Median Planting Plan
Staunton I-81/Route 250

December 2004
Prepared for the
City of Staunton

community design
assistance center
College of Architecture and Urban Studies
Virginia Polytechnic Institute and State University

The Community Design Assistance Center (CDAC) is an outreach of the College of Architecture and Urban Studies and Virginia Tech that assists communities, neighborhood groups and non-profit organizations in improving the natural and built environments through design, planning, and research. Through the integration of the learning and working environment, the Center will execute projects that link instruction and research and share its knowledge base with the general public.

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Acknowledgements

The Community Design Assistance Center would like to acknowledge the following individuals for lending their time and expertise to the development of these conceptual designs:

Holly Chichester, Horticulturist, City of Staunton
John Sandridge, Engineering Tech 3 - Permits, VDOT
Scott Nye, Roadside Manager, VDOT

Funding for this project was provided through a grant from the Virginia Department of Forestry grant.

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Project Description

With the desire to utilize grant monies to create a landscape design for the I-81/Route 250 interchange, the City of Staunton's Horticulture Department contacted the Community Design Assistance Center (CDAC) to prepare a design that will provide a gateway into the City and help blend the area with the rest of the City. CDAC worked with Holly Chichester, Staunton Horticulturist, to develop conceptual planting plans and plant lists that fit Staunton's needs and met VDOT requirements for central and side median plantings adjacent to Route 250 and I-81.

Map showing where the study area is located in the City of Staunton

The study area along Route 250 includes side medians, a central median along Route 250, triangular medians, and the I-81 side medians adjacent to the on and off ramps.

This picture shows the triangular medians and I-81 side medians within the study area

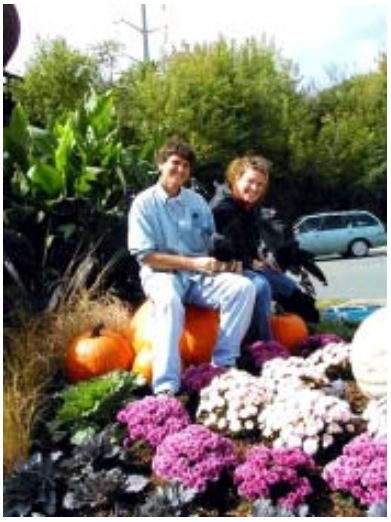
State context map

Horticulture in Staunton

"The people of Staunton love Horticulture. They project their green spaces and are constantly looking for ways to enhance them. Over the last few years, the City has developed and begun implementation of a Landscape Master Plan. Including all entryways into the city and the greenspaces within, the Master Plan is geared toward creating a sense of color and continuity. Once completed, the City's landscape areas will include the restoration of traffic islands, park entrances, greenways and tree plantings through the City and its parks."[1]

dig it.
STAUNTON HORTICULTURE

Staunton's Horticulture department, led by Staunton Horticulturist Holly Chichester, handles the technical care and improvement of public grounds, making sure each area has a stand-out display of color, texture, and movement. Her efforts are not going unnoticed. The City of Staunton received a 2004 Keep Virginia Beautiful Award for its display of flowers near the underpass on Greenville Avenue. At an October 20th ceremony in Richmond, Staunton was honored with a first place award under the organization's Landscape Excellence Awards Program - Municipal Horticulture category.



Holly Chichester (r) and Terry Bonner, Horticulture Assistant for the City

The CDAC landscape design for the I-81/Route 250 interchange falls right in line with the goals of the City's Landscape Master Plan. It provides a site specific plan that will add color and continuity to one of the entrances to Staunton.

Flowers near the Greenville Avenue underpass

"Trees are the lungs, water filters, and air conditioners of our cities. Many research and demonstration projects over the last decade have proven effective in cleaning the air, purifying surface water, and cooling urban heat islands."
—from the American Forests website, www.americanforests.com

[1]Taken from the script for *Staunton CityGreen,* a video developed by Holly Chichester

Design Process

The CDAC team began the project with an introductory meeting with Staunton Horticulturist Holly Chichester. Holly described her vision and goals for the project to the CDAC team, taking them to the study area. She also gave the team a tour of Staunton's plantings maintained by the City.

The team developed a base map for the project and researched examples of exceptional highway plantings. The CDAC team also conducted a site analysis of the area and used this information as well as the input given to the team by Holly Chichester to develop three preliminary conceptual plans.

On August 13th, 2004 the CDAC team met with Holly Chichester to discuss the three preliminary conceptual plans for the Route 250/I-81 plantings. Holly and the CDAC team discussed both the landscape plant palette and designs. The CDAC team used the feedback received from Holly to refine the plans into a single final design.

The CDAC team presented the final conceptual design to Staunton's City Council on September 23rd, 2004. A few minor adjustments were made to the final plan based on feedback and restrictions that Holly Chichester received from VDOT after the final presentation. This final supporting report was prepared to document the design process and highlight the design concept and planting plan.

Holly Chichester (r) takes the CDAC team out to the study area on the initial site visit.

CDAC team member conducts a site analysis of the study area.

CDAC staff review conceptual alternatives.

Brian Wolfe presents the final conceptual design to City Staff.

Site Inventory and Analysis

The CDAC team spent multiple hours in the field examining the site conditions for this project. The team divided the project into four focus areas: Route 250 Central Median, Route 250 Side Medians, Triangular Medians, and I-81 Ramp Medians. The areas were evaluated, looking at aspects such as slope, soils, existing vegetation, site lines, and design opportunities.

With the exception of the southern Route 250 Side Median (area 2b), all areas within the site receive sufficient sunlight throughout the day. As a north facing slope with several large trees behind it, area 2b is more limited in the amount of sunlight it receives which may influence plant selection. All information pertaining to soils was obtained from the USGS Augusta County Soil Survey. Each focus area is described below.

Route 250 Central Median (area 1)
The central median strip is approximately 600 feet long by 40 feet wide with a significant drainage swale down the center, which is three to four feet below the grade of the road surface. Standing surface water was present in this swale at the time of the site visit. Soil surveys indicate that the median contains a combination of Edom Silt Loam and Chilhowie Silty Clam Loam soils, both of which are characterized by slow water permeability and pH levels ranging from strongly acidic to moderately alkaline. The primary design consideration for this section is to improve the aesthetics of the drainage swale without obstructing its flow and while maintaining appropriate site lines near the two intersections. Water tolerant perennials and shrubs are most appropriate.

Route 250 Side Medians (areas 2a & 2b)
The north and south sides of Route 250 both contain slopes over 15%, which makes water runoff and erosion a significant issue. Minimizing exposed soil through the use of groundcover, perennials, grasses, or shrubs is an important design consideration. Soils in these areas are similar to those in the central median; however, the severe slope and slow permeability makes available water low. Pine trees are well suited to these soils. Despite constraints due to slope, these areas present the best opportunity to greet motorists as they enter or leave Staunton. A more formalized landscape may therefore be most appropriate.

Focus area context map

CDAC team member Brian Wolfe looks at the slope for area 2.

Route 250 Central Median (1)

Route 250 Side Median (2a)

Triangular Medians (area 3)

The median triangles are perhaps the least significant of all the areas on the site; however, they do serve an important role in tying the landscape together. The biggest concern in these areas is maintaining site lines for motorists merging into lanes. Small shrubs or perennials are therefore the most suitable plants for this area. Soils in this area are again primarily Edom Silt Loam, which, due to slow permeability and the flatness of the area, make available water high. Therefore, water tolerant plants are best suited for this location.

I-81 Ramp Medians (areas 4a & 4b)

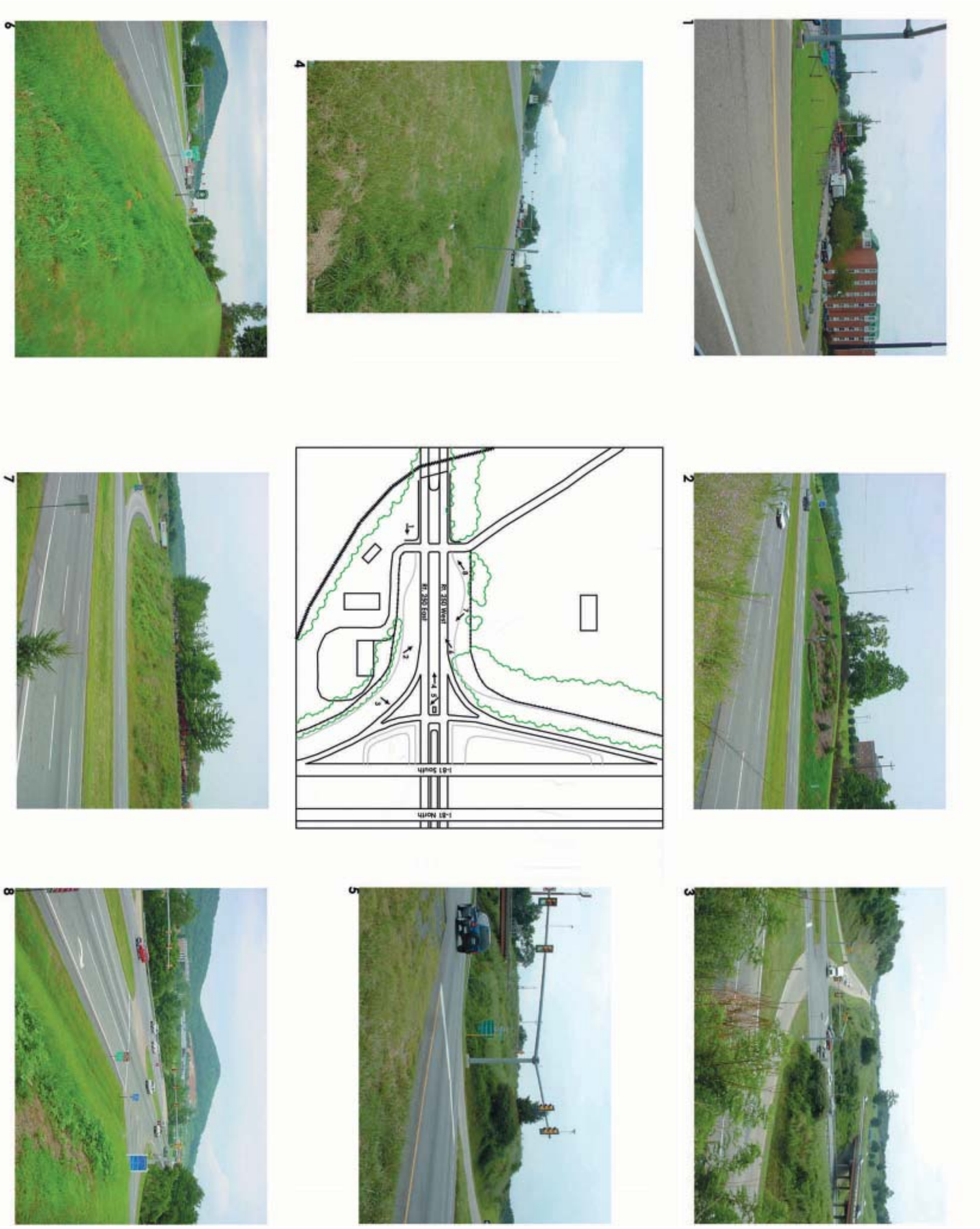
The two areas adjacent to I-81 are the largest spaces on the site and represent numerous challenges in terms of maintenance. These areas both contain fairly flat tops with severely sloping sides. The soil is Weikert Berks Shaley Silt Loam, which is characterized as being well drained with rapid permeability and severe erosion hazard, and is best suited for pines and hardwoods. These sites currently appear neglected and are dominated by weeds and rapidly spreading shrubs. The design goal for these areas is to improve the overall appearance while minimizing maintenance needs. This can be done with the use of a variety of trees, shrubs, and grasses that work well in masses and under adverse conditions.

Central Median (1) and Route 250 Side Median (2b)

Triangular Medians (3) and I-81 Side Median (4a)

Triangular Median (3) and I-81 Side Median (4b)

Triangular Median (3) and I-81 Side Medians (4a and 4b)



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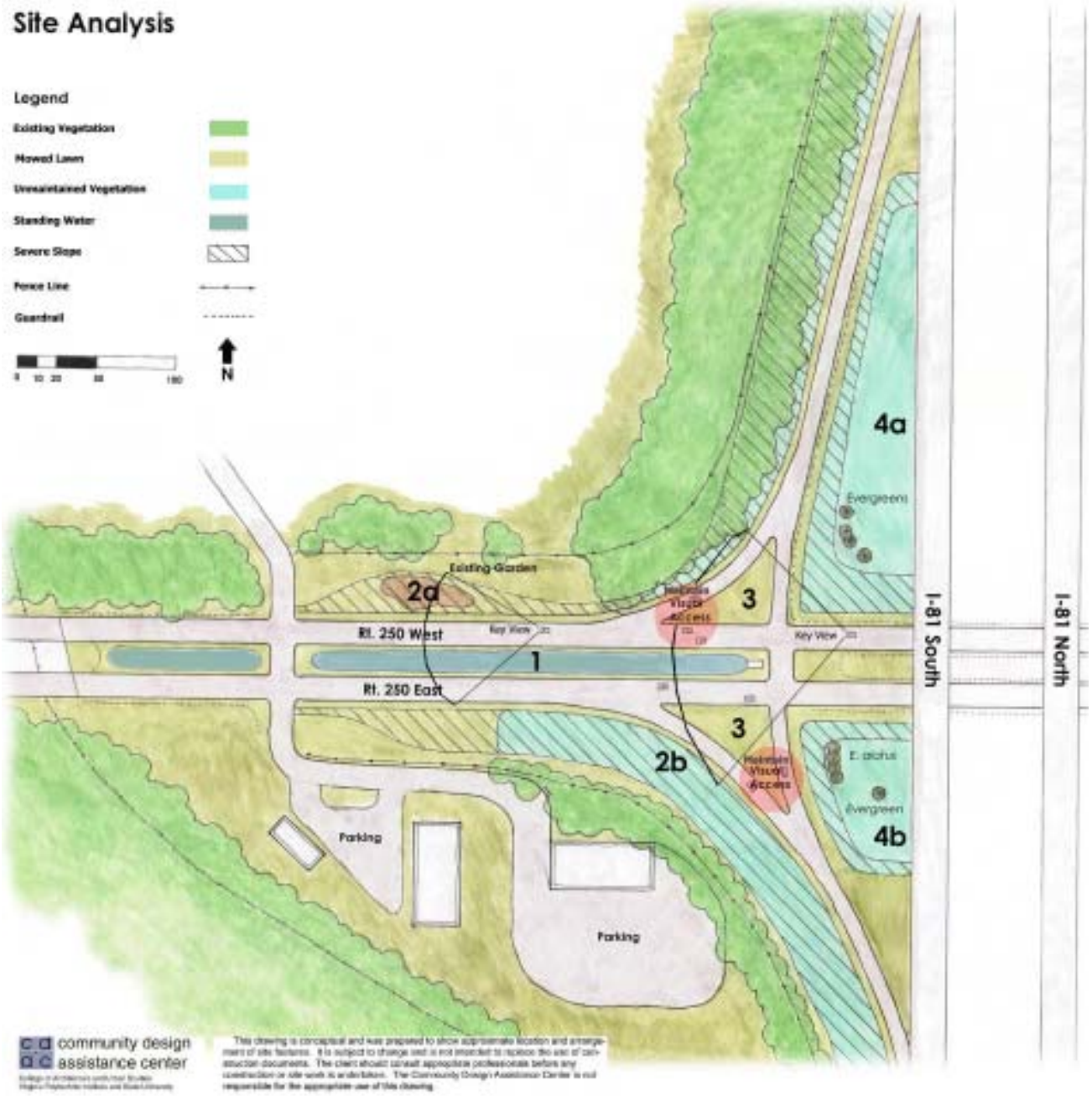
Existing Conditions

Pictoral Inventory


Site Analysis
Legend
Existing Vegetation
Mowed Lawn
Unmaintained Vegetation
Standing Water
Severe Slope
Fence Line
Guardrail
N
4a
Evergreen
Existing Garden
2a
3
Rt. 250 West
Key View
1
Rt. 250 East
I-81 South
I-81 North
2b
E. alatus
Evergreen
4b
Parking
Parking
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Preliminary Conceptual Designs

After completing the site analysis and gathering feedback from Staunton Horticulturist Holly Chichester, the CDAC design team prepared three conceptual designs for the four focus areas in the Route 250/I-81 interchange. The concepts were presented to Holly Chichester for review and comment. The CDAC team used these comments to refine the concepts into a single final design.

CDAC team member Brian Wolfe presents the design concepts to Holly Chichester.

The three preliminary conceptual designs share many common attributes, including general configuration, design concerns and strategies, and plant selection. The general concept behind the three alternatives is elegant yet simple. Both I-81 and Route 250 are high traffic roads with travelers moving at high speeds. Intricate gardens were therefore not appropriate. Large groupings of a few select species provide color and aesthetic appeal while being simple enough to be appreciated by passing motorists. Species were selected based on seasonal color, size, and culture, with an emphasis on plants native to the area. Maintenance was also a consideration as large plant groupings will be easier to mow around then more complex configurations.

The designs vary in terms of specific plant placement and grouping, offering three visual alternatives. The following description of each of the focus areas pertains to all three design concepts. Design variations can be seen in the 11x17 pullouts of the designs on the proceeding pages.

Route 250 Central Median Plantings

Water and road pollutants are the primary concern for the center median as this area contains a drainage swale down its center. Plants that can tolerate these conditions have been selected to mask the swale without obstructing its flow. Water tolerant shrubs, perennials, and grasses such as *Cornus sericea*, *Ilex verticillata*, *Aronia arbutifolia*, *Hemerocallis*, and *Typha latifolia* are recommended.

Route 250 Side Plantings

Side plantings along Route 250 are arranged in a way that conforms to the shape of the land. Given the steepness of these areas, erosion and maintenance are a major concern. Plants have been placed to form tight groups to aid in erosion control. This type of design will also make the plantings more visible to passing motorists. Low maintenance grass or ground cover fill the steep areas between the tree plantings. Evergreen and ornamental tree plantings soften the edge of the hill while providing color and texture variation; perennial plantings provide aesthetic appeal while conforming to the shape of the land. Perennial

plants recommended for this area include *Echinacea purpurea*, *Heuchera micrantha*, *Phlox divaricata*, *Rudbeckia fulgida*, *Rudbeckia hirta*, *Sedum kamtschaticum*, *Sedum Leucanthemum*, *Phlox subulata*, and *Veronica peduncularis*. *Amelanchier arborea*, *Cornus florida*, and *Chionanthus virginicus* are the recommended small ornamental trees.

Triangular Median Plantings

The planting scheme for the triangular median areas is intended to tie the less formal I-81 median plantings to the more formal Route 250 planting areas. This will be done primarily through plant selection. Only low growing plants should be used however, as obstruction of traffic views is a concern. Plants recommended for the triangular medians include low growing shrubs such as *Juniperus*, *Euonymus alatus*, and *Berberis thunbergii*. Recommended perennials include *Aster nova-angliae*, *Asclepia tuberosa*, *Coreopsis lanceolata*, *Heliopsis helianthoides*, and *Veronia*.

I-81 Median Plantings

Given the extensive size of these areas and the difficulty of maintaining them, the design strategy for the I-81 median plantings is to create masses of similar species of plants and place them in a way that maximizes their aesthetic appeal. This will help minimize cost and maintenance needs. Considering the speed of passing motorists and the location of these plantings, it is logical to conclude that intricate detail would not be frequently noticed or appreciated. Being as such, plants of lesser landscape value can be incorporated into the planting plan for this area to help minimize costs. Selective use of a few ornamental trees will add desired color and variety to the area.

Clusters of small ornamental trees provide variations in color. Existing vegetation fills in between the planting clusters. Groupings of shrubs and understory plants help to create size variations in the plantings. Wildflower plantings provide color with minimal maintenance needs. Masses of medium to large deciduous trees provide a variety of color and texture. Masses of small to large evergreen trees provide year round color.

Cornus florida, *Cercis canadensis*, and Amelanchier arborea are the recommended small ornamental trees. *Robinia pseudoacacia* and *Juglans nigra* are the recommended hardwoods. *Juniperus virginiana*, *Picea pungens*, and *Picea orientalis* are the recommended evergreen trees. Recommended perennials include *Aster nova-angliae*, *Asclepia tuberosa*, *Coreopsis lanceolata*, *Heliopsis helianthoides*, and *Veronia*. *Euonymus alatus*, *Berberis thunbergii*, *Pieris floribunda*, and *Aronia arbutifolia* are the recommended evergreen shrubs.

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Preliminary Conceptual Design 1

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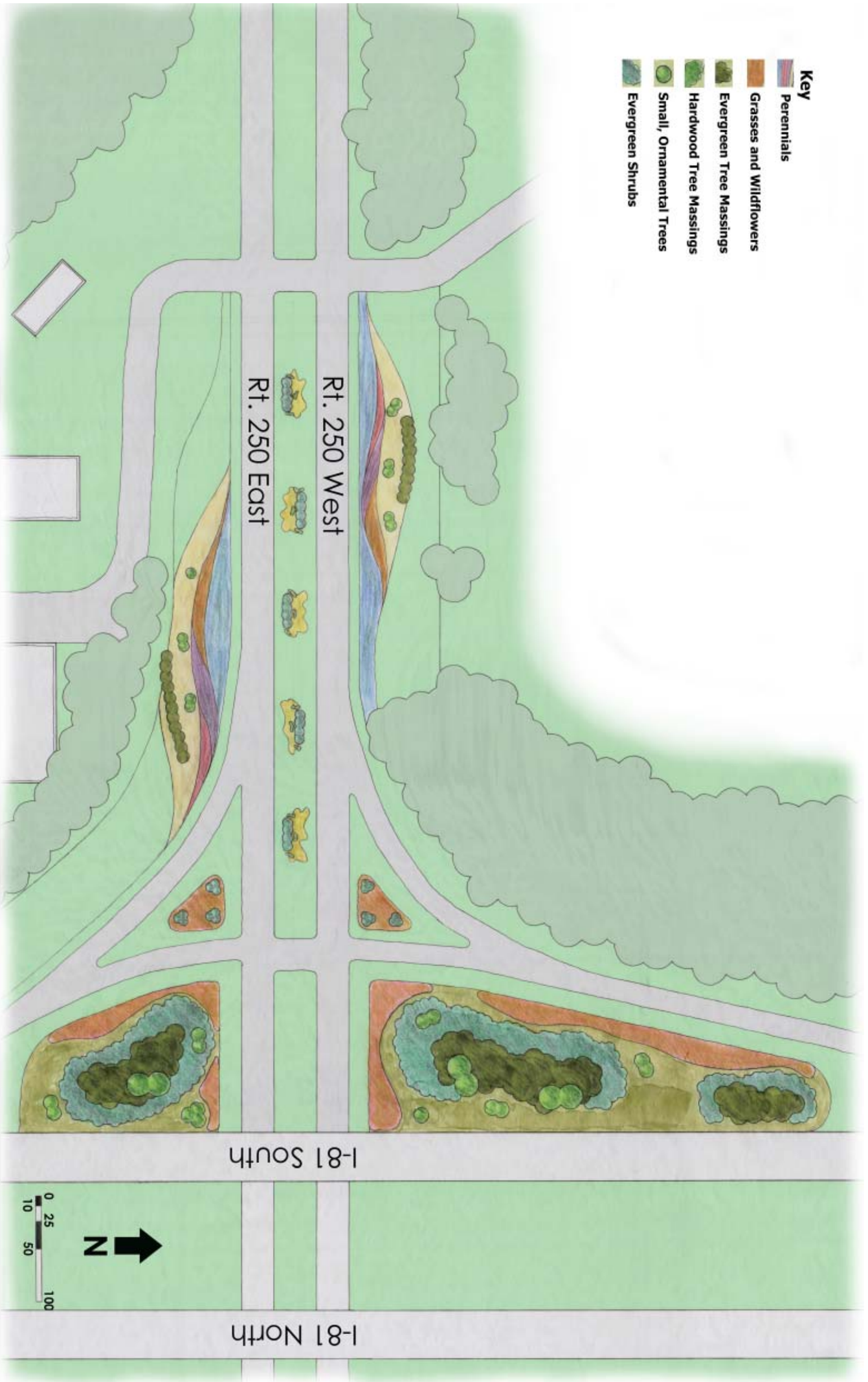

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Preliminary Conceptual Design 2

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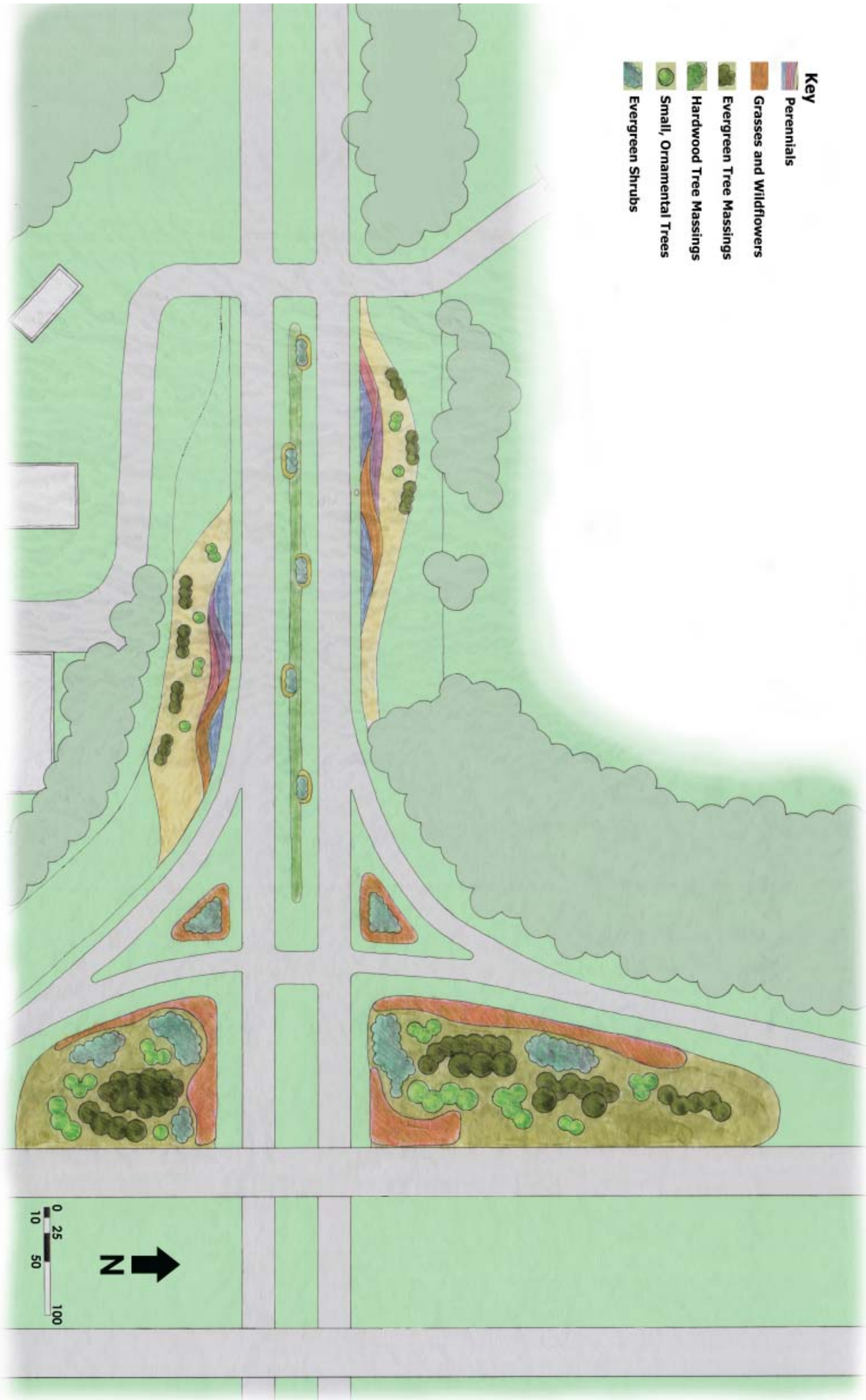

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Preliminary Conceptual Design 3

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Final Conceptual Design

The planting design in Preliminary Conceptual Design 1 emerged from the preliminary presentation as the preferred concept for the majority of the focus areas. Staunton Horticulturist Holly Chichester desired a blending of the triangular median focus area triangle in Preliminary Conceptual Designs 1 and 3.

CDAC team member Brian Wolfe describes the overall concept for the study area.

Holly also offered the design team some helpful feedback in regards to plant selection and placement. She proposed a reduction in the density of plantings for the Route 250 central median. She suggested replacing the specified Rudbeckia on the Route 250 side plantings with Speedwell. Groundhogs have notoriously devoured Rudbeckia in that area. She suggested seagreen juniper with sedum or rudbeckia in the middle for the triangular median plantings. Regarding the I-81 median plantings, Holly desired that only daffodils and/or poppies be planted in the areas designated for wildflowers (no multicolor flower mixes like cosmos). She also requested that the CDAC team clump the small ornamental and larger hardwood trees together in small mulched areas to make it easier for VDOT to mow and to protect the health of the trees. Holly approved of most all of the plants for this focus area with the exception of Robinia and Juglans nigra. Neither of these trees are to be planted.

Holly Chichester describes the study area and design process.

The CDAC team used this feedback to create one final conceptual master plan. Descriptions of each focus area described below and an 11x17 pullout drawing of the illustrative plan can be found following the descriptions.

CDAC team member Brian Wolfe explains the conceptual drawings.

Route 250 Central Median Plantings

The central median is the most formal element of the plan, as this area will serve as the entrance and exit to the town. This plan, while limited by VDOT requirements, features low growing evergreens placed at regular intervals along the median, with perennials to highlight the edges. The evergreens are placed in groups of two, staggered to maximize the aesthetic affect. The central swale will be kept clear so as not to interfere with storm runoff.

City Council members listen to the CDAC presentation.

Route 250 Side Plantings

The Route 250 side plantings are the most intricate, but still rely on large groupings of single plant species arranged in a flowing pattern. The intention of the flowing pattern is to soften the hard edges of the site while working with the natural flow of the land. Ornamental and evergreen trees placed along the upper edge frame the plantings while filling the large areas of open space. This plan is intended to

work with the plantings already present on the westbound side, with a similar plan being implemented on the eastbound side. The current planting did not succeed, partly due to the presence of a ground hog on site. The proposed plan therefore uses plants that are not commonly eaten by groundhogs.

Triangular Median Plantings

The triangular median designs were severely limited by VDOT requirements and simply consist of low growing evergreen clusters near the center to draw attention to the space.

I-81 Median Plantings

The I-81 median designs are placed in an informal pattern, with maximum intensity occurring at the intersection of Route 250. The design features large deciduous and evergreen trees along the top as a base, with groupings of smaller ornamental trees adding highlights around the sides. The corners on Route 250 are punctuated with clusters of *Euonymus alatus*, while the sides will be mass planted in wildflowers. The overall intention of this scheme was to add color and organization to the sites, while maintaining the simple natural patterns often found along highways.

All median areas will be unified by plant species used throughout the site. If successful, the plan will be appreciated by motorists without distracting them to the extent the safety is jeopardized.

Proposed Plant List

Rt. 250 Side Plantings
Cornus florida
Picea omorika
Imperata cylindrica
Sedum 'Autumn Joy'
Veronica peduncularis 'Georgia Blue'

Center Median
Cornus sericea
Hemerocalis
Typha latifolia

Trianglar Medians
Juniperus chinensis var. sargentii
Sedum kamtschaticum

I-81 Medians
Tilia cordata
Cercis canadensis
Amelanchier arborea
Juniperus virginiana
Juniperus chinensis 'Sea Green'
Euonymous alatus
Coreopsis tinutoria

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Final Illustrative Master Plan

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Planting Plan

As stated earlier, species for the median plantings were selected based on seasonal color, size, and culture, with an emphasis on plants native to the area. Maintenance was also a consideration as large plant groupings will be easier to mow around then more complex configurations. A full plant list for the conceptual design is listed on the following page. Planting plans for each focus area are also included in this section.

Central Median Planting Schedule

Symbol	Species	Common Name	Quantity	Planting Size	Notes
H	*Hemerocallis*	Daylily	700		
JC "B"	*Juniperus chinensis* 'San Jose'	Chinese Juniper	21		

Rt. 250 Side Planting Schedule - North

Symbol	Species	Common Name	Quantity	Planting Size	Notes
CF	*Cornus florida*	Flowering Dogwood	3		
IC	*Imperata cylindrica*	Japanese Bloodgrass	500		
PO	*Picea omorika*	Serbian Spruce	4		
SK	*Sedum* 'Autumn Joy'	Stone Crop	550		
VP	*Veronica peduncularis 'Georgia Blue'*	Speedwell	800		

Rt. 250 Side Planting Schedule - South

Symbol	Species	Common Name	Quantity	Planting Size	Notes
CF	*Cornus florida*	Flowering Dogwood	5		
IC	*Imperata cylindrica*	Japanese Bloodgrass	400		
PO	*Picea omorika*	Serbian Spruce	7		
SK	*Sedum* 'Autumn Joy'	Stone Crop	600		
VP	*Veronica peduncularis 'Georgia Blue'*	Speedwell	800		

Triangular Median Planting Schedule

Symbol	Species	Common Name	Quantity	Planting Size	Notes
JC "B"	*Juniperus chinensis* 'San Jose'	Chinese Juniper	6		

I-81 Median Planting Schedule - North

Symbol	Species	Common Name	Quantity	Planting Size	Notes
AA	*Amelanchier arborea*	Downy Serviceberry	6		
CC	*Cercis canadensis*	Redbud	3		
CT	*Coreopsis tinutoria*	Plains Coreopsis			
EA	*Euonymus alatus*	Burning Bush	3		
JC "A"	*Juniperus chinensis* 'Sea Green'	Sea Green Juniper	4		
JV	*Juniperus virginiana*	Eastern Redcedar	4		
TC	*Tilia cordata*	Little Leaf Linden	3		

I-81 Median Planting Schedule - South

Symbol	Species	Common Name	Quantity
AA	*Amelanchier arborea*	Downy Serviceberry	5
CC	*Cercis canadensis*	Redbud	2
CT	*Coreopsis tinutoria*	Plains Coreopsis	
EA	*Euonymus alatus*	Burning Bush	3
JC "A"	*Juniperus chinensis* 'Sea Green'	Sea Green Juniper	4
JV	*Juniperus virginiana*	Eastern Redcedar	2
TC	*Tilia cordata*	Little Leaf Linden	2

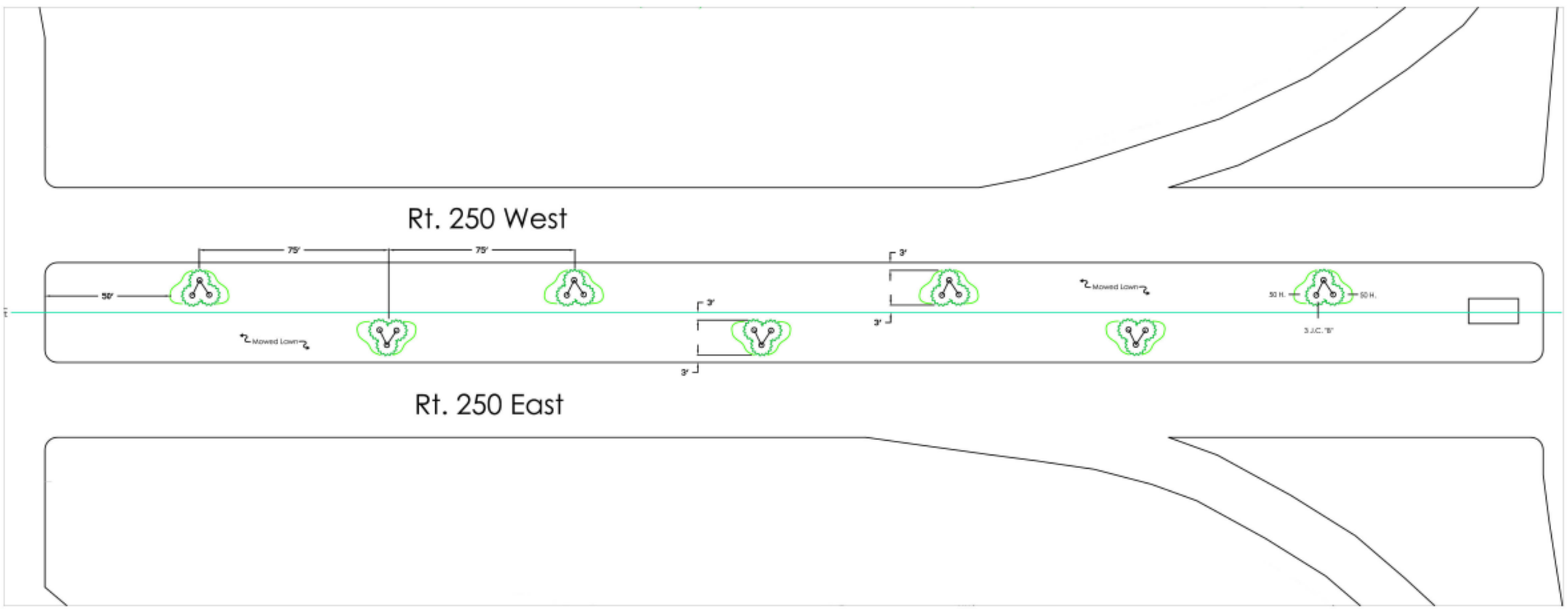
Central Median Planting Schedule

Symbol	Species	Common Name	Quantity
H	*Hemerocallis*	Daylily	700
JC "B"	*Juniperus chinensis* 'San Jose'	Chinese Juniper	21

Scale: 1" = 40'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



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Planting Plan
Route 250 Central Median

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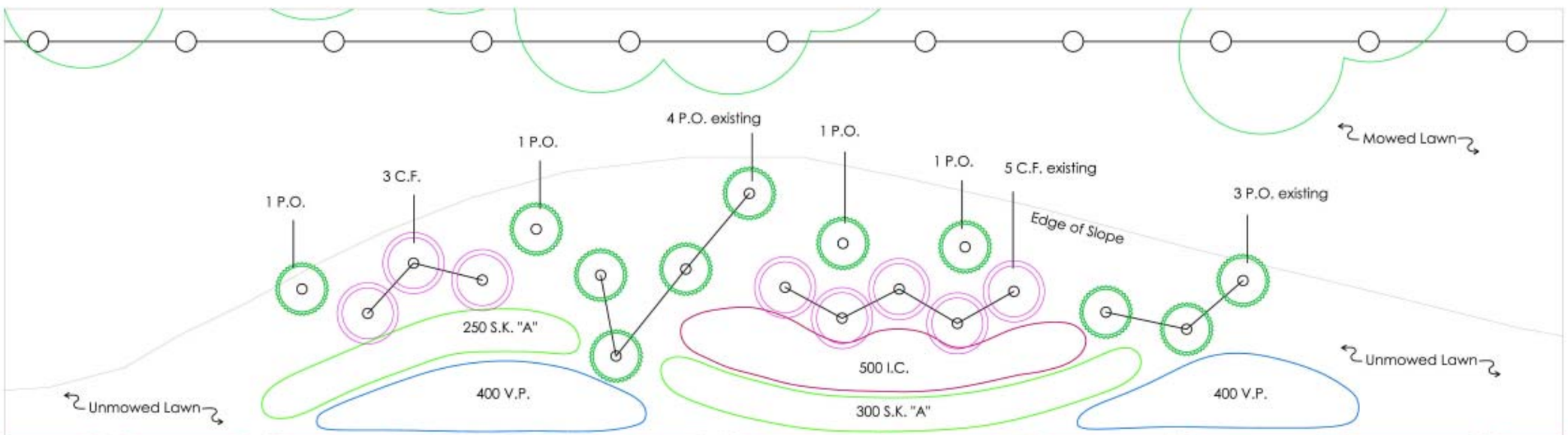
Rt. 250 Side Planting Schedule - North

Symbol	Species	Common Name	Quantity
CF	*Cornus florida*	Flowering Dogwood	3
IC	*Imperata cylindrica*	Japanese Bloodgrass	500
PO	*Picea omorika*	Serbian Spruce	4
SK	*Sedum* 'Autumn Joy'	Stone Crop	550
VP	*Veronica peduncularis* 'Georgia Blue'	Speedwell	800

Scale: 1" = 20'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



Rt. 250 West

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Planting Plan
Route 250 Side Median 2a

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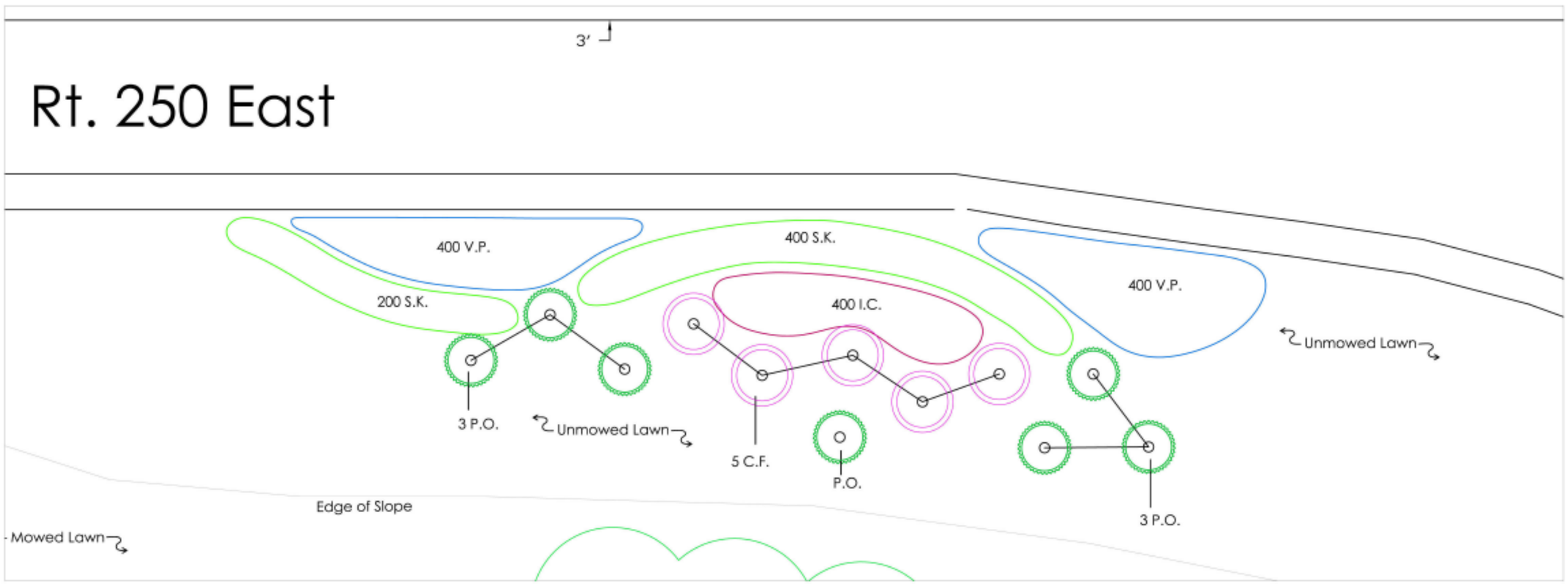
Rt. 250 Side Planting Schedule - South

Symbol	Species	Common Name	Quantity
CF	*Cornus florida*	Flowering Dogwood	5
IC	*Imperata cylindrica*	Japanese Bloodgrass	400
PO	*Picea omorika*	Serbian Spruce	7
SK	*Sedum* 'Autumn Joy'	Stone Crop	600
VP	*Veronica peduncularis* 'Georgia Blue'	Speedwell	800

Scale: 1" = 20'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



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Planting Plan
Route 250 Side Median 2b

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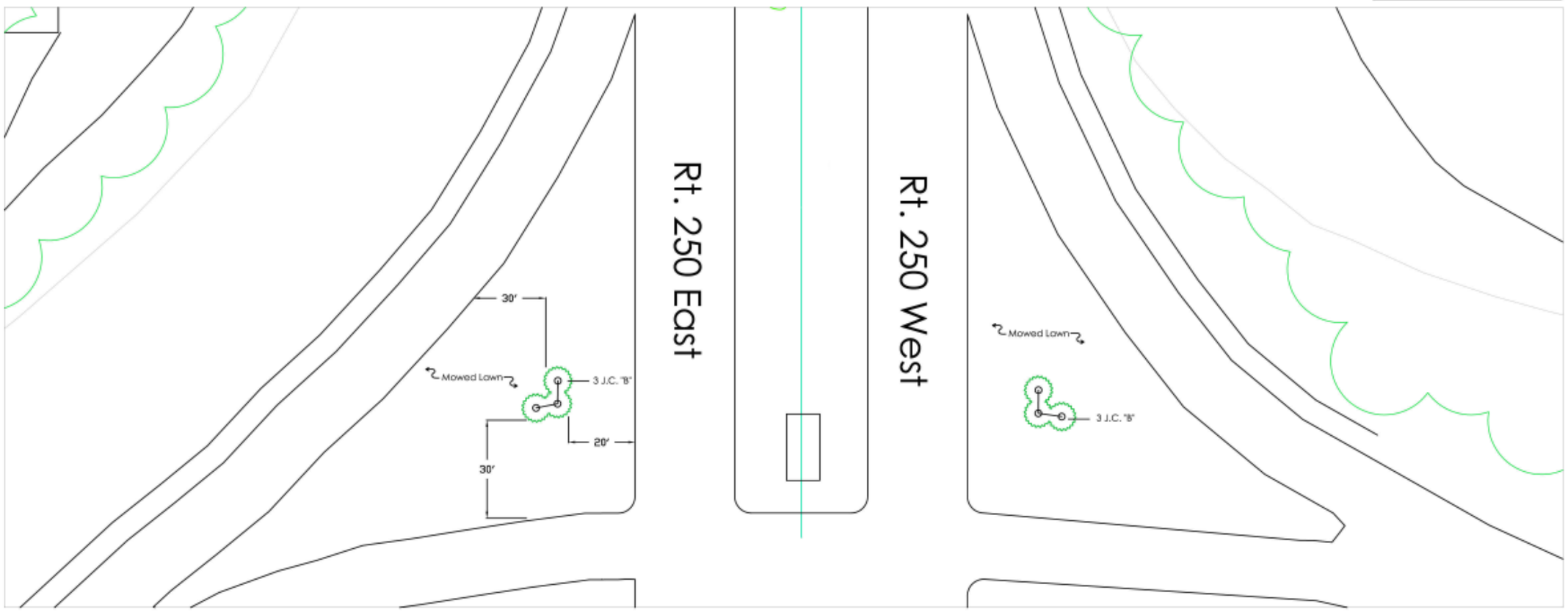
Triangular Median Planting Schedule

Symbol	Species	Common Name	Quantity
JC "B"	*Juniperus chinesis* 'San Jose'	Chinese Juniper	6

Scale: 1" = 30'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



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Planting Plan
Triangular Medians

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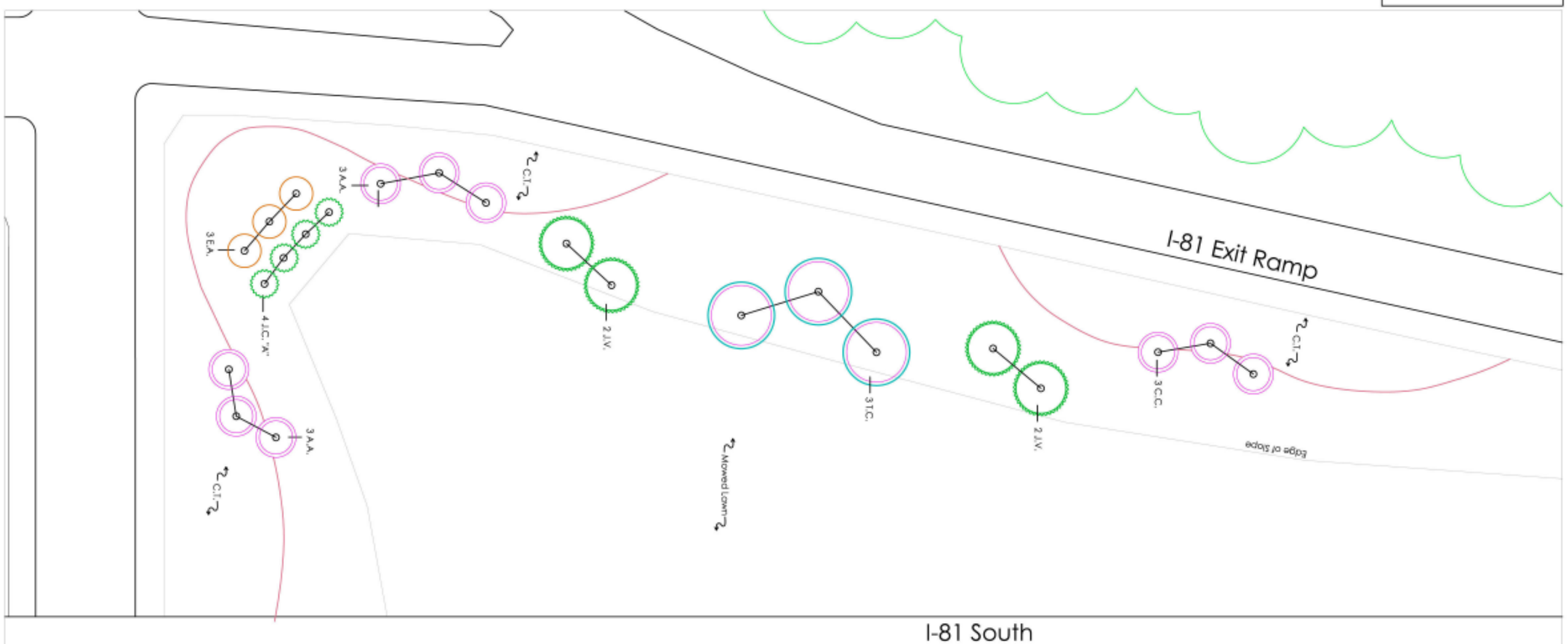
I-81 Median Planting Schedule - North

Symbol	Species	Common Name	Quantity
AA	*Amelanchier arborea*	Downy Serviceberry	6
CC	*Cercis canadensis*	Redbud	3
CT	*Coreopsis tinutoria*	Plains Coreopsis	
EA	*Euonymous alatus*	Burning Bush	3
JC "A"	*Juniperus chinesis 'Sea Green'*	Sea Green Juniper	4
JV	*Juniperus virginiana*	Eastern Redcedar	4
TC	*Tilia cordata*	Little Leaf Linden	3

Scale: 1" = 30'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



This drawing is conceptual and was prepared to show approximate location and arrangement of site features. It is subject to change and is not intended to replace the use of construction documents. The client should consult appropriate professionals before any construction or site work is undertaken. The Community Design Assistance Center is not responsible for the inappropriate use of this drawing.

Planting Plan
I-81 Side Median 4a

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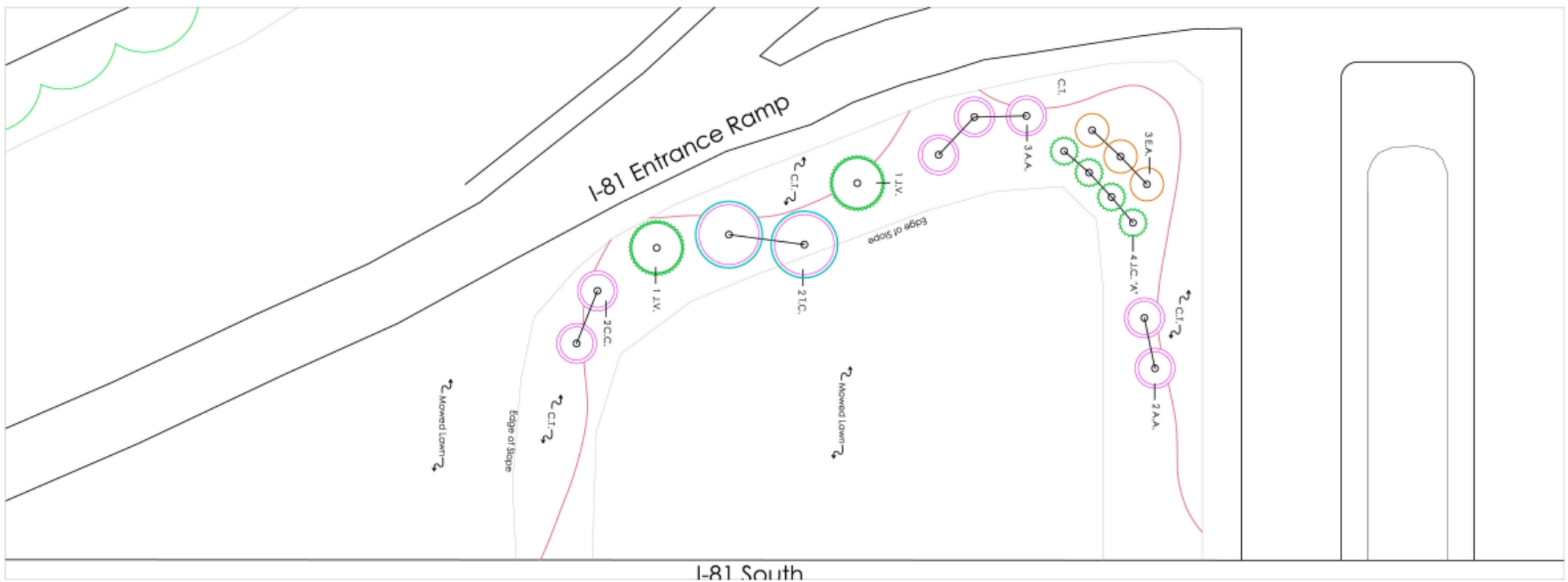
I-81 Median Planting Schedule - South

Symbol	Species	Common Name	Quantity
AA	*Amelanchier arborea*	Downy Serviceberry	5
CC	*Cercis canadensis*	Redbud	2
CT	*Coreopsis tinutoria*	Plains Coreopsis	
EA	*Euonymous alatus*	Burning Bush	3
JC "A"	*Juniperus chinesis 'Sea Green'*	Sea Green Juniper	4
JV	*Juniperus virginiana*	Eastern Redcedar	2
TC	*Tilia cordata*	Little Leaf Linden	2

Scale: 1" = 30'

Legend

- Existing Fence
- Deciduous Shrub
- Evergreen Shrub
- Evergreen Tree
- Deciduous Ornamental Tree
- Large Deciduous Tree



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Planting Plan
I-81 Side Median 4b

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Plant Palette - Trees and Shrubs

http://oregonstate.edu/dept/ldplants/eualc3.htm

Burning Bush

Euonymus alatus

Zone: 4-8

Habit & Form: Deciduous shrub; upright vased growth in youth; becomes rounded and spreading with age

Ornamental value: Brilliant red fall color

Culture: Full sun to full shade; prefers moist, well-drained, slightly acidic soils in full sun, but is very adaptable

http://www.esveld.nl.jpg

Chinese Juniper

Juniperus chinensis 'San Jose'

Zone: 4-9

Habit & Form: Prostrate, mat-like ground cover with long trailing branches; grows 1-2' tall and 6-8' wide

Ornamental Value: Evergreen shrub with sage green leaves

Culture: Full sun to light shade; well-drained soil

Other notes: Moderate growth rate

http://www.hort.uconn.edu/plants

Downy Serviceberry

Amelanchier arborea

Zone: 4-9

Habit & Form: Deciduous tree; irregular branching; rounded, narrow crown; grows 10-25' tall and 10-15' wide

Ornamental value: Small, white flowers in spring; magenta berries

Culture: Sun to partial shade; prefers moist soil but will tolerate a range of soil types

Other notes: Moderate growth rate; native tree; big fruit producer

http://www.hort.uconn.edu/plants/c/cercan/cercan1.html

Eastern Redbud

Cercis canadensis

Zone: 4-9

Habit & Form: Deciduous tree; upright, rounded habit often broad and flat-topped, short main trunk dividing into several large branches; grows 25' tall and 30' wide

Ornamental value: Reddish-purple buds and very showy small purplish-pink flowers

Culture: Full sun or partial shade; prefers moist, well-drained soils but tolerates a variety of types

Other notes: Early bloomer



http://woodyplants.nres.uiuc.edu http://www.ces.ncsu.edu

Eastern Redcedar

Juniperus virginiana

Zone: 2-9

Habit & Form: Evergreen tree; upright, densely pyramidal form; grows 30-40' tall and 10-20' wide

Ornamental value: Female tree has blue berries

Culture: Full sun; prefers well-drained soils but tolerates a variety of soil types

Other notes: Moderate to rapid growth; native tree that is tough and dependable

http://www.hort.uconn.edu/plants/c/corflo/corflo1.html

Flowering Dogwood

Cornus florida

Zone: 5-9

Habit & Form: Deciduous tree; semi-rounded top; horizontal low branches create a layered look; grows 15-30' tall and 15-20' wide

Ornamental value: White flowers in spring; glossy red fruit in fall

Culture: Partial shade; moist, well-drained soils

Other notes: Native tree


http://www.ces.ncsu.edu and http://www.uah.edu/admin/Fac/images/glenlevf.jpg

Little Leaf Linden

Tilia cordata

Zone: 3-7

Habit & Form: Deciduous tree; pyramidal in youth; more rounded with age; densely branched; grows 30-50' tall and 25-40' wide

Ornamental value: Lacey clusters of fragrant, cream flowers

Culture: Full sun; moist, well-drained soils but tolerates a range of conditions

Other: Slow to moderate growth; very tolerant

http://www.ces.ncsu.edu

Sea Green Juniper

Juniperus chinensis 'Sea Green'

Zone: 4-9

Habit & Form: Evergreen shrub; compact spreader with fountain-like arching branches; grows 4-6' tall and 6-8' wide

Ornamental value: Dark mint green foliage

Culture: Full sun; average, well-drained soils

Other notes: Good drought tolerant plant


http://www.urbanext.uiuc.edu/treeselector and http://www.nres.uiuc.edu/plant/picom

Serbian Spruce

Picea omorika

Zone: 4-7

Habit & Form: Evergreen tree; slender trunk; short, ascending branches; narrow pyramidal habit; grows 50-60' tall and 15-25' wide

Ornamental value: Extremely attractive spruces

Culture: Full sun to partial shade; moderately moist, well-drained soil but will grow in sand and heavy clay

Other notes: Slow growth rate;

***All tree information taken from http://www.ces.ncsu.edu/depts/hort/consumer/factsheets

Plant Palette - Perennials and Grasses

Autumn Joy Stonecrop
Sedum telephium 'Autumn Joy'

http://brecks.com/product.asp?pn=66968&bhcd2=1096900952

Japanese Bloodgrass
Imperata cylindrica

http://www.victoria-adventure.org/

Plains Coreopsis
Coreopsis tinutoria

http://www.aggie-horticulture_tamu_edu

Speedwell
Veronica peduncularis 'Georgia Blue'

http://www.plantdelights.com/Catalog/Current/Detail/01170.html

Tawny Daylily
Hemerocallis fulva

http://davesgarden.com/pdb/showimage/2924/

Conclusion

The CDAC design team hopes the landscape design for the I-81/ Route 250 interchange will be a great implemented addition to the outstanding plantings of the City of Staunton. The design offers a simple yet elegant concept that provides the Route 250/ I-81 interchange area with color and appeal. Plant selection criteria included native species, lower maintenance, and ornamental value.

Appendices

Appendix A: VDOT Recommendations and Guidelines

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
P. O. BOX 2249
Staunton, VA 24402-2249

PHILIP A. SHUCET
COMMISSIONER

DENNIS C. MORRISON
DISTRICT ADMINISTRATOR
TEL (540) 332-9075
FAX (540) 332-9179

Intra-Departmental Memorandum

September 23, 2004

TO: John Sandridge

FROM: Scott T. Nye, Roadside Manager

SUBJECT: City of Staunton I-81/Rt. 250 Planting Project

Per our field review this afternoon with Mr. Harris, Mr. True, and Mr. Downs of the Traffic & Engineering Section, I have provided below the requirements which must be met in order for the above referenced planting project to be approved.

General Requirements:

- All trees and shrubs shall be native to the Mountain Region of Virginia (as defined by the Virginia Department of Conservation and Recreation's Natural Heritage Program Native Species Tables);
- The City of Staunton shall maintain (including mowing) the entire median and islands, if plant material is installed; the city shall not mow along the ramps beyond the immediate vicinity of the islands of the north and south ramps. Also, the city shall not mow any portion along the mainline of I-81.
- Prior to the installation of any plant material or plant beds, all plant beds and tree/shrub locations shall be delineated for inspection by the Roadside Manager.

Northwest & Southwest Quads of I-81/Rt. 250:

- All plant beds and trees/shrubs shall be installed at a minimum distance of ten (10) feet back of the existing ditches;
- No landscape timbers or any other material shall be used to delineate a plant bed unless approved by the Department prior to installation.

Median of Rt. 250 (west of I-81):

- Plant material shall be maintained at a height of no more than two (2) feet;
- Plant beds shall be a minimum of three (3) feet from the edge of the paved shoulder as well as a minimum of three (3) feet from the bottom of the ditch;

- Plant beds shall be installed in an alternating manner from one side of the ditch to the other in order that access to the ditch is not totally restricted;
- Only herbaceous plant material shall be planted; no trees or shrubs shall be planted;
- No landscape timbers or any other material shall be used to delineate a plant bed unless approved by the Department prior to installation.

Triangular Islands Adjacent to Rt. 250 & the Ramps of I-81 South Bound Lane:

- Plant material shall be maintained at a height of no more than two (2) feet (measured from the road surface);
- Plant beds shall be a minimum of three (3) feet from the edge of the paved shoulder, as well as:
    - The south island planting area shall not extend south beyond the Yield Ahead sign;
    - The north island planting area shall not extend within twenty (20) feet of the edge of the paved shoulder of Rt. 250 west bound lane.
- Only herbaceous plant material shall be planted; no trees or shrubs shall be planted;
- No landscape timbers or any other material shall be used to delineate a plant bed unless approved by the Department prior to installation.

I know the Land Use Permit will cover work zone requirements, but I strongly feel we should emphasize that all work shall be performed according to the latest edition of both the Virginia Work Area Protection Manual and the MUTCD. If you have any questions, please do not hesitate to contact me.

CC: Mr. C. B. Harris
Mr. Mike True
Mr. Kelly Downs

Appendix B: Considered Plants List

Included in this appendix is a list of plants that were considered for the preliminary conceptual designs. Some of the plants on this list are also included on the final planting plan. Others were removed because of discoverd Staunton pest problems, design preferences, or upon the suggestion or request of Staunton Horticulturist Holly Chichester.

Considered Plants List

Scientific Name	Common Name	Form	Flower	Bloom	Fall Color	Native	Alternative Species	Notes
Amelanchier	Serviceberry Tree	Tree	White	April	Excellent	Y		
Carpinus caroliniana	American Hornbeam	Tree				Y		
Cornus florida	Flowering Dogwood	Tree	White	April-May	Excellent	Y		
Cornus alternifolia		Tree				Y		Possible understory tree
Cornus alba	Tatarian Dogwood	Tree Shrub	Yellow	May-June	Good	N		
*Cornus sericea**	Redosier Dogwood	Tree Shrub	White	June	Good	Y		
Cercis canadensis	Redbud	Tree	Pink	March- April	Good	Y		
*Juniperus virginiana**	Eastern Redcedar	Evergreen Shrub	N/A	N/A	Evergreen	Y		
Picea pungens	Colorado Spruce	Evergreen Shrub	N/A	N/A	Evergreen	N		
Aronia arbutifolia	Red Chokeberry	Shrub				Y		Good for massing by highway
Picea orientalis	Oriental Spruce	Evergreen	N/A	N/A	Evergreen	N		
*Euonymus alatus**	Burning Bush	Shrub	N/A	N/A	Excellent	N		
Pieris floribunda	Mountain Pieris	Shrub	N/A	N/A	N/A	N		
Thuja occidentalis	American Arbivorate	Evergreen Shrub	N/A	N/A	N/A	Y		Quick growing, urban tolerant, inexpensive; upright habit
Forsythia x intermedia	Border Forsythia	Shrub	Yellow	March-April	Good	Y		
Buddleia davidii	Butterfly Bush	Shrub	Purple	June- Frost	N/A	N		
Berberis thunbergii	Japanese Barberry	Shrub	N/A	N/A	Good	N		
*Rudbeckia fulgida**	Orange Coneflower	Perennial Wildflower	Orange	July- September	N/A	Y	R.hirta	Urban tolerant; tends to encroach on other perennials
*Echinacea purpurea**	Purple Coneflower	Perennial Wildflower	Purple	July- August	N/A	Y		
Phlox divaricata	Wild Blue Phlox	Perennial Wildflower			N/A			
Phlox subulata	Creeping Phlox	Perennial Groundcover	Pink	Early Spring	N/A			
Sedum 'Autumn Joy'	Autumn Joy Stonecrop	Perennial	Varies	Late Summer	N/A			Fruiting heads last throughout winter
Sedum kamtschaticum	Orange Stonecrop	Perennial	Yellow	Spring	N/A			Division of plant every few years

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Considered Plants List

Scientific Name	Common Name	Form	Flower	Bloom	Fall Color	Native	Alternative Species	Notes
Sedum 'Matrona'	Matrona Stonecrop	Perennial				N/A		Known for purple foliage and red stem
Leucanthemum x superbum	Shasta Daisy	Perennial	White	Summer	N/A			High maintenance
Heuchera micrantha 'Palace Purple'	Palace Purple Coral Bells	Perennial	White-Red	June	N/A			Semi-evergreen foliage; many varities of colors exist
Veronica peduncularis 'Georgia Blue'	Georgia Blue Speedwell	Perennial Groundcover	Purple	Early Spring	N/A			Alternative to *Phlox* groundcover
Aster novae-angliae	Purple Dome New England Aster	Perennial Wildflower	Lavender	N/A	Y			
*Asclepias tuberosa**	Butterfly Weed	Perennial Wildflower	Orange	N/A	Y			Drought tolerant; flower range from yellow to orange
*Coreopsis lanceolata**	Tickseed	Perennial Wildflower	Yellow	Summer	N/A	Y	C.tinctoria;C.palmata	Continuous flowering if deadheaded
Heliopsis helianthoides	False Sunflower	Perennial Wildflower	Yellow	Summer- Frost	N/A	Y		Will flower until frost if deadheaded
Vernonia	Ironweed	Perennial Wildflower	Purple	Early Autumn	N/A	Y		Previously considered a weed; similar to Golden Rod and Aster
Hemerocallis	Daylily	Perennial	Varies	May-Frost	N/A			Bulbs; Come in variety of colors; Urban tolerant
Miscanthus sinensis	Miscanthus	Grass	N/A	N/A				
Pennisetum alopecuroides	Fountain Grass	Grass	N/A	N/A				
Typha latifolia	Common Cattail	Grass	N/A	N/A				
Sorghastrum nutans	Sioux Blue	Grass	N/A	N/A				
*Panicum virgatum**	Switchgrass	Grass	N/A	N/A				

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