user to record observations and data during field work.

Volunteer

Professional

Volunteer + Professional



Syrup Maker

Image Source: CAFNR, "Mapling Basket." 08 March 2013 via Flickr, CC BY 2.0.





The Syrup Maker is a long-term lot design that has potential to generate income once the trees are mature enough (12 inches in diameter) to collect sap for maple syrup production.

Maple trees offer a vibrant array of fall colors and deep summer shade. It could take two decades for your trees to reach the size required for tapping, but in the interim, the Syrup Maker provides a well-groomed landscape appropriate for most neighborhoods.

This is an 'heirloom landscape' lot design that will be enjoyed by many generations.

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

What is the lot design likely to cost?

The estimated cost of the Syrup Maker is moderate (\$1,000 – \$2,500) and based on 1.5 inch diameter trees and utilizing volunteer labor. To save money you can plant smaller size trees however this can take longer for trees to reach 12 inch diameter required for sap for maple syrup production. The cost assumes that residents or volunteers have access to basic safety gear and garden tools.

How much upkeep will this lot design require?

This is a low maintenance lot design. Maintenance will include watering newly planted trees, particularly during times of drought and excess heat.

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 the lot design have been acquired and are ready to go.

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	Single, Double, or Multiple Lots in Full Sun or Shade			

Syrup Maker

Examples of Maple Sap Collection



1 - Watering Tank



2 - Syrup Collection

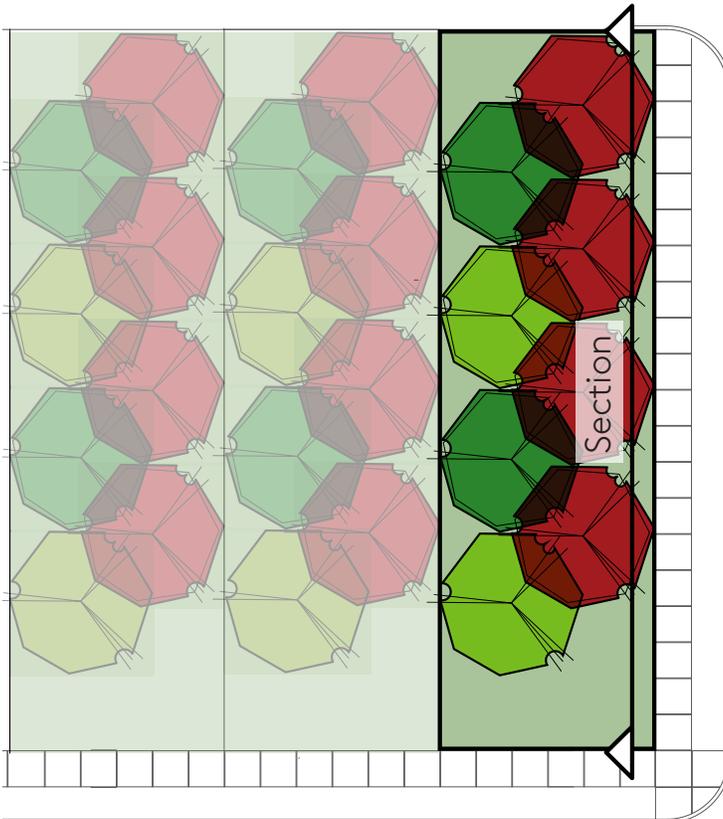


3 - Sugar Maple

Section



Where Do I Grow?



The Syrup Maker can be constructed on single, double, or multiple lots and is suitable for corner properties.

-  Grass or Optional Groundcover
-  Black Maples
-  Red Maples
-  Sugar Maples

Before You Start

'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:

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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.

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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
- **Ball Cart,** for moving heavy trees

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
- Tree Planting Detail
- Bulb Planting Detail

Materials List

Materials

- **Mulch or Wood Chips,** 0.5 cubic yards

Planting

- **Sugar Maple,** 4 pots, or balled and burlapped
- **Black Maple,** 2 pots, or balled and burlapped
- **Red Maple,** 2 pots, or balled and burlapped

Remaining Lot (Optional)

Groundcover

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

Refer to pages 10 and 11 for alternative groundcovers for underneath trees.

Syrup Maker Step-By-Step

Let's Start

Want to create the Syrup Maker 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:

- Prepare Your Lot**
- Plant Trees**
- Maintain Your Lot Design**
- Sow Lot Underneath Trees**

Prepare Your Lot

Decide on the best location for your Syrup Maker. **The Field Guide recommends utilizing the full 30 by 100 foot lot (3,000 square feet).**

You do not need to kill grass in the areas you wish to plant your maple trees. Simply dig out existing grass or groundcover in the area you wish to plant your trees.

Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and Burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. **0.5 cubic yards of mulch or wood chips is required for eight trees.** Keep mulch or wood chips a few inches away from tree trunks.

The Syrup Maker plan shows maple trees organized in rows. If you prefer a naturalized maple forest, plant trees randomly or staggered throughout the lot, making sure all trees are approximately 15 to 20 feet apart. This will give trees room to grow.

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

Syrup Maker Step-By-Step

○ Maintain Your Lot Design

Trees require care and attention to thrive. Trees must be watered regularly during the first year. Water weekly or as needed.

The Field Guide recommends connecting with an arborist or taking a workshop on tree health and maintenance. The Greening of Detroit offers a great Citizen Forester program to interested residents.

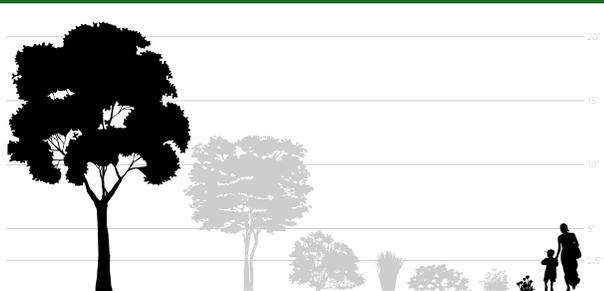


Prefer to sow remaining lot with seed mix other than low-maintenance Fescue mix? Refer to pages 9 and 10 for alternative groundcovers perfect for growing underneath trees.



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

Average Height of Plants



Trees and Groundcover

○ Sow Lot Underneath Trees

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. **If you follow the Syrup Maker lot design you will need approximately 15 pounds of fescue seed mix for full lot (3,000 square feet) 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen any compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

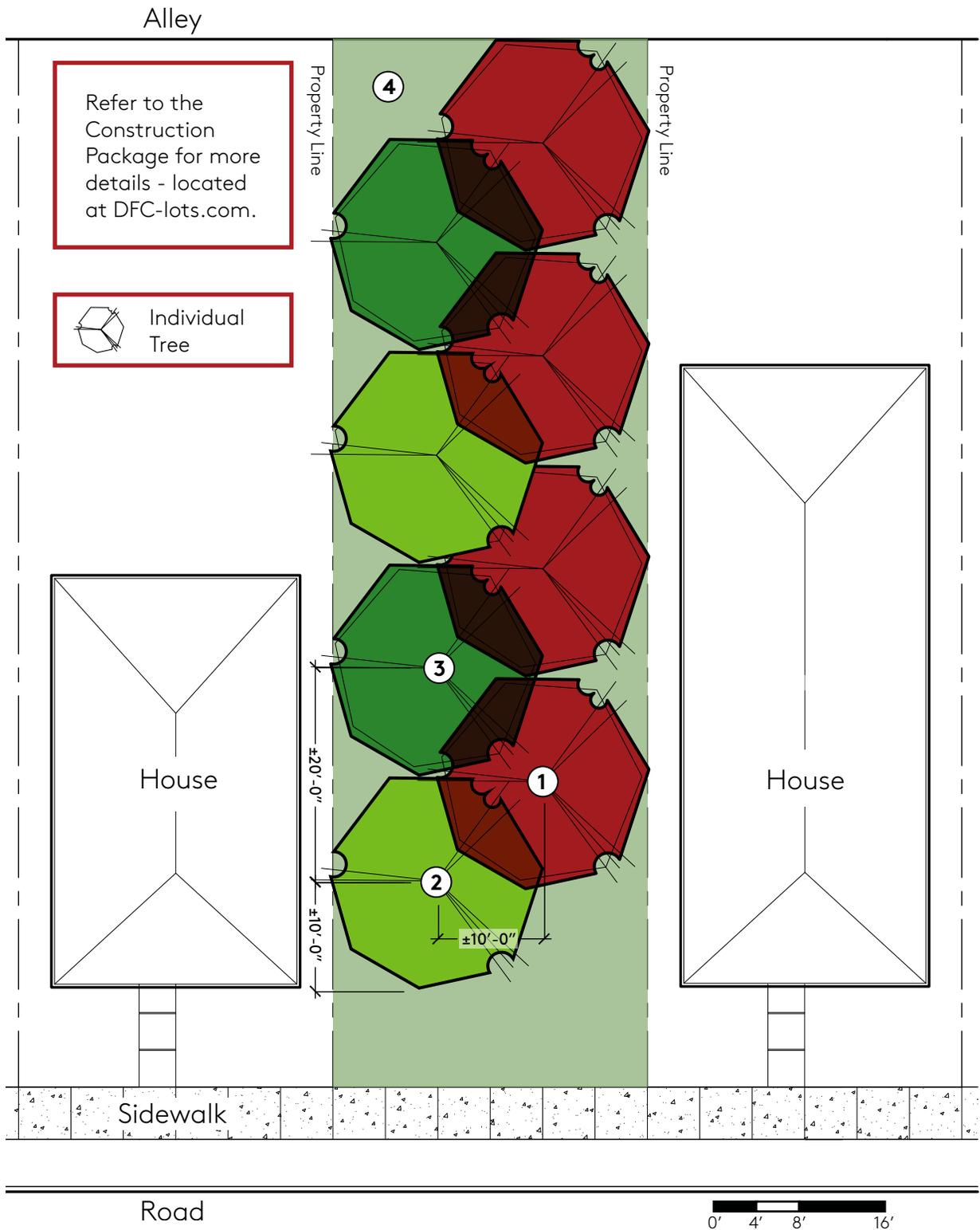
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Syrup Maker Lot Design



- 1
 Shade Tree (Sugar Maple)
- 3
 Shade Tree (Red Maple)
- 2
 Shade Tree (Black Maple)
- 4
 Grass or Optional Groundcover

Refer to the Construction Package for more details - located at DFC-lots.com.

Individual Tree

Planting: Full Sun to Part Sun



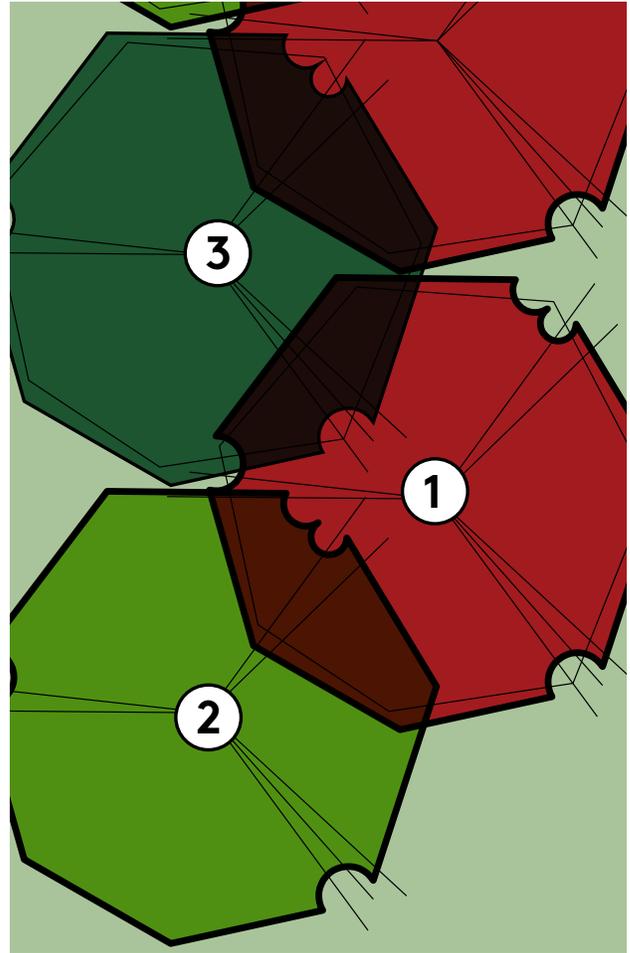
Sugar Maple¹
Acer saccharum
 60' Height x 50' Width.
Quantity: 4 pots or B & B



Black Maple²
Acer nigrum
 70' Height x 50' Width.
Quantity: 2 pots or B & B



Red Maple³
Acer rubrum
 60' Height x 50' Width.
Quantity: 2 pots or B & B



Plant Sizes



Pots: 1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Key

- 

Sugar Maple
 (Space approximately 15 to 20 feet apart from each other.)
- 

Black Maple
 (Space approximately 15 to 20 feet apart from each other.)
- 

Red Maple
 (Space approximately 15 to 20 feet apart from each other.)

Image Source: 1) Joshua Mayer, "Sugar Maple." 16 October 2010 via Flickr CC BY-NC-SA 2.0; 2) James M., "Black maple." 28 September 2014 via Flickr CC BY-NC-SA 2.0; 3) Georges Jansoone JoJan, "Plantanus Orientalis." 22 April 2007 via Wikimedia, Public Domain.

Planting: Alternative Groundcover

Seed Mix for Underneath Trees

Partially Shaded Mix

Mixing two pounds of Partially Shaded Area Roadside Seed Mix (ERNMX -140) with three pounds of Annual Cover Crop seed mix is recommended if selected as lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Little Bluestem, *Schizachyrium scoparium*, Fort Indiantown (32% of mix)

Virginia Wildrye, *Elymus virginicus* (20% of mix)

Autumn Bentgrass, *Agrostis perennans* (20% of mix)

Purple Coneflower, *Echinacea purpurea* (5% of mix)

Partridge Pea, *Chamaecrista fasciculata* (4% of mix)

Tall White Beardtongue, *Penstemon digitalis* (3% of mix)

Marsh Blazing Star, *Liatris spicata* (3% of mix)

Blackeyed Susan, *Rudbeckia hirta* (2% of mix)

Oxeye Sunflower, *Heliopsis helianthoides* (2% of mix)

Prairie Dock, *Silphium terebinthinaceum* (3% of mix)

Slender Bushcover, *Lespedeza virginica* (1.5% of mix)

Ohio Spiderwort, *Tradescantia ohiensis* (1% of mix)

White Wood Aster, *Aster divaricatus* (1% of mix)

Eastern Columbine, *Aquilegia canadensis* (1% of mix)

Thimbleweed, *Anemone virginiana* (1% of mix)

Browneyed Susan, *Rudbeckia triloba* (1% of mix)

Blue False Indigo, *Baptisia australis* (0.8% of mix)

White Goldenrod, *Solidago bicolor* (0.5% of mix)

Wild Bergamot, *Monarda fistulosa* (0.5% of mix)

Zigzag Goldenrod, *Solidago flexicaulis* (0.5% of mix)

Hoary Mountainmint, *Pycnanthemum incanum* (0.2% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

Planting: Alternative Groundcover

Seed Mix for Underneath Trees

Non-Native Woods Mix

Mixing six pounds of Right-of-Way Non-Native Woods Mix seed mix (ERNMX-132) with three pounds of Annual Cover Crop seed mix (oats or grain rye depending on sowing season) is recommended.

You can buy these seeds premixed at Ernst Conservation Seeds.

Creeping Red Fescue, *Festuca rubra* (30% of mix)

Timothy 'Climax', *Phleum pratense*, 'Climax' (20% of mix)

Perennial Ryegrass 'Homerun', *Lolium perenne*, 'Homerun' (20% of mix)

Ticklegrass, *Agrostis scabra* (18% of mix)

Alsike Clover, *Trifolium hybridum* (12% of mix)

Plant Sizes



Seeds: All plants can be purchased in seed form.

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?

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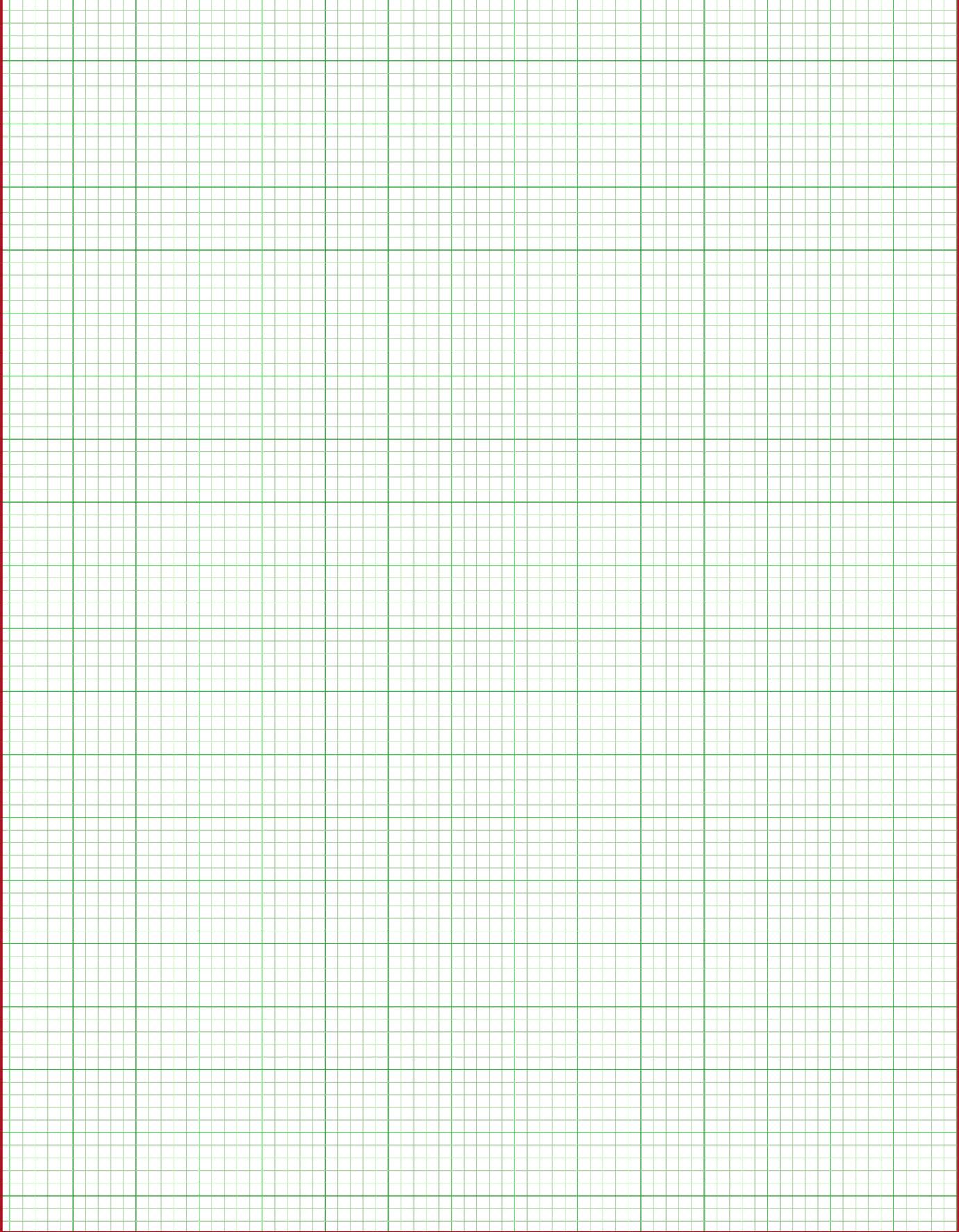
Helpful Facts

- Maple trees have beautiful fall colors.
- You can collect sap from a maple tree to make syrup once the tree has reached 12 inches or greater in diameter.
- Sugar maples yield the highest volume of concentrated sap. Black maples produce a sweeter sap than sugar maples. 40 to 50 gallons of sap will produce one gallon of syrup.
- Red maples do not produce as much sap as sugar maples; however, some maple farms prefer to only use red maples due to their superior flavor.
- Michigan has a strong network of syrup makers with several Michigan-based suppliers of tapping equipment, evaporators, and even cooperative syrup-selling opportunities.

Planting Tips

- Water trees during planting and as needed.
- If mulching around trees, do not place mulch too close to tree trunk (less than three inches). This will help keep the tree free of disease.
- Inspect trees before purchasing to make sure they are healthy and well formed. This will help you select trees that are likely to survive.
- Call ahead to be sure the nursery or garden store has the plants you need for your lot design.
- The best time to plant trees and shrubs is in the spring or fall.
- Do not plant trees under overhead wires. Trees can grow 40 to 50 feet in height.

Draw Your Lot





**DETROIT
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A FIELD GUIDE

Visit DFC-lots.com
#DFClots

Image Source: Ellenm1, "Irresistible Maples." 26 October 2009 via Flickr, CC BY-NC 2.0.



Volunteer

Professional

Volunteer + Professional

Turbo Till

Image Source: Ernst Conservation Seeds, with permission.





The Turbo Till creates a low maintenance lawn tailored to Detroit. Anything can happen on top of the Turbo Till! Underneath and over time, this lot design creates healthier soils and allows water to infiltrate better.

The Turbo Till combines soil tilling and earthworms to improve on-site infiltration, bone meal to stabilize any lead that may exist in the soil (or make the lead chemically unavailable for consumption by humans) and finishes with a fescue grass seed mix. This family of floppy grasses is drought resistant and requires only one cutting per year.

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

What is the lot design likely to cost?

The estimated cost of the Turbo Till is high (\$2,500 – \$5,500) and based on utilizing volunteer labor, bone meal, earthworms, and casting. Residents can save money by composting their own earthworms (refer to page 9 for more information). The cost assumes that residents or volunteers have access to basic safety gear and garden tools. A tiller is required and may add additional cost.

How much upkeep will this lot design require?

The Turbo Till is a low-maintenance lot design. If you are installing the low-maintenance lawn as a groundcover, it will require weekly watering and weeding during the germination period. The lawn should be mowed once a year in the early fall.

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. 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 the 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 the lot design have been acquired and are ready to use.

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	All Lots in Full Sun or Shade			

Turbo Till

Examples of Materials Found in Turbo Till



1 - Soil



2 - Compost



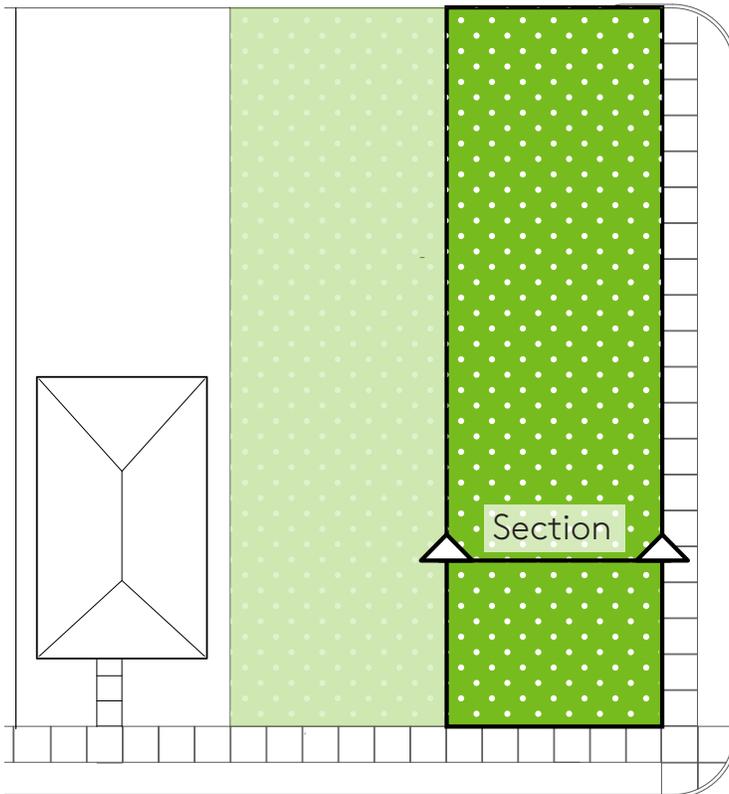
3 - Red Wiggler Worms

Section



Grass Area, Full Lot coverage

Where Do I Grow?



The Turbo Till is suitable for all properties. This design improves the health of soils and contributes to the health of the Great Lakes. Most of the action happens below the surface!

 Turbo Till Area

Before You Start

'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
- **Tiller,** 6 inch depth

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
- Bulb Planting Detail

Materials List

Materials

- **Bonemeal,** 120 pounds or 5 bags of 24 pounds of Bone Meal Plant Food
- **Organic Material,** 27 cubic yards (optional)
- **Red Wiggler Worms,** 126,000 worms
- **Worm Casting,** 214 pounds
- **Duff,** 27 cubic yards (60 bales of straw or shredded cardboard)

Groundcover

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

Refer to page 10 for alternative groundcovers.

Compost Bed (Optional)

Materials

- **Cinder Blocks or Bricks,** to create a 6 by 4 by 2 foot raised bed
- **Chicken Wire,** 26 to 30 square feet
- **Duff,** 0.2 cubic yards (straw or shredded cardboard)
- **Red Wiggler Worms,** 12,000 worms
- **Worm Casting,** 2 pounds

Turbo Till Step-By-Step

Let's Start

Want to create the Turbo Till 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 + Till
- Spread Earthworms
- Sow Groundcover
- Maintain Your Lot Design

Prepare Your Lot

Decide on the best location for your Turbo Till. **The Field Guide recommends using the full 30 by 100 foot lot.**

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 proposed groundcover.

Adding bone meal to the lot design has the potential to help to stabilize lead but does not remove it 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.

Add Soil Amendments + Till

Apply bone meal to the lot at a rate of four pounds per 100 square feet. **The Field Guide recommends 120 pounds of bone meal for a 30 by 100 foot lot.**

Bone Meal is available at nurseries or garden retailers. Bone meal will be a welcomed food source for earthworms and will help stabilize lead that may exist in the soil.

If available, it is recommended to add additional organic material such as coffee grounds, loose organic plant-based table scraps, crushed leaves, grass clippings, cow manure, or horse manure to the lot. Organic table scraps should not include dairy, oil, meat, citrus or hot peppers. **Three inches (27 cubic yards) of organic material spread across the lot will add significant nutrients to the soil and food source to earthworms.** Till the bone meal and organic material into the soil at approximately six to eight inches in depth.

Tilling will loosen soil for water infiltration and worm movement. Once the lot is tilled, rake and remove all clumps of existing vegetation. Tilling should not be done without an assessment of buried cement, debris, or large rocks. Be sure to select the appropriate size of machinery for the job.

Turbo Till Step-By-Step

○ Spread Earthworms

Earthworms improve water infiltration. The Field Guide recommends using approximately 42 Red Wigglers (*Eisenia fetida*) per square foot and one pound of worm casting per 14 square feet. Worm castings are a mix of earthworm eggs and feces. **A full 30 by 100 foot lot requires 126,000 Red Wigglers and 214 pounds of worm casting for robust soil amendment purposes.**

Do not be intimidated by the number of worms required. Over 1,000 worms can fit in a small, six inch by four inch box.

Red Wigglers and castings are recommended for their rapid soil transformation as they live within the top layers of soil and their efforts are focused on topsoil quality.

Do not spray lot with Round-Up or chemicals six weeks prior to adding earthworms to the soil. Release your earthworms in the early morning or late afternoon; do not release earthworms into your lot in the hot sun.

Spread earthworms gently over the top of the prepared bedding (loosened soil), then let them enter the soil on their own or gently mix them with top soil. Distribute evenly throughout the lot.

Place three inches of duff (27 cubic yards) on top of lot. Duff is light fluffy material, such as straw or shredded cardboard. Be sure to water the duff layer immediately to prevent it from blowing away in the wind.

Wait three months for worms to establish and consume duff layer before sowing groundcover.



Refer to "Turbo Till - Worms in Action!" on page 9 for more information on using and maintaining earthworms.

○ Sow Groundcover

If you are seeking a lower maintenance alternative to a traditional lawn, the Field Guide recommends a fescue seed mix. This family of floppy grasses is drought resistant and requires one cutting (in August or September) per year. Soil should already be loosened and prepared for seeding through tilling of lot.

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). Seed mix should be applied to a damp lot. Sow seed across remaining lot by seed spreader or by hand. Spread seed mix evenly over entire lot. You may need to do this several times over the bed. A seed rate of five pounds per 1,000 square feet is recommended. **If you follow the Turbo Till lot design you will need approximately 15 pounds of seed mix for full 30 by 100 lot.**

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. **Four 8 by 112.5 foot rolls of single net germination blanket required for 30 by 100 lot.** Germination blankets or straw can be purchased at most nurseries and garden stores, including Detroit Farm and Garden.

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: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Turbo Till Step-By-Step

○ Maintain Your Lot Design

Red Wiggler earthworms are likely to last for three to five years. They do not burrow during winter and require winter care to stay alive.

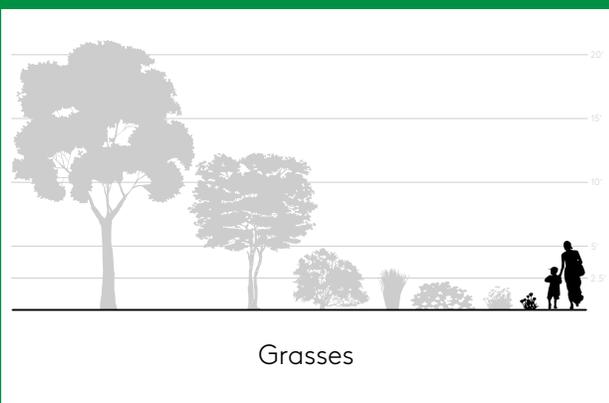
Life expectancy can be prolonged in many ways. You can add nitrogen to the soil, place tarp or cardboard over lot before frost and remove in spring, and/or add biomass such as leaves or straw over lot. Fresh castings applied to the soil over time will introduce more worms (through cocoons) and provide food.

Low-maintenance fescue mix should be watered daily until seedlings are four to six inches in height. Once established, grass will not require supplemental watering except during unusually dry periods. Cut grass once a year in August or September.



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

Average Height of Plants



Turbo Till - Worms in Action!

○ Composting Bed with Earthworms

Can't afford 42 earthworms per square foot or want to raise additional earthworms to add to your soil?

Composting with earthworms is easy and fun. Earthworms love organic plant based table scraps! Organic table scraps should not include dairy, oil, meat, citrus, or hot peppers. Worm composters are available at nurseries and garden stores, or you can build your own!

Create a six foot (length) by four foot (width) by two foot (deep) raised bed. You can do this using cinder blocks, bricks or wood to create perimeter walls around soil.

Line the bottom of the bed with chicken wire. This will help keep vermin out of compost bed, but will allow worms to make their way into the soil once the bed gets too populated.

Fill the raised bed with soil, loose organic table scraps, leaves, wood chips, straw, and/or grass clippings and 500 earthworms per square foot or 12,000 per raised bed, and mix together.

This will cost approximately 300 dollars and can be a cheaper alternative to supplying a full lot with earthworms; however, this process will take years to change soil within your lot.

○ Maintain Your Earthworms

Earthworms need continual feedings. A six by four by two foot box full of Red Wigglers and soil can consume five hundred pounds of organic material per week.

Under ideal conditions, the earthworm population can double every sixty days. Add table scraps and compost weekly, if not daily.

Earthworms will naturally filter into the earth; however, you can also transplant worms from the bed into your lawn to spread them throughout the lot.



Six-by-four-by-two-foot boxes full of Red Wigglers and soil can consume five hundred pounds of organic material per week.

Planting: Alternative Groundcover

For More Information

If you are seeking a more interesting groundcover than a low-maintenance fescue, try one of the alternative options listed on this page.

For more information on using any of the seed mixes on this page, refer to the lot designs below on the Field Guide web site:

Partially Shaded Area Roadside Seed Mix

Refer to [Syrup Maker](#) lot design

Native Grassland Meadow

Refer to [Grassland Habitat Maker](#) lot design

Butterfly Garden Mix

Refer to [Native Butterfly Meadow](#) lot design

Clay Mix

Refer to [Clay Soil Mix](#) lot design

These seed mixes, additional groundcovers, and lot designs can be found at DFC-lots.com.

Seed Mix for Part Sun to Shade

Partially Shaded Area Roadside Seed Mix

Mixing two pounds of Partially Shaded Area Roadside Seed Mix (ERNMX-140) with three pounds of Annual Cover Crop seed mix (oats or grain rye depending on sowing season) is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Native Grassland Meadow

Mixing three pounds of Native Grassland Meadow seed mix (Eastern Native Habitat & CREP, ERNMX - 173) with three pounds of Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Ernst Conservation Seeds.

Seed Mix for Full Sun to Part Sun

Butterfly Garden Mix

Mixing 15 ounces Butterfly Garden Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Seed Mix for Full Sun to Part Sun

Clay Mix

Mixing 15 ounces Clay Mix seed mix with 24 ounces Annual Cover Crop seed mix is recommended if selected for the lot design groundcover.

You can buy these seeds premixed at Michigan Wildflower Farm.

Plant Sizes



Seeds: All plants can be purchased in seed form.

Did You Know?

Professionals Can Help!

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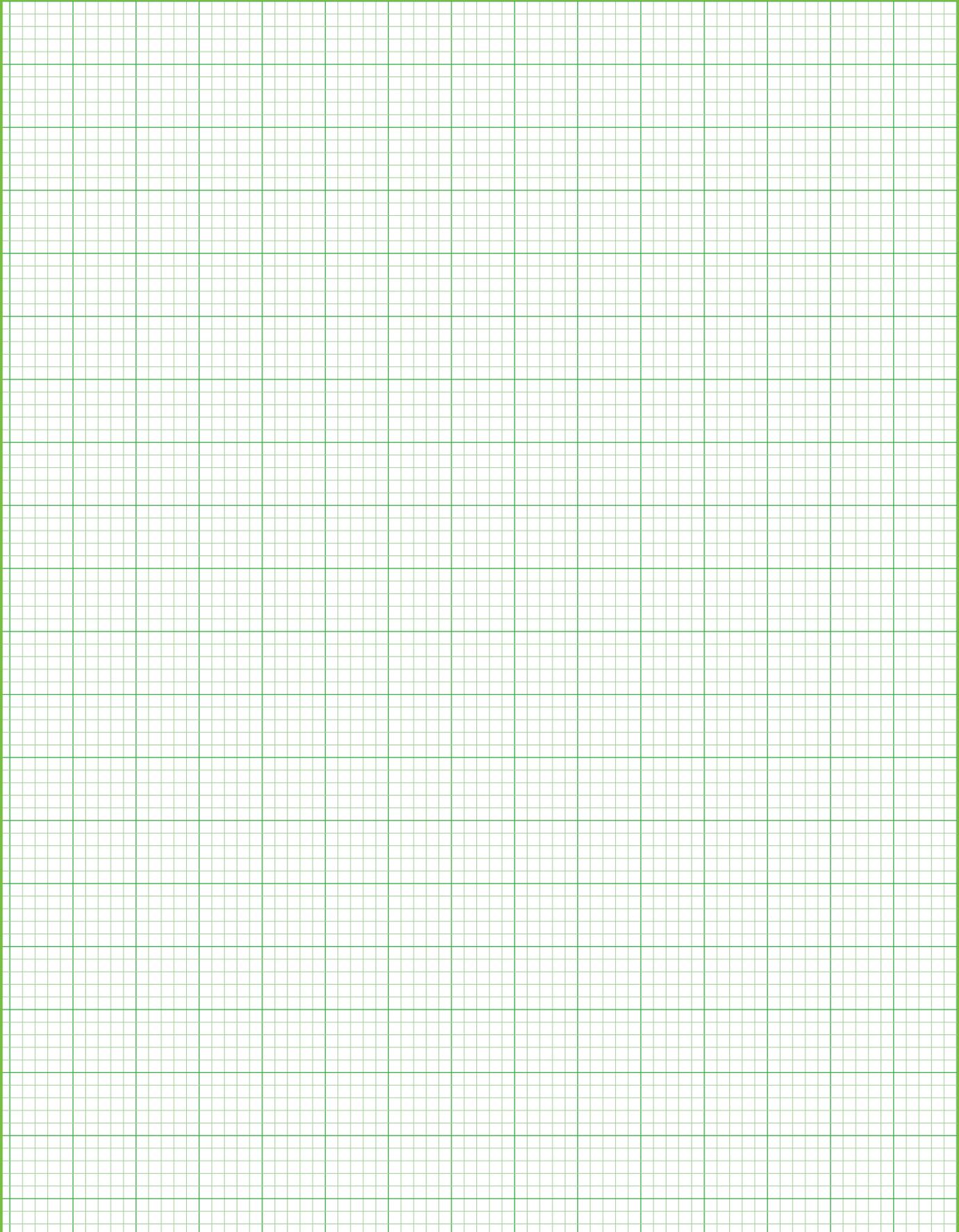
Helpful Facts

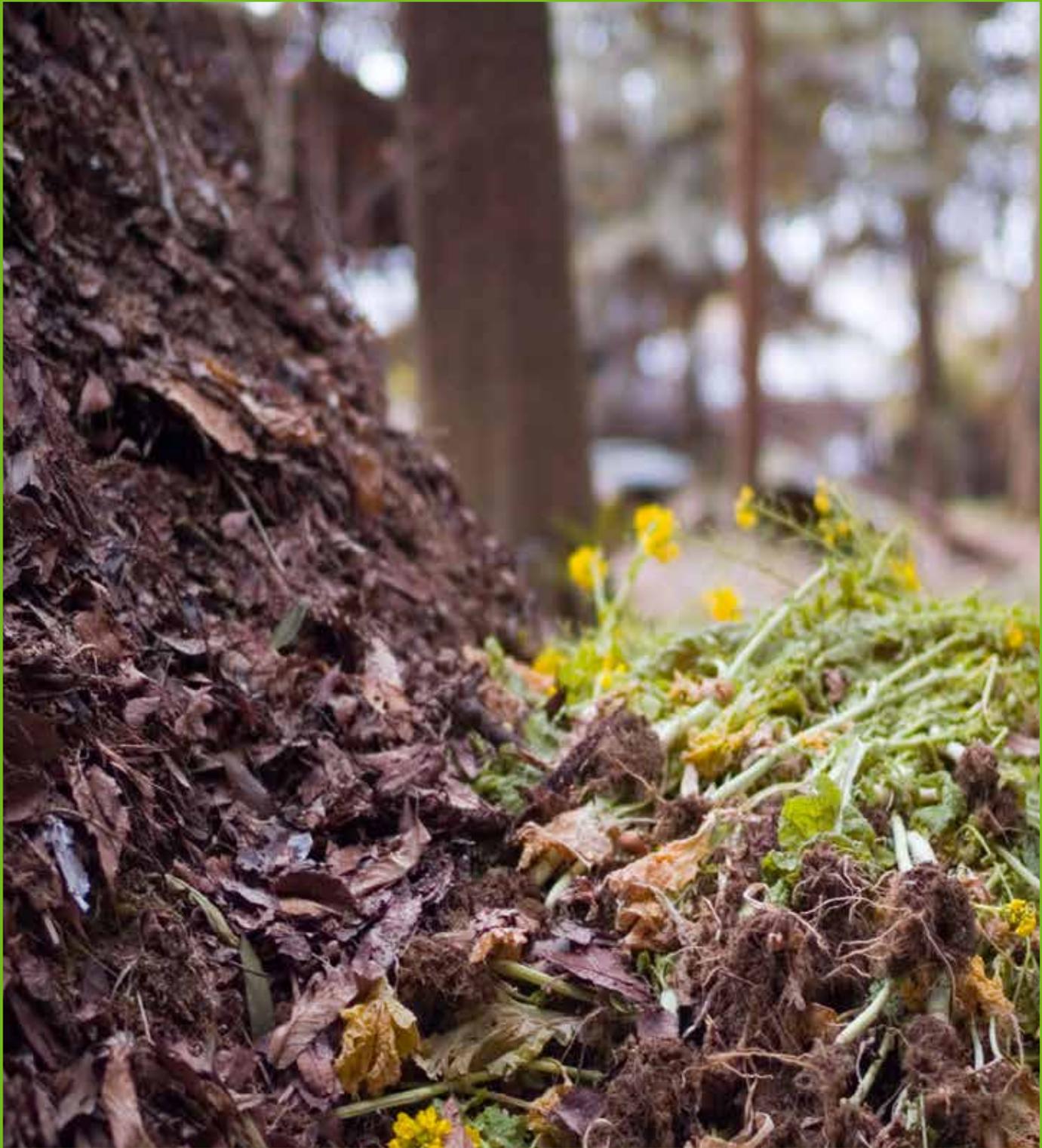
- Earthworms improve the soil's water infiltration rates by turning up the soil as they move around. Over time, all the underground activity helps to break up compacted soils while also amending soil with nutrients from their castings.
- Keep bone meal away from children and pets. It can be dangerous if consumed.
- Bone meal is not kosher or halal.

Planting Tips

- Bone meal can be mixed with soil as an amendment before planting by adding four pounds per 100 square feet.
- The best time to plant is spring or fall.
- Do not plant in extreme heat.
- Water after planting and as needed.
- Weed weekly or as needed.

Draw Your Lot





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Image Source: Joi Ito, "Neighbor's Compost." 17 March 2007 via Flickr, CC BY 2.0.

Volunteer

Professional

Volunteer + Professional

Urban Edge

Image Source: Manuel., "jardin Botanico de Madrid" 18 September 2012 via Flickr CC BY-SA 2.0



**working
with lots**

A FIELD GUIDE



The Urban Edge lot design uses perennials, shrubs, and trees to create a clean and beautiful perimeter on residential blocks. This design may be installed on a single lot but will have more impact if used on multiple and contiguous lots.

The planted border introduces seasonal interest and color through plants that are hardy and salt-tolerant. The Urban Edge can also help prevent illegal dumping on your lot by creating a planted, visual barrier between the road and the lot.

This easy-to-build lot design will introduce a clean, intentional edge to your lot and to your block.

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

What is the lot design likely to cost?

The estimated cost of the Urban Edge is moderate (\$1,000 – \$2,500) and based on 1.5 inch diameter trees, potted plants and utilizing volunteer labor. To save money, you can buy smaller trees or pots. The cost assumes that residents or volunteers have access basic safety gear and garden tools.

How much upkeep will this lot design require?

The Urban Edge is a low-maintenance lot design. Maintenance will include watering plants and newly planted trees, particularly during times of drought and excess heat.

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 healthy adults or youth. The Field Guide assumes that the lot is 'construction ready,' and all research, equipment and materials required for lot design have been acquired and are ready to use.

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	Single or Multiple Lots in Full Sun to Part Sun			

Urban Edge

Examples of Urban Edge Plantings



1 - Flowering Viburnum

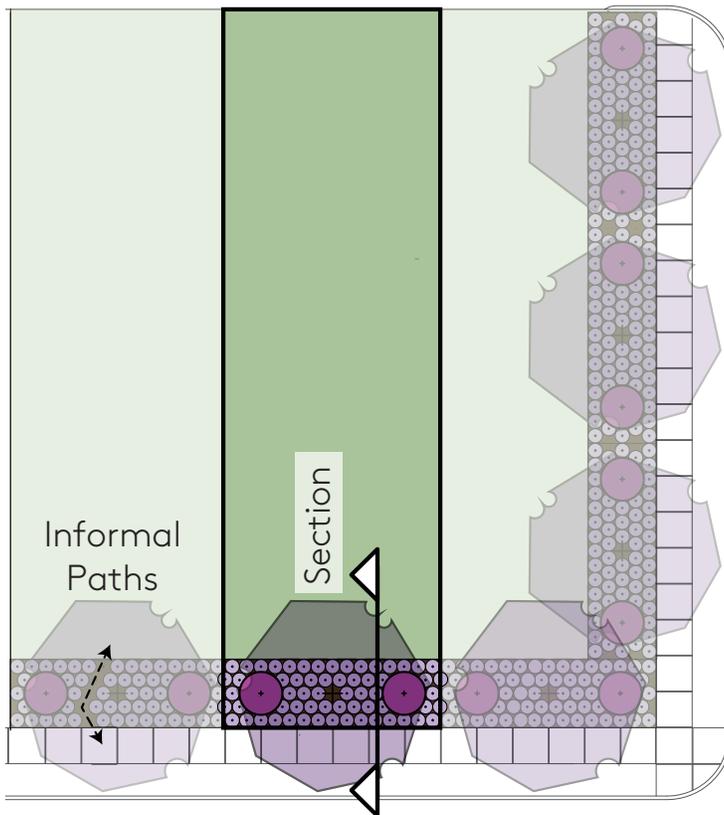


2 - Lilly Turf

Section



Where Do I Grow?



The Urban Edge can be installed on single or multiple lots and is suitable for corner lots. When built on multiple lots, the design creates a consistent urban edge along roads or alleyways. A few plants can be removed to create a pathway into the lot if desired.

-  Perennial
-  Large Shrub
-  Mulch
-  Grass or Optional Groundcover

Before You Start

'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.

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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); however the urban Edge is best

Tools + Resources

Suggested Tools

- **Marking Paint and Tape Measure**
- **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
- **Ball Cart**, for moving heavy trees

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**
- **Tree Planting Detail**
- **Perennials + Grasses Planting Detail**
- **Bulb Planting Detail**

Materials List

Materials

- **Mulch or Wood Chips**, 3 cubic yards

Planting

- **Lily Turf**, 20 pots
- **Silver Dragon Lily Turf**, 19 pots
- **Big Blue Lily Turf**, 19 pots
- **Tapertip Allium**, 100 bulbs
- **Oneleaf Allium**, 100 bulbs
- **Mapleleaf Viburnum**, 2 pots
- **Chinkapin Oak**, 1 pot or balled and burlapped

Remaining Lot (Optional)

Groundcover

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

Urban Edge Step-By-Step

Let's Start

Want to create the Urban Edge 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:

- Prepare Your Lot
- Plant Trees
- Plant Perennials
- Maintain Your Lot Design
- Sow Remaining Lot

Prepare Your Lot

Decide on the best location for your hedge. Use marking paint and a tape measure to map out the size, shape, and dimensions of your design. **The Field Guide recommends one planting bed approximately 10 feet by width of the lot (30 feet).**

Minimal grass removal is required for your lot design. The Field Guide recommends removing the grass and its root system by digging the grass up.

Plant Trees

The Field Guide recommends planting 1.5 inch diameter trees; however, smaller or larger trees can be planted if preferred. Trees can be purchased in pots or balled and burlapped. If you decide to plant larger trees speak with a professional or an educational group as older trees can be more difficult to establish.

Plant trees as soon as possible after purchasing. If you cannot plant them the same day, do not leave unplanted trees in direct sunlight. Keep them in shade and well watered until you can plant them. (Trees dry out fast!)

Identify the location where you wish to plant the trees. Dig a hole three times the width of the root ball and equal to the depth.

Pots should be removed before placing the tree in the planting hole. Balled and burlapped root balls should remain wrapped until placed in hole. Unwrap the top 1/3 of the root ball and peel back the burlap once planted. Remove any twine, nails, or stakes. The root flare should be level with the ground when you place the tree in the hole.

Water the root ball, then backfill the hole with the soil previously removed from planting. Add water to the tree every six inches as you backfill the hole. Compact the soil lightly after each watering until the hole is filled with soil and level with the adjacent ground.

Urban Edge Step-By-Step

The Field Guide recommends adding three foot diameter by three inch depth of wood chips or mulch around trees. Keep wood chips or mulch a few inches away from tree trunks.

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

○ Plant Perennials

A sunny to shade planting option is recommended for the Urban Edge.

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

The Field Guide recommends adding three inches (three cubic yard) of wood chips or organic mulch to planting beds. Adding wood chips or mulch will help suppress weeds.

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

○ Maintain Your Lot Design

Trees and plants require care and attention to thrive. Planting beds are low-maintenance but trees and perennials will need water and weeding while they are establishing.

Once your perennials are established, they will shade out the majority of the weeds.

Trees must be watered, especially in the first year. Water weekly or as needed.

Urban Edge Step-By-Step



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

Average Height of Plants



Large Trees, Large Shrub, and Small Perennials

○ Sow Remaining 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 Urban Edge lot design you will need approximately 15 pounds of fescue seed mix for the remaining lot (2,700 square feet) 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 be prepared for seeding by scarifying, raking, or tilling the soil four to six inches deep to loosen up compaction, allowing for easier seed germination and better water infiltration. Apply seed mix to a damp lot.

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

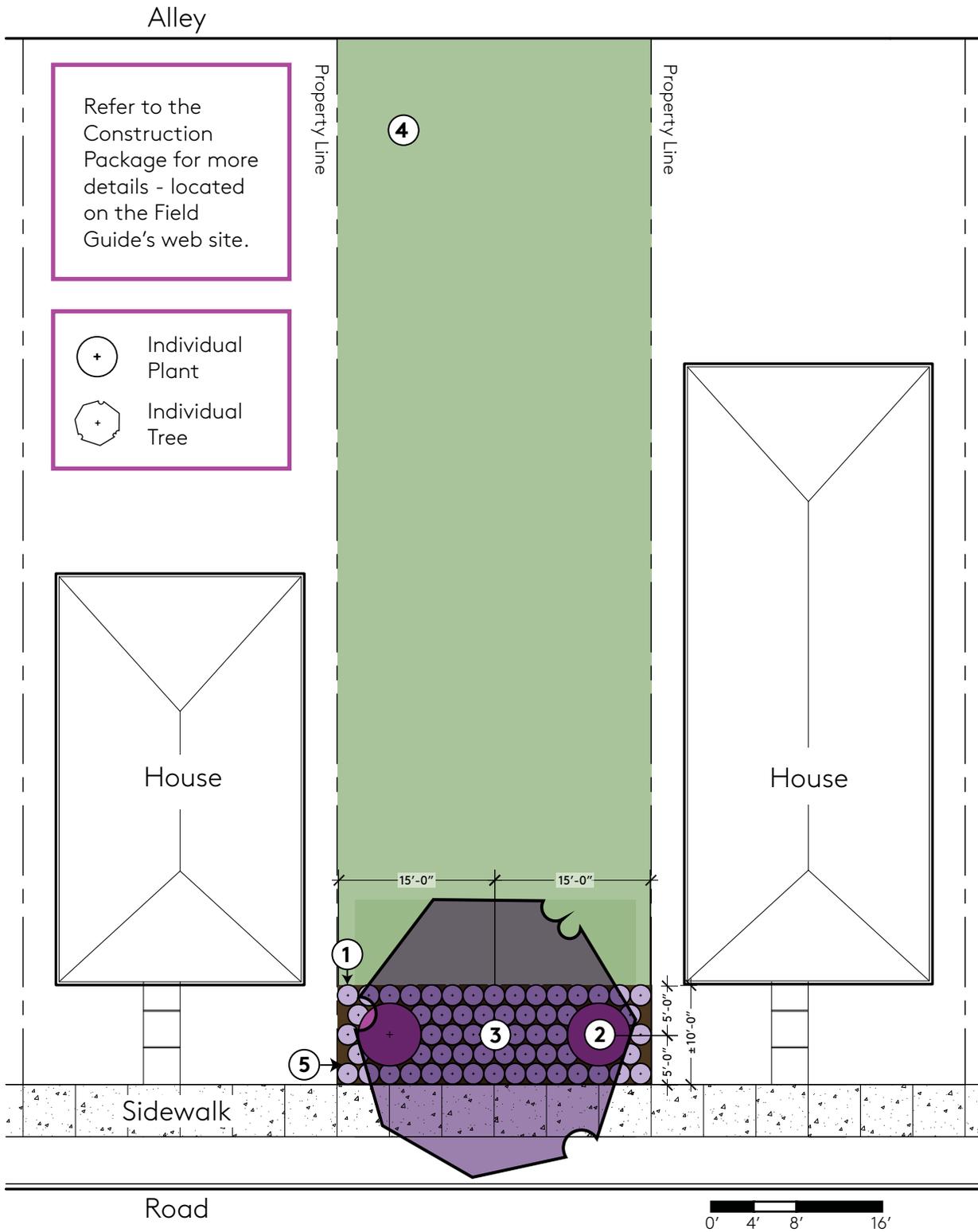
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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

Next Level: If you would like to bring additional color to your grass, you can plant bluebells, crocuses and/or daffodils to create a decorative show in spring. Bulbs should be planted in the fall.

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

Urban Edge Lot Design



Refer to the Construction Package for more details - located on the Field Guide's web site.

- + Individual Plant
- + Individual Tree

1

Groundcover (Lily Turf & Allium)

2

Shrub (Mapleleaf Viburnum)

3

Large Tree (Chinkapin Oak)

5

Mulch

4

Grass or Optional Groundcover

Planting: Full Sun to Part Sun



Lily Turf¹
Liriope spicata
 1' Height x 2' Width
 Blooms June - August
 Salt Tolerant
Quantity: 20 pots



Silver Dragon Lily Turf²
Liriope spicata 'Silver Dragon'
 1' Height x 2' Width
 Blooms June - August
 Salt Tolerant
Quantity: 19 pots



Big Blue Lily Turf³
Liriope muscari 'Big Blue'
 1' Height x 2' Width
 Blooms June - August
 Salt Tolerant
Quantity: 19 pots



Tapertip Allium⁴
Allium canadensis^{*}
 3' Height x 3' Width
 Blooms in May
 Salt Tolerant
Quantity: 100 bulbs



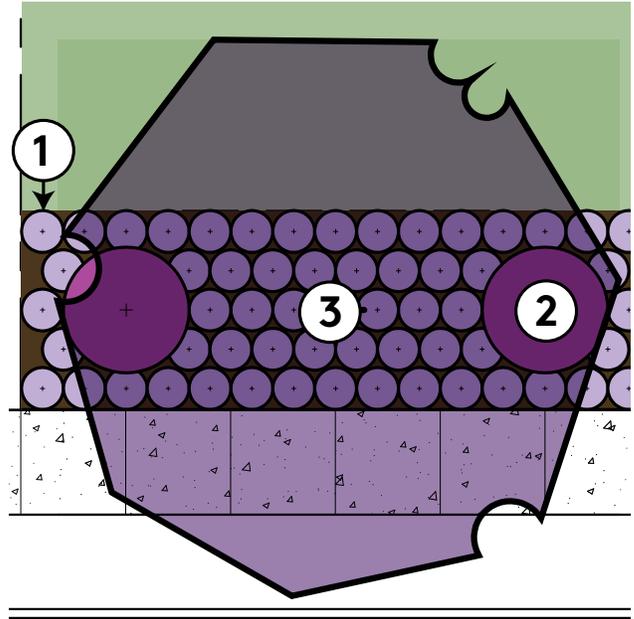
Oneleaf Allium⁵
Allium unifolium^{*}
 Blooms May
 Salt Tolerant
Quantity: 100 bulbs



Mapleleaf viburnum⁶
Viburnum acerifolium^{*}
 10' Height x 10' Width
 Blooms April - August
 Salt tolerant
 Prune after Blooming
Quantity: 2 pots



Chinkapin Oak⁷
Quercus palustris^{*}
 60' Height x 40' Width
Quantity: 1 pot or B & B



Key

- 1
Lily Turf, Silver Dragon Lily Turf, Big Blue Lily Turf, Tapertip Allium & Oneleaf Allium
 (Space approximately two feet apart and mix evenly.)
- 2
Mapleleaf Viburnum
 (Space five feet from property line and approximately 20 feet apart.)
- 3
Chinkapin Oak

Plant Sizes

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

1.5 inch diameter trees are available at commercial landscape supply stores in pots or balled and burlapped (B & B).

Image Source: 1) Manuel., "jardin Botanico de Madrid" 18 September 2012 via Flickr CC BY-SA 2.0; 2) Va.Rose, "101_0252." 26 August 2013 via Flickr CC BY-ND 2.0 3) Leonora Enking, "Liriope muscari." 20 October 2013 via Flickr CC BY-SA 2.0; 4) Clarence A. Rechenhthn, "Allium_canadense.jpg." 20 September 2012 via Wikimedia Public Domain; 5) Toedrifter, "Alliumunifoliumbloom.jpg." 22 April 2009 via Wikimedia CC BY-SA-3.0; 6) Kenpei, "Viburnum_plicatum_var_plicatum1.jpg." 01 May 2008 via Wikimedia CC BY 2.1; 7) Kim Scarborough, "Chinkapin_oak.jpg." 01 July 2006 via Wikimedia CC-BY-SA-2.5.

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.

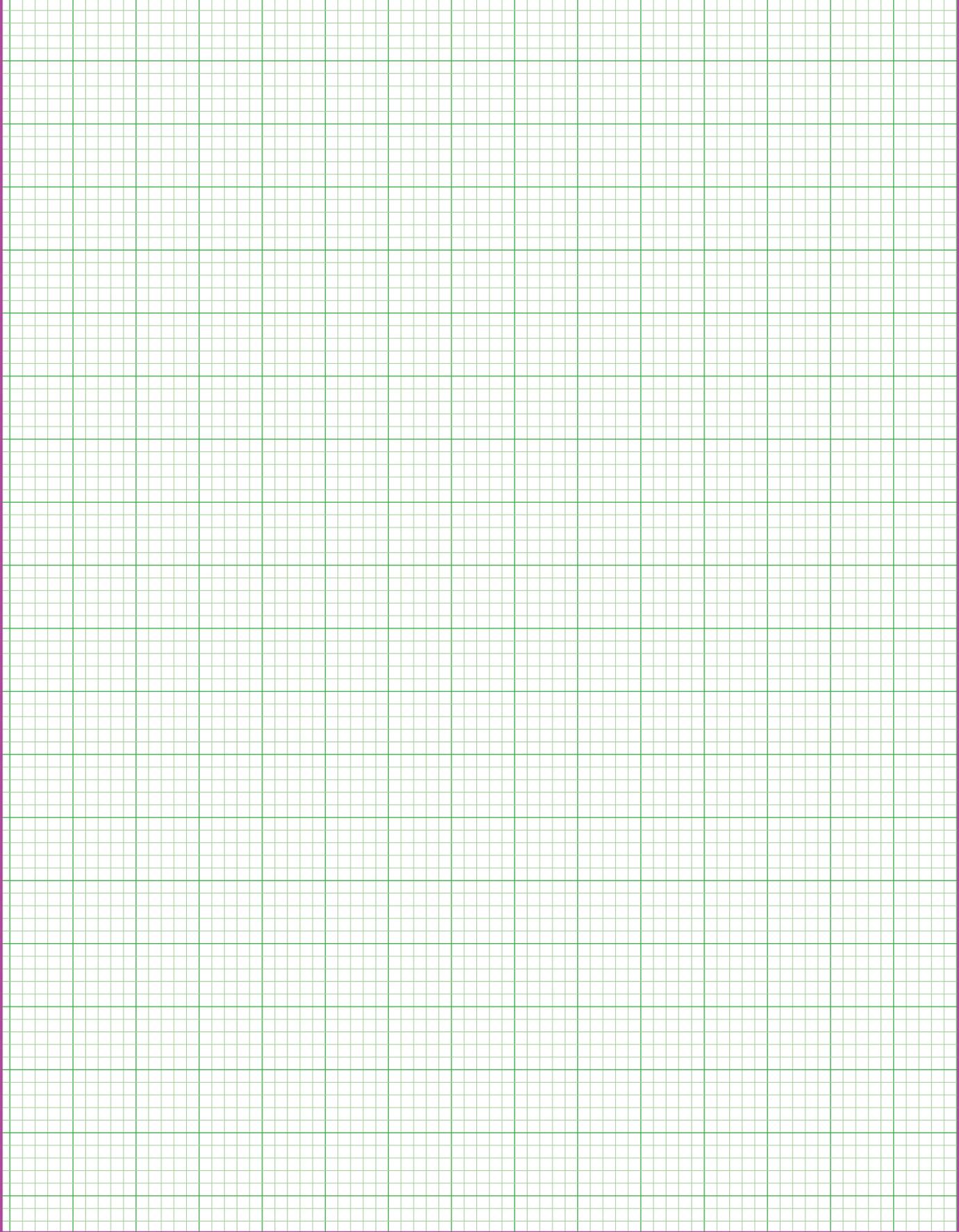
Helpful Facts

- Mapleleaf Viburnum produces fruit that is enjoyed by a variety of songbirds.
- Chinkapin Oak is a highly durable street tree that is currently less planted than other species along Detroit's streets. The Field Guide advocates for a diversity of species in our urban canopy!

Planting Tips

- Call ahead to make sure the nursery or garden store has the plants you need for the lot design.
- Inspect trees before purchasing. Be sure they are healthy and well formed. This will help you select trees that are more likely to survive.
- The best time to plant is in spring or fall.
- Do not plant in extreme heat.
- Water trees during planting and as needed.
- When mulching around trees, do not place too close (less than three inches) to the tree trunk. This will help keep the tree free of disease.

Draw Your Lot





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**Visit DFC-lots.com
#DFClots**

Image Source: Mary PK Burns, "Chinquapin Oak." 05 April 2010 via Flickr CC BY-NC 2.0.

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