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June 29, 2006

VIA HAND DELIVERY

Board of Zoning Adjustment
441 4th Street, NW
Suite 210S
Washington, DC 20001

BOARD OF ZONING ADJUSTMENT
District of Columbia

CASE NO. 17309
EXHIBIT NO. 136

Re: BZA Case No. 17309 – Dorchester Associates LLC – Chain Bridge Road

Dear Members of the Board:

Enclosed please find one original and 20 copies of the Applicant's Supplemental Submission as requested by the Board at the hearing on April 11, 2006 for BZA Case No. 17309. At the hearing, the Board requested additional information regarding the landscape plan, tree preservation efforts, and the storm-water management plan.

In response, the Applicant has retained a landscape architect to develop a new naturalistic landscape plan. The Applicant has also revised its Tree Preservation Plan has made several design changes to its project plans and drawings including a revised Storm Water Management Plan. A summary of the design changes is detailed below and a summary of the new landscape plan can be found at the front of the submitted landscape booklet. The revised Tree Preservation Plan is enclosed herewith.

Summary of Major Design Changes

- 1) A new naturalistic Landscape Plan utilizing mostly indigenous plant material has been developed. The plan further reinforces the heavily treed and sloped nature of the site and compliments Battery Kimble Park.
- 2) A Tree Protection Plan drawing has been developed that shows the line and limits of "fenced off" protected areas around individual and groups of trees.
- 3) The Tree Preservation Plan has been refined to include detailed pre- construction pruning instructions for the Beech trees.
- 4) The Storm Water Management Plan has been revised in several ways. A number of infiltration wells have been reconfigured to be in greater harmony with the new landscape plan. The use of stacked stone walls to direct and slow surface drainage

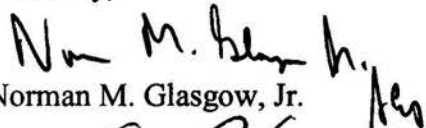
Board of Zoning Adjustment
District of Columbia
CASE NO. 17309
EXHIBIT NO. 136A1

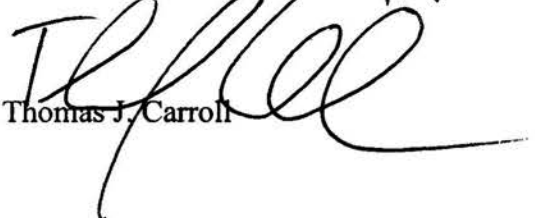
and bored drainage lines to protect critical root areas has been incorporated into the plan.

- 5) Lot 'A' – The driveway was moved away from tree #40 and realigned. A larger portion of the house was constructed on piers. These changes enhance the protection provided this lot's towering Poplar (tree #40).
- 6) Lot 'C' – The basement/garage level was raised and the driveway bridge was lengthened to allow a less steep drive slope.
- 7) Lot 'D' – The driveway was realigned and the basement/garage level was raised so the drive could more closely follow existing grade. A driveway bridge was incorporated and more of the house was supported on piers to enhance the protection of trees #29 and #53.
- 8) Lot 'E' – More of the house was supported on piers enhancing the protection of tree #29. Tree #31 was added to the 'Removed for Construction' list.
- 9) Lot 'F' – 'Green Roofs' were added to the design of this house.
- 10) Lot '2' – The ground floor of the house was raised and more of the house was supported on piers to enhance the protection of tree #11.
- 11) Lot '4' – A green roof was added to the design of this house. The entry drive was realigned to enhance the protection of tree #15.

Thank you for your attention to this matter.

Sincerely,


Norman M. Glasgow, Jr.


Thomas J. Carroll

Enclosures

cc: ANC 3D
Office of Planning
Parties of Record

Tree Preservation Plan for the Chain Bridge Road Project

June 26, 2006

Bonifant Tree Service, Inc.
16300 Oak Hill Rd.
Silver Spring, MD 20905
301-942-7890

Prepared by:

Tom Bonifant;
Owner, Bonifant Tree Service, Inc
MD Licensed Tree Expert #090

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MD Licensed Tree Expert #926

Bonifant Tree Service Inc. has visited the Chain Bridge Road Project to provide plans for tree preservation on the proposed development site. Tree location and ratings are based on the report completed by consulting arborist Lew Bloch. Most of the trees on the site, with proper protection, can be preserved throughout the construction process. With proper care these trees can also provide years of shade for the homeowners once the project is completed. Several aspects of the tree itself are taken into account when developing a tree preservation plan. Other aspects considered are the ways that the construction process harms the trees. To save the many trees present on the site several different methods of preservation will be employed.

There are many factors involved in determining what is needed to preserve a tree. To begin, a survey of all trees on the site needs to be completed detailing the species, size, condition and location of each tree. This survey was completed by Lew Bloch and submitted in a previous report. After a visit to the site we re-measured each tree including not only the circumference but also the diameter of the trees at breast height (dbh) and the radius of the drip-line. These measurements are used in determining the protected root zone of each tree. The protected root zone can be defined as 1' radius for each inch diameter dbh of the tree (Arlington County Dept of Public Works). Another method for determining the protected root zone is by using the drip line of a tree (University of Minnesota Extension Service). Topography of the land and other trees in the vicinity can also factor into the root zone of a tree. For example, a greater number of roots may be present on one side of the tree due to competing trees on the opposite side. It should also be noted that trees fenced in groups are more likely to survive than an individual fenced tree. Another issue to consider when protecting these trees is tolerance of each species to disturbances. Generally, no more than 25% to 30% of a tree's root system should be damaged during construction; however a young tree of a tolerant species may withstand as much as 50% root loss or more. To provide adequate protection of the trees on this site a combination of methods will be used to protect the trees.

Construction can damage trees in many ways. Machinery hitting trees is one of the frequent ways that damage occurs. This causes open wounds that are more susceptible to insects and disease. Some of the things that may not be as obvious is the damage that happens below grade. This includes the cutting of roots during excavation and the smothering of roots when soil is added to the existing grade. Soil compaction from machines as well as foot traffic can damage roots as well as the soil structure, hindering future root expansion. Other factors include the alteration of water flow in the area of the tree and chemical spills or dumping within the tree's root zone. The tree preservation plan is developed to minimize the impact from all of these factors.

Several methods of preservation will be used to minimize the effects of the construction. The most visual device will be the installation of tree protection fences. These fences will be installed to section off a "NO ENTRY" area around the critical root zone of the protected trees. Fencing will consist of, at minimum, 14 gauge wire, 4' high attached to post no greater than 10' apart on center. No construction materials, personnel

or equipment will be allowed in these areas during the construction. This also prohibits grade changes within the fenced perimeters. For trees very close to houses, the fence will be installed as described and then may be moved to allow personnel to complete the finishing aspects of the building at the end of the construction process. No machinery will be allowed in this area even after the fence has been moved. To prevent compaction in this area, a 6" – 8" layer of woodchips will be spread over the root zone. Root pruning will be done at the edge of the excavation areas to provide a clean cut on the roots encouraging future root growth. Proper pruning of the tree canopies will also be completed as needed to minimize or eliminate damage during the construction operations. Construction methods or house design will need to be altered in some cases to minimize root disturbance. An example of this is placing the house foundation on piers. Underground utilities will need to be tunneled underneath the root system of trees where they pass through the tree protection areas. Supplemental watering or other necessary steps will be taken to maintain tree health if dry weather or a drought occurs immediately preceding or during the construction. These precautions have proven successful for many development projects.

After the construction has been completed several steps will be taken to reduce post construction stress. Aeration of the root system of all trees will be done to help alleviate any compaction that may have occurred during or previous to the construction. Root zone aeration consists of drilling 2" holes on three foot centers throughout the protected root zone. The resulting holes are backfilled with a porous material such as composted leaf litter. Supplemental watering will help the trees overcome the stress induced during the construction. Soil tests will be conducted to determine if fertilization is needed to maintain tree health. As always care by the new homeowner will play an important role in the long term sustainability of these trees.

It appears that the layout of the development takes advantage of the existing topography by building the majority of the houses in the flat areas. This is beneficial because the majority of the trees are located on the steeper slopes. With this layout the trees will be able to be fenced together in large groups, increasing their long term viability.

Details of methods for preservation of individual large trees:

#1 Pin Oak: 104" Circumference, 33" Diameter, 28' Drip Line. Rated 75%.

Tree does not appear to be on the property.

#2 White Pine: 65" Circumference, 20.5" Diameter, 13' Drip Line. Rated 60%.

Fencing for this tree will join the fence of nearby trees. Fence will be installed at 13' or as limited by the existing tennis court on the neighboring property.

- #3 Pin Oak: 116" Circumference, 37" Diameter, ~40' Drip Line. Rated 45%.
Cankers present at the base of the tree and large deadwood is present throughout the canopy. The decline of this tree is likely a result of the installation of the existing sidewalks located close to either side of the trunk. This tree is not in good health and has a major defect 45' up the trunk. Removal of this tree is recommended.
- #4 American Elm: 97" Circumference, 30" Diameter, 35' Drip Line. Rated 70%.
Fencing to be determined on the south side by house footprints then extending out to 30' on the north side of the tree. The rear most room in the house on lot i will need to be placed on piers to leave a greater portion of the trees root system intact. The grade will also need to remain at the existing level to avoid damage of the root system.
- #5 64" flowering Cherry to be removed.
- #6 Pin Oak: 114" Circumference, 36" Diameter, 30' Drip Line. Rated 75%.
Tree is located ~16' from existing driveway. Fencing to be placed at driveway edge on the south side and extending out to 30' on the north side with an allowance for the corner of the house on lot i.
- #7 Pin Oak: 114" Circumference, 36" Diameter, 40' Drip Line. Rated 50%.
Fencing for this tree will join the fence for nearby trees, from the roadway on the south side to the house on the north side. The rearmost room of the house on lot 1 should be set on piers or have the southernmost wall moved to the north by several feet.
- #8 Red Oak: 64" Circumference, 20' Diameter, ~22' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees and installed no closer than 20' from the trunk of this tree.
- #9 Red Oak: 78" Circumference, 25" Diameter, 1' – 35' Drip Line. Rated 70%.
Fencing for this tree will join the fence of nearby trees. It will extend to the parking area for lot 4 on the south side and extends to the house edge on the north side. The raised patio shown on the plan for the house on lot 2 will need to be changed to a structure that does not require a continuous foundation if this tree is expected to survive. A structure such as a deck will disturb far fewer roots allowing this tree to survive. The fencing will remain in place during the construction of the house and will be moved afterwards for the construction of a deck, following the precautions described above.

- #10 Red Oak: 89" Circumference, 28" Diameter, 23' Drip Line. Rated 60%.
This tree has a healthy appearing canopy although cankers are seen at the base. It should be noted that there is no root flare, indicating grade level has been raised around the trunk and a portion of the root system. Fencing for this tree will join the fence of nearby trees. It will extend from the back of the house located on lot 2 on the north side down the hill to the edge of the parking area to the south located on lot 4.
- #11 Red Oak: 118" Circumference, 34" Diameter, 25' Drip Line. Rated 65%.
Fencing for this tree will join the fence of nearby trees. Fence will extend close to the house on lot 2 on the north side and down the hill on the south side to a minimum of 25'.
- #12 Tulip Poplar: 124" Circumference, 39" Diameter, Drip Line was not measured.
Rated 40%. Severe storm damage. Removal of this tree is recommended.
- #13 Beech: 44" Circumference, 14" Diameter, 16' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will extend 15' to the east of the trunk, south to the road edge and north up close to the front of the house located on lot 4.
- #14 Beech: 44" Circumference, 14" Diameter, 16' Drip Line.
This tree is rated 45% on the original tree survey. It is recommended that this tree be removed to allow for the relocation of the driveway of lot 4 to move closer to Chain Bridge Road. This will allow greater root space for trees #15 and #16.
- #15 Beech: 60" Circumference, 19" Diameter, 13' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from the road edge to the edge of the relocated (closer to Chain Bridge Road) driveway of lot 4.
- #16 Beech: 48" Circumference, 15" Diameter, 7' Drip Line. Rated 65%.
Fencing for this tree will join the fence of nearby trees. It will extend from the road edge to the edge of the relocated (closer to Chain Bridge Road) driveway of lot 4.
- #17 Beech: 65" Circumference, 21" Diameter, 18' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees to the north and extend to the road on the south.
- #18 Red Maple: 12" Diameter (uphill of tree #16). Rated 40%.
This tree to be removed.

- #19 Beech: 60" Circumference, 19" Diameter, 20' Drip Line. Rated 65%.
Fencing for this tree will join the fence of nearby trees to the north and extend to road on the south.
- #20 Black Cherry: 130" Circumference, 41" Diameter, 30' Drip Line. Rated 40%.
The condition of this tree appears to have degraded since the original tree survey was completed. Multiple areas of decay are present in the main trunk and limbs. There is also a large amount of deadwood present within the canopy. Removal of this tree is recommended.
- #21 Black Cherry: 54" Circumference, 17" Diameter, 20' Drip Line. Rated 45%.
Fencing for this tree will join the fence of nearby tree #22. Fence will be installed at a radius of 20'.
- #22 Boxelder: 70" Circumference, 22" Diameter, 35' Drip Line. Rated 45%.
Fencing for this tree will join the fence of nearby tree #21. Fence will be installed at a radius of 23'.
- #23 Tulip Poplar: 80" Circumference, 25.5" Diameter, 25' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east out to a radius no less than 25'.
- #24 Tulip Poplar: 76" Circumference, 24" Diameter, 20' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east to the edge of the house on the other side. The design or construction methods of this house can be altered to help this tree survive.
- #25 Tulip Poplar: 72" Circumference, 23" Diameter, 25' Drip Line. Rated 70%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east to the edge of the house on the other side. The design or construction methods of this house can be altered to help this tree survive.
- #26 Tulip Poplar: 76" Circumference, 24" Diameter, 24' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. to the edge of the house on the other side. With the current design of this house and its proximity to the tree, the survival of this tree is not likely.
- #27 Red Oak: 69" Circumference, 22" Diameter, 30' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of the house out to a radius no less than 22'. The construction of the patio on the back of the house on lot 3 will need to take into account the root system of this tree.

#28 American Holly to be removed for construction. Rated 80%.

#29 Red Maple: 128" Circumference, 41" Diameter, 30' Drip Line.

This tree has a rating of 50% on the original tree survey. Decay is present in the trunk of the tree and the canopy has several broken limbs throughout. Fencing for this tree will extend to the edges of the road and driveways on the west, north and east sides. To the south it will extend to the edge of the houses located on lots d and e. The alternate construction methods employed (houses supported on piers, driveway bridge spanning tree root zone, walks designed as stepping stones, etc.) will enhance the protection of this tree.

#30 Unhealthy Red Maple to be removed. Rated 35%.

#31 Flowering Cherry: 62" Circumference, 20" Diameter, 24' Drip Line.

This tree is rated 45% on the original tree survey. It is a mature tree nearing the end of its life expectancy. There is an existing retaining wall on the southeast side of the tree, ~5 feet from the base. It is unlikely that the roots of this tree extend past this wall. This tree will be removed for construction.

#32 Hemlock: 129" Circumference, 41" Diameter, multi trunk, 20' Drip Line.

This tree is rated 40% on the original tree survey. Fencing for this tree will join the fence of nearby trees. On the north it will extend to the edge of the house on lot e and extend outward to a radius no less than 20'.

#33 Hemlock: 84" Circumference, 27" Diameter, 15' Drip Line. Rated 60%.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#34 Spruce: 50" Circumference, 16" Diameter, 15' Drip Line. Rated 55%.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#35 Magnolia to be removed for construction. Rated 65%.

#36 White Pine: 90" Circumference, 28" Diameter, 15' Drip Line. Rated 45%.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

- #37 Hemlock: 68" Circumference, 22" Diameter, 15' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.
- #38 Sycamore: 109" Circumference, 35" Diameter, 20' Drip Line. Rated 35%.
This tree apparently has declined from the time of the original tree survey. The outer edge of the canopy has dieback present. This tree is in decline and is hazardous to neighboring properties. The construction of the existing storm drain may have led to the decline of this tree. Removal of this tree is recommended.
- #39 Unhealthy Tulip Poplar to be removed. Rated 30%.
- #40 Tulip Poplar: 148" Circumference, 47" Diameter, 30' Drip Line. Rated 75%.
As seen in existing plans, this tree is not likely to survive the construction. A redesign of the driveway and alternative building methods such as supporting the house on piers will give this tree a much better success rate. Fencing for this tree will extend from the edge of the house on lot a, to the edge of a redesigned driveway, south to Chain Bridge Rd. and west to the property line.
- #41 Tulip Poplar: 145" Circumference, 46" Diameter, 34' Drip Line.
This tree has a rating of 40% on the original tree survey. There are several major defects present. This tree is hazardous and should be removed before construction begins.
- #42 White Oak: 88" Circumference, 28" Diameter, 34" Drip Line. Rated 65%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of house on lot b to the north and outward 30' and to Chain Bridge Rd. Alternative building methods for the construction of the garage of the house on lot b will further increase the long term viability of this tree.
- #43 White Oak: 71" Circumference, 22" Diameter, 22' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from the edge of house on lot b to the north and outward 30' and to Chain Bridge Rd. Alternative building methods for the construction of the garage of the house on lot b will further increase the long term viability of this tree.
- #44 Beech: 97" Circumference, 31" Diameter, 35' Drip Line. Rated 75%.
Fencing for this tree will join the fence of nearby trees. It will follow closely the existing roadways and outward to a minimum radius of 35'.

- #45 Beech: 55" Circumference, 17" Diameter, 34' Drip Line. Rated 50%
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b.
- #46 Beech: 80" Circumference, 25" Diameter, 34' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b.
- #47 Beech: 67" Circumference, 21" Diameter, 34' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b. The sidewalk out to the road for lot b should either be eliminated or redesigned.
- #48 Beech: 80" Circumference, 25" Diameter, 35' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #48 and #49 for access to lot b. This bridge needs to be built over the top of the root system in a manner that will disturb as few roots as possible. The sidewalk out to the road for lot c should either be eliminated or redesigned.
- #49 Beech: 77" Circumference, 24" Diameter, 41' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The fence on the east side of the tree will be close to the trunk to allow the construction of a driveway bridge between #48 and #49 for access to lot b. This bridge needs to be built over the top of the root system in a manner that will disturb as few roots as possible. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.
- #50 Beech: 68" Circumference, 21" Diameter, 37' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.
- #51 Beech: 66" Circumference, 21" Diameter, 39' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.

#52 Beech: 56" Circumference, 18" Diameter, 32' Drip Line. Rated 60%.

Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #52 and #53 for access to lot c. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible.

#53 Beech: 106" Circumference, 33" Diameter, 35' Drip Line. Rated 65%.

Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #52 and #53 for access to lot c. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible.

#54 Hemlock: 47" Circumference, 15" Diameter. Rated 65%

Fencing for this tree will go from the property line to the foundation of house H, out 15' from tree.

#55 Unhealthy White Pine to be removed. Rated 40%.

#56 White Pine: 54" Circumference, 17" Diameter, 15' Drip Line.

This tree has a rating of 40% on the original tree survey. This tree will be located very close to the house on lot g. Removal of this tree is recommended prior to construction.

#57 White Pine: 56" Circumference, 18" Diameter, 15' Drip Line. Rated 40%.

This tree has a rating of 40% on the original tree survey. This tree will be located close to the house on lot g. Removal of this tree is recommended prior to construction.

#58 Hemlock: 76" Circumference, 24" Diameter, 14' Drip Line. Rated 40%.

Fencing for this tree will join the fence of nearby trees. It will extend to the driveway of lot f on the north side and outward to a radius of 14'. One lead had fallen from this tree prior to our inspection. We recommend removal of this tree.

- #59 Hemlock: 73" Circumference, 23" Diameter, ~10' Drip Line. Rated 60%.
The drip line of this tree was difficult to determine due to the density of the surrounding bamboo. Fencing for this tree will join the fence of nearby trees. It will extend from the property line on the south side out to a radius of 14'.
- #60 American Holly: 86" Circumference, 27" Diameter, 14' Drip Line. Rated 40%.
The condition of this tree appears to have degraded since the original tree survey was completed. Multiple defects are present in the main trunk of the tree consisting of, but not limited to, decay and included bark. Removal of this tree is recommended prior to construction.
- #61 Dead White Pine to be removed.
- #62 Not found on property or survey.
- #63 Not found on property or survey.
- #64 Tulip Poplar: 47" Circumference, 18" Diameter, 20' Drip Line.
Fencing for this tree will join the fence of nearby trees. It will be installed at a minimum radius of 20'.
- #65 Hemlock: 42" Circumference, 13" Diameter, 10' Drip Line. Rated 60%.
Fencing for this tree will join the fence of nearby trees. It will be installed at a minimum radius of 13'.
- 36" Oak and 42" Tulip Poplar: Incorrect information.
In this area there is a 36" circumference poplar and a 42" diameter poplar. There is an uprooted oak stump near neighbor's gazebo. Trees are located behind the house on lot g. Fencing will be installed at a radius of 20' on the east side and extending out to 35' along the property lines. This limited fencing along the uphill side is adequate due to the fact that tree roots do not grow far along uphill slopes.

Small trees will also be surrounded with protective fencing. Individual trees will be installed at a radius of 8' or included in the fencing of the larger trees where possible.

Even with the extensive development planned around these trees, with proper protection and care, the specified trees can remain viable long after the construction has been completed. With ample protective fencing installed prior to construction, the first and most important layer of defense is provided. Proper care during, and following, the construction process will also help to maintain the health of the trees. The methods of protection and care proposed here have proven successful at many construction projects. It will not only be up to the developer to care for the trees but the new homeowners as

well. They will play an important part in the care and maintenance of the trees long after the houses have been completed.

The following properties in Takoma Park are examples of “tree preservation” that have proven successful. Bonifant Tree Service was involved in the Haverford Road and Heather Avenue properties prior to construction and the Tulip Poplar Avenue property several years after the completion of construction. Twenty years ago, Takoma Park led the way in the area of tree preservation and new construction. We have listed information on each of these properties and have included recent photographs.

1. 1103 Haverford Rd. (lot originally subdivided from 1105 Haverford Rd.)
Our first inspection was on 2/15/93. The house was staked out and the path for the utilities was marked. The construction was completed in late 1993. The photographs were taken on 6/20/05 and show that the trees are still healthy. (See attached information and four photographs).
2. 903 Heather Ave. (lot originally subdivided from 901 Heather Ave.)
Our first inspection was on 12/30/94. Excavation and construction had been started prior to our first visit. Recommendations were made to minimize the impact on the effected trees. These recommendations were followed with good results. The photographs were taken on 6/20/05 and show healthy trees.
3. 102 and 104 Tulip Ave.
During the construction of these two homes, both owners were involved in the preservation of their trees. These houses were built on piers to minimize the impact on the large trees that were very close to the footprints of the houses. The construction was completed in 1985. We have been involved in the care of their trees since the late 80's. In the last five years, 102 Tulip Ave. has lost an Oak to a lightning strike and lost a Mulberry to a wind storm. Still a successful story. (See attached Photographs).

High Priority Trees to be Pruned Pre Construction

The Beech trees along the existing driveway will need to be pruned to accommodate construction traffic coming in to lots b through j and lot 4, and also to make space for houses b and c. Elevating the branch level to 15' above the road surface will be necessary to allow vehicles in and out of the site. Low limbs will need to be removed on the south side Beech trees to allow for the driveways into houses b and c and to create space for these two houses. The following is a list of the Beech trees and recommended pruning.

- #13 Beech: 14" D – Elevate to the first large limb. Less than 5% of the foliage will be removed.
- #14 Beech: 14" D – Remove this entire tree to accommodate the driveway on lot 4.
- #15 Beech: 19" D – Elevate to the first fork. Less than 5% of the foliage will be removed.
- #16 Beech: 15" D – Elevate to 15' off the ground. Less than 5% of the foliage will be removed.
- #17 Beech: 21" D – Elevate 15' off the ground and remove low dead limbs. Less than 5% of the foliage will be removed.
- #19 Beech: 19" D – Remove one low 5" – 6" limb over roadway. Less than 5% of the foliage will be removed.
- #44 Beech: 31" D – Recent storm damage left four stubs in tree to be removed.
- #45 Beech: 17" D – Remove 3" low limb and 6" low limb. We will be removing 5% of the foliage.
- #46 Beech: 25" D – Remove low 3" limb. Less than 5% of the foliage will be removed.
- #47 Beech: 21" D – Remove four low limbs – 6", 7", 2", and 3". We will be removing 10% of the foliage.
- #48 Beech: 25" D – Remove one 4" low limb and one 6" low limb. Less than 5% of the foliage will be removed.
- #49 Beech: 24" D – Remove one 4" low limb and one 6" low limb. Less than 5% of the foliage will be removed.
- #50 Beech: 21" D – Remove one 3" low limb and one 6" low limb. Less than 5% of the foliage will be removed.

#51 Beech: 21" D – Remove one 5" low limb and one 8" low limb. We will be removing 10% of the foliage.

#52 Beech: 18" D – Remove one 3" low limb and one 5" low limb. We will be removing 5% of the foliage.

#53 Beech: 33" D – Remove 5 low limbs – 8", 4", 3", 3", and 5". We will be removing 5% of the foliage.

In conclusion, we expect to have to prune several of the Beech trees again to clear houses b and c. This pruning will be minor, removing no more than 5% of additional foliage. A pruning limit of 25% of foliage removal on healthy trees is accepted throughout the industry. We will be way under this limit on all of these trees. Pruning of deadwood in all of the trees on the site will be necessary for safety. The American Elm (tree #4) would only be pruned while dormant. Some trees will need bracing and other care that will be done as needed. We expect to be involved in the project from the beginning to the end, and to provide care that will give these trees the best chance for survival.

Landscape Master Plan

Chain Bridge Road Project

Square 1425 Lot 827 Parcels 12/63,12/293 and 12/294
June 30, 2006

Chain Bridge Road Project Landscape Design Objectives

The Chain Bridge Road Project landscape plan is an ecologically focused design. The design objectives are to respect the existing landform and horticultural history of the site, to integrate tree and shrub species found in the neighboring park, to plant a diverse plant community with an emphasis on native plants, to install a mosaic of evergreen and deciduous trees to screen houses from the street and each other, to enable the houses to blend with the surrounding woodlands, and to provide an aesthetic enhancement unique to each home. Furthermore, the plan is based upon the concept of naturalized landscape design with a focus in maintaining or re-establishing the woodland layers.

A healthy eastern deciduous forest consists of layers of plant materials commonly referred to as the overstory, understory, shrub, and groundcover layer. The site has a well-established community of mature overstory (canopy) trees. The understory layer of plants includes small indigenous trees like *Cornus florida*, but much of the vegetation is invasive exotic plants like multiflora rose and English ivy. The landscape design supports the existing woodlands by using native plants in all the layers; overstory trees, understory trees, shrubs, native grasses and groundcovers. The suggested plantings around the houses are a blend of endemic and non-native materials which transition naturally into the woodland edge. Any proposed woodland plantings are native. Very little area is devoted to lawn and only in areas that is currently turf. In the woodland areas the plan intends for fallen leaves to be left as mulch and tree saplings preserved to provide the next generation of shade trees. Overall, the landscape plan relies on natural systems to enhance the experience and environment of the Chain Bridge Road Project.

Phasing the Planting Plan – Minimal Disturbance Plan & Woodland Restoration Plan

The plan works in conjunction with the tree preservation plan where the main objective is to maintain existing trees. To this end, the plan will be implemented in two phases: The Minimal Disturbance Plan and Woodland Restoration Plan.

The Minimal Disturbance Plan (Phase One) is designed to install the plantings after construction of the houses to minimize disturbance to critical root zone areas. The areas to be planted are next to the houses where construction will occur and in previously disturbed areas (currently flat turf areas).

The Woodland Restoration Plan (Phase Two) will be implemented 3-5 years after Phase One after the arborist has evaluated the health of the trees post construction. The first part of the Woodland Restoration Plan is to remove the invasive exotic plants. The second part of the plan is to install understory trees, shrubs and groundcovers typical to a woodland site. For example, witch hazel or serviceberry, pinxsterbloom (a native azalea) and lowbush blueberries would be planted under oak trees.

Plant Material

The Chain Bridge Road Project planting plan utilizes a wide diversity of plant materials with sixty (60) species of trees, shrubs and native grasses. Plant material diversity encourages a healthier landscape environment by minimizing the risk of disease and pest infestation. Diversity of native plants is also beneficial to the establishment of wildlife habitat. Sixty-seven percent (67%) of the introduced plants are endemic. In terms of quantity, ninety-five percent (95%) of the overstory trees are native, and over sixty percent (60%) of the understory trees and shrubs are native.

Index of Drawings

June 30, 2006

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Master Plan

EXISTING TREE CANOPY	
LARGE DECIDUOUS TREES	
LARGE EVERGREEN TREES	
SMALL DECIDUOUS TREES	
SMALL EVERGREEN TREES	
EVERGREEN SHRUBS	
DECIDUOUS SHRUBS	
NATIVE GRASSES, PERENNIALS, CROCKDOVERS	



Square 1425 Lot 827, Parcels 12/63, 12/293 and 12/294
Washington, DC

JUNE 30, 2006

Minimal Disturbance Plan



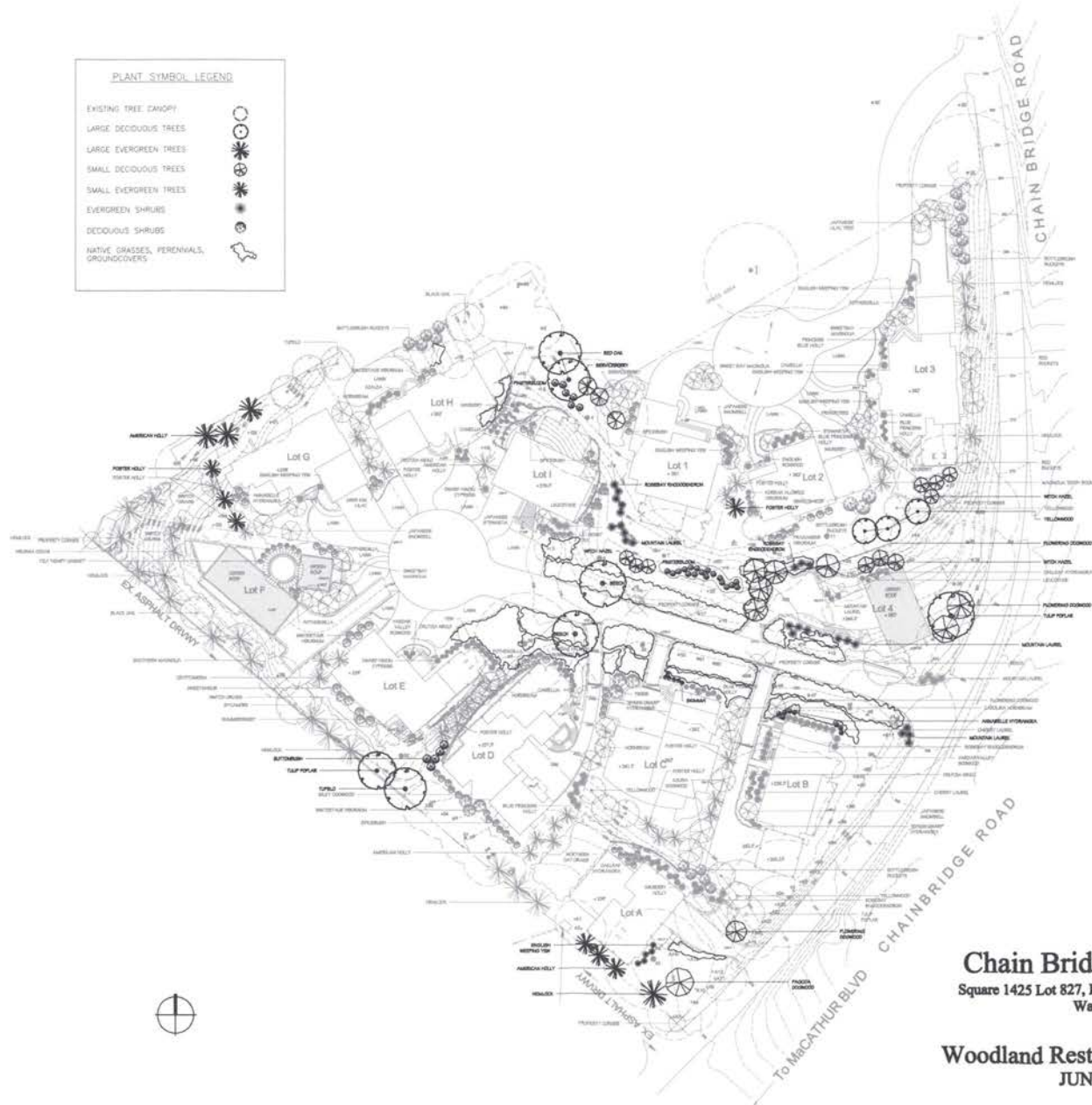
Chain Bridge Road Project
 Square 1425 Lot 827, Parcels 12/63, 12/293 and 12/294
 Washington, DC

Minimal Disturbance Planting Plan
 JUNE 30, 2006

Woodland Restoration Plan

PLANT SYMBOL LEGEND

EXISTING TREE CANOPY	
LARGE DECIDUOUS TREES	
LARGE EVERGREEN TREES	
SMALL DECIDUOUS TREES	
SMALL EVERGREEN TREES	
EVERGREEN SHRUBS	
DECIDUOUS SHRUBS	
NATIVE GRASSES, PERENNIALS, GROUNDCOVERS	



Square 1425 Lot 827, Parcels 12/63, 12/293 and 12/294
Washington, DC

Woodland Restoration Planting Plan
JUNE 30, 2006

Plant List

Native	Size	Common Name	Botanical Name
		Overstory Trees	
**	2"	American Beech	Fagus grandifolia
**	8-10'	American Holly	Ilex opaca
**	2"	Black Oak	Quercus velutina
	8-10'	Cryptomeria	Cryptomeria japonica
**	8-10'	Eastern Red Cedar	Juniperus virginiana
**	8-10'	Hemlock	Tsuga canadensis
**	2"	Red Oak	Quercus rubra
**	8-10'	Southern Magnolia	Magnolia grandiflora
**	2"	Sycamore	Platanus occidentalis
**	2"	Tulip Poplar	Liriodendron tulipifera
**	2"	Tupelo	Nyssa sylvatica
**	2"	Yellowwood	Cladrastis kentukea
		Understory Trees	
	2"	Chinese Dogwood	Cornus kousa
**	2"	Florida Dogwood	Cornus florida
	8-10'	Foster Holly	Ilex x attenuata 'Fosteri'
**	2"	Hornbeam	Carpinus caroliniana
	2"	Hornbeam 'Fastigiata'	Carpinus betulus 'Fastigiata'
	8-10'	Japanese Lilac Tree	Syringa reticulata 'Ivory Silk'
	2"	Japanese Snowbell	Styrax japonicus
	2"	Japanese Stewartia	Stewartia pseudocamellia
**	8-10'	Magnolia 'Edith Bogue'	Magnolia grandiflora 'Edith Bogue'
**	6-8'	Magnolia 'Little Gem'	Magnolia grandiflora 'Little Gem'
**	2"	Pagoda Dogwood	Cornus alternifolia
**	2"	Red Buckeye	Aesculus pavia
**	8-10'	Serviceberry	Amelanchier x grandiflora 'Autumn Brilliance'
**	8-10'	Sweetbay Magnolia	Magnolia virginiana
**	6-8'	Virginia Fringetree	Chionanthus virginicus
**	6-8'	Witch Hazel	Hamamelis virginiana
		Shrubs & Native Grasses	
**	21-24"	Annabelle Hydrangea	Hydrangea arborescens 'Annabelle'
	21-24"	Blue Princess Holly	Ilex x meserveae 'Blue Princess'
**	24-36"	Bottlebrush Buckeye	Aesculus parviflora
		Boxwood	Buxus sempervirens (transplanted)
**	21-24"	Buttonbush	Cephalanthus occidentalis
	21-24"	Camellia	Camellia japonica
**	21-24"	Carolina Allspice	Calycanthus floridus 'Athens'
	21-24"	Cherry Laurel 'Otto Luykens'	Prunus laurocerasus 'Otto Luyken'
	21-24"	Densiformis Yew	Taxus x media 'Densiformis'
	3-4'	Dwarf Hinoki Cypress	Chamaecyparis obtusa 'Nana'
	21-24"	English Weeping Yew	Taxus baccata 'Repandens'

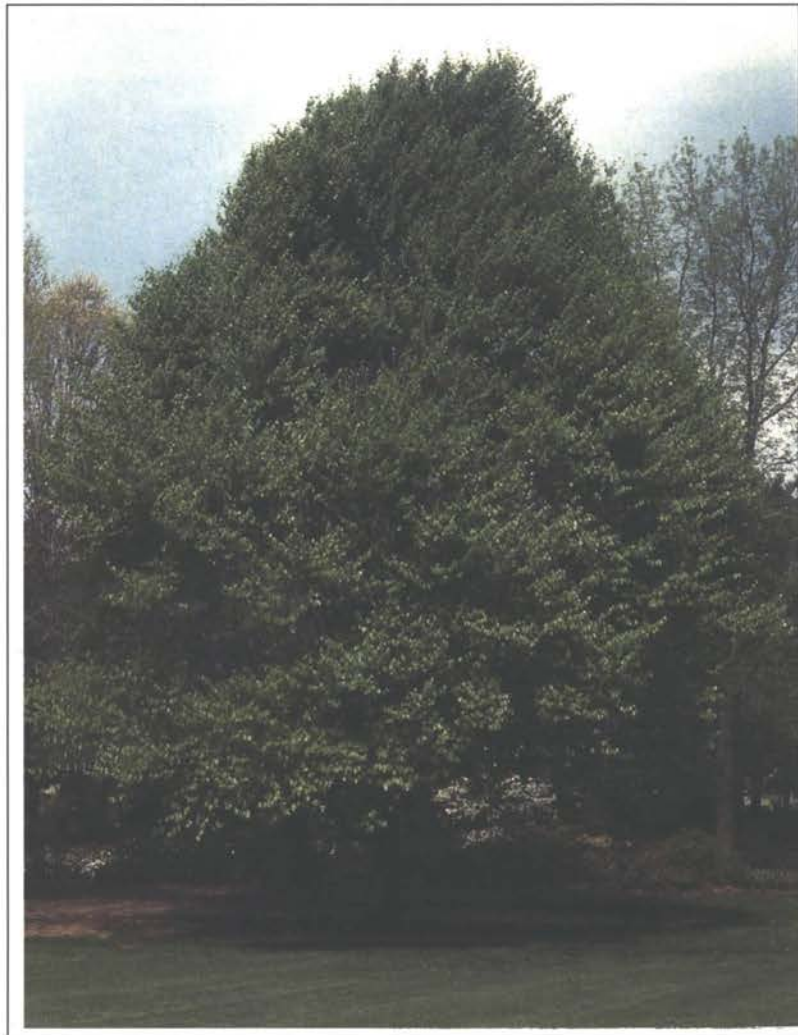
Native	Size	Common Name	Botanical Name
**	21-24"	Fothergilla	Fothergilla gardenii
**	21-24"	Inkberry	Ilex glabra 'Shamrock'
	21-24"	Koreanspice Viburnum	Viburnum carlesii
**	15-18"	Leucothoe	Leucothoe racemosa
**	21-24"	Mountain Laurel	Kalmia latifolia
**	24-36"	Oakleaf Hydrangea	Hydrangea quercifolia
**	21-24"	Oakleaf Hydrangea 'Sykes Dwarf'	Hydrangea quercifolia 'Sykes Dwarf'
	24-36"	Pieris	Pieris japonica
**	21-24"	Pinxterbloom	Rhododendron periclymenoides
	21-24"	Prague Viburnum	Viburnum x pragense
**	24-36"	Rosebay Rhododendron	Rhododendron maximum
**	21-24"	Silky Dogwood	Cornus amomum
	15-18"	Slender Deutzia	Deutzia gracilis 'Nikko'
**	21-24"	Spicebush	Lindera benzoin
**	21-24"	Summersweet 'Hummingbird'	Clethra alnifolia 'Hummingbird'
	18-21"	Vardar Valley Boxwood	Buxus sempervirens 'Vardar Valley'
**	21-24"	Virginia Sweetspire 'Henry's Garnet'	Itea virginica 'Henry's Garnet'
**	21-24"	Virginia Sweetspire 'Little Henry'	Itea virginica 'Little Henry'
**	21-24"	Winterthur Viburnum	Viburnum nudum 'Winterthur'
		Native Grasses	
**	1 gal.	Virginia Switchgrass	Panicum virgatum
**	1 gal.	Wild Oats	Chasmanthium latifolium

Overstory Trees

Overstory Trees

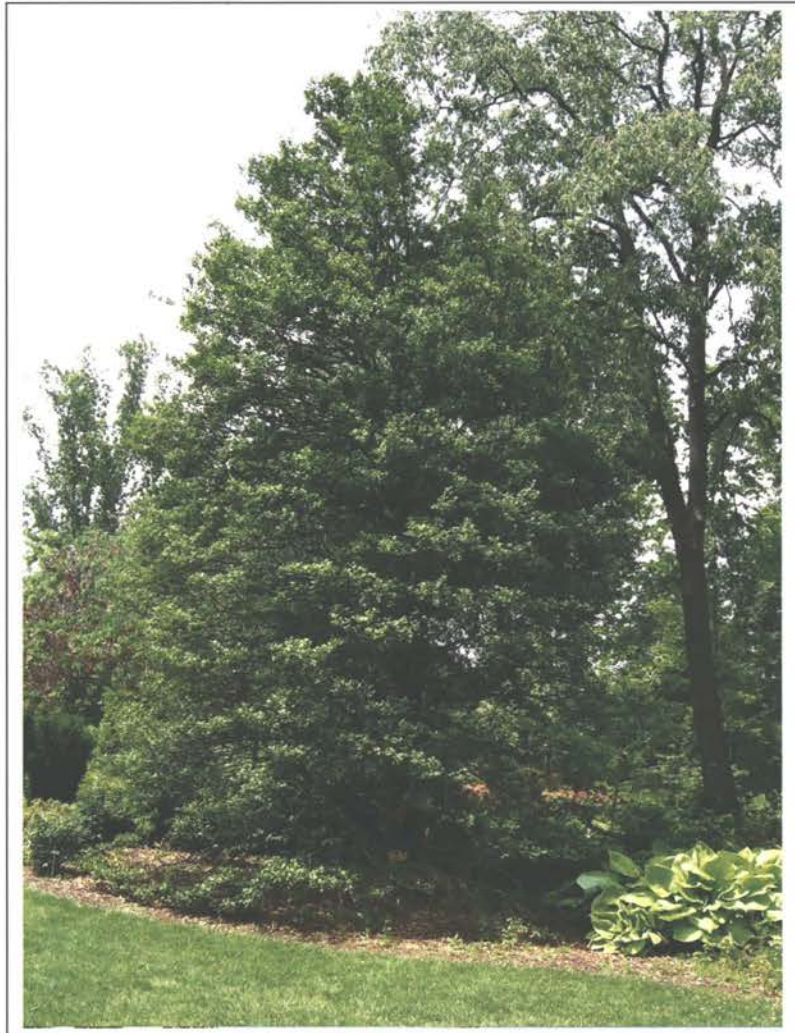
Native	Common Name	Botanical Name
***	American Beech	Fagus grandifolia
***	American Holly	Ilex opaca
***	Black Oak	Quercus velutina
	Cryptomeria	Cryptomeria japonica
***	Eastern Red Cedar	Juniperus virginiana
***	Hemlock	Tsuga canadensis
***	Red Oak	Quercus rubra
***	Southern Magnolia	Magnolia grandiflora
***	Sycamore	Platanus occidentalis
***	Tulip Poplar	Liriodendron tulipifera
***	Tupelo	Nyssa sylvatica
***	Yellowwood	Cladrastis kentukea

Chain Bridge Project – Overstory Trees



American Beech
Fagus grandiflora
Height 50'-70'
Spread 50'-70'

Chain Bridge Project – Overstory Trees



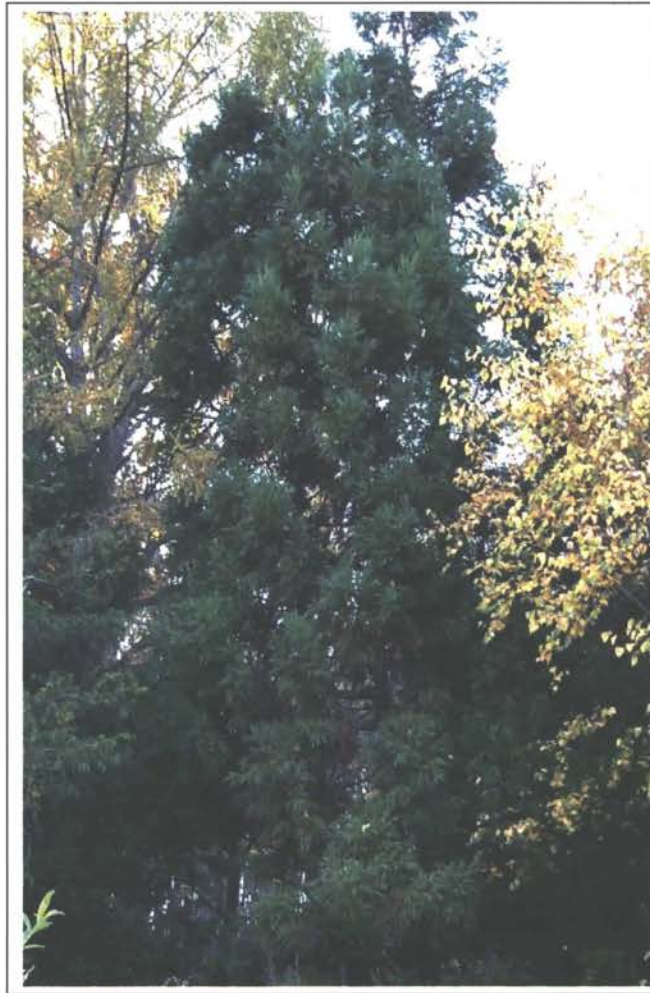
American Holly
Ilex Opaca
Height 50'-70'
Spread 18'-35'

Chain Bridge Project – Overstory Trees



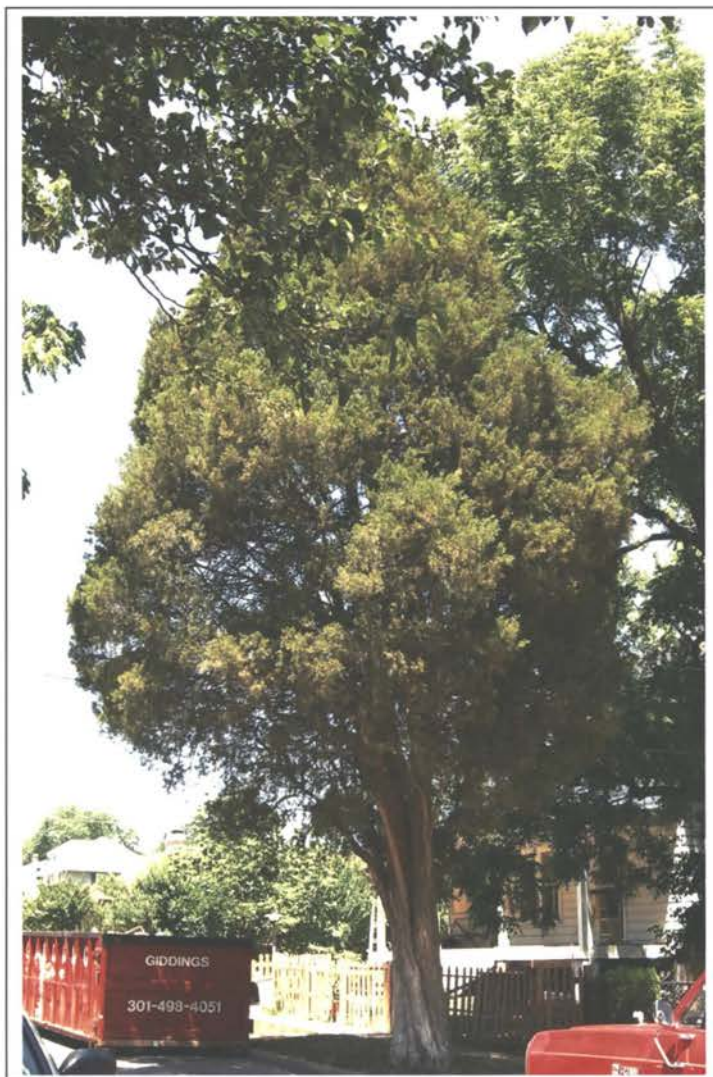
Black Oak
Quercus velutina
Height 75'-100'
Spread 75'-100'

Chain Bridge Project – Overstory Trees



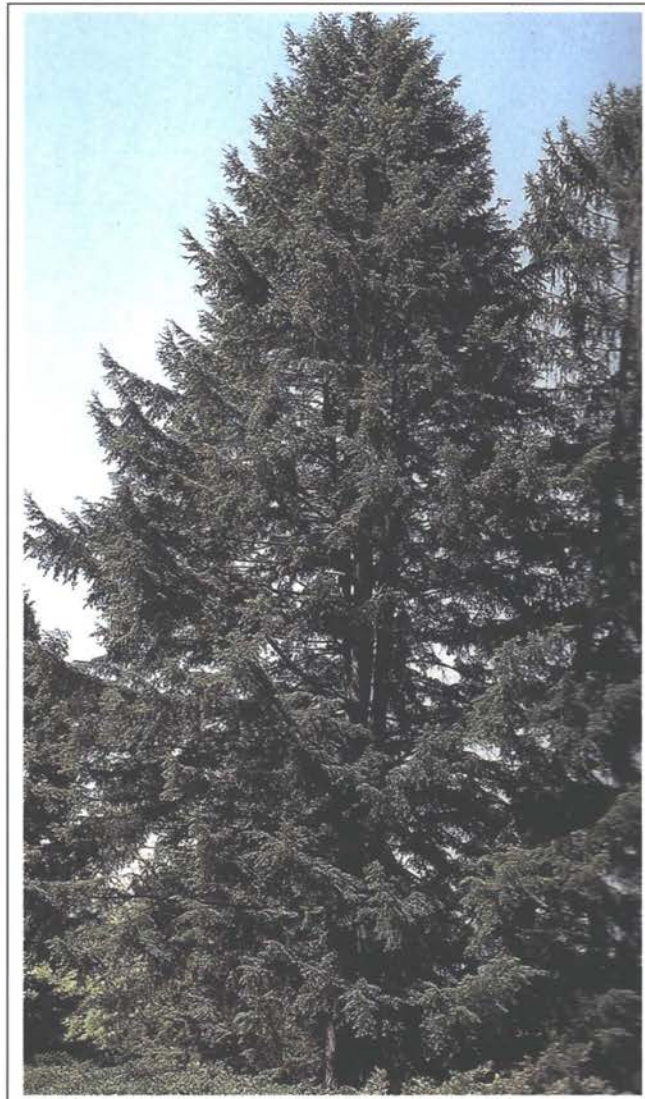
Cryptomeria
Cryptomeria japonica
Height 50'-60'
Spread 20'-30'

Chain Bridge Project – Overstory Trees



Eastern Red Cedar
Juniperus virginiana
Height 40' -50'
Spread 10' -20'

Chain Bridge Project – Overstory Trees



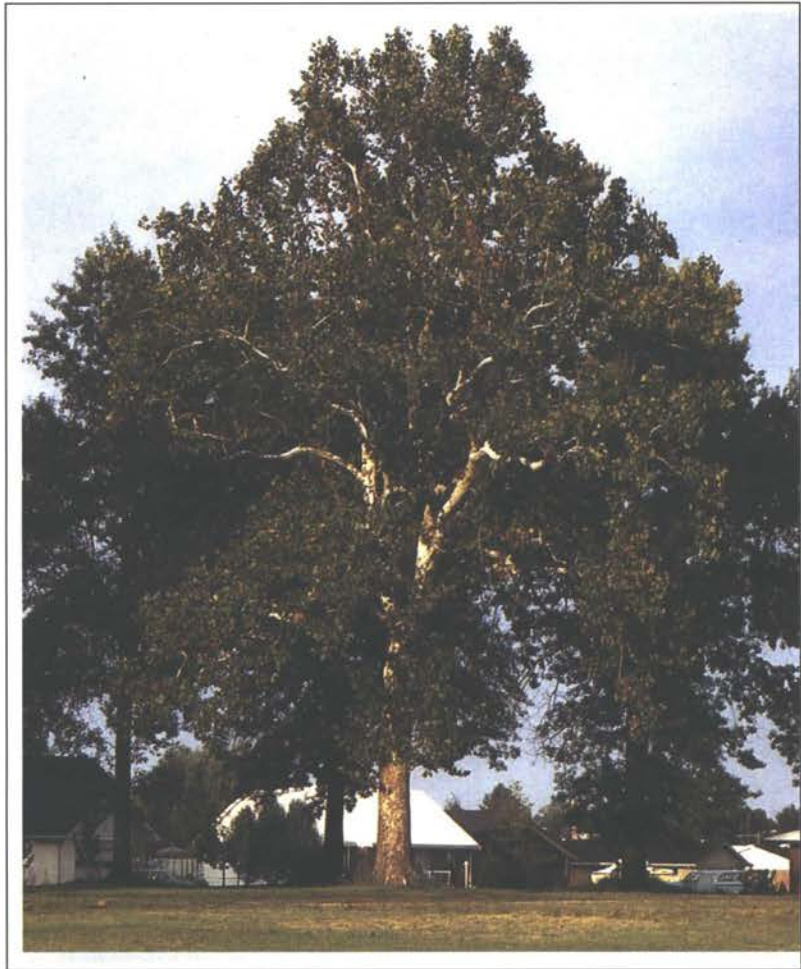
Hemlock
Tsuga canadensis
Height 40'-70'

Chain Bridge Project – Overstory Trees



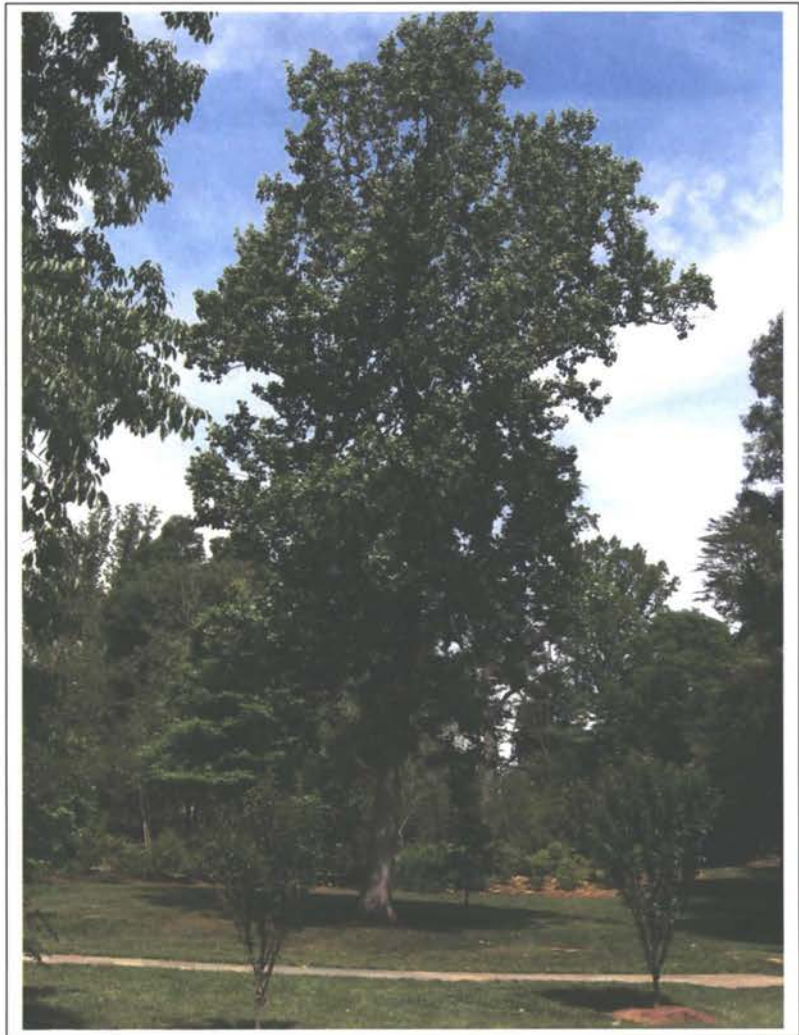
Red Oak
Quercus rubra
Height 60'-75'
Spread 60'-75'

Chain Bridge Project – Overstory Trees



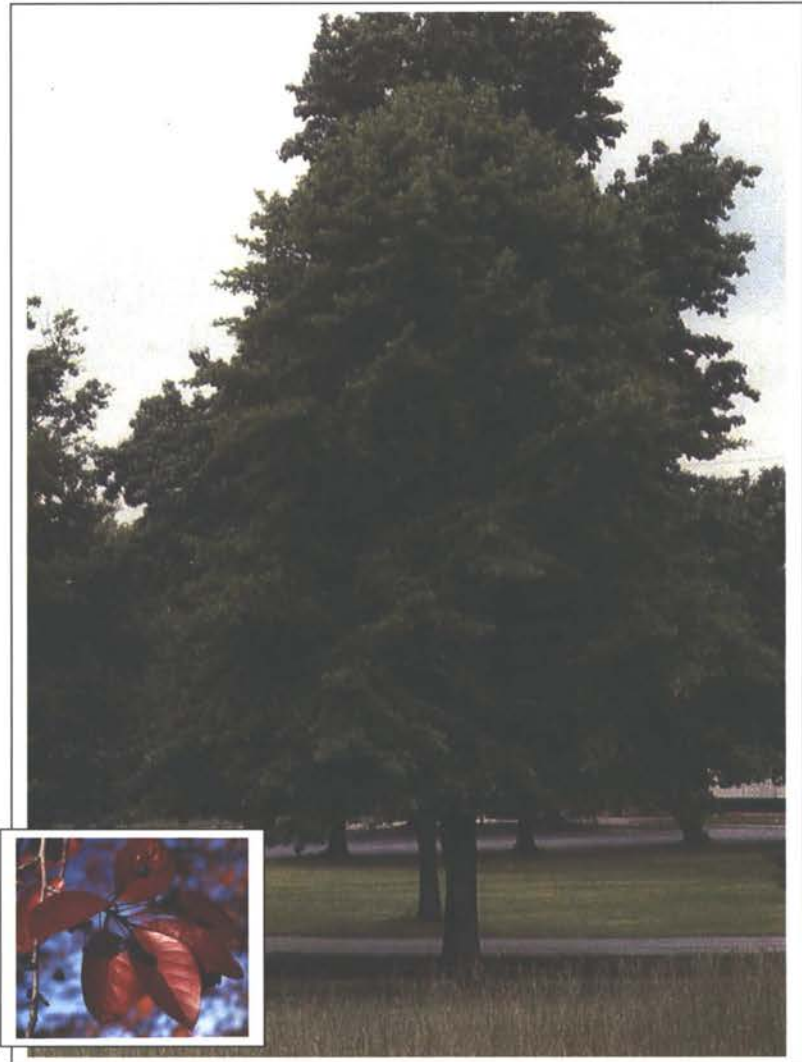
Sycamore
Platanus occidentalis
Height 75'-100'

Chain Bridge Project – Overstory Trees



Tulip Poplar
Liriodendron tulipifera
Height 30' -50'
Spread 20' -30'

Chain Bridge Project – Overstory Trees



Tupelo
Height 30'-50'
Spread 20'-30'

Understory Trees

Understory Trees

Native	Common Name	Botanical Name
	Chinese Dogwood	Cornus kousa
***	Florida Dogwood	Cornus florida
	Foster Holly	Ilex x attenuata 'Fosteri'
***	Hornbeam	Carpinus caroliniana
	Hornbeam 'Fastigiata'	Carpinus betulus 'Fastigiata'
	Japanese Lilac Tree	Syringa reticulata 'Ivory Silk'
	Japanese Snowbell	Styrax japonicus
	Japanese Stewartia	Stewartia pseudocamellia
***	Magnolia 'Edith Bogue'	Magnolia grandiflora 'Edith Bogue'
***	Magnolia 'Little Gem'	Magnolia grandiflora 'Little Gem'
***	Pagoda Dogwood	Cornus alternifolia
***	Red Buckeye	Aesculus pavia
***	Serviceberry	Amelanchier x grandiflora 'Autumn Brilliance'
***	Sweetbay Magnolia	Magnolia virginiana
***	Virginia Fringetree	Chionanthus virginicus
***	Witch Hazel	Hamamelis virginiana

Chain Bridge Project – Understory Trees



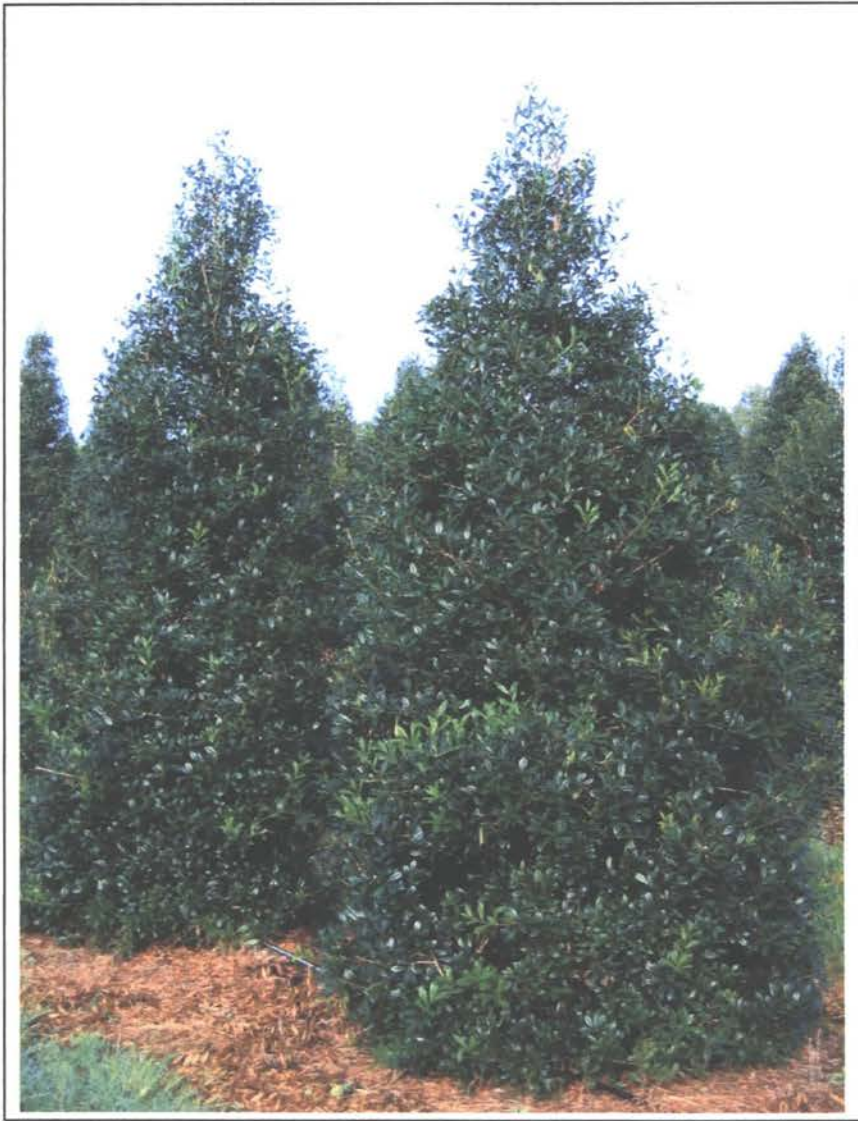
Chinese Dogwood
Cornus kousa
Height 20'-30'
Spread 20'-30'

Chain Bridge Project – Understory Trees



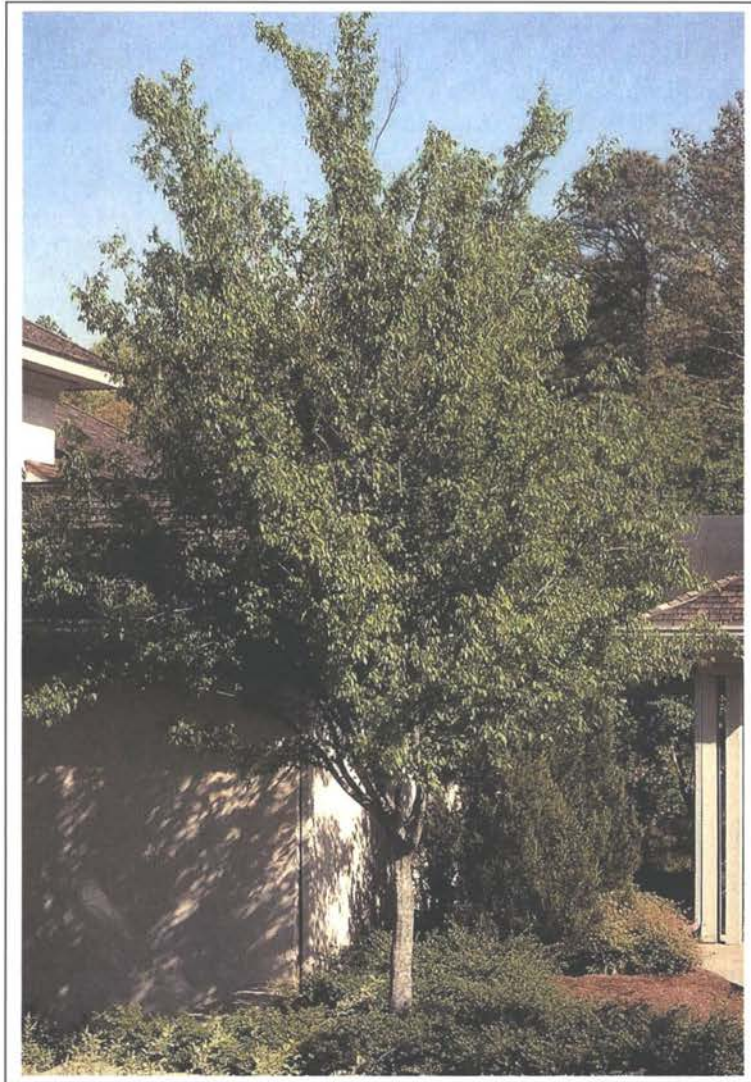
Flowering Dogwood
Cornus florida
Height 20'-30'
Spread 20'-30'

Chain Bridge Project – Understory Trees



Foster Holly
Ilex x attenuata 'Fosteri'
Height 20'-30'
Spread 15'-25'

Chain Bridge Project – Understory Trees



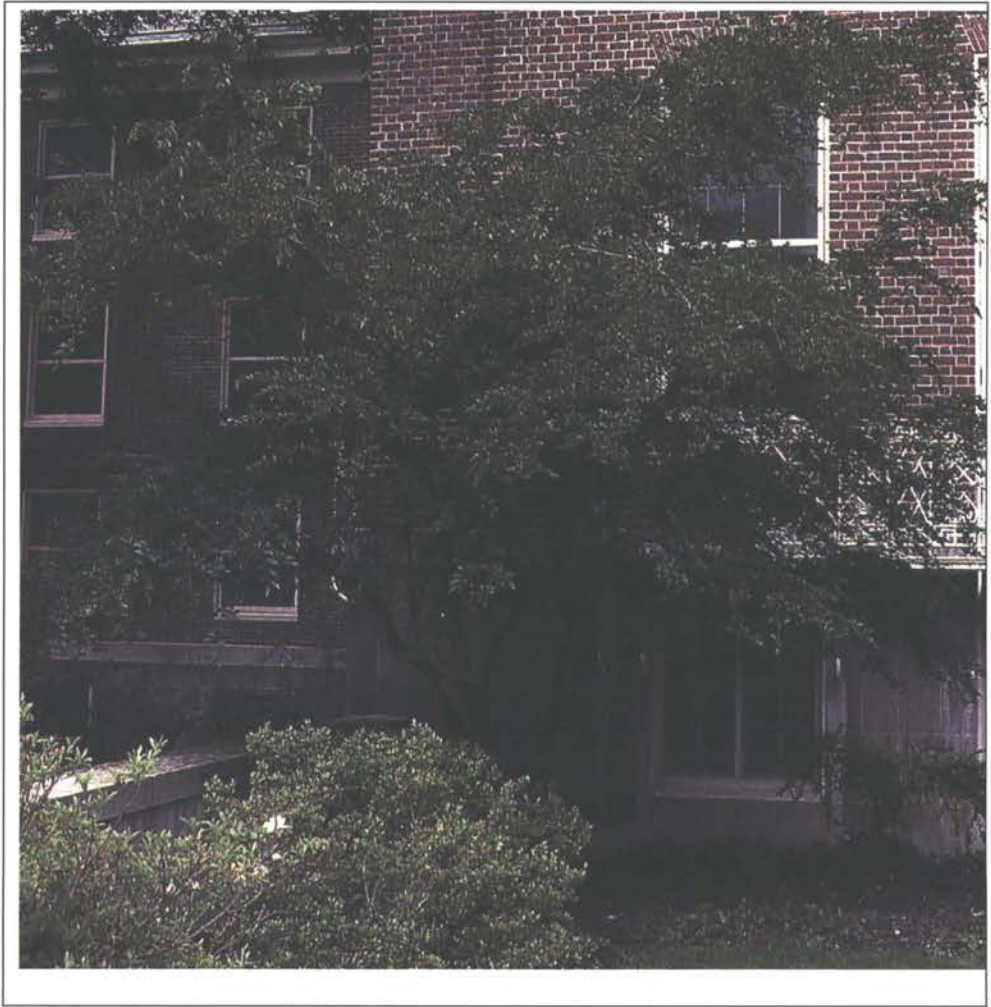
Hornbeam
Carpinus caroliniana
Height 20'-30'
Spread 20'-30'

Chain Bridge Project – Understory Trees



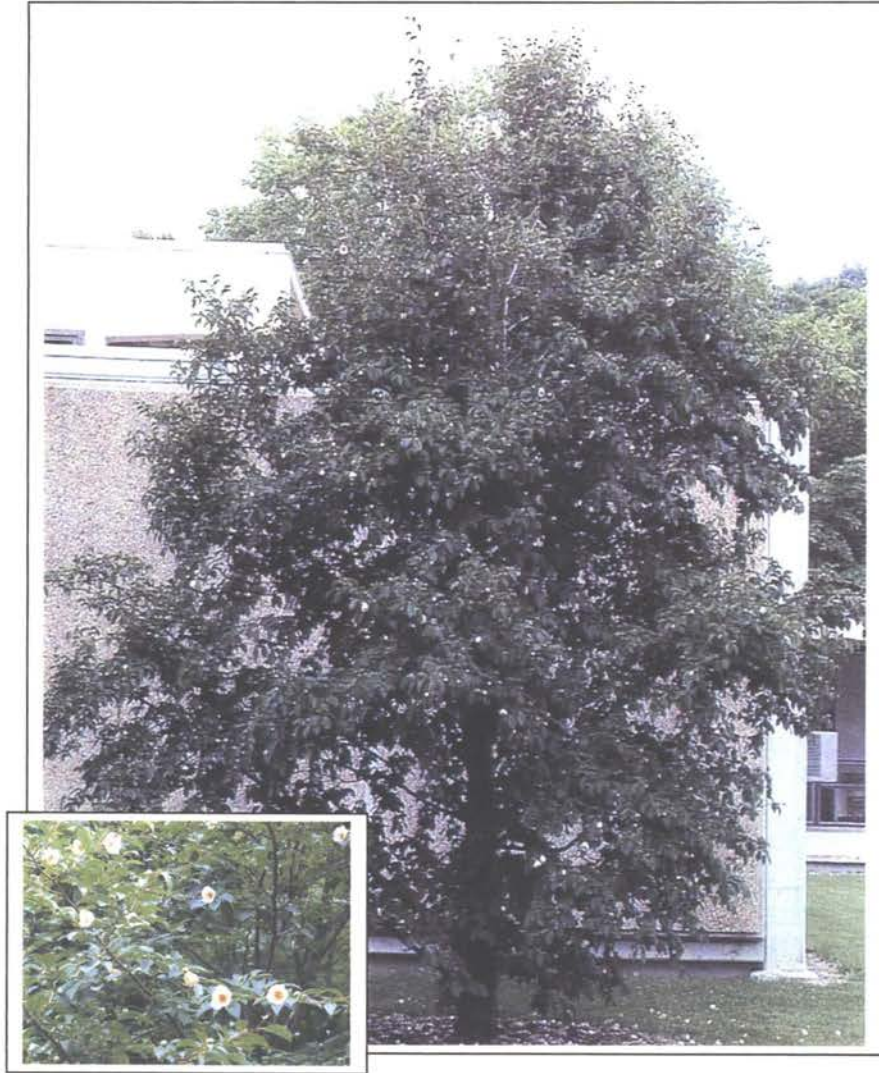
Hornbeam 'Fastigiata'
Carpinus betulus 'Fastigiata'
Height 20'-30'

Chain Bridge Project – Understory Trees



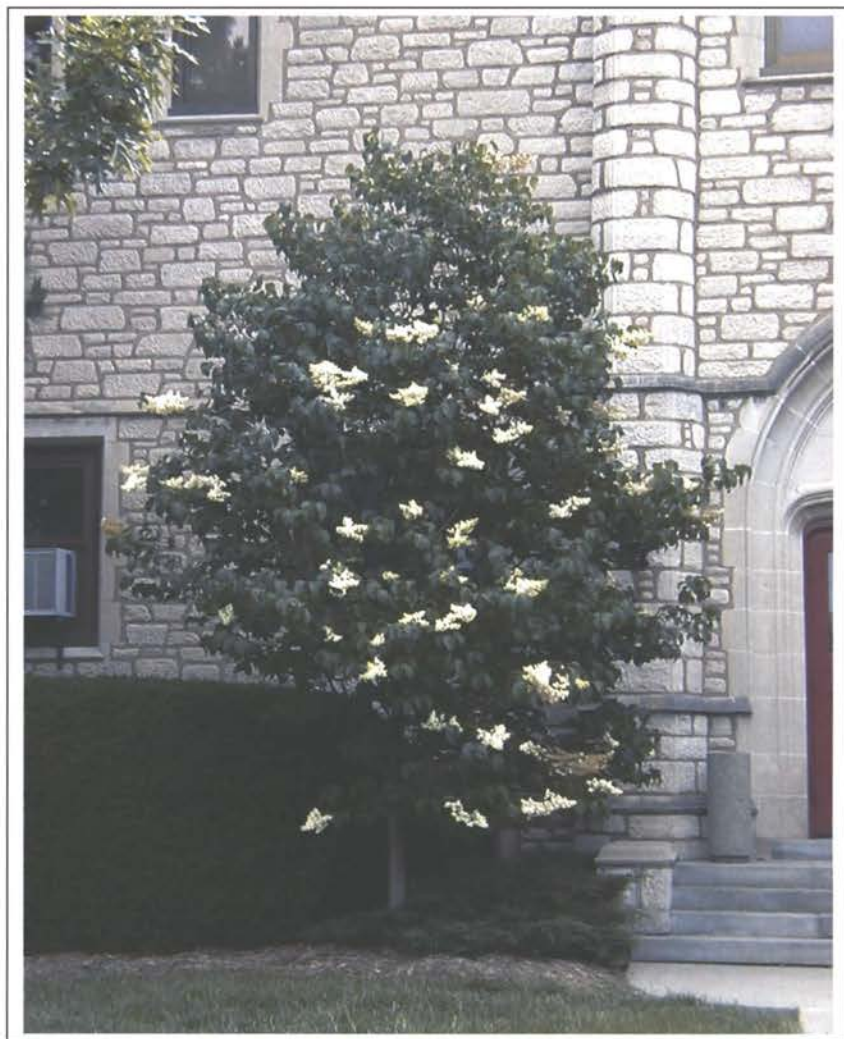
Japanese Snowbell
Styrax japonicus
Height 20'-25'
Spread 20'-25'

Chain Bridge Project – Understory Trees

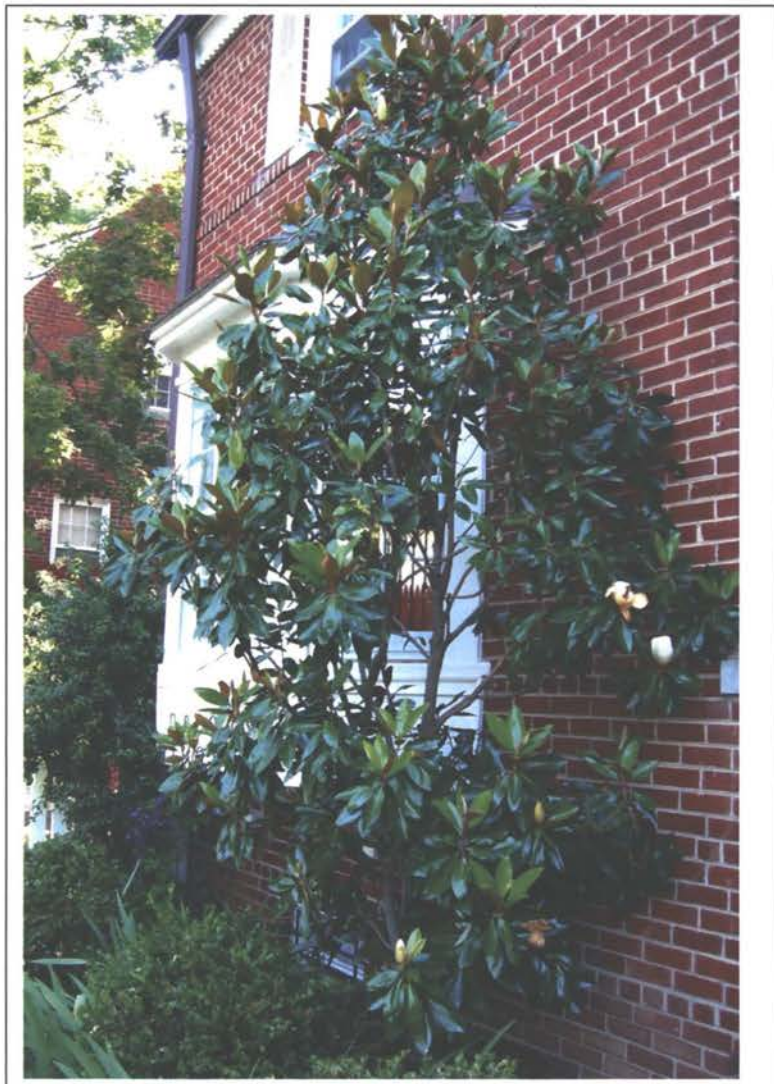


Japanese Stewartia
Stewartia pseudocamellia
Height 30'-40'
Spread 15'-20'

Chain Bridge Project – Understory Trees



Japanese Tree Lilac
Syringa reticulata
Height 20'-30'
Spread 15'-25'



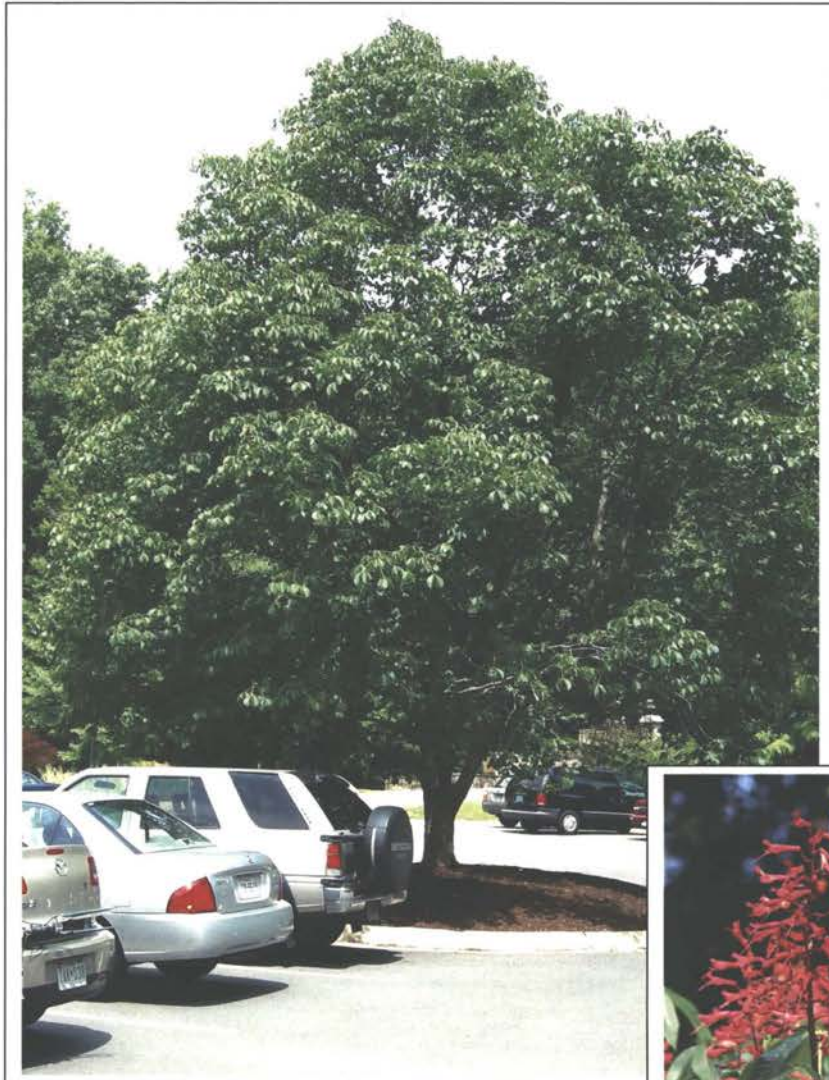
Magnolia 'Little Gem'
Magnolia grandiflora 'Little Gem'
Height 15'-20'
Spread 10'-15'

Chain Bridge Project – Understory Trees



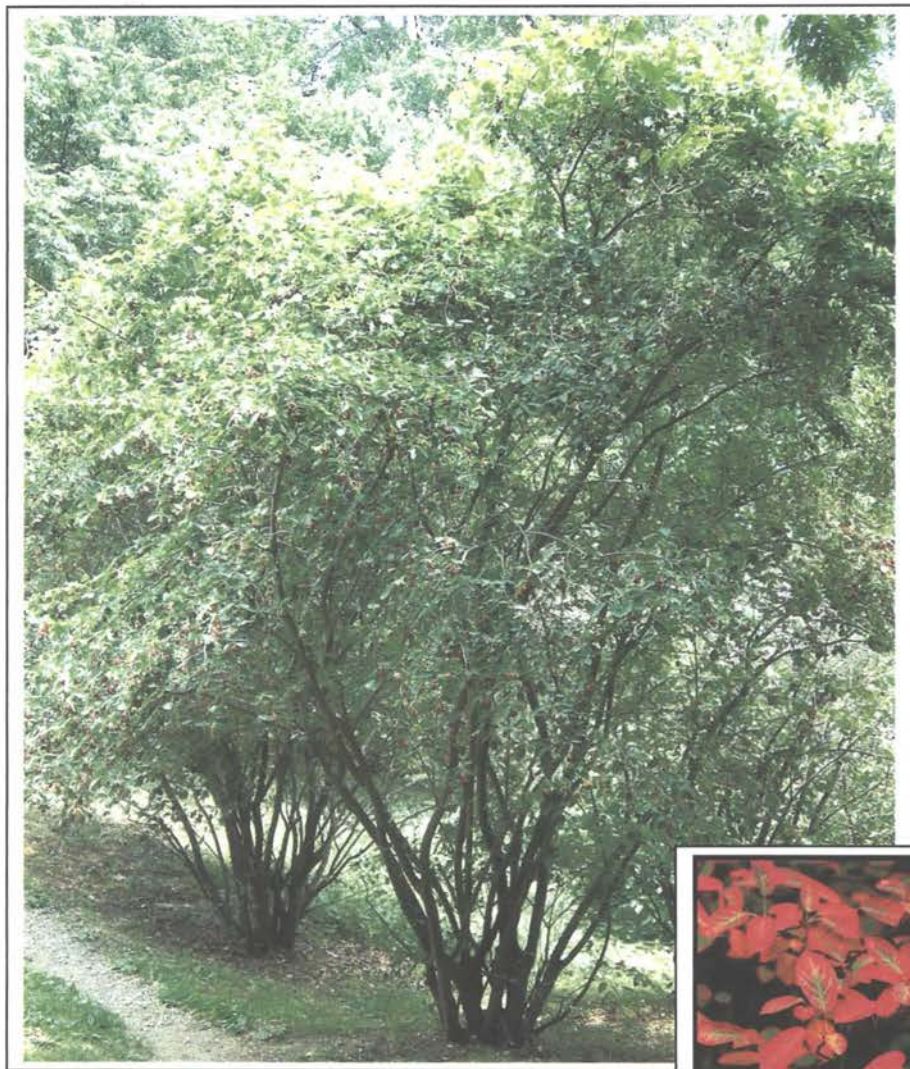
Pagoda Dogwood
Cornus alternifolia
Height 15'-25'
Spread 25'-30'

Chain Bridge Project – Understory Trees



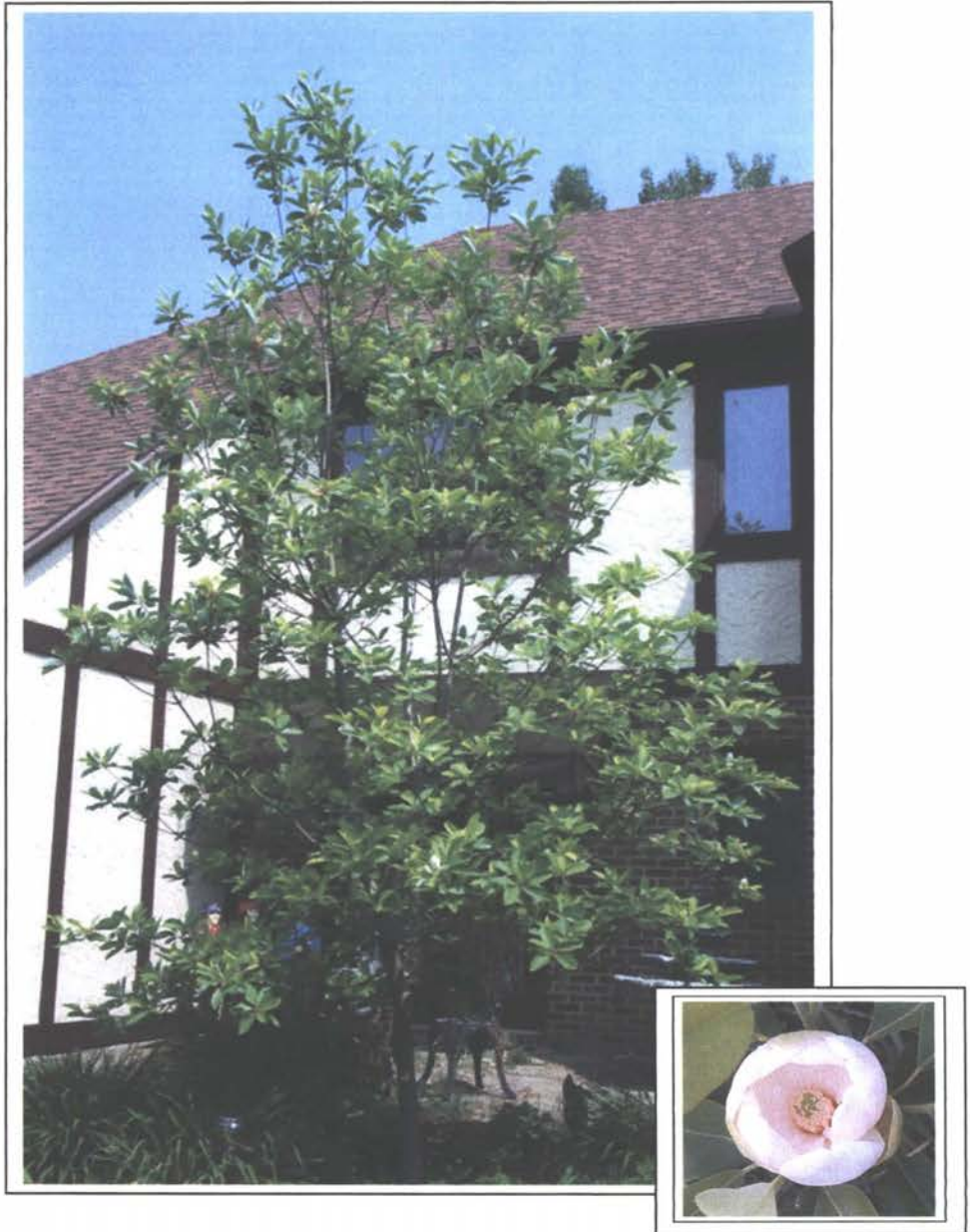
Red Buckeye
Aesculus pavia
Height 15'-20'
Spread 15'-20'

Chain Bridge Project – Understory Trees



Serviceberry
Amelanchier x grandiflora 'Autumn Brilliance'
Height 15'-25'
Spread 15'-20'

Chain Bridge Project – Understory Trees



Sweetbay Magnolia
Magnolia virginiana
Height 10'-20'
Spread 10'-20'

Chain Bridge Project – Understory Trees



Virginia Fringetree
Chionanthus virginicus
Height 12'-20'
Spread 12'-20'

Chain Bridge Project – Understory Trees



Witch Hazel
Hamamelis virginiana
Height 10'-15'
Spread 10-15'

Shrubs

Shrubs & Native Grasses

Native	Common Name	Botanical Name
***	Annabelle Hydrangea	Hydrangea arborescens 'Annabelle'
	Blue Princess Holly	Ilex x meserveae 'Blue Princess'
***	Bottlebrush Buckeye	Aesculus parviflora
	Boxwood	Buxus sempervirens (transplanted)
***	Buttonbush	Cephalanthus occidentalis
	Camellia	Camellia japonica
***	Carolina Allspice	Calycanthus floridus 'Athens'
	Cherry Laurel 'Otto Luykens'	Prunus laurocerasus 'Otto Luyken'
	Densiformis Yew	Taxus x media 'Densiformis'
	Deutzia Nikko	Deutzia gracilis 'Nikko'
	Dwarf Hinoki Cypress	Chamaecyparis obtusa 'Nana'
	English Weeping Yew	Taxus baccata 'Repandens'
***	Fothergilla	Fothergilla gardenii
***	Inkberry	Ilex glabra 'Shamrock'
	Japanese Skimmia	Skimmia japonica
	Koreanspice Viburnum	Viburnum carlesii

Native	Common Name	Botanical Name
***	Leucothoe	Leucothoe racemosa
	Lilac 'Miss Kim'	Syringa patula 'Miss Kim'
***	Mountain Laurel	Kalmia latifolia
***	Oakleaf Hydrangea	Hydrangea quercifolia
***	Oakleaf Hydrangea 'Sykes Dwarf'	Hydrangea quercifolia 'Sykes Dwarf'
	Pieris	Pieris japonica
***	Pinxterbloom	Rhodendron periclymenoides
	Prague Viburnum	Viburnum x pragense
***	Rosebay Rhododendron	Rhododendron maximum
***	Silky Dogwood	Cornus amomum
***	Spicebush	Lindera benzoin
***	Summersweet 'Hummingbird'	Clethra alnifolia 'Hummingbird'
	Vardar Valley Boxwood	Buxus sempervirens 'Vardar Valley'
***	Virginia Sweetspire 'Henry's Garnet'	Itea virginiana 'Henry's Garnet'
***	Virginia Sweetspire 'Little Henry'	Itea virginica 'Little Henry'
***	Winterthur Viburnum	Viburnum nudum 'Winterthur'

Native Grasses

***	Virginia Switchgrass	Panicum virgatum
***	Wild Oats	Chasmanthium latifolium

Chain Bridge Project – Shrubs



Annabelle Hydrangea
Hydrangea arborescens 'Annabelle'

Chain Bridge Project – Shrubs



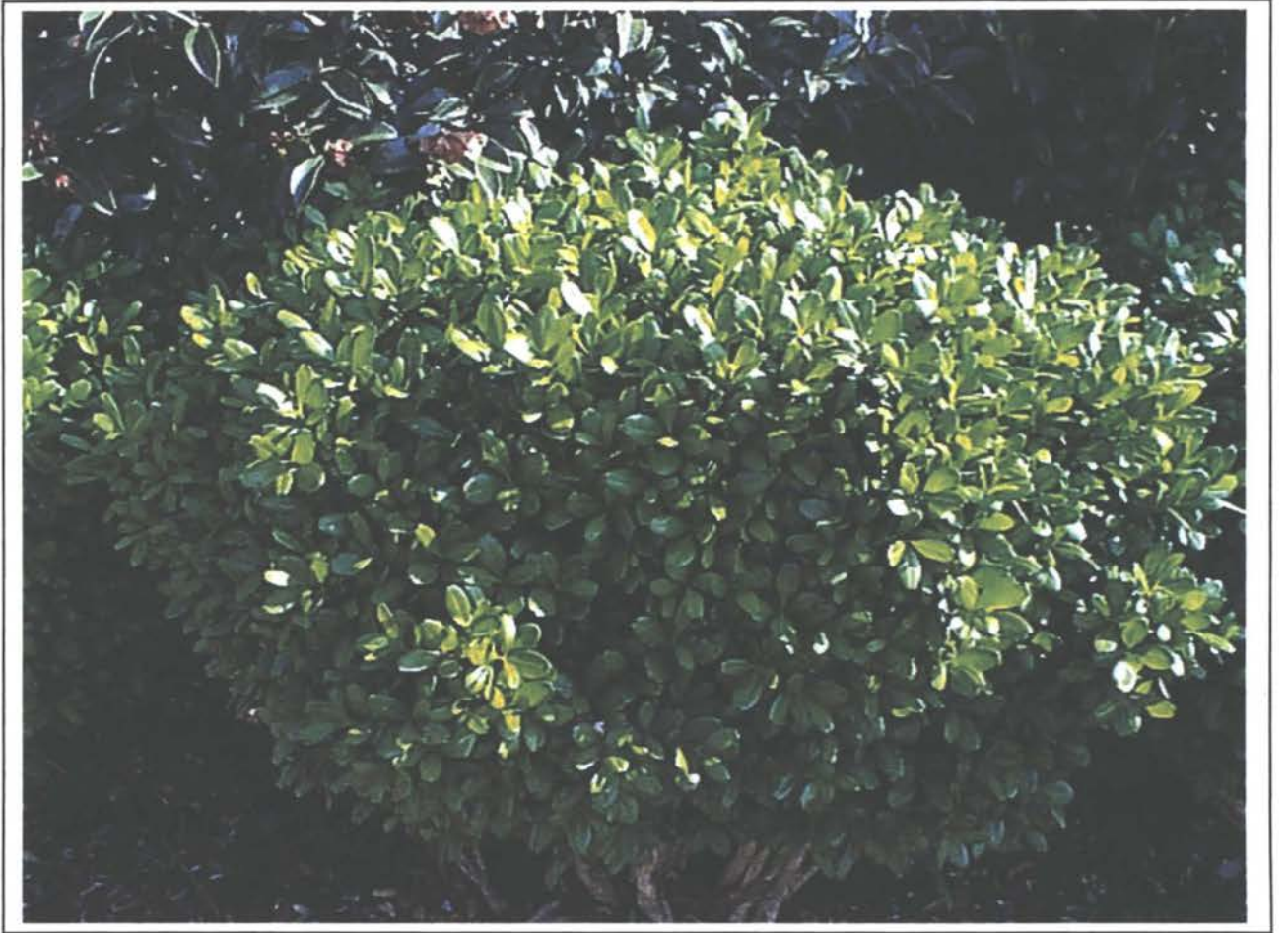
Blue Holly
Ilex x meserveae 'Blue Princess'

Chain Bridge Project – Shrubs



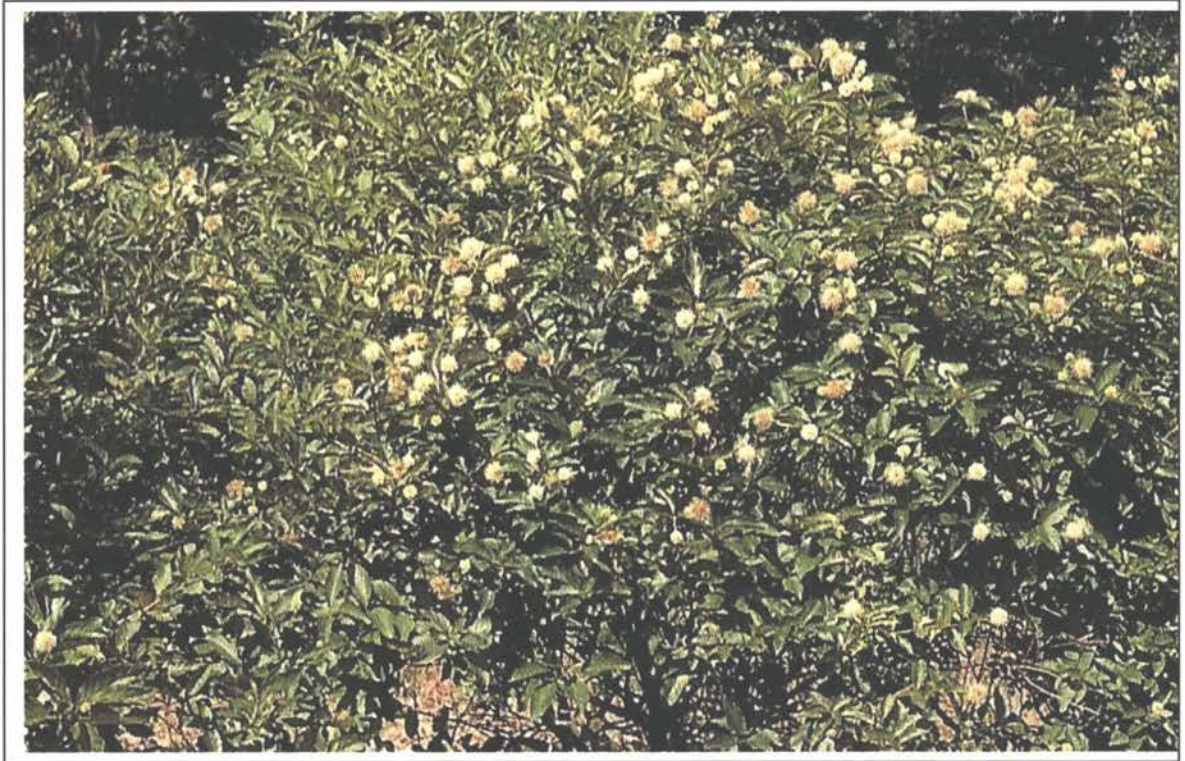
Bottlebrush Buckeye
Aesculus parviflora

Chain Bridge Project – Shrubs



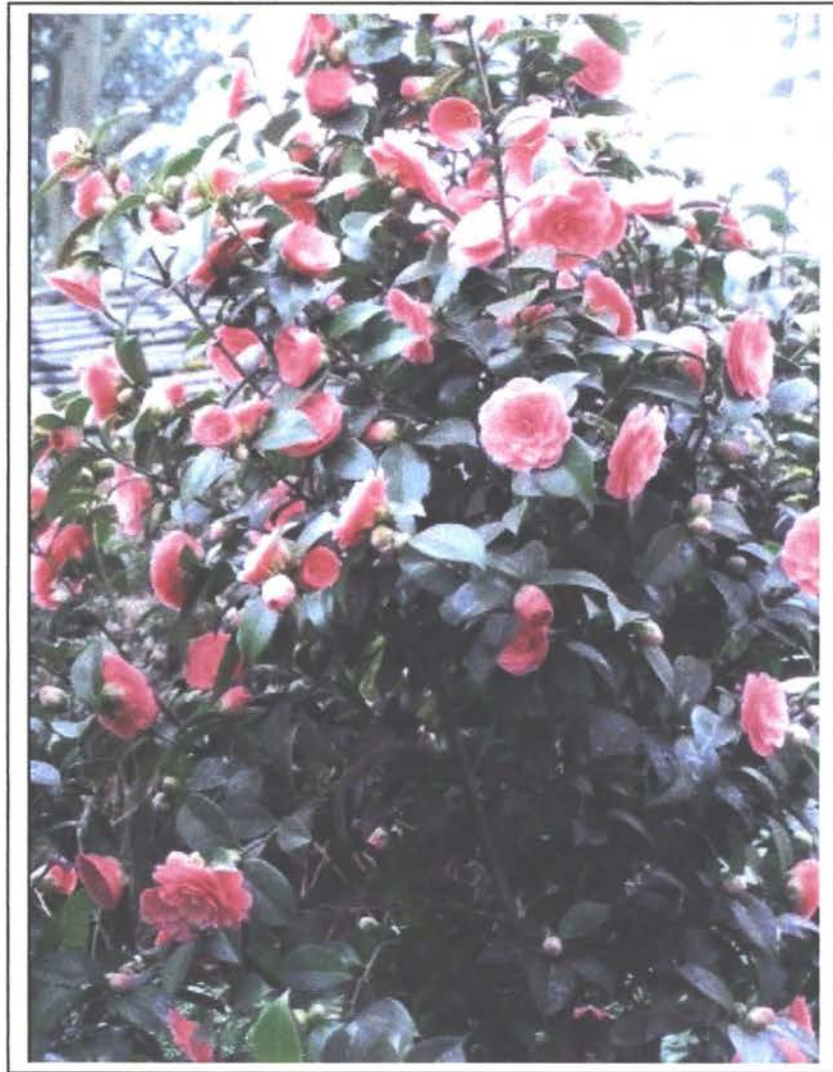
Boxwood
Buxus sempervirens

Chain Bridge Project – Shrubs



Buttonbush
Cephalanthus occidentalis

Chain Bridge Project – Shrubs



Camellia
Camellia japonica

Chain Bridge Project – Shrubs



Carolina Allspice
Calycanthus floridus

Chain Bridge Project – Shrubs



Cherry Laurel
Prunus laurocerasus 'Otto Luyken'

Chain Bridge Project – Shrubs



Densiformis Yew
Taxus x media 'Densiformis'



Deutzia Nikko
Deutzia gracilis 'Nikko.'

Chain Bridge Project – Shrubs



Dwarf Hinoki Cypress
Chamaecyparis obtusa 'Nana'

Chain Bridge Project – Shrubs



English Weeping Yew
Taxus baccata 'Repandens'

Chain Bridge Project – Shrubs



Fothergilla
Fothergilla gardenii

Chain Bridge Project – Shrubs



Inkberry Holly
Ilex glabra 'Shamrock'

Chain Bridge Project – Shrubs



Japanese Skimmia
Skimmia japonica



Koreanspice Viburnum
Viburnum carlesii



Leucothoe
Leucothoe racemosa



Lilac 'Miss Kim'
Syringa patula 'Miss Kim'

Chain Bridge Project – Shrubs



Mountain Laurel
Kalmia latifolia

Chain Bridge Project – Shrubs



Oakleaf Hydrangea
Hydrangea quercifolia