



FALL 2019

SILVERSPRING

STREETSCAPE STANDARDS

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

Abstract

This document contains the text and supporting graphics for the update to the 1992 Silver Spring Streetscape Plan Technical Manual. It describes the concept, materials, details and specifications for the trees, shrubs, pavers, street furnishings, lighting, wayfinding and public art in the Central Business District (CBD) of Silver Spring in Montgomery County, MD. It is used for private and public development within the CBD. The Silver Spring Streetscape Standards were approved by the Planning Board in 2019.

Sources of Copies

The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910

Online at <https://montgomeryplanning.org/planning/communities/area-1/silver-spring-cbd/streetscape-standards-update>

The Maryland-National Capital Park and Planning Commission

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The Commission is charged with preparing, adopting and amending or extending The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District in Montgomery and Prince George's Counties. The Commission operates in each county through Planning Boards appointed by those county governments. The Planning Boards are responsible for implementation of local plans, zoning ordinances, and subdivision regulations and the administration of the bi-county park system.

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SILVERSPRING

STREETSCAPE STANDARDS

Prepared by the Montgomery County Planning Department
MontgomeryPlanning.org

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Introduction & Existing Conditions

Introduction:

A Living Document for an Eclectic Place:

The Silver Spring Streetscape Standards, last updated in 1992, have positively contributed to the design of Silver Spring's streetscapes and public realm. This next iteration intends to evolve the quality of the public realm for the next generation. Like its predecessor, this document is intended to have a long lifespan and addresses planting, paving, lighting and furnishing details. It's also intended to be revised and amended periodically to ensure that its contents remain useful and relevant.

The 1992 Silver Spring Streetscape Standards aimed to improve Silver Spring's visual appearance during an era of economic challenges, when poured in place (PIP) concrete dominated the streetscape. In response, the standards directed the development of a more human-scaled, tree-shaded, brick-paved streetscape.

The renewed development interest in the Central Business District (CBD), spurred the creation of the 1992 Silver Spring Streetscape Standards and reflect Silver Spring's current era of economic prosperity. Today's Silver Spring has different design goals and abides by more updated design practices, and Silver Spring's businesses and citizens have increasingly begun to question the standards' overall applicability, usability and prescribed uniformity.

Updating the streetscape standards to be more adaptable and flexible builds on a Silver Spring tradition. The urban fabric that comprises present-day Silver Spring is eclectic and a product of buildings that have evolved over numerous eras. Newly constructed high-rise buildings sit next to buildings of varying uses, scales and styles dating back to the mid-20th Century and earlier. Embedded within those buildings are Silver Spring's varying businesses that support the needs of the diverse community. To achieve a public realm that endures for the next 20+ years, it is critical to develop simple streetscape standards that complement Silver Spring's varying subdistricts yet provide visual clarity to the entire CBD.

Process and Public Outreach:

The Montgomery County Planning Department executed an inclusive, outreach-driven project process. Following an existing conditions analysis and numerous site visits, the Planning Department hosted meetings, workshops, and presentations with property owners and developers, community associations and residents, government agencies, and practitioners to generate fresh ideas and receive ongoing feedback.

Based on input received, it was clear that these updated standards must re-imagine Silver Spring's streetscape as more than just public infrastructure that facilitates pedestrian movement. The streetscape should be considered a livable public space where people are encouraged to gather,

dine, play and linger. It must be accessible to all people, accommodate multi-modal transportation, embrace technology, and support a robust economy and diverse ecology.

Existing Conditions:

Trees and Plantings:

The 1979 Department of Housing and Community Affairs (DHCA) streetscape plan and the 1992 Streetscape Standards led to Silver Spring's mature and extensive tree canopy network. However, not all streets are equal. Nearly two and a half miles of CBD streets lack trees, primarily due to constrained sidewalk conditions. Where they do exist, 16% of trees are in poor condition. While most new development projects retain, replace or add street trees to their sidewalks, diversity in tree species is lacking, which leads to monocultures. Currently, only six tree species are planted in the CBD: oak, Zelkova, honey locust, London plane tree, Linden, and American elm. Of those six species, each CBD street typically does not contain more than one species per block.

Unlike Silver Spring's tree species, understory planting and design treatments range significantly throughout the CBD. The most common treatment types are grates, raised planters, green infrastructure (GI), and uncovered tree pits. Understory vegetation includes sod, ornamental grasses, perennials and shrubs. In many instances, tree pits have been stripped of their understory plantings and replaced with mulch or gravel.

Paving:

In accordance with the 1979 DHCA plan and the 1992 standards, PIP concrete sidewalks

began to be replaced with concrete "pink pavers," and then with the present-day Silver Spring "signature brick pavers." Given Silver Spring's high redevelopment rate since 1992, a clear majority of the CBD's sidewalks are now paved with brick of varying types. While many of these sidewalks are relatively new, some are challenged by high pedestrian traffic volumes or inadequate maintenance, which has led to nearly 45% of CBD sidewalks to be classified as low quality. Additionally, pedestrians have criticized some brick pavers as being slippery when wet.

Lighting:

With the implementation of the 1992 standards and early-2000s redevelopment, the Cobra Head and Black Top light fixtures on CBD sidewalks were replaced with Washington Globe and Teardrop Luminaire fixtures on secondary and primary streets, respectively. Cobra Head and Black shoebox light fixtures are designed to enhance the visibility of traffic lanes instead of sidewalks. Replacing these inadequate lighting types has significantly improved nighttime pedestrian travel in the CBD. Nonetheless, almost 50% of CBD sidewalks still have outdated or non-conforming light fixtures. Of the light fixtures that have been updated, most do not yet abide by not "dark-sky" best practices, which aim to reduce urban light pollution. As designed, these fixtures also emit glare into adjacent properties. These critiques have since been addressed with revised luminaire standards.



Existing Conditions



Furnishings:

Street furnishings can include benches, waste/recycling bins, bicycle racks, and other amenities. Per the 1992 standards, only one wooden bench model and one metal trash receptacle model were prescribed for the CBD streetscape. Other than these, no other furnishing standards were specified. Since 1992, flexibility has increased regarding furnishings within the CBD, and a wide range of furnishing products have been used. While this approach supports the overall eclecticism of Silver Spring, users have critiqued the utility of specific furnishing products and their placement.

Special Elements and Places:

Silver Spring's CBD has a wide array of civic destinations and public use spaces that have a variety of public art and activities. These special elements and places add to Silver Spring's uniqueness and are a point of pride for Silver Spring's citizens. However, the 1992 standards provide limited guidance for the design and implementation of public space, which has led to a variety of outcomes, especially regarding overall quality and maintenance. Public/special place usage is dependent upon overall comfort and adjacent land uses, but many of the CBD's special places are generally well-utilized and function as successful gathering places such as Veteran's Plaza, Acorn Urban Park, Jesup Blair Park, Fenton Street Urban Park, and Kramer Urban Park.





EXPRESSIVE PLACES AND STREETS



Goals & Design Approach

Goals:

Based on an extensive existing conditions and public outreach process, a set of goals was developed for the future design and implementation of Silver Spring's streetscape. These goals directly influenced the design approach for the updated Silver Spring Streetscape Standards. The goals are:

- A. Embrace the diversity and eclecticism of architecture and site design of the Silver Spring CBD.
- B. Evaluate existing streetscapes to determine areas suitable for change.
- C. Establish a palette of materials and treatments for moving on from the "basics".
- D. Emphasize the importance of landscape maintenance and improvements.
- E. Create a bold tree-planting design.
- F. Improve the quality of understory plantings.
- G. Encourage special design features/treatments at key locations.
- H. Develop effective streetscape guidelines that are simple to use.
- I. Embrace beauty and encourage creativity.
- J. Integrate the Purple Line and future bus rapid transit (BRT) into the streetscape.
- K. Develop a public realm that is enduring, creative, beautiful, adaptable, high quality and simple.

Design Approach:

Silver Spring's CBD is filled with eclectic buildings, open spaces, and activities. However, the CBD's existing streetscape rarely deviates from its red brick theme. This visual uniformity has an impact on the CBD's identity; it has the effect of unifying smaller subdistricts and building types into the CBD as a whole. While the brick has helped to visually unite very different CBD subdistricts, some argue that the visual consistency over simplifies and dilutes Silver Spring's subdistricts' identities.

Through the standards update process, an

assessment of the existing streetscape design was performed. As a result, the streetscape developed a style that fosters a "calm" backdrop where buildings, businesses, people, and activities stand out. In this approach, lighting, trees and furnishings are consistently treated. Within the streetscape, there are special "expressive" places and streets where the streetscape is intended to be wild and organic. This includes furnishings, paving, accent lighting, branding, and special elements that are intended to be more flexible to emphasize and celebrate the distinctiveness of each CBD subdistrict. See pages 66-79 and Chapter 5.



AND



CALM

The streetscape is a neutral backdrop.
Buildings, businesses, people, and street activities should primarily represent Silver Spring CBD's identity.

EXPRESSIVE

The streetscape is wild and organic.
The streetscape stands out and builds on Silver Spring CBD's varied buildings, businesses, people, and street activities.



Standard Streetscape Compositions

Sidewalk Zones:

Silver Spring's sidewalks define its streetscape and public realm. The primary role of the sidewalk is to facilitate the movement of pedestrians. However, when space allows, the sidewalk should also be considered a space that fosters gathering, lingering and a vital urban ecology. The sidewalk can allow for many types of activities. It can blend a building's ground floor activities with those of the street through programming and outdoor furnishings. When properly designed, sidewalks also host planting areas that support strong tree canopies and greenery.

The following sections define the sidewalk by four subzones. When arranged and programmed based on these zones, the sidewalk will contribute to comfortable and vibrant streetscapes.

Frontage Zone:

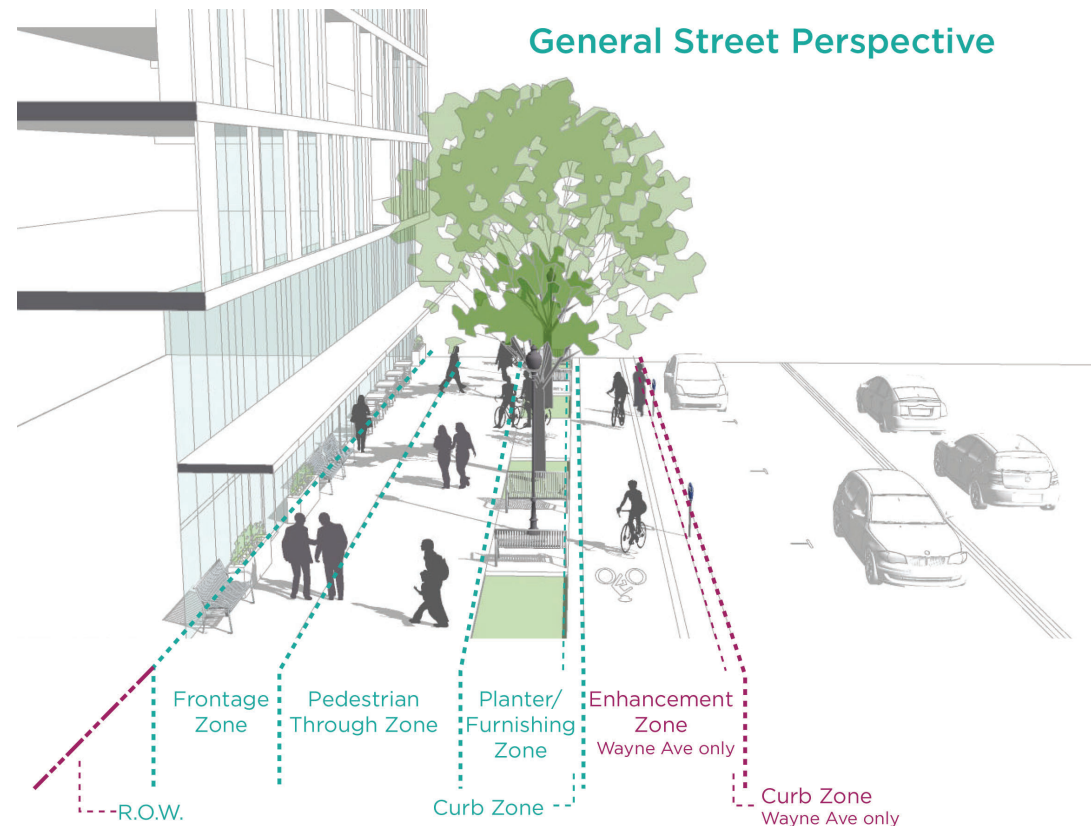
The "frontage zone" is located immediately adjacent to the building façade. It functions as an extension of the building's ground floor and should be a minimum of five feet wide. This zone should be paved adjacent to commercial ground floor uses but may be paved or planted adjacent to residential ground floor uses. This zone is a public right-of-way but is expected to be filled by adjacent building activities. Front stoops are not permitted within the frontage zone. However, limited overhead façade projections, awnings, pedestrian-scaled signage, sandwich boards and café seating are encouraged within Frontage zones adjacent to commercial ground floor uses. See Montgomery County Department of Permitting Services Outdoor Café Seating requirements: <https://www.montgomerycountymd.gov/DPS/Process/Id/outdoor-cafe-seating-permit.html>

When adjacent to residential ground floor uses, the frontage zone should function as a transition or buffer, especially when residential ground floors are not elevated. When new development occurs along narrower streets, those developments are encouraged to use private property to widen the frontage zone.

Pedestrian Through Zone:

The "pedestrian through zone" is the sidewalk zone dedicated exclusively to the movement

of pedestrians. It must never be obstructed by furnishings or plantings. This zone must be paved and span six to 10 feet wide to ensure that pedestrians of all abilities can travel safely. This zone fits between the frontage zone and the planter/furnishing zone. With the exception of some narrow sidewalks with existing tree pits, this zone does not include street trees or plantings. All pedestrian through zones to be ADA compliant with no more than 1:20 running slope and no more than 1:48 cross slope.



Planter/Furnishing Zone and Curb Zone:

The “planter/furnishing zone” functions primarily to provide public amenities and comfort to the streetscape. It must be at least eight feet wide. This zone hosts street trees, understory planting, GI treatments, street lighting, bicycle parking, street furnishings, wayfinding and public art. With the exception of some Wayne Avenue segments (described further in the following section), this zone is located between the pedestrian through zone and the curb and works with adjacent on-street parking to buffer pedestrians from moving vehicles. Where this zone exists in the public right-of-way (ROW), ground floor tenants and/or adjoining property owners are encouraged to activate this zone through special plantings and programming. In cases where sidewalks do not include a frontage zone, businesses may utilize available area in the planter/furnishing zone for café seating.

When located next to the curb, 18 inches of unobstructed pavement must be allocated at the curb back. This space is called the “curb zone,” and it allows for pedestrian access to parked vehicles. Parking meters are the only street furnishing type that may be placed in the curb zone.

Enhancement Zone

The “enhancement zone” applies to Wayne Avenue, 2nd Avenue, Cameron Street, Fenton Street, Dixon Avenue, Ellsworth Drive and Spring Street. In the event of future redevelopment, a re-designed streetscape scenario should implement the recommendation of the Bicycle Master Plan. See Bicycle Master Plan and the Bicycle Facility Design Toolkit for location and details: <https://montgomeryplanning.org/planning/transportation/bicycle-planning/bicycle-master-plan/>

The ‘enhancement zone’ will also accommodate bus stops, bus shelters and future BRT stations on Georgia Avenue and Colesville Road. Coordinate

with the appropriate county agencies for proper placement and design of these elements.

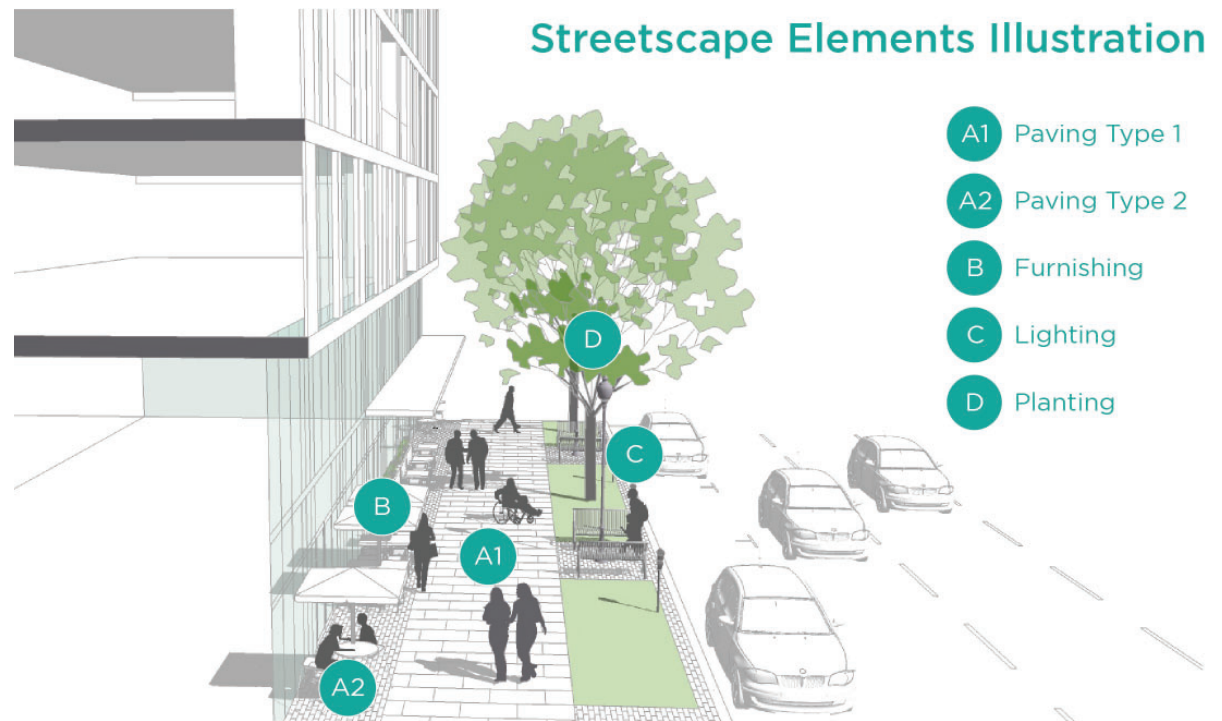
Overall Sidewalk Element Composition:

There are streetscape elements that apply to all the sidewalk zones. The streetscape elements are a direct evolution of Silver Spring’s existing streetscape. Many of these elements apply similar or complementary treatments to those of 1992. However, new technologies, updated best practices, and evolving needs require new design strategies.

The streetscape element categories are consistent with those of the 1992 standards: plantings, paving, furnishings and lighting. Based on the design approach described in Chapter 2, all streetscapes,

except for those within “expressive” places or on “expressive” streets, will follow the same “calm” streetscape element strategies. These “calm” streetscape element strategies aim to achieve several results: (1) visually unify the Silver Spring CBD subdistricts, (2) evolve but complement existing CBD streetscape design, (3) develop durable and accessible sidewalks, and (4) establish healthy urban plant habitats. All streetscape elements defined in Chapter 4 refer to “calm” streetscapes.

“Expressive” streets deviate from “calm” streetscapes. These “expressive” areas are designated in Chapter 5; more expressive areas can be added on a case-by-case basis. Expressive places and streets are intended to follow best design practices described in Chapter 5, and encourages



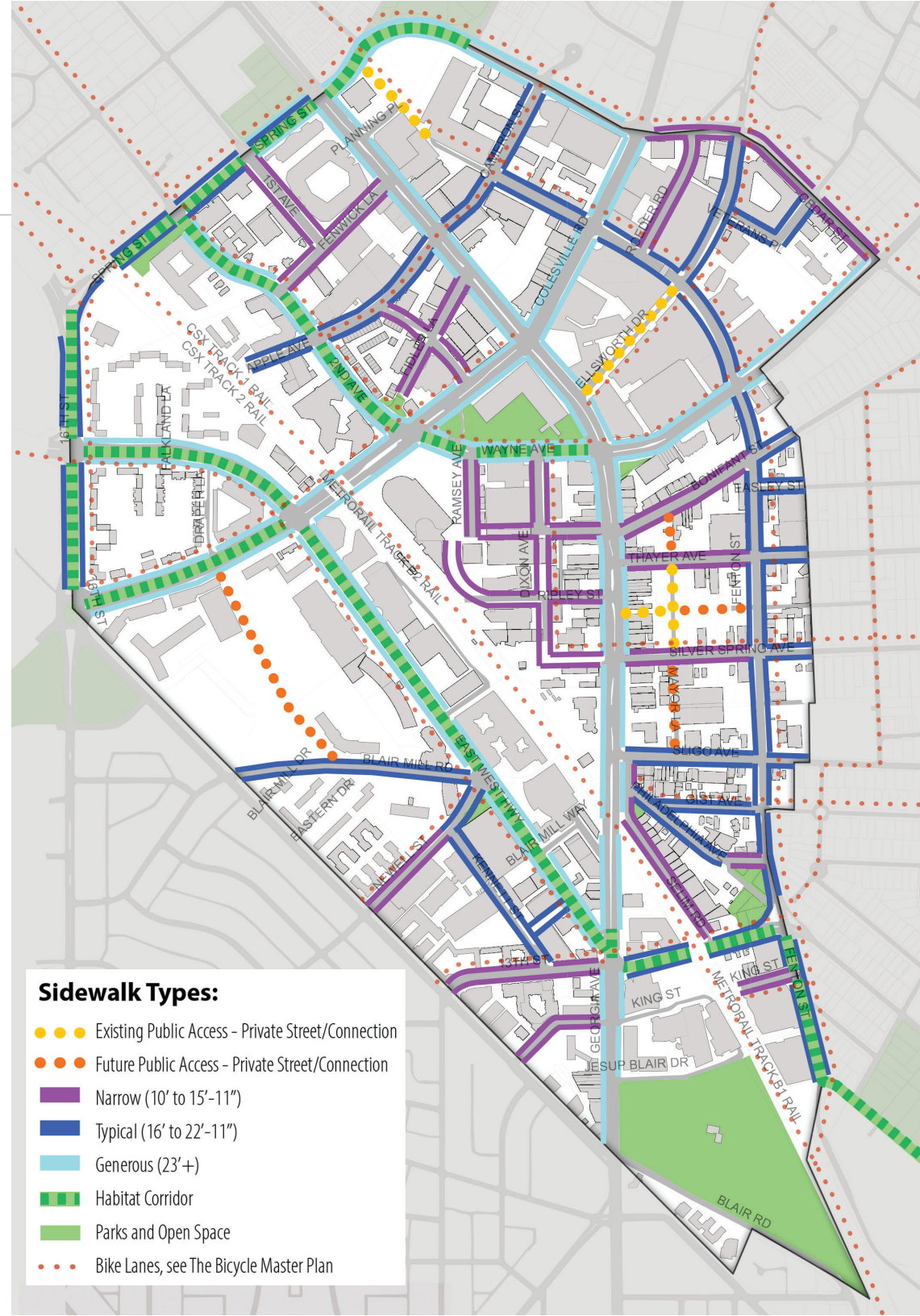
visual deviation using different paving materials, wayfinding and public art.

Sidewalk Types:

The standards designated future sidewalk types in Silver Spring according to “Narrow”, “Typical” and “Generous”. The major thoroughfares of Georgia Avenue, Colesville Road, Wayne Avenue, East West Highway and parts of Spring Street are to have “Generous” sidewalks. Cameron Street, Fenton Street, Ellsworth Street, Bonifant Street, Easley Street, Sligo Avenue, Philadelphia Street, Gist Street, Blair Street, Kennett Street and Parts of 16th Street are to have “Typical” sidewalks, while the remainder are to be “Narrow” sidewalks.

Where there are available public ROW widths, based on the applicable master plan, all sidewalk zones should be accommodated within the ROW. Where the ROW width does not accommodate the designated street type, it is recommended that space be dedicated or designated via a public access easement to accommodate the future sidewalk type.

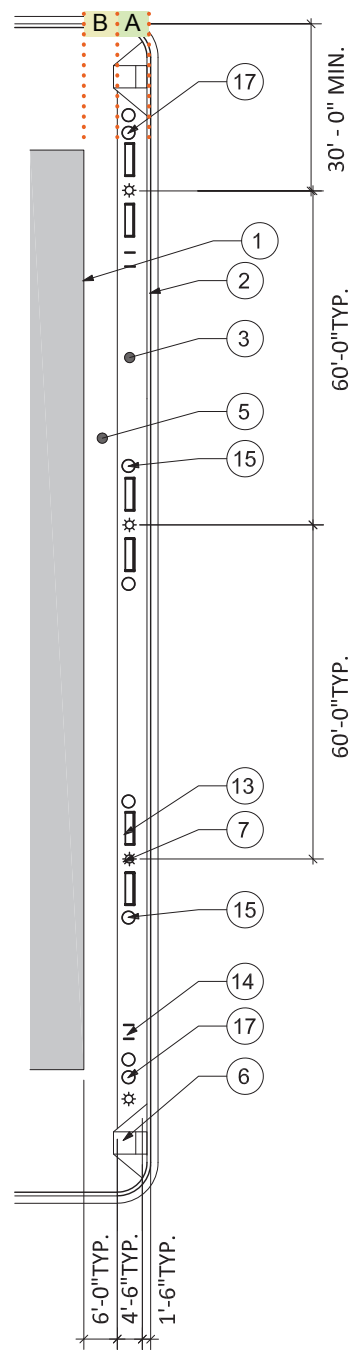
The following four sidewalk types can reasonably fit within the recommended master-planned ROW widths. In cases where the “Narrow” sidewalk type is recommended, the pedestrian through zone (the clear space for people to move) is prioritized. In no instances can the pedestrian through zone be eliminated or reduced by another zone. When there is enough width to accommodate two zones, the planter/furnishing zone is the second prioritized zone. It hosts street trees, street furnishings and bicycle parking, and acts as a buffer from moving vehicles.



Narrow Sidewalks (15' or Less):

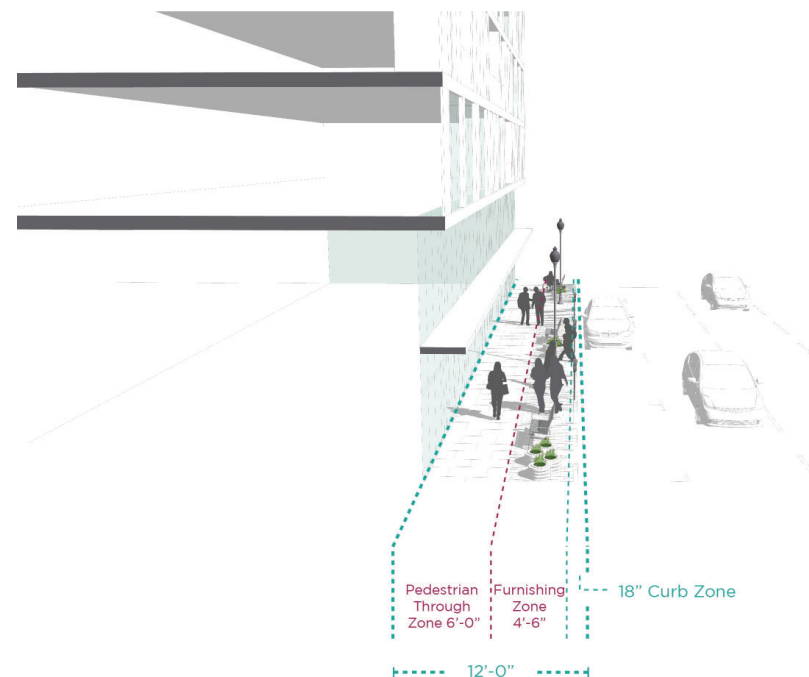
Narrow sidewalks are no wider than 15 feet and cannot comfortably accommodate two sidewalk zones in most cases. Given the constraints, include the pedestrian through zone and small planter/furnishing zones depending on specific street widths. The following diagrams illustrate four ways to arrange a narrow sidewalk based on available sidewalk widths. In all instances, a six-foot-wide clear zone within the pedestrian zone must never be obstructed. Café seating space is constrained on most narrow sidewalks but is encouraged by way of parklets when possible (discussed further in Chapter 6). Street lights must be accommodated on narrow sidewalks and must be placed close to the curb as to not obstruct the six-foot pedestrian clear zone. Some narrow streets include existing street trees. Street trees are not permitted on sidewalks narrower than 12.5 feet. Tree grates/grilles are not permitted on sidewalks wider than 14 feet. Please refer to the tree spacing and covered soil sections for more information.

On sidewalks between 12.5 feet and 14 feet wide, tree grates provide additional pedestrian throughway space. The tree grate should have a non-slip surface.



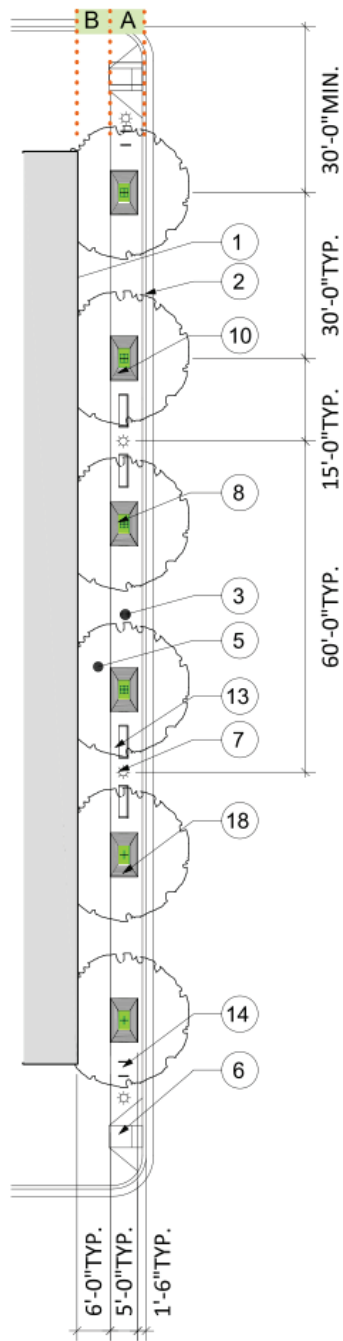
Narrow Streets Without Planting Zone

Narrow Streets Without Planting Zone



KEY LEGEND

- A Planting + Furnishing
- B Pedestrian Through Zone
- C Building Frontage
- # Items not shown on plan
- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate



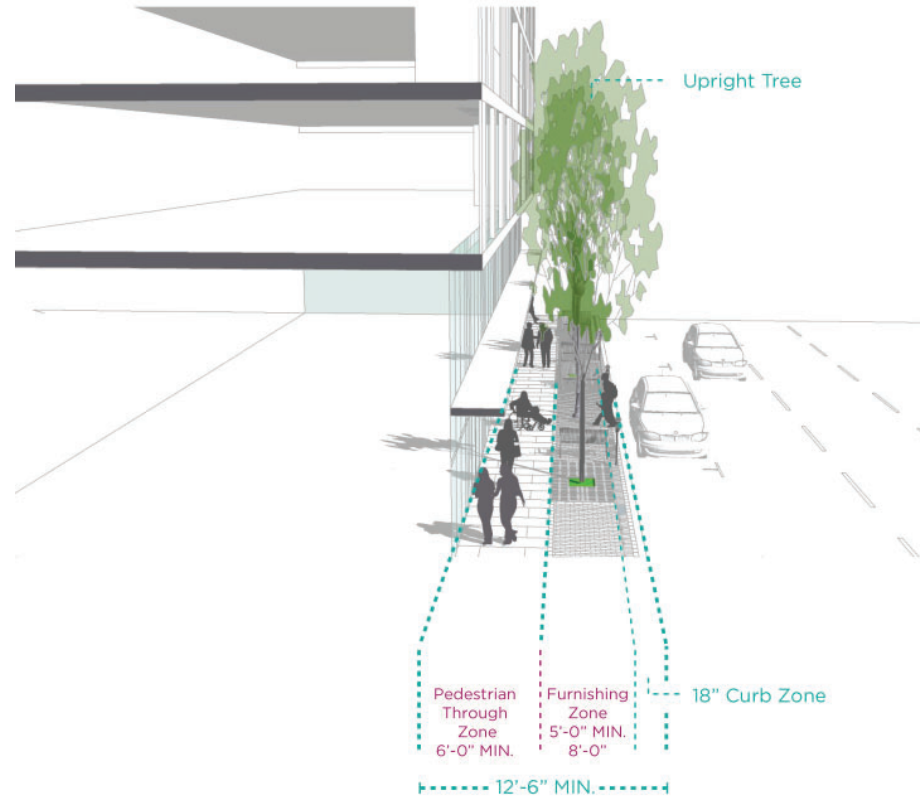
Narrow Streets With Street Tree & Grate

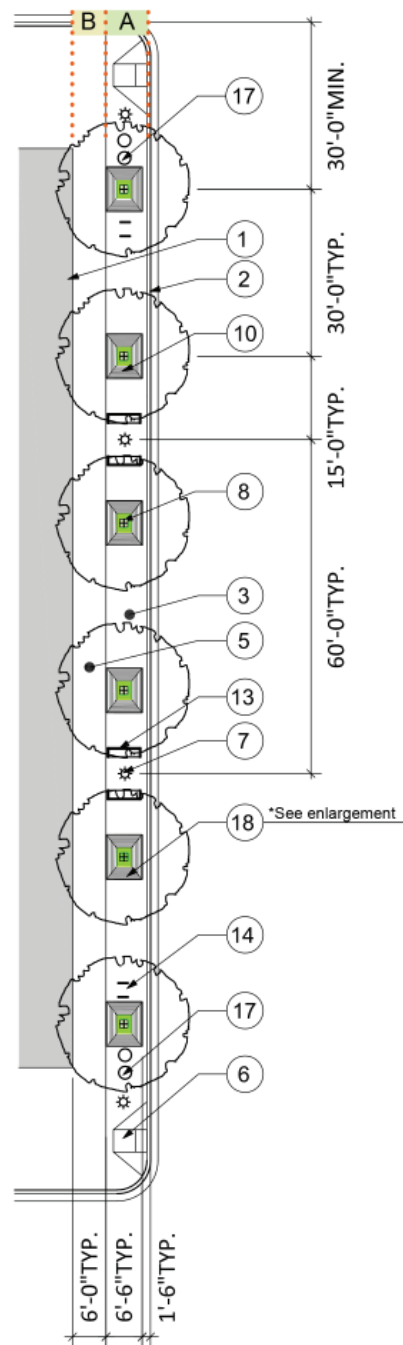
KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- # Items not shown on plan

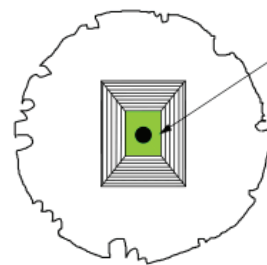
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- 18 Tree Grate

Narrow Streets With Street Tree & Grate





Narrow Streets With 8' Furnishing/
Planting Zone/ Tree Grate



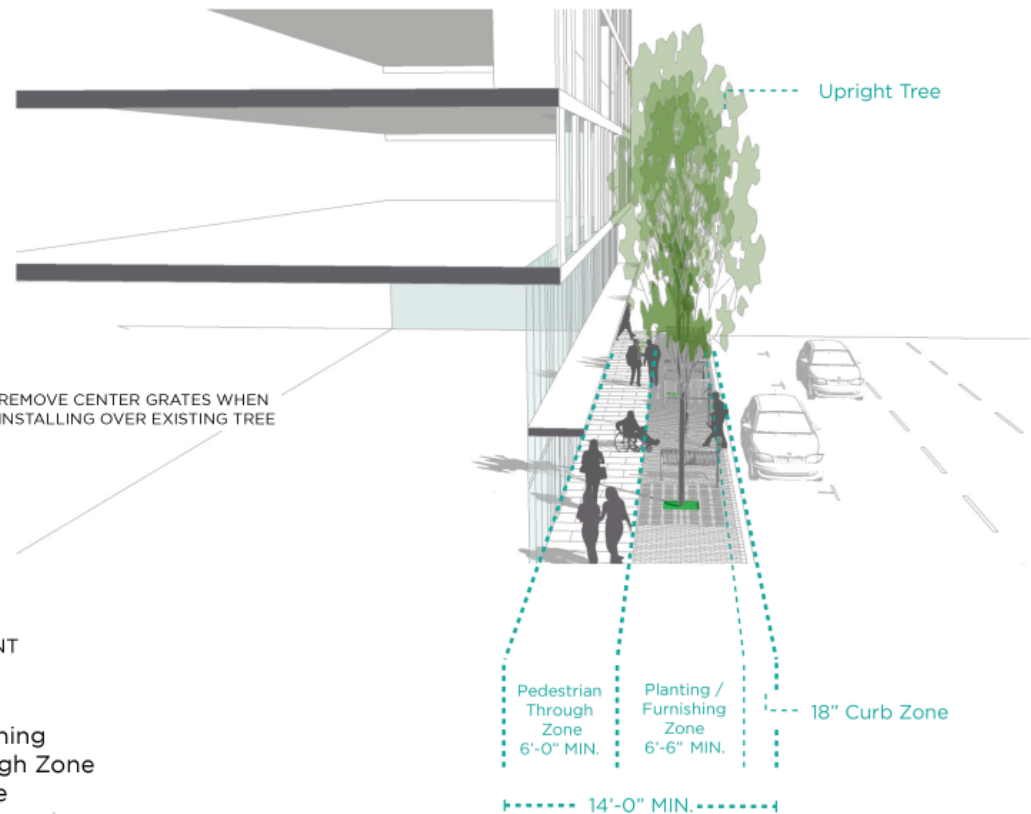
TREE GRATE ENLARGEMENT

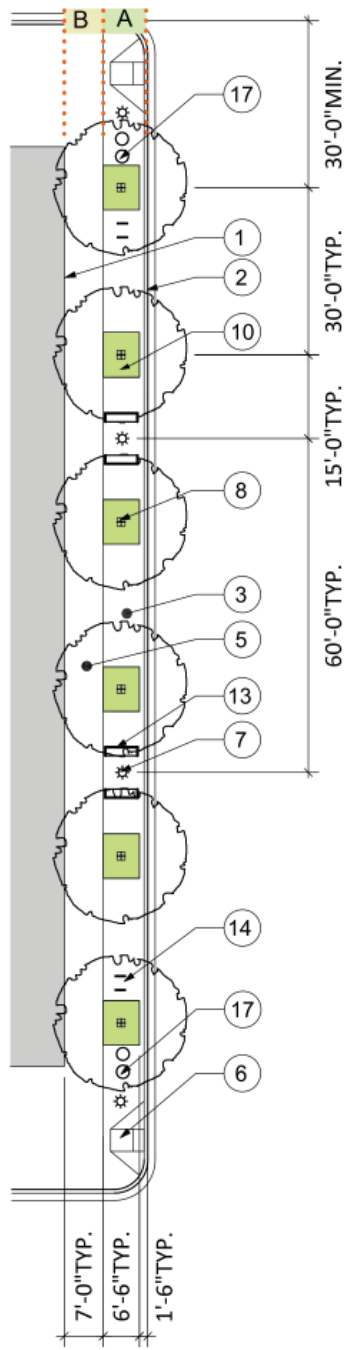
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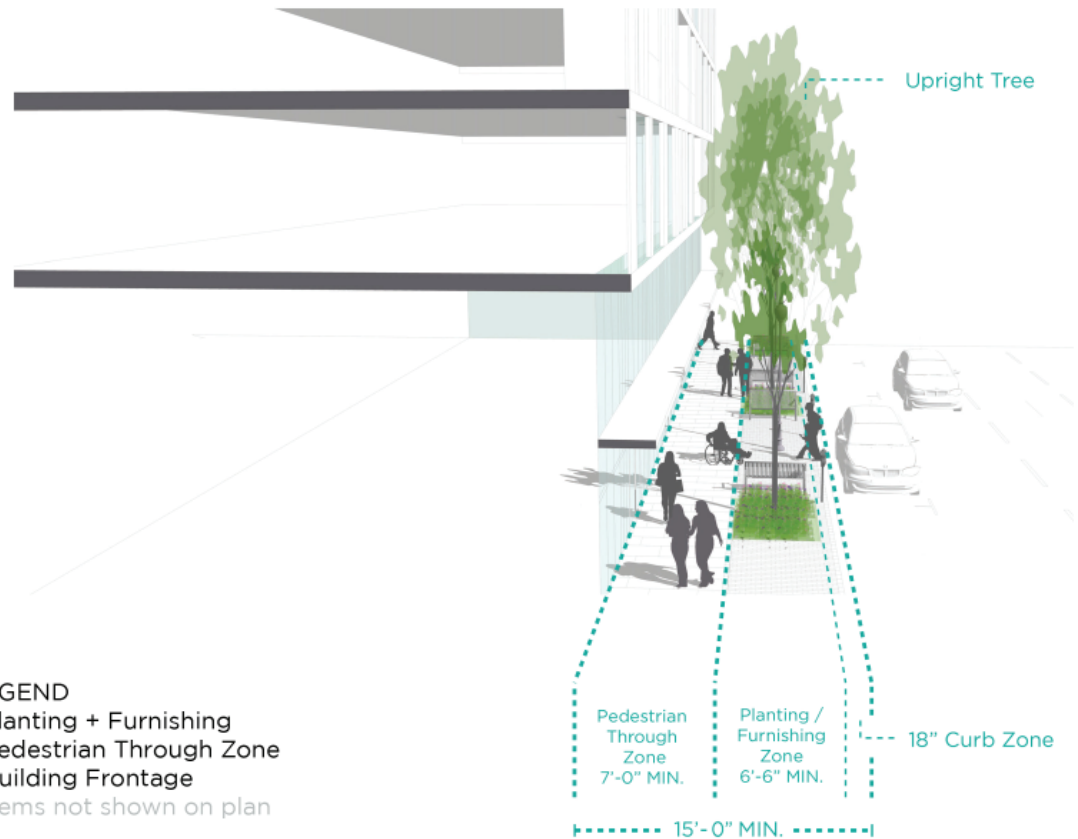
Narrow Streets With 8' Furnishing / Planting Zone / Tree Grate





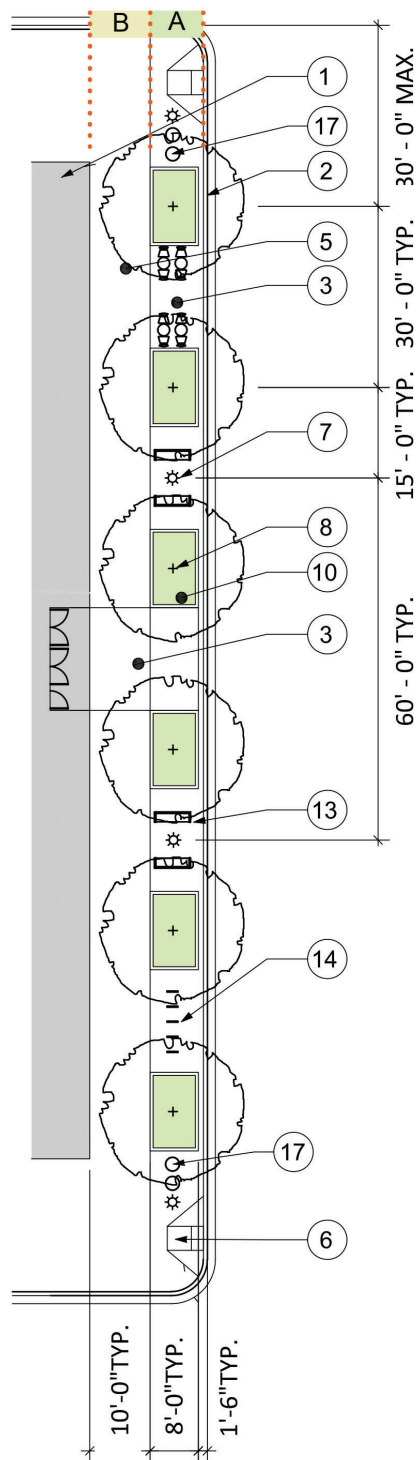
Narrow Streets With 7' Ped.
Zone/ Street Tree & Planting

Narrow Streets With 7' Ped. Zone / Street Tree & Planting



KEY LEGEND

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- B** Pedestrian Through Zone
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KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
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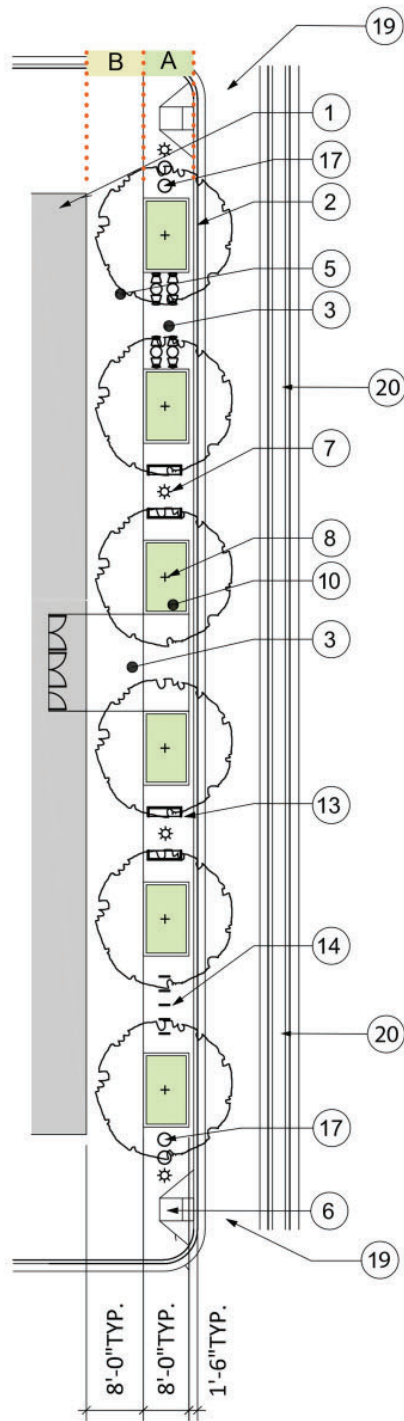
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- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate

Typical Streets

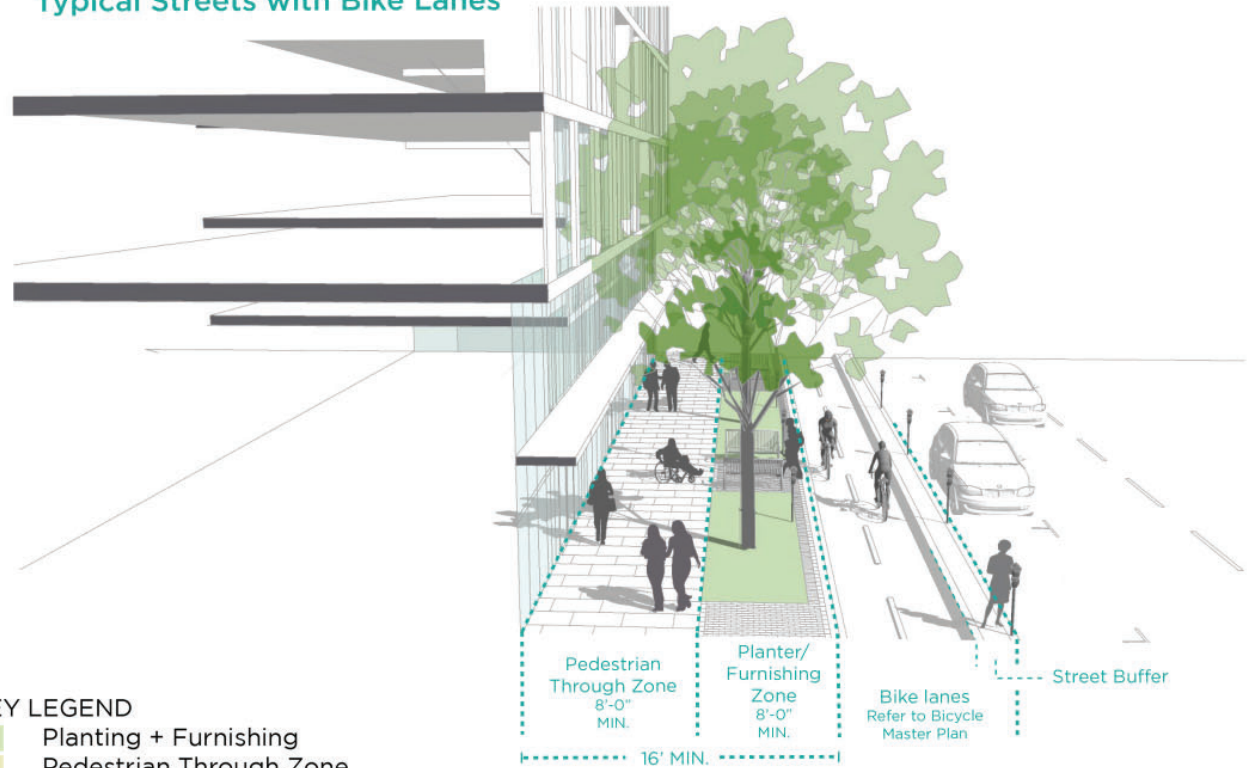


Typical (16'- 22'-11"):

Typical sidewalks range from 16 to 23-11" feet in width and can accommodate two sidewalk zones: (1) the pedestrian through zone and (2) the planter/furnishing zone. In all cases, the pedestrian through zone is at least 8 feet wide. The planter/furnishing zone must be at least 6'-6" wide (a total of 8 feet with and 18" parking access zone) and should accommodate all plantings, furnishings, lighting and wayfinding. For sidewalks between 16 feet and 18 feet wide additional space to be added to the pedestrian through zone. There should be a path between the sidewalk and the 18" wide parking access zone across the Planter/furnishing zoned roughly every 16 feet. Street trees and understory planting should be included within new and existing typical sidewalks and must follow the planting element standards in Chapter 4. Minimum furnishings to be included within this zone are benches, trash receptacles and bicycle racks. For sidewalks with more than 18 feet, the additional space may be utilized by the adjoining ground floor businesses for cafe seating in the planter/furnishing zone. For cafe seating, See Montgomery County Department of Permitting Services Outdoor Café Seating requirements: <https://www.montgomerycountymd.gov/DPS/Process/ld/outdoor-cafe-seating-permit.html>

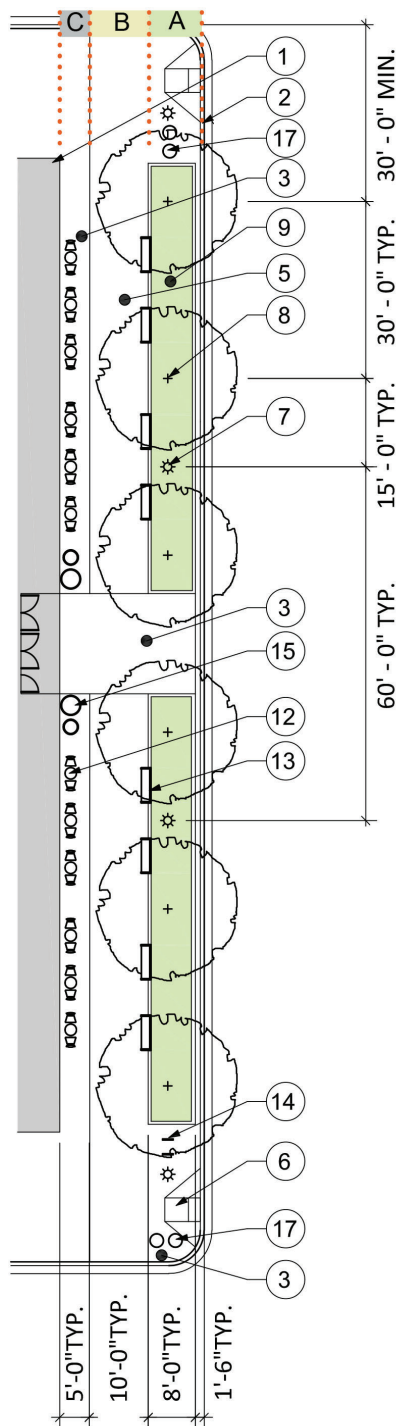


Typical Streets with Bike Lanes



KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- # Items not shown on plan
- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate
- 19 Bike Lanes
- 20 Curb Zone

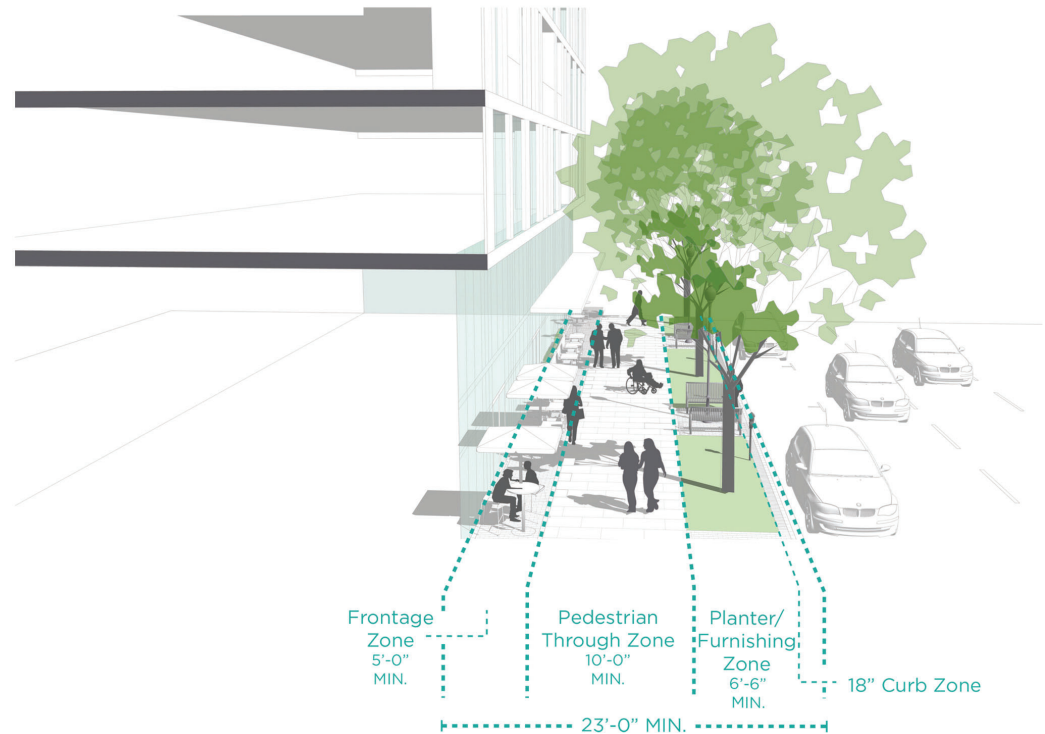


KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- # Items not shown on plan

- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate

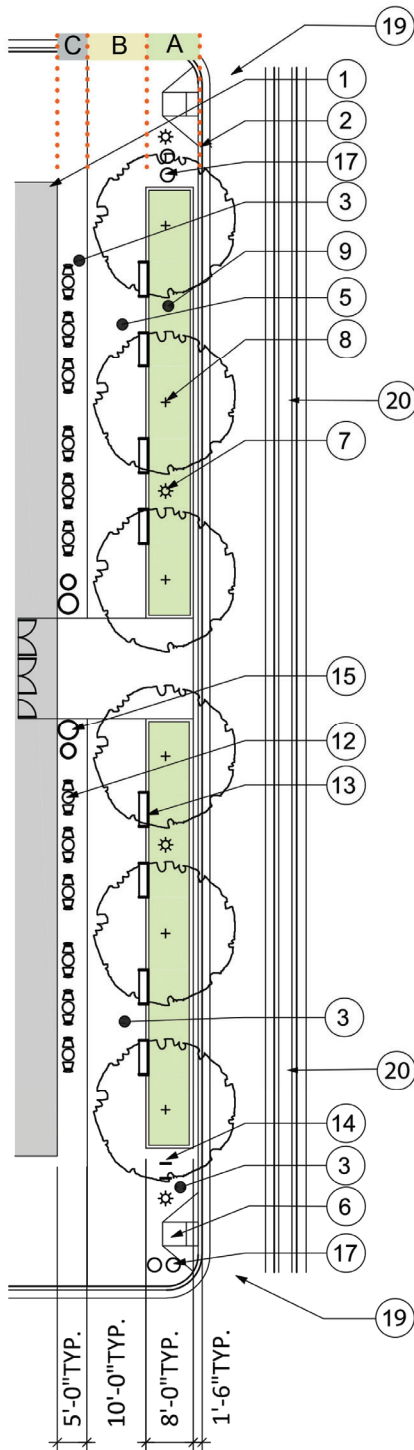
Generous Streets



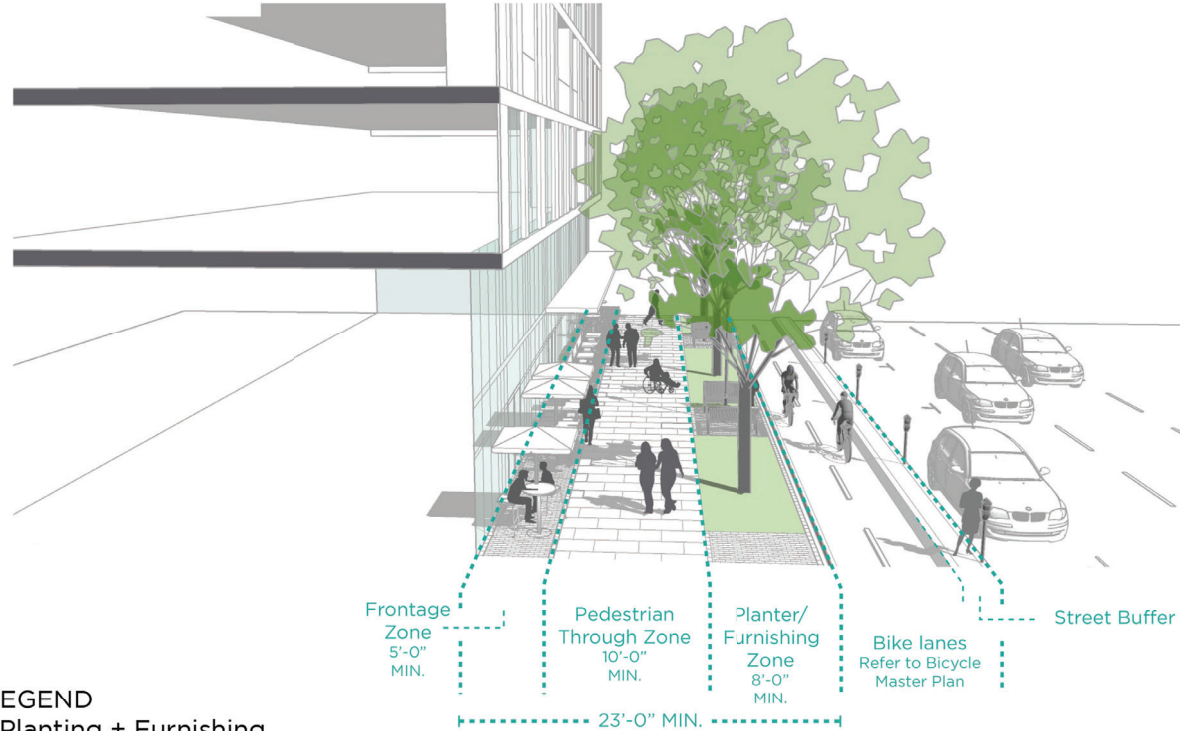
Generous (23' or More):

Generous sidewalks are anything wider than 23 feet and can accommodate all three sidewalk zones. Pedestrian through zones and planter/furnishing zones along generous sidewalks should follow the same dimensions and host the same features as those along typical sidewalks. The added frontage zone is the only difference between generous and typical sidewalks. Frontage zones are paved areas along generous sidewalks and are located between the adjoining building façade and the pedestrian through zone. This zone should be no narrower than five feet wide and should be used as an extension of the adjoining ground floor use. When overall sidewalk dimension is 23 feet wide or greater, café seating should be placed in the frontage zone rather than in the planter/furnishing zone. For café seating, See Montgomery County Department of Permitting Services Outdoor Café Seating requirements: <https://www.montgomerycountymd.gov/DPS/Process/Id/outdoor-cafe-seating-permit.html>

In all cases, the pedestrian through zone must be unobstructed.



Generous Streets with Bike Lanes

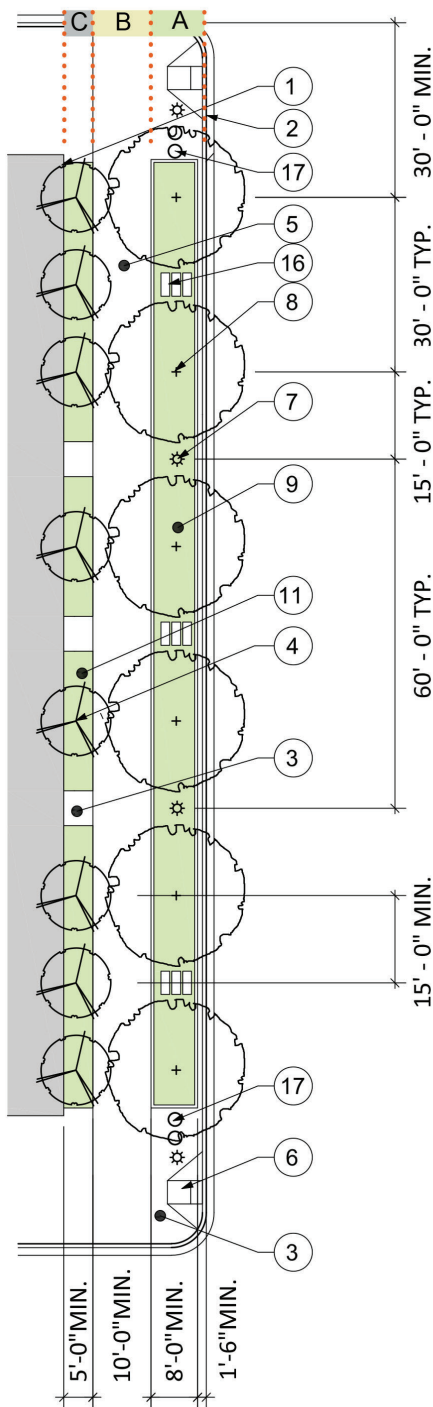
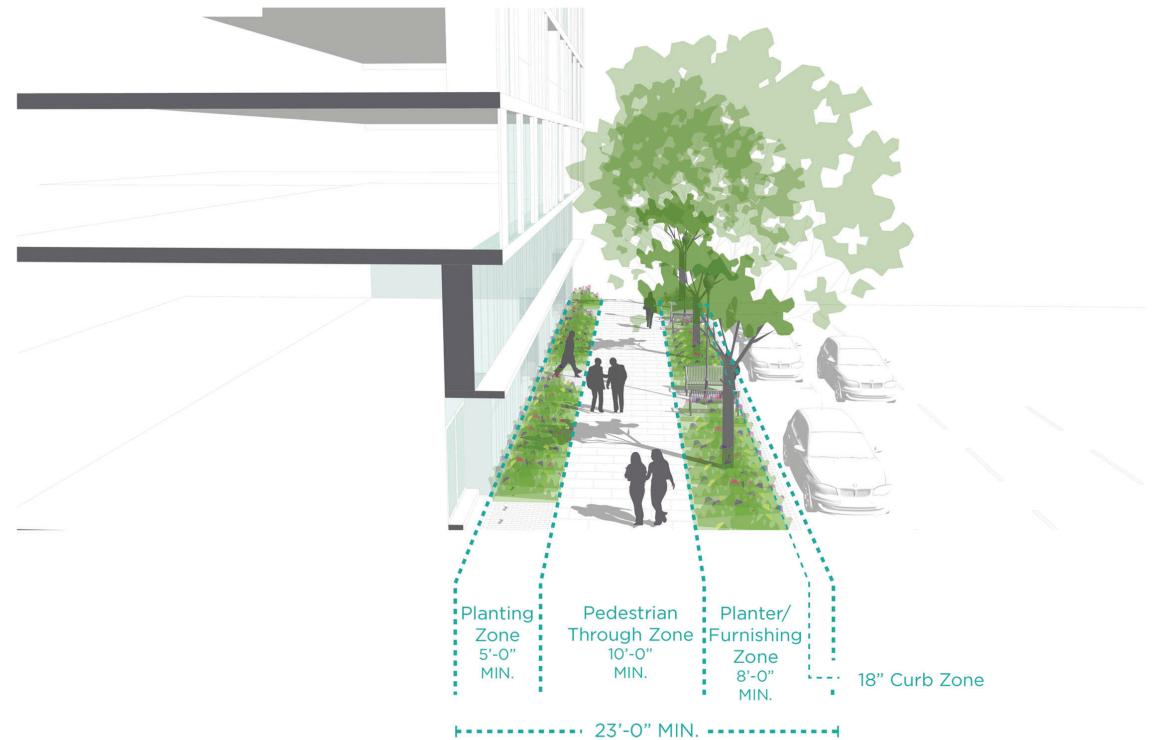


KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- # Items not shown on plan

- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate
- 19 Bike Lanes
- 20 Curb Zone

Habitat Corridor

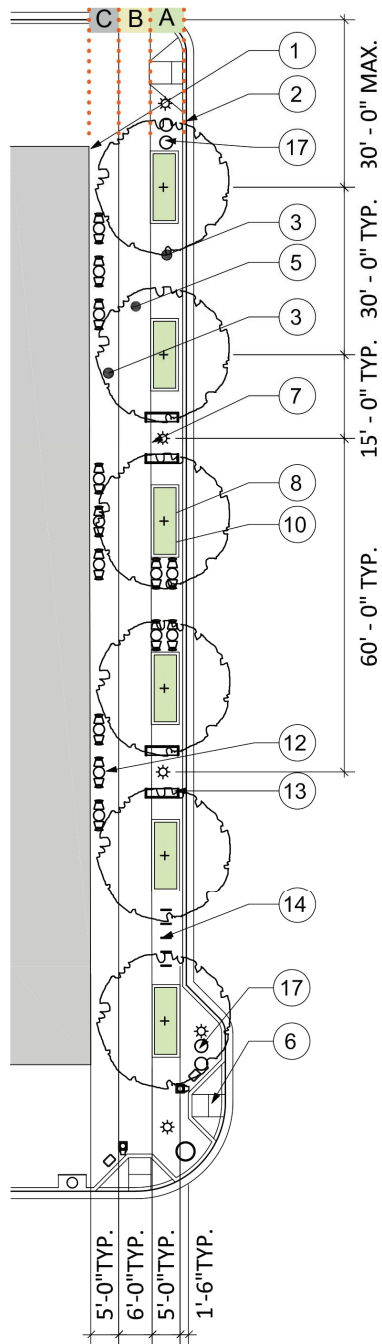


KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- #** Items not shown on plan
- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate

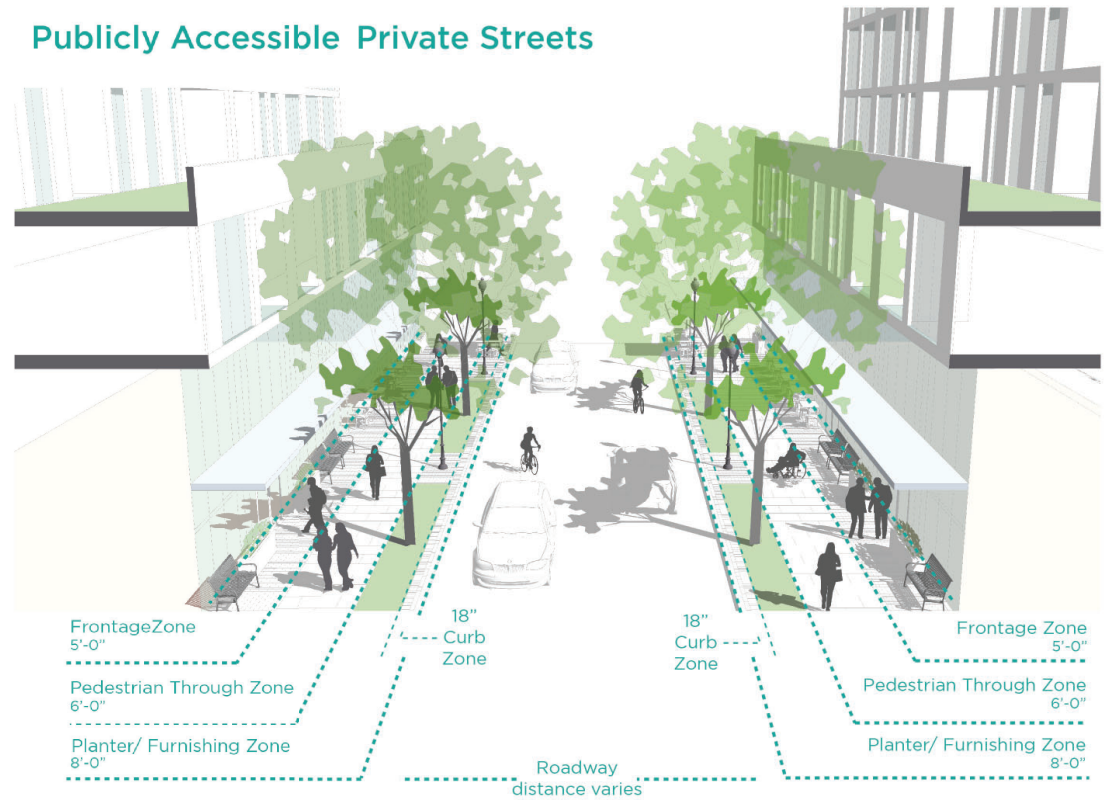
Habitat Corridor ("Generous" Alternative):

Habitat corridors are an alternative to the generous sidewalk type and aim to establish strategic green connections to new and existing parks and natural amenities. These corridors were designated based on a set of characteristics: (1) ROW availability, (2) adjoining non-retail ground floor uses, and (3) direct links to green spaces. The corridors contain the same three sidewalk zones whose dimensions correspond to those of generous sidewalks (a frontage zone, pedestrian through zone, and planter/furnishing zone). The primary difference between the two sidewalk types is that, in habitat corridors, all paving within the frontage and planter/furnishing zones is converted to plantings. Only limited paving should exist within the frontage zone and planter/furnishing zone, to provide access to parked vehicles and building entrances. Intensive understory planting should incorporate green infrastructure and provide lush natural habitats that support endangered pollinator insect species. Refer to the planting element section in Chapter 4 for more information regarding understory planting in habitat corridors. Anyone developing a future habitat corridor should collaborate with the Montgomery County Department of Environmental Protection (DEP).



Publicly Accessible Private Streets

Publicly Accessible Private Streets



KEY LEGEND

- A** Planting + Furnishing
- B** Pedestrian Through Zone
- C** Building Frontage
- # Items not shown on plan
- 1 Building Face
- 2 MCDOT Concrete Curbing, Typ.
- 3 Standard Brick Paving
- 4 Understory Tree, Typ.
- 5 Accent Paving (Subject to MCDOT Approval)
- 6 ADA Curb Ramp
- 7 Street Light, Typ.
- 8 Street Tree, Typ.
- 9 Continuous Planting Strip
- 10 Tree Well
- 11 Planting Area
- 12 Cafe / Dining Seating
- 13 Bench, Typ.
- 14 Bike Rack, Typ.
- 15 Free Standing Planting Container
- 16 Pedestrian Crossing Pavers
- 17 Receptacles
- 18 Tree Grate

Publicly Accessible Private Streets:

Publicly Accessible Private Streets are newly-constructed, privately owned streets that are accessible to the general public. The purpose and dimensions of these streets may vary. For example, many of these streets might have limited vehicular access and function more as shared streets. Even with the potential design range, these new streets must include the standard sidewalk zones referenced in the beginning of Chapter 3. These streets can be thought of as calm or expressive. Their corresponding element design is allowed to be more flexible and should be reviewed on a case by case basis, but safe and convenient pedestrian access cannot be compromised under any circumstances. New projects should also be sensitive to site context. Refer to the 'Publicly Accessible Private Streets' diagram for minimum zone dimensions.



Programming:

The Silver Spring CBD strives for vibrant and active streetscapes to support a dynamic urban place. Sidewalk programming is critical to achieving this goal and is strongly encouraged. Sidewalk programming is best defined as dedicating sidewalk space for pedestrians to linger, dine, play and gather. Programming is only feasible within the frontage zone and planter/furnishing zone. While narrow sidewalks only contain pedestrian through zones, which must remain unobstructed for safe pedestrian movement, other sidewalk types provide many opportunities for programming through the use of moveable street furniture, outdoor seating, public art, and 'guerilla' or 'tactical urbanism' projects. For more detailed information about sidewalk programming, please refer to the 2017 Bethesda Downtown Plan Design Guidelines.





Chapter 4:

Streetscape Elements

Streetscape Elements Introduction:

Silver Spring's Streetscapes are more than paths for pedestrian circulation. As Silver Spring evolves into an increasingly urban place, its streetscapes must satisfy more diverse needs. Streetscapes are increasingly the CBD's front porch where culture is made spontaneously, and where people come to gather and linger.

As Silver Spring densifies, its streetscapes face increasing pressure to serve more duties. They're where habitat and greenery must be stitched back into public life, where bicycles need to be parked, where lights can be placed to facilitate 24-hour activity, where restaurants and businesses advertise to and engage with customers, and where community identity is expressed. In addition to being dedicated places for public life, these same streetscapes must also serve as the primary storage facilities for utilities and stormwater management via underground utility banks and vaults.

To continue to accommodate Silver Spring's growth, these Standards provide detailed descriptions of how to properly design and construct Silver Spring's streetscapes to satisfy the functional needs of its built environment while creating more people-focused spaces for Silver Spring's residents, workers, and visitors. The following sections describe the CBD's streetscape elements and their proper applications.

At the time of the Silver Spring Streetscape Standards publication, the Silver Spring Urban District maintains within the Silver Spring CBD the brick, paver and concrete sidewalks, street trees, shrubs and perennials and street furnishings. The code governing the maintenance of Streetscapes in the Right - of - Way in the Silver Spring CBD is Section 68A-3: Creation of urban districts. If and when the code governing the maintenance of Streetscapes in the Right-of-Way in the Silver Spring CBD is revised or changed, these Standards are to be updated accordingly.





Plantings:

The Silver Spring Streetscape Standards defines plantings as street trees and understory planting. With some exceptions, most of Silver Spring's streetscapes are filled with extensive plantings. This is especially true among Silver Spring's newest and widest streetscapes. Despite strong efforts, many of these plants are not always well maintained and struggle to survive in the CBD's urban environment. Maintaining new plantings will require a County Government commitment and coordination between the responsible agencies, such as Montgomery County Department of Transportation, (MCDOT); State Highway Administration, (SHA); and the Silver Spring Urban District, (SSUD). Additionally, a narrow range of tree species and understory plants are repeatedly being selected and planted. This practice is leading to monocultures that are vulnerable to disease.

In response to Silver Spring's existing planting strengths and challenges, a new planting approach has been created to diversify Silver Spring's street trees and understory plantings without detracting from the visual clarity of Silver Spring's current tree canopies. Because Silver Spring has limited green and open space quantity, new methods were developed to better harness high-quality livable green spaces through its existing streetscapes.

Tree Canopy:

Street trees have a significant impact on the streetscape. Not only do they provide shade and vehicular buffering for pedestrians, street trees also combat the heat island effect, decrease excess stormwater runoff, and provide a necessary habitat for urban wildlife. Silver Spring has benefited from significant tree canopy coverage within the CBD. However, as mentioned in Chapter 1, its planted tree selection is limited. To diversify tree species while maintaining consistent tree canopy appearances within the CBD, the street tree selection system has been updated.

In most cases, Silver Spring's streets have been built out and its street tree locations have already been

determined. However, in situations where new streets are being developed or existing streetscapes are being reconfigured to include new street trees, these standards recommend that medium to large trees are spaced between 35 and 45 feet on center, dependent upon the sidewalk type, tree habit and existing utilities. For smaller ornamental trees, spacing can be 35 feet or less but must be reviewed on a case by case basis. For larger trees, 45 feet is acceptable.

These standards categorize tree species based on habit/form, sidewalk type, program and subdistrict. Sidewalk type organization is based on a tree's size as it correlates with the planting space provided within the streetscape. Tree size and form are also determined by sidewalk type and amount of retail on the street. For example, on retail streets, trees with well-spaced branching structure that does not block the view of signage should be selected. On narrow sidewalks, trees with a narrow habit should be selected to avoid hitting building facades. Categories also distinguish between areas with low impact development (LID) or GI planting and consider ground-floor retail versus residential frontages. Tree habits and characteristics are defined in the following tree matrix and should be considered when selecting a new or infill street tree. Tree species groups are also designated for each of Silver Spring's CBD subdistricts and build upon the tree species that are pre-existing in those areas. Tree selection for each CBD also considers prevalent street types, block compositions and current ground-floor uses. These tree selections aim to establish effective tree planting standards that both maintain a consistent visual canopy appearance while encouraging increased tree diversity throughout the CBD. Please refer to the following tree matrix when selecting a new or infill street tree.

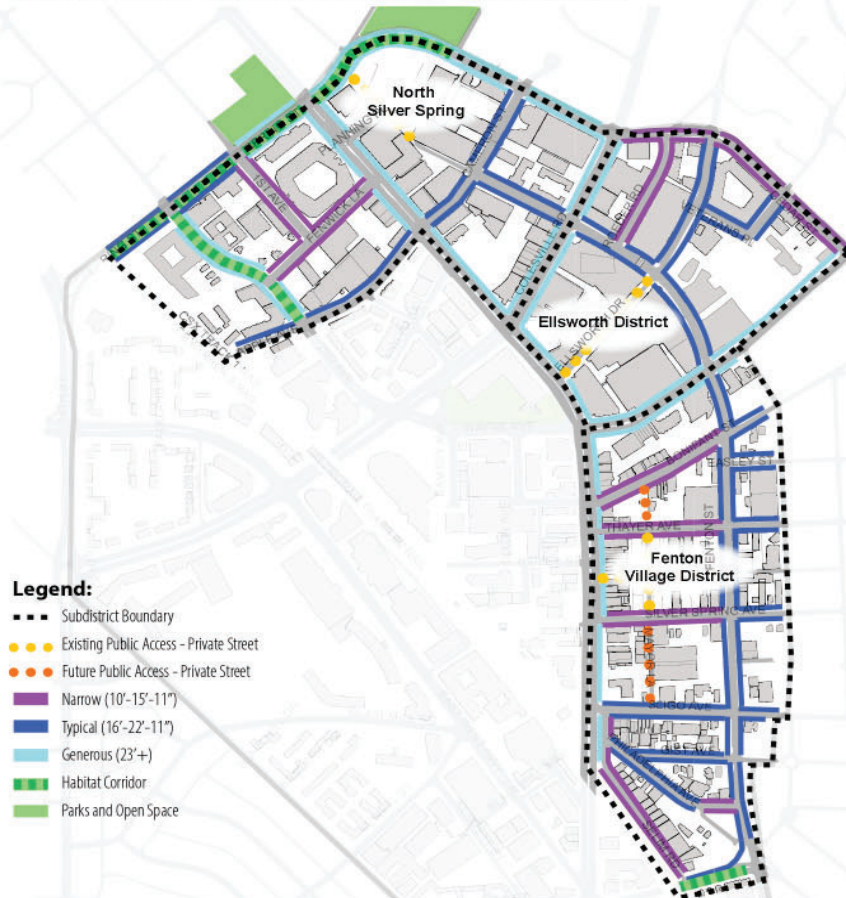
PRIORITY TREE PLANTING LOCATIONS



TREE SELECTION AND SIZE REQUIREMENTS:

- Recommended tree selections only apply to trees planted in the Planter/furnishing Zone.
- Avoid planting the same tree species next to each other. Aim to intermix tree species evenly along each block.
- Avoid planting trees with dense foliage along retail corridors.
- Planting trees that are not included on this map are subject to M-NCPPC review.
- Tree selections also apply to street tree replacements.
- All new tree plantings must be a minimum of 4-inch caliper in size,
- On planting strips 5' wide or narrower, the root ball for a 4-inch caliper tree will be too large. In these cases, the tree size may be reduced to 2-inch caliper so that the resulting smaller rootball will fit into the narrower planting strip.

STREET TREE PLANTING MAP BY SUBDISTRICT



Legend:

- Subdistrict Boundary
- Existing Public Access - Private Street
- Future Public Access - Private Street
- Narrow (10'-15'-11'')
- Typical (16'-22'-11'')
- Generous (23'+)
- Habitat Corridor
- Parks and Open Space

FENTON VILLAGE DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Carya aquatica</i>	Water Hickory	20'-30'
<i>Parrotia persica</i> 'Streetwise'	Streetwise Persian Ironwood	10'-20'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus lyrata</i> 'Highbeam'	Highbeam Overcup Oak	30'-40'
<i>Quercus nuttallii</i> 'Sangria'	Sangria Nuttall Oak	30'-40'
Generous Sidewalks		
Georgia Ave.		
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
Wayne Ave.		
<i>Nyssa sylvatica</i>	Blackgum	50'-60'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus nuttallii</i> 'Highpoint'	Highpoint Nuttall Oak	40'-50'
<i>Quercus phellos</i> 'Fortitude'	Fortitude Willow Oak	40'-50'

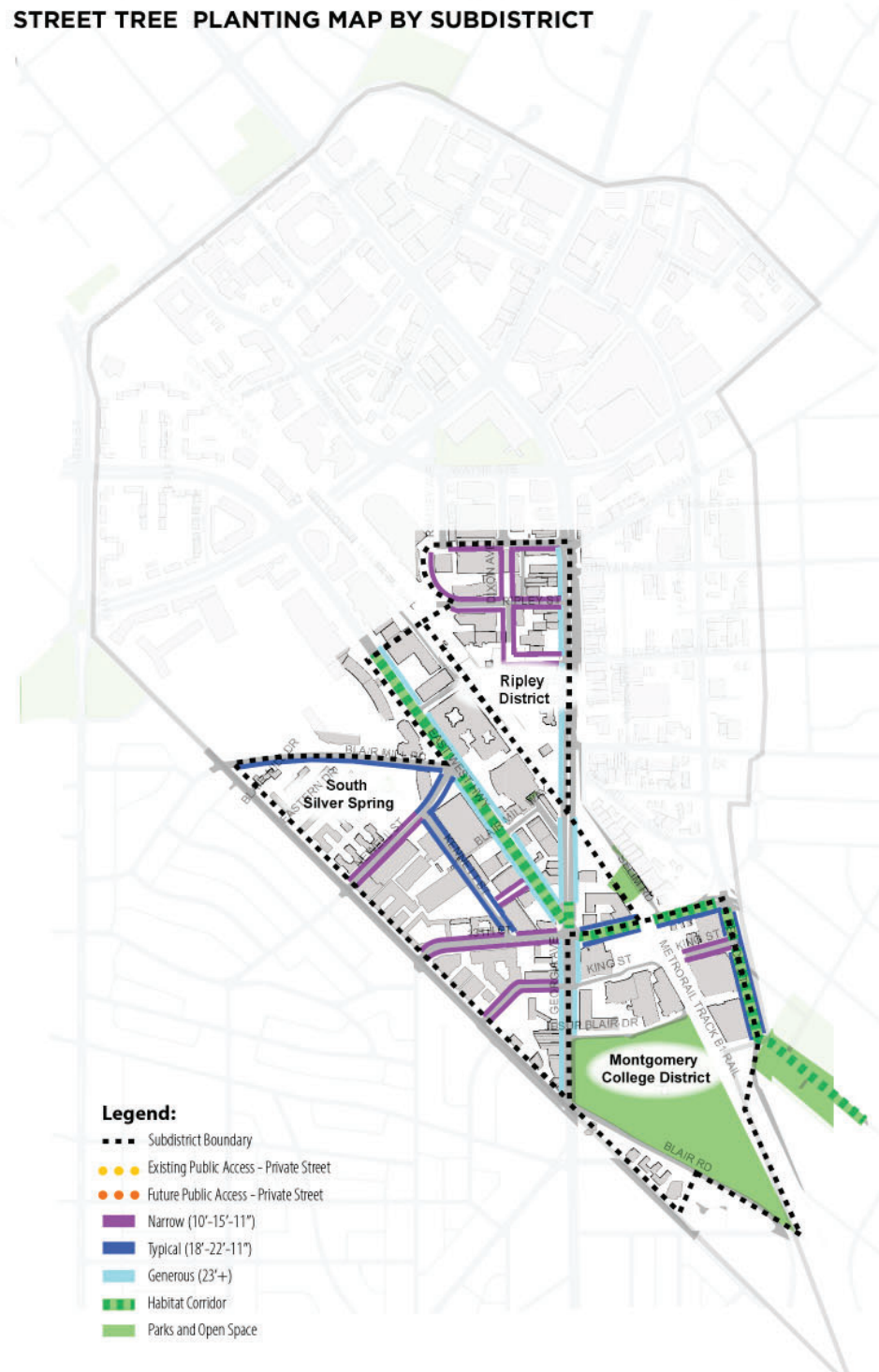
NORTH SILVER SPRING DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Acer Rubrum</i> 'Armstrong'	Armstrong Maple	10'-15'
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Parrotia persica</i> 'Streetwise'	Streetwise Persian Ironwood	10'-20'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
Typical Sidewalks		
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus lyrata</i> 'Highbeam'	Highbeam Overcup Oak	30'-40'
<i>Quercus x QRSW18</i> 'Streetwise'	Streetwise Red Oak	30'-40'
Generous Sidewalks		
Georgia Ave		
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Shiraz'	Shiraz Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
Spring St.		
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus phellos</i> 'Fortitude'	Fortitude Willow Oak	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
Colesville Rd.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Gleditsia triacanthos</i> var. <i>inermis</i> 'Shademaster'	Thornless Honeylocust	40'-50'
<i>Quercus phellos</i> 'Hightower'	Hightower Willow Oak	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
2nd Ave.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Quercus phellos</i> 'Abundance'	Abundance Willow Oak	40'-50'

ELLSWORTH DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Acer rubrum</i> 'Armstrong'	Armstrong Red Maple	10'-15'
<i>Betula Nigra</i> 'Dura Heat' (single stem)	Dura Heat River Birch	15'-20'
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus x phellos</i> 'Ascendor'	Ascendor Willow Oak	30'-40'
<i>Quercus lyrata</i> 'Highbeam'	Highbeam Overcup Oak	30'-40'
<i>Tilia americana</i>	American Linden	30'-40'
Generous Sidewalks		
Georgia Ave.		
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Shiraz'	Shiraz Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
Wayne Ave.		
<i>Nyssa sylvatica</i>	Blackgum	50'-60'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus nuttallii</i> 'Highpoint'	Highpoint Nuttall Oak	40'-50'
<i>Quercus phellos</i> 'Fortitude'	Fortitude Willow Oak	40'-50'
Colesville Rd.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Gleditsia triacanthos</i> var. <i>inermis</i> 'Shademaster'	Thornless Honeylocust	40'-50'
<i>Quercus phellos</i> 'Hightower'	Hightower Willow Oak	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'

STREET TREE PLANTING MAP BY SUBDISTRICT



RIPLEY DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Carya aquatica</i>	Water Hickory	20'-30'
<i>Ostrya virginiana</i>	American Hornbeam	20'-40'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
Generous Sidewalks		
Georgia Ave.		
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	60'-70'

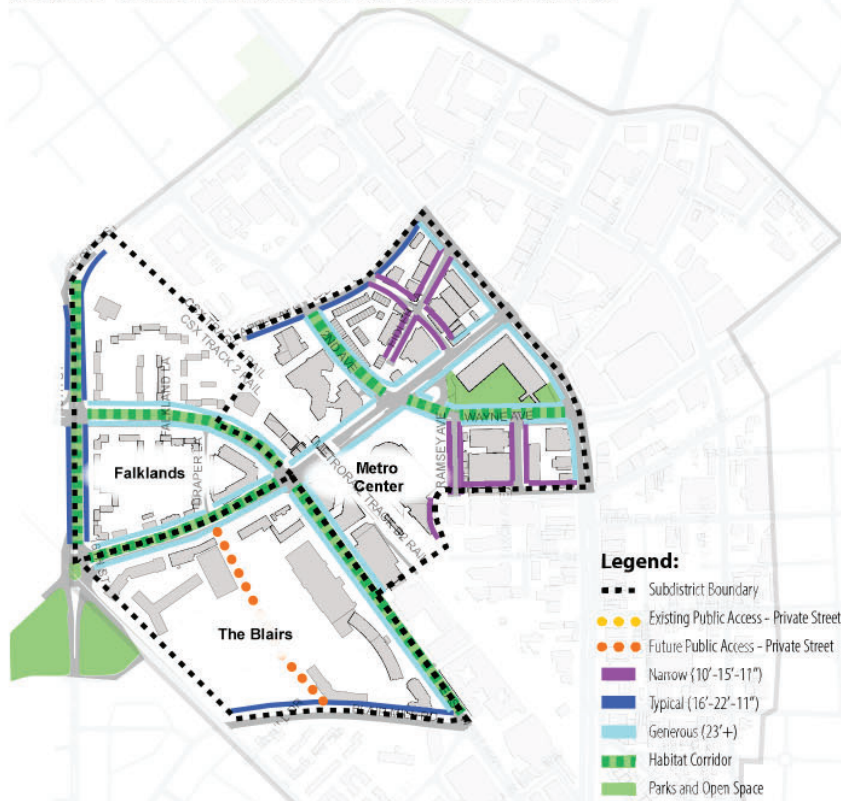
SOUTH SILVER SPRING DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Acer rubrum</i> 'Armstrong'	Armstrong Red Maple	10'-15'
<i>Betula Nigra</i> 'Dura Heat' (single stem)	Dura Heat River Birch	15'-20'
<i>Carya aquatica</i>	Water Hickory	20'-30'
<i>Parrotia persica</i> 'Streetwise'	Streetwise Persian Ironwood	10'-20'
Typical Sidewalks		
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus lyrata</i> 'Highbeam'	Highbeam Overcup Oak	30'-40'
<i>Quercus x QRSW18</i> 'Streetwise'	Streetwise Red Oak	30'-40'
<i>Tilia americana</i>	American Linden	30'-40'
Generous Sidewalks		
Georgia Ave.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
East West Hwy.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Shiraz'	Shiraz Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'

MONTGOMERY COLLEGE DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	20'-40'
<i>Ostrya virginiana</i>	Ironwood	25'-40'
<i>Parrotia persica</i> 'Streetwise'	Streetwise Persian Ironwood	10'-20'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus x phellos</i> 'Ascendor'	Ascendor Willow Oak	20'-40'
<i>Tilia americana</i>	American Linden	30'-40'
Generous Sidewalks		
Georgia Ave.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'

STREET TREE PLANTING MAP BY SUBDISTRICT



FALKLANDS DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Acer rubrum</i> 'Armstrong'	Armstrong Red Maple	15'-20'
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Betula Nigra</i> 'Dura Heat' (single stem)	Dura Heat River Birch	15'-20'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus lyrata</i> 'Highbeam'	Highbeam Overcup Oak	30'-40'
<i>Quercus nuttallii</i> 'Sangria'	Sangria Nuttall Oak	30'-40'
<i>Tilia americana</i>	American Linden	30'-40'
Generous Sidewalks		
Colesville Road		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Hightower'	Hightower Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
East West Hwy		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Quercus nuttallii</i> , 'Highpoint'	Highpoint Nuttall Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'

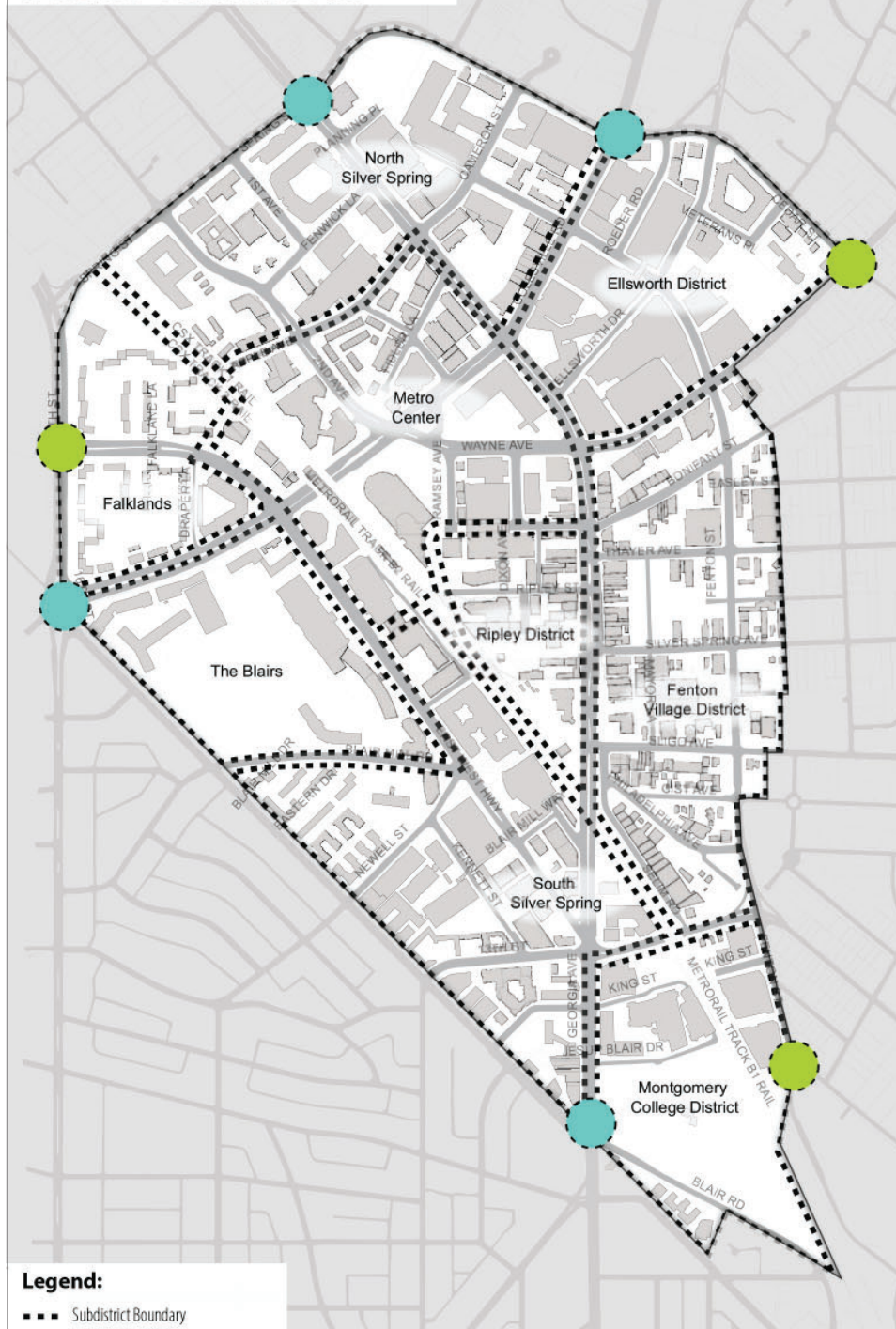
METRO CENTER DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Betula nigra</i> 'Dura Heat'	Dura Heat River Birch	15'-20'
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	10'-20'
<i>Parrotia persica</i> 'Streetwise'	Streetwise Persian Ironwood	10'-20'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
<i>Ostrya virginiana</i>	Musclewood	20'-40'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus x phellos</i> 'Ascendor'	Ascendor Willow Oak	30'-40'
<i>Quercus x QRSW18</i> 'Streetwise'	Streetwise Red Oak	30'-40'
Generous Sidewalks		
Colesville Rd.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Gleditsia triacanthos</i> var. <i>inermis</i> 'Shademaster'	Thornless Honeylocust	40'-50'
<i>Quercus phellos</i> 'Hightower'	Hightower Willow Oak	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
2nd Ave / Wayne Ave.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus phellos</i> 'Hightower'	Hightower Overcup Oak	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'
East West Hwy.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Quercus nuttallii</i> , 'Highpoint'	Highpoint Nuttall Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
Georgia Ave.		
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Shiraz'	Shiraz Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	40'-50'

THE BLAIRS DISTRICT

Latin Name	Common Name	Spread
Narrow Sidewalks		
<i>Carpinus caroliniana</i> 'Palisade'	Palisade American Hornbeam	20'-40'
<i>Ostrya virginiana</i>	Musclewood	20'-40'
<i>Quercus georgiana</i> 'Jaybird'	Jaybird Georgia Oak	15'-30'
Typical Sidewalks		
<i>Acer rubrum</i> 'Fireball'	Fireball Red Maple	30'-40'
<i>Liquidambar styraciflua</i> 'Ward'	Ward Sweetgum	30'-40'
<i>Quercus x QRSW18</i> 'Streetwise'	Streetwise Red Oak	30'-40'
<i>Tilia americana</i>	American Linden	30'-40'
Generous Sidewalks		
Colesville Rd.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Quercus alba</i>	White Oak	50'-70'
<i>Quercus phellos</i> 'Hightower'	Hightower Willow Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'
East West Hwy.		
<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	40'-50'
<i>Nyssa sylvatica</i>	Blackgum	40'-50'
<i>Quercus bicolor</i>	Swamp White Oak	50'-60'
<i>Quercus nuttallii</i> , 'Highpoint'	Highpoint Nuttall Oak	40'-50'
<i>Ulmus americana</i> 'Jefferson'	Jefferson American Elm	40'-50'
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm	40'-50'

GATEWAY PLANTING MAP



GATEWAYS

	Latin Name	Common Name	Height
	Primary Gateway		
	<i>Quercus rubra</i>	Northern Red Oak	60'-80'
	<i>Taxodium distichum</i>	Bald Cypress	50'-70'
	Secondary Gateway		
	<i>Ulmus americana</i> 'Valley Forge'	Valley Forge American Elm	60'-70'

Preliminary Planting List

Latin Name	Common Name	Height	Type	Habit/Form			
				R	U	O	Co
Large Trees							
Nyssa sylvatica	Hackberry	40'-70'	Deciduous Tree				x
Quercus alba	White Oak	50'-70'	Deciduous Tree			x	
Quercus bicolor	Swamp White Oak	50-60'	Deciduous Tree			x	
Quercus lyrata 'Highbeam'	Highbeam Overcup Oak	40'-60'	Deciduous Tree			x	
Quercus nuttallii, 'Highpoint'	Highpoint Nuttall Oak	40'-60'	Deciduous Tree	x			
Quercus nuttallii, 'Sangria'	Sangria Nuttall Oak	40'-60'	Deciduous Tree	x			
Quercus phellos 'Abundance'	Abundance Willow Oak	60'-75'	Deciduous Tree			x	
Quercus phellos 'Ascendor'	Ascendor Willow Oak	60'-75'	Deciduous Tree			x	
Quercus phellos 'Hightower'	Hightower Willow Oak	60'-75'	Deciduous Tree			x	
Quercus phellos 'Fortitude	Fortitude Willow Oak	60'-75'	Deciduous Tree			x	
Quercus phellos 'Shriaz'	Shiraz Willow Oak	60'-75'	Deciduous Tree			x	
Quercus x QRSW18 'Streetwise'	Streetwise Red Oak	60'-75'	Deciduous Tree			x	
Quercus rubra	Northern Red Oak	60'-80'	Deciduous Tree	x			
Taxodium distichum	Bald Cypress	50'-70'	Deciduous Tree				x
Tilia americana	American Linden	50'-80'	Deciduous Tree				x
Ulmus americana 'Jefferson'	Jefferson American Elm	40'-50'	Deciduous Tree		x		
Ulmus americana 'Princeton'	Princeton American Elm	50'-70'	Deciduous Tree		x		
Ulmus americana 'Valley Forge'	Valley Forge American Elm	60'-70'	Deciduous Tree		x		
Medium Trees Deciduous Tree							
Acer rubrum 'Fireball'	Fireball Red Maple	40'-50'				x	
Acer rubrum 'October Glory'	October Glory Red Maple	40'-50'	Deciduous Tree			x	
Betula Nigra 'Dura Heat' (single stem)	Dura Heat River Birch	25'-35'	Deciduous Tree			x	
Gleditsia triacanthos var. inermis 'Shademaster'	Thornless Honeylocust	40'-60'	Deciduous Tree			x	
Liquidambar styraciflua 'Ward'	Streetwise Persion Ironwood	25'-40'	Deciduous Tree				x
Quercus georgiana 'Jaybird'	Jaybird Georgia Oak	25'-40'	Deciduous Tree	x			
Small Trees							
Carpinus caroliniana 'Palisade'	Palisade American Hornbeam	20'-40'	Deciduous Tree	x			
Carya aquatica	Water Hickory	20'-30'	Deciduous Tree	x			
Parrotia persica 'Streetwise'	Streetwise Persion Ironwood	25'-40'	Deciduous Tree				x
Ostrya Virginiana	Ironwood	25'-40'	Deciduous Tree	x			

Preliminary Planting List

Latin Name	Sidewalk Types				Program		
	Narrow	Typical	Generous	Habitat	LID	Retail	Resident
Large Trees							
Nyssa sylvatica	x	x	x	x		x	x
Quercus alba		x	x	x		x	x
Quercus bicolor		x		x	x	x	x
Quercus lyrata 'Highbeam'		x		x		x	x
Quercus nuttallii, 'Highpoint'			x	x			x
Quercus nuttallii, 'Sangria'			x	x			x
Quercus phellos 'Abundance'			x	x	x	x	x
Quercus phellos 'Ascendor'			x	x	x	x	x
Quercus phellos 'Hightower'			x	x	x	x	x
Quercus phellos 'Fortitude'			x	x	x	x	x
Quercus phellos 'Shriaz'			x	x	x	x	x
Quercus x QRSW18 'Streetwise'			x	x	x	x	x
Quercus rubra			x	x			x
Taxodium distichum				x	x		x
Tilia americana		x		x		x	x
Ulmus americana 'Jefferson'		x		x	x	x	
Ulmus americana 'Princeton'		x		x	x	x	
Ulmus americana 'Valley Forge'			x	x	x	x	
Medium Trees							
Acer rubrum 'Fireball'		x		x	x	x	x
Acer rubrum 'October Glory'		x		x	x	x	x
Betula Nigra 'Dura Heat' (single stem)	x			x	x	x	x
Gleditsia triacanthos var. inermis 'Shademaster'		x		x		x	x
Liquidambar styraciflua 'Ward'	x	x	x	x		x	x
Quercus georgiana 'Jaybird'	x			x			x
Small Trees							
Carpinus caroliniana 'Palisade'	x			x			x
Carya aquatica	x			x			x
Parrotia persica 'Streetwise'	x			x			x
Ostrya virginiana	x			x			x

Tree Species



Quercus phellos 'Ascendor'
Willow Oak



Carpinus caroliniana
American Hornbeam



Tilia americana
Linden



Nyssa sylvatica
Blackgum



Quercus bicolor
Swamp White Oak



Celtis occidentalis
Hackberry



Gleditsia triacanthos
var. *inermis* 'Shademaster'
Thornless Honeylocust



Acer rubrum 'October Glory'
Red Maple



Liquidambar styraciflua
'Ward'
Ward Sweetgum



Ulmus americana 'Princeton'
Princeton American Elm

Tree Spacing: Continuous Planter

A continuous planter provides a sense of safety and comfort to pedestrians and maximizes the amount of open soil available to street trees. Continuous planters should be employed wherever possible, especially along streets with lower volumes of pedestrian activity due to the relationship of a smaller pedestrian through zone that is typically associated with the open soil area of a continuous planter. Continuous planters create a buffer between the roadbed and the pedestrian through zone or sidewalk area. While this can be a barrier that is advantageous for streets with high vehicular traffic, in areas with curbside parking the pedestrian route needs to be accounted for. When constructing continuous planters, allocate curb zone space to accommodate a pedestrian step-off area where curbside parking is present. Additionally, provide intermittent paved connections from the curb zone to the pedestrian through zone where curbside parking is present – typically spaced at 60 feet on center. Further, avoid mulched tree beds; employ a variety of ground-cover plantings. A variety of plant material is aesthetically pleasing and environmentally beneficial.

Tree Spacing: Tree Well

Tree wells are individual planting areas that have a minimum width of five feet and range in length from eight to 12 feet. While tree wells allow for streetscape activities and furnishings between street trees, they typically do not provide the minimum soil volume required and should not be used unless additional soil volume can be provided in the form of structural cells or structural soil panels. Achieving adequate soil volume for proper tree health is generally harder to accommodate with tree wells and will require a covered-soil volume approach. When building tree wells, consider providing street tree fencing that clearly delineates the planting zone and protects the tree space/planting bed from pedestrians and other various activities associated with urban life.





Understory Planting

Existing understory plantings have struggled to survive in the CBD for reasons ranging from improper plant selection and installation, inadequate plant maintenance and irrigation, and soil compression from heavy foot traffic. To combat these challenges, a new understory planting list was created along with best practices for planting strategies in an urban setting.

Understory species are now categorized based on possible programs including typical streetscape plantings, habitat-corridor plantings, and LID/GI plantings. Please refer to the following understory planting matrix when selecting new or replacement understory plantings.

Understory Species



Polystichum acrostichoides
Christmas Fern



Panicum viratum
'Cheyenne Sky'
Switchgrass



Asclepias incarnata
Swamp Milkweed



Phlox divaricata
Wild Sweet William



Rudbeckia hirta
Black-eyed Susan



Lespedeza capitata
Bush Clover



Helenium autumnale
Sneezeweed



Monarda didyma
Bee Balm



Chelone glabra
White Turtlehead



Liriope muscari 'Big Blue'
Lirioturf

Preliminary Planting List

Latin Name	Common Name	Height	Type	Program		
				Typical	Habitat	LID
Evergreen Shrubs						
Ilex glabra	Inkberry	5-8'	Evergreen Shrub	x	x	x
Ilex glabra 'Compacta'	Compact Inkberry	3-4'	Evergreen Shrub	x	x	x
Ilex verticillata 'Jim Dandy' *	Jim Dandy Winterberry Holly	3-6'	Evergreen Shrub	x	x	x
Ilex verticillata 'Nana' Red Sprite *	Compact Winterberry Holly	2.5-3'	Evergreen Shrub	x	x	x
Deciduous Shrubs						
Cornus alba 'Elegantissima'	Red Stem Dogwood	8-10'	Deciduous Shrub		x	
Cornus sericea 'Silver and Gold'	Yellow Twigged Dogwood	5-7'	Deciduous Shrub			x
Itea virginica 'Merlot'	Virginia Sweetspire	3-4'	Deciduous Shrub	x	x	x
Hypericum x hidcoteense 'Hidcote'	St. John's wort	2-4'	Deciduous Shrub		x	
Ferns						
Polystichum acrostichoides *	Christmas Fern	1-2'	Fern		x	
Ornamental Grasses						
Panicum virgatum 'Cape Breeze'	Switchgrass 'Cape Breeze'	2-3'	Ornamental Grasses		x	x
Panicum virgatum 'Cheyenne Sky'	Switchgrass 'Cheyenne Sky'	2-3'	Ornamental Grasses		x	x
Schizachyrium scoparium	Little Bluestem	1.5-4'	Ornamental Grasses		x	x
Sedges						
Carex amphibola	Creek Sedge	1-1.5'	Sedge			x
Carex flaccosperma	Blue Wood Sedge	0.5-1'	Sedge			x
Carex pensylvanica	Pennsylvania Sedge	0-1.5'	Sedge	x	x	x
Carex radiata	Eastern Star Sedge	2-2.5'	Sedge			x
Shade Perennials						
Chelone glabra *	White turtlehead	2-3'	Shade Perennial			x
Eurybia divaricata	White Wood Aster	1-2.5'	Shade Perennial		x	x
Phlox divaricata *	Wild Sweet William	0.5-1'	Shade Perennial			x
Thalictrum pubescens *	Thalictrum	3-7'	Shade Perennial			x
Sun Perennials						
Asclepias syriaca *	Common Milkweed	2-3'	Sun Perennial		x	
Asclepias incarnata *	Swamp Milkweed	4-5'	Sun Perennial			x
Aster novae angliae ' Purple Dome' *	New England Aster	1.5-2'	Sun Perennial		x	
Chamaecrista fasciculata *	Partridge Pea	1-3'	Sun Perennial		x	
Coreopsis verticillata 'Moonbeam' *	Threadleaf Coreopsis	1.5-2'	Sun Perennial		x	

Latin Name	Common Name	Height	Type	Program		
				Typical	Habitat	LID
Gaillardia x grandiflora *	Blanket Flower	2-3'	Sun Perennial		x	
Helenium autumnale *	Sneezweed	3-5'	Sun Perennial			x
Heliopsis helianthoides *	Oxeye Sunflower	3-6'	Sun Perennial			x
Leucanthemum x superbum 'Becky'	Shasta Daisy	3-4'	Sun Perennial		x	
Liatris spicata *	Blazing Star	2-4'	Sun Perennial		x	
Lupinus x hybrida *	Lupine	3-4'	Sun Perennial		x	
Penstemon digitalis	Beardtounge	3-5'	Sun Perennial			x
Phlox subulata *	Moss Phlox	0.25-1'	Sun Perennial			x
Physostegia virginiana 'Pink Manners'	Obedient Plant	2-3'	Sun Perennial			x
Rudbeckia hirta *	Black-eyed Susan	1-3.5	Sun Perennial	x	x	
Salvia officinalis 'Berggarten'	Common Sage	1.5-2'	Sun Perennial	x	x	
Vernonia noveboracensis *	New York Ironweed	4-6'	Sun Perennial		x	
Sun/Shade Perennials						
Amsonia tabernaemontana *	Blue Star	2-3'	Sun/Shade Perennial			x
Anemone canadensis *	Windflower	1-2'	Sun/Shade Perennial			x
Baptisia australis	Blue False Indigo	3-4'	Sun/Shade Perennial		x	
Echinacea purpurea 'Magnus'	Purple Coneflower	2.5-3'	Sun/Shade Perennial		x	
Eupatorium dubium 'Litte Joe' *	Joe Pye Weed	3-4'	Sun/Shade Perennial			x
Filipendula rubra *	Queen of the Prarie	6-8'	Sun/Shade Perennial			x
Helianthus decapetalus *	Thinleaved Sunflower	0.5-2.5'	Sun/Shade Perennial		x	
Lespedeza capitata *	Bush Clover	2-4'	Sun/Shade Perennial		x	
Lilium superbum *	Turkscap Lily	4-7'	Sun/Shade Perennial			x
Lobelia cardinalis *	Cardinal Flower	2-4'	Sun/Shade Perennial			x
Mimulus ringens *	Allegheny Monkey Flower	1-3'	Sun/Shade Perennial			x
Monarda didyma *	Bee Balm	2-4'	Sun/Shade Perennial		x	
Oenothera biennis	Common Evening Primrose	3-5'	Sun/Shade Perennial		x	
Phlox maculata *	Spotted Phlox	2-3'	Sun/Shade Perennial			x
Phlox paniculata *	Garden Phlox	2-4'	Sun/Shade Perennial			x
Rudbeckia laciniata *	Cutleaf coneflower	2-9'	Sun/Shade Perennial	x		x
Sedum spectabile 'Autumn Joy'	Autumn Joy Stonecrop	1.2-2'	Sun/Shade Perennial		x	
Groundcovers						
Liriope muscari 'Big Blue'	Lillyturf	1-2'	Groundcover	x	x	



Tree Protection and Soil Compaction Prevention

Being an urban environment, the Silver Spring CBD struggles with soil compaction in its at-grade tree pits and planting strips. Due to limited sidewalk space, most urban places must trade large planting areas – where plants thrive – for paved areas that facilitate pedestrian movement. Luckily, there have been numerous technological advancements since the 1992 standards that can help reduce soil compaction and improve urban planting vitality.

Structural cells are increasingly being used in urban tree pits nationwide with significant success in reducing tree pit soil compaction and improving the health and longevity of street trees. As a result, the installation of structural cells with all new street tree plantings are recommended.

Soils and Soil Volume

Overview:

Tree space should be designed to meet and, wherever feasible, exceed minimum soil volume requirements for street trees without encroaching on the pedestrian through zone. There are several methods for providing soil volume, which include providing open soil areas in the form of tree wells or continuous planting strips, providing added soil volume underneath pavement that accommodates root growth while supporting the sidewalk above, or a combination.

Open soil areas, in the form of continuous planting strips or tree wells, are generally encouraged when space allows. This method of providing soil volume maximizes the amount of stormwater than can be infiltrated and provides easy access to oxygen for street tree roots. However, it can be difficult to provide the minimum soil volume using only open soil areas.

When open soil areas will not provide the minimum required soil volume for street trees, covered soil in

the form of an amended soil panel or structural cells should be used. Covered soil is covered by pavement and is designed to accommodate the growth of tree roots while also structurally supporting the pavement above. Covered soil should also be considered in areas where high pedestrian traffic is expected and where sidewalk widths are constrained.

Typical Tree Planting

The typical street tree planting detail consists of a 12-foot long tree well that accommodates a single street tree. The width of the tree well may vary depending on site-specific conditions, but the minimum width is five feet.

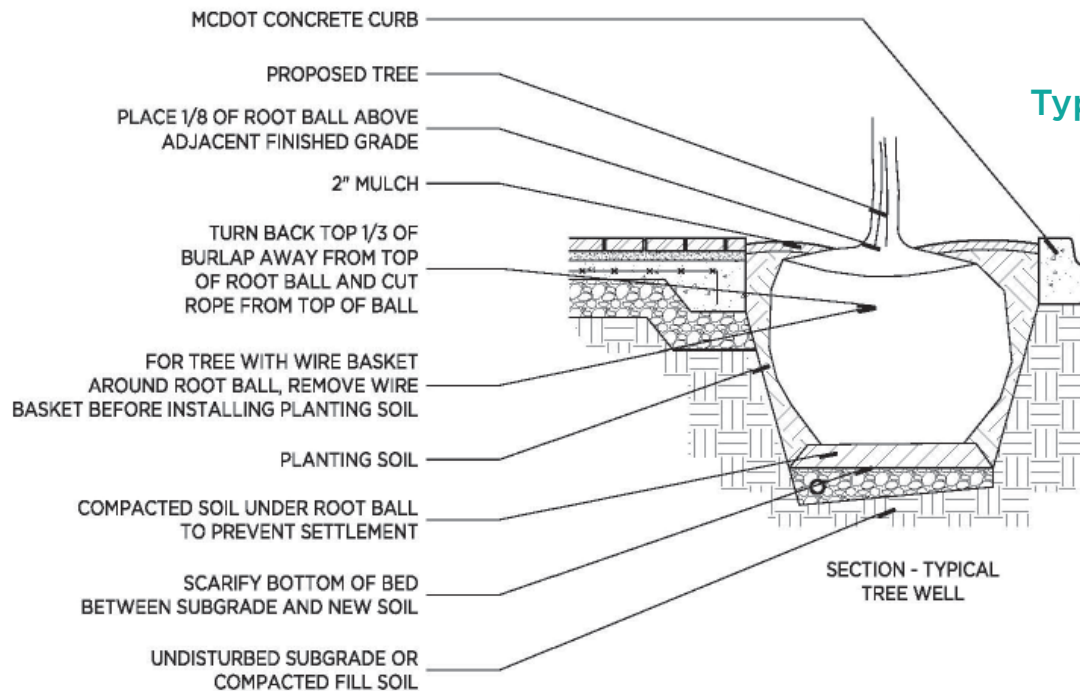
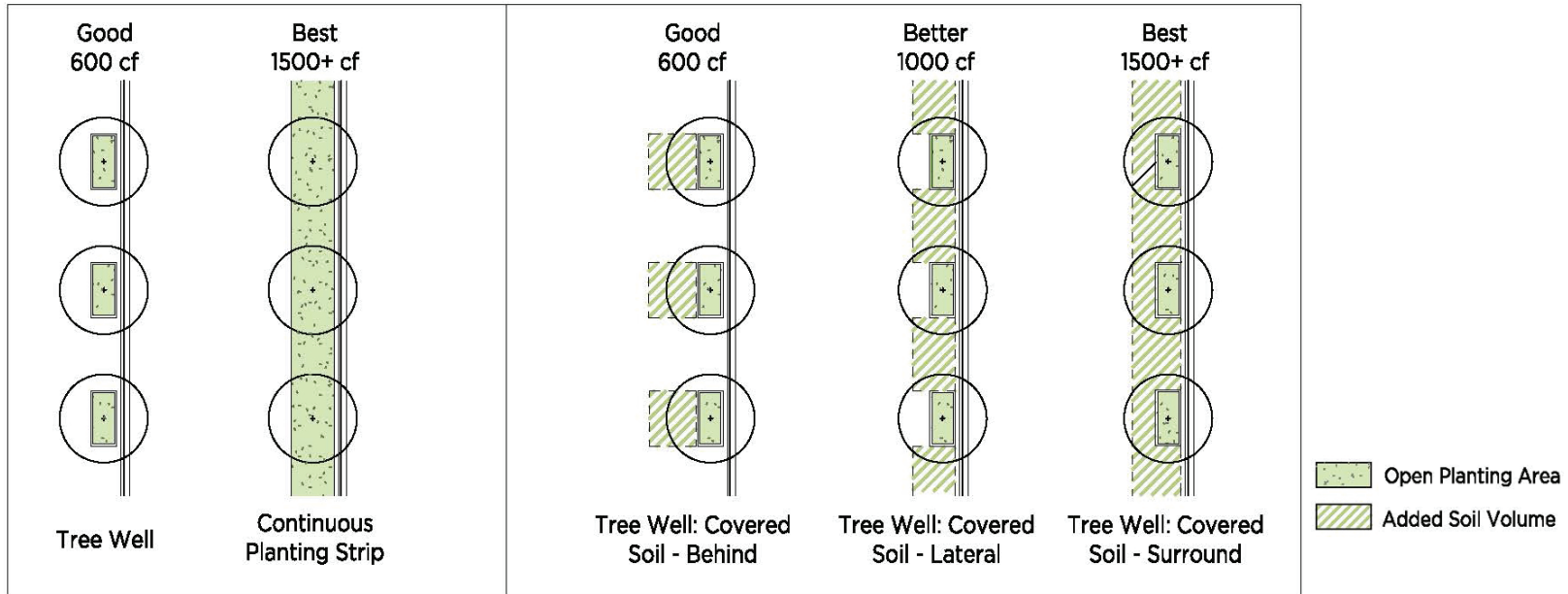
This detail as shown will likely not meet downtown Silver Spring's soil volume requirement (600 cubic feet per tree). Therefore, this planting method should not be used unless existing constraints (such as the presence of utility vaults and other large utilities) do not permit any of the tree planting methods that allow for expanded (typically covered) soil volumes. Such constraints may require approval from M-NCPPC.

Tree Space with Covered Soil Area:

For a tree to grow and stay healthy, adequate rooting space is essential. In ideal conditions, with uncompacted soil, the roots of a mature tree can spread to more than twice the width of a tree's canopy. Tree roots gain nutrients from the soil, but roots also need the air and water that occupy the voids between soil particles. In uncompacted soil, these voids are abundant.

In dense areas, where soils are often compacted and covered by pavement, urban trees rarely reach their full growth potential and have a shortened life span. Covered-soil areas allow street trees to utilize additional uncompacted soil volume that would otherwise be unavailable while also supporting the sidewalk above, allowing for a healthier tree canopy and a more flexible sidewalk paving surface above.

Tree Space with Covered Soil



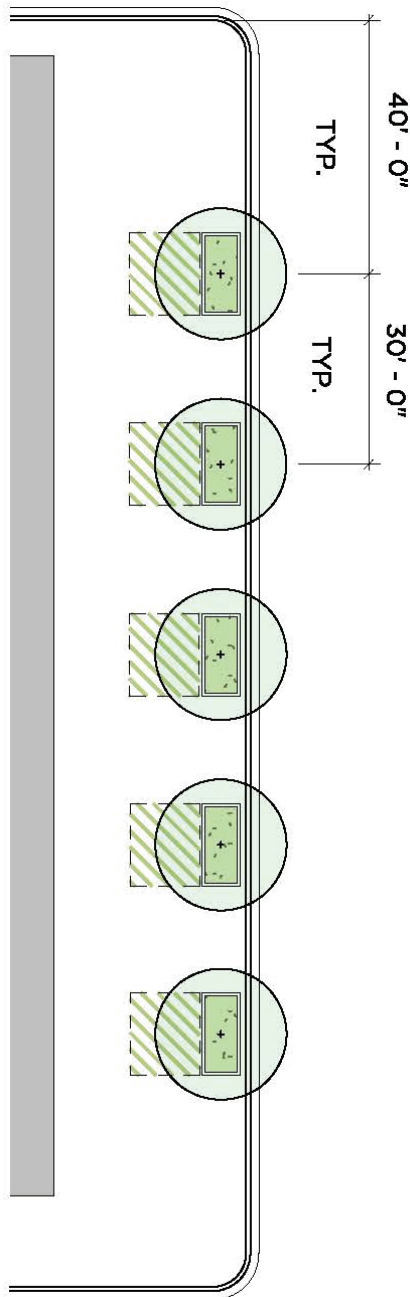
Typical Tree Planting

Methods for Covered Soil:

There are two methods of providing covered-soil area specified in this document: (1) an amended soil panel, and (2) structural cells. These two covered-soil methods should be applied whenever the open-soil volume is less than 600 cubic feet. Regardless of method, the minimum soil volume for any street tree in downtown Silver Spring should be at least 600 cubic feet. Greater amounts of soil volume per tree are encouraged; see the table below for recommended soil volume quantities per mature canopy size. Generally, for each square foot of tree canopy spread, there should be at least 1 to 2 cubic feet of soil volume.

Recommendation	Soil Volume (cubic feet)
Good	600
Better	1,000
Best	1,500+





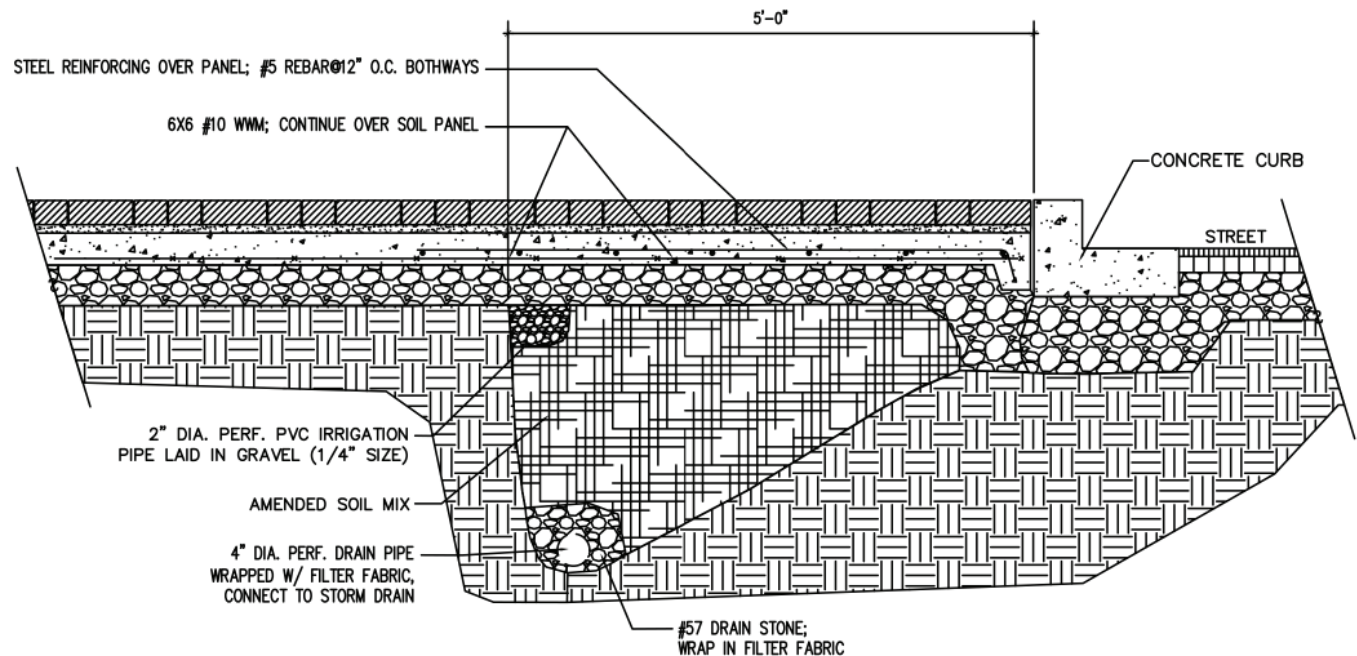
Methods for Covered Soil

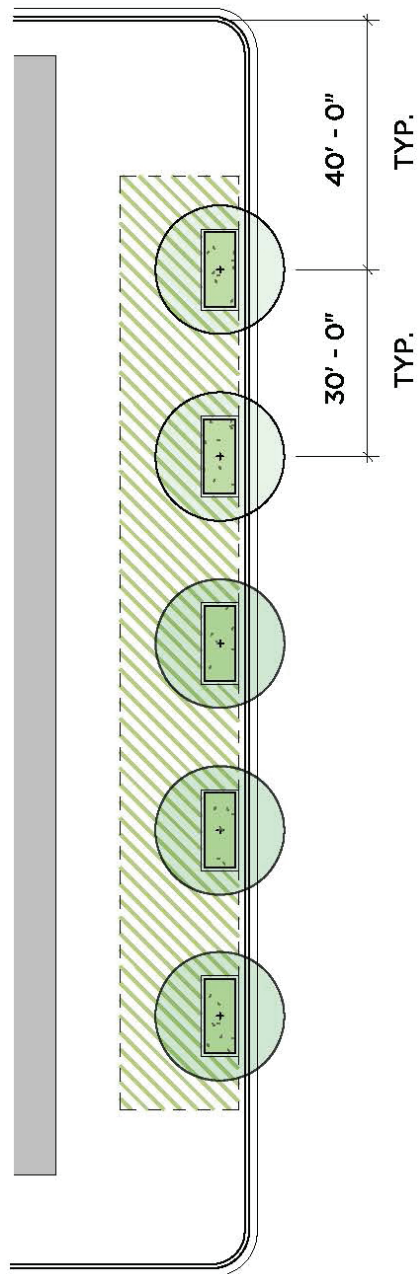
1) Amended Soil Panels

An amended soil panel is a tree-planting technique that prevents soil compaction and ensures covered soil remains organic, well-drained, and well-aerated for healthy street tree growth and long-term survival. Its installation allows for tree roots to properly extend into adjacent covered soils beneath the pedestrian through zone while directing root growth away from the curb and drive lanes via timber or concrete shoring.

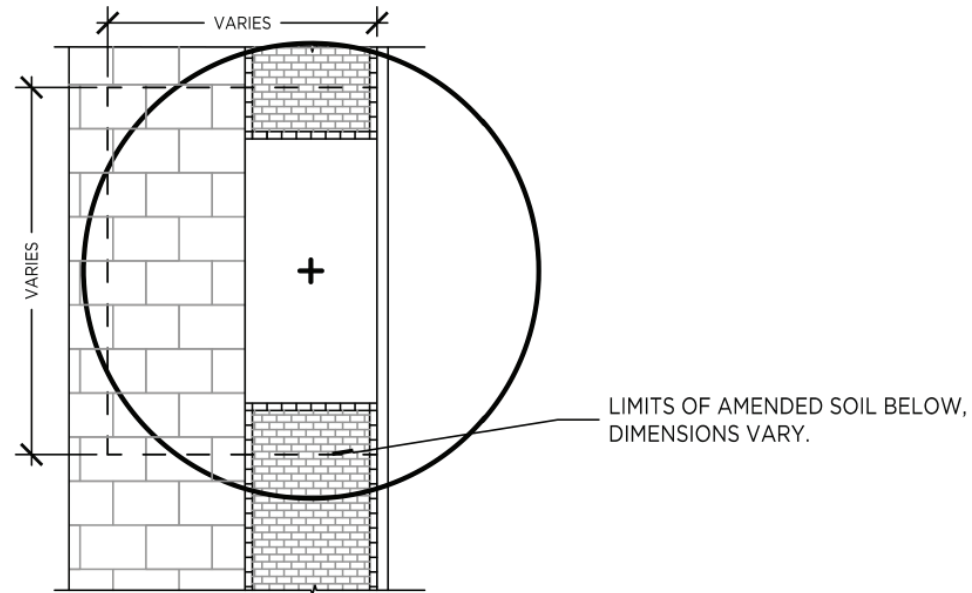
Construction begins with the removal of all existing soil and pavement. The prepared soil mixture containing one-third native soil provides a suitable consistency for the tree in the urban environment. Amended soil panels improve root development by providing a sub-surface drainage system to carry away excess water, avoiding root rot. Installation of an irrigation pipe will allow for manual watering of several trees at once during times of drought.

Amended Soil Panel

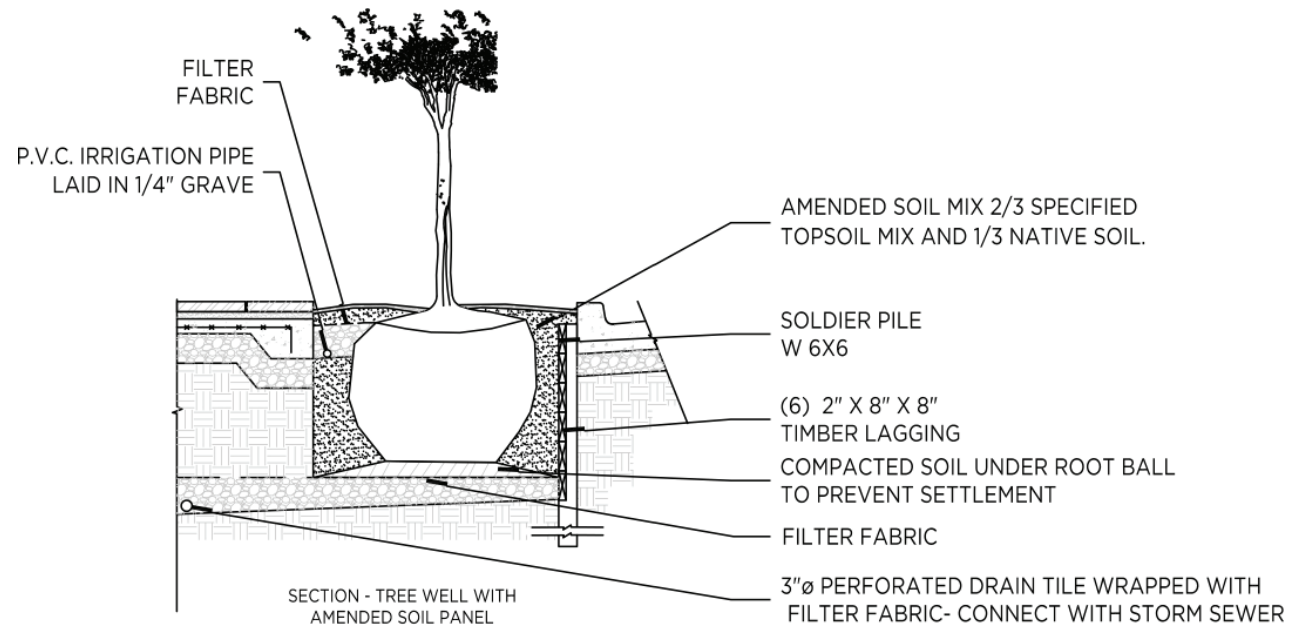




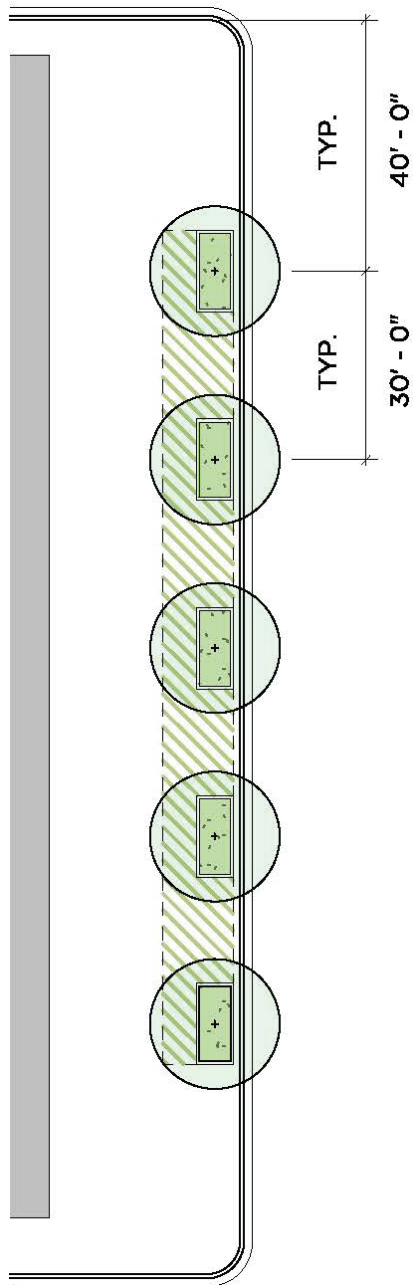
Amended Soil Panels



PLAN - TREE PLANTER WITH AMENDED SOIL PANEL



Structured Cells

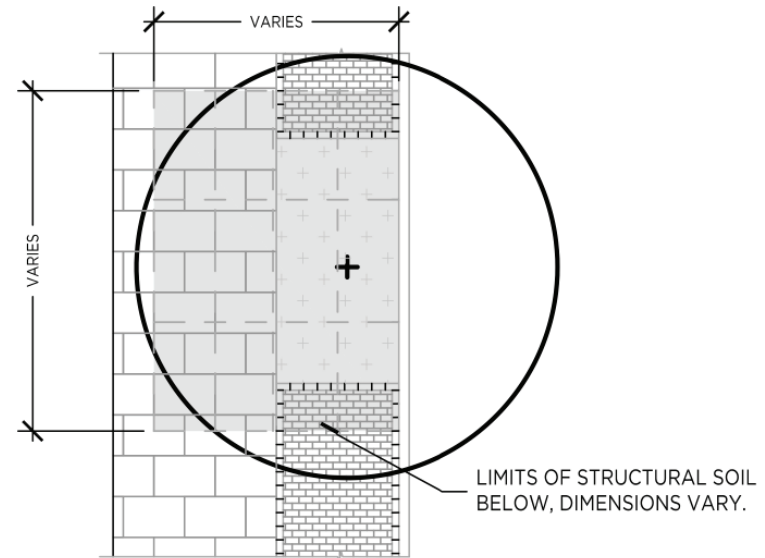


2) Structured Cells

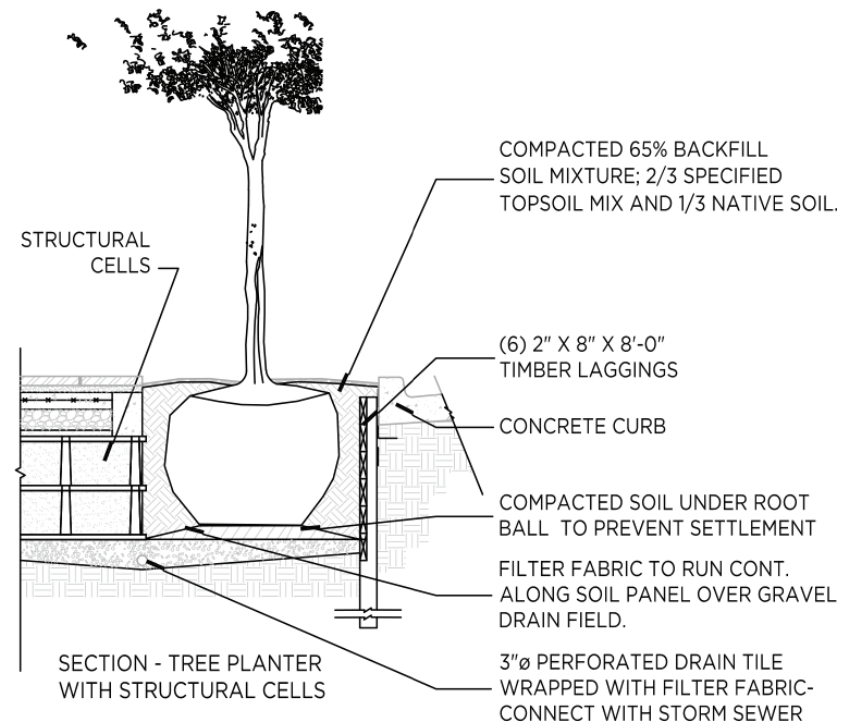
Structural cells are a manufactured pavement support system, typically made of plastic or recycled materials configured in a stacked, pillar-like arrangement. Soil between the pillars remains un-compacted in order to promote tree root growth and soil health. Structural cells are often selected in lieu of an amended soil panel due to the greater volume of uncompacted soil space which is created by the cell system. Structural cells also allow for increased stormwater infiltration but are most effective when larger systems are installed and interconnected with other stormwater management best management practices (BMPs).

Structural cells should be employed in areas where an amended soil panel cannot provide adequate volume needed to meet soil volume requirements. The cells should be located beneath the pavement in the applicable covered-soil area and are most cost-effective for street trees along sidewalks with extremely constrained widths (i.e. planting/furnishing zones that are less than 6 feet wide).

Due to the structural network of these cells, the location of any underground utilities require coordination for placement and grouping. When installed, underground utilities must be protected from root penetration via root barriers.



PLAN - TREE PLANTER WITH STRUCTURAL CELLS

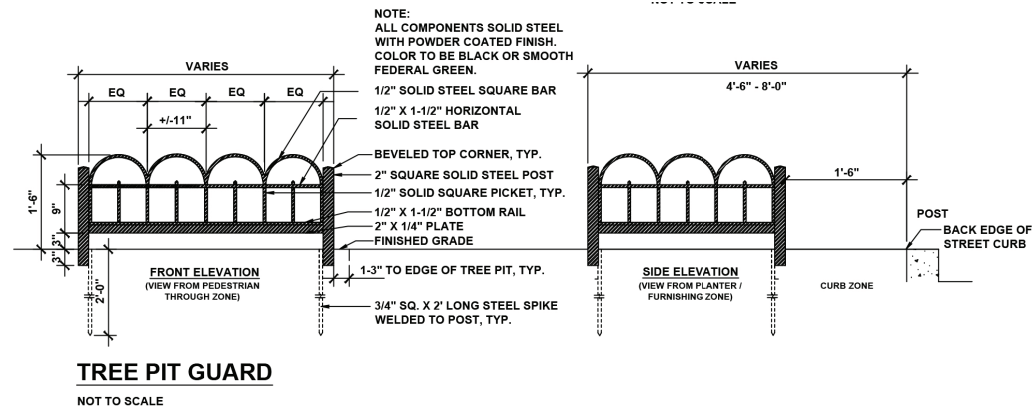


Guards and Tree Grates

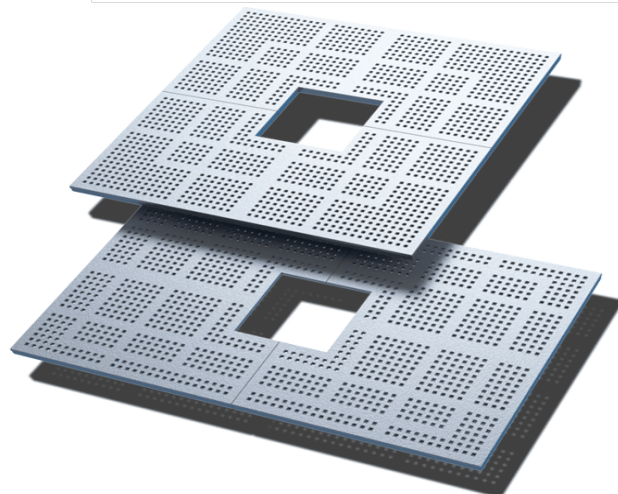
Utilizing tree pit guards and railings are other strategies that combat soil compaction and have been used on numerous CBD tree pits. These products work well to discourage pedestrians from walking on open tree pits. While effective, these products should be limited to typical and generous sidewalk types where the pedestrian through zone is at least 10 feet wide and can comfortably accommodate pedestrian traffic.

Where the existing sidewalk is narrow, such as on certain sections of Fenton Street, tree grates or grilles are proven strategies for providing additional pedestrian clearance while helping to prevent soil compaction from foot traffic. However, tree grates are often slippery when wet, presenting a significant slipping hazard. The tree grates specified in these standards must be slip resistant when wet.

While tree trunk guard systems are not recommended to be installed, there is potential for rare circumstances that should be reviewed on a case by case basis. The following matrix lists the preferred tree grate/grilles products for narrow CBD sidewalks. Refer to the Paving Section for placement/installation details.



NYC Tree Guard, <https://www.nycgovparks.org/trees/tree-care/tree-guards>



Iron Smith

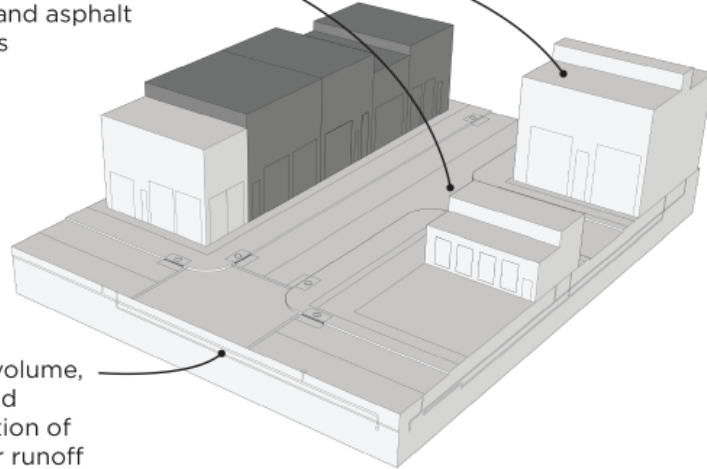
Recommended Tree Grate/Grille		
	Existing Tree	New Tree
Product	<ul style="list-style-type: none">Ironsmith: Market Street Tree Grate. Install with center grates removed.http://www.ironsmith.cc/TREE-GRATES-MKTST.htmAll grates to have slip resistant coating	<ul style="list-style-type: none">Ironsmith: Market Street Tree Gratehttp://www.ironsmith.cc/TREE-GRATES-MKTST.htmAll grates to have slip resistant coating
Placement/ Dimension	<ul style="list-style-type: none">On narrow sidewalk types with existing street treesShould be no narrower than 5 feet	<ul style="list-style-type: none">On narrow sidewalk types with new and existing street treesShould be no narrower than 5 feet

Movable Above-Ground Planters

Movable above-ground planters include container plantings, raised planter beds, and hanging planter baskets. They add greenery to the streetscape without permanently eliminating paved space for pedestrians. When space allows, planters work well to protect and buffer pedestrians from moving vehicles and further define Silver Spring's sense of place. The Silver Spring CBD already uses a wide array of planter types that work well. These standards encourage the continued use of planters within the frontage and planter/furnishing zones without cluttering the streetscape. Any planters that obstruct the pedestrian through zone are prohibited. All planters added to the sidewalk must be regularly maintained and are the responsibility of the organization, property owner or business owner who installs them



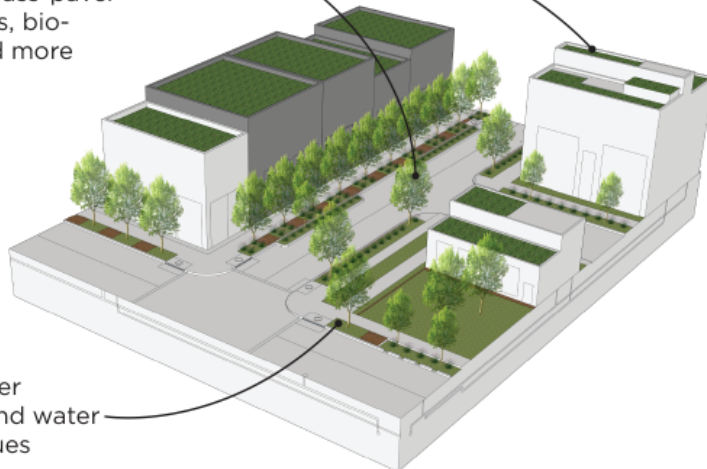
Hard surfaces:
Impervious-- Roads,
roofs, large areas of
pavement and asphalt
parking lots



Increased volume,
velocity, and
contamination of
stormwater runoff

Impervious Design Urban Surfaces

Soft surfaces:
Pervious/Permeable
--Green roofs, rain
gardens, grass-paver
parking lots, bio-
swales, and more



Increased
groundwater
recharge and water
quality values

Pervious Design Urban Surfaces

Environmental Site Design

The percentage of paved, impervious surface area has steadily increased in urban areas, contributing to record reductions in groundwater resources, decreased water quality, and increased stress on municipal sewer systems- especially combined systems. This has contributed to a greater risk of damage caused by erosion and flooding. Environmental site design (ESD) and structural storm water management (SWM) offers an effective means of reducing the impact of untreated runoff. Stormwater management achieves the following goals: (1) reduces stormwater volumes, (2) reduces stormwater peak runoff discharges, (3) improves water quality.

A series of small-scale connected stormwater facilities is referred to as a 'treatment train'. When one treatment facility reaches capacity, the stormwater overflow is directed into another via a drainage channel or pipe network. In an urban environment, post treatment is connected to the larger municipal storm/sewer system. The benefit that comes with employing a train of small-scale facilities is the ability to achieve an overall greater level of stormwater treatment.

Some Environmental Site Design Facilities include:

- Micro-Bioretention
- Vegetated Planter Box
- Dry Swale
- Bioswale
- Permeable Pavements

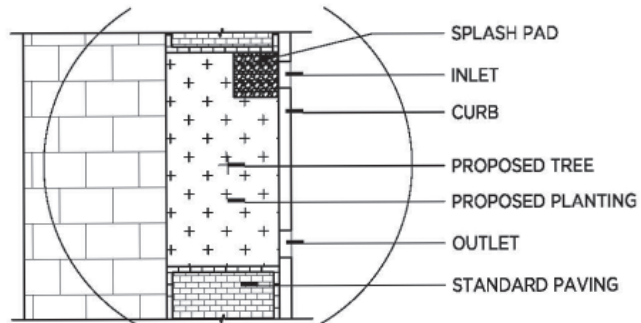
Typical Planting Strip: Vegetated Stormwater Collector

The vegetated stormwater collector is essentially a tree well that has been engineered to absorb a larger volume of stormwater runoff. Breaks in the curb serve as inlets to allow stormwater into the planter, and outlets for excess runoff. Drains connect each vegetated stormwater collector to create an interconnected system. A tree well that acts as a stormwater collector requires a fence between it and the pedestrian through zone, a 2-foot flat buffer when next to the curb, and not have a slope steeper than 3:1.

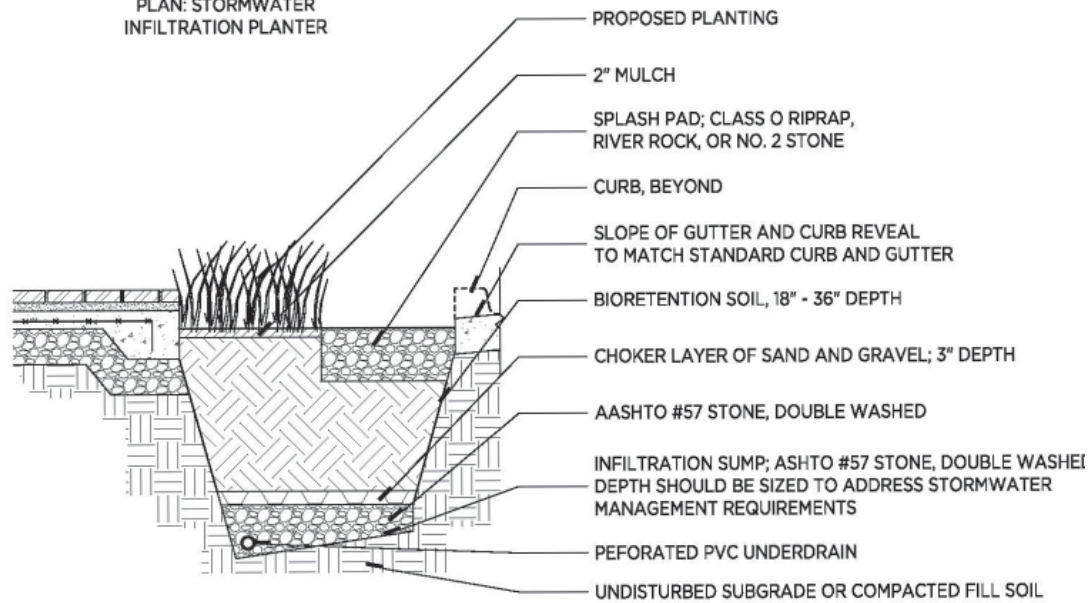
Stormwater management practices must be designed per Maryland Department of Environment and Montgomery County Department of Permitting Services requirements.

Irrigation

Installation of permanent sidewalk planting irrigation systems is not generally preferred in the public Right-of-Way (ROW); however, the practice is acceptable if well-maintained and used sustainably. The use of temporary watering bags and/or regular tree watering for at least the first six months after the initial tree plantings is strongly encouraged.



PLAN: STORMWATER INFILTRATION PLANTER



SECTION: STORMWATER INFILTRATION PLANTER



Paving Introduction

The updated streetscape standards' design approach for paving builds on the 1992 standards. The signature brick paving material that has become ubiquitous within the CBD is retained but mixed with a new material. To avoid pedestrians slipping on brick surfaces during inclement weather, these standards specify a precast concrete paver for the pedestrian through zone in all calm streetscapes. London Pavers have been a standard streetscape paving staple throughout the region for nearly two decades, and have proven to be a safe, durable, and timeless paving product. Paired with the London Paver material, Silver Spring's signature brick will continue to be used as an accent material within the frontage and planter/furnishing zones. In addition to London Pavers, a darker PIP concrete is specified for concrete driveway aprons and ADA ramps. Paving details are further described based on the following sidewalk zones and special elements matrices.

As discussed in Chapter 2, this update recommends two styles for the Silver Spring CBD. The first, referred to as a "Calm" style, fosters a calm backdrop where buildings, businesses, people, and activities stand out. In this approach, paving, lighting, trees and furnishings are consistently treated. The second style is referred to as "Expressive", where the streetscape is intended to be wild and organic.

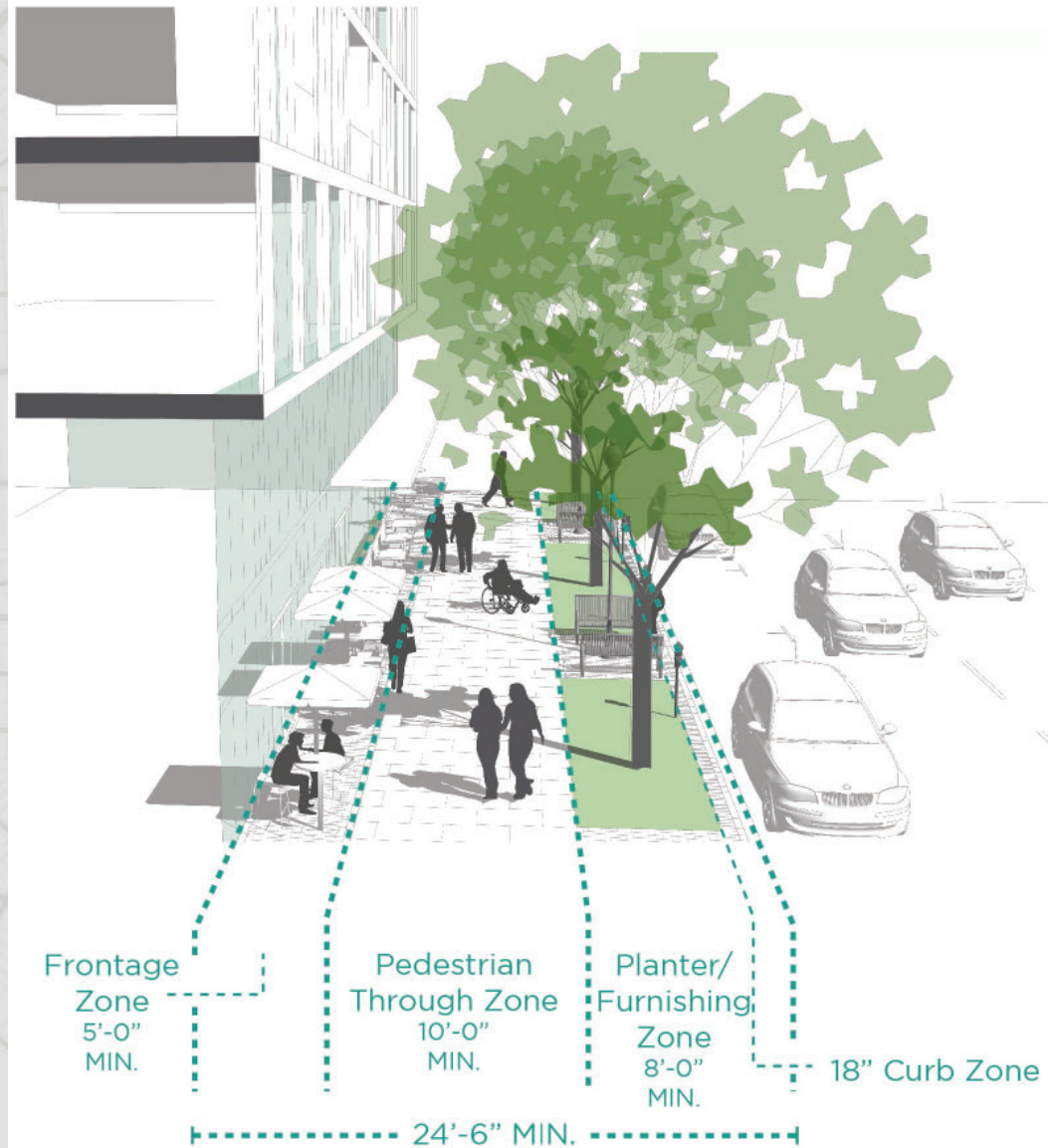
Paving in the areas of the CBD designated "Expressive" may vary from the "Calm" streetscape in paver material and design, and will be reviewed on a case by case basis at the time of Site Plan approval. Streetscapes that vary from the standard in paving material and design must adhere to the approved construction details in all other aspects.



EXPRESSIVE PLACES AND STREETS



Generous Streets



Frontage Zone Paving Strategy		
	Paved	Planted (Habitat Corridors Only)
Material	<ul style="list-style-type: none"> Belden Paver #470-479, 'Silver Spring Special' 	<ul style="list-style-type: none"> Only paved for adjoining building access. Limited paving must consist of signature brick. GI infrastructure is encouraged where feasible. Refer to the GI subsection in the Plantings element for more information.
Placement/Dimension	<ul style="list-style-type: none"> Located between the adjoining building and the pedestrian zone. Can be no narrower than five feet. 	<ul style="list-style-type: none"> Located between the adjoining building and the pedestrian zone. Can be no narrower than five feet.
Pattern	<ul style="list-style-type: none"> No preferred pattern 	<ul style="list-style-type: none"> Naturalistic planting arrangements. Refer to the plant element matrices for more guidance.
Edge Condition	<ul style="list-style-type: none"> If an adjoining building has a setback beyond the public ROW edge, boundary demarcation studs should be used to demarcate privately versus publicly maintained paved areas. Brick banding should be used as an edge condition between the frontage zone and the pedestrian through zone. 	<ul style="list-style-type: none"> Plantings should meet adjoining building façade. Metal edging should be used between the planted frontage zone and paved pedestrian through zone.







Pedestrian Through Zone Paving Strategy	
	Paved
Material	<ul style="list-style-type: none"> • Hanover “Prest” London Paver • Size: 24” x 36” x 2 1/4” • Color: “Charcoal” with “Tudor” finish
Placement/ Dimension	<ul style="list-style-type: none"> • Located between the frontage zone and planter/furnishing zone. • Ideally 10’ wide. • Can be no narrower than 6’ wide.
Pattern	<ul style="list-style-type: none"> • Running bond, perpendicular to curb.
Border	<ul style="list-style-type: none"> • Consistent straight edge between adjoining sidewalk zones.



Planter/Furnishing Zone and Curb Zone Paving Strategy		
	Paved Accent Areas	Planted Areas
Material	<ul style="list-style-type: none">Belden Paver #470-479, 'Silver Spring Special'	<ul style="list-style-type: none">18" curb zone must be paved. See following paving details.Intermittently spaced paved walks connecting the paved curb zone and the Pedestrian zone are recommended in continuous planted areas to allow access to parking and prevent compacted soils.Refer to the Plantings element for more information.
Placement/ Dimension	<ul style="list-style-type: none">Located between the pedestrian through zone and the curbShould range between eight to 10 feet wide.	<ul style="list-style-type: none">Planted areas can be no narrower than five feet, assuming ideally 1000 cubic feet soil volume per tree.
Pattern	<ul style="list-style-type: none">Running bond, perpendicular to curb.	<ul style="list-style-type: none">Follow tree selection recommendations in the Planting element.Understory planting must be consistent with those recommended in the Planting element.No preferred understory planting arrangement.
Border	<ul style="list-style-type: none">4" soldier course.	<ul style="list-style-type: none">Metal edging should be used to separate between paved and planted areas.



ADA Ramps/Aprons Paving Strategy

Driveways/Aprons Paving Strategy

	Paved		Paved
Material	<ul style="list-style-type: none"> Dark pigmented PIP concrete to match London Pavers (see specifications section) Embedded Hanover “Detectable Warning” Paver (charcoal, natural finish) 	Material	<ul style="list-style-type: none"> Pedestrian through zone: dark pigmented PIP concrete (see specifications section) to match London Pavers Frontage and planter/furnishing zone: Silver Spring signature paver
Placement/Dimension	<ul style="list-style-type: none"> Please refer to https://www.montgomerycountymd.gov/dot-dte/common/standards.html 	Pattern	<ul style="list-style-type: none"> Pedestrian through zone: London Pavers Frontage and planter/furnishing zone: Silver Spring signature paver
Edge Condition	<ul style="list-style-type: none"> Consistent straight edge between adjoining paving materials. 	Border	<ul style="list-style-type: none"> Dark pigmented PIP curb edge (see specifications section) to match London Pavers

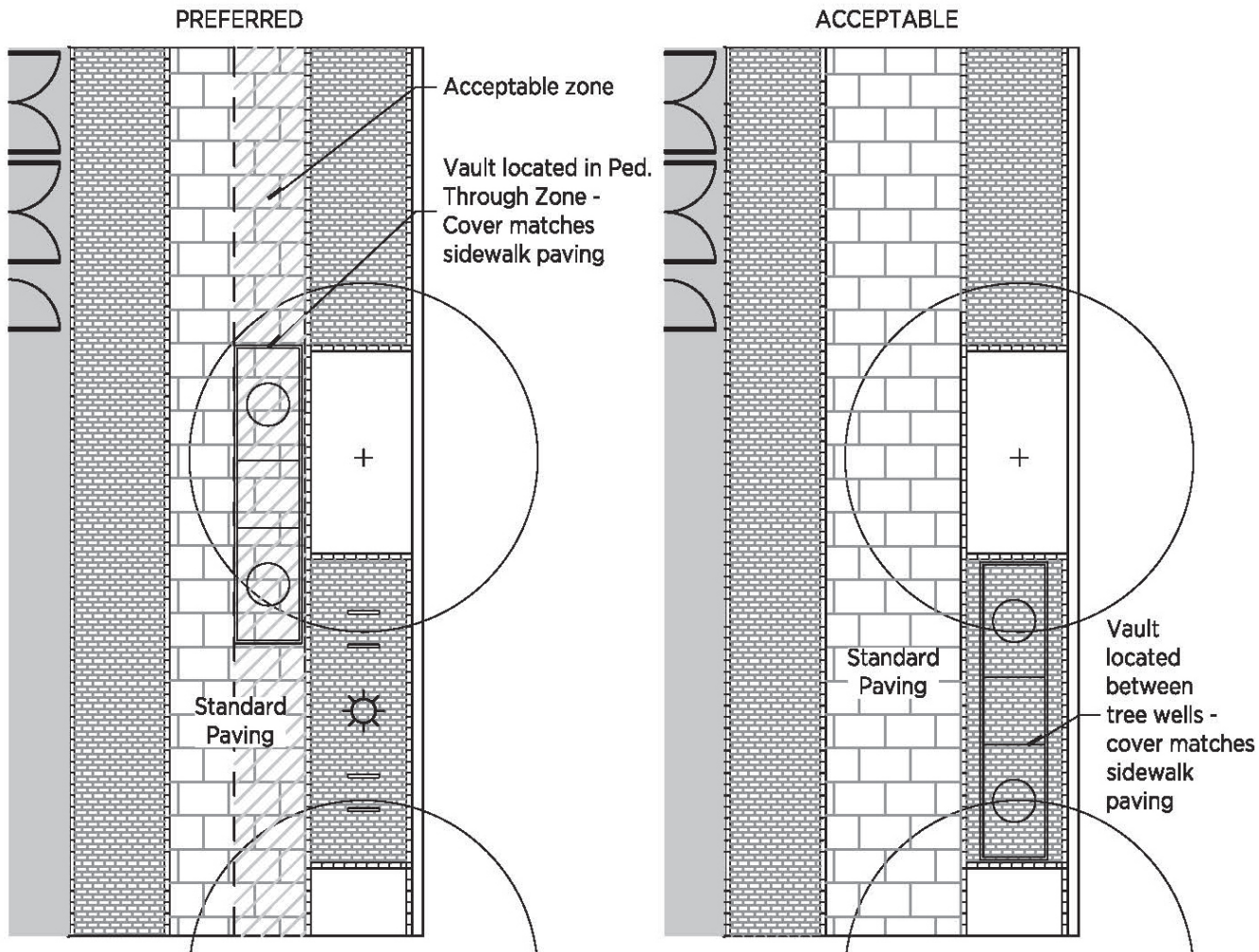


2) Utility Vaults:

Where feasible, utility vaults should be located on private property. If a vault can only be placed in the public ROW, it is best located in the pedestrian through zone to minimize conflicts with street trees or other

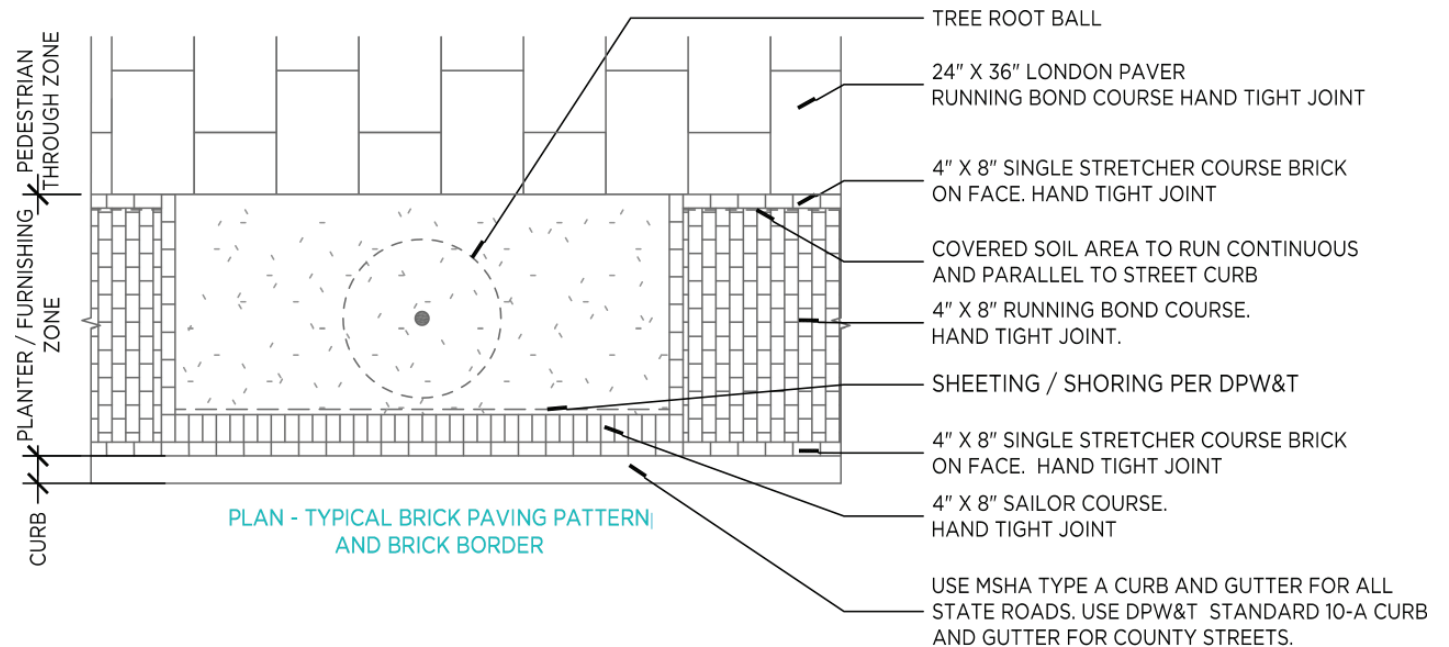
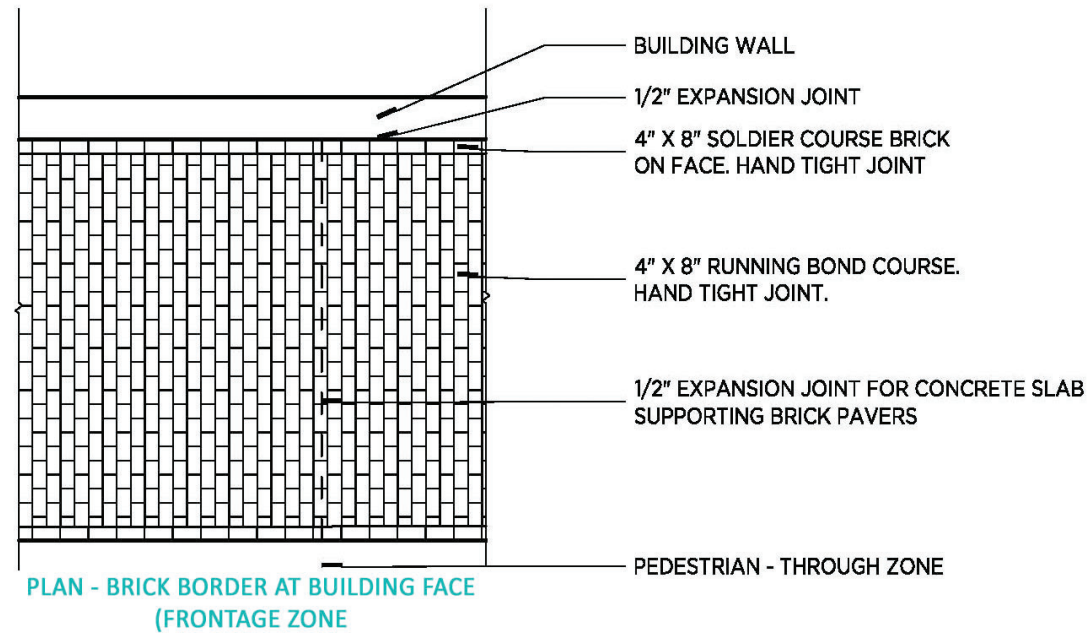
ESDs in the planting/furnishing zone. Vaults located in the pedestrian through zone should have a solid cover flush with the adjacent sidewalk surface and should match the adjacent paving material. Vaults must be constructed in compliance with American Disabilities Act standards for walking surfaces

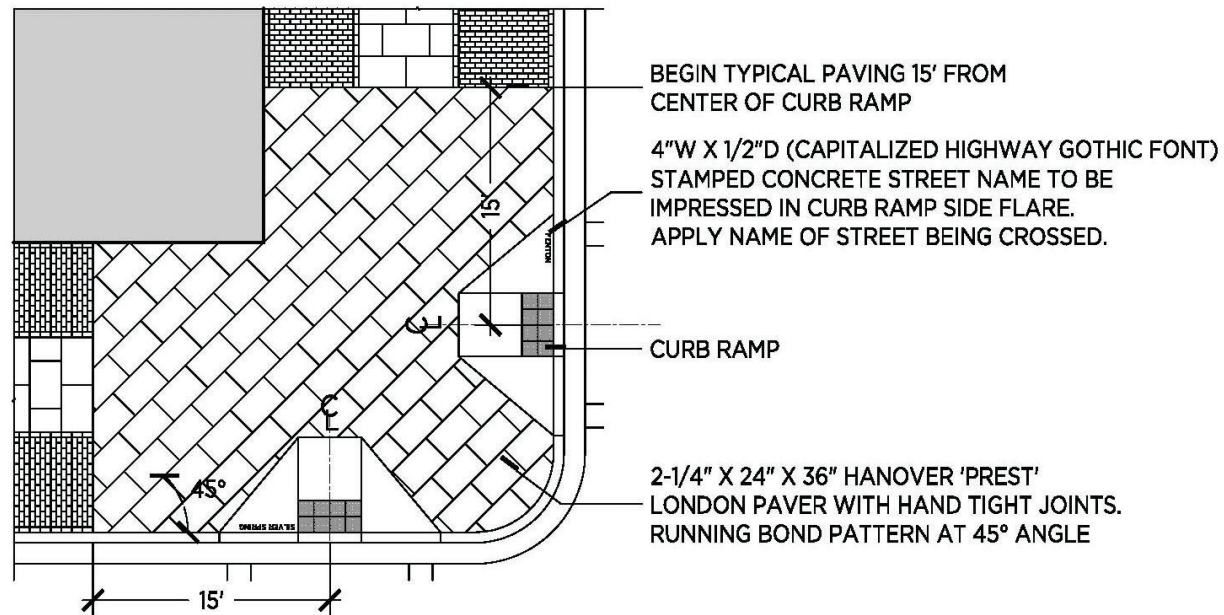
within an accessible route. A minimum 6-foot wide continuous free and clear path must be provided during maintenance work.



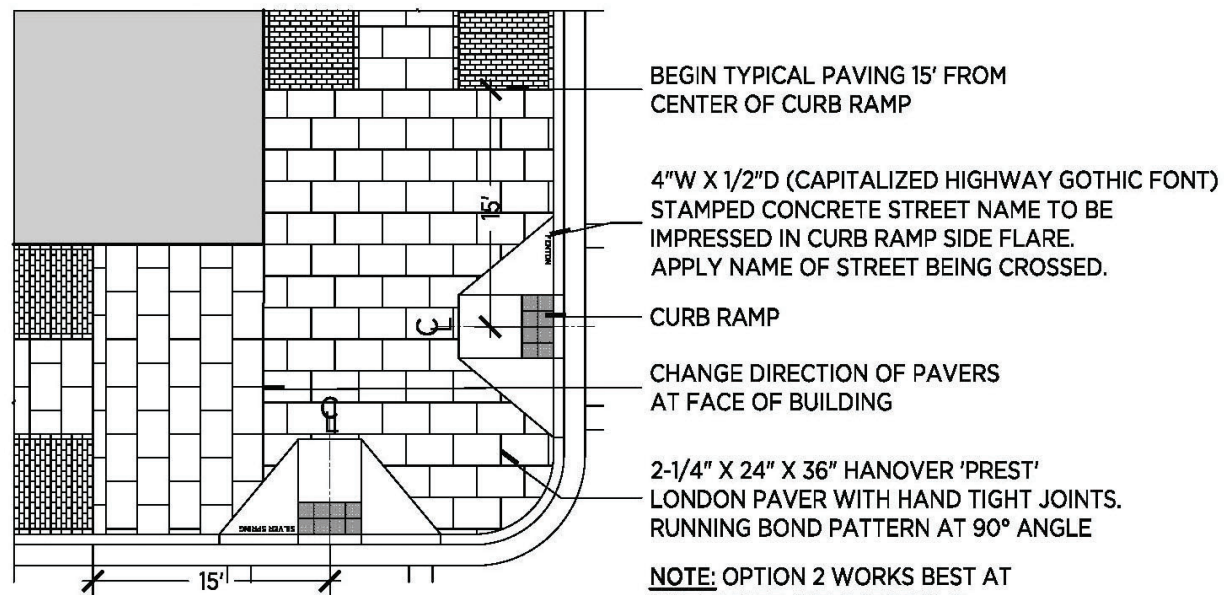
Preferred/Acceptable Utility Vault Location Diagrams

The following illustrate the necessary details to install standard downtown Silver Spring sidewalk paving:





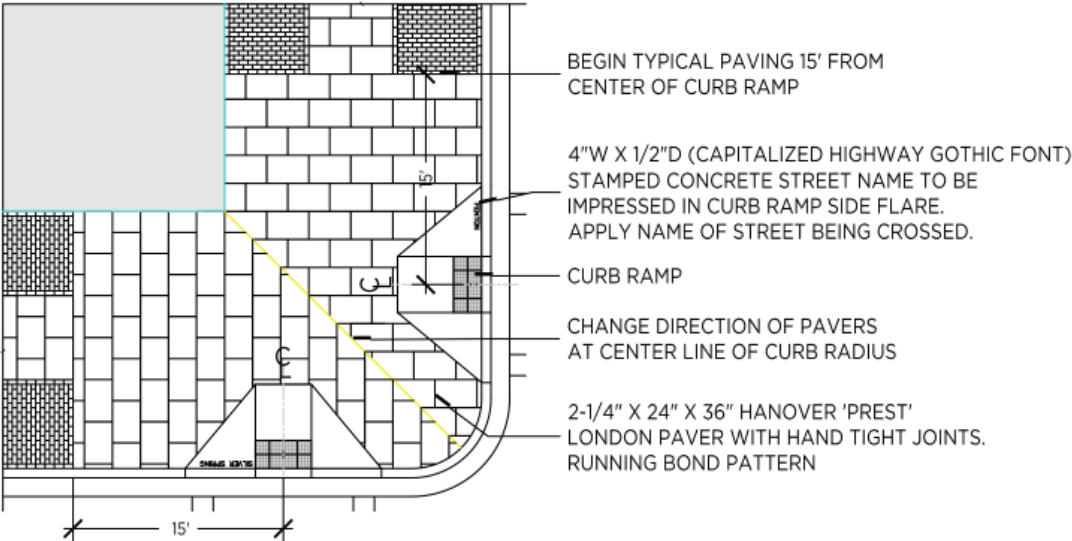
PLAN - STREET CORNER CROSSING OPTION 1



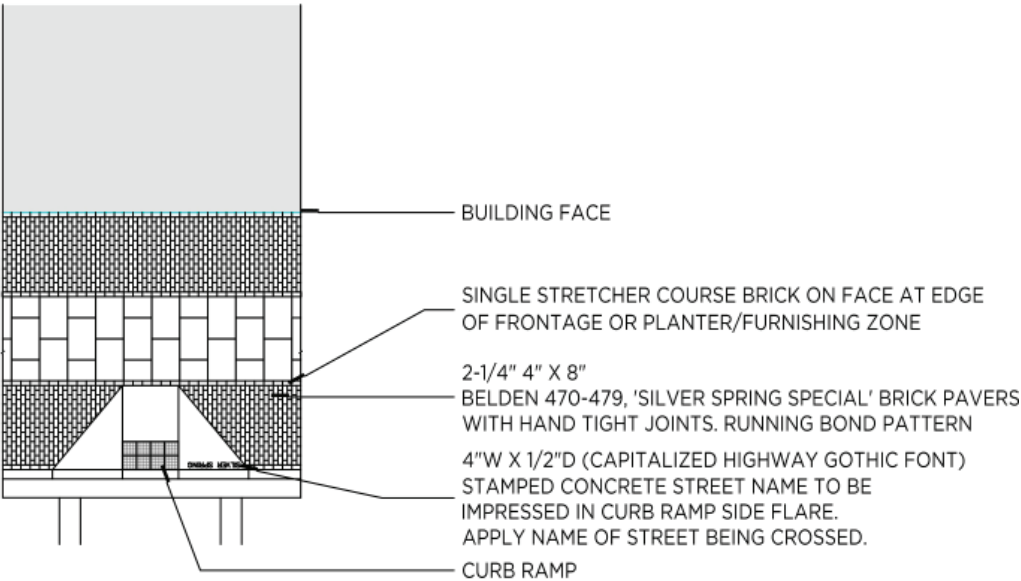
PLAN - STREET CORNER CROSSING OPTION 2

NOTE: OPTION 2 WORKS BEST AT 90° ANGLED INTERSECTIONS

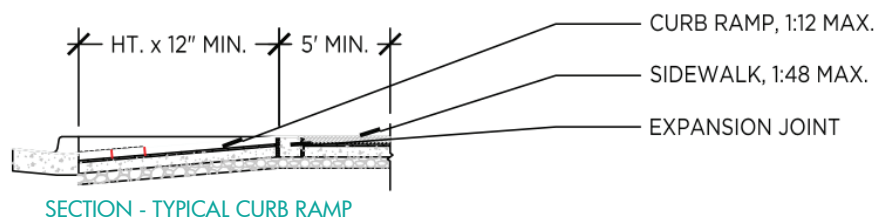
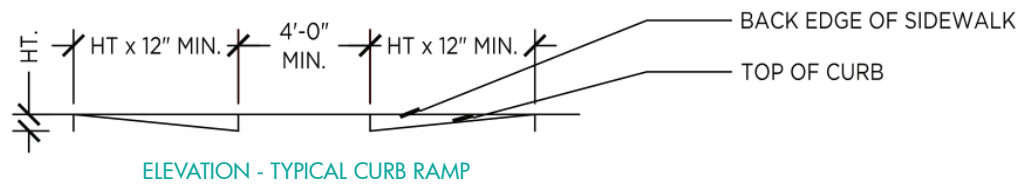
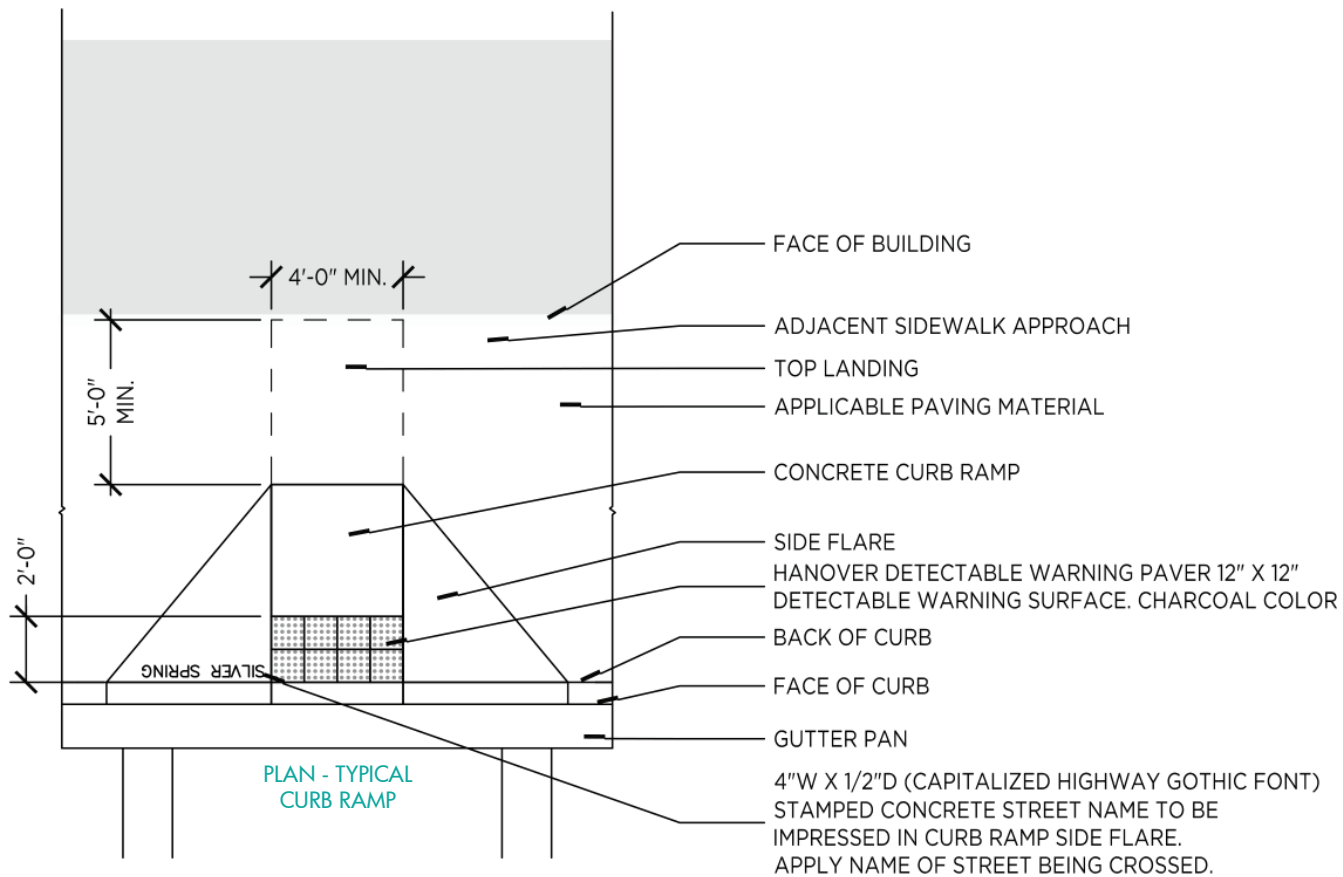
The following illustrate the necessary details to install standard downtown Silver Spring sidewalk paving:



PLAN - STREET CORNER CROSSING OPTION 3



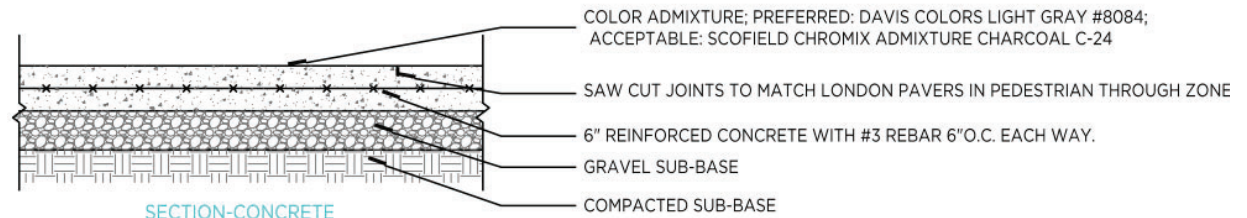
PLAN - MID BLOCK CROSSING



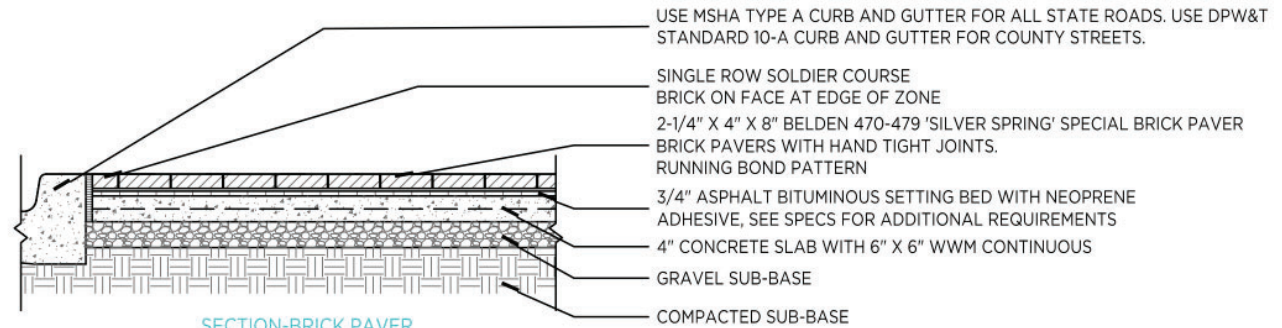
The following illustrate the necessary details to install standard downtown Silver Spring sidewalk paving:

COORDINATE WITH MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION SPECIFICATIONS:

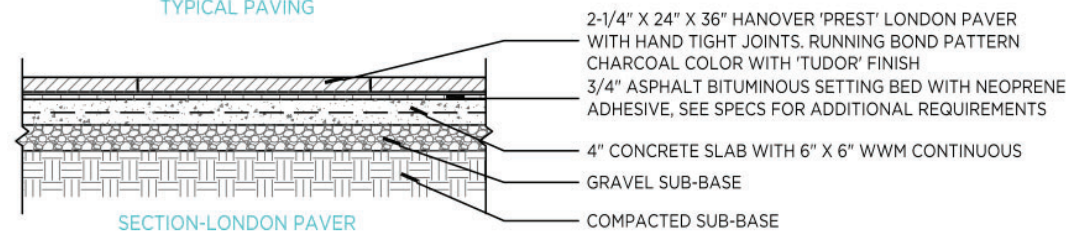
www.montgomerycountymd.gov/dot-dte/common/standards.html



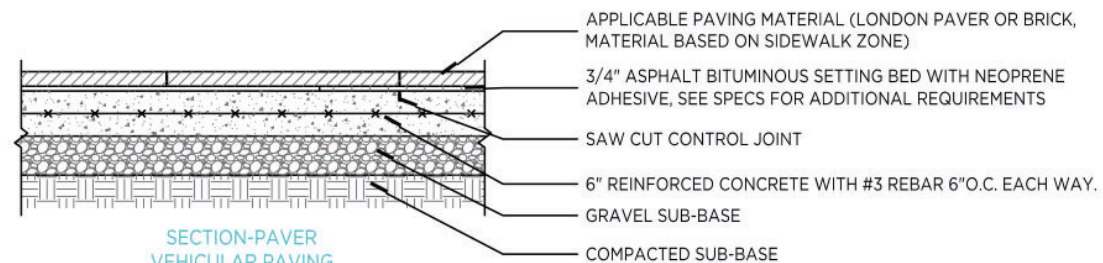
SECTION-CONCRETE
VEHICULAR PAVING



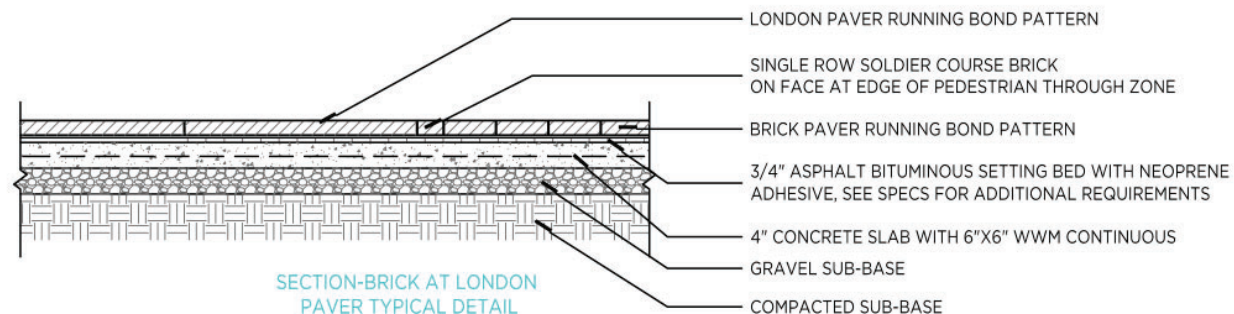
SECTION-BRICK PAVER
TYPICAL PAVING



SECTION-LONDON PAVER
TYPICAL PAVING

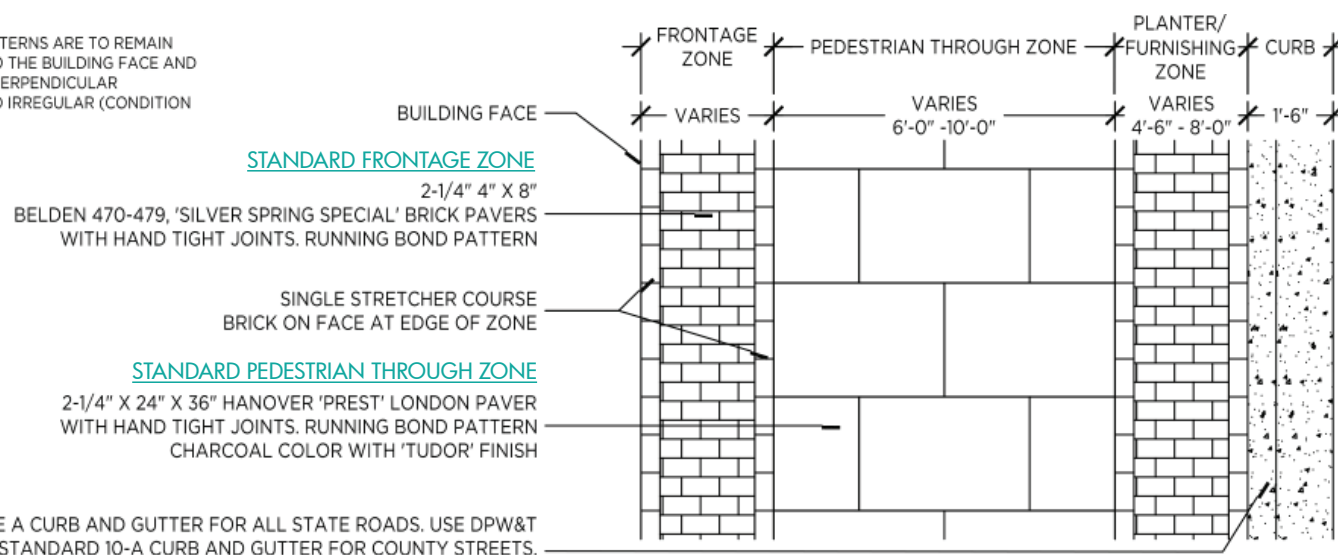


SECTION-PAVER
VEHICULAR PAVING

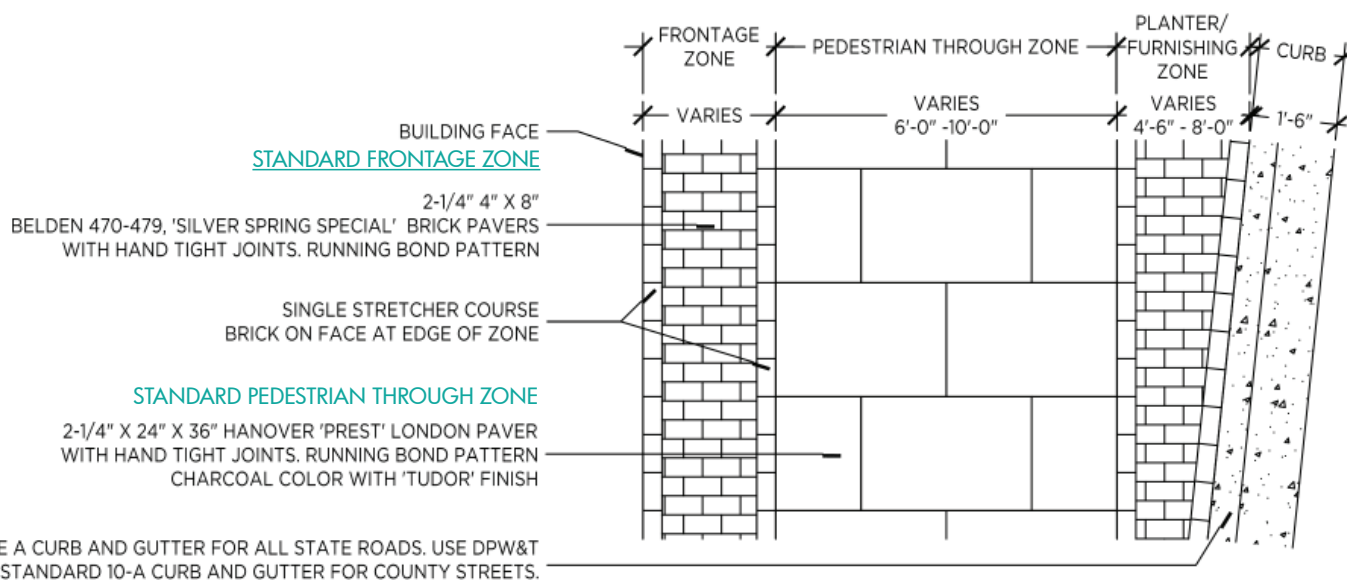


SECTION-BRICK AT LONDON
PAVER TYPICAL DETAIL

NOTE:
BRICK BORDER PATTERNS ARE TO REMAIN
PERPENDICULAR TO THE BUILDING FACE AND
CURBING IN BOTH PERPENDICULAR
(CONDITION A) AND IRREGULAR (CONDITION
B) SITUATIONS.

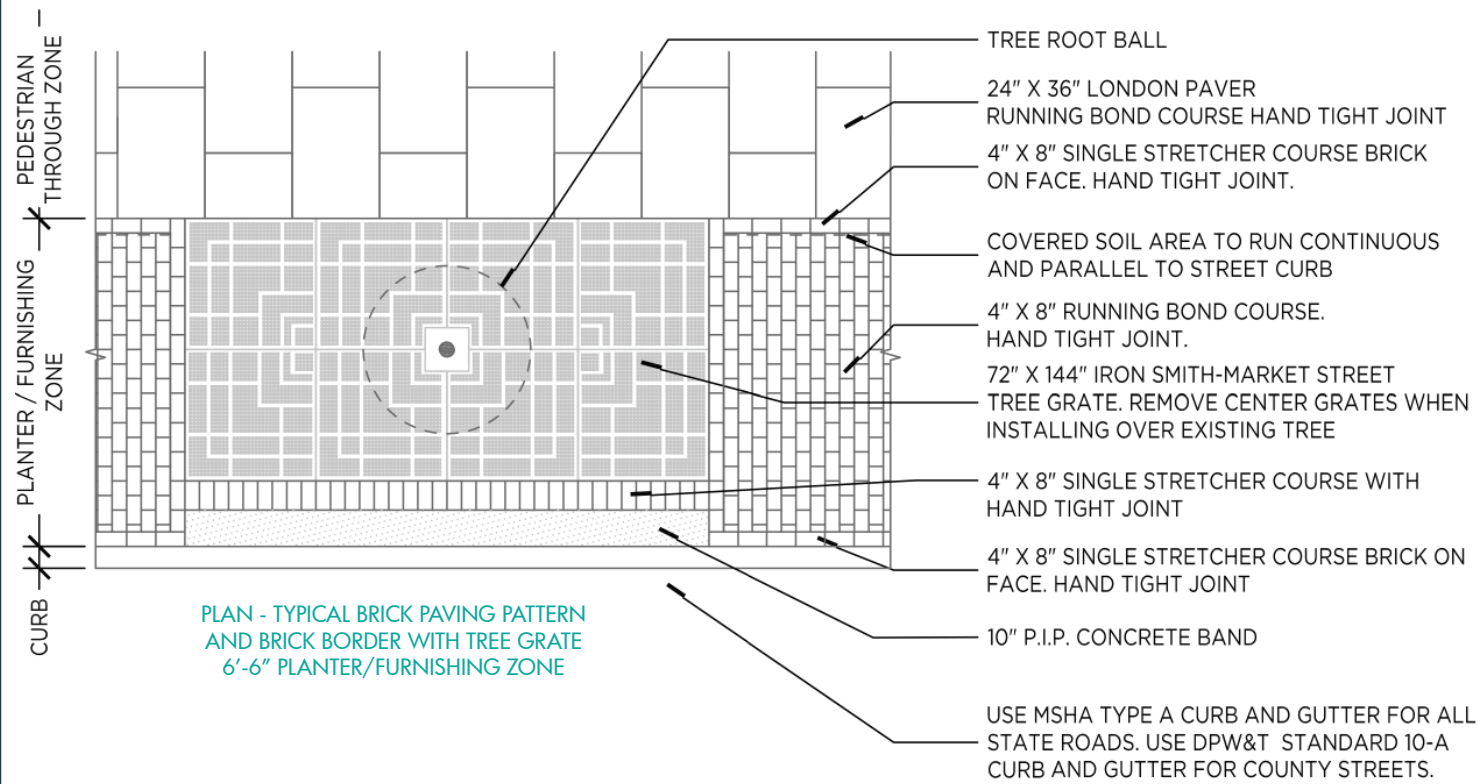


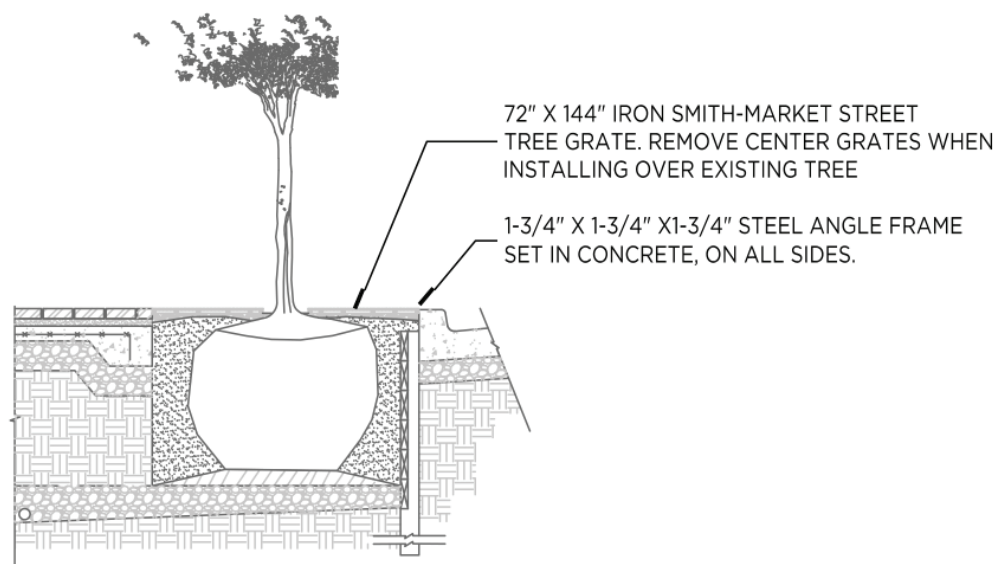
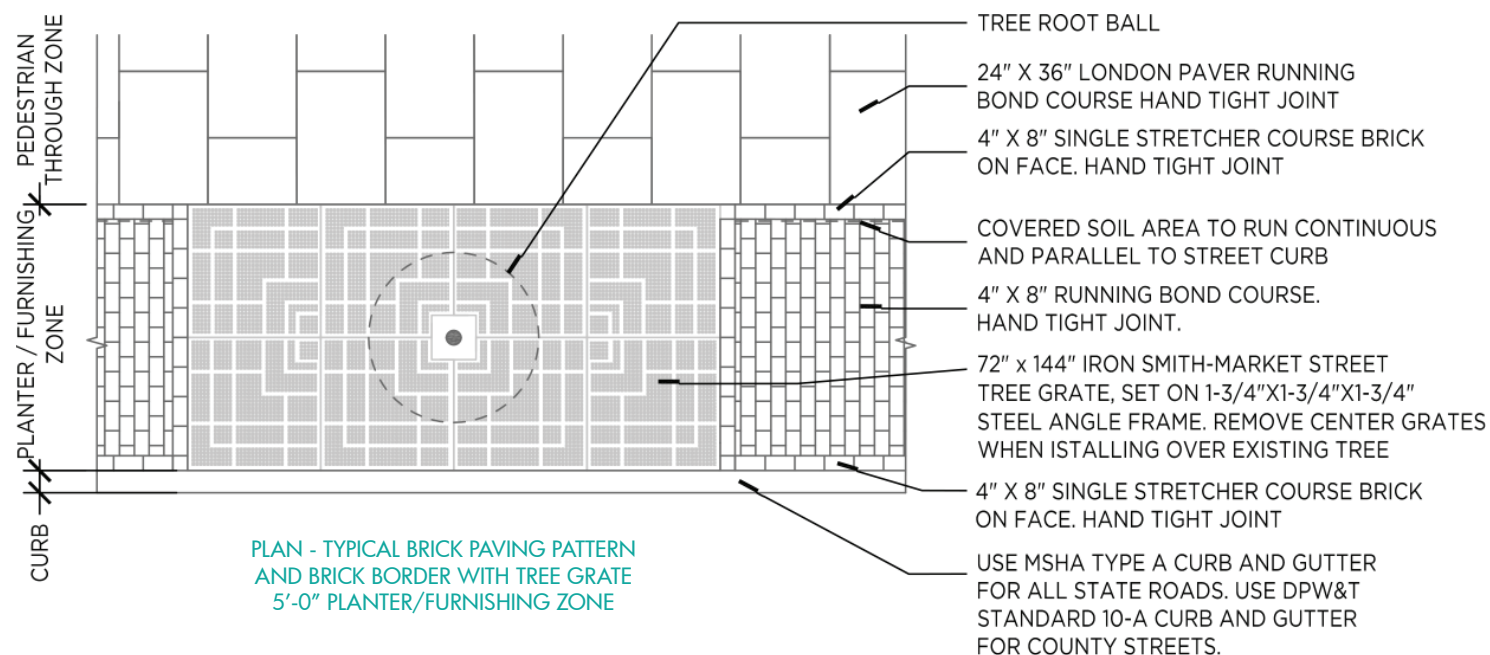
PLAN - CONDITION A: PERPENDICULAR



PLAN - CONDITION B: ANGULAR

The following illustrate the necessary details to install standard downtown Silver Spring sidewalk paving:





SECTION - TREE WELL WITH TREE GRATE

Furnishings

This update recommends two styles for the Silver Spring CBD. The first, referred to as a “Calm” style, fosters a calm backdrop where buildings, businesses, people, and activities stand out. In this approach, paving, lighting, trees and furnishings are consistently treated. The second style is referred to as “Expressive”; where the streetscape is intended to be wild and organic. The recommended furnishings in the next few pages are designated either calm or expressive and are intended to support the two different approaches.



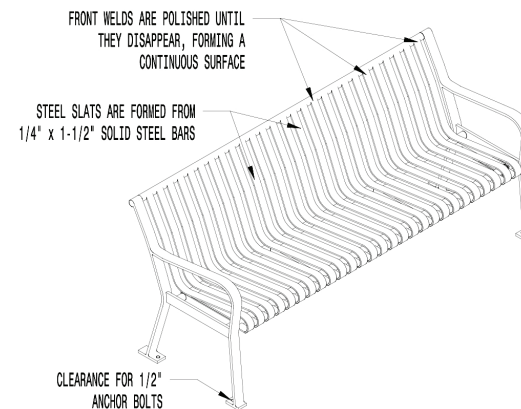
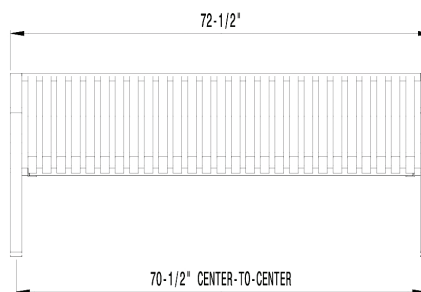
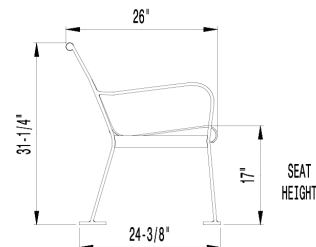
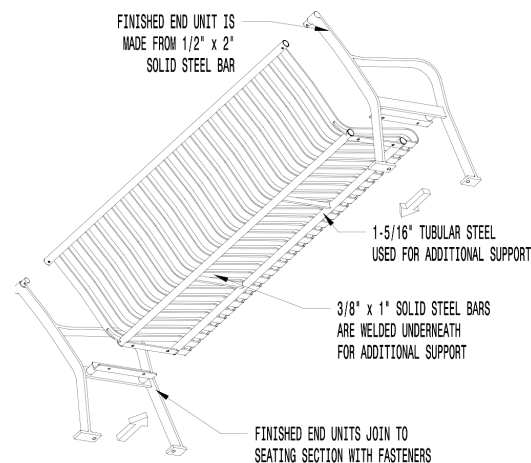
Furniture Number and Placement

The number and placement of smaller scale “street furnishing” elements – e.g., benches, trash receptacles, etc. – within public rights of way should be coordinated with the Silver Spring Urban District during the Site Plan review process. The following factors should be considered when determining number and siting of provided furnishings:

- Number and location of nearby transit stops
- Number of nearby entryways
- Number and proximity of existing and proposed restaurants and outdoor dining
- Number of benches and trash receptacles already in place on neighboring properties
- Proximity of public open spaces with existing public seating

EXPRESSIVE PLACES AND STREETS





LENGTHS
STANDARD 4'
STANDARD 6' (AS SHOWN)
STANDARD 8'

AVAILABLE OPTIONS

POWDER COATING

10 STANDARD COLORS, 2 OPTIONAL METALLIC COLORS,
CUSTOM COLORS (INCLUDING THE RAL RANGE)

INTERMEDIATE & CENTER ARMRESTS

4', 6', & 8' AVAILABLE WITH OPTIONAL SOLID STEEL ARMRESTS

NOTES:

1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL BENCH IS IN PLACE. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. ANCHOR BOLTS NOT PROVIDED BY VICTOR STANLEY, INC.
5. FOR HIGH SALT ABUSIVE CLIMATES, HOT-DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. HOT-DIP GALVANIZING IS PERFORMED FOR VICTOR STANLEY, INC. BY AN EXPERIENCED QUALIFIED FIRM TO WHICH PRODUCTS ARE SHIPPED FOR GALVANIZING. HOT-DIP GALVANIZING INCLUDES AN AGGRESSIVE PRE-TREATMENT AND IMMERSION IN A TANK OF CHARGED LIQUID ZINC AT OR AROUND 860°F (460°C). THE RESULTING SURFACE IS RESISTANT TO RUST BUT HAS SOME UNEVENNESS RESULTING FROM THE BONDING OF THE ZINC TO THE STEEL SURFACE. AS A RESULT, THE POWDER-COATING SURFACE FINISH OVER THAT GALVANIZED SURFACE MAY EXHIBIT BUMPS, UNEVENNESS, AND MAY NOT BE AS SMOOTH AS THE STANDARD FINISH; THIS UNEVEN AND INCONSISTENT FINISH IS NORMAL FOR GALVANIZING. CONTACT MANUFACTURER FOR DETAILS.
6. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
7. THIS PRODUCT IS SHIPPED PARITALLY UNASSEMBLED.



RB-28

STEELSITES™ RB

ALL STEEL CONTOURED BENCH
SHOWN: STANDARD 6-FOOT LENGTH



calm

NEOLIVIANO

Product Data Sheet



The NeoLiviano bench is a lyrical variation on NeoRomantico. Lighter in structure and form it has arms for extra comfort. Its slim profile coupled with a strong cast aluminum structure and wood slat seat and back make it versatile seating for both public and private spaces.

Bench

- Benches are available backed or backless.
- Bench can be freestanding, surface mounted, or embedded.
- Supports come in an anodized finish with no color options.
- Center arm option available for 118" bench only.
- Available only in Jarrah—exterior or interior finishes.

Finishes

- Anodized Aluminum Finish for Supports.
- Unfinished Exterior Woods.
- Interior Woods with LF-80 Finish.

Designed by Santa & Cole

landscapeforms®

BACKED	STYLE	DEPTH	WIDTH	HEIGHT	PRODUCT WEIGHT
	24"	26.5"	24"	31"	47 lb
	69"	26.5"	69"	31"	96 lb
	118"	26.5"	118"	31"	155 lb
	118" w/ center arm	26.5"	118"	31"	157 lb

BACKLESS	STYLE	DEPTH	WIDTH	HEIGHT	PRODUCT WEIGHT
	24"	19.5"	24"	17"	27 lb
	59"	19.5"	59"	17"	51 lb
	118"	19.5"	118"	17"	96 lb

35 Collection Stay Bench



Backless
19" x 69" x 18"



Backed
22" x 69" x 32"



1 divider
19" x 69" x 20"



Arms
20" x 69" x 26"



Dividers & arms
23" x 69" x 32"



landscapeforms®



expressive



35 Collection
designed by fi

About frog



The 35 Collection is the next generation of furniture for the way we live, work, learn at a cantilever bench distinguished by a wide, gr supporting arc. Its form is timeless and organi grow from the ground like a blade of grass.

CONTACT

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7800 E. Michigan Ave.
Kalamazoo, MI 49048

Email Us

Representatives
Corporate Office
Info Request Form

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LIGHTING

LANGUAGES
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French
Spanish

SOLUTIONS

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Learn
Work
Care
Play
Travel

COLLECTIONS

35 Collection
Concord
FGP
Metro 40
MultipliCITY
Urban Edge

PRODUCTS

Benches
Tables
Chairs
Litters + Recycling
Lighting
Outdoor Power
Terrace Life
Umbrellas
Bike Racks
Bollards
Shelters
Planters
Accessories

RESOURCES

My Binder
Project Photos
Space Planning Tips
Big Book
Sustainability
Warranty
Care and Maintenance
Roundtable Reports
XtremeLA Challenge
Insite
Price List
Pay Now



LATCH AND KEYED LOCK

Standard latch closure or optional keyed lock (US Patent 6,339,944 B1). Our keyed lock is a unique design with a custom key to prevent tampering and residential trash.



Latch



Keyed lock

HIGH-DENSITY PLASTIC LINERS

Our standard full and Half-Moon plastic receptacle liners (pair) are formed on custom molds designed for us. Reinforced, ribbed and molded for durability and ease of use. The primary raw material is recycled resin. Half-Moon liners make it easier and more cost effective than ever to separate different waste streams without sacrificing capacity or durability.



Standard liner.

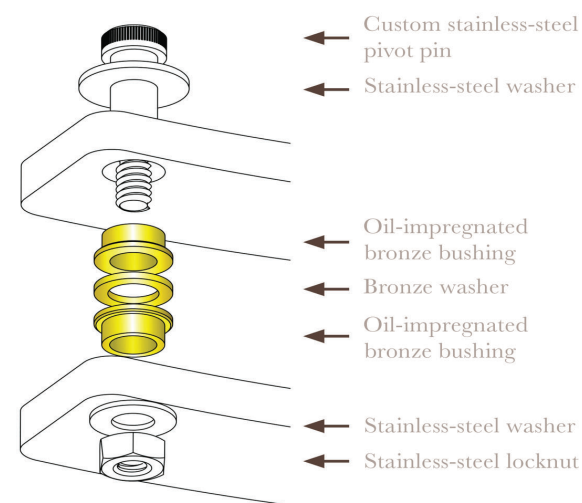


Half-Moon liners.

VICTORSTANLEY.COM

SIDE-DOOR HINGES

Composed of embedded precision stainless-steel pivot pins and oil-impregnated bronze bushings for reliable all-weather durability year after year.



DOOR BUMPER

Unique shock absorbing rubber bumper designed to prolong the product's life span by dissipating the energy of repeated closings.

Let us know what you think at:
www.surveymonkey.com/r/W3FYHD

or use the URL code here:





Overall Dimensions	Bigbelly® High Capacity	Smartbelly® Standard Capacity	Smartbelly® Companion
Height	49.8" (1264mm)	49.8" (1264mm)	49.8" (1264mm)
Width	25" (635mm)	25" (635mm)	25" (635mm)
Depth	26.8" (681mm)	26.8" (681mm)	26.8" (681mm)
Handle Height	43.1" (1095mm)	-	-
Weight	270 lb (122kg)	175 lb (80kg)	164 lb (75kg)
Shipping Weight	300 lb (136kg)	205 lb (93kg)	205 lb (93kg)
System Voltage	12V	12V	-
Insertion Opening (see below)	6" x 17" (15.2cm x 43.2cm)	Can be configured for multiple recycling or waste streams.	Can be configured for multiple recycling or waste streams.
Bin Volume	33 gallons (125L) compacted; 150 gallons uncompact	50 gallons (189L)	50 gallons (189L)
Other			
Liner Bags	Custom Bigbelly Liner Bags (#BBS-CB4647 or #BBS-RCB4647) are available for purchase. Contact WasteZero at 800.866.3954 or www.WasteZero.com/Bigbelly . The black or clear bags are 47"H x 46"W (120cm x 117cm) and 2.5mil (64μ) thick.	Custom Smartbelly Liner Bags (#BBS-RB4255) are available for purchase. Contact WasteZero at 800.866.3954 or www.WasteZero.com/Bigbelly . The clear bags are 55"H x 42.5"W (140cm x 108cm) and 1.25mil (32μ) thick.	Custom Smartbelly Liner Bags (#BBS-RB4255) are available for purchase. Contact WasteZero at 800.866.3954 or www.WasteZero.com/Bigbelly . The clear bags are 55"H x 42.5"W (140cm x 108cm) and 1.25mil (32μ) thick.

Suite of Smart, Connected Waste & Recycling Stations

Each Bigbelly deployment is comprised of a customized fleet of smart waste & recycling stations. An assessment of the unique challenges and needs of each public space determines the best suited combination of capacity, waste stream, and accessories/options. Stations can be configured as standalone single stations or as multi-stream double or triple stations to accommodate each community's waste stream collections. The full suite of smart stations are field-proven to be durable and street-tough across all environmental conditions.



Two capacities (high & standard) are available to match the varying waste volume needs in every location.



Stations are self-powered (compactors are solar-powered) & do not require connection to an electrical grid.



Each smart station analyzes and monitors its status to make decisions about communications, fullness & alerts.



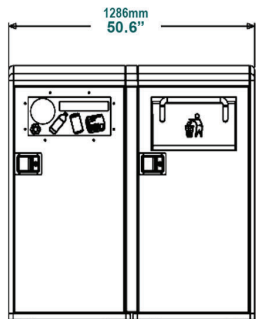
Sensors located inside each station continuously measure the fullness status, door opens, and collection activity.



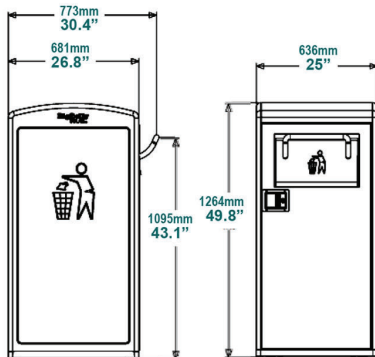
On-board GPS provides accurate and up-to-date geolocation for the most precise location-based data.



Smart stations communicate their real-time status and activity to the cloud management system via cellular connection.



Bigbelly & Smartbelly double station
Approximately 445 lbs (200kg)



Bigbelly single station
Approximately 270 lbs (122kg)

CENTRAL PARK CONSERVANCY RECYCLING SYSTEM

Product Data Sheet



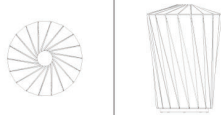


The Central Park Conservancy Recycling System combines high form and humble function. The leading design and branding firm Landor designed it as a custom solution for the non-profit Central Park Conservancy to advance environmental stewardship at the world's most famous urban park. The three-unit system, first developed and produced by Landscape Forms Studio 431, has proven itself on the job, earned multiple design awards, and been adopted as a Landscape Forms standard product. Inspired by the classic 1930s Central Park bench, the vibrant design cleverly turns the hooped arms and seat slats of the original on end, re-envisioning them for a new purpose. Aluminum units are identical in size and shape, but different in the size of top openings that identify receptacles for cans and bottles, paper, and waste.

Central Park Conservancy Recycling System

- Constructed of aluminum with a cast aluminum base for stability.
- Top opening receptacle can be freestanding or surface mounted; surface mount holes provided with every unit.
- All units feature hinged top opening for easy emptying.
- The unit has a 30 gallon capacity, custom fit polyethylene liner in black included with all receptacles.
- Recycling litter available with 5", 8.6" or 12" diameter openings to collect recyclable material.
- Labels with recycle symbol and specified recyclable material printed on high performance, exterior grade UV protected vinyl, mounted securely to each unit.
- For more information on signage options, visit landscapeforms.com.
- Recycling system units ship fully assembled with freestanding glides.

Finishes

- Metal is finished with Landscape Forms' proprietary Pangard II® polyester powdercoat, a hard yet flexible finish that resists rusting, chipping, peeling and fading.
- Call for standard color chart.
- A wide array of optional colors may be specified for an upcharge.

5" DIAMETER TOP-OPENING	WIDTH	HEIGHT	PRODUCT WEIGHT
	24.5"	35"	63 lb
8.6" DIAMETER TOP-OPENING	WIDTH	HEIGHT	PRODUCT WEIGHT
	24.5"	35"	63 lb
12" DIAMETER TOP-OPENING	WIDTH	HEIGHT	PRODUCT WEIGHT
	24.5"	35"	63 lb

To Specify

- Select powdercoat color.
- Choose standard 5" diameter, standard 8.6" diameter or standard 12" diameter opening.
- Select standard wording from options available on landscapeforms.com. Custom wording available for an upcharge.
- Select lid ring decal option.
- Black polyethylene liner included with each unit. Surface mount holes provided in base.
- Shipped with freestanding glides.
- Ships fully assembled.

Designed by Landor Associates

Visit our landscapeforms.com for more information. Specifications are subject to change without notice. Landscape Forms supports the Landscape Architecture Foundation at the Second Century level. ©2015 Landscape Forms, Inc. Printed in U.S.A.

Landscape Forms, Inc. | 800.521.2546 | F 269.381.3455 | 7800 E. Michigan Ave., Kalamazoo, MI 49048

PETOSKEY™

Product Data Sheet



Like the prized coral fossil stone that shares its names, Petoskey is pleasing to the eye and solid as a rock. The Petoskey Litter receptacle is engineered for active commercial and institutional spaces and has become a favorite for courtyards, city parks, university campuses, open air retail malls, and transportation hubs.

	STYLE	DEPTH	WIDTH	HEIGHT	PRODUCT WEIGHT
	litter receptacle, hinged lid	20.5"	n/a	42"	112 lb
	litter receptacle, tube support	27"	23.75"	47"	150 lb
	ash urn	12.75"	n/a	21.75"	22 lb

Litter Receptacles And Ash Urn

- Formed of 11-gauge steel.
- Tube support for litter receptacle is 3" o.d.; may be surface mounted or embedded.
- Tube support receptacle may be specified with optional sand pan insert.
- Litter receptacle with hinged lid features standard freestanding/surface mount base.
- Custom fit 30-gallon polyethylene liner supplied with both litter receptacle styles.

Metal Finishes

- Metal parts are finished with Landscape Forms' exclusive Panguard II® polyester powdercoat, a hard yet flexible finishing process that resists rusting, chipping, peeling and fading.

To Specify

- Litter Receptacle and Ash Urn: Select Petoskey litter receptacle or ash urn.
 - Select powdercoat color.
 - For litter receptacle: select either tube support and mounting option; or hinged lid style with freestanding/surface mount base.
 - Specify optional sand pan for receptacle with tube support.

Designed by Beckett and Raeder, Inc. and Arno Yurk, AIA, IDSA.
Petoskey designs are protected by U.S. Patent Numbers D-319,520, D-385,731 and D-392,821.

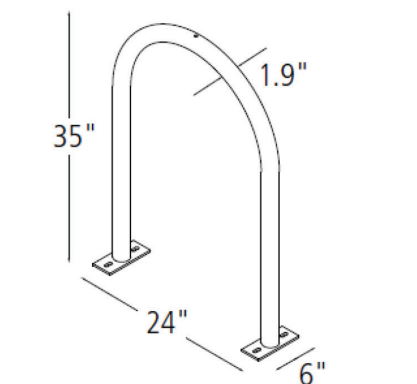
Let us know what you think at:
www.surveymonkey.com/r/W3FYHD

or use the URL code here: →

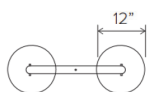




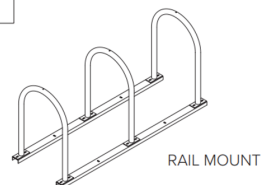
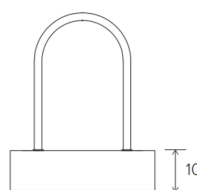
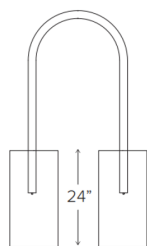
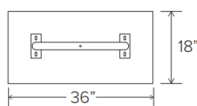
Hoop Rack



IN-GROUND MOUNT



SURFACE MOUNT



RAIL MOUNT



Example of rack in use

Product Hoop Rack

Capacity 2 Bikes

Materials 1.5" Schedule 40 pipe (1.9" OD)

Finishes Standard options: Galvanized Or Powder Coated



RAL 9005	Flat Black	RAL 9003	RAL 2004	RAL 1023	Bright Yellow
RAL 6016	RAL 6018	RAL 6005	RAL 5005	RAL 5015	Purple
RAL 7011	RAL 7042	RAL 9007	RAL 1001	RAL 8014	Bronze
RAL 3003	RAL 3005				

Also available in PVC, Thermoplastic, or Stainless steel upon request.

Installation Methods **In ground mount** is embedded into concrete base. Specify in ground mount for this option.

Foot Mount has two 2.5"x6"x.25" feet with two anchors per foot. Specify foot mount for this option.

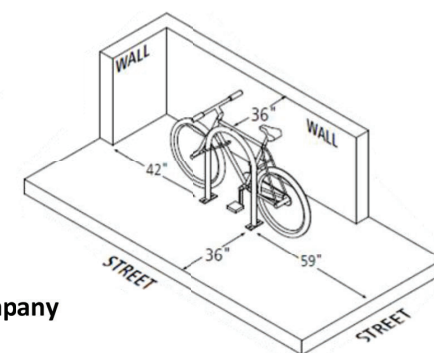
Rail Mounted Hoops are bolted to two parallel rails which can be left freestanding or anchored to the ground. Rails are heavy duty 3"x1.4"x3/16" thick galvanized mounting rails. Specify rail mount for this option.

Space Use & Setbacks **Wall Setbacks:** For racks set parallel to a wall: Minimum: 24" Recommended: 36"

For racks set perpendicular to a wall: Minimum: 28" Recommended: 42"

Distance Between Racks: Minimum: 24" Recommended: 36"

Street Setbacks: Minimum: 24" Recommended: 36"



American Bicycle Security Company

P.O. Box 7359

Ventura, CA 93006

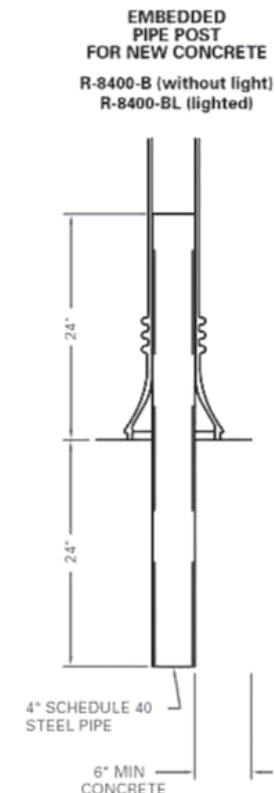
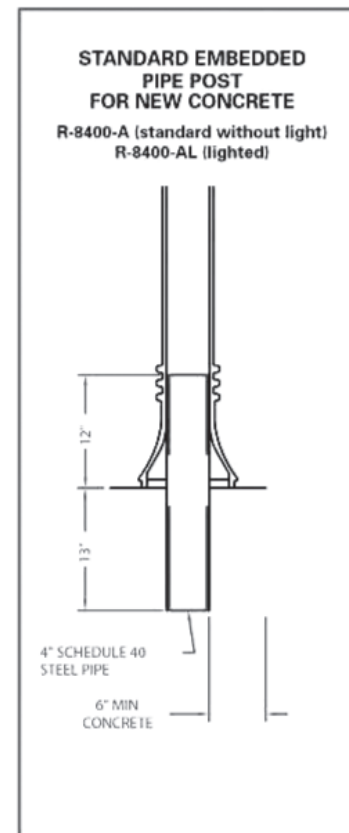
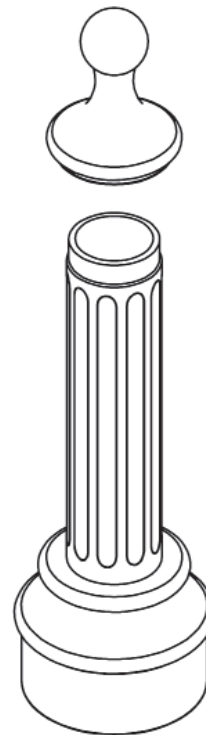
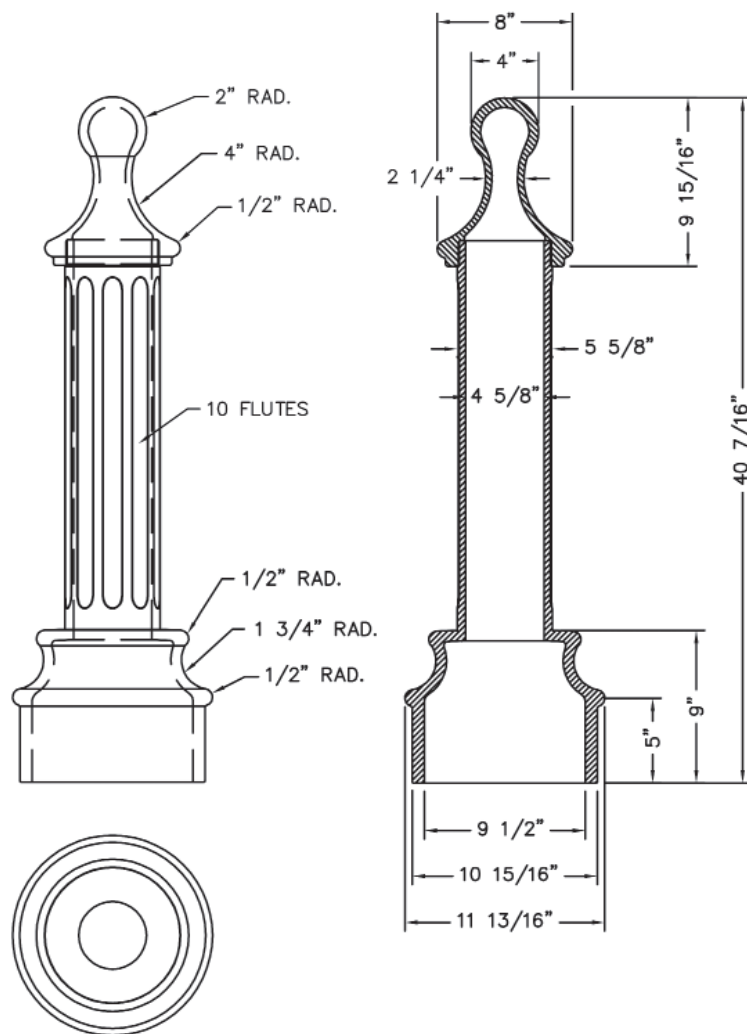
Ph: (800) 245-3723 or (805) 933-3688

Fax: (805) 933-1865


www.ameribike.com

Email: turtle@ameribike.com





NOTE: THE CONTRACTOR IS RESPONSIBLE FOR THE FINIAL CAP ASSEMBLY AFTER THE BOLLARD BODY IS PROPERLY MOUNTED IN PLACE.
 ASSEMBLY INSTRUCTIONS WILL BE PROVIDED WITH MOUNTING KIT.
 COMPONENT NUMBERS: BOLLARD BODY 8401-4301, FINIAL CAP 8400-4001
 MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B.
 FINISH: PAINT SHOULD BE SPECIFIED ON PURCHASE ORDER.
 WEIGHT: 121 LBS.

DR.	E. NIVER	SCALE	TITLE: R-8401-43AA BOLLARD		
CH.		1/8"=1"	w/FLUTED BODY FOR 4" PIPE INSTALLATION		
APP.		DIM CHK.	NEENAH FOUNDRY <small>NEENAH WISCONSIN 54956</small> 		
DATE	03-21-2013				
www.neenahfoundry.com			PHONE: 1-800-558-5075		
			NF- 8401 200		B

CAD DWG. REF: 8401 200.DWG- 2

04-25-2013	UPDATES THE NOTES.	ELJ
DATE	REVISION	INT

LIGHTING

Lighting

Following the 1992 Streetscape Standards, these updated Standards have retained the usage of Silver Spring's two primary street light fixtures: (1) the Silver Spring Tear Drop fixture, and (2) the Washington Globe fixture. During new streetscape projects, please refer to the lighting diagram for appropriate lighting fixture placement per street. Except for portions of the Ellsworth CBD subdistrict, most major streets like Georgia Avenue, Colesville Road, and Wayne Avenue include the Silver Spring Tear Drop fixture. All secondary CBD streets include the Washington Globe. These street light standards abide by dark-sky best practices. However, luminaire types are subject to County review in efforts to reduce glare on adjacent properties.

5G Small Cell Antennas:

Montgomery County Council recently approved legislation allowing 5G antennas in the right-of-way on poles at least 20 feet tall. They will be attached to the teardrop luminaire on those streets where the Teardrop Luminaires are specified. There will be no more than one light post mounted 5G antenna per block. See pages 99-100 for details.

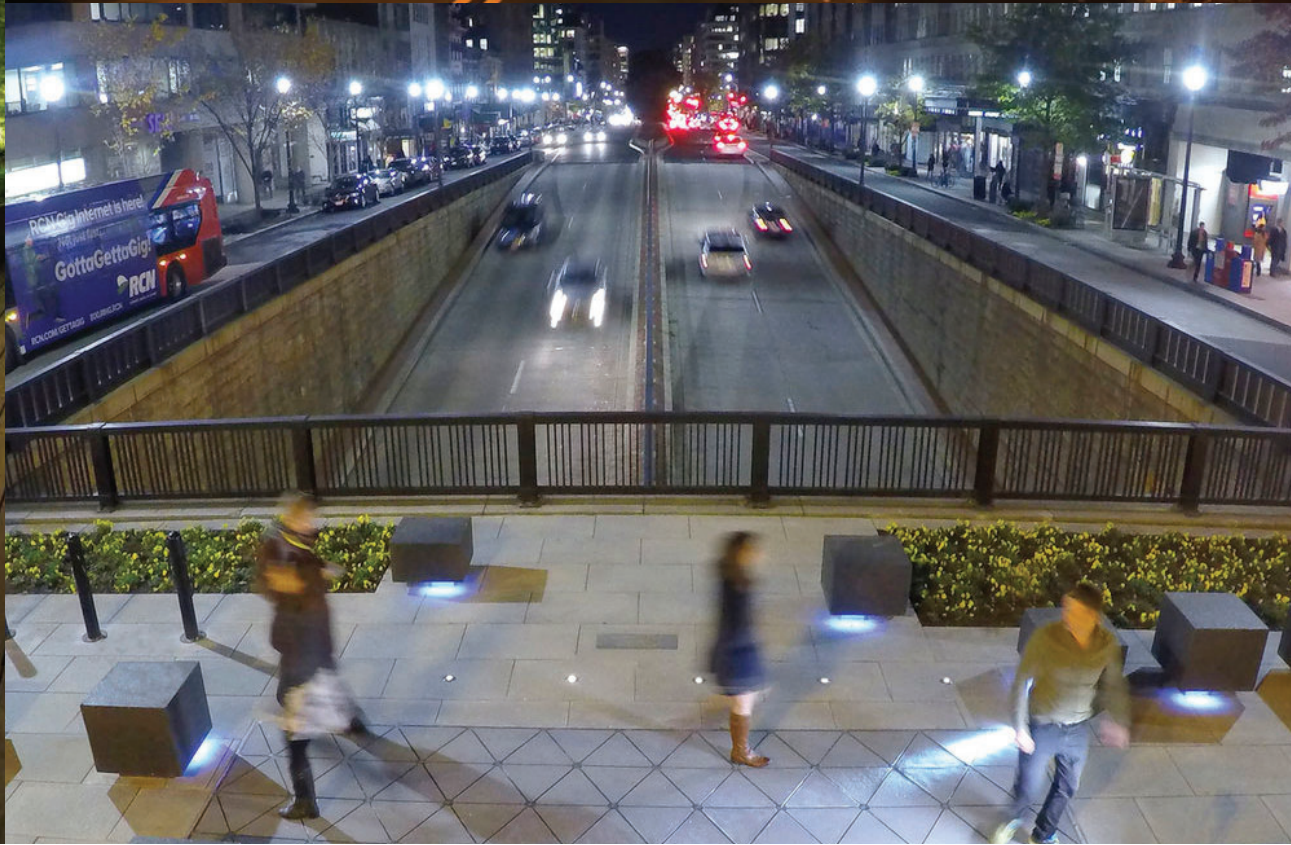



Washington Globe



Teardrop Luminaires







Accent Lighting

To add visual interest, variety, and depth to the streetscape, the streetscape standards encourage the use of accent lighting in the streetscape. Accent lighting is defined as secondary lighting sources that emphasize unique site features. Accent lighting cannot be used as an alternative to traditional street lighting. While subject to county review on a case by case basis, the images arranged below illustrate successful examples of accent lighting within urban streetscapes.



Chapter 5:

Special Places and Elements

Special Places and Elements

Introduction

The average “calm” Silver Spring CBD streetscape described in the previous chapters is designed to unify a cityscape that hosts a variety of building styles, sizes and uses. Therefore, in most cases, a more uniform streetscape provides necessary visual clarity and continuity to Silver Spring’s public realm.

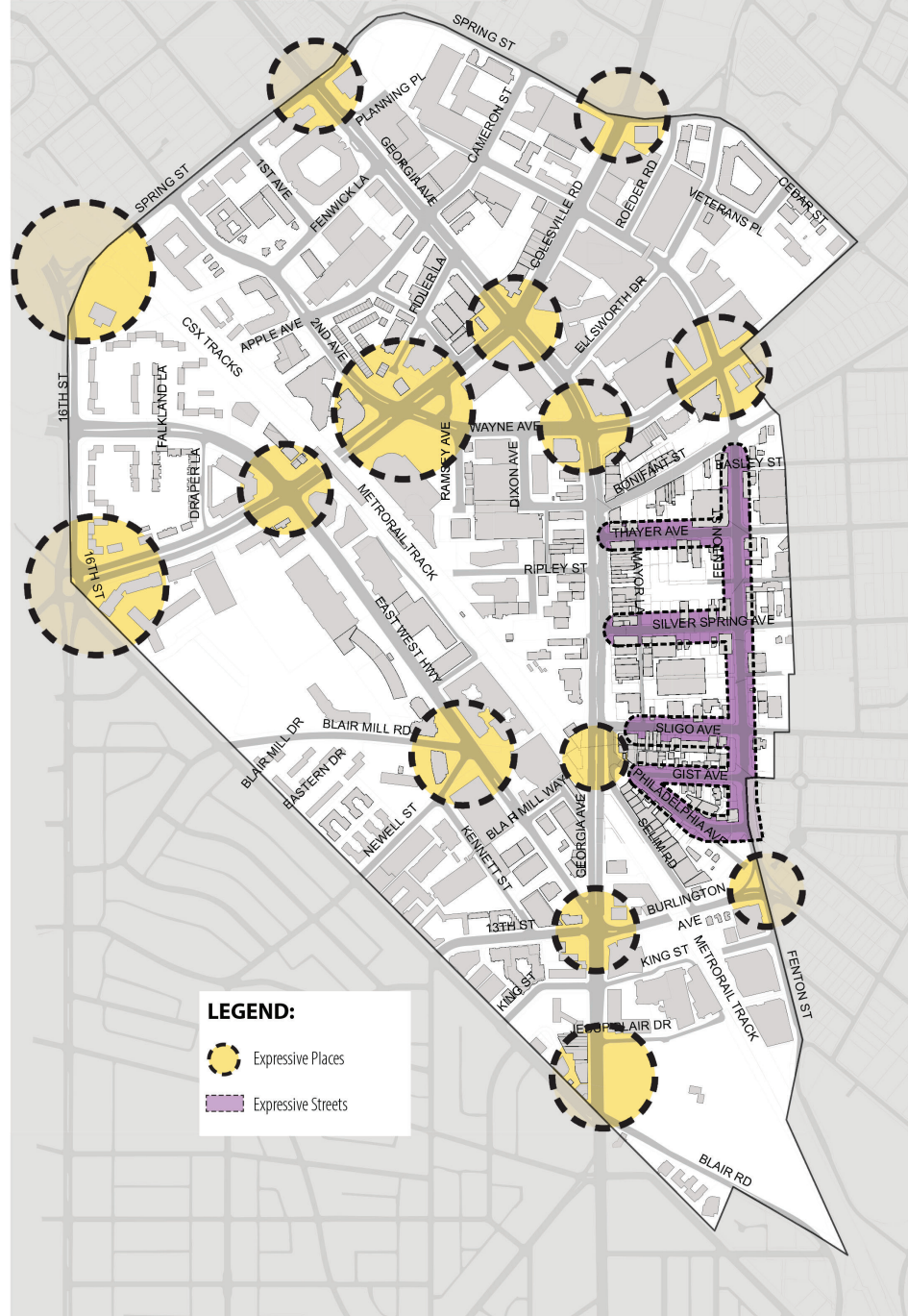
That being the case, there are areas dispersed throughout the CBD’s subdistricts where uniform streetscape design might not always be enough to express the importance or uniqueness of a special place. To accommodate special or “expressive” places and streets, branding and wayfinding, public art, and parklets within the CBD, the following sections describe general strategies and minimal standards to follow during any streetscape design process.

Expressive Places and Streets

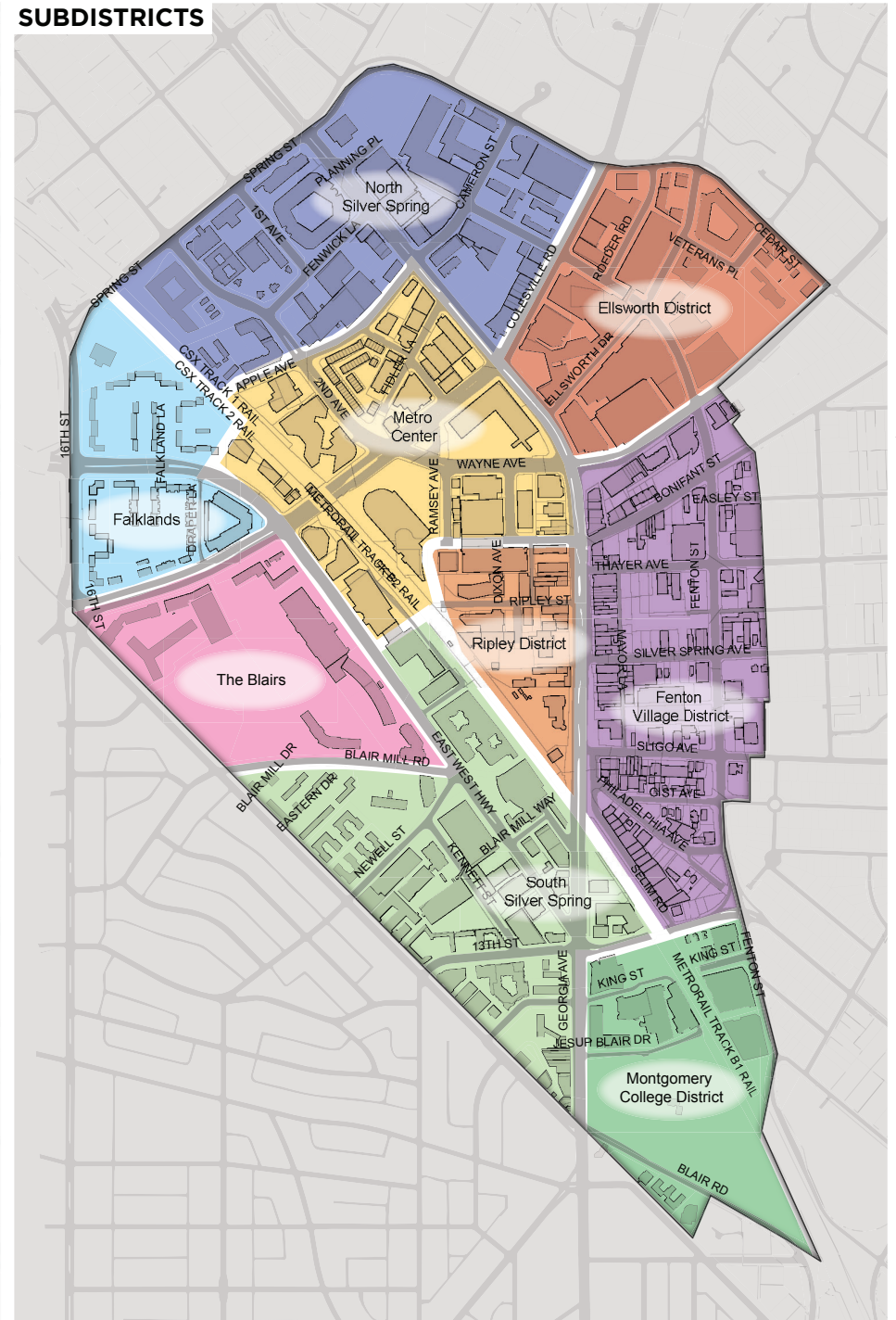
In contrast to calm streetscapes, which are meant to unify the Silver Spring CBD subdistrict, expressive places and streets aim to create public spaces that are unique and dramatic, yet organic. These expressive places and streets provide opportunities for subdistricts and special places like transit stations, CBD gateways and public plazas to achieve individual identity. To reinforce the impact of expressive places and streets, the standards assigned locations sparingly. Expressive places and streets promote the use of alternative paving materials and utilize a different street furnishing family than those of calm streetscapes. Applications for additional expressive places and streets within the Silver Spring CBD can be considered on a case by case basis.



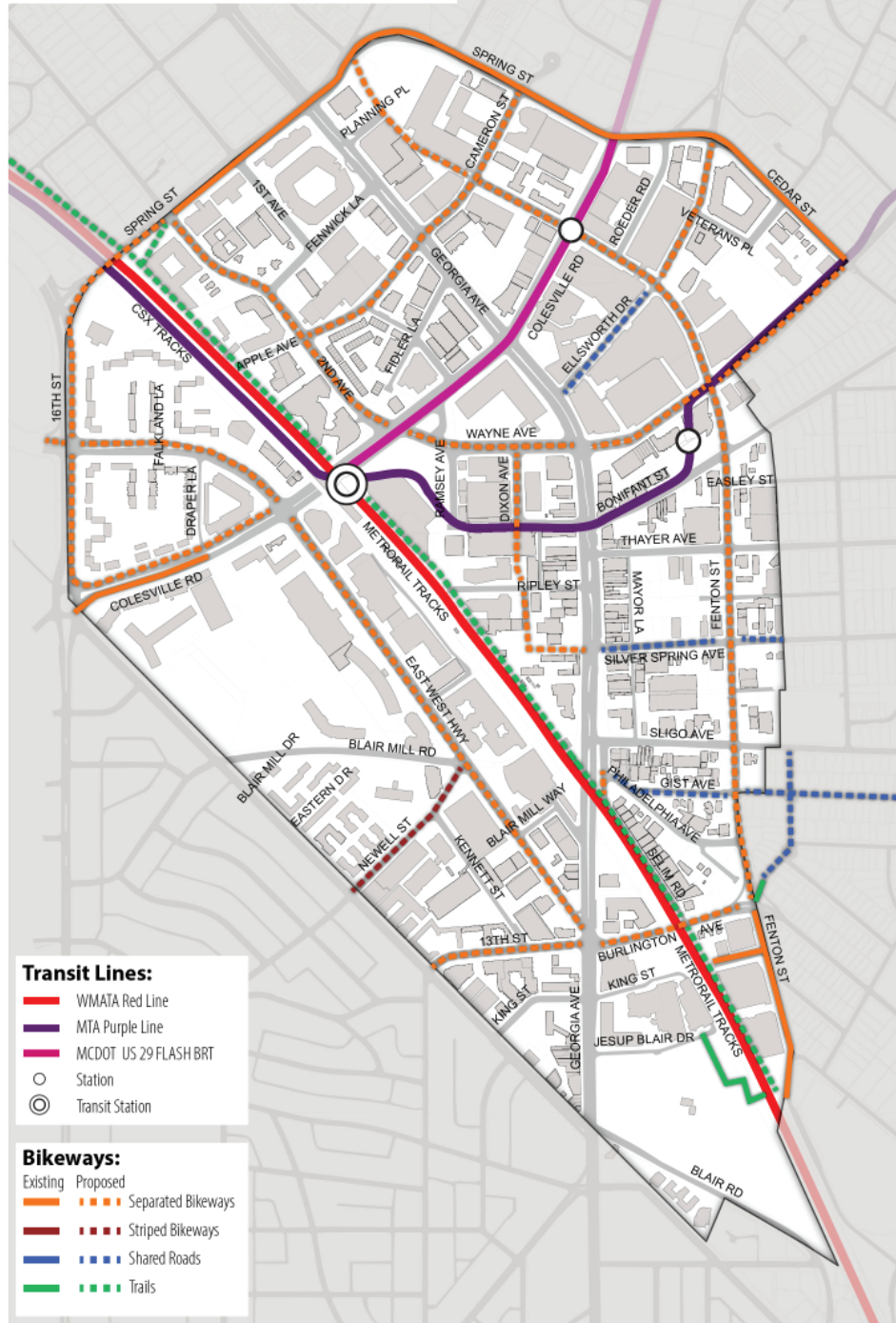
EXPRESSIVE PLACES AND STREETS



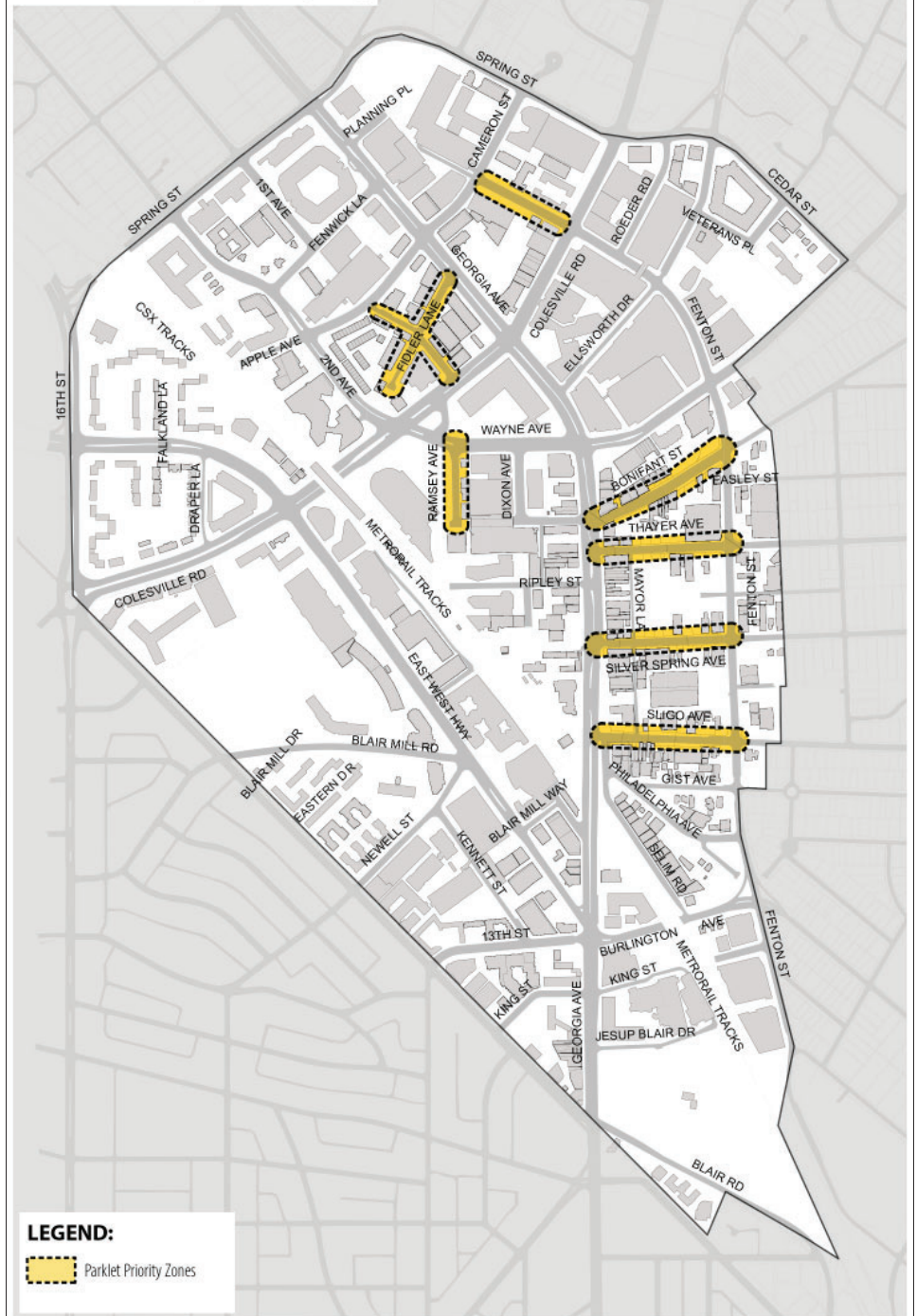
SUBDISTRICTS



MULTI-MODAL INFRASTRUCTURE



PARKLET PRIORITY ZONES



Branding & Wayfinding

Branding and wayfinding should work in tandem with expressive places and streets to further identify and celebrate special places within Silver Spring's subdistricts. Given the variety and evolution of wayfinding methods, creative and innovative wayfinding and branding solutions are encouraged and will be considered on a case by case basis. Stringent design guidelines have an adverse effect on developing impactful wayfinding and branding.

Wayfinding implemented under the direction of the Silver Spring Regional Center and the Silver Spring Urban District will consist of two systems:

- 1) Stamped street names in concrete curbs at street intersections. Names of intersecting streets shall be impressed on sidewalk curbs that are opposite the crosswalk or crosswalks. Impressed letters and numerals should be four inches high and a half inch deep. Refer to ADA Aprons/Ramps Detail in the Paving section for more details. These stamped names will follow the same procedure as San Francisco, CA (Engineering Standard Specifications, Part 2, 204.08 <http://sfpublicworks.org/sites/default/files/Part2-StreetsAndHighways.pdf>).
- 2) Street name toppers: Subdistrict names above street name signage. Attached directly above the standard sheet aluminum street name sign should be a secondary sheet aluminum sign that contains the street's corresponding CBD subdistrict name. These sign toppers are based on Portland, Oregon's street name sign procedure (City of Portland Standard Construction Specifications, Section 00940 – Signs <https://www.portlandoregon.gov/transportation/article/631178>).

Each subdistrict street name topper may use a unique design that is different from the sign toppers for the other subdistricts. The Planning Department will work with representatives from those districts that desire a different design.





-



Public Art

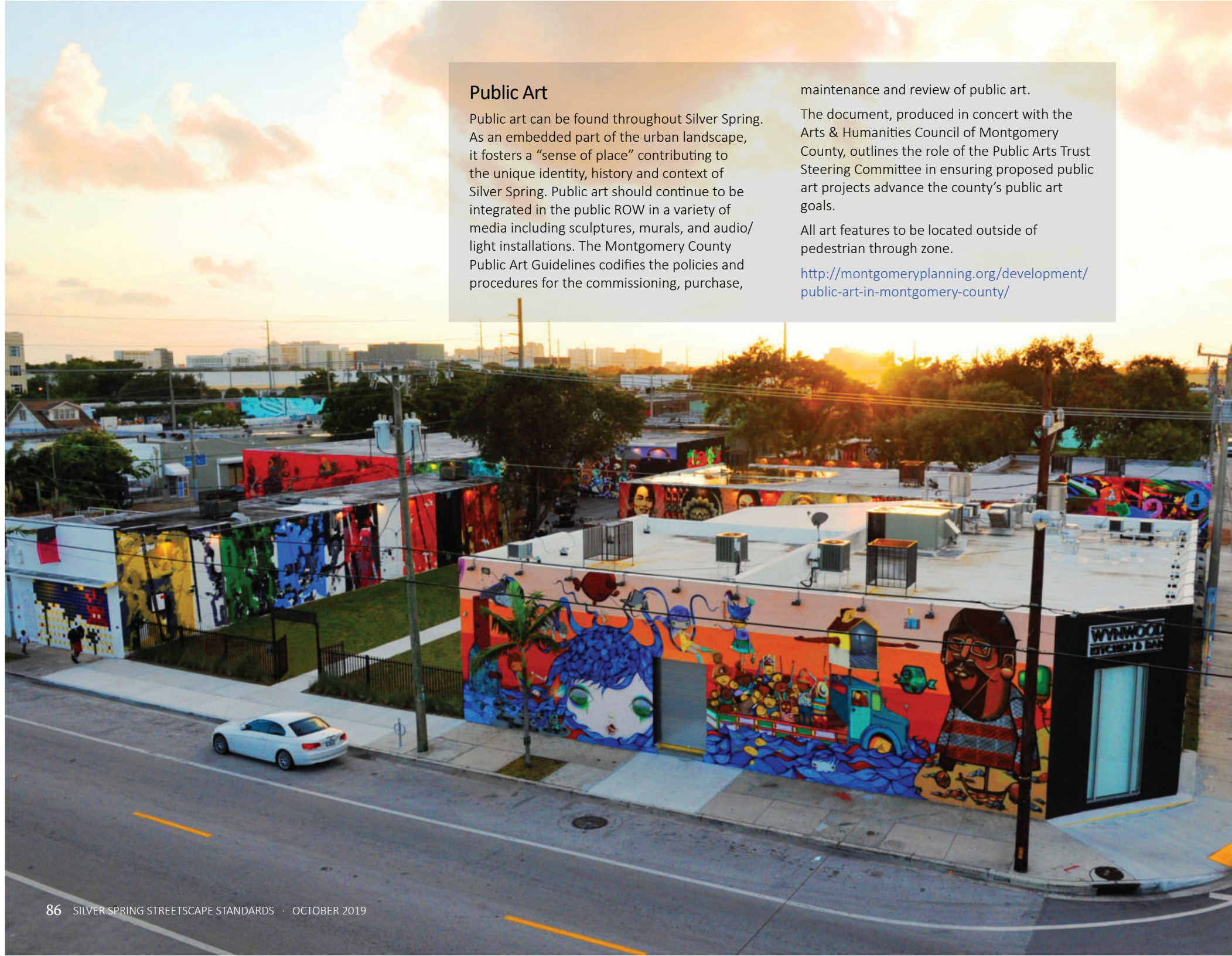
Public art can be found throughout Silver Spring. As an embedded part of the urban landscape, it fosters a “sense of place” contributing to the unique identity, history and context of Silver Spring. Public art should continue to be integrated in the public ROW in a variety of media including sculptures, murals, and audio/light installations. The Montgomery County Public Art Guidelines codifies the policies and procedures for the commissioning, purchase,

maintenance and review of public art.

The document, produced in concert with the Arts & Humanities Council of Montgomery County, outlines the role of the Public Arts Trust Steering Committee in ensuring proposed public art projects advance the county’s public art goals.

All art features to be located outside of pedestrian through zone.

<http://montgomeryplanning.org/development/public-art-in-montgomery-county/>





Interim Streetscapes/Parklets

The subdistricts that contain Silver Spring's oldest buildings and infrastructure also tend to have the narrowest sidewalks. Silver Spring has evolved into an urban core that requires more street space for pedestrians and diverse transportation modes. Interim streetscapes or temporary parklets are great tools to expand constrained sidewalks.

Parklets convert existing on-street parking into temporary extensions that provide temporary planter/furnishing zones. In Silver Spring's case, interventions like parklets can temporarily convert narrow sidewalks into typical sidewalks. These interim streetscapes have been applied nationally with proven success, especially along sidewalks with adjoining ground floor retail and restaurants. Parklets can provide places for people to linger, dine, play and gather without obstructing the pedestrian through zone.

The parklet priority areas map identifies areas that would benefit the most from parklet pilot projects. Many streets in the Fenton Village District already have limited on-street parking that businesses highly value. Therefore, parklets should be applied on a case by case basis with the full cooperation and approval of the businesses on the street where the parklet is proposed. If deemed successful over time, these priority areas, with the full approval of the businesses on the street where the parklet is located, could be considered for larger traffic calming projects, which could permanently reallocate on-street parking to multimodal travel. These parklets are restricted to County Roads.

Another option for activating narrow sidewalks is the use of garage door style store-front openings. Though it does not widen the sidewalk, it does provide an outdoor café experience for those establishments where the sidewalks are too narrow to provide them, while activating the pedestrian areas while obstructing movement.

PARKLET PRIORITY ZONES





Specifications

Paving Specifications

Paving Specifications	
Paving: Brick Pavers (Frontage Zone & Planting/Furnishing Zone)	
Type	Belden 470-479 Silver Spring Special, or approved equal. "Equal" must be submitted to staff of Urban Design Division, M-NCPPC for approval.
Absorption Rate	Average water absorption rate 4%.
Comprehensive Strength	Shall not be less than 10,000 pounds per square inch for any five bricks tested.
Freeze-Thaw Cycles	Shall be capable of withstanding a minimum of 100 freeze-thaw cycles.
Tolerances	Shall conform to ASTM Designation C-902-79a.
Pattern	Running bond, perpendicular to curb.
Border	4" soldier course.
Paving: London Pavers (Pedestrian Through Zone)	
Type	Hanover Charcoal "Prest" Paver (24" x 36" x 2 ¼") with "Tudor" finish.
Absorption Rate	Average water absorption rate 5%.
Comprehensive Strength	Shall not be less than 8000 psi.
Freeze-Thaw Cycles	Shall be capable of withstanding a minimum of 50 freeze-thaw cycles.
Tolerances	Shall conform to ASTM Designation C936-82
Pattern	Running bond, perpendicular to curb.
Border	No border.
Paving: Truncated Dome Pavers (ADA Aprons/Ramps)	
Type	Hanover Charcoal "Detectable Warning" Paver (12" x 12") with "Natural" finish.
Absorption Rate	Average water absorption rate 5%.
Comprehensive Strength	Shall not be less than 8000 psi.
Freeze-Thaw Cycles	Shall meet ASTM Designation C67 requirements.
Tolerances	Shall conform to ASTM Designation C936.
Pattern	Stacked bond.
Border	No border.
Paving: Dark Pigmented Poured in Place (PIP) Concrete (ADA Aprons/Ramps & Curbs)	
Concrete Materials	<ul style="list-style-type: none"> Portland Cement – ASTM C150, Type 1. Use only one brand of cement throughout the project. Aggregates – ASTM C33, fine and coarse aggregates shall be clean, sharp, and free from clay, organic matter and other deleterious substances. Coarse aggregates shall be crushed stone with a maximum size no larger than one-fifth of the narrowest dimension between side forms, one-third depth of the slab, nor three-fourths of the minimum clear spacing between individual reinforcing bars. Water shall be clean, drinkable and meet the PH requirements of AASHTO T-26 Method B.

Paving Specifications

Reinforcing Materials	<ul style="list-style-type: none"> Reinforcing Bar shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A285. Supports for reinforcement shall comply with CRSI recommendations. Wood, bricks or other devices will not be acceptable as supports for reinforcement.
Admixtures	<ul style="list-style-type: none"> Air..... entraining admixtures shall conform to ASTM C260. Water.....admixture shall conform to ASTM C494, Type A. Set.....control admixtures shall conform to ASTM C494 as follows: <ol style="list-style-type: none"> Type B.....Retarding Type C.....Accelerating Type D.....Water reducing and retarding Type E.....Water reducing and accelerating Calcium chloride shall meet the requirements of AASHTO M.144, Type 1 or 2
Color Admixtures	<p>Preferred: Davis Colors Light Gray #8084.</p> <p>Acceptable: Scofield Chromix Admixture Charcoal C-24.</p>
Compressive Strength	Minimum of 3,000 psi shall be achieved by the 28th day of a strength test. Control testing shall be in conformance with Montgomery County Standards.
Slump Requirements	2" – 4" range is acceptable.
Air Content	5% to 8%

Paving: Bituminous Setting Bed

Type	Asphalt cement shall conform to ASTM Designation D-3381. Fine aggregates shall be clean, hard sand, and free from adherent coating, lumps of clay, alkali salts and organic matter. Aggregates shall meet the standard method of test for sieve analysis of fine and coarse aggregates ASTM Designation C-136-81.
Viscosity Grade	Shall be A.C. 10 or A.C. 20.
Proportion of Material	Approximate proportion shall be 7: asphalt cement and 93% fine aggregate.
Reinforcing Materials	Supports for reinforcement shall comply with CRSI recommendations. Wood, bricks or other devices will not be acceptable as supports for reinforcement.
Admixtures	<p>Air- entraining admixtures shall conform to ASTM C260. Water- admixtures shall conform to ASTM C494, Type A. Set – control admixtures shall conform to ASTM C494 as follows:</p> <ul style="list-style-type: none"> Type B – Retarding Type C – Accelerating Type D – Water reducing and retarding Type E – Water reducing and accelerating Calcium chloride shall meet the requirements of AASHTO M.144, Type1 or 2
Compressive Strength	Minimum of 3,000 psi shall be achieved by the 28th day of a strength test. Control testing shall be in conformance with Montgomery County standards.
Slump Requirements	2"-4" range is acceptable.
Air Content	5% to 8%

Specifications

Paving: Neoprene – Modified Asphalt Adhesive Under Pavers

Mastic (Asphalt Adhesive)	Solids (base)..... 75% +- 1% Lbs./Gal.....8 – 8.5 lbs. Solvent..... Varsol (Over 100 °F Flash)
Base (2% Neoprene, 10% Fibers, 88% Asphalt)	Melting Point ASTM D-36..... 200°F Min. Penetration..... 77°F 100 Gram Load 5 Second (1mm.)..... 23-27 Ductility..... ASTM D-113-44 @ 25°C cms/per minute.....125 cm Min.

Paving: Joint Filler

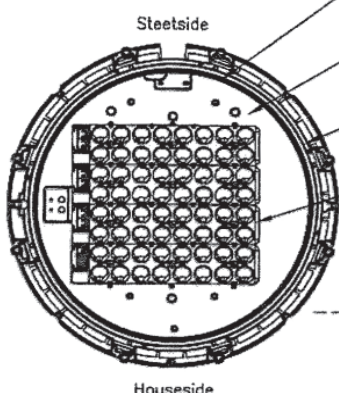
Type	Portland Cement shall conform to ASTM C-150 and sand shall conform to ASTM C-33
Proportion of Materials	One part Portland Cement to three parts sand.

Paving: Concrete Subbase

Concrete Materials	<ul style="list-style-type: none"> • Portland Cement – ASTM C150, Type 1. Use only one brand of cement throughout the project. • Aggregates – ASTM C33, fine and coarse aggregates shall be clean, sharp, and free from clay, organic matter and other deleterious substances. • Coarse aggregates shall be crushed stone with a maximum size no larger than one-fifth of the narrowest dimension between side forms, one-third depth of the slab, nor three-fourths of the minimum clear spacing between individual reinforcing bars. • Water shall be clean, drinkable and meet the PH requirements of AASHTO T-26 Method B.
Reinforcing Materials	<ul style="list-style-type: none"> • Reinforcing Bar shall conform to ASTM A615, Grade 60. Use in concrete under vehicular aprons or driveways. • Welded Wire Fabric shall conform to ASTM A285. Use in concrete under pavers in pedestrian throughways. • Supports for reinforcement shall comply with CRSI recommendations. • Wood, bricks or other devices will not be acceptable as supports for reinforcement.
Admixtures	<ul style="list-style-type: none"> • Air..... Entraining admixtures shall conform to ASTM C260. • Water.....admixtures shall conform to ASTM C494, Type A. • Set.....control admixtures shall conform to ASTM C494 as follows: <ol style="list-style-type: none"> 1. Type B.....Retarding 2. Type C.....Accelerating 3. Type D.....Water reducing and retarding 4. Type E.....Water reducing and accelerating 5. Calcium chloride shall meet the requirements of AASHTO M.144, Type 1 or 2
Color Admixtures	Not applicable.
Compressive Strength	Minimum of 3,000 psi shall be achieved by the 28th day of a strength test. Control testing shall be in conformance with Montgomery County standards.
Slump Requirements	2" – 4" range is acceptable.
Air Content	5% to 8%

Philips LEDgine

Bottom View



Streetside

Houseside

LENS: TEMPERED GLASS

HEAT SINK: DIE-CAST ALUMINUM

LENS FRAME: DIE-CAST ALUMINUM

PHILIPS LEDGINE, SEE SPECIFICATIONS

LIGHTING: WASHINGTON GLOBE

Ordering Guide:

C9024Q: LUMINAIRE

Color:

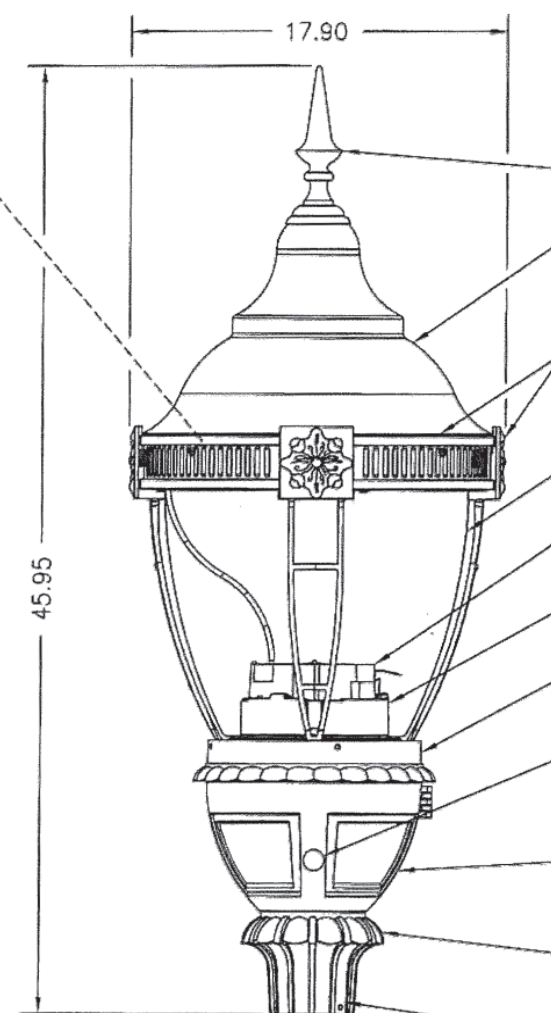
Green

Philips LEDgine Specifications

- 64, 3000K (warm) Philips Lumileds Luxeon T LEDs, typical 75 Color Rendering Index (CRI), >60,000 hours of operational life (at 25°C ambient temperature & 70% lumen maintenance), injection molded Type III optical plates, IP66 rated LED module.
- Integral Philips Advance Xitanium LED driver, class 1, IP66 rated, 350mA, IntelliVolt 120-277 VAC, 50-60 Hz, RoHS compliant, field replaceable 10kV/10kA surge suppression.
- Delivered lumens: 7041, Wattage: 69W, BUG Rating: B1-U3-G2.

Luminaire Specifications

- UL8750 & UL1598 compliant, ETL & cETL listed to U.S. & Canadian standards for wet locations, manufactured to ISO 9001:2008 standards, vibration tested to ANSI C136.31 for Normal Applications, LM80 & LM79 tested, DLC listed.



17.90

45.95

Color: Green

FINIAL: CAST ALUMINUM

ROOF: SPUN ALUMINUM

CAGE ASSEMBLY: DIE-CAST ALUMINUM W/ (4) LEGS EA. W/ SQUARE DECORATIVE FLOWER BLOCK, FLUTED RECTANGULAR BAND AROUND TOP OF CAGE

GLOBE: CLEAR ACRYLIC

DRIVER COVER: DIE-CAST ALUMINUM

CAMDEN ADAPTOR: DIE-CAST ALUMINUM

GLOBE HOLDER: CAST ALUMINUM

PHOTO CONTROL: TWIST-LOCK RECEPTACLE (eye supplied by others)

DRIVER ENCLOSURE: DIE-CAST ALUMINUM W/ SIDE HINGED ACCESS DOOR, TOOL-LESS ENTRY

SLIP FITTER: 3" I.D.

FASTENERS: 5/16-18 STAINLESS STEEL HEX BOLTS W/ LOCKING NUTS

CONFIDENTIAL: This drawing is confidential and proprietary to Philips Hadco and may not be reproduced without the express written consent of Philips Hadco. Any use hereof or of any of the information or detail herein shall be for the sole benefit of Philips Hadco.		100 Craftway Drive Littlestown, Pa 17340 Phone 800-331-4185 Fax 717-359-9289 www.philips.com		PHILIPS HADCO	
JOB NAME: Montgomery County					
SCALE: 1:8		DATE: 04/15/15		DRAWN BY: SMK	
DRAWING NUMBER: C9024-DWG09					
REP: DePorter, Dominick		REV: B		PCN: 16-021	
BY: SMK		DATE: 08/02/16			

LIGHTING: TEARDROP LIGHT

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html

Maximum Effective Projected Area - 2.37 ft²
Maximum Weight - 69 lbs (Up Light Version)
Maximum Weight - 60 lbs (Down Light Version)

ORDERING INFORMATION:

ESL2 **P30S** **30K** **AS**

LUMEN / WATTAGE PACKAGE
 (SEE PERFORMANCE TABLE FOR DETAILS, Page 2)
 P10S = DOWN LIGHT
 P10U = DOWN LIGHT AND UP LIGHT
 P20S = DOWN LIGHT
 P20U = DOWN LIGHT AND UP LIGHT¹
 P30S = DOWN LIGHT
 P35S = DOWN LIGHT
 P40S = DOWN LIGHT
 P50S = DOWN LIGHT
 P60S = DOWN LIGHT

VOLTAGE
 AS = AUTO-SENSING 120 - 277 V
 AH = AUTO-SENSING 347 - 480 V

COLOR TEMPERATURE
 27K = 2700 CCT
 30K = 3000 CCT
 40K = 4000 CCT
 50K = 5000 CCT

Sag Glass
(Asymmetric)
(Symmetric)

COLOR
 BK = BLACK
 DB = DARK BLUE
 GR = GRAY
 GH = GRAPHITE
 GN = GREEN
 PP = PRIME PAINT
 WH = WHITE
 BZ = BRONZE
 TDC = RAL COLOR (RAL****)
 CMC = CUSTOM MATCH COLOR
 XX = STD FINISH, TBD

DOOR AND GLASS
 TG = TEARDROP² GLASS & DOOR
 BG = BOWL GLASS & DOOR
 SG = SAG GLASS & DOOR

OPTIC
 3 = TYPE 3 ASYMMETRIC
 4 = TYPE 4 ASYMMETRIC (ONLY ON TG DOOR AND GLASS)
 5 = TYPE 5 SYMMETRIC

TOP ENTRY
 P = 1.5 NPT PENDANT MOUNT
 S = QUICK LOCK STEM MOUNT

LED Package	Glass	Distribution	System Watts	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
				Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P30S	TG 3	T3S	118	12,634	107	2	3	3	12,914	109	2	3	3	13,551	115	2	3	3	13,458	114	2	3	3
	TG 4	T4M	118	12,086	102	3	3	3	12,354	105	4	3	4	12,964	110	4	3	4	12,874	109	4	3	4
	BG 3	T4M	118	12,242	104	2	3	4	12,513	106	2	3	4	13,130	111	3	3	5	13,040	111	3	3	5
	BG 5	T5S	118	12,888	109	4	3	3	13,174	112	4	3	3	13,823	117	4	3	3	13,729	116	4	3	3
	SG 3	T3S	118	12,406	105	2	3	3	12,681	107	2	3	3	13,307	113	2	3	3	13,215	112	2	3	3
	SG 5	T5S	118	13,028	110	3	3	2	13,317	113	3	3	2	13,974	118	4	3	2	13,879	118	4	3	2

ORDER #:

TYPE:

DRAWN:

DATE:

DWG NO:

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

HOLOPHANE®
 LEADER IN LIGHTING SOLUTIONS
 An Acuity Brands Company

DECORATIVE OUTDOOR

Esplanade®
 Utility Tear Drop LED 2

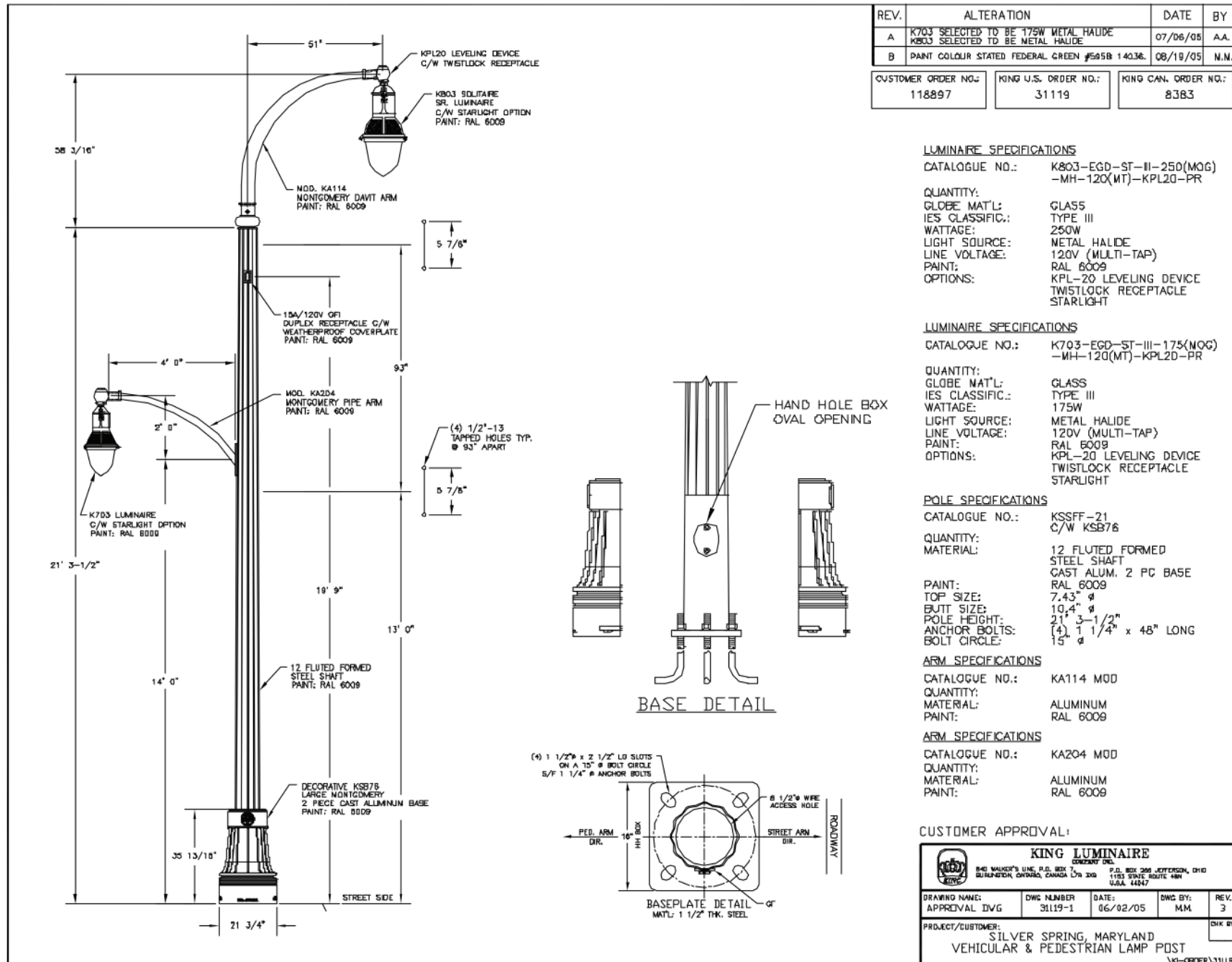
LIGHTING: TEARDROP LIGHT

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html

	<p>Maximum Effective Projected Area - 1.43 ft² Maximum Weight - 39 lbs.</p>	<p><u>SPECIFICATIONS FOR STREETLIGHT HARDWARE</u> IFB # 1063092</p>													
<p>ORDERING INFORMATION:</p> <table border="0"> <tr> <td> <p>ESPL2</p> <p>COVER TYPE ESPL2 = Esplanade Pedestrian LED</p> </td> <td> <p>P40</p> <p>COLOR TEMPERATURE 30K = 3000 SERIES CCT 40K = 4000 SERIES CCT 50K = 5000 SERIES CCT</p> </td> <td> <p>30K</p> <p>LED PERFORMANCE PACKAGE (SEE PERFORMANCE TABLE FOR DETAILS) P10 = 27 W (2 COB) P20 = 38 W (2 COB) P30 = 51 W (2 COB) P40 = 77 W (3 COB) P50 = 120 W (3 COB)</p> </td> <td> <p>AS</p> <p>VOLTAGE AS = AUTO-SENSING VOLTAGE (120 THRU 277V) AH = AUTO-SENSING VOLTAGE (347 THRU 480V)</p> </td> <td> <p>S</p> </td> <td> <p>RAL 6009</p> <p>HOUSING COLOR A = AS SPECIFIED B = BLACK N = GREEN W = WHITE Z = BRONZE</p> </td> <td> <p>7</p> <p>OPTICS 4 = TEARDROP ASYMMETRIC 5 = TEARDROP SYMMETRIC 6 = SHALLOW SYMMETRIC 7 = SHALLOW ASYMMETRIC</p> </td> </tr> <tr> <td colspan="7"> <p>MOUNTING P = 1.5 NPT PENDANT MOUNT S¹ = QUICK LOCK STEM MOUNT</p> </td> </tr> </table>	<p>ESPL2</p> <p>COVER TYPE ESPL2 = Esplanade Pedestrian LED</p>	<p>P40</p> <p>COLOR TEMPERATURE 30K = 3000 SERIES CCT 40K = 4000 SERIES CCT 50K = 5000 SERIES CCT</p>	<p>30K</p> <p>LED PERFORMANCE PACKAGE (SEE PERFORMANCE TABLE FOR DETAILS) P10 = 27 W (2 COB) P20 = 38 W (2 COB) P30 = 51 W (2 COB) P40 = 77 W (3 COB) P50 = 120 W (3 COB)</p>	<p>AS</p> <p>VOLTAGE AS = AUTO-SENSING VOLTAGE (120 THRU 277V) AH = AUTO-SENSING VOLTAGE (347 THRU 480V)</p>	<p>S</p>	<p>RAL 6009</p> <p>HOUSING COLOR A = AS SPECIFIED B = BLACK N = GREEN W = WHITE Z = BRONZE</p>	<p>7</p> <p>OPTICS 4 = TEARDROP ASYMMETRIC 5 = TEARDROP SYMMETRIC 6 = SHALLOW SYMMETRIC 7 = SHALLOW ASYMMETRIC</p>	<p>MOUNTING P = 1.5 NPT PENDANT MOUNT S¹ = QUICK LOCK STEM MOUNT</p>							<p>Shallow Glass</p> <p>Shallow Glass Optic Options 6 and 7</p> <p>Mark Appropriate Box for Trim Option</p>
<p>ESPL2</p> <p>COVER TYPE ESPL2 = Esplanade Pedestrian LED</p>	<p>P40</p> <p>COLOR TEMPERATURE 30K = 3000 SERIES CCT 40K = 4000 SERIES CCT 50K = 5000 SERIES CCT</p>	<p>30K</p> <p>LED PERFORMANCE PACKAGE (SEE PERFORMANCE TABLE FOR DETAILS) P10 = 27 W (2 COB) P20 = 38 W (2 COB) P30 = 51 W (2 COB) P40 = 77 W (3 COB) P50 = 120 W (3 COB)</p>	<p>AS</p> <p>VOLTAGE AS = AUTO-SENSING VOLTAGE (120 THRU 277V) AH = AUTO-SENSING VOLTAGE (347 THRU 480V)</p>	<p>S</p>	<p>RAL 6009</p> <p>HOUSING COLOR A = AS SPECIFIED B = BLACK N = GREEN W = WHITE Z = BRONZE</p>	<p>7</p> <p>OPTICS 4 = TEARDROP ASYMMETRIC 5 = TEARDROP SYMMETRIC 6 = SHALLOW SYMMETRIC 7 = SHALLOW ASYMMETRIC</p>									
<p>MOUNTING P = 1.5 NPT PENDANT MOUNT S¹ = QUICK LOCK STEM MOUNT</p>															
<p>ORDER #:</p> <p>TYPE:</p> <p>DRAWN:</p> <p>DATE:</p> <p>DWG NO:</p>	<p>THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.</p>	<p>HOLOPHANE® LEADER IN LIGHTING SOLUTIONS An Acuity Brands Company</p>	<p>DECORATIVE OUTDOOR</p>	<p>Esplanade® Utility Tear Drop LED 2</p>											

SILVER SPRING DUAL COMBINATION TEAR DROP LAMP POST

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html



SILVER SPRING PEDESTRIAN TEAR DROP LAMP POST

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html

REV.	ALTERATION	DATE	BY
A	K703 SELECTED TO BE 175W METAL HALIDE	07/06/05	AA.
B	PAINT COLOUR STATED FEDERAL GREEN #6009 14036.	08/19/05	N.M.

CUSTOMER ORDER NO.: 118897	KING U.S. ORDER NO.: 31119	NO CAN. ORDER NO.: 8383
-------------------------------	-------------------------------	----------------------------

LUMINAIRE SPECIFICATIONS

CATALOGUE NO.: K703-EGD-ST-III-175(MOG)
-MH-120(MT)-KPL20-PR

QUANTITY:
 GLOBE MAT'L: GLASS
 IES CLASSIFIC.: TYPE III
 WATTAGE: 175W
 LIGHT SOURCE: METAL HALIDE
 LINE VOLTAGE: 120V (MULTI-TAP)
 PAINT: RAL 6009
 OPTIONS: KPL-20 LEVELING DEVICE
 TWISTLOCK RECEPTACLE
 STARLIGHT

POLE SPECIFICATIONS

CATALOGUE NO.: KSSFF-12
C/W KSB77


QUANTITY:
 MATERIAL: 16 FLUTED FORMED
 STEEL SHAFT
 CAST ALUM. 2 PC BASE

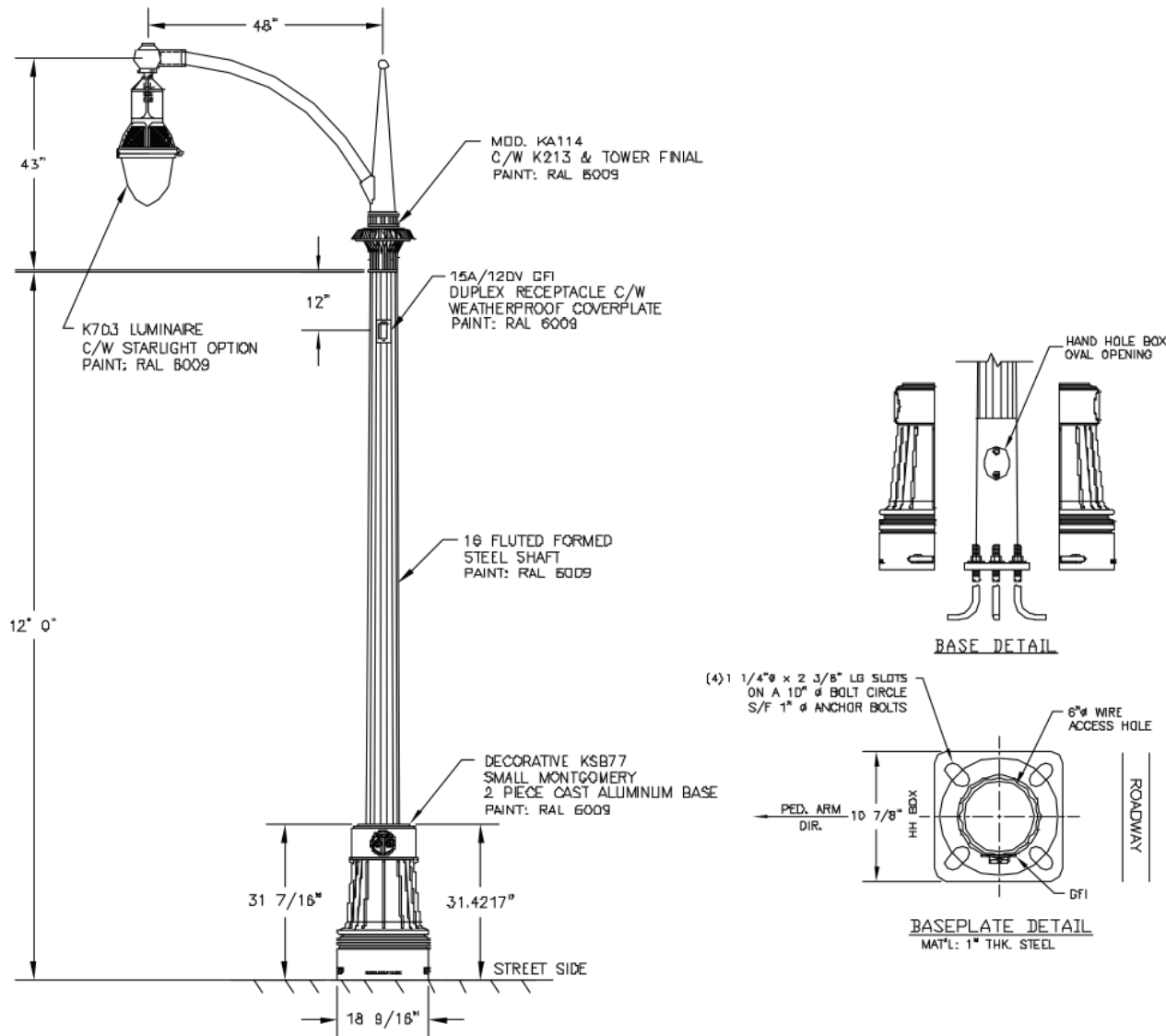
PAINT:
 TOP SIZE: 5.32" Ø
 BUTT SIZE: 7" Ø
 POLE HEIGHT: 12' 0"
 ANCHOR BOLTS: (4) 1" x 42" LONG
 BOLT CIRCLE: 10" Ø

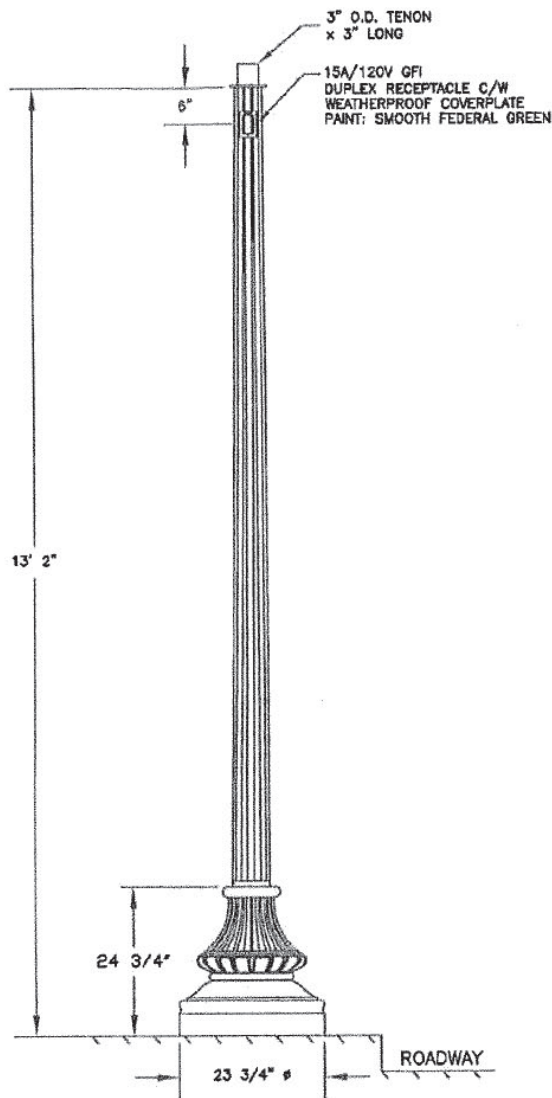
ARM SPECIFICATIONS

CATALOGUE NO.: KA114 MOD
C/W K213 & TOWER FINIAL

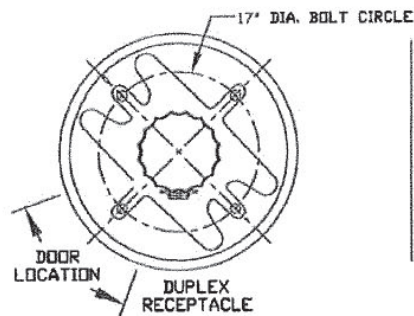
QUANTITY:
 MATERIAL: ALUMINUM
 PAINT: RAL 6009

 KING LUMINAIRE COMPANY INC. 840 WALKER'S LINE, P.O. BOX 7, BRUNSWICK, ONTARIO, CANADA L7M 3X5 P.O. BOX 280 JEFFERSON, OHIO 1155 STATE ROUTE 48N U.S.A. 44007				
DRAWING NAME:	DWG NUMBER:	DATE:	DWG BY:	REV.
APPROVAL: DWG	31119-2	06/02/05	M.M.	3
PROJECT/CUSTOMER:				CHK BY:
SILVER SPRING, MARYLAND PEDESTRIAN LAMP POST				





NOTE:
MODIFY BASE TO ACCOMMODATE
17" DIAMETER BOLT CIRCLE



BASE PLAN DETAIL

Notes:
Although rare, oscillating loads severe enough to cause damage can occasionally occur in structures of all types. Because they are influenced by many factors not provided to StressCrete, these loads are unpredictable. The users maintenance program should include observation for excessive vibration & examination for any structural damage. The StressCrete warranty specifically excludes fatigue failure or similar phenomena resulting from induced vibration, oscillation or resonance associated with the eccentric rotation of attached equipment.

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html

REV.	ALTERATION	DATE	BY
A	DR ADDED	01/04/13	T.B

POLE SPECIFICATIONS

CATALOGUE NO.: KSS16FF-13.2-DR

QUANTITY:

BASE MATERIAL: CAST IRON

SHAFT MATERIAL: 11 GAUGE FLUTED FORMED STEEL

TOP SIZE: 4 1/2"

BUTT SIZE: 6 1/8"

PAINT: SMOOTH FEDERAL GREEN

TENON: 3" O.D. x 3" LG.

ANCHOR BOLTS: (4) 1" x 36"L BY OTHERS

ANCHOR B.C.: 17" Ø

OPTIONS: 15A/120V GFI DUPLEX RECEPTACLE
C/W WEATHERPROOF COVERPLATE

CUSTOMER APPROVAL & DATE:



King Luminaire • StressCrete • Est. 1953

STRESSCRETE
GROUP

Manufacturing Locations:

Burlington, Ontario 1-800-268-7809

Northport, Alabama 1-800-435-6563

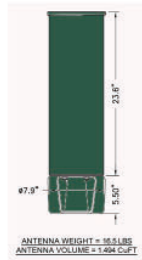
Atchison, Kansas 1-800-837-1024

Jefferson, Ohio 1-800-268-7809

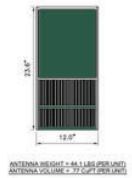
CUSTOMER ORDER No:
KMFG. ORDER No:
KING U.S. ORDER No:

PROJECT/CUSTOMER: MONTGOMERY				
DRAWN BY:	AT:	CHECKED BY:	DATE:	REVISION:
A. ALVELA	SC1		09/27/12	A
DRAWING TYPE: APPROVAL DWG.			DRAWING NUMBER: KSS16FF-13.2	

See Montgomery County DOT lighting specifications at:
www.montgomerycountymd.gov/DOT-Traffic/streetlight_specs.html



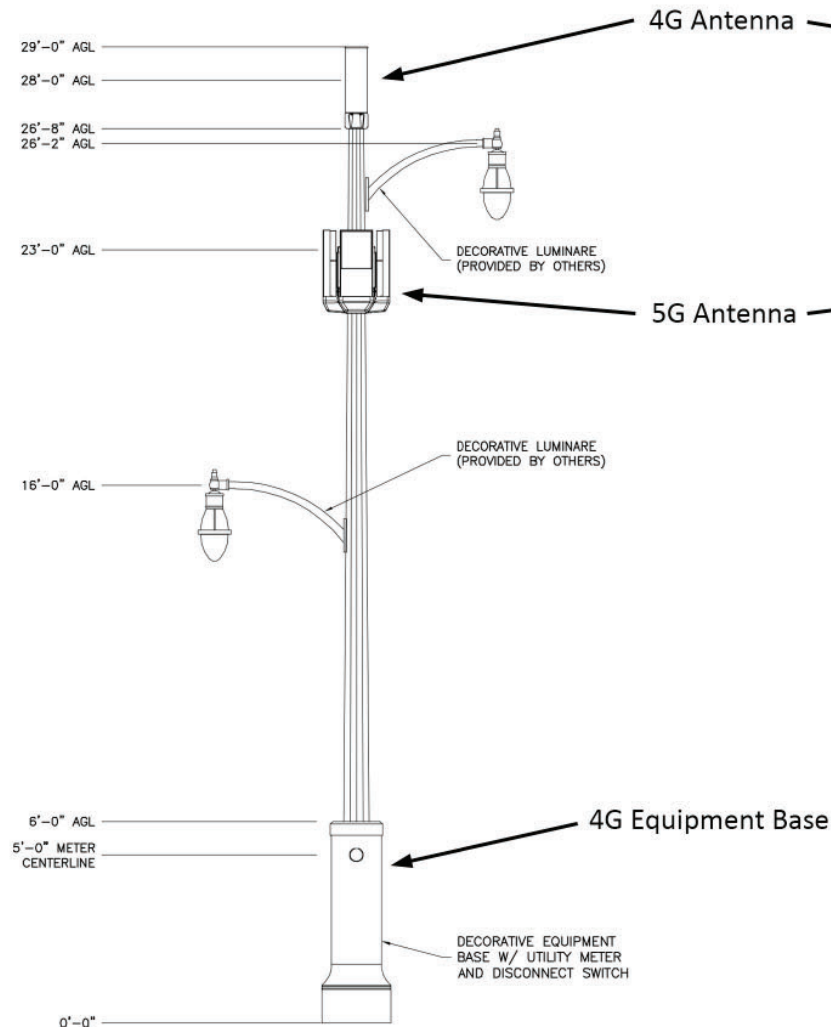
4G Antenna



5G Antenna



Proposed Equipment Base
for 4G Antenna



4G & 5G Antennas Mounted on Teardrop Luminaire
Pole Above and Below Light with Equipment Base

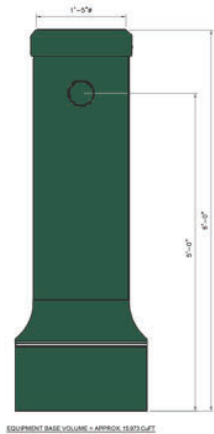


4G & 5G Antennas Mounted on Teardrop Luminaire
Pole Above and Below Light with Equipment Base

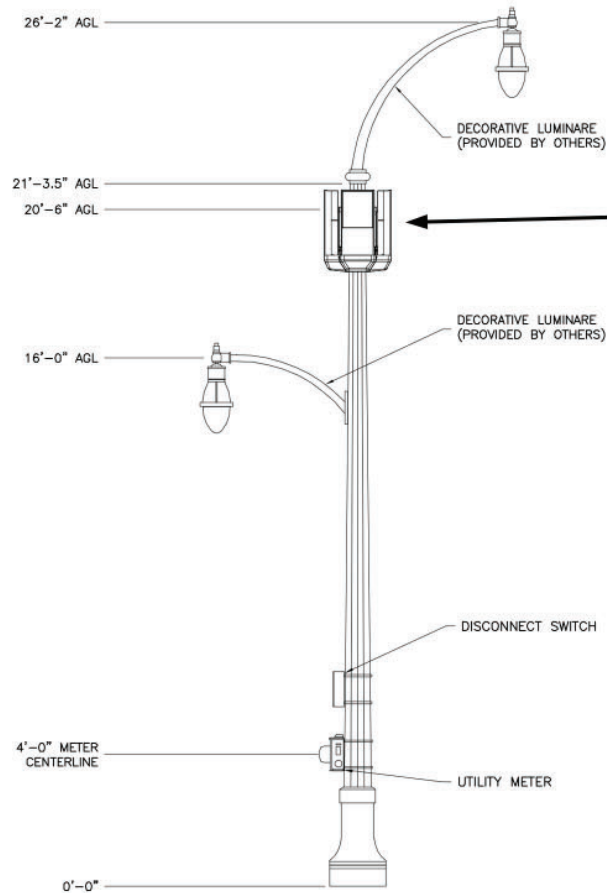
4G & 5G Antennas and Equipment Base Mounted on Teardrop Luminaire Poles.



5G Antenna Detail



Proposed Equipment Base



5G Antennas Mounted on Teardrop Luminaire Pole Below Light

5G Antenna



5G Antennas Mounted on Teardrop Luminaire Pole Below Light

5G Antennas Mounted on Teardrop Luminaire Poles

Planting Specifications

Planting: Plant Materials

Street trees, groundcovers and turf sod shall be furnished in accordance with the drawings. All lawns shall be certified sod and consist of 10% to 20% certified Ken blue (Kentucky Original, certified Merion or South Dakota certified Kentucky Bluegrass and 80% to 100% certified Kentucky 31 Tall Fescue.)

Quality	<ul style="list-style-type: none"> Plants shall be nursery-grown in accordance with the latest edition of USA standards for nursery stock. Plants shall be hardy under climatic conditions similar to those in the locality of the project. Plants shall be sound, healthy and vigorous. Free from disease and insect pests, eggs or larvae. All plants shall be typical of their species of variety and shall be well-branched and densely foliated when in leaf. Each piece of sod shall be well covered with turf grass, free from weeds and be 1.5 to 4 inches long.
Size	<ul style="list-style-type: none"> Street trees shall be 3.5 to 4.5 inches in caliper and shall begin branching no less than 5.5 feet from the base. Street trees shall be balled and bur lapped with root balls dug larger than USA standards require. Ground cover shall be established, well-rooted in containers or peat pots, with not less than the minimum number and length of runners required by ANSI 260-1 for pot size used. Pot sizes shall be large enough to establish 90% plant coverage within two years.

Planting: Amended Backfill

Shall consist of two-thirds topsoil mixture and one-third native soil. However, if native soil is predominately composed of deleterious matter, such as fill construction materials, do not use.

Quality	<ul style="list-style-type: none"> Topsoil shall be sandy loam, uniform in composition, free of stones, lumps, roots and other debris. PH range shall be 5.0 to 7.0 and organic matter shall be a minimum of 1%. Organic matter used in backfill mix shall be peat, composted bark or leaf mold.
Mixture	Top soil mixture shall be two-thirds topsoil and one-third organic matter. The need for Dolomite lime, fertilizer, or other soil additives shall be tested in field and adjustments shall be made to obtain proper PH and nutrient levels.

Planting: Structural Cells

Manufactured Silva Cell or equal. To be installed per manufacturer guidelines.

Planting: Miscellaneous Landscape Materials	
Gravel	Washed gravel shall be clean, crushed stone complying with ASTM C.33, size 8 or 9.
Filter Mat	Fiberglass mat filter: "Poly-filter G-8", manufactured by Carthage Mills, or equal.
Anti-desiccant	Emulsion type, film forming agent similar to Dowax by Dow Chemical Company, or Wilt-proof by Nursery Specialty Products, Inc., designed to retard excessive loss of moisture from plants.
Wrapping	4" wide, standard manufactured tree wrapping paper, brown in color with crinkled surface, and installed to prevent water collection with a 2" overlap. Trees should be wrapped only for transit to the site. Wrapping should be removed upon installation.
Staking	Trees over 4" in caliper should not be staked or received guy-wires.
Steel Edging	Shall be 16"x4" in size and manufactured by Ryerson and Son, Inc. or an approved alternative.
P.V.C. Pipe	Type 1, Grade 1, Normal impact plasticized, high density polyvinyl chloride. Sized according to the drawings.

SILVERSPRING

STREETSCAPE STANDARDS

M-NCPPC
Montgomery County Planning Department
8787 Georgia Avenue
Silver Spring, MD 20910

MontgomeryPlanning.org