

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!

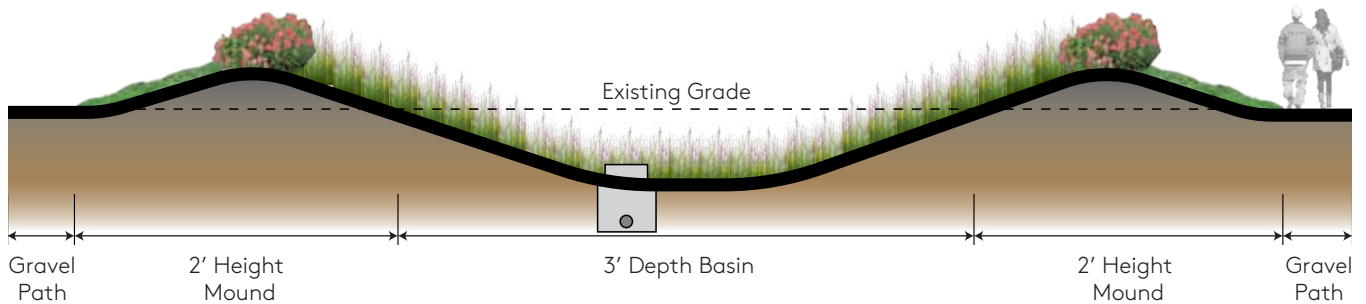


1 - Cars Covered in Snow

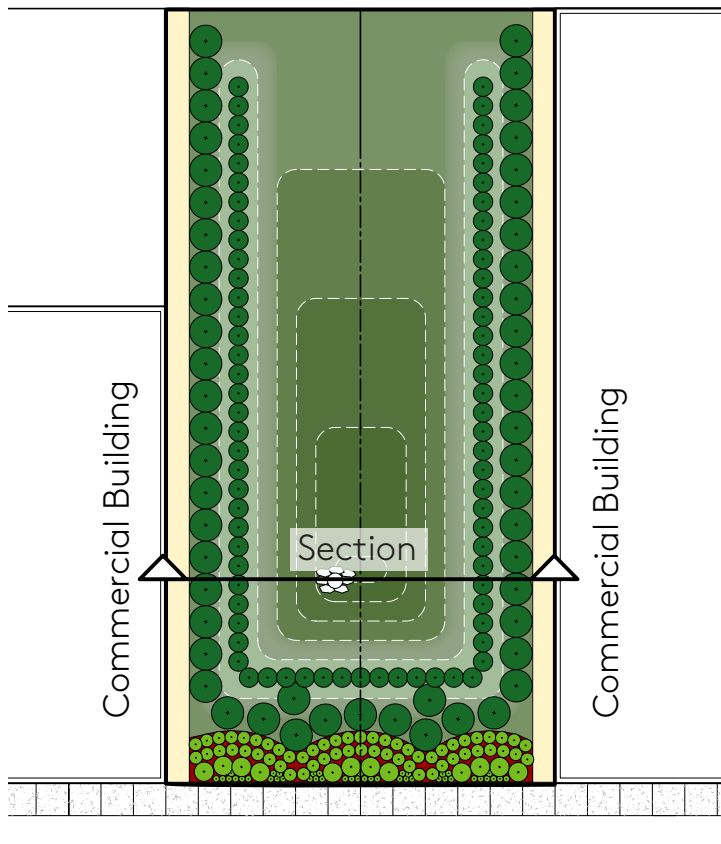


2 - Walking Through Snow

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.

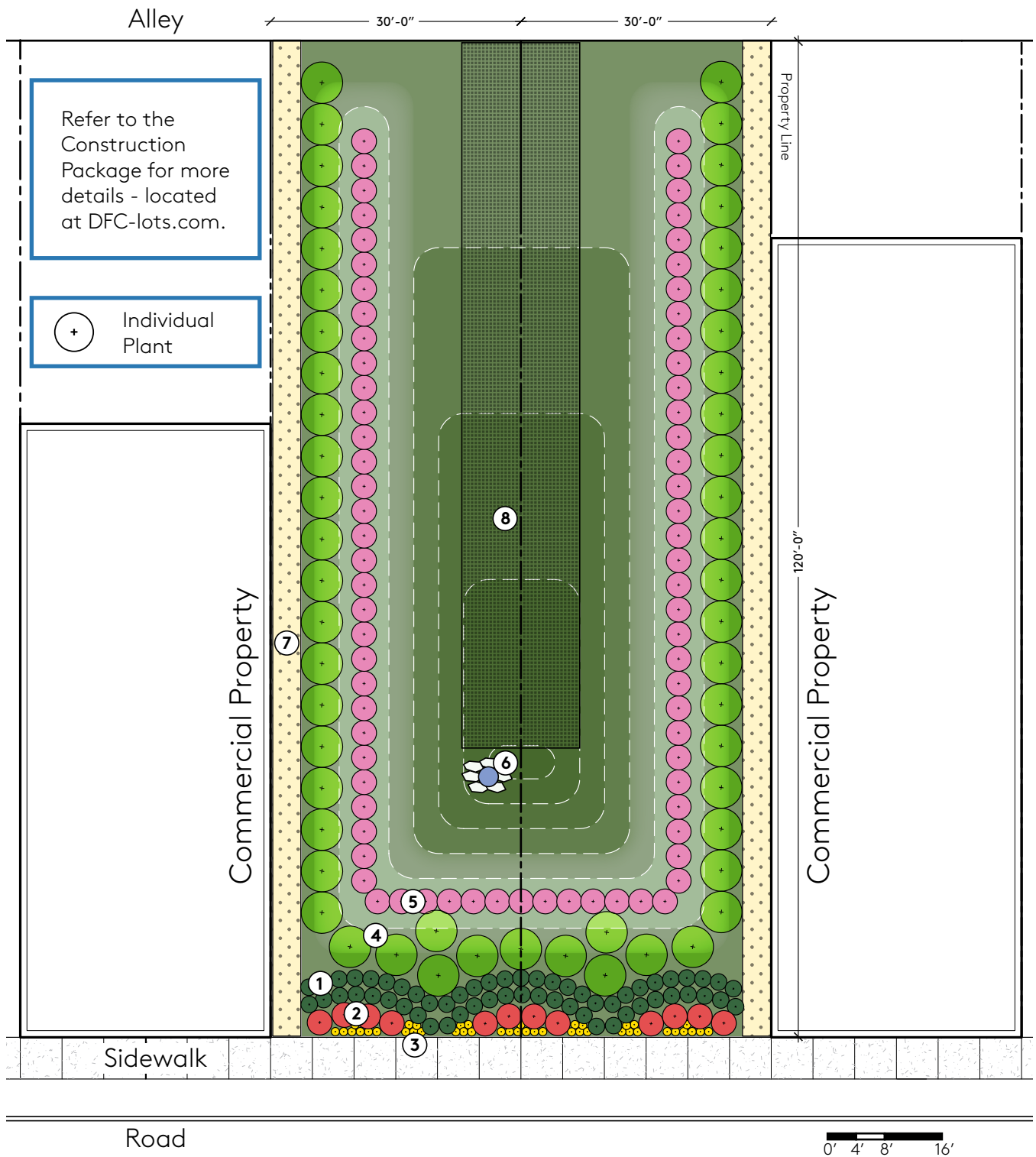
Due to the Snowmelter's shape and slopes, special machinery may be require for mowing. Always use caution when mowing slopes, and follow manufacturers' recommendations.

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



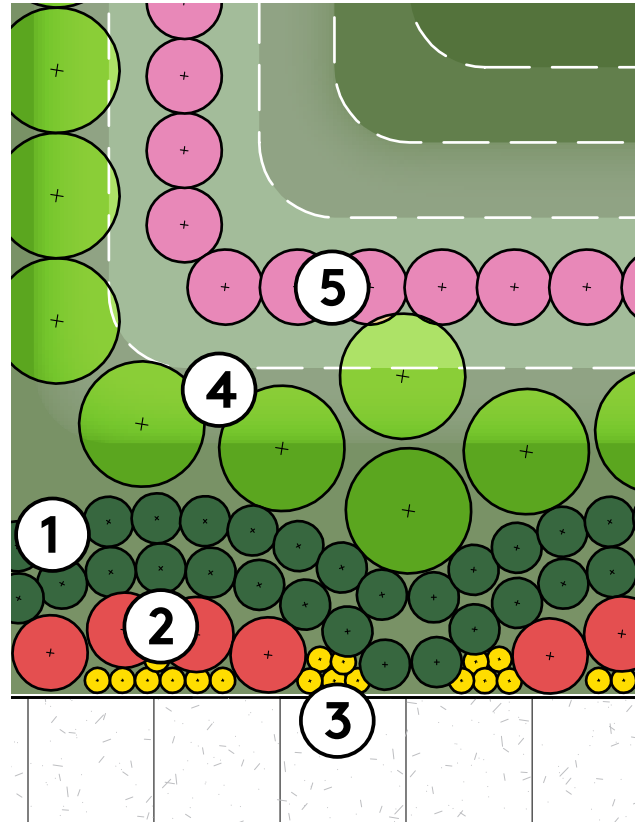
Golden Princess Spiraea⁶
Spiraea japonica 'Golden Princess'
 3' Height x 4' Width
Quantity: 25 pots



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.

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.

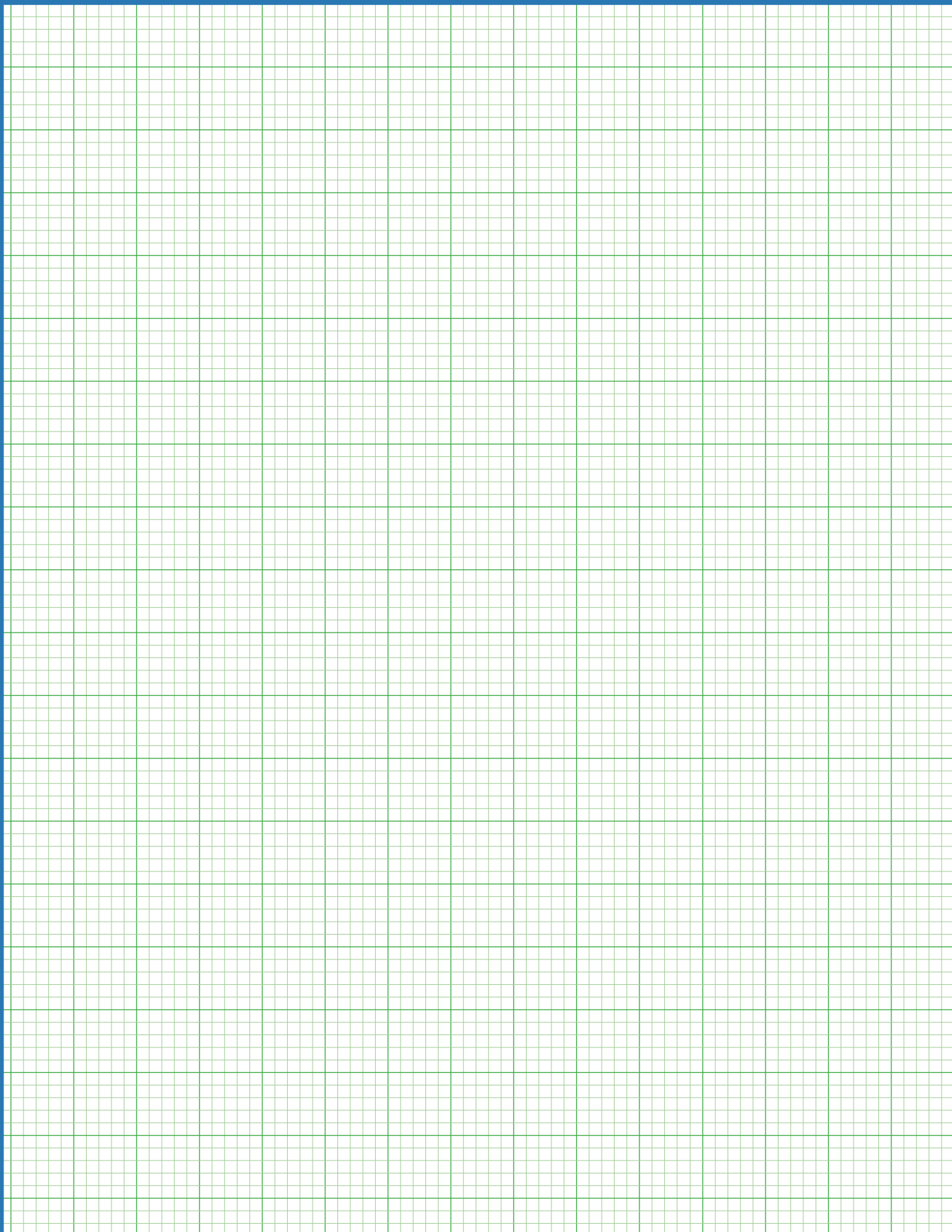
Did You Know

- 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





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A FIELD GUIDE

**Visit DFC-lots.com
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