

Riverside Memorial Cemetery Master Plan Update

December 2011

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Prepared For: Town of Cape Elizabeth, Maine and
Riverside Cemetery Board of Trustees



Master Plan Update Riverside Memorial Cemetery

Cape Elizabeth, Maine
2011

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2011 Master Plan Update Committee:

Ms. Debra Lane, Assistant Town Manager
Ms. Jessie Timberlake, Riverside Memorial Cemetery Trustee, Chair
Mr. Gerald Sherry, Riverside Memorial Cemetery Trustee, Chair
Ms. Beverly Brooking, Riverside Memorial Trustee
Mr. Frank Governali, Town Council Representative
Mr. David Jones, Riverside Memorial Cemetery
Mr. Stephen Mohr, Mohr & Seredin
Ms. Tanya Seredin, Mohr & Seredin

Executive Summary

Introduction

The Trustees of the Riverside Memorial Cemetery have been working with the 1993 Cemetery Master Plan for the past eighteen years and have used that plan to guide the construction of the cemetery infrastructure and layout of the burial plots. At this time the roads and utilities have been constructed, many of the plots have been located or sold, and only the final phase of plots needs to be laid out. Over the past decade the Trustees have noted that there are improvements that need to be made to make the remaining cemetery sections more attractive, and the Trustees would like to revisit the addition of cremation niche walls as a way to increase the plot count and interment options at the cemetery.

The Riverside Memorial Cemetery Trustees determined that the best approach to addressing these issues would be to update the 1993 Cemetery Master Plan, and they selected Mohr & Seredin to prepare the plan update. The Trustees created a Master Plan Update Committee (the Committee) to guide the process and advise Mohr & Seredin, and this report was prepared to accompany, and explain, the updated plans for the cemetery.

The goal of the current work is to assess the existing conditions and evaluate the issues identified by the Trustees. Based upon this information the Committee can determine the preferred approach to be taken and the specific improvements to be implemented. The Master Plan Update will depict and illustrate the planned improvements, identify typical conceptual construction details and a proposed construction cost budget for the plan implementation, evaluate lot sale issues, and estimate the remaining active life of the cemetery.

Master Plan Update Process

The Plan Update Committee met with Mohr & Seredin to review the Trustees' concerns and the key issues, and walked the cemetery grounds with Mohr & Seredin. Mohr & Seredin returned to Riverside Cemetery to review the existing cemetery conditions, assess conditions in the buffer between the marsh and the cemetery, and review the issues identified by the Committee.

Mohr & Seredin prepared initial assessment plans and options for the treatment of the areas of concern identified by the Committee. These were reviewed with the Committee and direction established for each area of concern, as well as how best to treat the issue of expansion of the cemetery for additional plots and niches.

Based upon the input and guidance from the Committee, Mohr & Seredin prepared this report and supporting graphics.

Existing Conditions and Background

The Riverside Memorial Cemetery began as an early 19th century burial ground that was associated with Spurwink Meeting House. Over the centuries it has physically expanded to the north and west to encompass the remaining developable area between the Spurwink Marsh and Route 77. In 1952 the initial build-out plan for the cemetery was prepared by Myron Lamb, RLA, to guide the expansion of the cemetery. In 1982, additional expansion was planned by the Trustees, and implemented over the next decade.

In 1992 the Trustees of the Riverside Cemetery hired Mohr & Seredin to prepare the 1993 Cemetery Master Plan. That plan was adopted, and from 1993 through 1998 the cemetery driveways, waterlines, and maintenance building were installed. The first four phases of the plots have been laid out in the field, and burials have been taking place in these plots. Other parts of the 1993 Master Plan have not yet been implemented: the cremation niche walls associated with the flag circle, the extension of the stone wall along Route 77, and the plantings, of which roughly fifty percent have been installed.

To date, the recent cemetery expansion has been viewed by the Trustees and community as successful. However, the Trustees believe there are some areas where improvements need to be made in order to complete the cemetery build-out and sell the remaining burial plots. One key condition is that there are no plots left which have a view of the marsh, which is the dominant natural feature that helps to create the character of the cemetery.

Existing issues which require attention

The Trustees, working with Mohr & Seredin, have identified the following issues at the cemetery which they want the Master Plan Update to address.

1. Plots adjacent to the Maintenance Shed: Experience with purchasers has shown that it is difficult to sell plots adjacent to the Maintenance Shed due to proximity to the work yard and building. The plan update should explore ways to make the plots in this area of the cemetery more attractive for purchase through plantings, fencing, etc.
2. Exposure to Route 77: The openness to road traffic and lack of enclosure were noted by the Trustees along the north end of the cemetery adjacent to Route 77. This issue has affected the desirability of the plots in this part of the cemetery. This northern area is the only section of the cemetery that does not have a stone wall at the edge of the cemetery between the cemetery and the road.
3. Existing Soils Stockpile: The soils stockpile at the lower edge of the cemetery elicits a large number of complaints from visitors to the cemetery. Presently it is located on the northern edge of the cemetery between the cemetery and the marsh, and has been growing to the point where it has been endangering the adjacent vegetation. A solution needs to be found which will allow for a smaller soils stockpile which can

be used or removed more frequently, and which is located in a less visible area within the cemetery grounds.

4. Flag Circle: The flagpole area is an open lawn circle with a flagpole in the center, and this area appears stark and unfinished. This feature is located on axis with the main entrance to the cemetery from Route 77. In this location it can become an inviting entrance and a focal point, as well as a location for additional interment spaces.
5. Open, flat plot areas: Based upon feedback from cemetery visitors and from the Trustees, there is a lack of plantings in the plot areas between Dogwood Lane and Sycamore Lane. This corresponds directly with the desirability of plots for potential purchasers. The plan update should provide for additional trees in this area, but the planting should be designed in a way so the tree roots do not interfere with the burial plots.
6. Invasive species on the grounds and marsh visibility: A large amount of invasive plant materials have been identified in the wooded area between the burial areas and the marsh, including honeysuckle and bittersweet. This decreases the visibility of the marsh from the cemetery and creates an unhealthy habitat for native species. In the period of time between the 1993 Master Plan and today, the woods have gone from an open forest with a moderate density of canopy trees and groundcover to being filled with a thicket of invasive, non-native plant materials with a dense canopy so as to make the woods nearly impenetrable.
7. Additional interment space: The Cemetery Trustees would like to explore the addition of niche walls to the cemetery. This would help to increase the plot count, offer interment options, and extend the time frame for burials in the cemetery. In addition, the Committee feels that the Master Plan Update should examine options for plot layout for the remaining cemetery section (Phase V) and explore any other areas suitable for use for burial plots.
8. The Trustees also identified other items for review, but with lesser importance for the plan update. These include:
 - a. Mohr & Seredin is to look at the number of plots remaining in the cemetery, annual lots sales, and the number of remaining years for burials anticipated for the cemetery
 - b. Mohr & Seredin is to assess the undeveloped 250' Shoreland Zone buffer between the cemetery and the Spurwink Marsh to determine opportunities and issues for the cemetery's potential use of this area.

Master Plan Update Recommendations

In response to the issues identified by the Plan Update Committee and from the sitewalk, existing conditions review and the Mohr & Seredin analysis, the following improvements are proposed, and are shown on the plans:

- A. Buffer between burial plots and the Maintenance Building: To develop an effective and interesting visual buffer without creating a hard wall, the Master Plan Update recommends a buffer treatment that includes several layers of screening between the plot areas and the maintenance building. These layers include a 6' high wood fence which is not continuous and is not solid, shrubs, evergreens and deciduous trees.

Recommended plants include: red oak, white and red spruce, viburnum, witchhazel, shadbush, and bayberry.

Refer to the detail plans for a sketch of the fence.

- B. Buffer between Route 77 and cemetery: To create a consistent edge between the cemetery and Route 77, and to help create a better sense of separation from the busy road, a mixed density, multiple-layer buffer is proposed between the burial plots and the road. The layers include extending the stone wall for the full length of the cemetery and planting several groupings of trees on both sides of the wall. The plantings should include overstory trees, understory trees, and large shrubs. The plants should be able to withstand road/salt conditions as well as dry soil conditions.

Recommended plants include: red oak, white ash, tree lilac, bayberry, viburnum (some varieties) and lilac.

- C. Additional tree plantings in the open areas of the cemetery: Mohr & Seredin is proposing new groupings of deciduous shade trees in the sections of the cemetery devoid of plantings, with care taken to place the trees between the already laid-out plot areas wherever possible. Approximately 12 unsold plots are proposed to be removed to accommodate the new trees. An in-ground root barrier is proposed to be installed between the trees and the plots to allow the trees to be planted closer to the burial areas without impacting the plots. In order to fit more trees into the cemetery without risking the tree roots interfering with the burials, a tree root barrier such as DeepRoot is recommended. DeepRoot makes several sizes of a root barrier which would be adequate for use in the cemetery. (Product information is attached)

Refer to the detail plan showing the root barrier detail.

- D. Plot Layout for Phase Five Area: A proposed plot layout is shown in the remaining section of the cemetery on the outermost western edge adjacent to the woods (referred to as Phase Five from the original Master Plan). This is laid out using a pattern similar to the previous burial section layout. This phase will add 243 full size plots, and 24 cremation plots to the cemetery, as proposed. If there is the demand, the northwest corner of this area could be utilized for niche walls, which would

increase the capacity of the cemetery by 300 to 400 interments. Fill from the previous excavation of burials has been stockpiled adjacent to this northwest corner, and can be used to raise the grade in the lower plot areas as shown on the plan update.

- E. Flag Circle: The new layout, which includes cremation walls in the flag circle area, is shown on the proposed plan for the flag circle. Six walls with 40 niches per wall are shown. The walls can be constructed at the same time, or as demand requires. The center of the island is proposed to have shrub and tree planting, and there are benches shown between the walls. The front edge of the flag circle, which is the focus of the cemetery entrance from Route 77, is proposed to include a band of low-maintenance flowering plants, such as daylilies. The driveway edges are shown with a granite curb for improved definition and appearance, and accessibility ramps are shown as needed for disabled access. The driveway width will be wide enough for a car to park with other vehicles able to pass (minimum 16 to 18 feet wide).

Cremation Wall Niche Sizes: The cremation niche sizes are shown on the detail as 12" x 12" x 12" deep. This size can accommodate up to 3 urns. If there is a desire for family niches that can contain more urns, one or more of the walls can contain deeper niches that can hold more urns. (12" x 12" x 16" deep can hold 5 urns, 12" x 12" x 24" can hold 8 urns). These sizes are based upon research of other cemeteries and discussion with national columbarium wall suppliers. (Niche size information is attached)

- F. Control of Invasive Plant Materials and Views to the Marsh: As noted above, invasive plant materials including honeysuckle, bittersweet and barberry are well established in the woods, especially along the woods edge of the cemetery. This is an issue not only for the cemetery, but for the entire town. A removal program should be designed and implemented to keep the invasive plant materials under control so they don't destroy the existing, native plant materials. This will not only be environmentally responsible, it will also bring back some of the scenic qualities of the cemetery, and will enhance sales of the cemetery lots. Mohr & Seredin recommends removal of the invasive plants and their roots, by hand. If acceptable the invasive plants can be cut back and an herbicide applied topically to the exposed stalks. The existing canopy trees should be trimmed and thinned as needed for vigor and to restore views to the marsh.

Phasing and Implementation

The work set forth in the Master Plan Update are separated into a number of projects which can be implemented as the needs arise, and as the funds are available:

Project A: Removal of Soil Stockpile

Remove excess soil and dead/dying trees. Spread loam in low areas where needed at Projects B, C, and I as described below, and seed with grass mixture.

Construction Budget: \$2,800

Project B: Northeast Plot Layout

Layout plot areas for sales: 100 full size plots.
Install tree root barrier, and install approximately 10 trees

Construction Budget: \$4,300

Project C: Northwest Plot Layout

Layout plot areas for sales: 54 full size plots and 8 cremation plots.
Install tree root barrier and plant 1 tree

Construction Budget: \$3,700

Project D: Tree Plantings in Open area

Install tree root barrier and plant approximately 21 trees. This will require the removal of the following lots: NY 24, 25, NY 14,15, NW 30, 31, NX 49, OD 11, 12, 13

Construction Budget: \$9,400

Project E: Buffer Planting at Maintenance Shed

Install 6' high wooden fence, approximately 120 LF. Install plantings of approximately 6 evergreen trees, 3 deciduous trees, and 24 shrubs.

Construction Budget: \$11,800

Project F: Flag Circle Development

Install granite curbing on both sides of Lilac Lane, including wheelchair ramps for access onto lawn areas. Construct cremation niche garden, including walls, benches and plantings. Wall construction may be phased by completing all earthwork including installation of all foundations, and constructing walls as needed.

Construction Budget: \$140,000 - \$165,000

Project G: Buffer Installation along Route 77

Extend stone wall the remaining length of the cemetery, approximately 350 LF.
Install tree root barrier to protect burial areas from tree roots, and install plantings: approximately 21 large trees, 8 small trees, and 40 shrubs.

Construction Budget: \$42,400

Project H: Control of Invasive Plant Materials

Develop a plan to remove invasive plant materials on a regular basis

Construction Budget: \$5,500 - \$6,800

Project I: Northern Corner Development

There are two options for the development of this area for burials. The first option is to lay it out entirely for in-ground full body burials. This will provide for an additional 62 spaces. If there is a need for additional burial space in the cemetery, this area could be developed as a niche garden with cremation walls. This would provide approximately 200 to 260 niches.

Construction Budget: \$8,500 - \$72,000

Cemetery Capacity: Lot Sales and Long Range Planning

Currently there are approximately 368 full size unsold burial plots, and 123 unsold cremation plots. If the Master Plan Update is implemented as shown, with all in-ground burials laid out on the outside of Sycamore drive (the Phase 5 area), there will be an additional 243 full size plots, 24 cremation burial plots, and 240 cremation niches. The total number of spaces available will be approximately 998.

Lot sales have been fairly steady over the last 3 decades at 611 to 646 lots per decade. Burials have increased from 245 in the 1980s, 337 in the 1990s to 425 in the 2000s. If the lot sales rate remains constant at approximately 63 lots per year, all of the lots in the cemetery will be sold by 2025.

If the Town of Cape Elizabeth wishes to continue to provide burial space for its residents, planning for a new municipal cemetery should begin by 2015. This will allow for approximately three to five years for long-range budgeting, site selection and acquisition. Over the next three years, a master plan can be developed and construction can be undertaken. The goal should be for burials to begin at the new cemetery as the last remaining lots are sold at Riverside, estimated to be in 2022 to 2024.

Lot Pricing

The current lot prices at Riverside Memorial Cemetery, as established in 1998, are \$650 for a full size lot, and \$300 for a cremation lot. Interment prices are \$600 for the full size burial, and \$425 for cremation. Neighboring municipalities charge from \$200 to \$890 for full size lots and \$100 to \$500 for cremation lots. They interment costs range from \$400 to \$1,100 for full size burials, and \$110 to \$700 for cremation burials.

In reviewing the lot price history, there have been price increases in 1998, 1999, 2004, and 2008. The 2004 increase was only \$50, which is half of the previous price increases. Based on this, the price ranges charged by neighboring municipalities, and to help finance the master plan update improvements, a rate increase for 2012 would be appropriate.

Rules and Regulations

The Rules and Regulations that have been published for the Cemetery should be reviewed to ensure that they are meeting the needs of the Town. One rule that needs to be reviewed is the residency requirements for burial in the Cemetery.

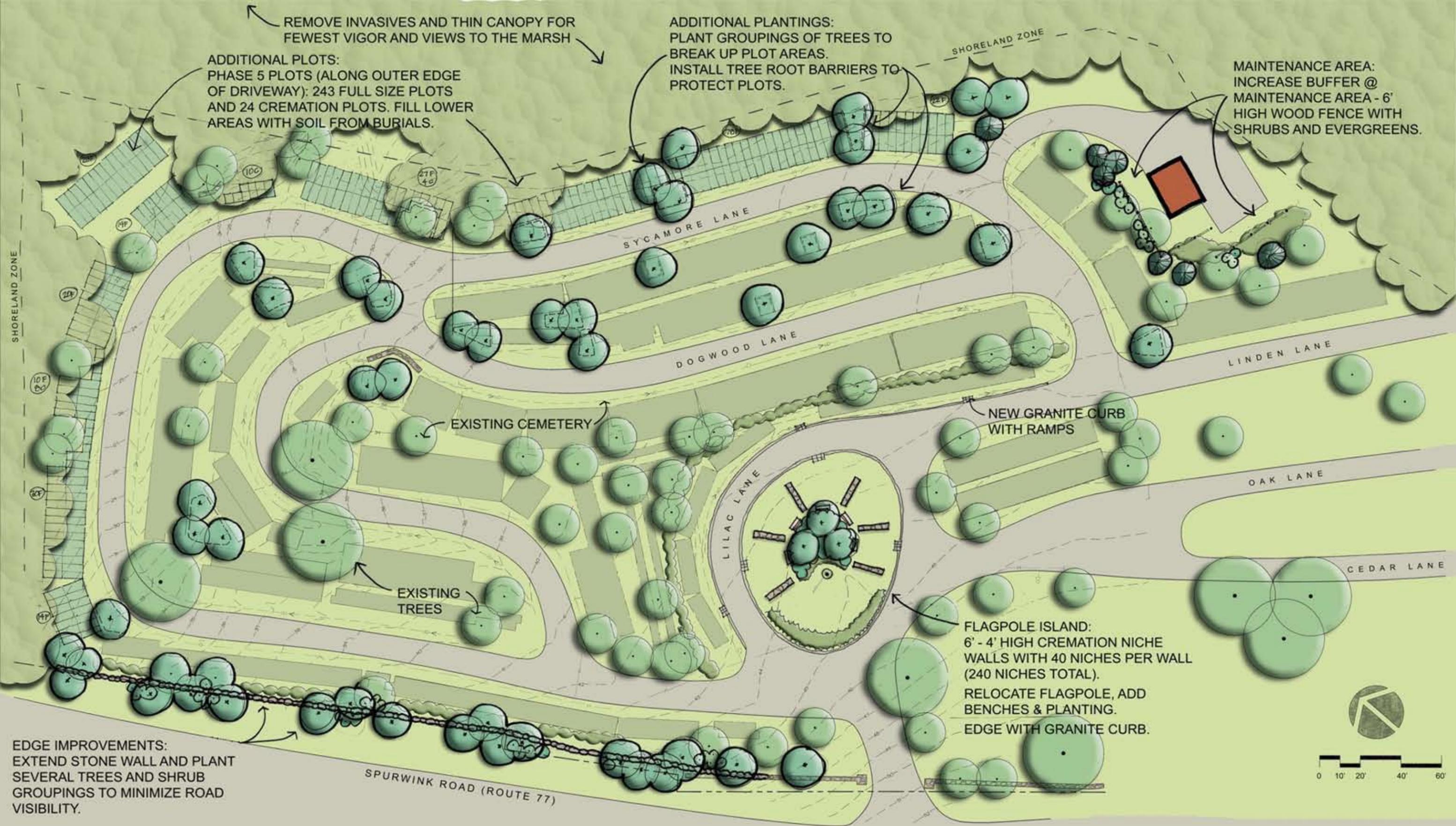
The Cemetery Trustees are considering the pros and cons of allowing non-residents of the Town to be buried in the cemetery. The advantages are financial, as municipalities usually sell cemetery plots to non-residents for a higher cost. This would help to fund improvements to the cemetery. The disadvantage is that there is a finite amount of space

available in the cemetery, and allowing non-residents would mean that the cemetery is built out sooner. One option that was discussed during the Master Plan Update meetings would be to allow non-residents in the cemetery, but restrict them to the niche walls.

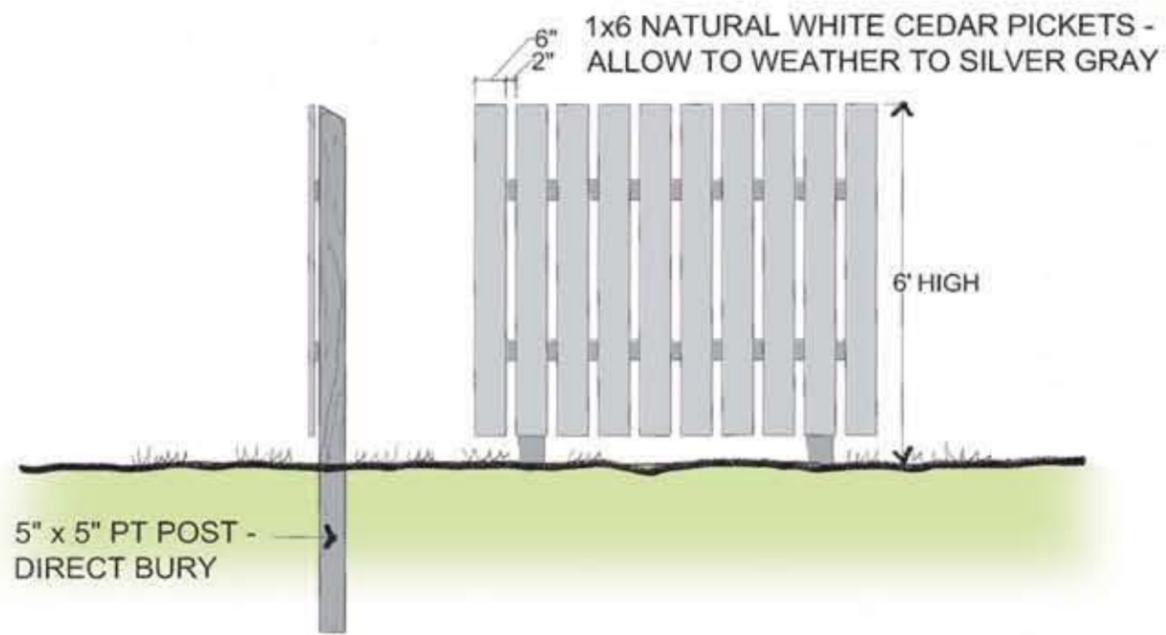
The current language in the RULES and REGULATIONS that pertains to residency is as follows:

Lots are sold to citizens of Cape Elizabeth or non-resident taxpayers. Sale of lots to other non-residents may be made at the discretion of the Board of Trustees. Former long term residents and those with family buried at the cemetery may be considered by the Board.

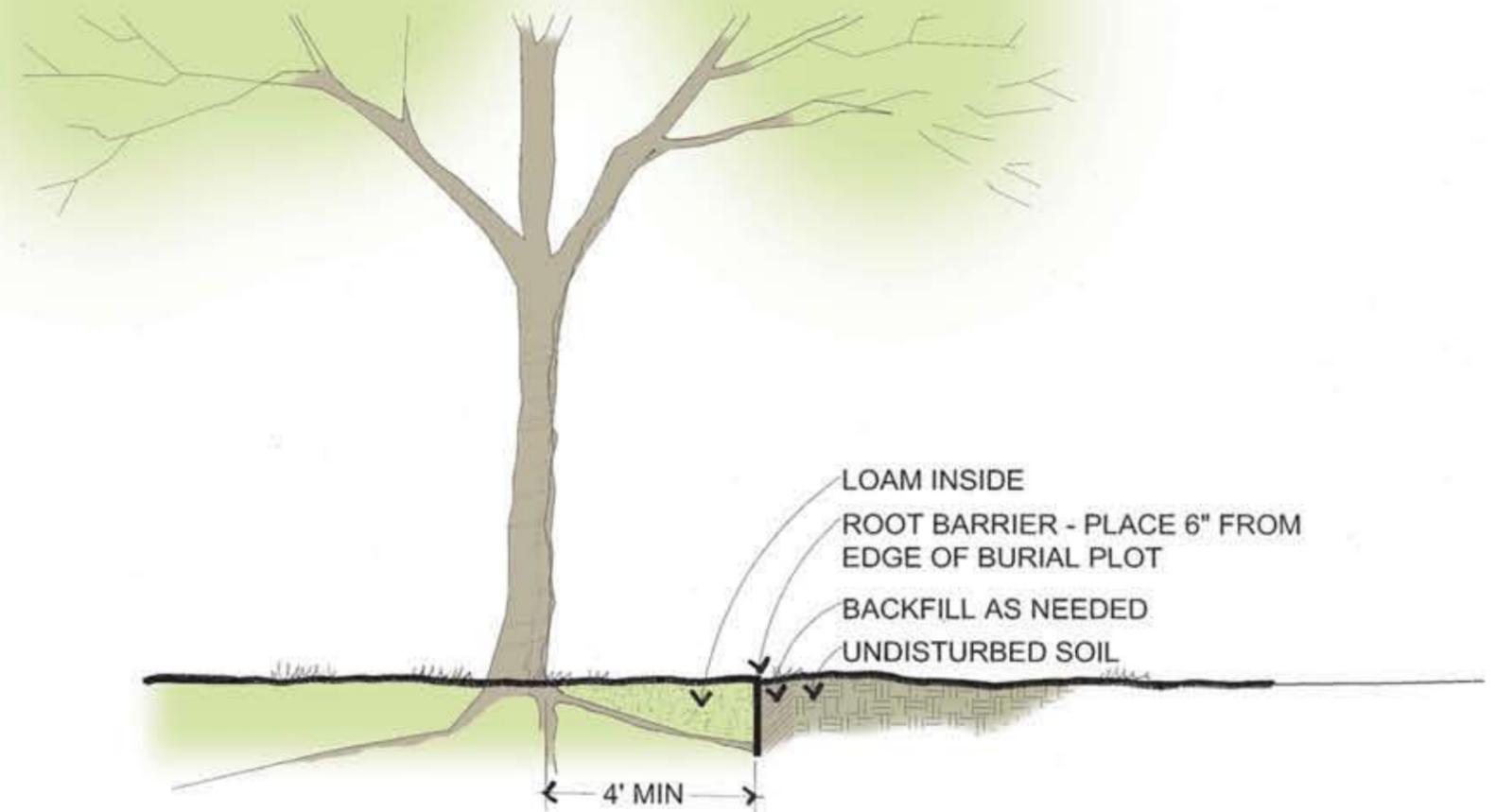
This language gives the Trustees a limited amount of discretion. If the decision is made to allow non-residents to be buried in the cemetery the language should be clarified and/or amended. This would allow for the Town and the Trustees to market the cemetery to a new group of people, if it is determined that it would be to the Town's advantage.



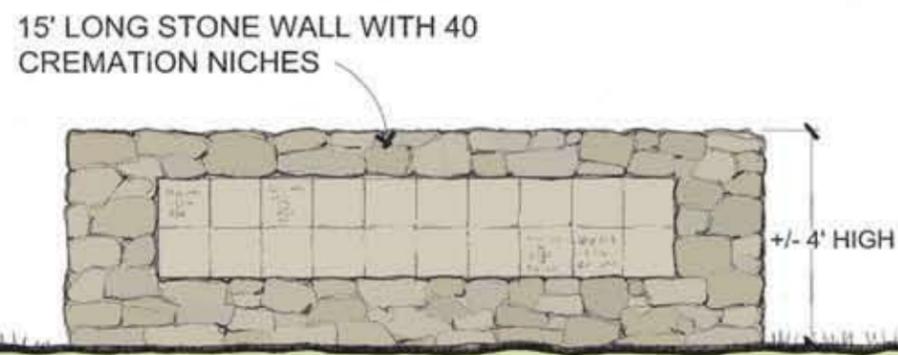




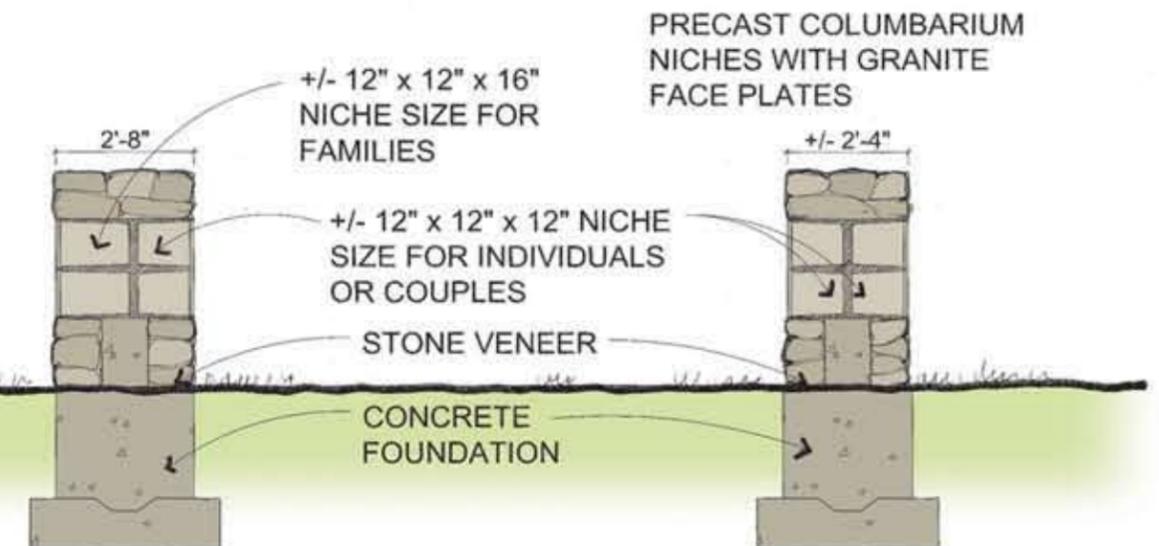
WOOD FENCE SCREEN AT MAINTENANCE BUILDING



ROOT PROTECTION BARRIER



CREMATION NICHE WALL - ELEVATION



CREMATION NICHE WALL - SECTION

TYPICAL CONSTRUCTION DETAILS

B

**Local Municipal Cemetery Pricing Comparison
2011**

Cemetery Name & Location	Cost per Single Plot		Cremation Lot		Residency Requirement?	Town-provided excavation?	Open full-size grave				Open Cremation plot			
	Resident	Non-Resident	Resident	Non-resident			Weekday -R	Weekday - NR	Weekend - R	Weekend - NR	Weekday -R	Weekday - NR	Weekend - R	Weekend -NR
Scarborough, Maine 2 Municipal Cemeteries	\$400.00	\$400.00	\$220.00	\$220.00	No	Yes	\$400.00	\$400.00	\$500.00	\$500.00	\$110.00	\$110.00	\$150.00	\$150.00
Biddeford, Maine Woodlawn Cemetery	\$500.00	\$1,000.00	\$250.00		No	Yes	\$400.00	\$900.00	\$500.00	\$1,000.00	\$250.00	\$625.00	\$350.00	\$700.00
Cumberland, Maine 6 Municipal Cemeteries	\$450.00	\$450.00		\$450.00	No	Y, Chris Stilkey	\$600.00	\$600.00	fees apply	fees apply	\$150.00 or with service it's \$250.00	\$150.00	fees apply	fees apply
Gorham, Maine Many cemeteries, privately managed.						Yes	\$550.00	\$550.00	\$625.00	\$625.00	\$250.00	\$250.00	\$325.00	\$325.00
Sanford, Maine Oak-Dale Cemetery	\$700.00	\$700.00	\$500.00	\$500.00	No	Yes	\$800.00	\$800.00	\$1,100.00 WE service must be before 12	\$1,100.00	\$400.00	\$400.00	\$700.00 WE service must be before 12	\$700.00
Windham, Maine 26 Town-maintained Cemeteries	\$200.00	\$350.00	\$100.00	\$175.00	No	No								
Portland, Maine Evergreen Cemetery	\$890.00	\$1,070.00	\$475.00	\$570.00	No	Yes	\$790.00	\$950.00	\$945.00	\$1,135.00	\$420.00	\$505.00	\$570.00	\$670.00
Westbrook, Maine Woodlawn Cemetery	\$600.00	\$750.00			No	Yes	\$630 - \$730 Adults	\$530 - \$630 Children	\$350-\$390 Infant					
							Saturday rates:							
							\$790 Adult	\$690 Child	\$430 Infant					

Summary Information:

Full Size Plot	Neighboring Communities	Cape Elizabeth	Proposed New Rates
-Resident	\$200.00 to \$890.00	\$650.00	
-Non resident	\$350.00 to \$1,070.00		
Cremation Plot			
-Resident	\$100.00 to \$500.00	\$300.00	
-Non resident	\$175.00 to \$570.00		
Burial Costs - Full Size			
-Resident	\$400.00 to \$1100.00	\$600.00 (+ \$150 for weekend)	
-Non resident	\$400.00 to \$1135.00		
Burial Costs - Cremation			
-Resident	\$110.00 to \$700.00	\$425 (+ \$150 for weekend)	
-Non resident	\$110.00 to \$700.00		



BOOKMARK

Subscribe

The Best Columbarium Niche Size

February 2011

When you purchase a columbarium, it needs to fit your requirements. With a columbarium niche, the primary requirement is usually to accommodate the remains of one or, more commonly, two adults. There is also sometimes a derived requirement to conserve space.

A common size for a columbarium niche is 8x8x12 inch. This niche has the advantage of being compact. However, relative to its purpose of holding urns, it is less functional than larger niches. It will fit very few commercially available urns and even fewer for double inurnment.

A memorial garden can accept the limitation on urns or even require the use of a specific urn. It is important to communicate either approach to potential niche buyers. Some families may prefer a choice of urns. The memorial garden also will have the responsibility of ensuring availability of viable urns.

Toward the other end of the columbarium niche size spectrum, a 12x12x16 inch niche will accommodate the majority of commercially available urns. Based on Architarium's survey of metal and stone urns, an urn's height is the dimension that most impacts niche fit. The average height for a rectangular urn is between 7.5 and 8 inches. Round urns tend to be even taller, with an average height of 10.5 inches.

Of course, the 12x12x16 inch niche requires more space in all directions. A larger niche also requires more construction infrastructure. Although the relative increase in construction cost won't be significant, it still exists. To its credit, this niche allows more text and larger text for visibility, given its larger face plate.

When deciding on columbarium niche size, it is useful to understand cremain volume. A rule of thumb is that 1 pound of human mass equates to 1 cubic inch of cremains (actually a little less). The majority of adult urns accept a volume in the vicinity of 220 cubic inches. However, it is possible that an individual be larger and require larger urn.

It is also useful to know a little about urns. Urns are made of different materials and shapes. Some materials are thicker, requiring more space. For example, given a stone urn and a metal urn with the same capacity, the stone urn will require more space. Some shapes make more efficient use of space than others. For example, rectangular urns are very efficient in this regard. However, round urn styles easily outnumber rectangular urn styles.

Architarium has full production capability and can manufacture whatever columbarium niche size you require, including 8x8x12 inch and 12x12x16 inch. You can even use a mix of niche sizes in your design for maximum flexibility.

Instead of trying to determine the columbarium industry's niche standard or even a columbarium manufacturer's columbarium standard, select the columbarium niche size that fits your needs.

Niche Sizes and Costs

City of Edmonton Cemetery – Outdoor Columbarium Niches

Beechmount Cemetery

The Good Sheppard

Niches for 2

Colour: Grey Granite

Memorial Style: Bronze 11X11

Interior Dimensions: 9.5X9.5X12D

The Good Sheppard 2

Niches for 2

Colour: Grey Granite

Memorial Style; Bronze 12X12

Interior Dimensions: 12X12X12.5D

The Westwood

Upright Style Columbarium

Niches for 1 or 2

Colour: Rose Granite

Memorial Style: Bronze Wreath

Interior Dimensions: 12X12X15D

Centre Dome

Dome Style Columbarium

Niches for 1 to 4

Colour: Rose Granite

Memorial Style: Bronze 10X16

Interior Dimensions: 11.5X20F-7RX20D

Prices

Cost	Units	Availability
\$3,082.07	The Good Sheppard	Available
\$3,154.25	The Good Sheppard 2	Available
\$3,736.19	The Good Sheppard 3	Available
\$4,388.19	The Centre Dome	Available

Niche packages include:

- Niche unit
- Interments (open and close) based on 2 urns
- Memorialization based on 2 names

Municipal Cemetery, Anchorage Alaska

Q. Are there niches of different size?

A. There are three sizes of niches and they are designed to hold urns as follows:

(1) There is the Single niche that will hold only one urn with a size equal to or less than 7 inches by 7 inches by 11 inches. (Only on the north side of the Wall)

(2) There is the Companion niche that will hold up to three urns with a combined size of less than 11 inches by 11 inches by 11 inches. (Only on the south side of the Wall)

(3) There is the Family niche that will hold up to eight urns with a combined size of less than 11 inches by 11 inches by 23 inches. (Only on the south side of the Wall)

Q. What do the niches cost and what is included in the cost of the niches?

A. The cost of the niche is all-inclusive. In other words, when you pay for the niche, you receive the use of the niche, the niche plaque, appropriate engraving, a vase on the Companion and Family niches, one opening and closing, perpetual care and continued maintenance. The cost is as follows:

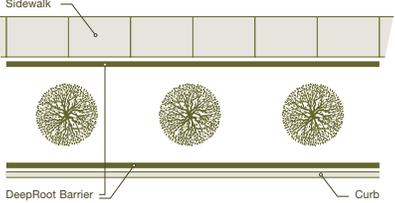
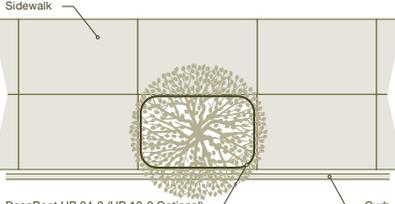
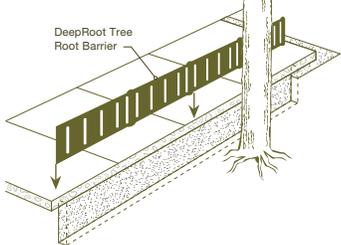
- (1.) Single niche \$875.00
- (2.) Companion niche \$1750.00
- (3.) Family niche \$2916.00

D Root Barrier Product Information

Tree Root Guides

Patented mechanical barriers effectively manage root expansion and protect surrounding hardscapes without compromising tree health or growth, and can be used both on new plantings and on existing trees.

Tree Root Guide	SPECIFICATIONS + FEATURES	
	<p>APPLICATIONS Redirect tree roots down and away from hardscapes.</p> <p>MATERIALS LB 12-2, UB 18-2, and UB 24-2: High-quality 50% post-consumer recycled injection molded co-polymer polypropylene. Manufactured in ISO 9002 certified factories.</p> <p>UB 36-2 and UB 48-2: High-quality homopolymer extruded polyethylene.</p> <p>SIZES LB 12-2: 12" (30 cm) x 24" (61 cm) UB 18-2: 18" (45 cm) x 24" (61 cm) UB 24-2: 24" (61 cm) x 24" (61 cm) UB 36-2: 36" (91 cm) x 24" (61 cm) UB 48-2: 48" (122 cm) x 24" (61 cm)</p>	<p>FEATURES LB 12-2, UB 18-2, and UB 24-2:</p> <ul style="list-style-type: none"> • 90° ribs redirect root growth down and underneath the barrier • Patented reinforced double-top edge withstands repeated foot traffic • Added UV inhibitors prevent breakdown from sun exposure • Patented anti-lift ground lock tabs secure the panel in the ground • Made in the USA <p>UB 36-2 and UB 48-2:</p> <ul style="list-style-type: none"> • 90° ribs redirect root growth down and underneath the barrier • Sizing adjustable in 1 ft. (.3 m) modules adaptable to any site • Combine with UB 18-2 or UB 24-2 where terrain is of varying depth • Made in the USA

APPLICATIONS																																																																										
 <p style="text-align: center;">LINEAR</p>	<p>LINEAR Provide maximum hardscape protection while utilizing all available rooting space for improved tree health by placing guides in a straight line directly along the hardscape to be protected.</p> <p>SURROUND Protect hardscapes that surround a planting on all four sides. Plan to line the perimeter of the planting area with the panels—this provides the maximum available uncompacted soil volume for immediate root growth.</p> <p>ROOT PRUNING Root pruning can help save existing trees and prevent future damage to paving. Disruptive roots are cleanly cut and removed; linear Root Barrier is then installed. There are limitations to root pruning and a qualified Certified Arborist should be consulted.</p>	<p>SPECIALTY APPLICATIONS Help protect sites with unusual requirements—like tennis courts, slopes, cemeteries and retaining walls—from root damage. DeepRoot Tree Root Barriers of different sizes can be used in combination in areas of variable depth.</p> <p>ROOT BLOCK In some circumstances it may be more desirable to prevent root intrusion by blocking roots, not redirecting them. Please see our Geomembrane catalog for details.</p>																																																																								
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Deep Root Partners, L.P.
Corporate Offices: 530 Washington Street, San Francisco, CA 94111
Tel: 800 ILV ROOT (458.7668) Fax: 800.277.7668 www.deeproot.com
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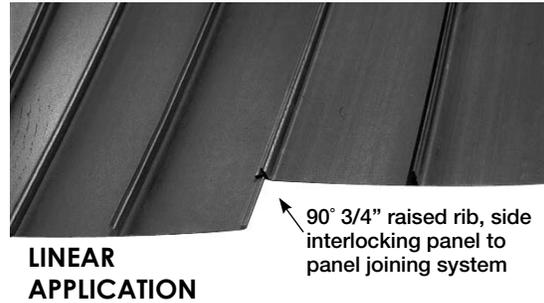
CP-Series Root Barrier Panels:

Manufactured from durable polyethylene material. Century Products panels feature 90° root deflecting ribs and self interlocking panel to panel connection that eliminates joiner strips and gluing. As well as being a root impervious barrier, the CP-Series panels direct roots downward to prevent costly damage to surrounding hardscapes and landscapes. These versatile panels can be used in linear and surround applications. The CP-Series panels are designed to reduce maintenance costs and liabilities for government agencies, cities, and private industry.

Linear Application: For root pruning of existing trees or in planting situations where one or more trees are in close proximity to hardscapes.

-OR-

Surround Application: For new tree planting or when the hardscape encircles the planter



Features:

- Flexible Top Safety Edge
- Versatile barrier for linear or surround applications
- Manufactured with 50% recycled plastic
- Raised 90° root deflecting ribs
- 90° 3/4" raised rib, side interlocking panel to panel joining system
- Adjustable anti-lift polyethylene panels which can be separated into 1' sections

SPECIFICATIONS

CP-SERIES: CP12-2, CP18-2, CP 24-2, CP36-2, and CP48-2.
90° 3/4" raised rib, side interlocking panel to panel joining system.
Material: Polyethylene with ultraviolet inhibitors.
Thickness: .080" (2.032mm)

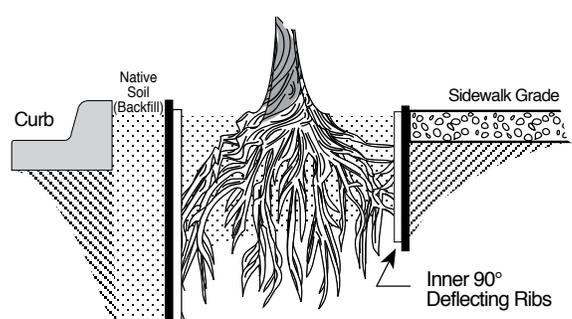
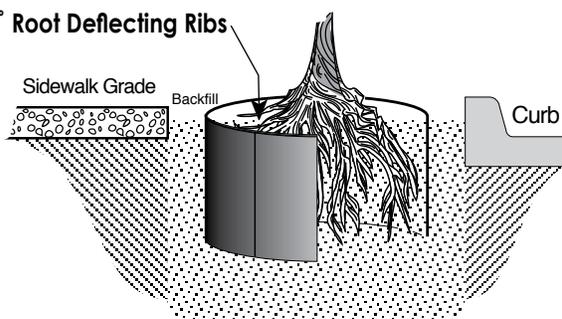
MATERIAL	Polyethylene	
THICKNESS	.080" (2.032mm)	
PROPERTIES	ASTM TEST METHOD	VALUE POLYETHYLENE COPOLYMER
Tensile Stress @ Yield	D638	4100 TO 4300 PSI
Elongation @ Break	D638	40%
Tensile Modulus of Elasticity	D638	150,000 PSI
Flexural Stiffness	-	-
Cantilever Beam	D747	125,000 PSI
Tensile Impact	D1822	50Ft. lbs/in ²
Environmental Stress	-	-
Crack Resistance	D1693	1 Hr.
Hardness, Shore D	D2240	68

U.S. Standard
For Technical or Field Support, please call: 714.632.7083

SURROUND APPLICATION

LINEAR APPLICATION

90° Root Deflecting Ribs



Backfill is native soil or 3/4" gravel for drainage.



CP-SERIES Root Barrier Panels

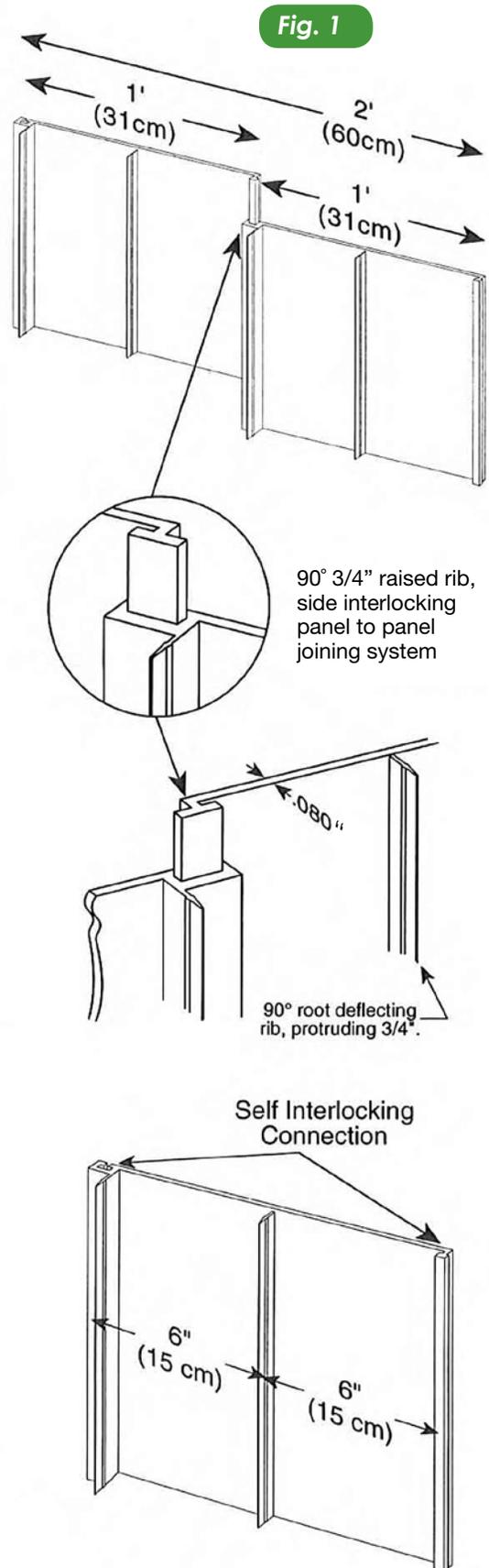
Century CP-Series Panels are pre-assembled in 2' long segments which can be combined to create various lengths of barrier to fit your application.

I. SPECIFICATIONS

- A. The root barrier shall be **CP-Series** manufactured by Century products, 1144 North Grove St., Anaheim, CA 92806, (714)632-7083, or approved equivalent
- B. The barriers are black molded modular panels manufactured using 50% recycled polyethylene plastic with ultraviolet inhibitors and .080" (2.032mm) in thickness. Each panel has vertical 90° root deflecting ribs protruding 3/4" in height. The ribs have a minimum thickness of .080" (2.032mm) and are placed 6" apart. An integrated 90° 3/4" raised rib, side interlocking panel to panel joining system provides for an instant assembly by sliding one panel into another.

II. INSTALLATION

- A. The specified number of panels shall be joined together and placed along hardscapes to create a linear style planting application or connected to encircle the root ball for surround installation.
- B. Vertical 90° root deflecting ribs are always facing the root ball.
- C. Always install the panels 2" above grade to avoid root penetration above the barrier.
- D. Prepare your installation as depicted in illustrations. (Assemble panels as shown in Figure 1.)
- E. Recommended for linear or surround planting applications. Back fill with existing native soil. If necessary for drainage, use gravel or crushed rock. Avoid backfill less than 3/4" or greater than 1 1/2". Finish to grade. Do not distort barrier during installation.
- F. Technical Questions? Call Century Products at 714.632.7083 for assistance.





E Meeting Notes

Riverside Memorial Cemetery
Master Plan Update
Meeting #1
May 5, 2011

Attending:

Debra Lane, Assistant Town Manager
Jessie Timberlake, Riverside Memorial Cemetery Trustee, Chair
Beverly Brooking, Riverside Memorial Cemetery Trustee
Gerald Sherry, Riverside Memorial Cemetery Trustee
Frank Governali, Town Council Representative
David Jones, Riverside Memorial Cemetery
Bob Malley, Director of Public Works
Stephen Mohr, Mohr & Seredin
Tanya Seredin, Mohr & Seredin

Discussion:

- A. Jessie opened the meeting and turned it over to Mohr & Seredin to discuss the Master Plan update.
- B. Tanya and Stephen discussed the approach to be taken for the project, and explained that the goal of the first meeting was to listen to the Committee to learn more about what the Master Plan needs to address, and what the hopes are for the plan.
- C. The following are items that were discussed:
 - 1. Would like to explore the addition of niche walls to the cemetery. A handout of the Peace Garden at St. Albans showed a garden that has columbarium, or niche walls, and also includes a scatter garden.
 - 2. Would like to look at extending the stone wall for the entire length of the cemetery, as it feels very open next to the road.
 - 3. Need to look at numbers of spaces, lot sales, and number of years of burials expected for the cemetery.
 - 4. Consider allowing the niches to be open to non-residents of Cape Elizabeth.
 - 5. The soil stockpile is the biggest complaint. Bob Malley indicated that there are plans underway to utilize a smaller stockpile which will get removed periodically. For now, the stockpile will remain in case the soil is needed for construction or expansion of cemetery areas.
 - 6. The maintenance shed is an important part of the functioning of the cemetery, however the adjacent plots are difficult to sell. Perhaps additional screening or fencing should be looked at to help buffer the shed.

7. The flagpole area is stark. The 1993 Master Plan shows a stone wall/columbarium in this area. Perhaps it is time to explore this further.
 8. Is there a way to understand what the demand may be for interment in this cemetery by non-residents?
 9. Care needs to be taken as to tree placement, so the tree isn't blocking access to plots when burial is needed.
 10. The only other active cemetery in Cape Elizabeth is the Seaside Cemetery, which is privately owned.
 11. Tanya and Stephen explained that they are exploring the potential for expansion of the cemetery into the 250' buffer zone of the Spurwink Marsh. In 1993, the town's interpretation of the Shoreland zone was that no work could take place in the 250' zone. At present, there may be the potential to utilize a portion of the buffer – potentially for a walkway and benches with scatter gardens, or columbarium walls. The committee expressed the desire to be a good example for environmentally responsible development, but would like to review what the possibilities are.
- D. Stephen and Tanya concluded the meeting portion by thanking the Committee for the opportunity to work on the Riverside Memorial Cemetery once again.
- E. The majority of the committee convened at the cemetery to walk it and to further explore any site specific issues. The following were discussed at the site:
1. The lack of plantings in some areas were noted, and seemed to correspond with desirability of plots.
 2. The soils stockpile was examined, and it was noted that the trees immediately adjacent to the stockpile had died – probably due to the soil over the roots.
 3. The maintenance shed is a fairly attractive looking building, however people are not very interested in the plots immediately adjacent to it. The plan should explore ways to make the plots more attractive for purchase through plantings, fencing, etc.
 4. The plot layout has been changed / adjusted since the initial layout plans were prepared. David Jones has a plan with the new layouts, and the plot markers are located on the ground.
 5. Tanya noted that there are a significant amount of invasive plant materials growing in the buffer zone between the cemetery and the marsh. This is significantly different from when the expansion of the cemetery occurred. Of particular concern is the thick layer of honeysuckle that is throughout, and it appears as if bittersweet is also starting to take hold.
 6. The openness and lack of enclosure were noted along the north end of the cemetery adjacent to Route 77. This also has affected the desirability of the plots in this area.
 7. The starkness of the flagpole area was also noted. The group agreed that this would make a more desirable area for niche walls than in the buffer zone where they wouldn't be visible.



M O H R & S E R E D I N

Landscape Architects, Inc.

Riverside Memorial Cemetery
Master Plan Update
Meeting #2
June 20, 2011

Attending:

Debra Lane, Assistant Town Manager
Jessie Timberlake, Riverside Memorial Cemetery Trustee, Chair
Beverly Brooking, Riverside Memorial Cemetery Trustee
Gerald Sherry, Riverside Memorial Cemetery Trustee
Frank Governali, Town Council Representative
David Jones, Riverside Memorial Cemetery
Stephen Mohr, Mohr & Seredin
Tanya Seredin, Mohr & Seredin

Discussion:

- A. Jessie opened the meeting and turned it over to Mohr & Seredin to present the progress on the Master Plan update.
- B. Tanya and Stephen presented the work to date as follows:
 - 1. Cemetery Fees: A table was distributed that details fees charged for cemetery plots and burials from cemeteries in eight neighboring municipalities. In every case, non-residents are allowed to be buried in the cemetery. Non-residents are usually charged a higher fee for the purchase of the lot, and often they are charged a higher fee for burials. The table gives a breakdown for every municipality, and provides a summary showing the ranges of fees charged.
 - 2. Existing Conditions: An Existing Conditions Plan was prepared that showed the new section of the cemetery, including the drives, laid out plot areas, vegetation, and maintenance area. There are notes on the plan that describe the issues that the Committee charged Mohr & Seredin with addressing in the Master Plan Update. (See attached plan) The Committee confirmed that the issues noted on the plan are accurate.
 - 3. Shoreland Zone: Stephen discussed the Shoreland Zone requirements with Cape Elizabeth's Code Enforcement Officer, Bruce Smith. Bruce did not feel that municipal cemetery use could be defined as an essential service according to the definitions in the codes, and therefore there any cemetery use

within 250' from the critical wetland edge is not allowed. There is provision for forestry management practices which would allow selective pruning, limbing and thinning to take place, as well as removals of invasive species. This would create opportunities for opening up views into the marsh, which would be very desirable for selling the plots.

4. Proposed Improvements: The following improvements and updates are proposed:
 - a. Buffer between road and cemetery: A multi-layer buffer is proposed along the road, including extending the stone wall for the full length of the cemetery, planting several groupings of trees both inside and outside the wall. The plantings should include large trees, understory trees, and large shrubs.
 - b. Buffer between plots and the Maintenance Building: Several layers of buffer are proposed between the plots and the Maintenance Building. This includes a 6' high fence (approximately 66% solid), shrubs, evergreens and deciduous trees.
 - c. Tree plantings in the open areas of the cemetery: Groupings of deciduous shade trees are shown in the un-planted sections of the cemetery, with care taken to place them between the already laid-out plot areas wherever possible. The plan shows displacing plots in only two areas: 4 cremation plots are eliminated in one area, and in a second, 8 full-sized plots are reduced to 8 cremation plots. A root barrier is proposed between the trees and the plots to allow the trees to be planted closer to the burial areas without impacting the plots.
 - d. Plot Layout: A proposed plot layout is shown in the remaining section of the cemetery on the outermost edge adjacent to the woods utilizing a similar pattern as the previously laid out sections. The northeast corner is shown as developed with cremation niche walls, but it could be utilized as in-ground burials as well. The master plan update could show both options, and the decision could be made at a later date based on need.

As shown, with both in-ground plots and cremation niche walls, there are 166 full size plots and 8 cremation plots, and 430 cremation niches.

With all in-ground burials, there would be a total of 208 full size plots, and 18 cremation plots.

- e. Flag Circle: Everyone agreed that the flag circle was stark and uninviting, and that it is an opportunity to develop into a more interesting space visually, and an opportunity to place cremation niche walls. Three options for niche walls were presented, one is shown on the site plan, and

two alternatives were shown on the detail plan. Adding soil (used from on-site excess stockpiles) to create some gently mounding slopes in addition to different wall layouts were shown. The committee had several questions and comments about the niche walls and the layouts:

1. The niche sizes are shown as 12" x 12" x 12". How many urns would that fit, and would it make sense to incorporate larger, family size niches? M&S will research this and provide additional information.
2. It is preferable from a cost standpoint to construct walls that have niches on both sides, rather than on just one side.
3. Edge treatment of the driveway around the flag circle might be a nice consideration. M&S agreed and will explore options.

C. Tanya and Stephen will coordinate with Debra for the next meeting.



M O H R & S E R E D I N

Landscape Architects, Inc.

Riverside Memorial Cemetery
Master Plan Update
Meeting #3
August 10, 2011

Attending:

Debra Lane, Assistant Town Manager
Jessie Timberlake, Riverside Memorial Cemetery Trustee, Chair
Beverly Brooking, Riverside Memorial Cemetery Trustee
Frank Governali, Town Council Representative
David Jones, Riverside Memorial Cemetery
Tanya Seredin, Mohr & Seredin

Discussion:

- A. Jessie opened the meeting and turned it over to Mohr & Seredin to present the progress on the Master Plan update.
- B. Tanya presented refinements to the master plan update based on comments received at the previous meeting, as well as additional information as follows:
 1. Updated Plan: Tanya presented an updated master plan sketch that showed a more detailed layout for phase 5 which are the plots on the outside edge of Sycamore Drive. The plan shows all in-ground plots, with a total of 243 full size plots, and 24 cremation plots. The previous plan showed the northwest corner developed as a cremation wall garden area, and this plan shows how it would look with all in-ground burials. The final decision as to how this area gets developed could be made at a later date based upon need and available funds. Fill from the excavation of burials has been stockpiled adjacent to the northwest corner, and can be used to raise the grade in the lower plot areas. Tanya will review this with Bob O'Malley.

A new layout for the cremation wall layout at the flag circle area is shown on the plan. Six walls with 40 niches each is shown. The walls can be constructed at the same time, or as needed. The center of the island contains a shrub and tree planting, and there are benches shown between the walls. The front edge of the island has a band of low-maintenance flowering plants, such as daylilies. The edge of the driveway is shown with a granite curb and has accessibility ramps shown as needed. The driveway width will be wide enough for a car to park with cars able to pass.

2. Cremation Wall Niche Sizes: The cremation niche sizes are shown on the detail as 12" x 12" x 12" deep. This can accommodate up to 3 urns. If there is a desire for family niches that can contain more urns, one or more of the walls can contain deeper niches that can hold more urns. (12" x 12" x 16" deep can hold 5 urns, 12" x 12" x 24" can hold 8 urns). Research of other cemeteries, and discussion with national columbarium wall suppliers. (see attached literature from various sources)
3. Tree Root Barrier: It has been difficult to sell plots that are in the open; people prefer to purchase adjacent to a natural resource or tree. In order to fit more trees into the cemetery without risking the tree roots interfering with the burials, a tree root barrier is recommended. DeepRoot makes a 12" deep edge which would be adequate for use in the cemetery. (see attached product information)
4. Construction Cost Estimate: A preliminary construction cost budget was prepared (see attached). The Cremation Garden area costs are approximately \$140,000, which amounts to approximately \$575 to \$600 per niche. Tanya will follow up with Bob O'Malley to determine a budget for the layout of the new plot areas, and to prepare a budget for filling of the lower areas. These costs will be included in the final construction cost budget.
5. Lot sales / interment data: Tanya reviewed the lot sales and interment data provided by Debra. Lot sales has been fairly steady over the last 3 decades at 611 to 646 lots per decade. Burials have increased from 245 in the 1980s, 337 in the 1990s to 425 in the 2000s.

With the additional 267 plots added to the 491 that are presently unsold, there will be a total of 758 lots available for sale, not including any niches. At an approximate sales rate of 65 lots per year, there is approximately 10 to 12 years left of sales in the cemetery.

6. Lot Pricing: An updated lot pricing comparison was prepared that compares the Riverside Cemetery prices with several cemeteries located in Southern Maine. Cape Elizabeth pricing is presently in the middle, but we believe that there is room to increase the pricing to reflect the true costs of the cemetery, and still stay within the typical lot prices for neighboring cemeteries.