

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

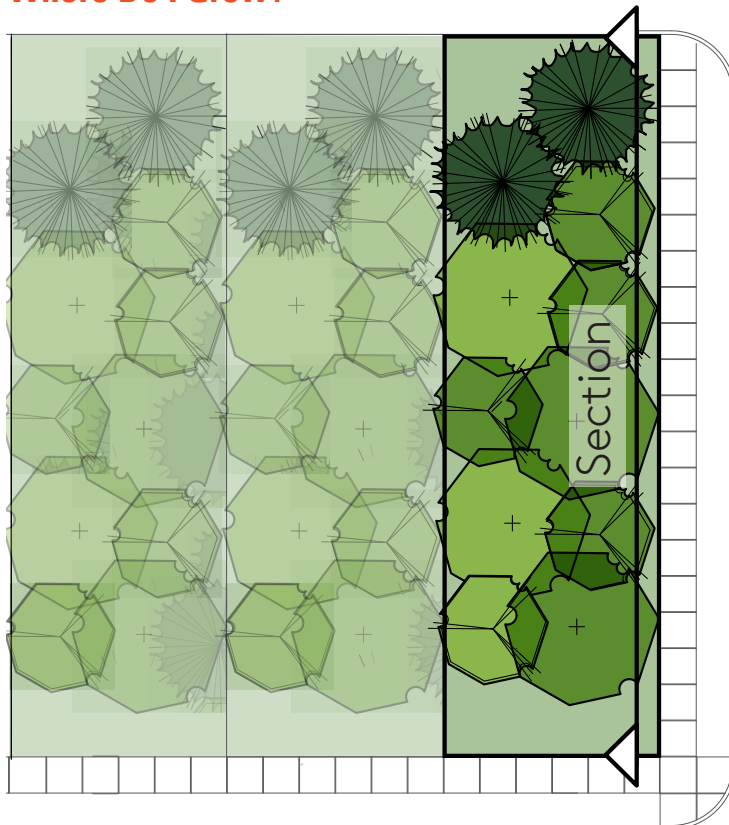


4 - Hawthorn

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 Lliovet, "Figueroa 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.

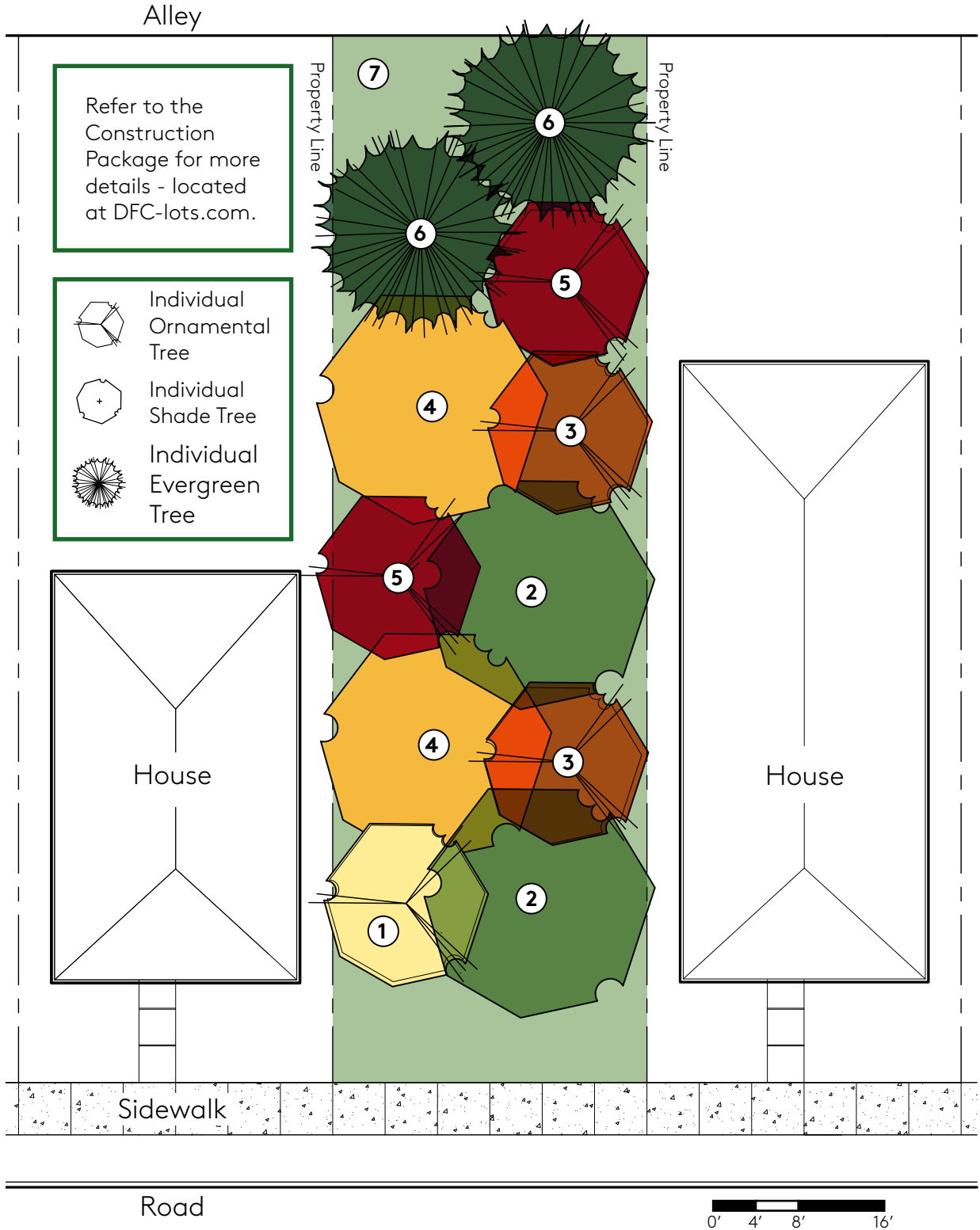
Once established, grass will not require supplemental watering except during unusually dry periods. Eco-Turf Low Maintenance Fescue Mix is one recommended seed mix and can be purchased through the Michigan Wildflower Farm.

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!

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.

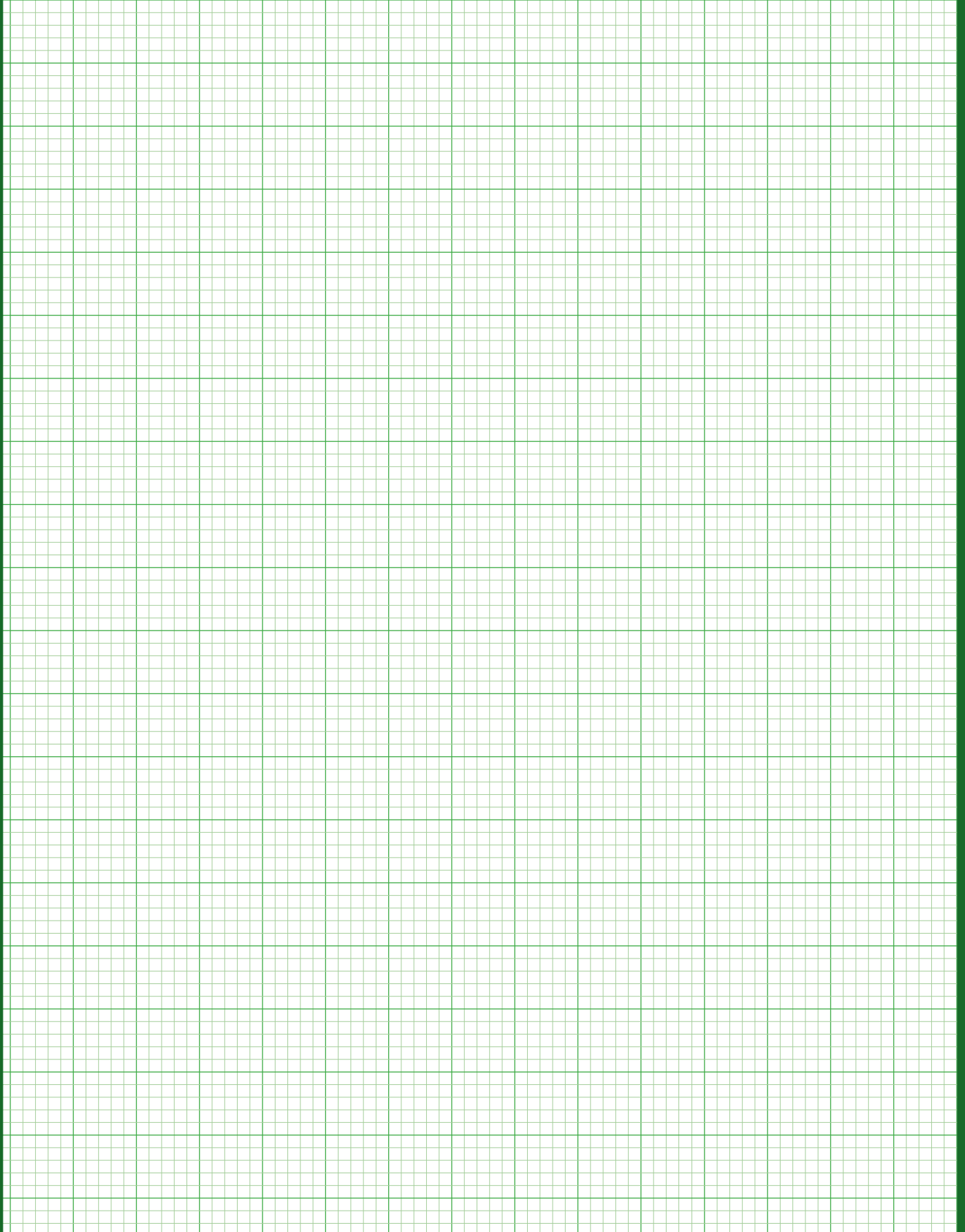
Helpful Facts

- 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



Shade Maker Field Notes



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

**Visit [DFC-lots.com](https://dfc-lots.com)
#DFClots**

Image Source: Baerchen57, "Ein Park in Gold." 04 November 2011 via Flickr CC BY-NC-SA 2.0.