Categorical Appeal, Protest, & Refutation of the Destruction & Removal of The Circle, AKA The Rotunda, AKA Carlyle Circle, AKA Holland Circle, AKA Eisenhower Circle

State Project Number: U000-100-135, C501, PE101, RW201
From: Holland Lane
To: Mill Road
Federal Project Number: STP-5401(743)
County/City: City of Alexandria

Prepared by:

Carlyle Architecture Society

• To begin it should be known that the City of Alexandria has received awards for the planning & development of Carlyle. This is due to the well thought out and developed planning over the past several decades. The planning has been well documented and by following it the City has prospered. At the end of this document the primary designs are attached. The points we are debating are primarily independent of each other and if only one of our arguments stands to scrutiny, The Circle should be saved.

1. **The Design Guidelines are being thrown to the curb, and this is detrimental to all those who live, work, bike, walk, drive, or own in Carlyle due to the reduction of property values, higher risk of accidents or fatalities, dimunition of joy, pleasure, and happiness, and less pleasant lunchs and breaks.**

Below we will show the guidelines that call for The Circle or The Rotunda (see appendix C for full text)

> OPEN SPACES: In these guidelines, the term spaces shall refer to the seven major public squares and parks: Courthouse Square, the Crescent, Dulany Gardens, Carlyle Square, ~~Ballenger Mews,~~ the Rotary and Alexandria African-American Heritage Park. (1.3)
>
> Eisenhower Avenue is a gateway to Old Town from the west. As the development of the Eisenhower Valley increases. the importance of Carlyle at the eastem end of Eisenhower Avenue will be greater. The design concept for Eisenhower Precinct is a clean. simple

strong boulevard lined with trees and lawn on each side. The terminus of Eisenhower Av.enue Is at the Rotary within Carlyle. The boulevard treatment will set apart Carlyle from the ·rest of Eisenhower Avenue to the west and focus views to the Rotary. The Eisenhower Precinct forms the southern edge of Carlyle; It extends from Elizabeth Lane east to John Carlyle Street. (6)

OPEN SPACE: There is no major open space within Eisenhower Precinct. The precinct does, however, have a strong focus on the Rotary at Holland lane due to the axial relationship al Eisenhower Avenue to the Rotary. The broad greensward of the streetscape will also provide a balance to the wide paved street. (6.1.1)

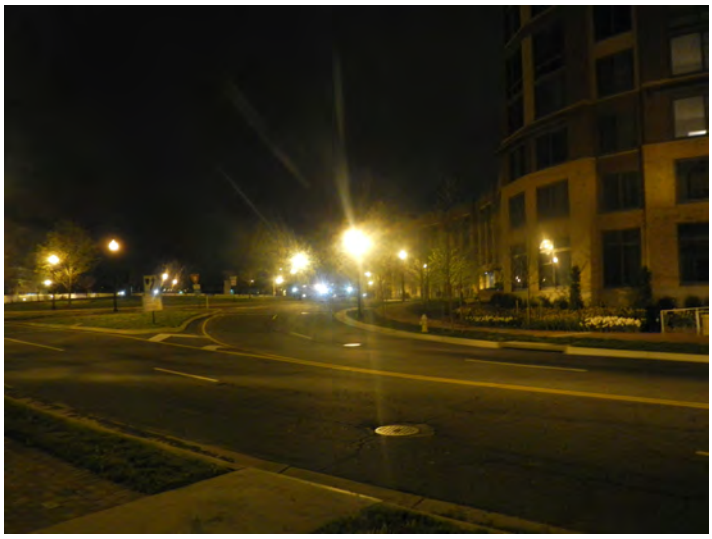
- The entire block from Emerson to Holland to Eisenhower to John Carlyle built around The Circle
- The next block from Emerson to Holland to Ballenger to John Carlyle reflects architecture of circle
- The next block from Ballenger to Jamieson to Holland to John Carlyle mirrors the indentation that is present on the Carlyle Square Condos on the Eisenhower side (reference bullet 1 or block # of master plan)
- The Alexandria African American Heritage Park from Jamieson to Emerson along Holland is Elliptical in nature.
  - ★ Behind the signage is a circle with monuments. Two other circles are present along the large elliptical track.

- One contains art and a monument, the other is raised and is meant to walk around.
- Also the corner of Holland & Jamieson has a Circular Pavilion style Trellis that is integral to the Park and ties it in with The Circle

- The Circle was original design of Carlyle
- The Circle is entrance to Carlyle Corridor

- Green & Park & Pedestrian space is present in The Circle
- Monument of Eisenhower commissioned and installed
- Trees have been planted & established independent root systems (the trees need to supports or braces) in The Circle

2. **Below are some pictures to help illustrate The Circle. This will show another important point that has not been addressed: Carlyle has already been built, North of Eisenhower. The building followed the Guidelines and all the architecture reflects this. The curves pair with the circles. The community owns The Circle, not the city or the developer who is most anxious for the $7,000,000 to remove it.**



Serious flaws contained in:

Categorical Exclusion for the Eisenhower Avenue Widening:

Regarding low income and minority populations: Both are present and affected. The census doesn't accurately reflect the population living and working here because many residents had not moved in yet; the census doesn't account for the large population of workers; and the census doesn't include the many folks who come to visit the Alexandria African American Heritage Park--the only such park in Alexandria.

Public Recreation Area: Yes

Public Park: Yes

Public Wildlife/Waterfowl Refuge: Yes

Planned Public Park, Recreation Area, Wildlife or Waterfowl Refuge: Yes

All four of the above were answered no. However, as noted in formation documents the Circle was planned from the get go as park space. Geese, rabbits, foxes, squirrels, and many other animals visit the circle. It is a planned public place for recreation and relaxation.

Public Monument in honor of Dwight D. Eisenhower, 5 star general and President, designer of America's Interstate & Highway system has been commissioned and erected in his honor in The Rotunda.

• Circles are efficient and reduce noise, pollution, accidents, traffic, and are more pedestrian friendly

- The Circle is much easier to navigate on a bike and foot (as a pedestrian)
- Reduced accidents means fewer fatalities
- Consequentially, future fatalities from a T intersection could open the City of Alexandria to unnecessary liability and litigation
- on the street interviews revealed many would prefer pedestrian improvements and the prospect of crossing six lanes is very intimidating.

- There are mathematical and statistical errors of over three standard deviations regarding the 10K cars daily on the circle. Carlyle Architectural Society proposes a traffic study with sensors/counters placed at Holland and John Carlyle intersections be performed forthwith to ascertain actual flow and car count. Senior law enforcement officers stated in fact that a circle is more conducive to reductions in

traffic. Also many studies, including the one in the Appendix prove this.

Lack of sufficient notice and advertising

- No residents or employees surveyed were aware of plan to remove circle. Those most affected haven't been properly notified.
- Carlyle Architectural Society would like more time to properly prepare a response and counter proposal. This is being submitted so there is room for Appeal later.
- We would propose the developer who wants The Circle removed be given the $7 million dollars and simply resurface Eisenhower. CarlyleArchitectural Society is confident it can raise money from the community to further beautify The Circle and make the area even more pedestrian friendly & park like.
- 

• Sign is too small to read, it is not prominently displayed. Also, there is other text visible on front and back of signs.

-  Picture take with 50mm lens on DSLR matching human vision of 20/20 or better. Sign cannot be read from sidewalk. Driving by sign it is even harder to see.

- 

Also signage was re-used and old sign is visible behind and under text, further obfuscating it.

- Minority and low income populations are affected. The city's only African American Park and the Historic African American Graveyard are adjacent to The Circle.
- Eisenhower promoted racial integration and equalit

Ballenger Precinct will be home to most of Carlyle's residents, as it is a primarily residential precinct. A combination of pedestrian oriented open spaces and a variety of buildings will make it an interesting place to stroU. Ballenger Precinct will best exemplify the first design principle of the Development Plan which states that the number and kinds of buildings will be diverse. Individual expressions of homes will add a charm and character to the precinct that wil be reminiscent of Old Town. (8-1)

OPEN SPACES: There are two open spaces in the Holland Precinct: they are Alexandria African American Park and the Rotary.

Alexandria African American Park, which runs the length of the eastem edge of Carlyle, has large existing trees and other vegetation. Most of this will be preserved in the design for the park. These existing trees more than anything else establish the parkway image for Holland Precinct. The existing grade at Holland Lane is high and It quickly falls to a lower level at Hooff's Run.

The Rotary at the intersection of Holland Lane and Eisenhower Avenue will be a place many people wiU associate with their image of Carlyle because they will drive around 1. The rotary is a strong geometric form and this form is reinforced by the buildings surrounding the west side of I. The Rotary is ll<e many of the circles in Washington which are a foals for a neighborhood (7.1.1)

7.2 MAJOROPENSPACES

The major open spaces will contribute substantially to the parkway image of Holland Precinct. Every effort should be made to orient buildings and integrate the buitt edge of Carlyle to these spaces.

7.2.1 ROTARY

The Rotary at the intersection of Holland Lane and Eisenhower Avenue is the terminus to the long axis of the Eisenhower "boulevard.• The strong geometric form of the circle defines the space and its character. The double row of street tree

plantings and the building massing. along the western edge of the Rotary reinforces the circular form. The design of the rotary shall be formal and symmetrical about the Eisenhower axil. There should be a focal element at the center of the rotary such as a statue.

The plantings should respond to the fonnal nature of the space. however. plants should be selected to relate to the streetscape and the existing vegetation in the park. A strong relationship between the Rotary and the park is encouraged.

Treatment of the streetscape on the inside edge of the rotary shall be as designed with the rotary.

Figure 7-4: Rotary Open Space Concept

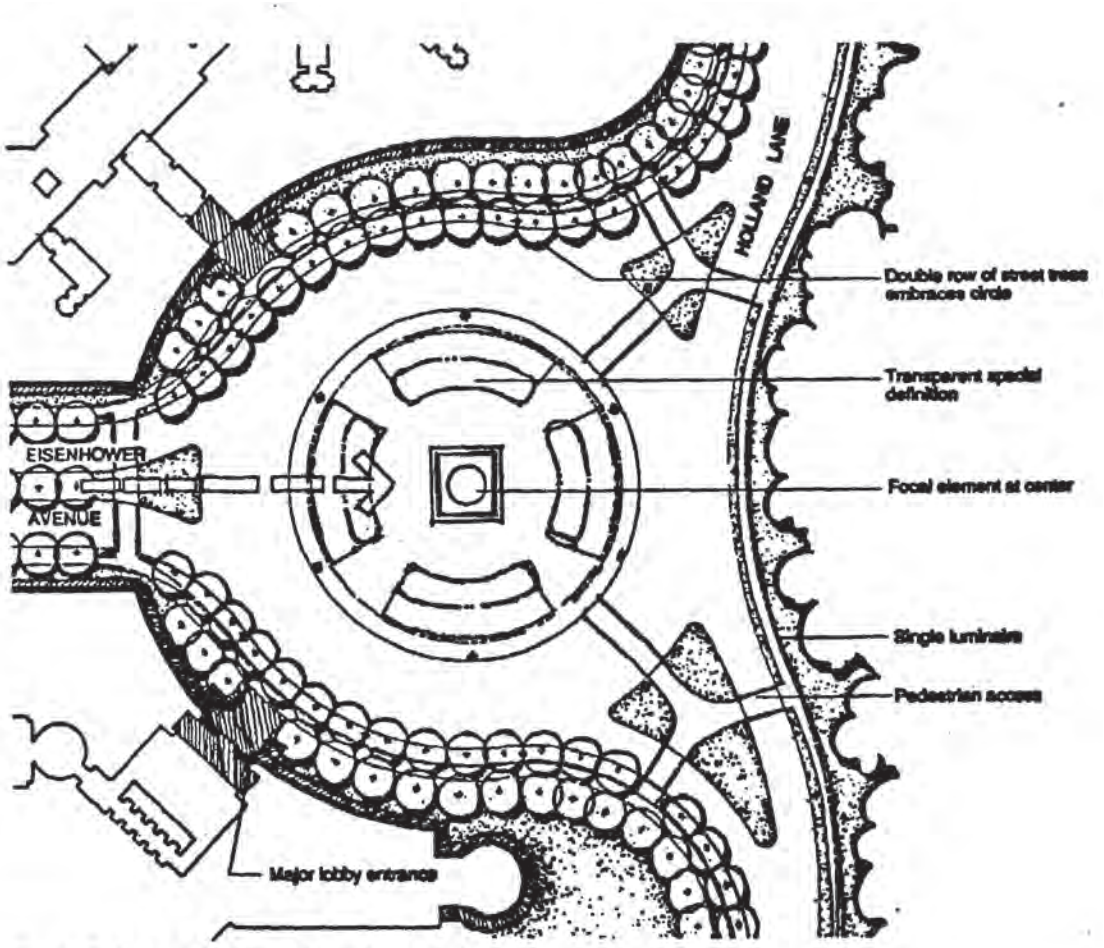
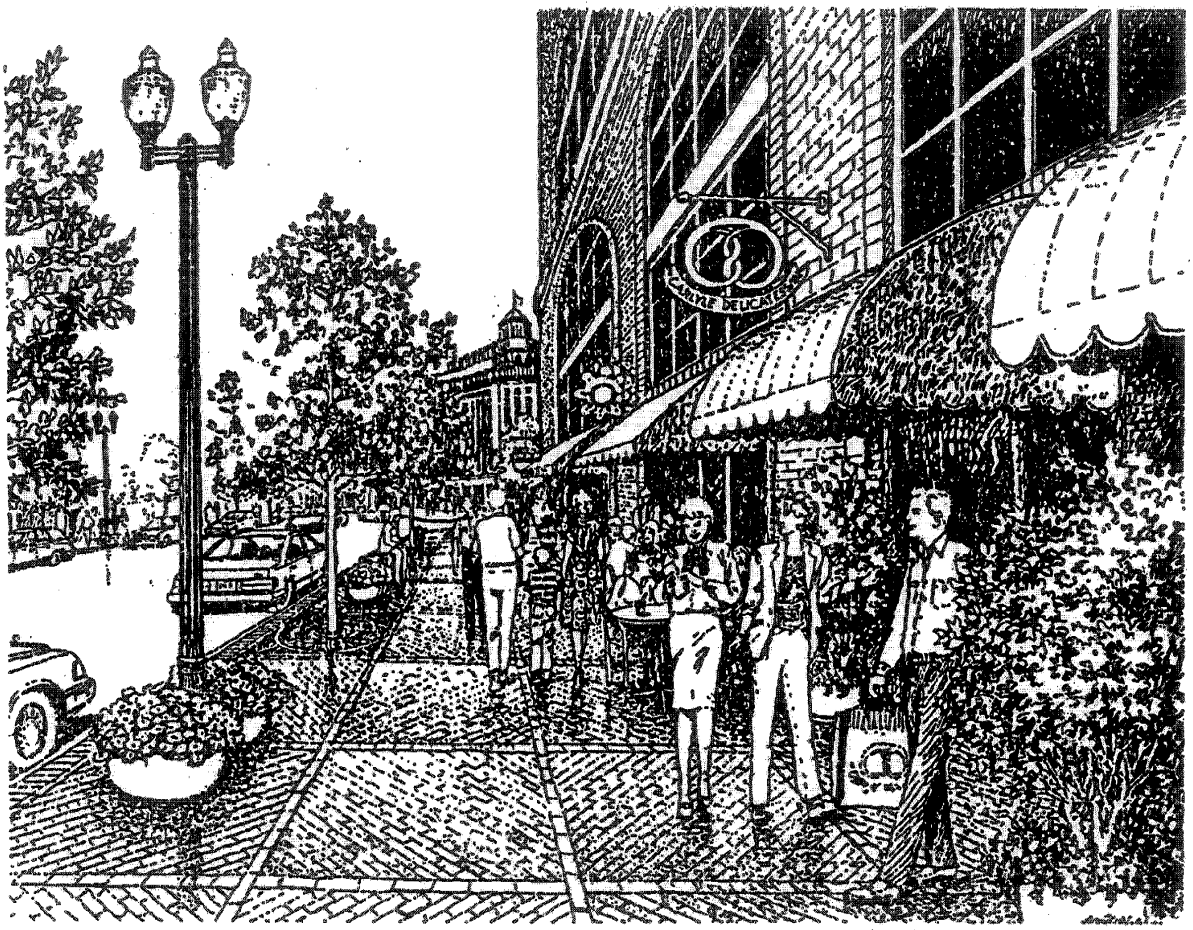


Figure 7-4: Rotary Open Space Concept

7.3.2 BUILDING ENTRANCES

MAJOR LOBBY ENTRANCE: Major lobby entrances of buildings facing the Rotary may be designed by the parcel owner, however, they may not interrupt the curb zone. No physical connection to the street with pavement will be pennitted and the street trees within the curb zone shall be maintained at the specified spacing.

Appendices



CARLYLE

Alexandria, Virginia

Streetscape Design Guidelines

Streetscape Design Guidelines

Carlyle Development Corporation

Prepared by:

LandDesign, Inc.
April, 1994

...The people on the sidewalk, being culture-bound, know that the space which they are part of is a sidewalk, and, as part of their culture, they have the pattern of a sidewalk in their minds. It is this pattern in their minds which causes them to behave the way that people do behave on sidewalks, not the purely spatial aspect of the concrete and the walls and curbs.

— Christopher Alexander

CARLYLE STREETSCAPE DESIGN GUIDELINES

CONTENTS

1 INTRODUCTION

1 INTRODUCTION

1.1 CARLYLE STREETSCAPE DESIGN GUIDELINES

Carlyle is a eighty-two acre mixed use development in Alexandria, Virginia comprised of office, residential, hotel, retail, and recreational uses. It is located between Old Town and the Eisenhower Valley, and adjacent to the King Street Metro Station area. The development process for the site began with the submission of a Development Plan prepared by Cooper, Robertson and Partners to the City of Alexandria. The Development Plan applied for approval for rezoning the property to CO zoning, for a special use permit for a planned residential and commercial development, and a transportation management plan special use permit. The Development Plan was approved by the Alexandria City Council in April 1990 with conditions. Compliance with these conditions and the Development Plan requirements will be required by the City of Alexandria for all site plan submissions.

The Development Plan and the conditions are also the basis for this document - the Carlyle Streetscape Design Guidelines.

The purpose of the Carlyle Streetscape Design Guidelines is to ensure high quality, integrated, compatible development while allowing flexibility over time to address changing development needs. Six precincts have been designated within Carlyle to reflect one of the principal goals of the Development Plan — that of creating a series of distinct places. These guidelines will describe the desired streetscape characters for Carlyle's six precincts. To achieve the desired characters, the guidelines will provide standards and specifications to guide parcel owners with the design and construction of the streetscape. The streetscape design principles will also be described to give a basis for future interpretation by users of these guidelines.

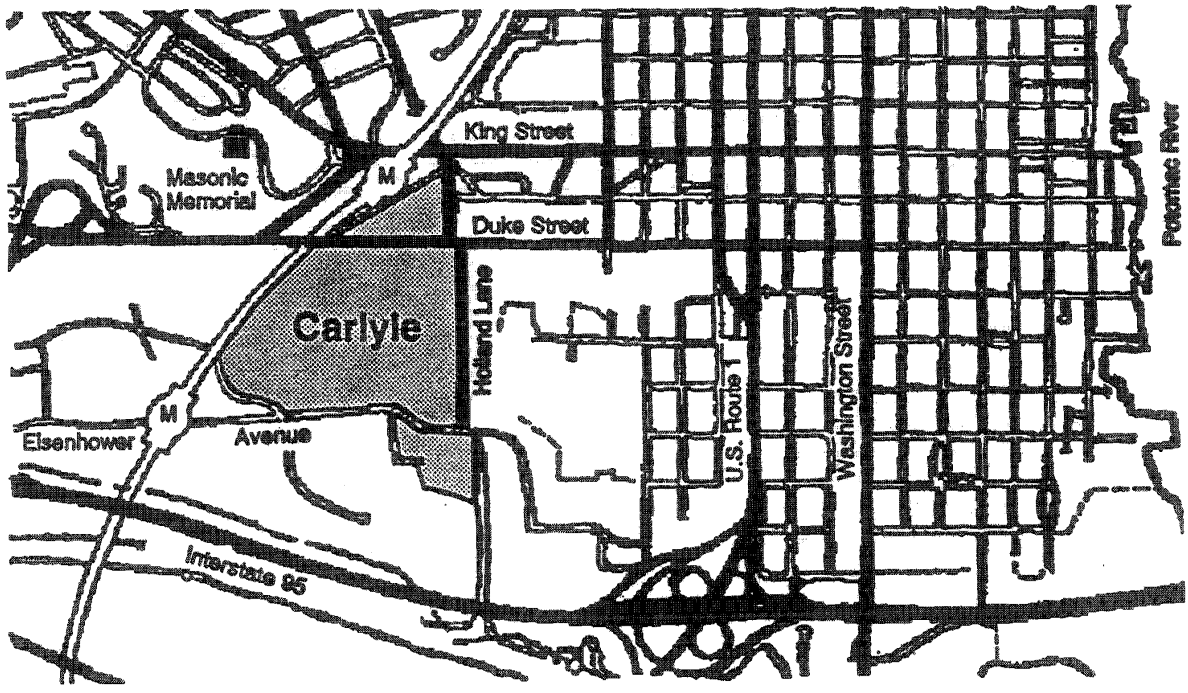
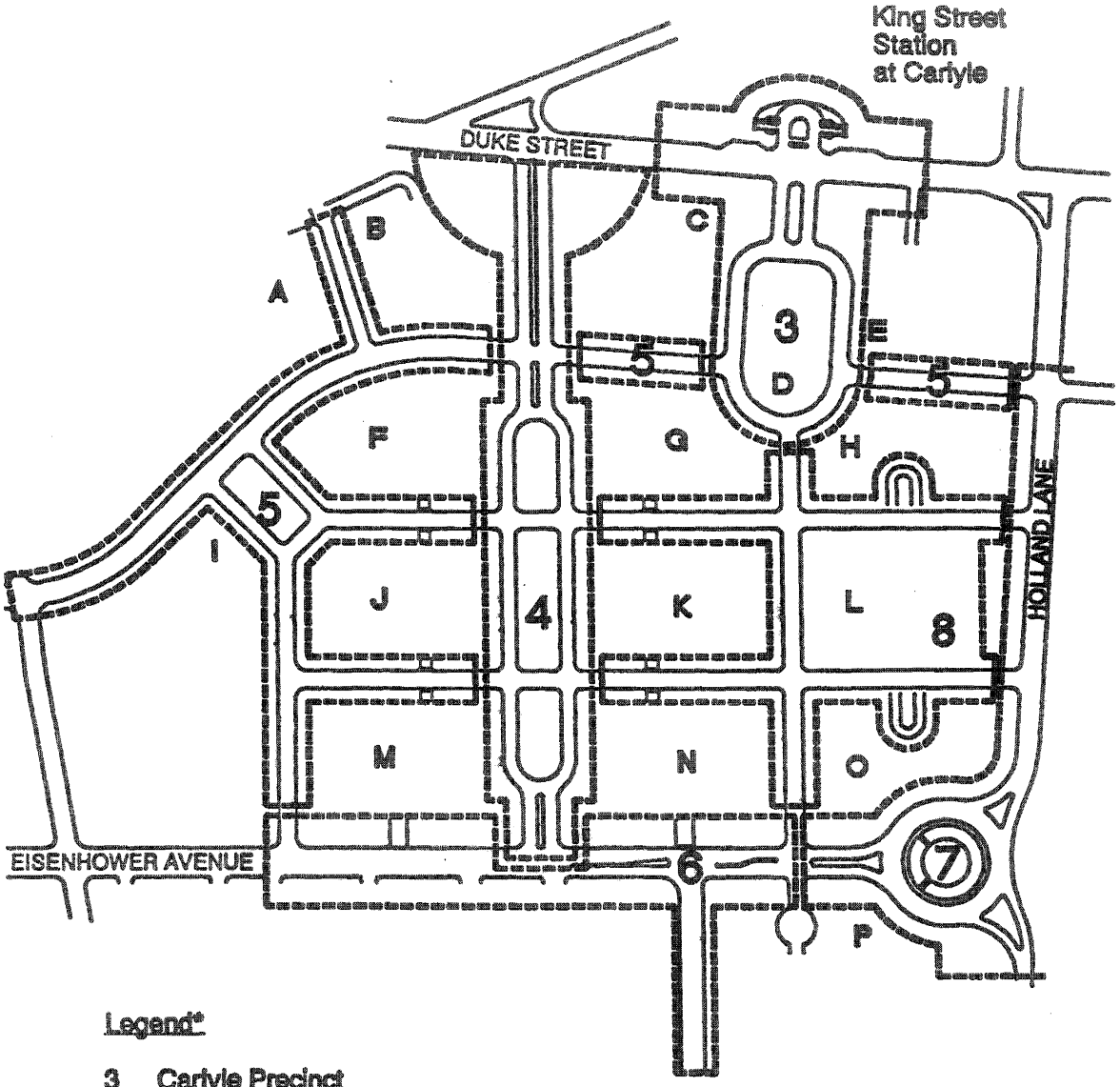


Figure 1-1: Vicinity Map



Legend*

3 Carlyle Precinct
4 Dulany Precinct
5 Jamieson Precinct
6 Eisenhower Precinct
7 Holland Precinct
8 Ballenger Precinct

* Numbers correspond to appropriate chapters

Figure 1-2: Precinct Plan

1.2 ORGANIZATION AND USE OF THE GUIDELINES

1.2.1 ORGANIZATION

There are eight chapters of the Carlyle Streetscape Design Guidelines. This, the first, is a basic introduction to the guidelines. Chapter Two contains guidelines that apply uniformly to all of Carlyle. Following Chapter Two are six chapters, one for each precinct. These six chapters address specific requirements for each precinct. The precinct chapters will not repeat the general guidelines in Chapter Two. If a topic is not addressed in the precinct chapter, the general guidelines will apply.

Each precinct chapter of the guidelines is intended to be used independently from the others. For example, the parcel owner for a site in the Jamieson Precinct would refer to the General Design Guidelines (Chapter Two) and the Jamieson Precinct Guidelines (Chapter Five).

1.2.2 DESIGN REVIEW

Carlyle Development Corporation or its agents will review all site and building development plans for conformance to these design guidelines, prior to the plans' submission to the Carlyle Design Review Board.

Carlyle Development Corporation may amend these guidelines as necessary to adhere to the design intent. Carlyle Development Corporation may also approve variances to these guidelines for a specific plan submission provided that the requested variance does not conflict with the design intent stated herein. Decisions for variances are made on an individual basis and do not constitute a change in the requirements of the guidelines.

The Carlyle Design Review Board has been established as a condition of the Development Plan (see S.U.P. conditions #R-67 to R-73).

1.2.3 APPLICATION AND RESPONSIBILITIES

These guidelines apply to all development and construction in the open spaces, street rights-of-way and sidewalk and landscape easements within Carlyle. All repairs to the streetscape due to utility maintenance shall be made in accordance to these guidelines as well.

These guidelines are based on the Development Plan and Special Use Permit #2253 as approved by the Alexandria City Council. The Development Plan and Special Use Permit includes the following documents:

Executive Summary
Demolition Plan/Existing Conditions
Preliminary Site Plans
Landscape Plans
Block by Block Design Guidelines
Conditions as approved by the City of Alexandria

Conformance to these streetscape guidelines does not relieve the developer of compliance to the Development Plan and the conditions of the Special Use Permit or any other applicable City, State or Federal codes, ordinances and regulations.

Generally, the parcel owner shall be responsible for installing all streetscape improvements in the public right-of-way from the back of curb and in the sidewalk and landscape easements. The City of Alexandria will maintain the sidewalks within the public right-of-way except for landscaping. The streetscape outside of the public right-of-way and the landscaping within the public right-of-way will be maintained by the Carlyle Property Owners Association, unless noted otherwise (see S.U.P. Conditions #R-1 and R-15).

When specific products are specified in these guidelines, equivalent substitutions may be made with the approval of Carlyle Development Corporation.

1.3 DEFINITIONS

BUILD-TO LINE: The line as set by the sidewalk easements and described in the Block by Block Design Guidelines as the mandatory streetwall.

BUILDING ZONE: The zone of transition from the building wall to the sidewalk. The building zone may include plantings, architectural features, entrances, steps, awnings, seating, et cetera.

CARR DEVELOPMENT & CONSTRUCTION: Carr Development & Construction is the developer of Carlyle.

CARLYLE DEVELOPMENT CORPORATION: Carlyle Development Corporation is the owner of Carlyle.

CARLYLE PROPERTY OWNERS ASSOCIATION: The association of all property owners within the area of the Carlyle Special Use Permit except those specifically excepted.

CURB ZONE: The zone of transition from the sidewalk to the street - therefore containing the limits of the sidewalk by a curb. This zone contains most of the utilitarian fixtures of an urban street such as fire hydrants, street lights and street trees.

OPEN SPACES: In these guidelines, the term open spaces shall refer to the seven major public squares and parks: Courthouse Square, the Crescent, Dulany Gardens, Carlyle Square, Ballenger Mews, the Rotary and Alexandria African-American Heritage Park.

PARCEL OWNER: In these guidelines, the term parcel owner shall include the fee simple owner, developer, lessor, or any other person or entity constructing improvements to property within Carlyle.

PEDESTRIAN ZONE: The zone of concentrated pedestrian movement along a sidewalk, bound by the building zone on one side and the curb zone on the other. The zone is generally free of obstacles but may have encroachments of planting, seating or directories.

PRECINCT: An area of specified character and design within Carlyle.

RIGHT-OF-WAY (R.O.W.): The public dedicated portion of the street. Right-of-way as used in these guidelines means the perpetual surface easements of the streets in Carlyle as well.

SIDEWALK: The pedestrian area between the curb and the building streetwall.

SIDEWALK EASEMENT: As defined in the Development Plan submission Executive Summary:

> "A landscape area, or sidewalk widening within the [parcel] property line to ensure adequate and uniform sidewalk widths....It is a continuous open area at the same level as the adjoining sidewalk and is directly accessible to the public. It may include, on wider sidewalks, obstructions such as driveways, canopies, trees or other landscape elements."

SPECIAL USE PERMIT (S.U.P.): The approval granted by the City of Alexandria for rezoning and development of planned residential and commercial development. In these guidelines, it shall refer to Special Use Permit #2253 as approved by the City of Alexandria in April 1990, and subsequently amended for Carlyle.

STREETSCAPE: The area visually and physically part of the street encompassing the public right-of-way, the sidewalk easements and adjoining parcels.

1.4 BIBLIOGRAPHY

This bibliography not only lists sources referenced in preparing these guidelines but also is intended to serve as a source list for further information. While some codes and regulations do appear, it is not intended to be a complete list of all applicable laws, codes and regulations.

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2 GENERAL STREETSCAPE GUIDELINES

2 GENERAL STREETSCAPE GUIDELINES

This chapter addresses overall design issues and standards that apply to the entire Carlyle development. Many of the following sections will be referenced throughout the guidelines.

2.1 DESIGN CONCEPT AND CHARACTER

The design concept for Carlyle is based upon traditional city and town planning principles as stated in the Development Plan Design Report:

> The plan calls for the site to be an extension of the existing city, [Alexandria] with a traditional system of streets and blocks derived from the Old Town grid. The plan avoids uniformity, incorporating different open spaces and streets, many blocks and different building types to create variety and complexity. It is a return to a more traditional model of town planning and city design [rather] than the current large scale commercial development found in the region.

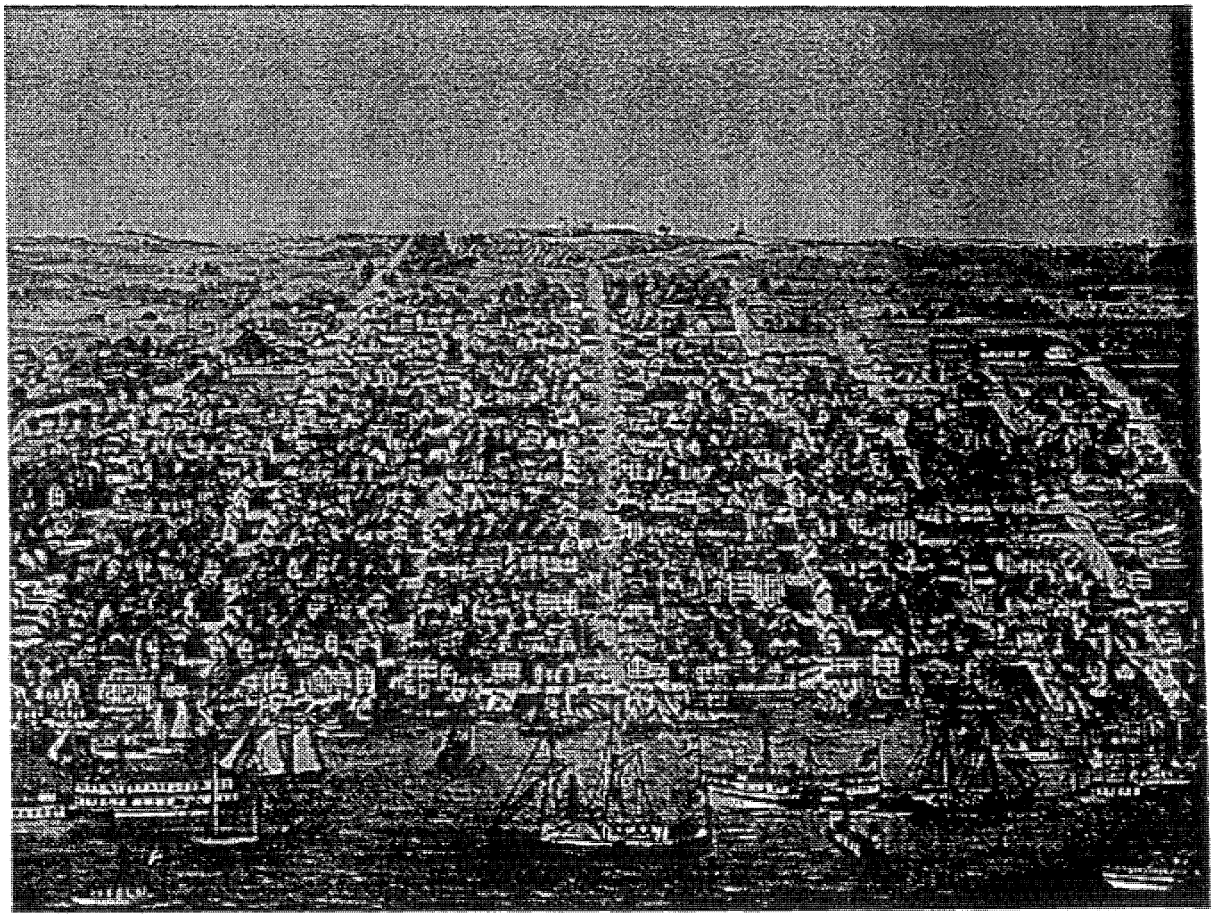

Figure 2-1: Alexandria, 1863

Six design principles are established in the plan:

1. A mix of uses within each precinct, and an effort to maximize active ground floor frontages.

2. A constantly varied sequence of open spaces which become the focus of each precinct in the plan. The plan will have six places of special character.

3. An organization of the plan into a series of pedestrian-oriented places. The control of the physical impacts of the car and parking facilities to clearly emphasize the public space. A public design that reinforces the pedestrian-oriented character of the plan.

4. The introduction of a series of public amenities and facilities.

5. The role of the street as linear park, multi-purpose corridor and ordering device for the street and block grid.

6. Conscious effort to diversify the kinds and numbers of buildings, and the variety of scales and architectural expressions that will result. The scale and density within each block is consciously controlled. A clear building height rationale reinforces the streets and special places of the plan.

These design principles focus the development of outdoor spaces for the use and enjoyment of pedestrians. The design character is developed through the use of streetscape elements, such as street trees, sidewalk paving, street lighting, open space features and street furniture. In each precinct, the site context, its specific uses and intended imagery should be considered for streetscape elements that will reinforce the Precinct character.

2.1.1 CONTEXT

The development of specific streetscapes and precinct characters should consider context in the initial analysis of design. Context - the configuration and scale relationships of streets and intersections, buildings, and major open spaces - establish the physical setting for streetscape design. These components and their scale relationships distinguish the context from one precinct to another. For example, Ballenger Precinct's residential buildings are generally lower in height, and scaled for the pedestrian. The residential buildings reinforce the home-like character and define the outer limits of the mews. A major open space may influence the context depending upon the proximity of the space and the specific elements used within the open space and the streetscape. The closer the space and the more similar its elements, the greater its influence. For example, the streetscapes directly adjacent to a major open space usually share common street furniture, street trees and street lighting. The streets not adjacent to the open space may have related streetscape elements but they do not need to be identical.

2.1.2 USE

The character of a place is influenced by specific uses. The type of use adjacent to the sidewalks (public, semi-public and private) has varying degrees of influence on the streetscape environment. Public uses in open spaces such as parks and squares may interrupt and alter the adjacent streetscape. Semi-public places such as building entrances, lobbies, courtyards and residential gardens will be more integrated into the streetscape. Private uses such as a single residential entrance or garden would only subtly alter the character or configuration of the streetscape The scale of the streetscape also corresponds to the type of use: public uses usually have wider sidewalks and more street furniture than private uses.

Many combinations of specific types of uses are possible: public oriented retail, private residential and semi-public open spaces. There are two categories of general uses that determine the precincts, predominant use and major first floor use. In most cases, a predominant use such as

PRECINCT	MAJOR FIRST FLOOR USE	PREDOMINANT USE
Carlyle	Retail	Mixed-residential/office/retail
Dulany	Office/residential	Office
Jamieson	Retail	Office
Eisenhower	Office	Office
Holland	Residential	Residential/park
Ballenger	Residential	Residential

Figure 2-2: Uses in Carlyle

residential or office establishes the precinct and influences the streetscape character. However, a special first floor use such as retail may change the character of the streetscape and redefine the precinct. Precincts and their characters may change if the predominant or first floor use is significantly modified. The chart below lists both categories of uses for each precinct. Uses that create strong indoor to outdoor relationships such as sidewalk cafes, book stores, haberdasheries, boutiques, ice cream parlors, florists and news stands are pedestrian oriented and typically generate concentrated pedestrian movements along the streets and to the buildings. The architectural response to this pattern is reflected by the large window displays, multiple entrances, and pedestrian scaled detailing. The streetscape accommodates the increased pedestrian use with wide sidewalk areas, benches, directional signs, awnings and canopies, and other street furniture.

Evening uses that extend beyond normal business hours include restaurants, shops, night clubs, movie theaters and community buildings. The streetscape environment should accommodate vehicular and pedestrian traffic with additional safety considerations of adequate street lighting, designated parking areas, and additional lighting of public open spaces.

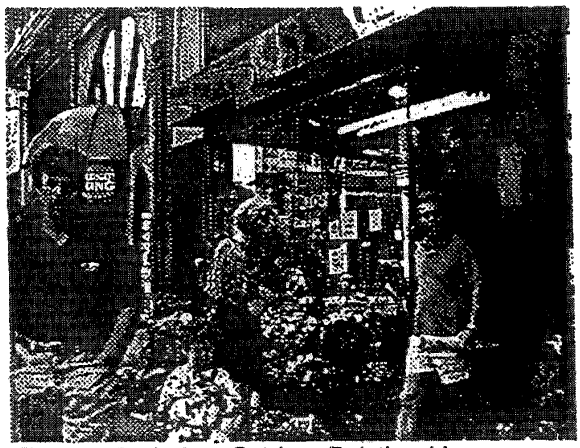

Figure 2-3: Indoor/Outdoor Relationships

Figure 2-5: Carlyle Precinct Image

2.1.3 IMAGERY

Although context and use characterize a precinct, the specific designs and landscape elements for the major open spaces and streetscapes provide the visual images that will most differentiate one neighborhood or precinct to another. The following chart outlines the images and character for each precinct. Each precinct chapter will further discuss its imagery.

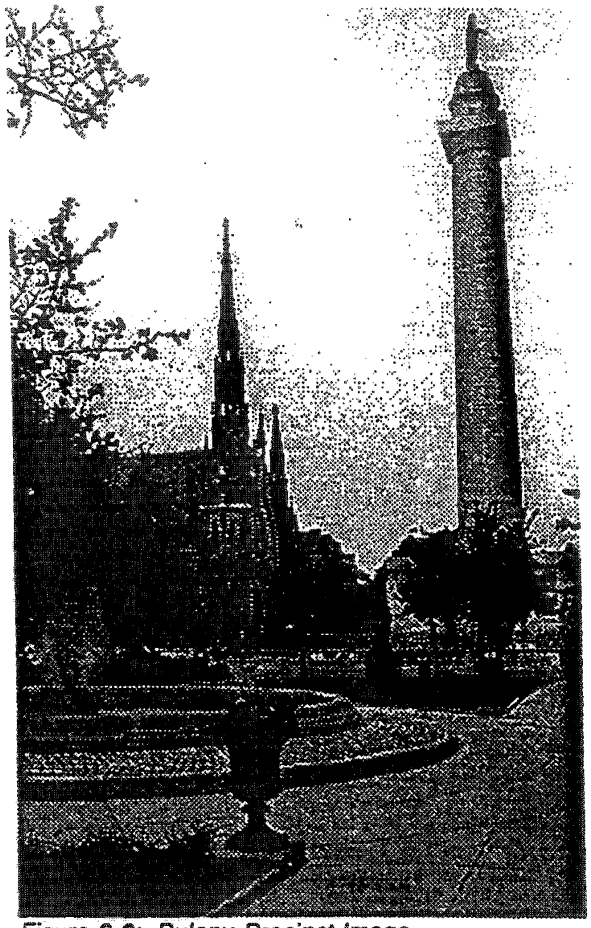

Figure 2-6: Dulany Precinct Image

PRECINCT	IMAGES	CHARACTER
Carlyle	Street vendors, outdoor cafe, shopping, festive	Marketplace
Dulany	Rich materials, formal gardens, grand architecture with distinction	Ceremonial
Jamieson	Federal Courthouse, urban plaza, central open space, authoritative	Civic
Eisenhower	Double row of trees, large grass panels, broad street, monumental	Boulevard
Holland	Large existing trees, pastoral landscape, passive park, picturesque	Parkway
Ballenger	Intricate detailing, variety, lush open space, human scale	Home

Figure 2-4: Precinct Images and Character

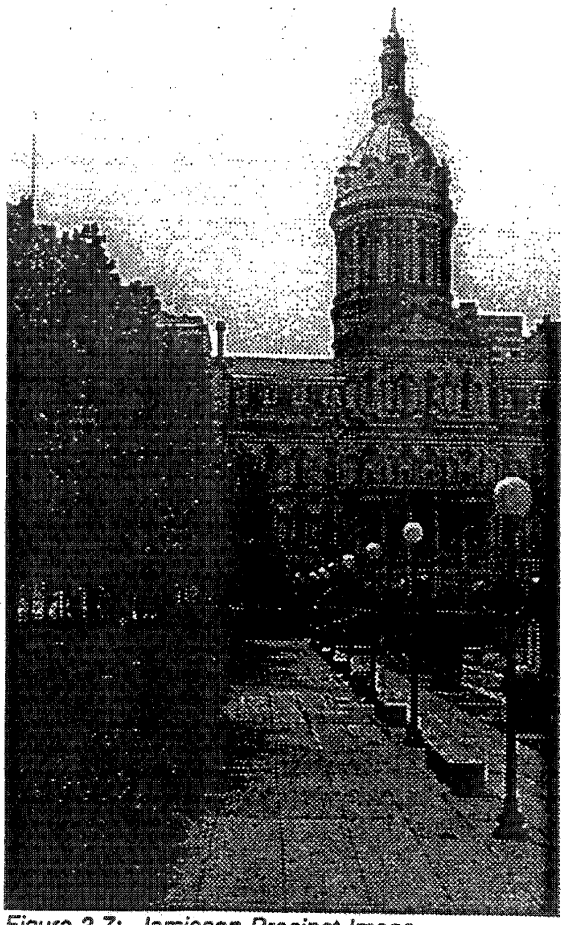

Figure 2-7: Jamieson Precinct Image

Figure 2-8: Eisenhower Precinct Image

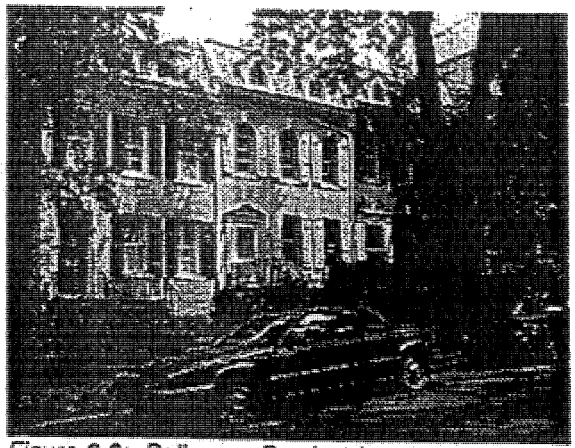

Figure 2-9: Ballenger Precinct Image

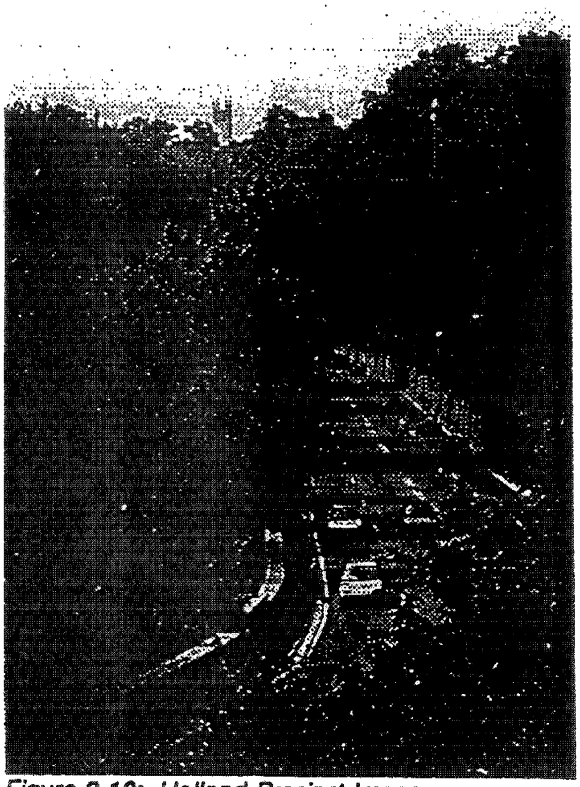

Figure 2-10: Holland Precinct Image

2.2 MAJOR OPEN SPACES

With the exception of Eisenhower Precinct, each precinct includes a major open space area which will have different relationships with the surrounding streetscapes. For example, Jamieson Precinct features an urban square with intense pedestrian activity from the surrounding streets; the streetscape allows free flowing access to and from the square. The major open space section of the Precinct Guidelines provides parcel owners with a concept and general design parameters for streetscape coordination. The major open space concept identifies the important open space features and streetscape elements such as street lights, sidewalk paving, street trees and other hardscape materials to unify the spaces with the streetscape. General design parameters are included to supplement the established precinct characters and outline the spatial organization, proportion, scale and other ordering principles, such as symmetry, hierarchy, rhythm and repetition. For example, Courthouse Square is a civic place characterized by its proximity to the Federal Courthouse occupying a symbolic central position in the precinct. The space is well defined by tall, massive buildings and is organized formally with the Courthouse streetscape.

The major open spaces will have varying degrees of influence on the surrounding streetscapes. Parcel owners shall use the open space concept and general design parameters as a basis for design of the streetscapes.

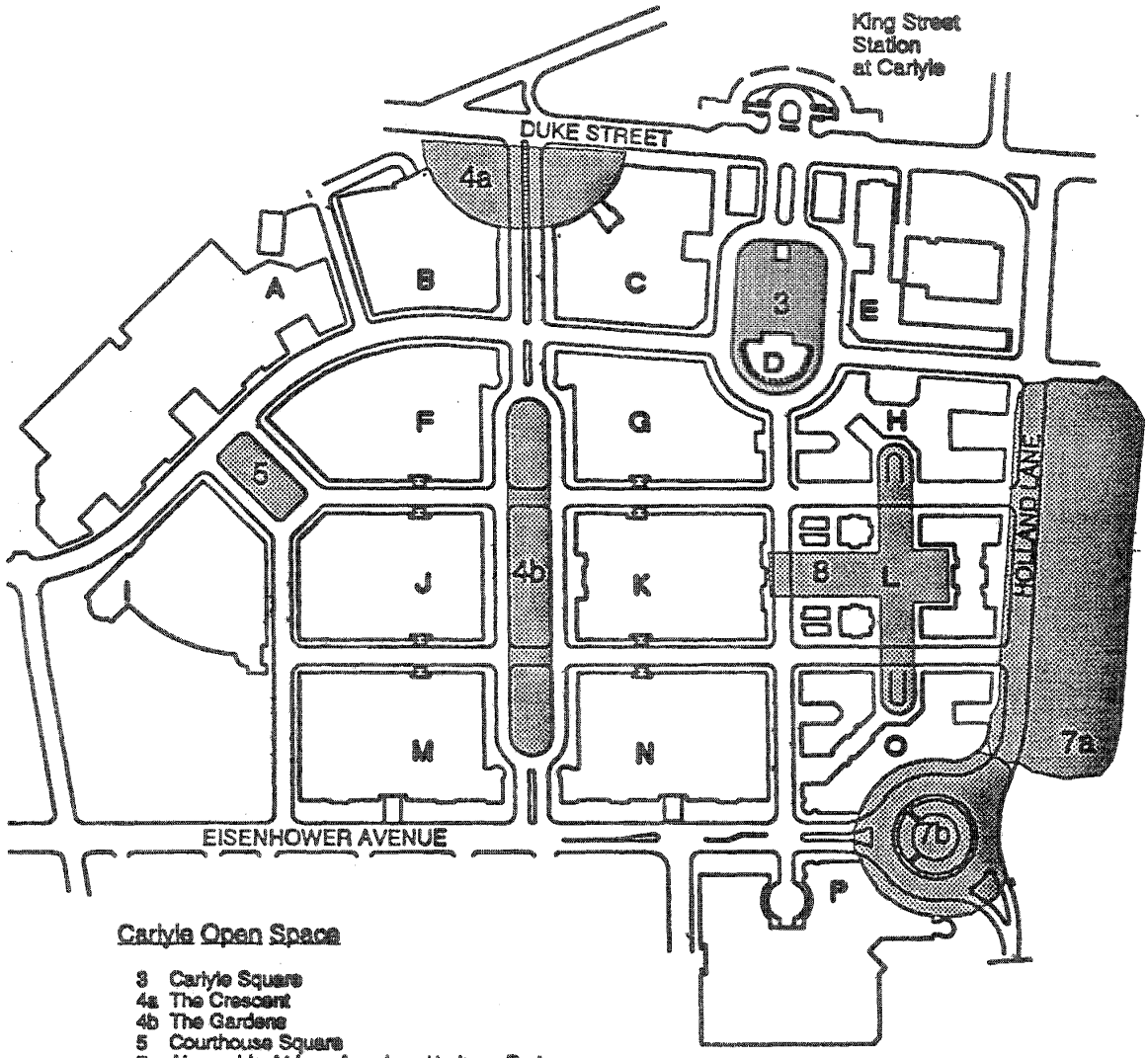

Figure 2-11: Open Spaces Location Plan

2.3 STREETSCAPE DESIGN

Design of the Carlyle streetscape requires an understanding of the specific precinct - its context, use and imagery, and how the character should be expressed within the street. Streetscapes are defined by the street and the architecture that enclose them.

2.3.1 TYPICAL LAYOUT AND DIMENSIONS

The organization of streetscape elements occurs in identifiable zones based upon physical relationships between the building and the street. The zones are the **Building Zone, the Pedestrian Zone and the Curb Zone.**

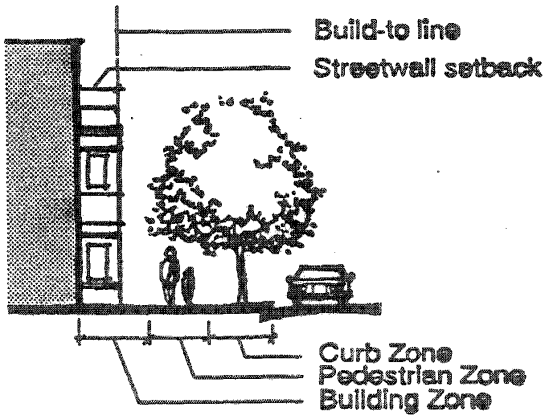

Figure 2-12: Streetscape Zones

BUILDING ZONE: The building zone is the zone of transition from the building streetwall to sidewalk. The zone may include plantings, architectural features, entrances, steps, awnings, seating, et cetera.

PEDESTRIAN ZONE: The pedestrian zone is the zone of concentrated pedestrian movement along a sidewalk, bound by the building zone on one side and the curb zone on the other. This zone is generally free of obstacles but may allow encroachments of planting, seating or kiosks.

CURB ZONE: The curb zone is the zone of transition from the sidewalk to the street - therefore containing the limits of the sidewalk by a curb. Most of the utilitarian fixtures of an urban street such as fire hydrants, street lights and street trees are located in this zone.

The three zones are not as clearly defined as the definitions might indicate. They are defined for purposes of indicating the location of all the elements in the streetscape; the zone edges will not necessarily correspond to the location of the right of way lines. The precincts shall cover each zone in detail; for more information refer to the appropriate chapter.

2.3.2 BUILDING ENTRANCES

Building entrances are significant architectural features that have aesthetic and functional purposes. The proportion, scale and architectural context of building entrances may identify uses and contribute to precinct character. The location and frequency of building entrances is the largest single impact on the building zone in the streetscape. There are five types of entrances as defined herein: lobby entrances, both major and minor, multiple entrances, minor entrances and garden court entrances.

MAJOR LOBBY ENTRANCE: A major lobby entrance is an entrance with an adjacent hall, foyer or waiting room typical of corporate offices and apartment buildings. It is large scale, one to two stories in height, visually prominent in the building facade and has greater architectural detailing than the other types of entrances. Major lobby entrances may incorporate special paving and lighting, and architectural projections such as a canopy or porte cochere. Elements of major lobby entrances may extend beyond the building zone and into the pedestrian zone up to the street right-of-way. For example, special paving, bollards, flags and banners may extend beyond the doors and along the sidewalk. Planting is required for articulation of the entrance and shall be a predominantly evergreen material. Special lights should be considered along with project or building signs. Steps and ramps are restricted to the building zone.

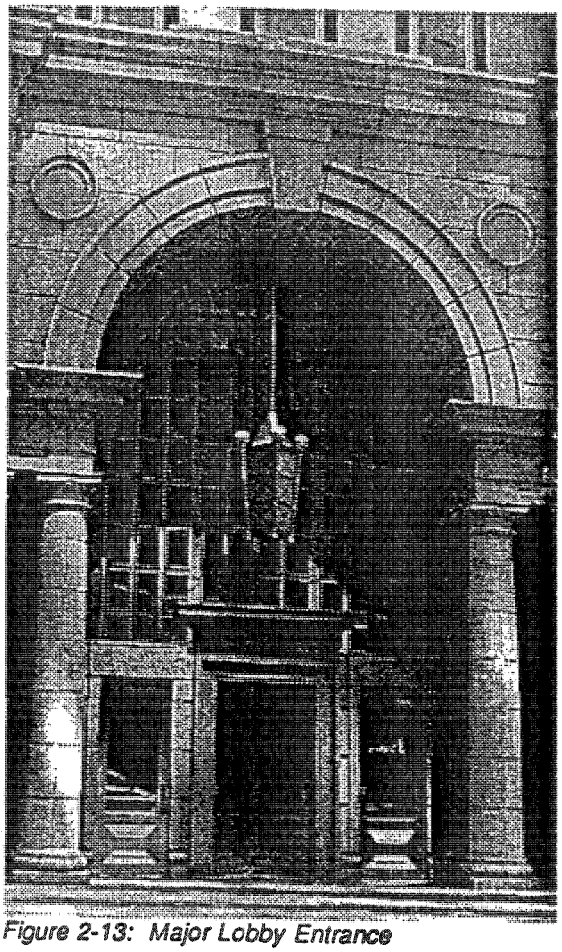

Figure 2-13: Major Lobby Entrance

Figure 2-14: Minor Lobby Entrance

MINOR LOBBY ENTRANCE: Minor lobby entrances have similar relationships to the streetscape as major lobby entrances. Minor lobby entrances are smaller scale, are usually one story in height and have simpler detailing. They are more integrated with and have less influence on the streetscape. Elements of minor lobby entrances should not extend beyond the building zone. Special paving and small architectural projections such as awnings may be incorporated into the design. Planting adjoining the entrance area is also required and shall have a minimum of fifty percent evergreen material. Special lights shall be low intensity and preferably incandescent. Steps and ramps are restricted to the building zone.

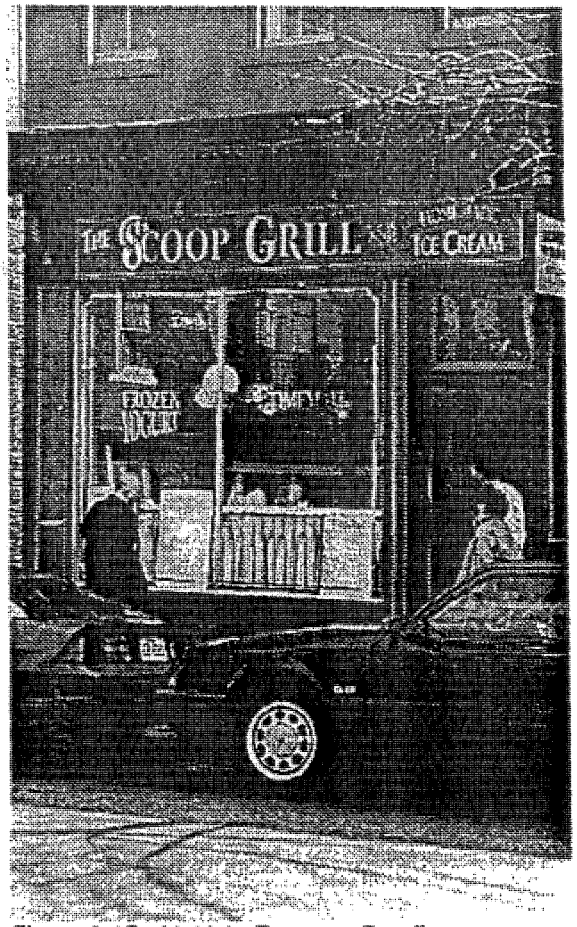

Figure 2-15: Multiple Entrance Retail

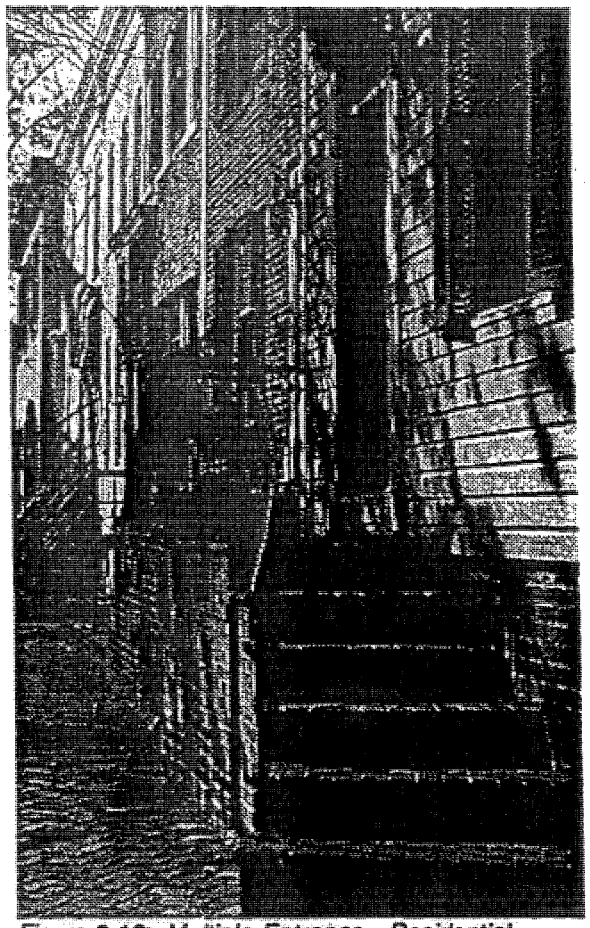

Figure 2-16: Multiple Entrance - Residential

MULTIPLE ENTRANCE: A multiple entrance is a single entrance in a series of entrances; it may have a small foyer, generally serves a single tenant, and is typically residential, office condominium or one story retail. A multiple entrance is smaller than a minor lobby entrance. Although multiple entrances have similar emphasis, individual expression is encouraged by using different but related materials and streetscape elements.

MINOR ENTRANCE: A minor entrance is typically a secondary utilitarian entry such as an emergency exit or service door and incidental to the streetscape. A minor entrance will not have a foyer or special architectural detailing. No exterior elements associated with the other entrances would occur at these entrances. Minor entrance doors shall not swing into the pedestrian zone. Where possible, minor entrances shall be recessed within the buildings or within planting beds in the building zone. No special paving is allowed; planting is encouraged but will not emphasize the doorway. Lighting shall be minimal, but will satisfy emergency access requirements. The standard brick sidewalk paving will extend to the threshold.

GARDEN COURT: A garden court is a special type of entrance for Carlyle used with residential buildings. It may be part of a major or minor lobby entrance. The garden court provides a semi-private front yard for the residents.

Special paving, planting, seating and special lighting may be combined in a unique design for a garden court. Garden courts may extend to the pedestrian zone.

2.3.3 VEHICULAR ACCESS ZONES

Vehicular access zones are driveways from streets to buildings that cross the pedestrian walkways. Therefore, careful attention must be given to provide safe crossing for pedestrians. The following section will discuss combinations of vehicular and pedestrian uses with their area of interaction and how they are accommodated by the streetscape.

PARKING AND SERVICE ENTRANCES: Parking and service entrances are generally located on the east-west streets in Carlyle. They shall be constructed according to City Standards and meet the requirements of the Special Use Permit (Condition R-29).

Parking and service entrances shall be constructed to be flush with the sidewalk at the pedestrian zone. Brick pavers shall be mortared in place in a running bond pattern perpendicular to the street. The brick paver shall be the same paver as the adjoining sidewalk paving.

Streetscape elements such as trees, lights, planters and signs shall be located to allow safe vehicular movement and pedestrian crossing. Street Trees shall be located no closer than fifteen feet from the

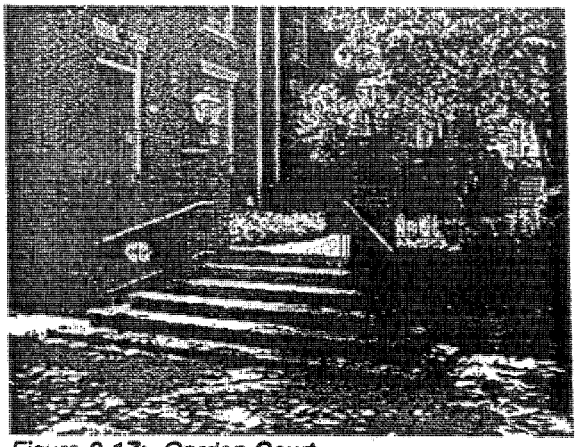

Figure 2-17: Garden Court

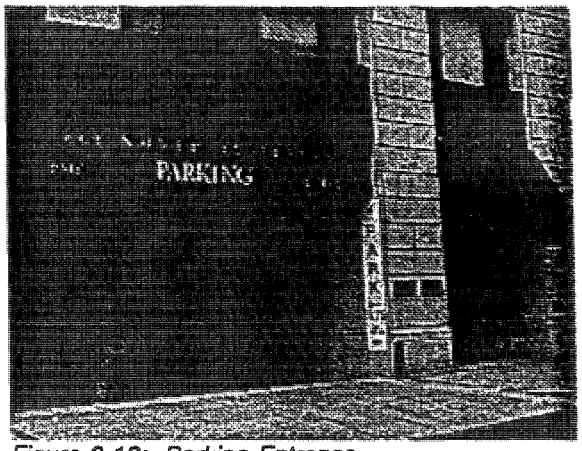

Figure 2-18: Parking Entrance

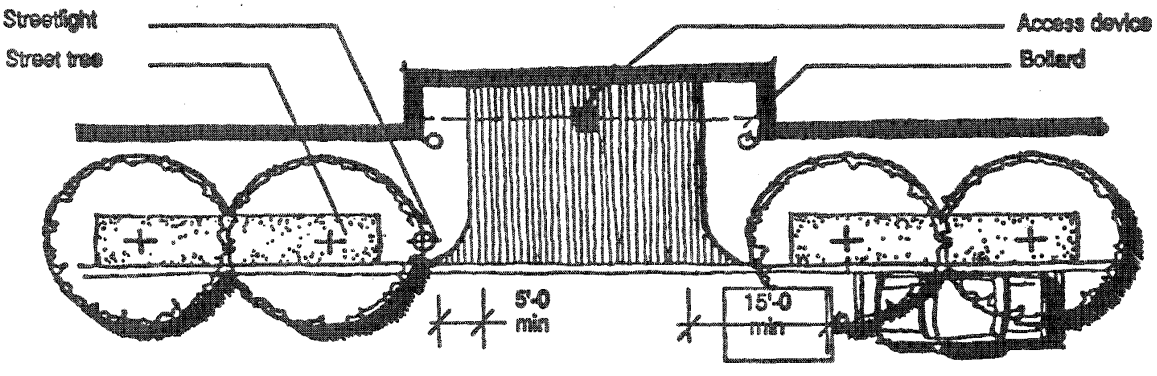

Figure 2-19: Parking/Service Entrance

entrance. Streetlights shall be located a minimum of five feet from the entrance, although where possible, they should be located nearby to provide additional light at the entrance. Electronic access devices shall be preferably located within the building or in the building zone. Bollards may be used to protect access devices and building corners. Information signs shall be placed on the building. Refer to the appropriate section on sidewalk paving, bollards and signs for further information.

DROP OFFS/LAY-BYS: Hotels, large office buildings and high rise apartments may incorporate dropoffs or lay-bys into the adjoining streetscape in conjunction with major lobby entrances if allowed by the approved development plans. Recessed building walls, porticos, porte cocheres and canopies may be incorporated into the architecture. The extension of special paving from a major lobby entrance to the dropoff is encouraged, provided the special paving does not extend into the right-of-way. Carlyle Development Corporation shall approve the use and location of all drop offs and lay-bys.

LOADING ZONES: On street loading zones will be subject to review by the City of Alexandria Director of Transportation and Environmental Services. The preferred location of these zones is on the east to west streets.

TAXI STANDS: Taxi stands may be located near uses that have need of taxi service such as a hotel or grocery store. After approval of the proposed location by Carlyle Development Corporation, the parcel owner must obtain approval from the City of Alexandria, Department of Transportation and Environmental Services.

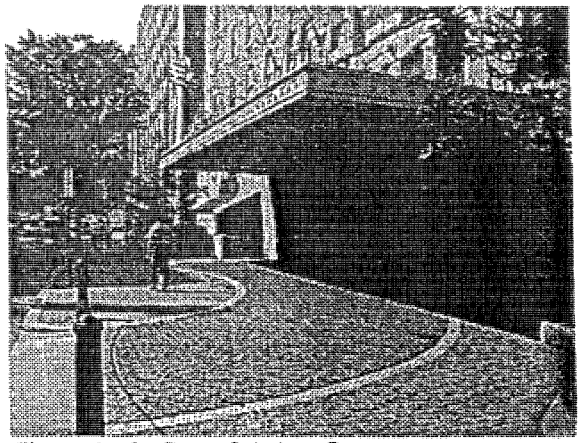

Figure 2-20: Drop Offs/Lay-Bys

BUS STOPS: A city operated shuttle service will operate through Carlyle between to the King Street and Eisenhower Avenue Metro Stations. Bus stops and shelter locations shall be determined by Carlyle Development Corporation, with the approval of the City of Alexandria, prior to final site plan. Bus stops shall be located in the curb zone on paved areas. A minimum of one bench and one trash can receptacle shall be provided per stop.

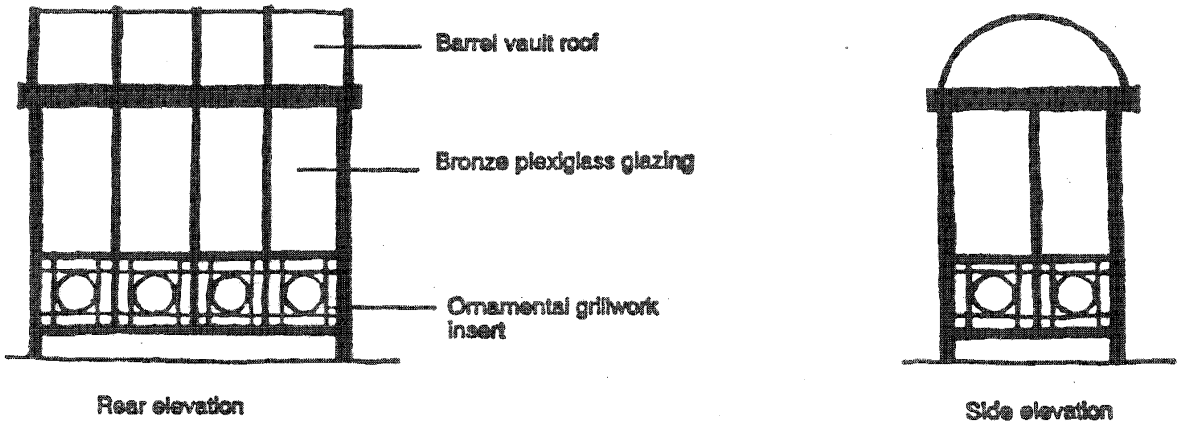

Figure 2-21: Bus Shelter

As of January 6, 1994, bus shelter locations as proposed by Carlyle Development Corporation have not been accepted by the Alexandria Transit Company. When locations are finalized, they shall be included here and parcel owners will be required to install bus shelters as necessary.

Figure 2-22: Bus Stop and Shelter Locations

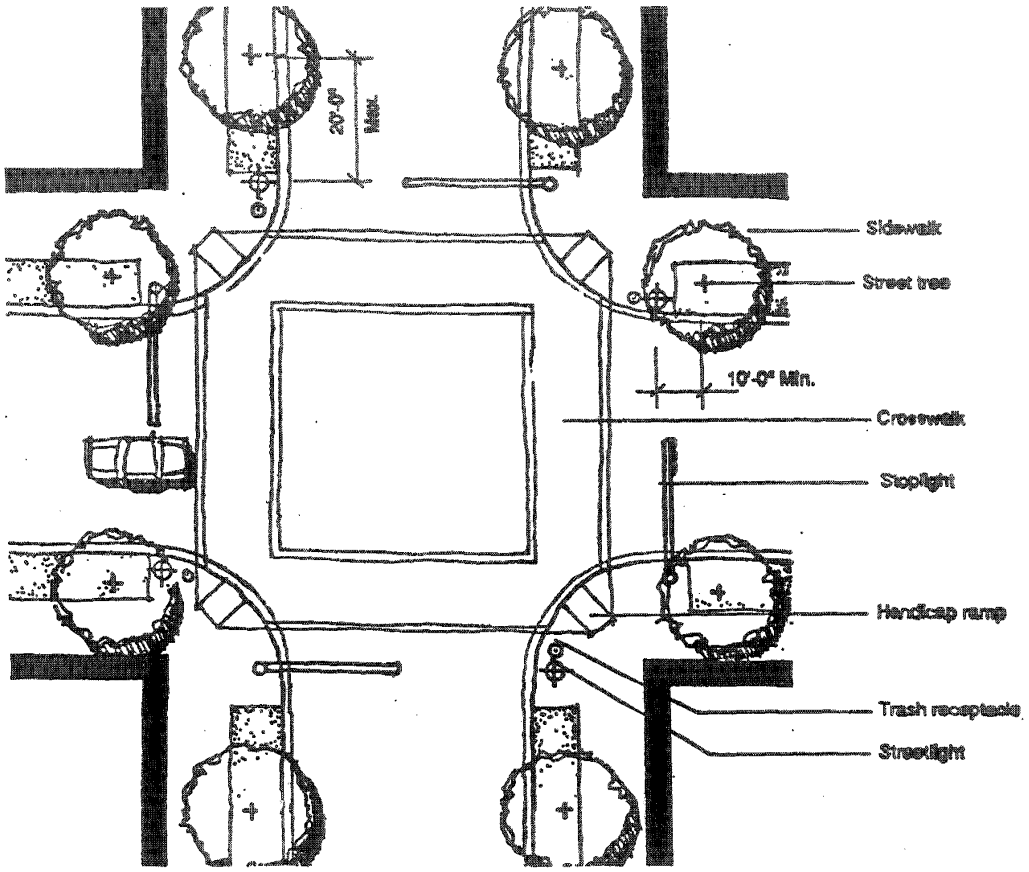

Figure 2-23: Typical Intersection

When it is determined that a bus shelter will be needed, the bus shelter shall be the standard custom design for Carlyle.

Bus shelters shall be the Modular Prefabricated Equipment Company, Inc., Jamaica, New York or equal approved by Carlyle Development Corporation. The shelters shall have bronze plexiglas glazing with a barrel vault roof and decorative metal grillwork. All metal shall be painted black.

2.3.4 INTERSECTIONS

Intersections serve as points of reference and transitional areas between precincts. Architecture, unique shops, clocks, banners, flags and other landmarks all contribute to the inherent character that differentiates one intersection from the next. Several streetscape elements are necessary at most intersections such as crosswalks, stop lights and signs, streetlights, trees, planters and paving. The following guidelines will help parcel owners coordinate these items at intersections.

CROSSWALKS: The typical crosswalk for Carlyle shall be the City of Alexandria standard crosswalk.

SIDEWALK PAVING: Sidewalk paving patterns shall be designed to turn the corner at intersections in a clean, simple manner. Handicap ramps shall be provided according to City standards; they shall be paved with the same brick pavers as the adjoining sidewalks.

STOPLIGHTS: The City of Alexandria Department of Transportation and Environmental Services and the Virginia Department of Transportation are responsible for determining final locations. Stoplights shall be mounted on the standard VDOT mast arms as installed elsewhere in Old Town Alexandria. The mast arms will be painted to match those in Old Town. Flags may be mounted to stoplight poles at intersections in certain locations; see Section 2.5.2 Street Fixtures, for this requirement.

STREETLIGHTS: One streetlight shall be provided at each corner as is typical along King Street in Old Town, Alexandria. Streetlights shall be located at the point of curvature or tangency of the curb at the intersection, in a manner that will not conflict with stoplight poles. The desired location for each streetlight is shown in the Typical Intersection figure.

STREET TREES: Street trees shall be located a minimum of ten feet and a maximum of twenty feet from the point of curvature or tangency of the curb at the intersection.

PLANTINGS AND STREET FURNITURE: Plantings and street furniture shall be designed and located in a manner that will not obstruct or hinder safe pedestrian or vehicular movement through the intersection. Appropriate clear sight lines must be maintained.

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2.4 HARDSCAPE

The hardscape or paving is one of the most visually dominant elements of the streetscape. Because of this, it is used to reinforce and differentiate the six precinct streetscapes of Carlyle. The hardscape includes the sidewalk paving, curbs, and street paving.

2.4.1 PAVING

STANDARD SIDEWALK PAVING: Standard sidewalk paving will be used throughout Carlyle, except as otherwise noted. It shall consist of a standard pattern and materials. The standard patterns are established on a precinct basis; refer to the precinct guidelines for the specific patterns to be used.

All sidewalks shall be paved with brick as specified by condition #R-28 of the special use permit. The brick shall be either the 4" x 8" King William Range brick paver by Baltimore Brick Company or the 4" x 8" Old Virginia #24 brick paver by Old Virginia Brick Company, Salem, Virginia or equal approved by Carlyle Development Corporation and the City of Alexandria. See the precinct guidelines for the specific paver to be used.

All brick sidewalk paving shall be dry laid with hand tight to meet the City of Alexandria Standards. A concrete base course shall be used to work with the street tree planting trough requirement in Section 2.7.1 - Street Trees.

All sidewalk paving shall be installed by the parcel owner. The City of Alexandria will maintain the paving within the right-of-way; the sidewalk paving within the landscape easement will be maintained by the Carlyle Property Owners Association.

PAVEMENT EDGES: Pavement edges at street trees and planting areas in the building zone are detailed in several ways. The detailing responds to precinct specific design and may include a simple pavement edge, curbs or walls. The minimum requirement will be for a flush, clean edge of the sidewalk paving, unless other requirements are given in the precinct guidelines.

In some areas tree grates or curbs will be required. The grates are specified in the precinct guidelines. See Section 2.7.1 as well for further information on tree grates.

SPECIAL PAVING: Special sidewalk paving is allowed and encouraged in certain areas such as building entrances and within the open spaces. The design of the special paving shall be left to the parcel owner. The intent is to allow for individual expression of a particular building or place in the streetscape, however the special paving shall be carefully integrated with the standard streetscape paving. It shall also include brick that match or compliment the brick specified in the standard sidewalk paving for the precinct. Special sidewalk

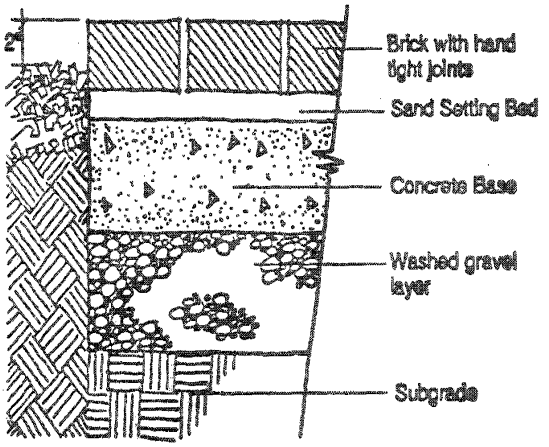

Figure 2-24: Brick Pavement Section

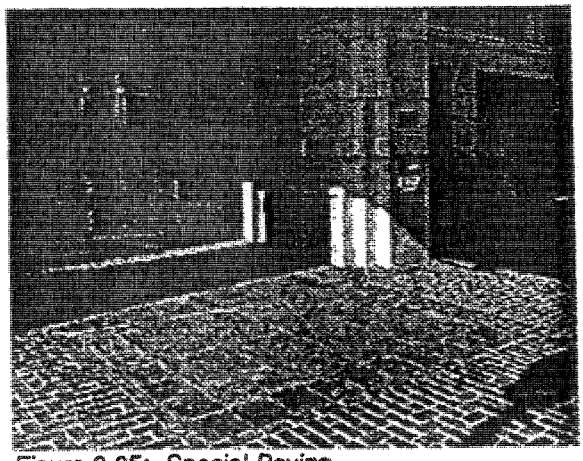

Figure 2-25: Special Paving

paving associated with buildings shall relate to the form, scale and materials of the architecture. Special paving areas shall not extend into the street right-of-way unless otherwise noted in the precinct guidelines. The design of all special paving areas must be approved by Carlyle Development Corporation. The maintenance for all special paving shall be the responsibility of the parcel owner.

STREET PAVING: All streets in Carlyle shall be paved with asphalt paving conforming to the requirements of the City of Alexandria. Concrete street paving will not be allowed.

2.4.2 CURBS

Six inch concrete curbs with gutters installed according to the City standards will be used throughout Carlyle. Curbs will be installed by Carlyle Development Corporation.

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2.5 STREET FURNITURE

This section of the Carlyle Streetscape Guidelines sets forth street furniture specifications and/or design approach. Each parcel owner is required to purchase and install these items in the streetscape consistent with the overall image of Carlyle. Specific requirements for location and quantities can be found in the precinct guidelines.

Consideration in the placement of street furnishings should be given to the appropriateness to context (ie., trash receptacle near take out restaurants), to minimizing obstruction of pedestrian traffic, to the quantity required to meet demand and achieve the desired effect (ie., Seating), and to minimize clutter and disassociated items (ie., cluster items in groups).

A matrix is provided in Appendix I to this chapter to summarize the furniture requirements and options for each precinct. It summarizes whether an item is required or optional in each streetscape zone. Additional requirements for location and quantities will be given here in the text. Locations may be specific or may simply indicate a zone. Appendix II in this chapter provides a reference list of the manufacturers or distributors for all furniture.

2.5.1 SEATING

Sidewalk seating opportunities are encouraged throughout Carlyle and shall be made available in both formal (bench, and table and chairs seating) and informal (seat walls, steps, ledges) seating types where the desired street character suggests it.

FORMAL SEATING - BENCHES: Benches used in Carlyle shall be the TimberForm Restoration Series (model number 2118, 2119 or 2123), manufactured by Columbia Cascade or equal approved by Carlyle Development Corporation. Bench seats shall be the standard Alaska yellow cedar; metal frames shall be finished in the standard black, powdercoat finish. The bench type within the series shall be chosen by each parcel owner, unless otherwise required in precinct guidelines.

Benches shall be permanently mounted to the sidewalk paving with tamper proof bolts. The maintenance of all benches will be the responsibility of the individual parcel owners.

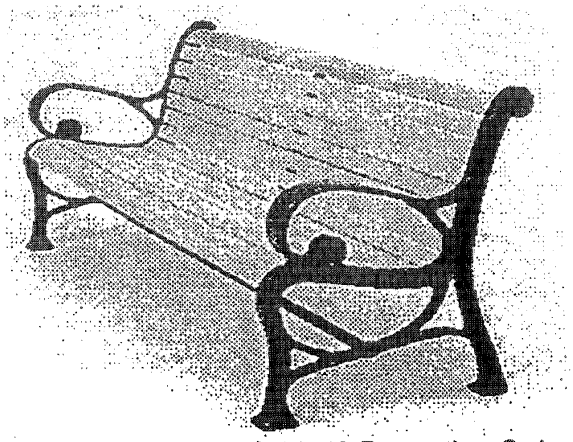

Figure 2-26: Model #2118-Restoration Series, Bench with Arms

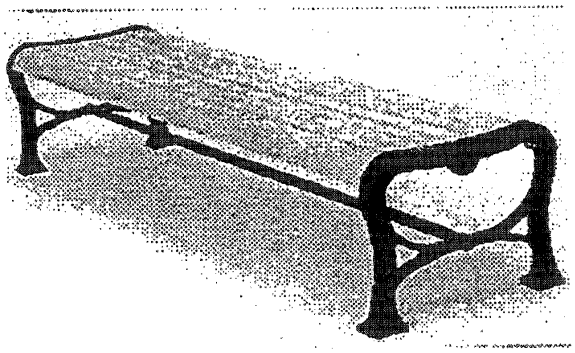

Figure 2-27: Model #2123, Restoration Series, Backless Bench

FORMAL SEATING - TABLES AND CHAIRS: The use of tables and chairs is encouraged in conjunction with cafes, restaurants, ice cream stores, coffee shops or any other particular use that could benefit from outdoor seating. All such outdoor areas require a special use permit and shall follow City regulations. Encroachment into the pedestrian zone shall be held to a minimum; seating/dining areas shall not occupy more than one third of the sidewalk width and shall not exceed the length of the store frontage.

All tables and chairs are the responsibility of the establishment owner. They shall be temporary and stored securely after hours. Their style and character should reflect the image of each particular establishment.

INFORMAL SEATING: Informal seating such as walls and steps is encouraged throughout Carlyle. Seatwalls primarily function as planters, however they shall allow for seating. Seat walls shall be at least sixteen inches in height and a maximum of twenty-six inches high from finish grade to top of coping. Seatwall caps shall be a minimum of twelve inches wide and of material that matches the architecture and is compatible to sitting. Large prickly plant material, if any, shall be placed away from the seatwall edge.

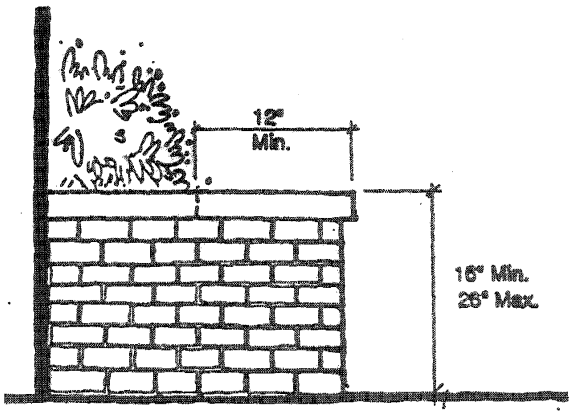

Figure 2-28: Seat Wall

Steps are a form of informal seating. Steps, when possible, should be wide enough that passage is not blocked by seating.

2.5.2 STREET FIXTURES

Street fixtures are additional street furnishings. The requirements and amount are based on the specific use in each precinct and user demand. In general, all furnishings should be located for pedestrian safety, handicap accessible, and meet all applicable standards and codes.

TRASH RECEPTACLES: The trash receptacle to be used throughout Carlyle shall be the Iron Site Bethesda Series receptacle (model S-42) with spun steel dome manufactured by Victor Stanley, Inc., Dunkirk, Maryland or equal approve by Carlyle Development Corporation. The trash receptacle shall be finished in a black, powdercoat finish.

Trash receptacles shall be permanently mounted, to the paving surface and generally located in the curb zone. The quantity of receptacles installed shall respond directly to demand and frequency of trash collection. Minimum quantities are specified in the precinct guidelines. The receptacles will be maintained by the individual property owners. Collection of all refuse will be the responsibility of the City of Alexandria.

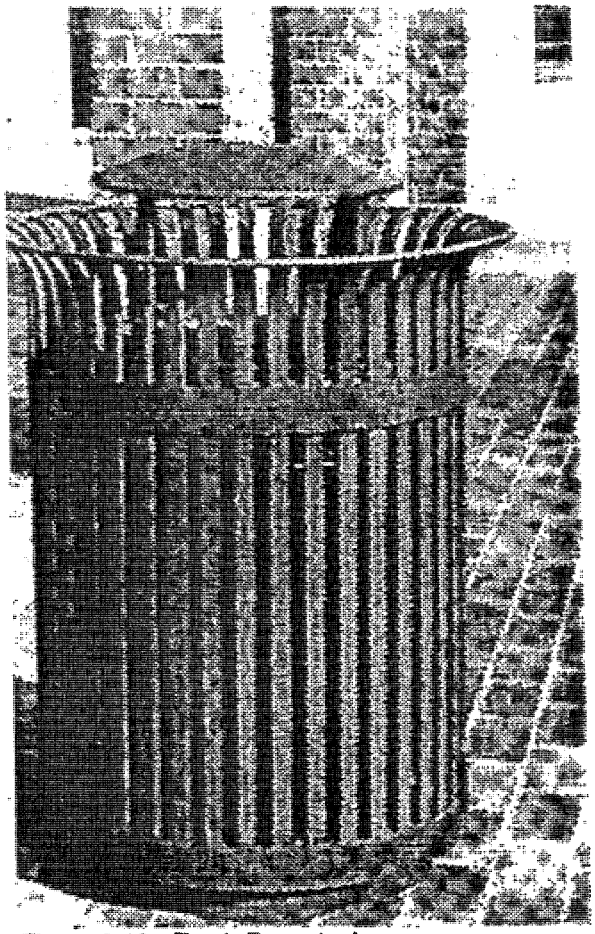

Figure 2-29: Trash Receptacle

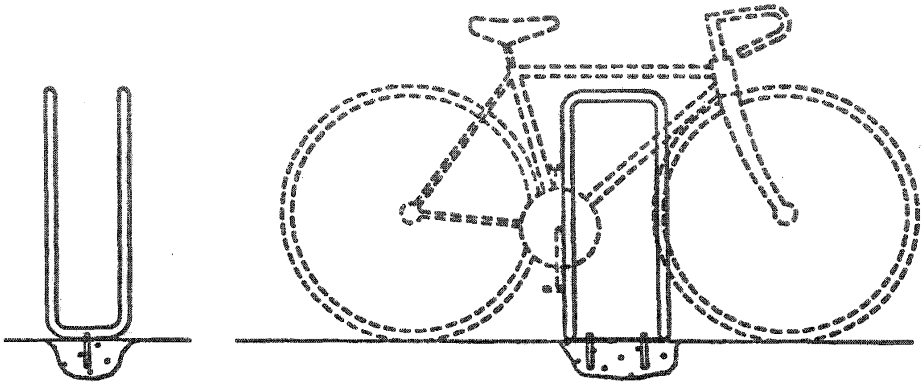

Figure 2-30: Bike Rack

BIKE RACKS: Bike racks shall be installed along the streetscape when determined to be needed. They shall be used to facilitate and encourage biking as an alterative means for transportation and to eliminate chaining of bikes to trees, streetlights and fences. If bike racks are needed, the Bicycle Sentry, Catalog #900 by Canterbury International, Los Angeles, California or equal approved by Carlyle Development Corporation, shall be used. Racks shall be finished in the standard black enamel powdercoat finish.

Bike racks should be placed in groups at convenient, visible, safe, well lit paved areas in the building zone or curb zone. Care must be taken to ensure that bikes and bike racks do not obstruct pedestrian movement. The bike racks will be maintained by the individual parcel owners.

In addition to the bike racks in the streetscape, parcel owners are required to provide bicycle parking within parking garages. Maintenance of these bike racks will be the responsibility of the parcel owner.

FLAGS AND BANNERS: Flags and banners are simple ways to animate and celebrate seasonal events and special activities in conjunction with planned events in Carlyle and Old Town.

Three flag mounting brackets matching the existing city brackets may be provided at the corner streetlight or stoplight pole on the main streets in Carlyle. Flag brackets shall be finished to match the streetlight and stoplight poles. These brackets shall become the property of the City of Alexandria. Flags will be provided and changed by the City of Alexandria and/or the Carlyle Property Owners Association.

Flag poles may be used as an individual design element for specific buildings. Flag poles may be attached to building facades or placed in the ground. They shall be located within the landscape easement and shall be maintained by the parcel owner.

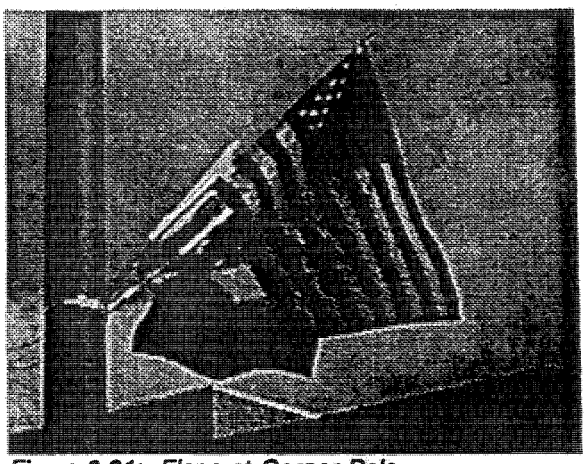

Figure 2-31: Flags at Corner Pole

Banners on buildings may be allowed in some precincts. These banners are required to convey a single design theme throughout that building's street frontage. The specific design of the building banners must be approved by Carlyle Development Corporation.

Break away mounting systems for all banners are needed to ensure pedestrian safety, due to wind loads and extreme weather conditions.

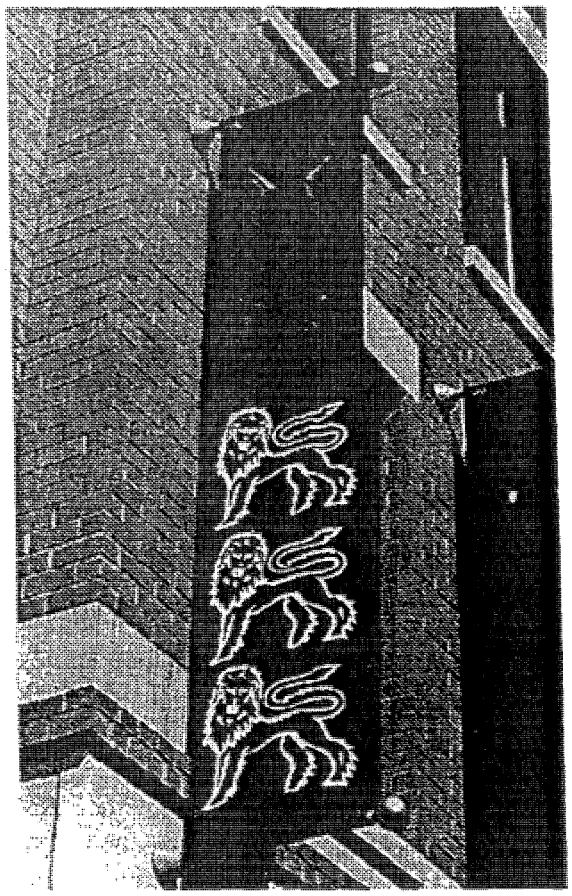

Figure 2-32: Banners

CLOCKS, ART AND OTHER SPECIAL FEATURES: Clocks, art and other special features add points of interest and landmarks to the urban streetscape. In order not to diminish their special effect, the location and frequency of clocks, art and other special features shall be controlled and approved by Carlyle Development Corporation. (i.e., The clock at King Street Station can be seen from many locations throughout Carlyle and is a strong visual tie to the Carlyle precinct, therefore further use of clocks in this precinct's streetscape may diminish the King Street Station clock's significant effect.) All clocks, art and other special features must occur in sidewalk easement and will be installed and maintained by the parcel owner.

FENCES, GATES, COLUMNS and WALLS: Fences, gates, columns and walls will be found throughout Carlyle. In some situations they will be an integral part of the architecture and shall compliment the materials, forms and colors used Handrails and fences should also be coordinated. (i.e., garden court entrance to residential towers)

In other situations fences, columns, gates and walls will be used to identify and contain a particular outdoor use. (e.g., gardens at Dulany and Ballenger Mews) Here the material, form and color shall compliment the garden within and be inviting. Fences may be used with low walls and columns; the desired effect is a transparent barrier when used in public open space applications.

All fences, gates and columns shall occur within the landscape easement and within the described building zone and shall not encroach into the pedestrian zone. Fences shall be made of substantial materials such as iron, steel or wood in a sturdy design.

All fences, gates and columns shall be installed and maintained by the parcel owner.

Walls may be either retaining or freestanding, and faced in brick. The use of decorative details in walls such as water tables, recessed bricks, precast caps and other decorative brick is encouraged to provide interest at the streetscape level. The use of seat walls is also encouraged; see Section 2.5.1 - Informal Seating for more information.

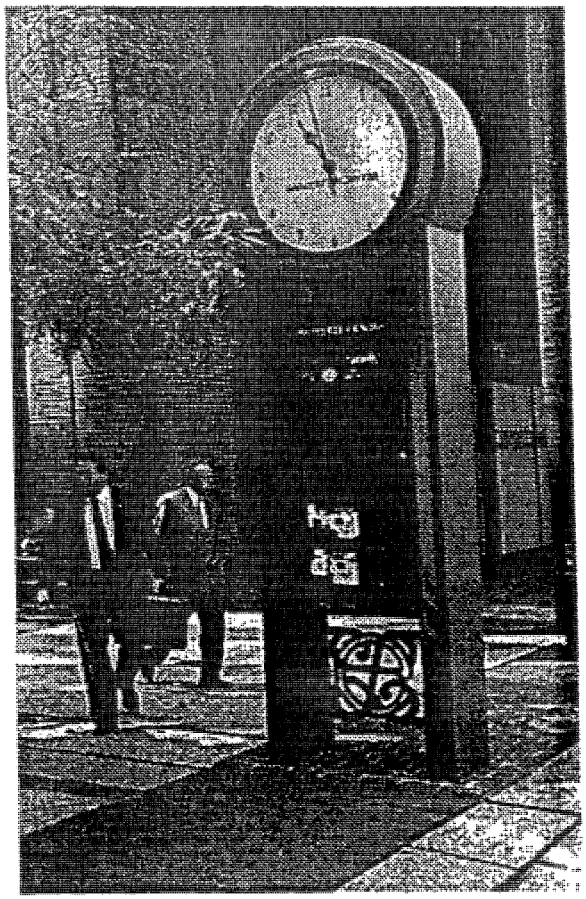

Figure 2-33: Clock

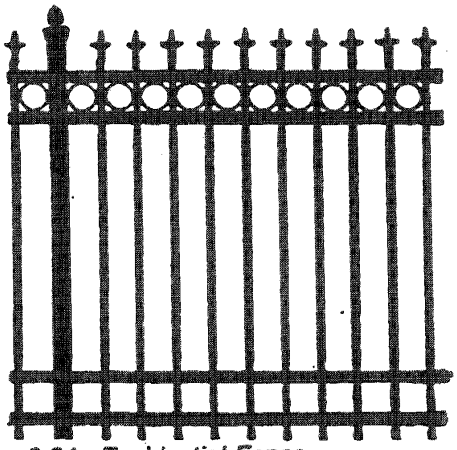

Figure 2-34: Residential Fence

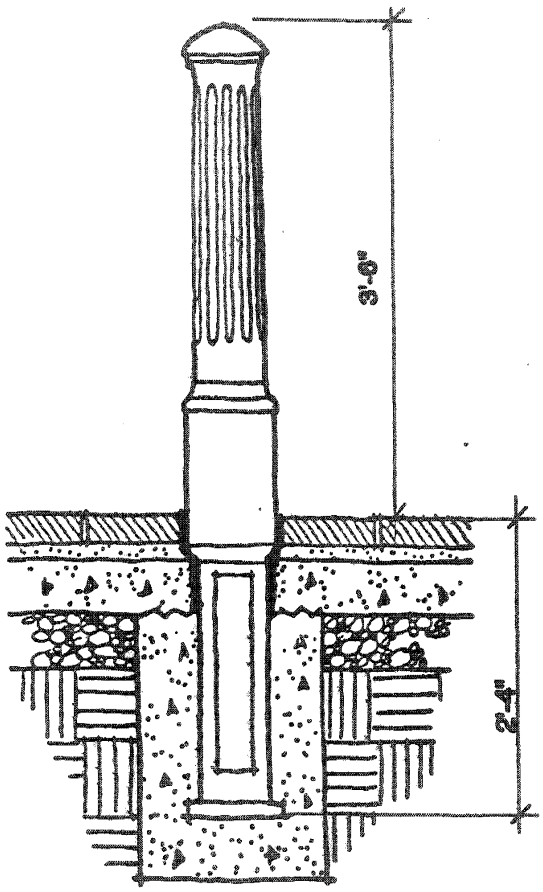

Figure 2-35: Decorative Bollard

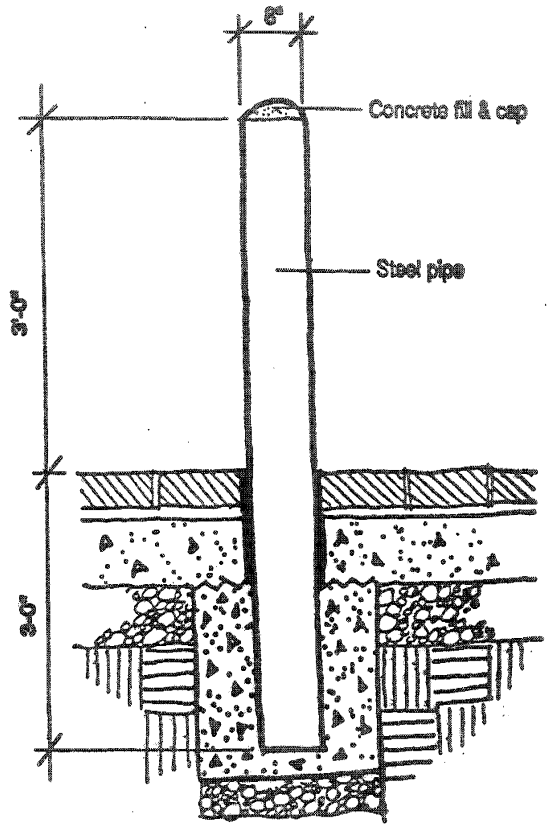

Figure 2-36: Simple Bollard

BOLLARDS: Bollards will be used throughout Carlyle as traffic control and safety/protection devices.

Traffic control type bollards will generally occur in high visibility areas in the curb and pedestrian zones. They have been proposed at lay-bys, special entrances and in Jamieson Square. Bollards in these applications will be of a decorative type: the Princeton Embedded (direct burial) Cast Iron Bollard by Spring City Electrical Manufacturing Company. The bollard shall be finished in black to match the streetlight poles.

Less visible areas, such as building walls at service and parking entrances, that may require protection from automobiles may use a less decorative bollard type. This bollard shall be a simple round concrete filled metal post, painted to match the building architecture. The concrete cap shall be painted to match the metal post.

Bollards within the landscape easement shall be installed and maintained by the parcel owner. Bollards occurring within the right-of-way may become the City of Alexandria's responsibility if the City chooses to accept them.

DRINKING FOUNTAINS: Drinking fountains may be used in public open spaces and shall be custom designed to become an integral part of each open-space. The materials, finish and color of the fountain shall relate to its context. The responsibility of maintenance and providing water shall be determined during the design process for each specific area.

2.5.3 PUBLIC SERVICES

Many public services offered in an urban environment occur on the public streets. Each parcel owner must review the needs for his parcel for the following public services; final approval must be obtained from the appropriate agency.

No public service element shall obstruct vehicular sight triangles or safe pedestrian movement.

MAIL COLLECTION BOXES: Mail collection boxes will be placed according to a demand calculated by the United States Postal Service. Boxes will not be required near large office buildings or large residential buildings that have an interior mail room. The parcel owner shall review with the U.S. Postal Service his plans to determine the need for mail collection boxes. If the Postal Service determines that mail collection boxes are needed, they shall be installed according to Postal Service regulations and these guidelines.

Mail collection boxes shall be located in pavement areas in the curb zone; curb drop collection boxes are prohibited. The U.S. Postal Services prefers that the mail collection boxes are located near corners as opposed to mid-block locations. The U.S. Postal Service requires all mail collection boxes to be bolted to a 250 pound concrete slab. Parcel owners shall provide a poured in place concrete slab with bolts beneath the brick sidewalk paving meeting the specifications of the U.S. Postal Service. The parcel owner shall work directly with the U.S. Postal Service to finalize the location and installation of mail collection boxes.

Collection boxes for express mail services, such as Federal or Airborne Express, Shall preferably be located in the building zone near major building entrances on pavement areas. Parcel owners will work with the express mail companies to locate the collection boxes integrally in the streetscape. Express Mail Collection boxes should be permanently bolted to the pavement similar to U.S. Mail Collection boxes.

NEWSPAPER VENDING MACHINES: Newspaper vending machines will be placed according to requests by parcel owners and demand determined by newspaper vending services. Parcel owners with retail components will establish newspaper sales within retail establishments or locate vending machines in interior foyers or interior parking garage access areas.

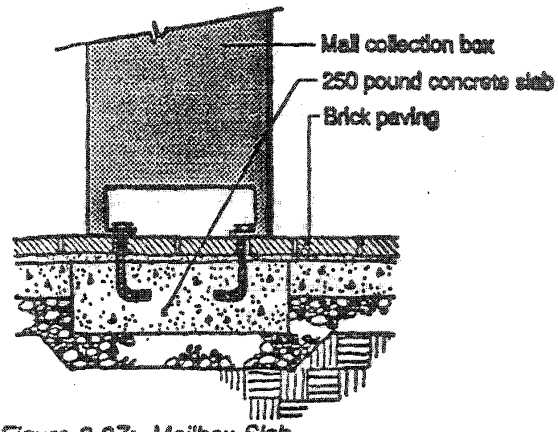

Figure 2-37: Mailbox Slab

Figure 2-38: Newspaper Vending Machines

Newspaper vending services prefer to locate their vending machines near building entrances, bus stops and other places convenient to their customers. Parcel owners shall coordinate with the newspaper vending services to install the machines.

Newspaper vending machines shall be located against walls in the building zone or parallel orperpendicular to the curb in the curb zone on pavement areas. Multiple machines shall be clustered together in straight rows; not in haphazard clumps. The machines shall be bolted to the pavement for security; machines shall not be secured to streetlights, stoplight poles, trees or other street furniture with chains or cables.

The parcel owner shall inform Carlyle Development Corporation and Carlyle Property Owners Association of the location of the proposed machines. Vending machines remain the responsibility of the newspaper company for maintenance and supply. If the machine is neglected or improperly installed, the parcel owner shall contact the supplier and request its removal immediately.

PUBLIC TELEPHONES: Public telephones shall be located within major office and residential buildings in service areas adjacent to lobbies and in conjunction with proposed directories. If additional public telephones are needed, they shall be located within the building zone at street corners against building walls following the pattern in Old Town. The location shall be secure, visible and well lit.

The telephone enclosure for all exterior public phones shall be the Intermediate Enclosure Catalog number L35A/61 with the standard black anodized finish by Clark Specialty Company, Inc., Hammondsport, New York or equal approved by Carlyle Development Corporation. Public telephones shall be installed by a telephone company at the request of a parcel owner. Telephone service for public phones shall allow outgoing calls only. The telephones shall be maintained by the installing telephone company.

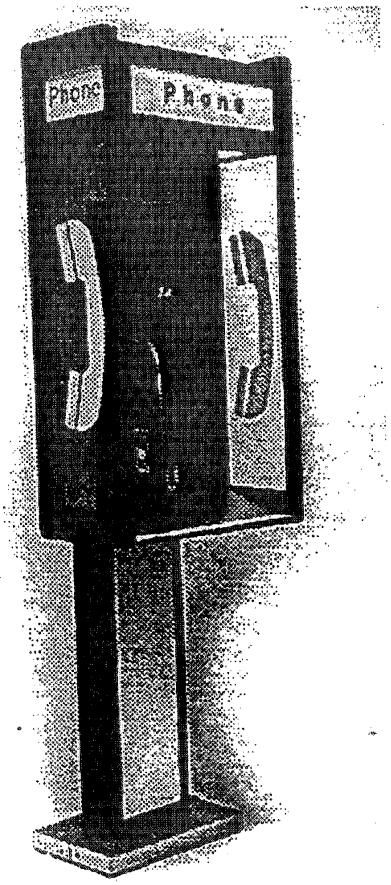

Figure 2-39: Public Telephone Enclosure

PARKING METERS: Parking meters if required by the City of Alexandria will be purchased by the by parcel owners. The City will then install them in cooperation with parcel owner. The City of Alexandria will collect the money from as well as maintain the meters. Meters will be mounted on two inch pipe, in pairs, and set back eighteen inches from face to curb to the face of meter.

VENDING MACHINES: Vending machines of all kinds except newspaper and automatic teller machines will not be permitted anywhere within the Carlyle streetscape.

2.6 LIGHTING

Lighting will greatly influence the sense of comfort and security. The willingness to linger in a place ultimately will influence its character and use. In Carlyle, a full range of lighting design opportunities exist for the streetscape including streetlights, specialty landscape lighting including uplighting, moonlighting, focal lighting and miniature lights, as well as building lighting of varying degrees.

2.6.1 STREETLIGHTS

A major element of the streetscape design is the streetlight, because of its frequency, repetition and impact at nighttime. The streetlight selected for Carlyle is the "Acorn" as shown on pages 22 and 23 of the Virginia Power Outdoor Lighting Manual. The "Acorn" streetlight is composed of the W.J. Whatley Washington series fiberglass pole and General Electric Edison III luminaire. A Hadco Victorian III series refractive globe will be substituted for the Edison III luminaire's standard polycarbonate globe and type V refractor. This streetlight or equal approved by Carlyle Development Corporation and Virginia Power will be used throughout Carlyle except along Duke Street where the standard City of Alexandria, "Gadsby" streetlight shall be used, matching King Street Station.

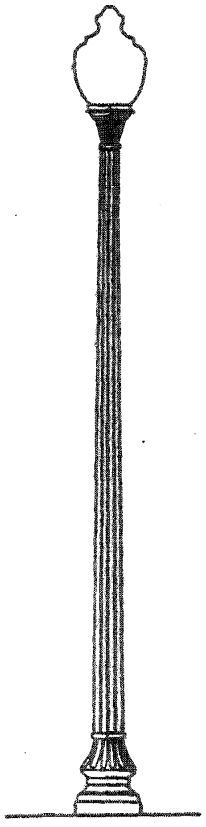

Figure 2-40: Single Luminaire Streetlight

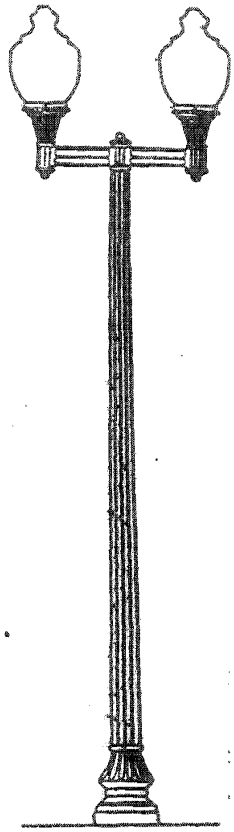

Figure 2-41: Double Luminaire Streetlights

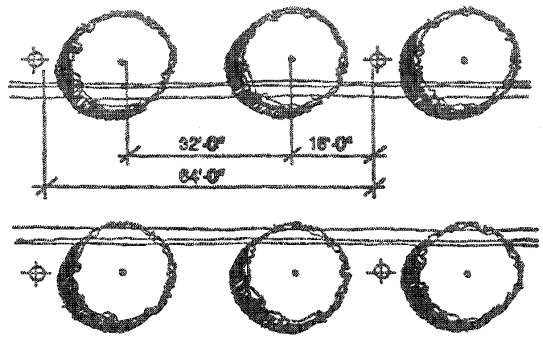

Figure 2-42: Paired Street Lights

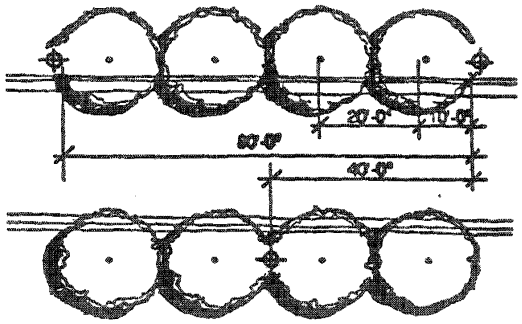

Figure 2-43: Staggered Streetlights

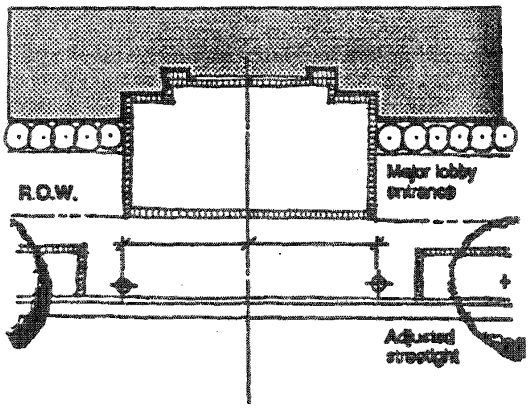

Figure 2-44: Coordinated Streetlights

The light source shall be a high pressure sodium lamp at an appropriate wattage to meet the required lighting levels.

Generally, a single luminaire mounted to Washington Series 405 fluted tapered fiberglass composite pole as manufactured by W.J. Whatley, Commerce City, Colorado will be used. The pole shall be fourteen feet in height above grade. In some areas, double luminaires shall be used mounted on the fourteen foot Washington series 405 pole with a thirty-six inch Celtic series arm. The locations of the double luminaires is specified in the precinct chapters and shown on the Carlyle Infrastructure Plan.

All streetlight luminaires, poles and accessories shall be finished in the standard black finish.

The Carlyle Infrastructure Plans show the locations of the streetlights. Streetlights are generally spaced at sixty-four feet on center, paired across the street or eighty feet on center in a staggered pattern. They are be centered on a line two feet, nine inches from the face of curb. For good light distribution, streetlights shall typically be located halfway between street trees. When new streetlights are installed on the opposite side of a street where streetlights already exist, the placement of the new streetlights shall be coordinated to create the paired or staggered effect specified. Special spacing requirements may be required for certain areas; see the precinct chapters and the Carlyle Infrastructure Plans.

Placement and spacing of the streetlights may need to be adjusted to meet other requirements in these guidelines. These other requirements include location at intersections (see Section 2.3.4) and at Parking and Service Entrances (see Section 2.3.3). Special attention should also be given to the location of streetlights at major lobby entrances. The streetlight locations shall be coordinated with the entrance design. At all other entrances, the normal spacing of streetlights as shown on the Carlyle Infrastructure Plans shall prevail.

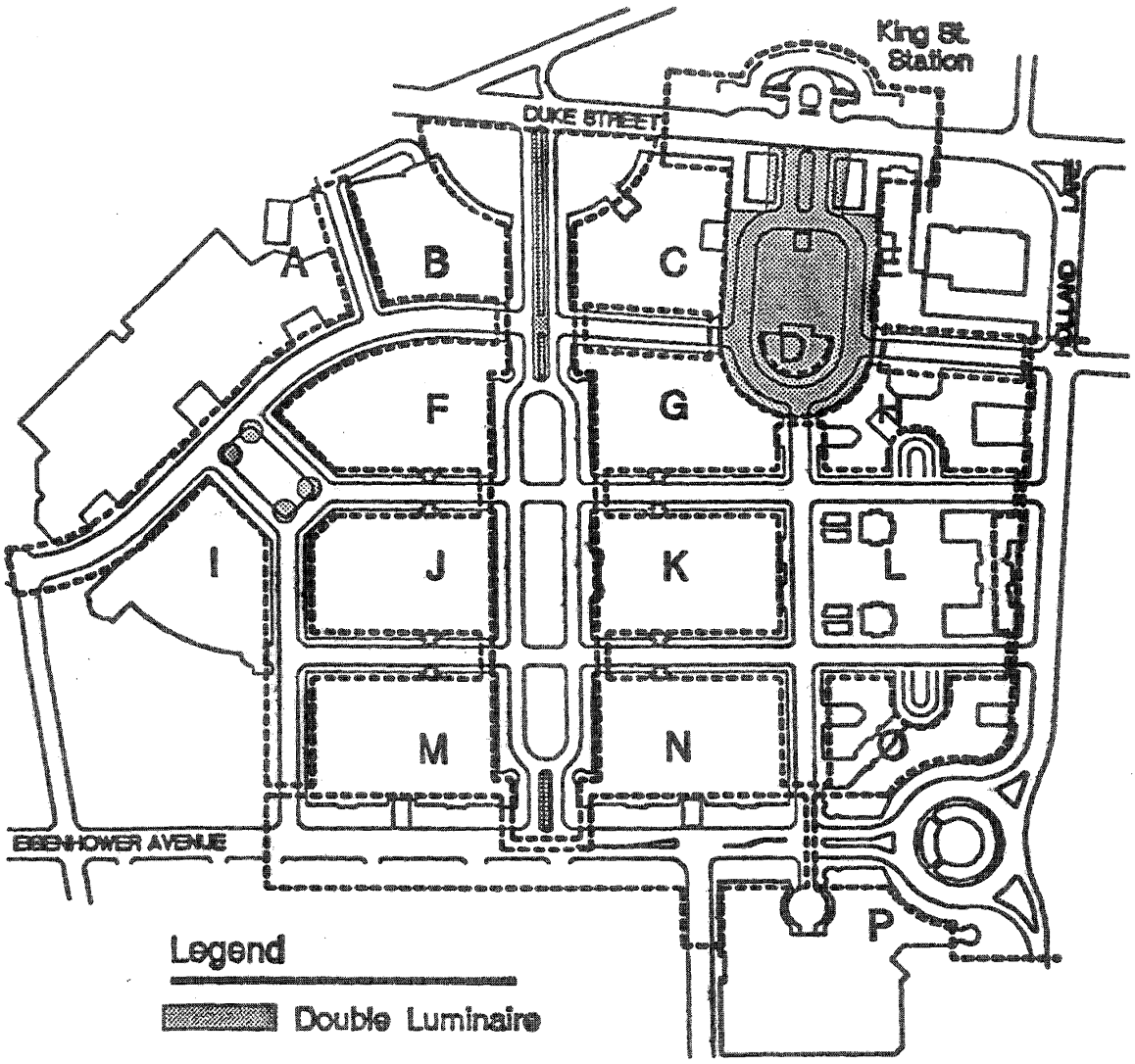

Figure 2-45: Double Luminaire Locations

2.6.2 SPECIALTY LANDSCAPE LIGHTING

Specialty lighting to highlight landscape features in the streetscape is allowed and shall be installed at the discretion of the parcel owner. The use of specialty lighting is also encouraged in the open spaces.

Care must be exercised in the design of landscape lighting to avoid excessive light and glare. Consideration shall also be given to the type of light source, its color rendition, and the coordination of that color with adjacent light sources. The streetlights which have metal halide lamps will be the predominant light source in the streetscape. The effect of color rendition on the colors of the materials and plants should also be considered.

Light fixtures shall be simple and unobtrusive in design. The fixture and its placement shall not intrude into the streetscape design so as to draw attention to itself, unless the prominence is a deliberate feature of the landscape design.

Landscape lighting includes uplighting, moonlighting, focal lighting and miniature lights.

UPLIGHTS: Uplighting is a dramatic way to highlight the form of a plant, sculpture or other landscape feature. Its success depends on the creation of contrasting light and shadow areas. Uplighting may be used for plantings within the building zone and other landscape features. Except as noted for specific areas, the uplighting of street trees is not permitted.

FOCAL LIGHTING: Focal lighting is used to spotlight a specific plant, planting or other landscape feature in a manner that provides additional emphasis not achieved through even light distribution.

MINIATURE LIGHTS: Miniature lights similar to Christmas lights lend a festive quality to a place at night. They are often used to highlight uses with an evening orientation such as nightclubs and restaurants.

The design of permanent installations of miniature lights must be approved by Carlyle Development Corporation. Miniature lights shall be white in color only; flashing, race or twinkling lights are not permitted.

2.6.3 BUILDING LIGHTING

The specific design for building lighting is at the discretion of the parcel owner, however these guidelines may encourage special building lighting in certain areas. Building lighting includes building mounted fixtures and facade lighting.

BUILDING MOUNTED FIXTURES: Building mounted fixtures such as sconce lights shall be appropriate in character and scale to the building

Figure 2-46: Building Mounted Light

architecture and the adjoining streetscape. Fixtures may be used to give emphasis to major lobby entrances and lesser emphasis to minor lobby entrances. Appropriate smaller scale fixtures are encouraged for multiple entrances. Consideration should be given to the additional light provided to the adjoining streetscape by these fixtures.

Building mounted "wallpack" flood lights which wash an area with bright light are not permitted on the streetscape facades of buildings.

FACADE LIGHTING: Facade lighting is washing the facade of a building with light, providing emphasis for the building at night. Facade lighting should enhance the massing and detail of a building through the use of light and shadow. Even lighting of all facade areas is not permitted.

Depending on the location and prominence of the building, portions or all of a building facade may be lit. These guidelines will suggest where this type of building lighting is appropriate. The amount and location of all facade lighting is subject to the approval of Carlyle Development Corporation.

2.7 PLANTING

Well designed, properly installed plantings will be a part of the Carlyle Streetscape. Some of the plantings will be specified by these guidelines; other plantings in the streetscape will be allowed or required but the specific design will be left to the individual parcel owner. Plantings in Carlyle are intended to create a lush, green atmosphere similar to Old Town Alexandria. Variety in plantings is encouraged; massive monocultural plantings are discouraged.

All plants installed in Carlyle shall meet the *American Standard for Nursery Stock*, latest edition as published by the American Association of Nurserymen. Plants shall be sized and spaced to provide adequate impact upon installation, meaning the plantings should "fill-in" in one to two years. All plants shall be installed according to the *Landscape Specification Guidelines for the Baltimore-Washington Areas* unless equivalent specifications are prepared. To maintain soil moisture and reduce weed growth, all plantings shall be mulched using double shredded hardwood bark mulch.

All plantings shall be installed by the parcel owner; they will be maintained by the parcel owner or the Carlyle Property Owners Association depending on the location and type of planting. Generally, plantings associated with a specific building shall be maintained by the parcel owner while plantings within the public open spaces (Carlyle Square, The Crescent, The Gardens, Courthouse Square, Alexandria African American Heritage Park, The Rotary and The Mews) will be maintained by the Carlyle Property Owners Association. See Special Use Permit Condition #R-15 for more information.

2.7.1 STREET TREES

Street trees are required along all streets in Carlyle. To ensure uniformity and continuity of design, the species and cultivars for the street trees shall be as designated in these guidelines. Refer to the precinct guidelines for more information.

Unless otherwise required street trees shall be installed at a four inch minimum caliper. Street trees shall generally be spaced at twenty feet on center, except along Jamieson Avenue, around Carlyle Square and around Dulany Gardens. See the appropriate precinct chapter for the particular spacings in these areas. The location of major lobby entrances, intersections and parking/service entrances affects the spacing of street trees. Spacing of the street trees may be varied slightly to accommodate these breaks in the street. Refer to the sections on Entrances (2.3.2), Intersections (2.3.4) and Parking/Service Entrances (2.3.3) for information regarding the location of street trees in these areas.

All street trees shall be planted in a continuous planting trough along the curb as required by S.U.P Condition #R-49, with aeration, drainage, and irrigation systems. This trough must be large enough to provide sufficient arable soil volume to support adequate moisture for the tree. A planting trough for a single tree shall contain a minimum of 300 cubic feet of soil. When there are multiple trees planted in one trough, a minimum of 240 cubic feet of soil shall be provided per tree. These amounts are

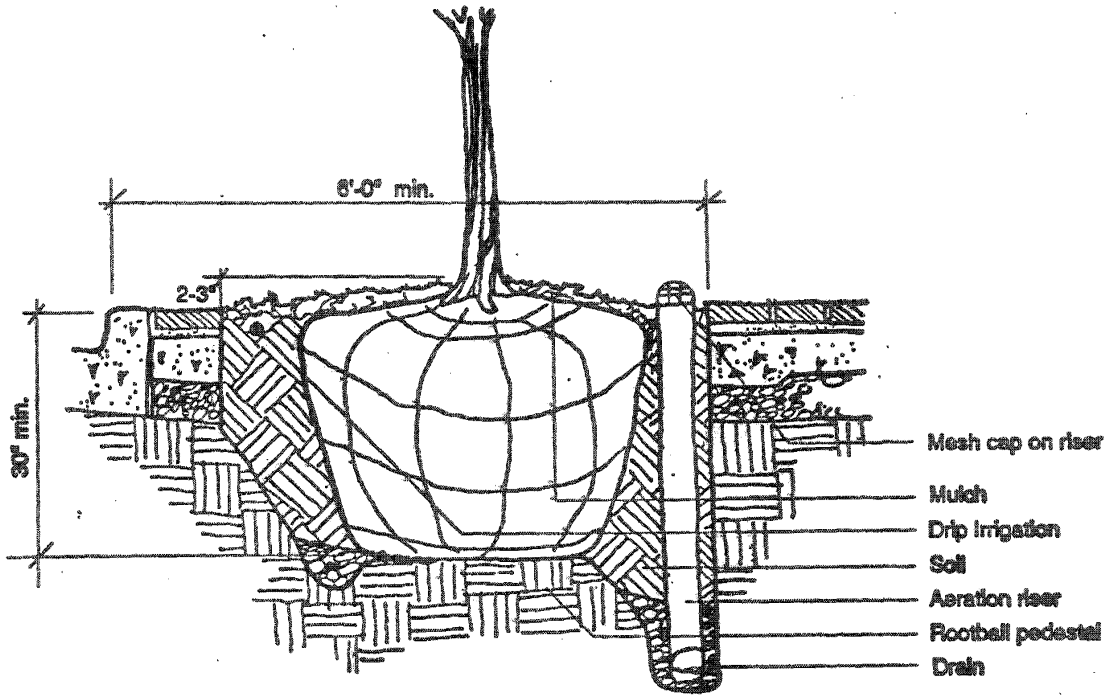

Figure 2-47: Planting Trough at Tree

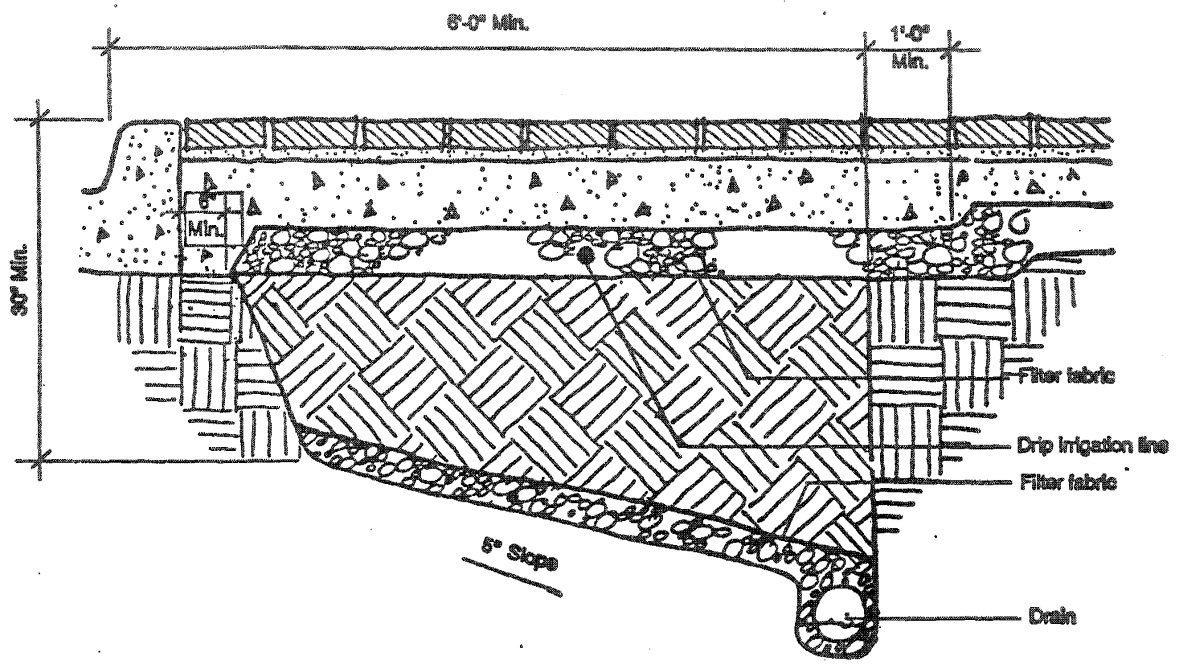

Figure 2-48: Planting Trough Between Trees

minimums; where it is possible, more soil volume shall be provided. Troughs shall be a minimum of thirty inches deep and six feet wide from the face of curb. The maximum depth of the trough shall be no deeper than is necessary to install the tree given the size of its rootball. Special care shall be taken to not disturb curb and gutter when installing planting troughs.

Tree well openings in the sidewalk shall be sized as required in each precinct. Between tree well openings, the sidewalk shall be suspended over the tree planting trough. The planting soil and aeration, irrigation and drainage systems for the trough must be in place prior to construction of the sidewalk. Every effort shall be made to not compact the planting soil during sidewalk construction. The typical sidewalk cross-section may need to be modified to provide adequate structural support for the sidewalk and road. Planting troughs are not required to continue beneath parking or service entrances.

Drainage shall be provided for planting troughs with an underdrain. This drain shall outfall to the storm drainage system. Adequate aeration of the planting trough shall also be provided. One riser from the underdrain will be provided at each tree to allow air down into the planting trough. The riser shall be capped with an open cap to prevent trash from accumulating in it while maintaining air circulation.

In addition, washed stone without fines shall be provided under the sidewalks to allow air to circulate at the surface of the planting trough. Aeration sheets may also be provided.

An automatic irrigation system shall be provided for the tree planting troughs. This system shall consist of a drip irrigation line placed at the top of the planting trough and shall be connected to the building's water system.

Electrical outlets may be required in certain areas at each tree well for seasonal lighting displays. Specific areas will be addressed by the precinct guidelines.

Street trees will be installed centered in the tree well opening at two to three inches higher than the finish grade of the tree well. Root balls shall rest on undisturbed sub-grade or adequately compacted fill to prevent settling. Soil shall be kept a minimum of two inches below the pavement edge to prevent it from spilling onto the sidewalk. Planting soil shall be a fertile, well granulated, medium sandy clay loam.

In certain areas of some precincts, tree grates are required. These grates shall be installed set flush with the pavement surface in frames. Trees shall be installed to allow a two inch gravel mulch to be placed under the grate.

All trees shall be guyed for the first year following installation. Three stainless steel or hot dipped galvanized eye bolts shall be set in the concrete pavement base at the edges of the tree well in a triangular pattern to be used for guying the tree. Eye bolts shall be below the soil surface. Guy wires shall be promptly removed one year after the installation of the tree. Eye bolts should remain in place in case a tree should need to be replaced in the future. When trees are planted in lawn areas, they shall be staked or guyed according to the *Landscape Specification Guidelines for the Baltimore-Washington Area.*

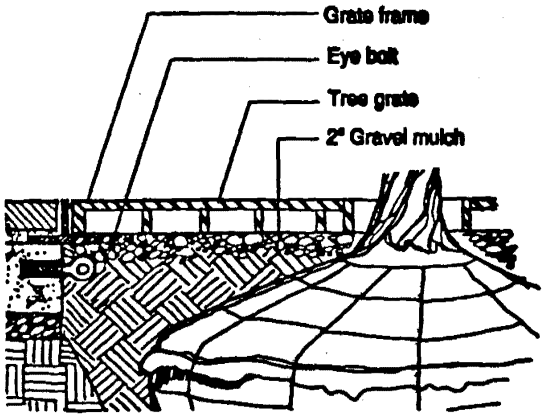

Figure 2-49: Gravel Under Grate

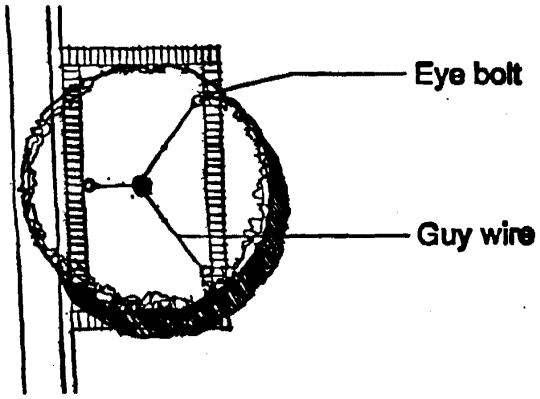

Figure 2-50: Eye Bolts in Triangular Pattern

Street trees shall be installed by the parcel owner and maintained by the Carlyle Property Owners Association. The City of Alexandria is responsible for the replacement of street trees within the public right-of-way (see S.U.P. Condition #R-15.)

2.7.2 PLANTING BEDS AND PLANTERS

Other plantings may be required or allowed especially in the building zone. The design of these plantings is left to the parcel owner, however, they should always include an evergreen component. Plantings should be appropriate to the character of each precinct. Specific requirements for the quantity of planting are on a precinct basis; see each precinct chapter for more information.

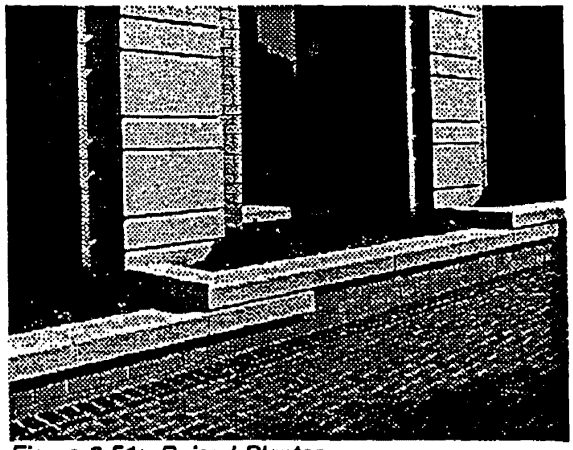

Figure 2-51: Raised Planter

Plantings may be installed in at-grade planting beds (flush with the sidewalk level) or in raised planters. Raised planters shall be constructed of masonry; they shall be designed as an integral part of the adjoining building in the same style, form, color and materials. Specific requirements for planting beds and raised planters may be found in each precinct chapter. Also see the information on seatwalls in Informal Seating in Section 2.5.1.

Required quantities of planting are expressed in terms of net plantable facade. Net plantable facade is that area along a building where plantings may be installed. Doorways, service and parking entrances and other areas requiring access are subtracted from the gross length of the facade to obtain the net plantable facade. Required planting in the building zone is then expressed in terms of a minimum percentage of this length and a minimum width.

Automatic mechanical irrigation systems shall be installed for these plantings. This system will be installed and maintained by the parcel owner.

Planting beds and planters shall be installed by the parcel owner. Maintenance of planting beds and planters including those in the curb zone shall be the responsibility of the parcel owner.

Additional requirements for specific plant types are below:

LAWN: All lawn areas shall be sodded when installed. Sod shall be "certified" or "approved" per the standards published by the Virginia Cooperative Extension Service. Grass cultivars shall be varieties recommended by the Virginia Cooperative Extension Service for the Alexandria area.

GROUNDCOVER: Groundcovers are used as a substitute for lawn in areas where foot traffic, size of area and location are not a factor to be considered. Suggested groundcovers are English Ivy, Pachysandra, Periwinkle, Liriope and Mondo Grass.

SEASONAL COLOR: Annuals, biennials and perennials may be used to provide seasonal flower color. Uses of seasonal color include highlighting entrances and signs. Seasonal color shall be restricted to the building zone and open spaces unless otherwise noted.

SHRUBS: Shrubs shall be planted in unified mass plantings. Individual shrubs spaced separately are to be avoided.

TREES: Trees other than those specified for street trees may be used in planting where there is adequate room. Parcel owners are encouraged to use flowering and ornamental trees especially for residential uses and entrance areas.

2.7.3 FREE STANDING PLANTERS

In certain precincts, the use of freestanding planters is encouraged. The design may be specified or left to the parcel owner to choose. When the design is left to choice, the planter color, material and type shall complement the adjacent architecture within the streetscape. Consideration should be given to the winter appearance of these planters, either by providing evergreen or other winter plantings or removing the planters to storage. Bare exposed soil in the winter will not be allowed.

Freestanding planters include pots, hanging baskets and window boxes and may be located in the building zone only unless otherwise noted. They shall not obstruct safe pedestrian movement. All

All shall be sufficiently large enough to provide an adequate amount of soil for growing plants in the hottest weather. Unless otherwise noted, the parcel owner is responsible for the maintenance of all freestanding planters. Specific criteria for each type follow:

POTS: Pots shall be twenty-four inch diameter minimum and hold at least two cubic feet of soil.

HANGING BASKETS: Hanging baskets are encouraged in certain precincts. They shall be used in the growing season only and stored in winter. Hanging baskets shall be twelve inches in diameter minimum. The hanging apparatus shall be clean, functional and inconspicuous.

WINDOW BOXES: Window boxes shall be at least eight inches wide and eight inches deep and appropriately scaled to the adjacent window.

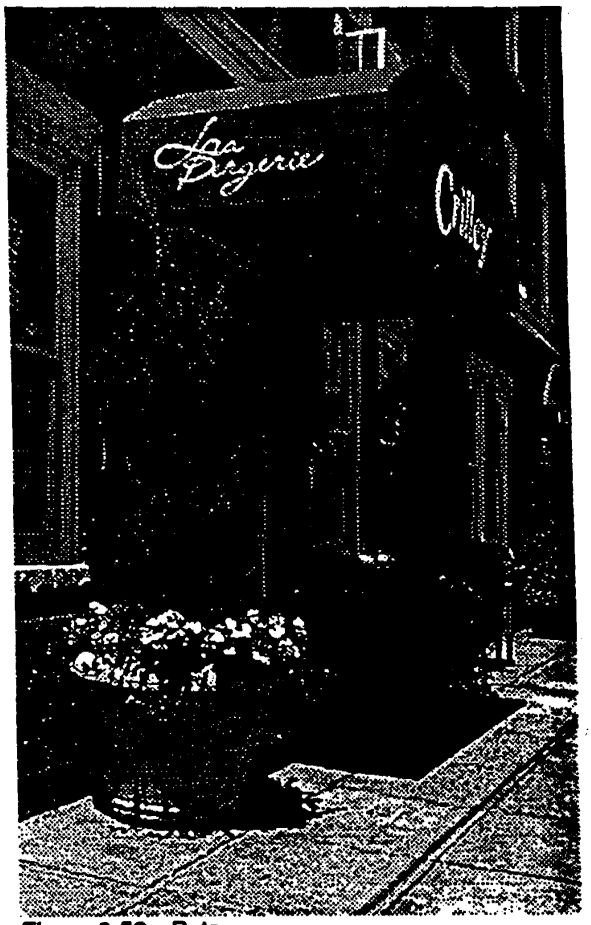

Figure 2-52: Pots

SUP 98-0023

2.8 SIGNS

Signs are an important and inevitable part of the streetscape, providing direction, information, and identity. In Carlyle, signs should be designed to contribute to the unity, interest, and character of the streetscape. To some degree, a minimalist approach is recommended, that is signs should be used only where needed to avoid clutter and confusion. Signs in Carlyle should be oriented to the specific user - either automobiles or pedestrians or both, as appropriate. All signs shall comply with Article IX of the Alexandria City Zoning Ordinance, unless otherwise indicated in these guidelines and approved by City Council as part of the Carlyle Coordinated Sign Program (SUP #97-0074).

2.8.1 REGULATORY SIGNS

All regulatory signs shall meet the requirements of the Virginia Department of Transportation and the City of Alexandria. These guidelines are intended to supplement those regulations.

Traffic Control and Restriction Signs:
Traffic control signs such as stop, yield, speed limit, driver information, and parking restriction signs shall be attached to the streetlights where possible, with a simple metal strap finished to match the streetlight pole.

When a separate post is required for these signs, the standard "U" type rolled rail steel post shall be used. The post shall be finished to match the street light pole. Posts shall be installed neatly in the sidewalk. The parcel owner shall provide posts as necessary.

Street Name Signs: Street name signs shall be attached to the nearest corner streetlight or stop light pole when possible. The sign plate will be the standard City of Alexandria design.

2.8.2 INFORMATION SIGNS

Information signs have more flexibility with regard to their design. The specific design will be left to the parcel owner subject to all applicable codes and the guidelines which follow.

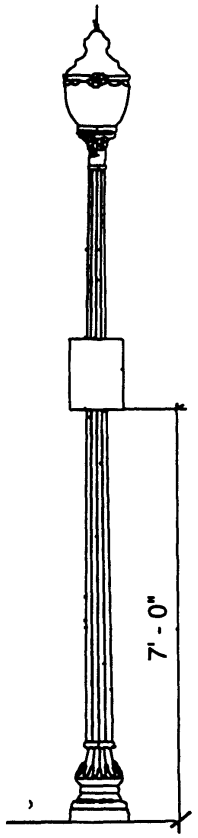

Figure 2-53: Sign Attached to Light Pole

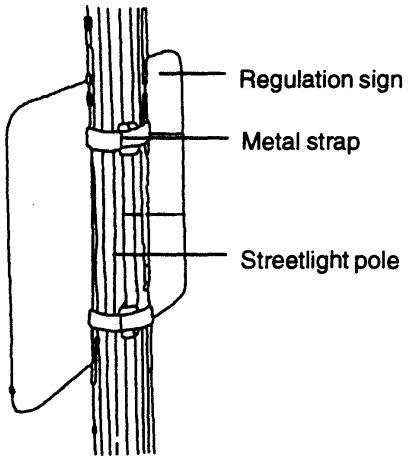

Figure 2-54: Sign Attachment

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Figure 2-55: Sign on Steel Post in Walk

Figure 2-56: Business sign

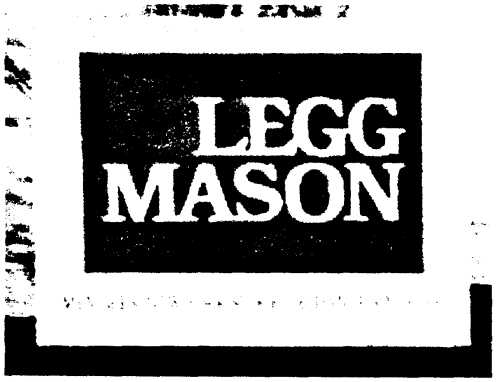

Figure 2-57: Professional sign

Signs shall be designed as an integral part of a building. They should relate in materials, color, and scale to the building architecture. Where illumination of the signs is allowed, the lighting shall be carefully integrated into the design of the sign, so as not to create glare or detract from the sign. Low intensity lighting is encouraged. Neon signs are permitted only with the approval of the Carlyle Design Review Board. Sign messages shall be limited to logos, names, and street address information. Signs and graphics should be simple and easily understood. Graphic symbols and word economy are encouraged. Slogans and advertisements are prohibited.

Business Names/Logo Signs: Business names and logos shall be limited to building mounted signs that are designed as an integral part of the architecture. Information on business name signs shall be limited to the name of the business and its logo. Wall mounted signs, transom signs, and sign bands are all acceptable for business signs. Business name signs that exceed 16 square feet in area require approval of the Carlyle Design Review Board.

Retail and Professional Signs: Retail and professional signs are typically associated with individual and multiple entrances. These signs are limited to entrances for a single use.

Retail and professional signs should be small in scale to address primarily the pedestrian. The sign should be of the same character as the architecture and well integrated with it. Each retail and professional business may have one sign, exclusive of off-site directory signs. Additional signs are permitted only with approval of the Carlyle Design Review Board. The following types of signs are permitted for retail and professional uses:

Wall mounted signs such as brass plaques are acceptable.

Box signs shall be located in sign bands above retail storefront windows. The location of the sign band shall be approved by the Carlyle Design Review Board at the time it reviews the overall building design. Sign bands should relate to the building's architecture and to neighboring buildings. Use of similar colors and lettering are encouraged. Box signs may be internally illuminated.

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Figure 2-58: Projecting Sign

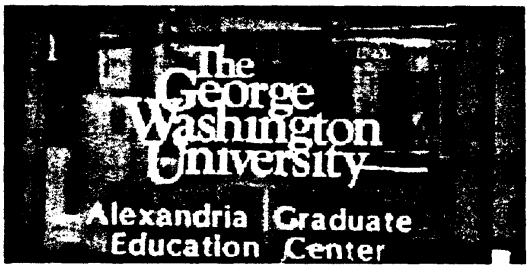

Figure 2-59: Storefront Sign

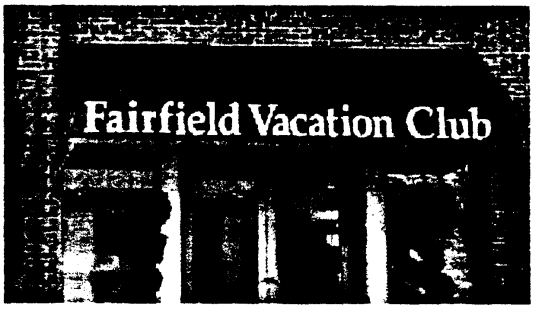

Figure 2-60: Sign on Awning

Figure 2-61: Building Identification Sign

Projecting signs over the sidewalk are encouraged in retail areas; these signs should be appropriately sized to human scale. The bottom of a projecting sign shall be at least ten feet above a sidewalk and at least 14 feet above a vehicular driveway. Projecting signs should be located near the primary entrance or doorway. Projecting signs should be aligned with other hanging signs. No more than one hanging sign should be installed for each business. Projecting signs may not be internally illuminated.

Signs applied to storefront windows are also acceptable. These signs should cover no more than twenty percent of the glass.

Signs on canopies or awnings giving the name of a retail establishment are also acceptable. Canopies and awnings should be constructed of a "sunbrella" type material (plastic coated canvas) Internally illuminated plastic awnings are not permitted.

Building Identification Signs: Building identification signs consist of street address, building names and cornerstones. Building names and addresses shall be clearly visible from the street especially at night. They should be located in traditional locations such as over entrances, at the side of doors, or on porte cocheres. Building Identification Signs that exceed 16 square feet require approval of the Carlyle Design Review Board.

Freestanding signs will be allowed only with approval by the Carlyle Design Review Board. These freestanding signs shall be designed to reflect the scale, character, materials, and colors of the related building architecture. The sign height shall be no higher than five feet above finish grade.

The use of building cornerstones is encouraged especially in areas where pedestrians have visual access.

Accessory Information Signs: Accessory signs are signs which provide required information or directions. These are signs such as parking garage signs, signs identifying service entrances, et cetera.

Accessory signs shall be permanently mounted to building walls. These signs shall be kept as

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unobtrusive as possible. Messages shall be kept simple and straightforward. All accessory signs for a building will be coordinated in design for each building. They shall have similar sizes, proportions, and colors, and shall be made of the same materials.

Directories/Kiosks: Directories will be required in certain areas. These directories will be of a standard custom design, see Figure 2-64A, in order to be instantly identified as a directory. Directories shall contain a map to orient the user. Directories shall also be lit for night use. Directories will be maintained by the Carlyle Property Owners Association. In some places, the directories may be expanded to form kiosks which contain public telephones. Refer to Section 2.5.3 Public Services for more information on public telephones. See figure 2-64, amended, for Directory locations. A maximum of six directories is permitted. Directories to be located according to figure 2-64, amended, may be approved by staff, alternative locations require approval of the Carlyle Review Board.

Carlyle Monuments: Sign and other monuments for Carlyle may be installed by Carlyle Development Corporation. These monuments shall include brick and precast concrete materials in their design. The design will be tailored to the specific location and precinct. One example of monument signs is the Carlyle Lions located on either side of Dulaney Street. Other monument signs of differing design may be located at other prominent entrances with the approval of the Carlyle Design Review Board.

Figure 2-63: Accessory Information Sign

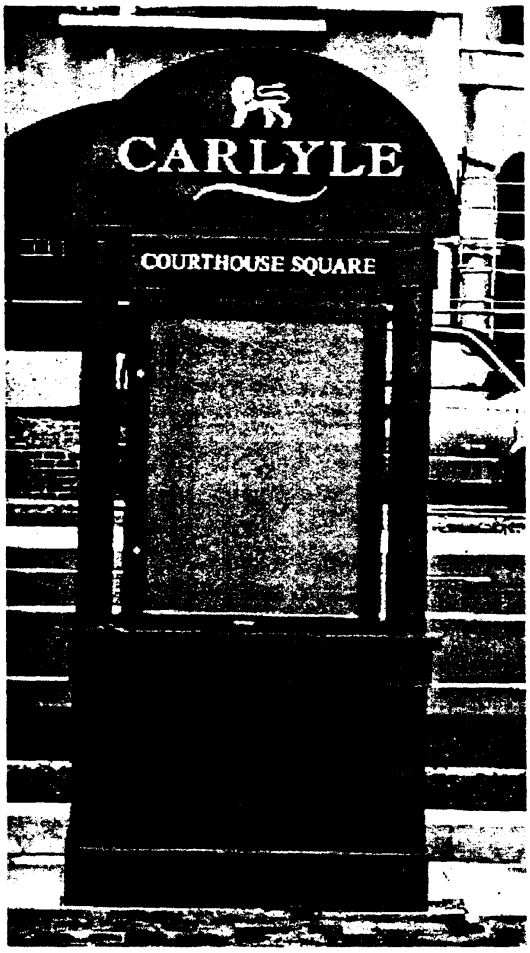

Figure 2-64A: Directory

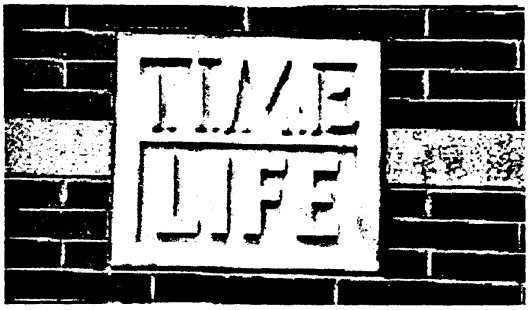

Figure 2-62: Cornerstone

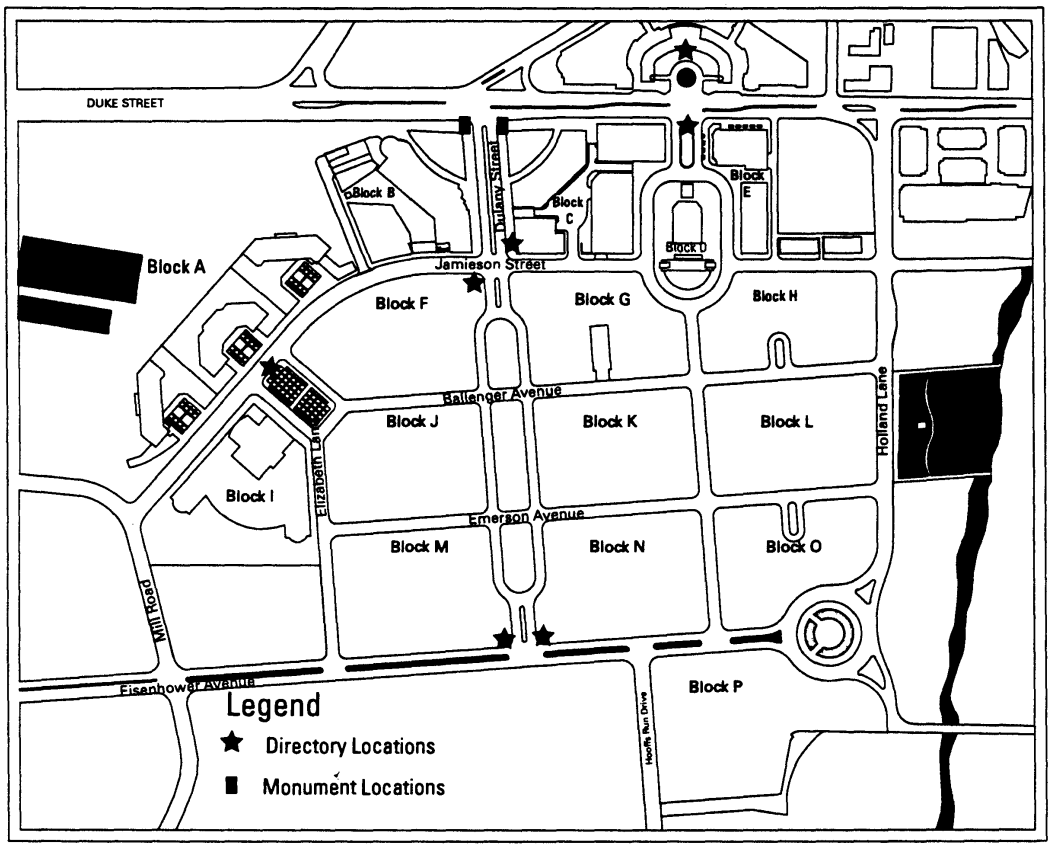

Figure 2-64: Directory Locations

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Carlyle Real Estate Signs 3.30.98

CONSTRUCTION:
1. Sign to be ground mounted
2. Sign may be either single or double-faced. Single-faced signs must be boxed in on back side. Sides and back of sign to be painted to match front face.
3. Sign panels are to be constructed of MDO plywood, shop-painted with exterior grade sign enamel.
4. Sign posts to be 4x4 pressure treated lumber. Exposed edge must be primed before painting to match face of sign.
5. All graphics to be applied, exterior-grade, 2 mil vinyl film.
6. Sign may not be illuminated.
7. Face panels to be screwed to supports post.
8. Sign may have any of the three predetermined Headers illustrated below. No other header shapes may be used. No sign without a header will be allowed.

COLOR AND FINISH:
1. Painted finishes to have semi-gloss finish.
2. Exposed screw heads to be painted out to match surrounding area.
3. Headers are to be painted as follows:
   a) Stepped header to be Medium Blue to match PMS 308C
   b) Peaked header to be Green to match PMS 561C
   c) Rounded header to be Maroon to match PMS 208C
4. Main section of panel to be Dark Blue to match PMS 539C
5. Base to be painted Taupe to match PMS 451C.
6. Copy on Main Section must be white.
7. Copy on Header to be:
   a) Lion: Line art prints Dark Blue to match PMS 539C. Inside to print Gold to match PMS 131C.
   b) Type and Swash: Line art prints white. Inside to drop out to expose background color.
8. Vinyl equivalents for Lion colors are:
   a) Gold PMS 131C - 3M Harvest Golds #105 and Calon II "Imitation Gold" #59
   b) Dark Blue PMS 539C - 3M Light Navy #197 and Calon II "Midnight Blue" #65.

TYPE STYLE:
1. All copy to be Galliard. (Galliard, Galliard Bold, Galliard Italic and Galliard Bold Italic are acceptable.)
2. Artwork for Carlyle Lion and Logo is available from Carlyle Development Corporation.
3. Logos of Leasing Agents are allowable.
4. If double-faced, information on rear face must match front face.
5. Sign layout must be submitted to Carlyle Development Corporation for approval.
6. 3M Scotchprint "photos" may be used to illustrate project.

LOCATION:
1. Location of sign must be submitted to Carlyle Development Corporation for approval.
2. Posts must set down into earth at a minimum of 3'-0".

Figure 2-66: Real Estate Sign Guidelines

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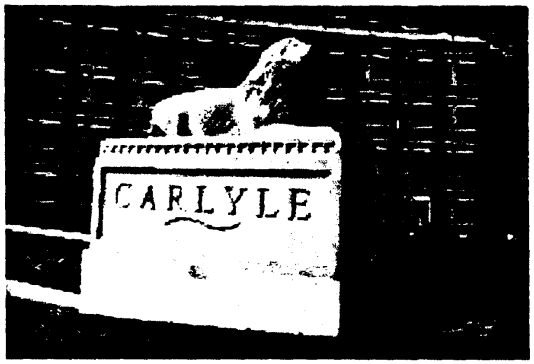

Figure 2-65: Carlyle Monument at Dulany Street

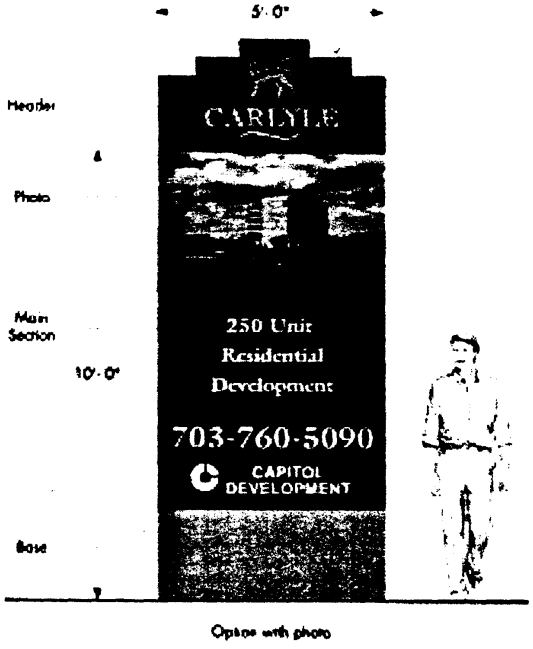

Figure 2-66A: Carlyle Real Estate Sign

2.8.3

Real Estate Signs

Signs used for the purpose of advertising the sale, lease or other use of real estate shall be designed in accordance with the graphic standards for real estate signs specified in the Carlyle Coordinated Sign Program, as may be amended from time to time. The specific design will be left to the parcel owner subject to program guidelines for use of color, letterstyle, materials and finishes (Figure 2-66). Carlyle Development Corporation must approve the proposed design prior to installation.

Such signs are to be free standing and may be double-faced, not to exceed 50 square feet per face. No sign type prohibited by the Alexandria City Zoning Ordinance may be used for real estate advertising purposes. Messages shall be kept simple and straightforward and may include graphics such as building renderings, site plans, and building or business logo as well as information on leasing contacts, project description, project credits (developer, architect, financial institution, etc.).

Real estate signs may be placed in any designated location shown in Figure 2-67, with the prior approval of Carlyle Development Corporation. Alternative locations require the approval of Carlyle Design Review Board. In general, one real estate sign is permitted per lot for a given project. Carlyle Development Corporation may approve one additional real estate sign for a given project, up to a maximum of two per project.

Contractor or Subcontractor Signs: Individual signs advertising contractors, construction companies, financial institutions, architectural firms, engineering firms, etc. shall be limited to not more than three per lot, including one general contractor sign of not more than 24 square feet and two subcontractor signs of not more than 8 square feet each. Such signs may be freestanding or attached to construction equipment or construction trailers. Carlyle Development Corporation must approve placement of any freestanding sign prior to installation. Sign(s) exceeding the allowable number will be removed at owner's expense. Information on contractor or subcontractor signs will be limited to company names and/or logos.

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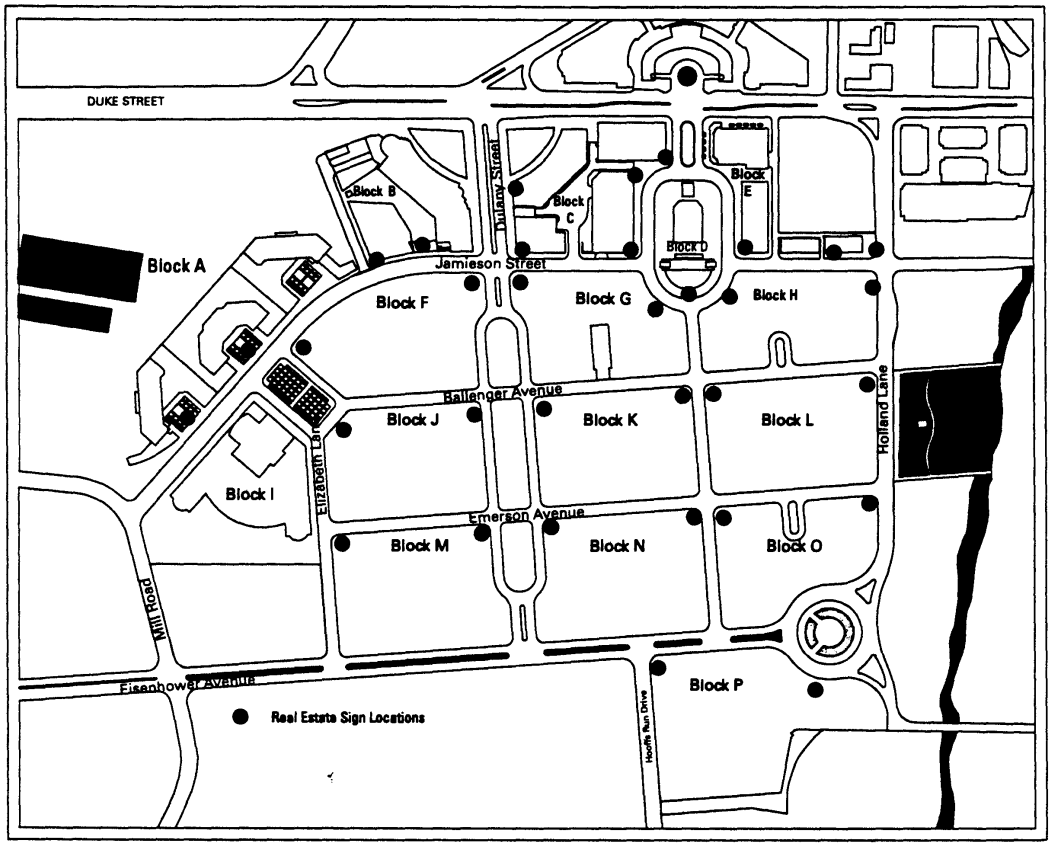
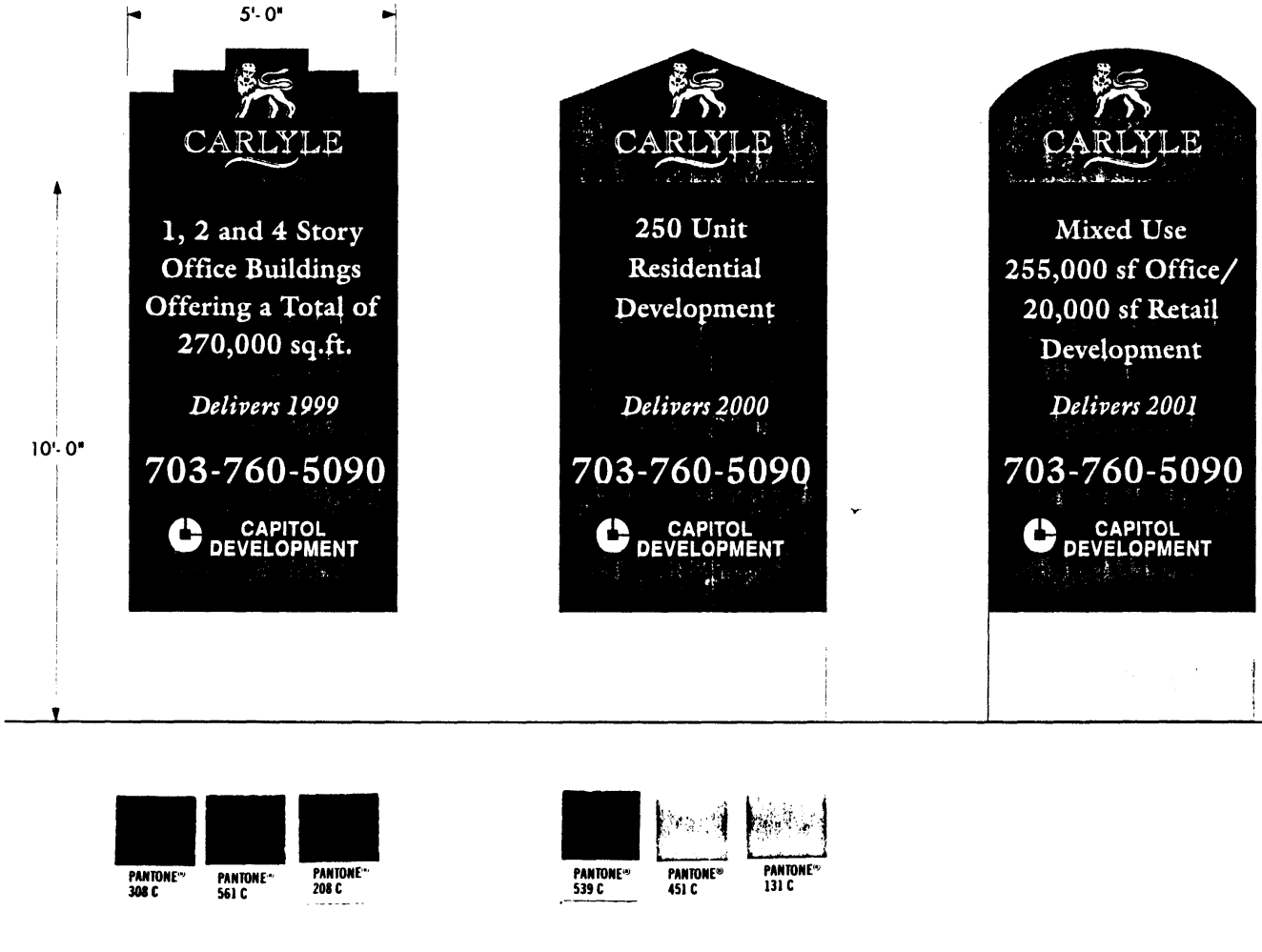


Figure 2-67: Real Estate Sign Locations


5'- 0"
10'- 0"
CARLYLE
1, 2 and 4 Story
Office Buildings
Offering a Total of
270,000 sq.ft.
Delivers 1999
703-760-5090
CAPITOL
DEVELOPMENT
CARLYLE
250 Unit
Residential
Development
Delivers 2000
703-760-5090
CAPITOL
DEVELOPMENT
CARLYLE
Mixed Use
255,000 sf Office/
20,000 sf Retail
Development
Delivers 2001
703-760-5090
CAPITOL
DEVELOPMENT

PANTONE
308 C
PANTONE
561 C
PANTONE
208 C

PANTONE
539 C
PANTONE
451 C
PANTONE
131 C

2.9 UTILITIES

In Carlyle utilities will be underground as required by the Special Use Permit, condition #R-7. Normal practice is for utilities to be installed first. Care must be exercised to coordinate utility locations so that the streetscape design is not harmed. Specific requirements for utilities follow.

2.9.1 UTILITY LINES

All utility lines shall be placed underground as required by the Special Use Permit Condition #R-7. Utility lines shall be routed to minimize disruption of street tree planting troughs. Utility lines shall cross tree planting troughs as perpendicular as possible to the trough and curb.

2.9.2 FIRE HYDRANTS

Fire hydrants will be installed as needed according to the City standards. Fire hydrants shall not be located in tree wells or planter areas; they shall be located in pavement areas only.

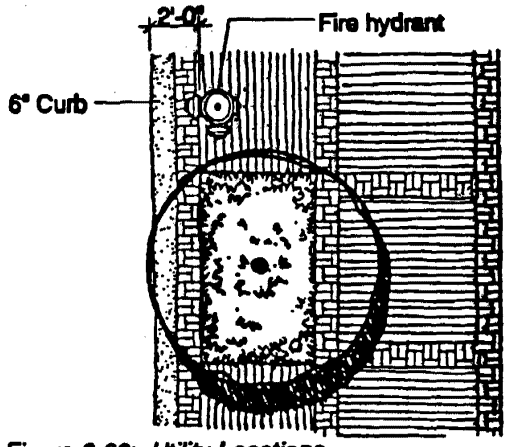


Figure 2-66: Utility Locations

2.9.3 MANHOLES

No manholes shall be permitted within the sidewalks; all manholes shall be located in the street.

2.9.4 UTILITY VAULTS

Utility vaults such as electrical transformers are prohibited within the sidewalk by Condition R-7 of the Special Use Permit. Utility vaults shall be located within the buildings, within landscape areas behind the build-to line or in landscape areas within the landscape easements. Utility vaults shall be adequately screened with walls or landscape plants.

2.9.5 SIDEWALK DRAINAGE

Sidewalk drainage flumes and checker plates are prohibited. Rain spouts or other drains shall be connected directly to the storm drain system. Water shall not be drained in a concentrated manner across sidewalks.

2.10 ARCHITECTURAL PROJECTIONS

Details in architecture provide variety and interest, and may add substantially to the character of the streetscape. Details which may project into the streetscape include awnings, canopies, garden courts, marquees, porte cocheres, stairs and stoops. The color, sizes and proportions of these projections shall relate to the building architecture and to the streetscape context. Specific requirements may be given on a precinct basis. Please also refer to Section 2.3.2 Building Entrances.

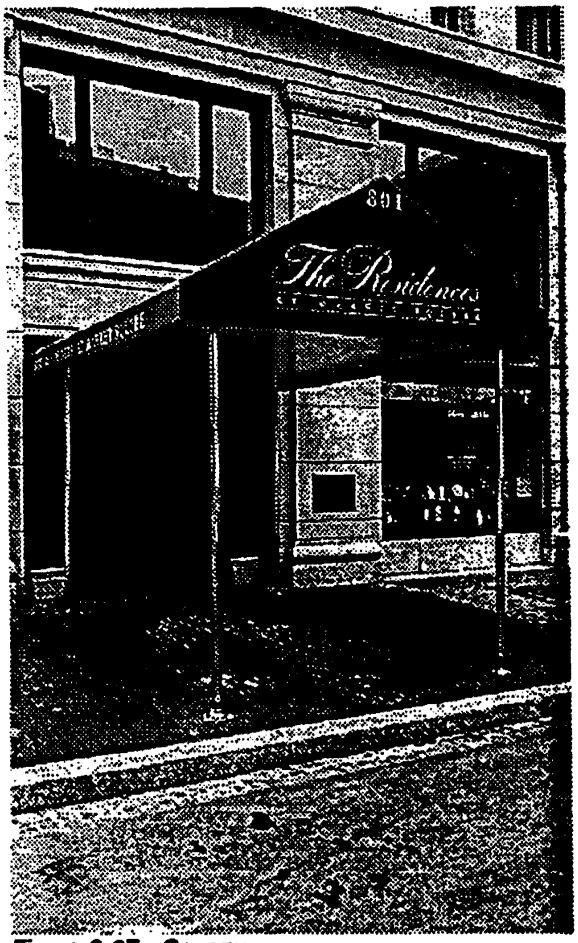


Figure 2-67: Canopy

2.11 TRANSITIONAL AREAS

There are several transitional areas within the streetscapes of Carlyle. These are transitions within the same block, transitions between precincts and transitions to areas adjacent to Carlyle.

2.11.1 TRANSITIONS WITHIN THE SAME BLOCK

Because of the urban nature of Carlyle and the mixed uses, there may be multiple buildings on one block with differing characters. One of the purposes of these guidelines is to provide a consistent streetscape design to unify the development. The streetscape at transitions between developments in a block shall be constructed to be continuous and appear seamless. Pavement patterns, tree spacing, streetlight spacing, et cetera shall match. When parcels adjoin an undeveloped parcel, the streetscape shall be finished in a manner that will allow for ease of continuing the construction of the adjoining segment.

2.11.2 TRANSITIONS BETWEEN PRECINCTS

Transitions between precincts normally occur at street intersections. For each transition, there is a dominant precinct. The streetscape design of the dominant precinct is the one which will determine the intersection design. The goal is to create a smooth transition from the dominant precinct to the subordinate precinct. One to several of the dominant precinct's streetscape elements will turn the corner to varying extents. Only in rare situations will all elements change abruptly at the same line. The intention is to feather the changes from one precinct to the next.

2.11.3 TRANSITION TO AREAS ADJACENT TO CARLYLE

The streetscape shall extend to the boundaries of Carlyle with the appropriate precinct design. The precinct design will be clearly stated to announce and identify Carlyle as a place. The design will need to be adapted as necessary to make the physical connections to existing streets and sidewalks. When adaptations are made for such connections, they should respect the design intent and character established by the streetscape design.

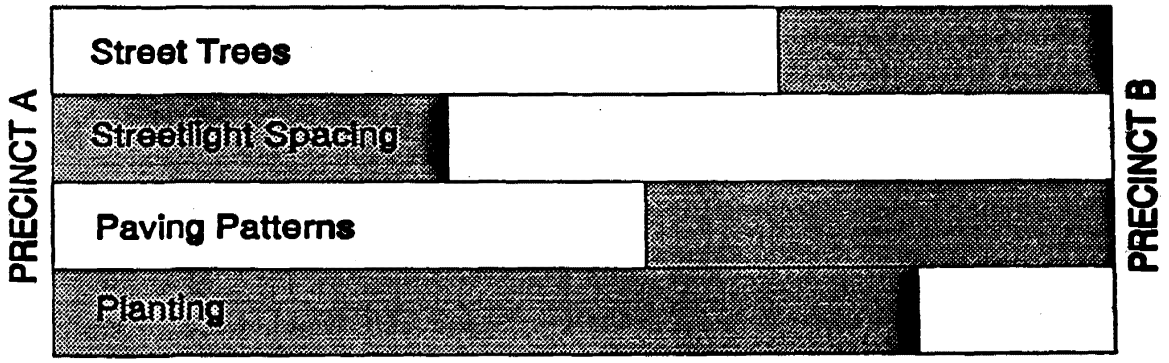


Figure 2-68: Precinct Transition

2.12 SPECIAL AREAS

In addition to the major open spaces, the precincts may have other areas with special design requirements. These areas will be addressed in each precinct section in terms of the precinct design.

APPENDIX I

Reference Matrix of Required Elements

This matrix will provide the uses of these guidelines a quick reference to determine requirments and options for each streetscape precinct in Carlyle. The matrix is divided into the three streetscape zones to provide a general location for the elements. Additional specific requirements for location as well as quantity are given in the appropriate sections of the guidelines.

CURB ZONE ● = preferred alternative fullfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
BUS STOPS (2.3.3)		●		●			Subject to bus routes
CROSSWALKS (2.3.4)							
Standard	●	●	●	●	●	●	
PAVING (2.4.1)							
King William Range Brick		●	●	●	●	●	
Old Virginia Brick #24	●						To match King Street Station
Special Paving			◇				Courthouse Square only
PAVING PATTERNS (2.4.1)							
Grid with Diagonal Field	●						Running bond to match King Street Station
Running Bond			●	●	●		
Diagonal Basket Weave		●					
Perp. Running Bond			●				
Herringbone	●					●	Along Duke Street only at Carlyle Precinct
CURBS (2.4.2)							
6" concrete curb	●	●	●	●	●	●	

CURB ZONE ● = preferred alternative fulfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
SEATING (2.5.1)							
Benches	●		●				
STREET FIXTURES (2.5.2)							
Trash Receptacles	●	●	●	●	●	●	
Flags	●	●	●				At street corners
Bike Racks	◇	◇	◇	◇	◇	◇	
Bollards	◇	◇	◇	◇	◇	◇	
PUBLIC SERVICES (2.5.3)							
U.S. Mailboxes	◇		◇	◇		◇	Face pedestrian way, no curb drops
Newspaper Machines	◇	◇	◇	◇			
STREETLIGHTS (2.6.1)							
Double Luminaire	●	●	●				At strategic locations
Single Luminaire		●	●	●	●	●	
Gadsby	●	●					On Duke Street only
STREET TREES (2.7.1)							
Double Row				●	●		Eisenhower Avenue and Rotary
Single Row	●	●	●	●	●	●	West side of Holland Lane only
Curbed Tree Wells		●					
Tree Grates	●		●				Carlyle Square & Jamieson Square only
At Grade Tree Wells	●		●			●	
In Lawn				●	●		

CURB ZONE ● = preferred alternative fulfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
FREESTANDING PLANTERS (2.7.3)							
Pots	●						

PEDESTRIAN ZONE ● = preferred alternative fulfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
PAVING (2.4.1)							
King William Range Brick		●	●	●	●	●	
Old Virginia Brick #24	●						To match King Street Station
Special Paving		◇	◇	◇		◇	Major lobby entrances
PAVING PATTERNS (2.4.1)							
Grid with Diagonal Field	●						Running bond to match King Street Metro
Running Bond				●	●		
Diagonal Basket Weave		●					
Perp. Running Bond			●				
Herringbone						●	
STREET FIXTURES (2.5.2)							
Clocks, Art and Special Features	◇	◇	◇	◇	◇	◇	
Bollards	◇	◇	◇	◇	◇	◇	Service & parking entrances; drop offs & lay-bys
INFORMATION SIGNS (2.8.2)							
Directories	●	●	●	●			

BUILDING ZONE ● = preferred alternative fulfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
PAVING (2.4.1)							
King William Range Brick		●	●	●	●	●	
Old Virginia Brick #24	●						To match King Street Station
Special Paving	◇	◇	◇	◇		◇	Major entrances
PAVING PATTERNS (2.4.1)							
Grid with Diagonal Field	●						Running bond to match King Street Station
Running Bond				●	●		
Diagonal Basket Weave		●					
Perp. Running Bond			●				
Herringbone						●	
SEATING (2.5.1)							
Benches-Public Street	◇		◇	◇			
Seatwalls		●	○			◇	
Tables & chairs	●	◇	◇				
STREET FIXTURES (2.5.2)							
Flags	◇	◇	◇	◇	◇	◇	
Banners	◇		◇				
Clocks, Art, Etc.	◇	◇	◇	◇	◇	◇	
Fences, Gates, Columns and Walls	◇	◇	◇		○	◇	Gardens Courts
Bollards	◇	◇	◇	◇	◇	◇	Parking/service entrances design element

BUILDING ZONE ● = preferred alternative fulfilling requirement ○ = alternative - fulfills requirement ◇ = optional	CARLYLE PRECINCT	DULANY PRECINCT	JAMIESON PRECINCT	EISENHOWER PRECINCT	HOLLAND PRECINCT	BALLENGER PRECINCT	REMARKS
PUBLIC SERVICES (2.5.3)							
Newspaper Machines	◇	◇	◇	◇			
Public Telephones	◇		◇	◇			Well lit, visible, secure area, out going calls only, free standing, or in directories
PLANTING BEDS AND PLANTING (2.7.2)							
Seatwall Height Planter		●	○			◇	Only allowed at lobby entrances within Ballenger Precinct
Curbed		○	●			○	
At Grade	○			●	●	○	
Pots	●					○	Ballenger Precinct individual additions
Window Boxes	○					○	
ARCHITECTURAL PROJECTIONS (2.10)							
Awnings	●						
Canopies		◇					

APPENDIX II

Reference List of Specified Products

This reference list will give the user of these guidelines the name and address of the manufacturer or distributor of the products specified within these guidelines. The specifications are not intended to be proprietary specifications; substitutions of equal quality and design may be made with the approval of Carlyle Development Corporation and other parties where required.

For the specific quantity and location of these items, see the appropriate section(s) of the guidelines.

ITEM	SPECIFICATION	SOURCE	REFERENCE
Benches	Restoration Series #2118, 2119 and 2123	TimberForm Columbia Cascade Company Distributed by: Mid-Atlantic Products 3 Church Circle, Suite 252 Annapolis, MD 21401 (301) 858-7331	2.5.1
Bicycle/Moped Rack	Bicycle Sentry, Cat No. 900	Canterbury International, Inc. P.O. Box 5730 Sherman Oaks, CA 91413 (213) 936-7111	2.5.2
Bollard, decorative	Princeton Cast Iron Embedded (direct burial) Bollard	Spring City Electrical Mfg. Co. P.O. Drawer A Spring City, PA 19475 (215) 948-4000	2.5.2
Brick Pavers	King William Range Brick Pavers (4" x 8")	United Materials Manassas, VA 22110 (703) 631-1105	2.4.1
	Old Virginia #24 Brick Pavers (4" x 8")	United Materials Manassas, VA 22110 (703) 631-1105	2.4.1
Bus Shelter	Prefabricated shelter system with barrel vault roof and decorative grillwork	Columbia Equipment Company 180-10 93rd Avenue Jamaica, NY 11433-1499 (718) 658-5900	2.3.3

ITEM	SPECIFICATION	SOURCE	REFERENCE
Precast Concrete Curbing for Dulany Precinct	#1006 with light sandblast	Maryland Cast Stone, Inc. 14820 Southlawn Lane Rockville, MD 20850	4.41
Pots	Lorraine Series Bowls Florence Series Pots	Magnalite Systems, Inc. 2900 Lockheed Way Carson City, NV 89706 (800) 356-2462	2.7.2; 3.7.2
Public Telephone Enclosure	Intermediate Enclosure #CK20842 L35A/61	Clark Specialty Company, Inc Route 54 Hammondsport, NY 14840 (607) 569-2191	2.5.3
Streetlights	City of Alexandria "Gadsby": Wayzata Series Luminaire	Sterner Lighting Systems Winstead, MN 55395	2.6.1; 3.6.1
	Franklin Lamp Post	Spring City Electric Mfg. Co. P.O. Drawer A Spring City, PA 19475 (215) 948-4000	2.6.1; 3.6.1
	Edison III Luminaire (fitter and ballast assembly)	General Electric Company Distributed by: Commercial Lighting Sales, Inc. 6797 Dorsey Road, Suite 3 Elkridge, Maryland 21227 (301) 621-1650	2.6.1
	Victorian III Series Refractive Globe with Decorative Band and Finial	Hadco Outdoor Lighting Distributed by: Genlyte 7120 Columbia Gateway Drive, Suite 100 Columbia, Maryland 21046	2.6.1

ITEM	SPECIFICATION	SOURCE	REFERENCE
Streetlights (cont.)	Washington Series 405 fluted tapered fiberglass composite fourteen foot pole; for double streetlights, Celtic Series thirty-six inch double arm	W.J. Whatley, Inc. Distributed by: Ambiance Lighting P.O. Box 1484 1532-F Pointer Ridge Professional Center Mitchellville, MD 20717	2.6.1
Trash Receptacles	Iron Site Bethesda Series #S-42 with spun steel dome #S-2	Victor Stanley, Inc. Brick House Road Dunkirk, MD 20754 (800) 368-2573	2.5.2
Tree Grates	Centennial Series 5' x 8'	Ironsmith, Inc. Distributed by: Mid-Atlantic Products 3 Church Circle, Suite 252 Annapolis, MD (301) 858-7331	5.7.1
	O.T. Series, 5' square	Urban Accessories First Street and Avenue A 20004 144th Avenue, NE Woodinville, WA 98072 (206) 487-0488	3.7.1

3 CARLYLE PRECINCT

Additional information and special requirements for the streetscape for Carlyle Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

3 CARLYLE PRECINCT

Carlyle Precinct is the most lively public place in Carlyle. It is the heart, a marketplace with a traditional character. It includes the existing King Street Station and should be integrated with it.

Carlyle Precinct is located on the north side of Carlyle extending across Duke Street to King Street Station. Jamieson, Ballenger and Dulany Precincts surround it on the other sides.

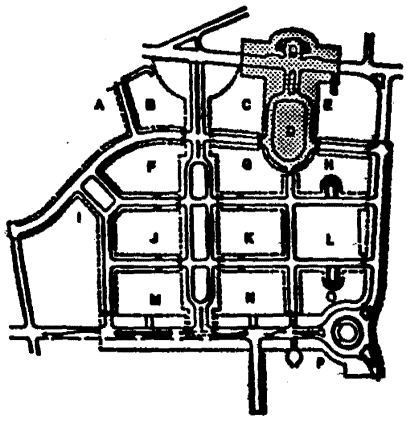


Figure 3-1: Carlyle Precinct

3.1 DESIGN CONCEPT AND CHARACTER

Carlyle Precinct exemplifies the first design principle in the design report to maximize active ground floor uses. It will be like an old town square with shops, office and residences focused on an open space. The Design Report and Development Plan describe it as a:

> ...most critical area in terms of scale and characteristics as it integrates with the King Street Station Project and older buildings along Duke and King Streets. The precedents for this square include Palmer Square in Princeton, New Jersey and the Square at City Hall in Alexandria. The space will be framed by six-to-seven story (77' high) office and residential buildings. Four-story pavilion buildings of a more traditional scale and character will announce this special place at Duke Street. Ground floor retail uses will line the plaza. It will be a focus for public activity both during and after regular office hours, and the setting for festivals, markets, fairs and other large gatherings of people.

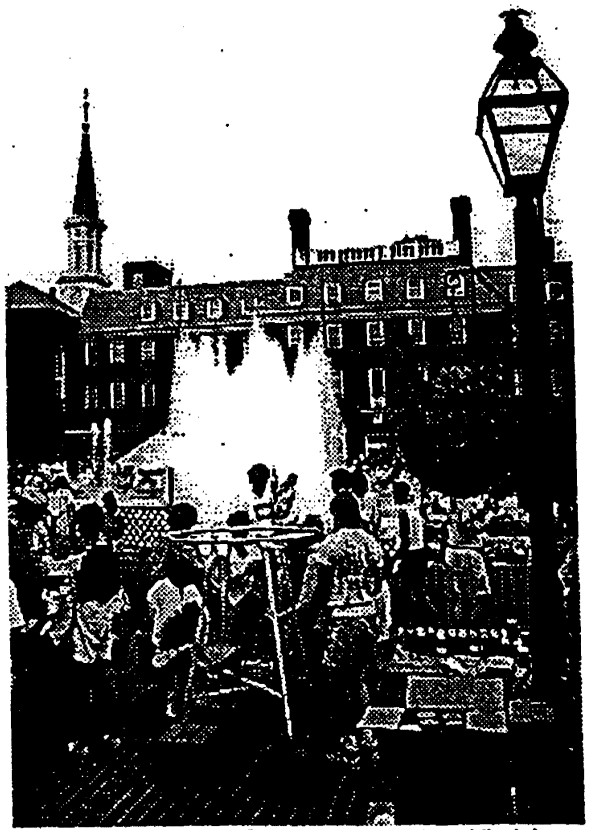


Figure 3-2: Market Square, Alexandria, Virginia

3.1.1 CONTEXT

SITE PLAN: Carlyle Precinct focuses on the Carlyle Square with the four story retail building at the south end. The square is surrounded by buildings, creating a sense of enclosure around the square. At Duke Street, two pavilion buildings help to forge a strong relationship to King Street Station, by framing and focusing the John Carlyle Street axis, onto the

King Street Station arcade across Duke Street. Multiple retail entrances facing the square add liveliness, color and detail to the pedestrian sidewalk.

CIRCULATION: Vehicular traffic will be one way around the square and will be mainly local traffic. Parallel parking along the street will slow the movement of cars on the street. Pedestrian movement will be free flowing especially across the square; the streetscape design should promote this free flowing pedestrian movement.

OPEN SPACE: The open space, Carlyle Square, is defined by the retail buildings on Block D and the building walls of Blocks C and E. At the north end of the square, a small pavilion will house access to parking beneath the square, and possibly a cafe. This would be a place where people would come and go.

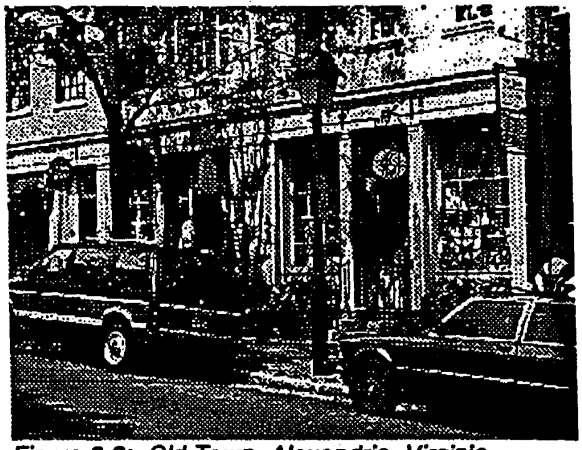


Figure 3-3: Old Town, Alexandria, Virginia

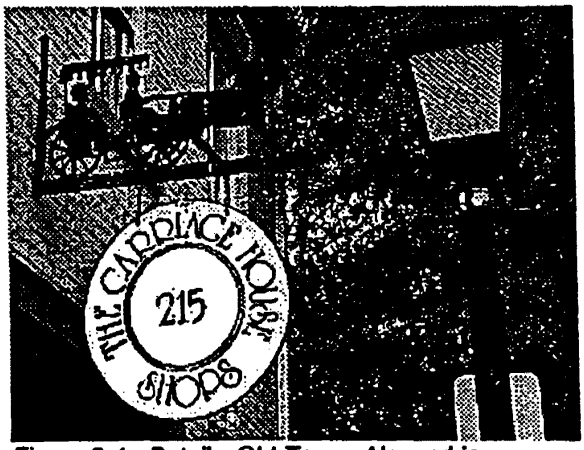


Figure 3-4: Detail - Old Town, Alexandria

3.1.2 USE

The predominant use in Carlyle Precinct is mixed office/residential/retail. The primary first floor use is retail. The interaction between pedestrians and the shop windows is a strong indoor/outdoor relationship. Merchants want to invite window shopping and to maintain high visibility along the street. The shops, restaurants and cafes are public uses. The residential entrances in Carlyle Precinct by contrast are semi-public. The mix of public and semi public retail, office and residential uses will make Carlyle Precinct a hub of activity through much of the day into the evening as people come and go to work, shop, meet friends and come home.

3.1.3 IMAGERY

Carlyle Precinct is the heart of Carlyle and will be a vibrant, colorful marketplace with its retail shops surrounding the largest square. Markets and fairs, shops, restaurants and outdoor cafes, and evening nightlife will all contribute to this atmosphere. The sidewalk is the center of activity in Carlyle Precinct. Carlyle Precinct will be very much like Market Square in Old Town, Alexandria.

3.2 MAJOR OPEN SPACE

The major open space of Carlyle Precinct is Carlyle Square. Carlyle Square is just over two acres in size. The square shall be a pedestrian oriented open space that is flexible for many uses such as formal and informal gatherings including public performances and lunches. The square should have transparent edges and allow for free pedestrian access across the space along the streets and to the shops. The square shall have a central open space which focuses attention onto a four story retail building. (See Figure 3-5: Carlyle Square Open Space Concept) No physical barriers should be placed to obstruct the view into or across the square; steps and other vertical barriers shall be kept low.

Carlyle Square will be an integral part of the precinct by the repetition and placement of street furnishings. The square's street edge shall be designed to be identical to the street edge along the buildings across John Carlyle Street East and West. The use of a grid paving pattern within the space is encouraged. Fixed and moveable seating shall be provided within the square.

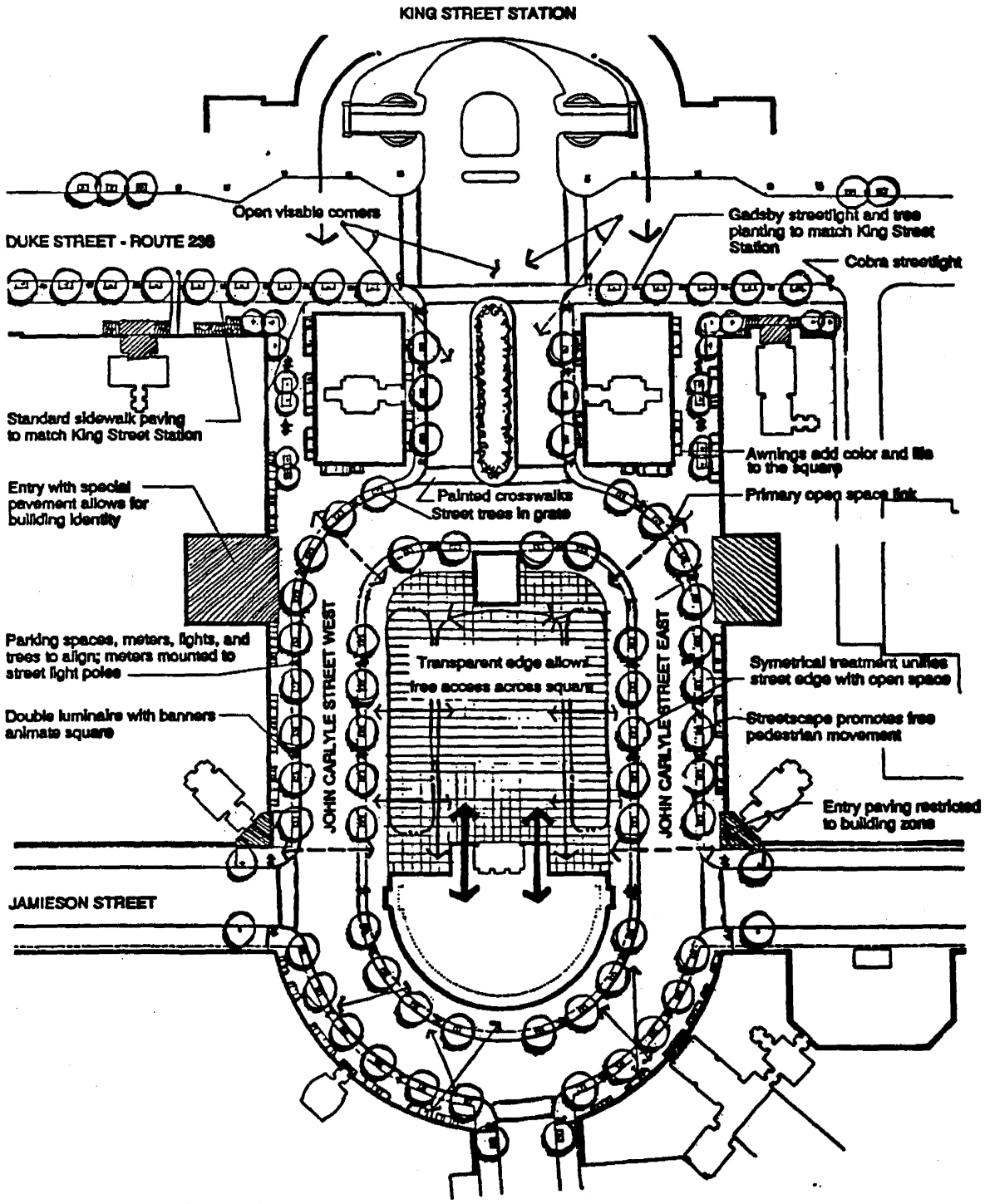


Figure 3-5: Carlyle Square Open Space Concept

3.3 STREETSCAPE DESIGN

3.3.1 TYPICAL LAYOUT AND DIMENSIONS

In Carlyle Precinct the three streetscape zones will be the least distinct. The curb zone shall be six and one half feet wide; it shall consist of a six inch curb with a one foot band and the first five foot square pavement module. The pedestrian zone is immediately behind the curb zone and shall be a minimum of ten feet wide; the building zone shall be a maximum of three feet wide.

The sidewalk in Carlyle Precinct is based on a five foot square module similar to the paving at King Street Station. This module is set into a grid of four inch banding. The grid shall be aligned to the north-south axis of Carlyle Square, except the streetscape along Blocks G and H where the grid shall be radial to the street.

3.3.2 BUILDING ENTRANCES

MAJOR LOBBY ENTRANCE: In order to maintain a continuous pedestrian zone along the street, any special design features such as special paving shall not extend beyond the building zone.

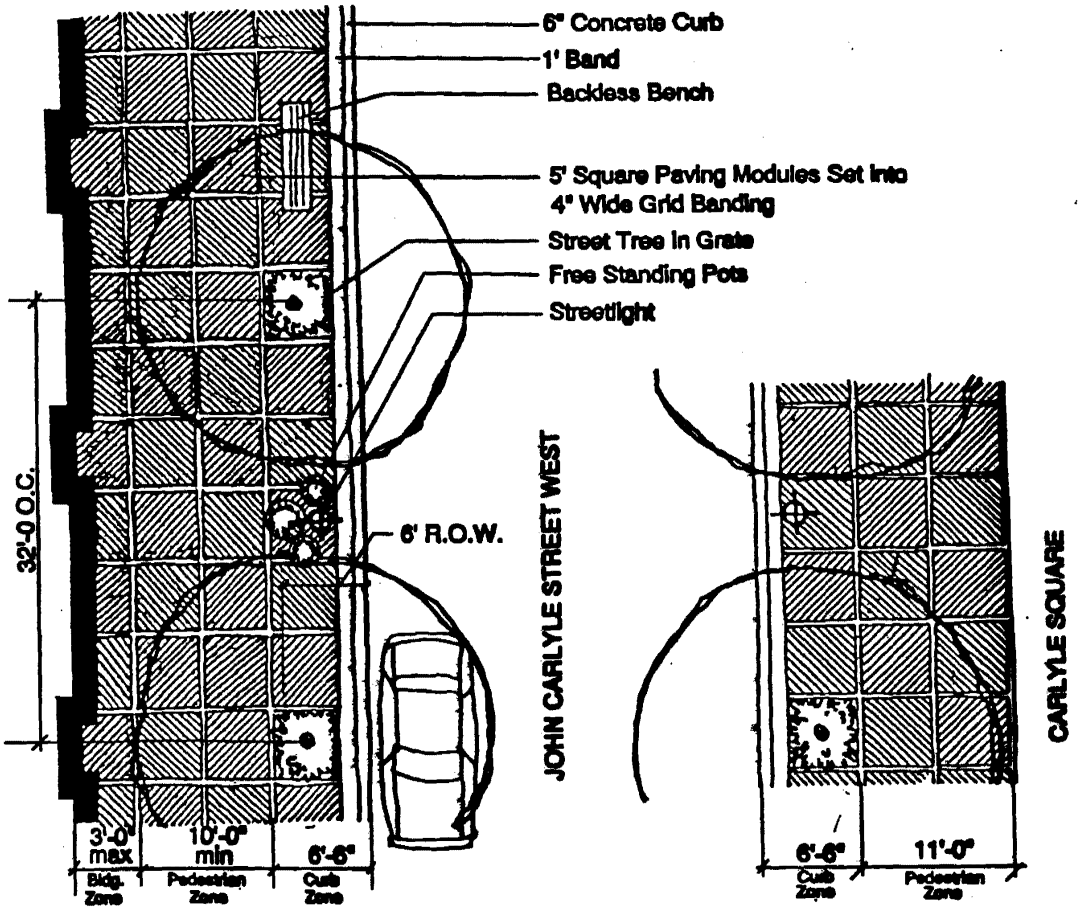


Figure 3-6: Carlyle Precinct Typical Streetscape

MULTIPLE ENTRANCE: Individual expression of retail establishments through planting, lighting, awnings banners and signs is strongly encouraged.

3.3.3 VEHICULAR ACCESS ZONES

DROPOFFS/LAYBYS: Dropoffs and laybys are not permitted in Carlyle Precinct.

3.4 HARDSCAPE

3.4.1 PAVING

STANDARD SIDEWALK PAVING: There are two standard sidewalk pavings for Carlyle Precinct. The primary paving shall be the Old Virginia #24 brick paver laid in an alternating five foot square modules of forty-five degree diagonal running bond pattern to match King Street Station. The five foot square modules shall be laid in a grid of a single brick stretcher band. This grid will be aligned to the centerline of John Carlyle Street except for along blocks G and H where the grid shall be radial with the street. Tree grates for street trees shall be coordinated with the grid. A one foot band shall be provided at the curb in a running and stack bond oriented to take the place of the single brick band. The diagonal grid paving shall be used on all sidewalks around the square and extend to Duke Street. It shall extend west along Duke Street sixty feet from the John Carlyle Street West build-to-line, and east along Duke Street to the edge of Carlyle to encompass all retail storefronts.

For the remainder of Duke Street in Carlyle Precinct, a second standard sidewalk paving shall be used. This paving shall be the Old Virginia #24 paving brick laid in a herringbone pattern to match the paving at King Street Station across Duke Street. Between the two sidewalk pavings a transitional paving similar to the existing transitions at King Street Station shall be used. This transition consists of a panel of brick pavers laid in a running bond pattern parallel to the street. This panel shall be a minimum of 5'-0" in length and extend to the full width of pavement areas of sidewalk. Where possible it shall be aligned to an architectural feature. A one foot running and stack bond band shall be provided along the curb at Duke Street.

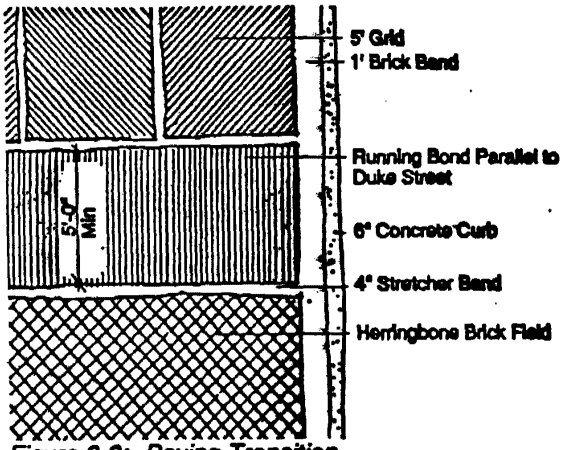


Figure 3-6: Paving Transition

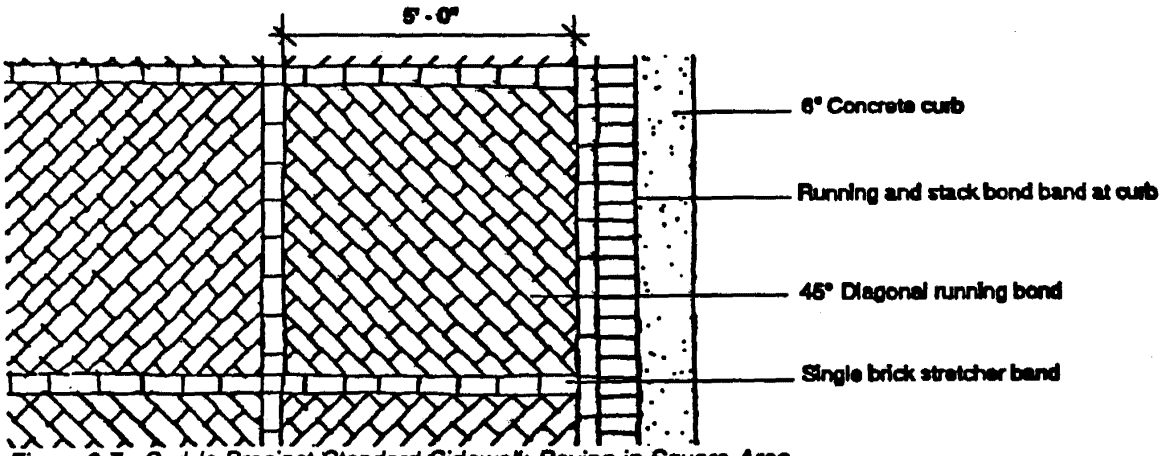


Figure 3-7: Carlyle Precinct Standard Sidewalk Paving in Square Area

PAVEMENT EDGES: Planter bed edges will be treated in several ways. Street trees along John Carlyle Street East and West shall be installed in five foot square grates which will fit within the five foot square modular grid. Street tree wells along Duke Street shall be flush with the pavement designed to match the ones at King Street Station . All other planters shall either be flush, at grade planters or have a seatwall enclosing them.

SPECIAL PAVING: In order to maintain a cohesive design connection of the streetscape to the square, special paving at major lobby entrances may not extend beyond the building zone.

3.5 STREET FURNITURE

3.5.1 SEATING

FORMAL SEATING- BENCHES: Formal seating shall be provided in an organized manner in Carlyle Precinct. Along the street at Blocks C, E, G, and H, a minimum of two backless benches shall be provided per block. These benches shall be located in the curb zone between the street trees alternating with the streetlights and shall be placed parallel to the street. Benches shall not be placed in front of residential entrances. The property owner shall provide the benches as required; they shall be maintained by the Carlyle Property Owners Association.

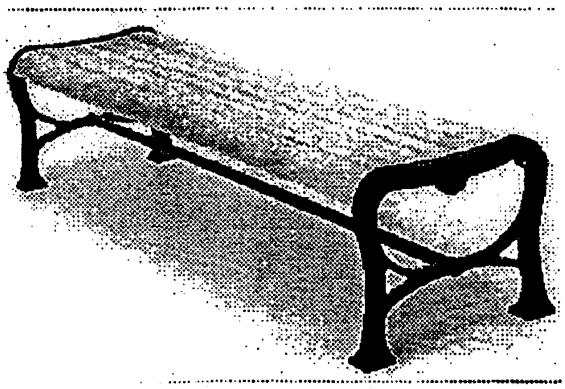


Figure 3-9: Backless Bench

3.5.2 STREET FIXTURES

TRASH RECEPTACLES: A minimum of four trash receptacles shall be provided along John Carlyle Street East and West at Blocks C and E. Two trash receptacles minimum shall be provided in the curb zone of Blocks G and H. One trash receptacle shall be located at each street corner; these may be counted towards the minimum requirements. Trash receptacles shall be located in the curb zone and next to streetlights where possible.

FENCES, GATES, COLUMNS AND WALLS: Fences, gates, columns and walls are prohibited except when they are used in conjunction with a residential entrance. Fences, gates and columns are restricted to the building zone.

3.6 LIGHTING

3.6.1 STREETLIGHTS

Except for along Duke Street, double luminaire streetlights as specified in the General Streetscape Design Guidelines shall be used in Carlyle Precinct. The streetlights shall be spaced at sixty-four feet on center and shall be paired across the streets.

The axis of the double luminaire shall be aligned perpendicular to the curb.

Double luminaire streetlights shall be located at certain prominent points. At the "T" intersections of Jamieson Avenue and John Carlyle Street, a double streetlight shall be located at the top of the "T" aligned to the centerline of Jamieson Avenue; two paired double luminaire streetlights shall also be located at the point of tangency of the curb returns on Jamieson Avenue. At the north end of Carlyle Square, two double luminaire streetlights shall be aligned with the centerlines of each travel way perpendicular to those centerlines.

Along Duke Street, the "Gadsby" streetlight shall be used. The streetlights shall be spaced and paired to match the existing Gadsby Streetlights in King Street Station across Duke Street.

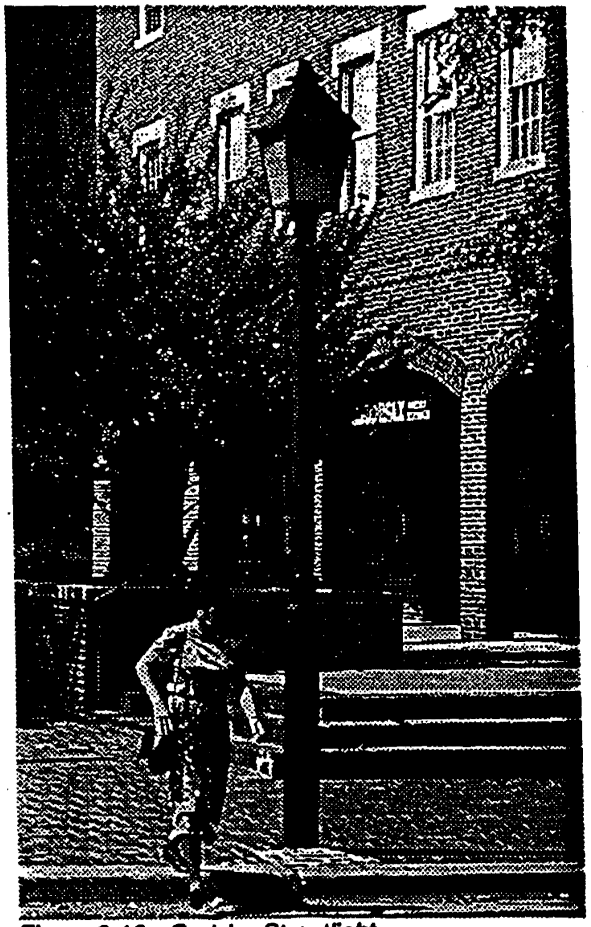


Figure 3-10: Gadsby Streetlight

3.7 PLANTING

3.7.1 STREET TREES

Except for along Duke Street, the street trees in Carlyle Precinct shall be *Quercus phellos*, Willow Oak. The Willow Oaks shall be spaced at thirty-two feet on center and shall be installed in tree grates. The tree grate shall be a five foot square, O.T. Series grate by Urban Accessories, Snohomish, Washington. Tree wells shall be fitted with permanent electrical outlets to allow for seasonal lighting displays.

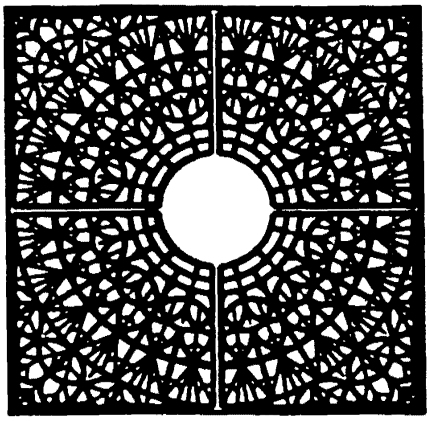


Figure 3-11: O.T. Series Tree Grate

Along Duke Street, the street tree shall be *Acer rubrum* 'Red Sunset', Red Sunset Maple. These street trees shall be spaced to match the existing street trees across Duke Street at King Street Station. They shall be planted in tree planting wells to match those across Duke Street; tree wells should be planted with English Ivy for a groundcover.

3.7.2 PLANTING BEDS AND PLANTERS

Planting is not required in front of retail shops in Carlyle precinct, however, the use of pots and window boxes is encouraged. For all other uses, planting shall be provided for seventy five percent of the net plantable facade in the building zone. Plantings shall include seasonal color to add to the marketplace atmosphere of the precinct.

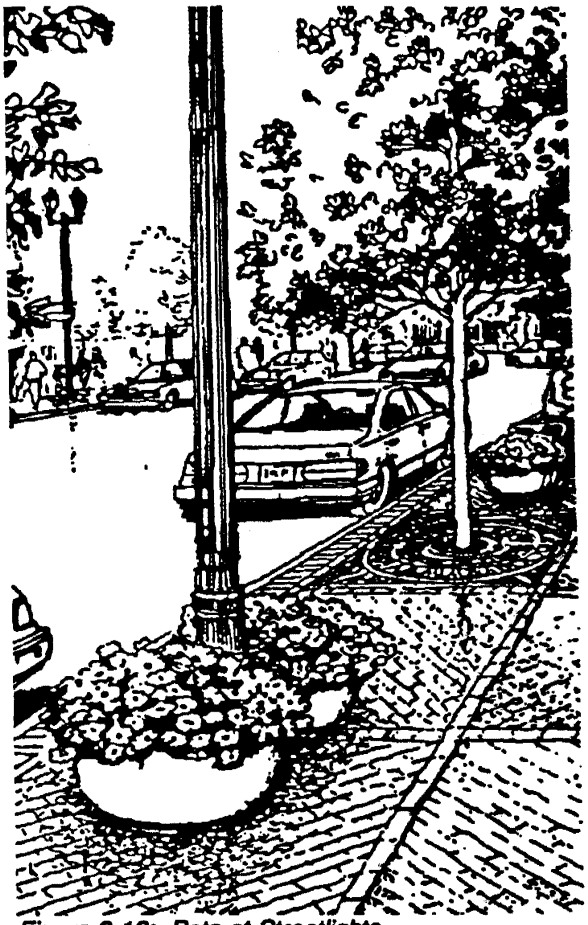


Figure 3-12: Pots at Streetlights

3.7.3 FREESTANDING PLANTERS

Two or three large pots of varying sizes shall be clustered together at the streetlight poles in Carlyle Precinct. The pots shall be the Lorraine series bowls by Magnalite Systems, Inc., Carson City, NV, catalog number LB3216-32" diameter, number LB3816-38" diameter, number LB3024-30" diameter and number 3630-36" diameter. The pots shall be the natural sand finish. Seasonal plantings in these pots will add unity and color to the streetscape; the seasonal plantings shall be installed and maintained by the Carlyle Property Owners Association.

Individual retail shops are encouraged to provide freestanding pots, hanging baskets and window boxes within the building zone of their shops. Planters shall be of a sufficient size and design to provide year round interest.

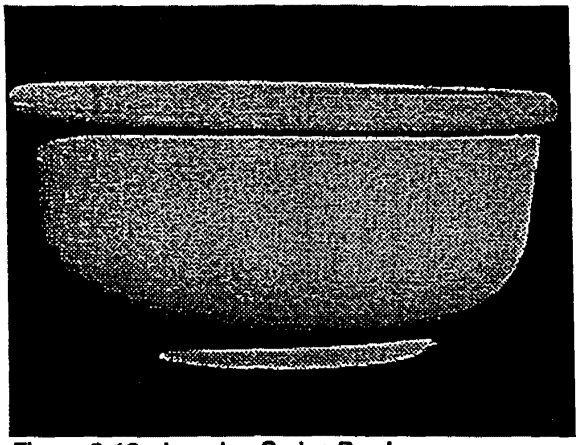


Figure 3-13: Lorraine Series Bowl

3.8 SIGNS

3.8.2 INFORMATION SIGNS

RETAIL AND PROFESSIONAL SIGNS: Retail shops in Carlyle Precinct are encouraged to use individual custom overhanging signs.

DIRECTORIES/KIOSKS: Three directories shall be provided in Carlyle Precinct. One shall be located at the Carlyle Square ends of each pedestrian through block connector in Blocks C and E. One shall be located in the north end of Carlyle Square.

CARLYLE MONUMENTS: A sign monument for Carlyle may be provided at John Carlyle Street and Duke Street. This monument shall be custom designed for this location and shall be located so as not to obstruct safe pedestrian or vehicular circulation.

Figure 3-14: Overhanging Retail Signs

3.10 ARCHITECTURAL PROJECTIONS

3.10.1 AWNINGS/CANOPIES

Custom designed awnings shall be provided for each retail shop in a color and design acceptable to Carlyle Development Corporation.

3.10.2 PORTE COCHERE

Porte Cocheres are prohibited in Carlyle Precinct except for Blocks C and E. The use of a marquee in conjunction with a theater is encouraged.

3.10.3 STEPS AND STOOPS

Steps and stoops may be used where needed. Consideration should also be given to recessed retail doorways.

Figure: 3-15: Awnings

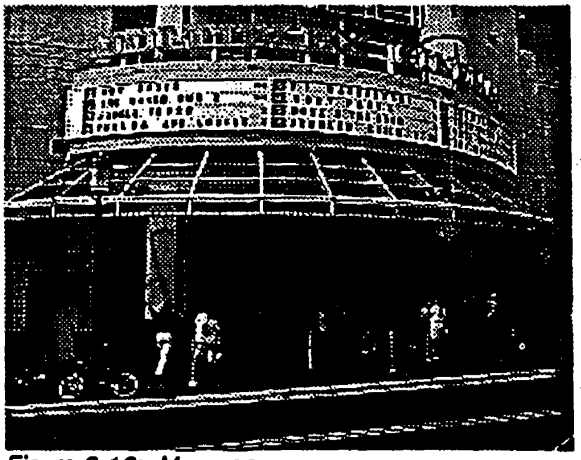


Figure 3-16: Marquee

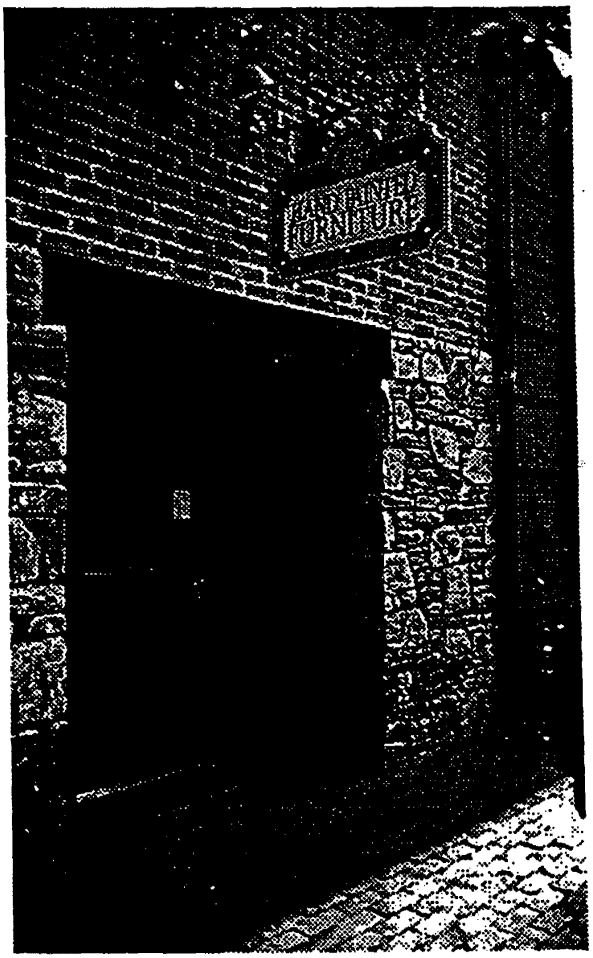


Figure 3-17: Recessed Doorway

3.11 TRANSITIONAL AREAS

3.11.2 TRANSITIONS BETWEEN PRECINCTS

BALLENGER PRECINCT TRANSITION: Carlyle Precinct is the dominant precinct. The standard sidewalk layout and paving shall change from Carlyle Precinct standards to Ballenger Precinct standards at the line created by the extension of the build-to line across John Carlyle Street. The street tree shall be as specified for the respective streets. The planting requirements for the building zone shall change at the same point as the sidewalk paving and layout.

TRANSITION TO DULANY PRECINCT: The transition from Carlyle Precinct to Dulany Precinct shall occur at the extension of the semicircular build-to-line at Block C extended perpendicular to Duke Street. Dulany Precinct is the dominant precinct and since the transition occurs at the Crescent, it shall be integrally designed with the Crescent.

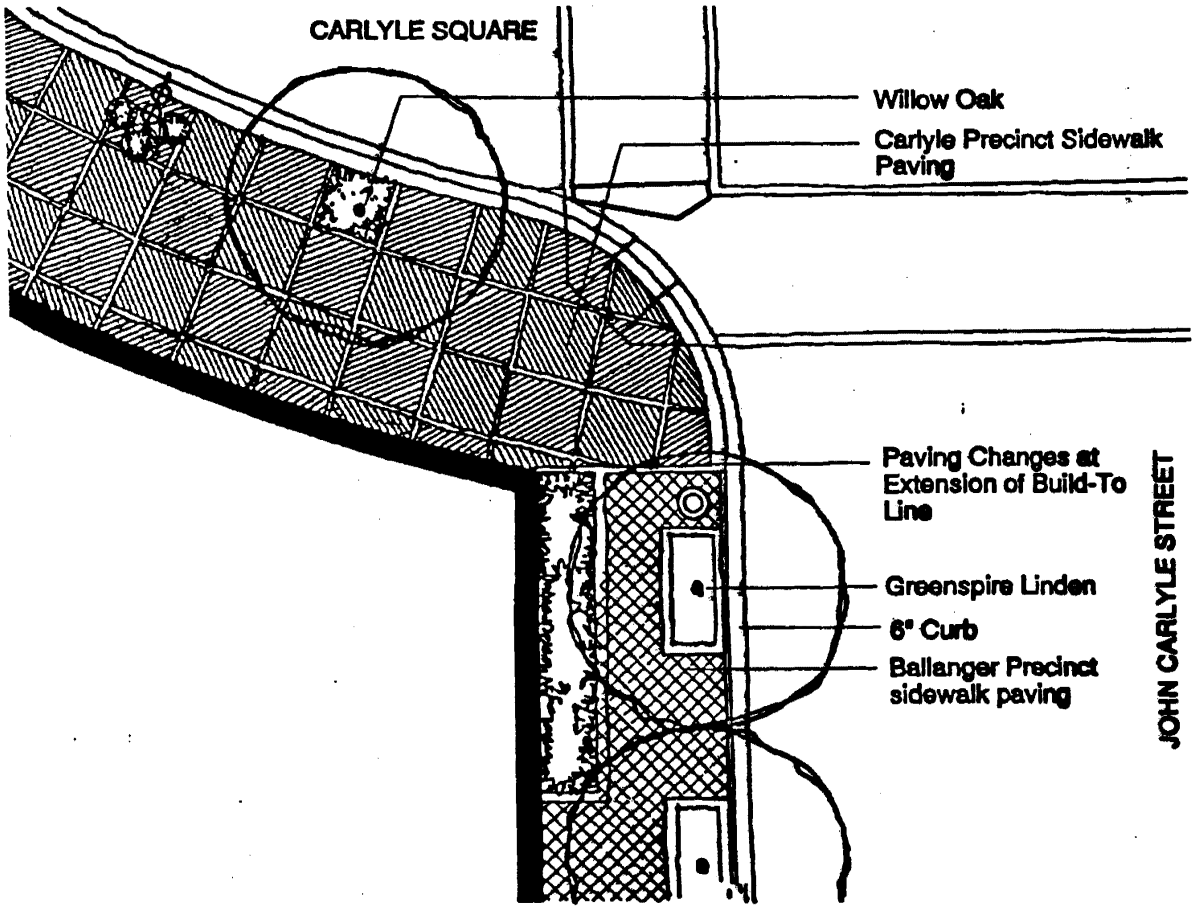


Figure 3-18: Ballenger Precinct Transition

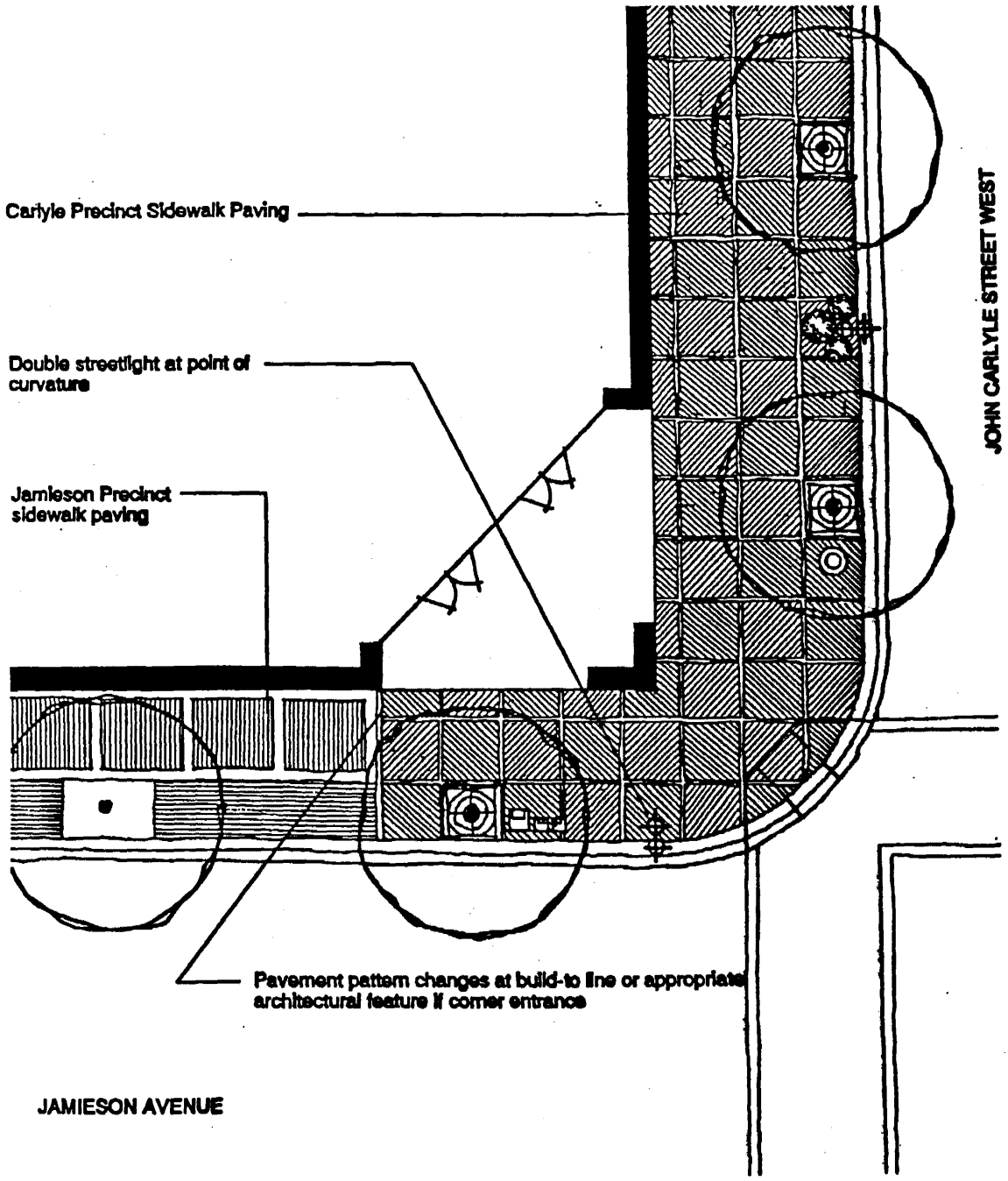


Figure 3-19: Jamieson Precinct Transition

JAMIESON PRECINCT TRANSITION: Jamieson Precinct is subordinate to Carlyle Precinct. The standard sidewalk layout and paving shall change from Carlyle Precinct to Jamieson Precinct standards at the line created by the extension of the build to line of Blocks C and E. The street trees are the same for each precinct. Planting for Carlyle Precinct shall extend around the corner into Jamieson Precinct for a minimum of ten feet ending at an appropriate architectural feature.

3.11.3 TRANSITIONS TO AREAS ADJACENT TO CARLYLE

Carlyle Precinct is entirely within Carlyle and therefore no transitions are necessary.

4 DULANY PRECINCT

Additional information and special requirements for the streetscape for Dulany Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

4 DULANY PRECINCT

Dulany precinct is the ceremonial spine of Carlyle– beginning with the Crescent at Duke Street and running through the Gardens to Eisenhower Avenue. It has the most continuous connected open spaces; the perception will be of a green street set within the urban fabric. The sequence of the spaces from the Crescent to the Gardens to Eisenhower Avenue is like a procession.

Dulany Precinct extends from Carlyle's northern edge at Duke Street through the center of Carlyle to the southern edge at Eisenhower Avenue.

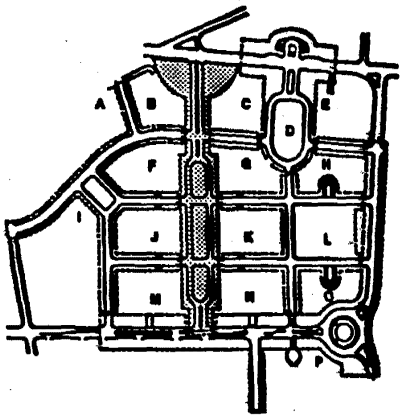


Figure 4-1: Dulany Precinct

4.1 DESIGN CONCEPT AND CHARACTER

4.1.1 CONTEXT

SITE PLAN: The Crescent forms a gateway for Dulany Precinct and Carlyle. The Crescent is created by the semicircular form of the buildings which embrace Duke Street. The spine created by Dulany Street and the Gardens contribute the main physical structure to the precinct. Buildings in Dulany Precinct are generally four, seven and nine stories; at Blocks F, G, M and N, four story portal elements create smaller scale gateways to the Gardens, reducing the height and mass of the buildings. The building edge is continuous along the street with only narrow breaks for the side streets and the required setbacks.

CIRCULATION: Dulany Precinct will be a major corridor for pedestrians, and vehicles traveling between Carlyle and the King Street and Eisenhower Metro Stations.

OPEN SPACE: The open spaces in Dulany Precinct are significant; there is generally a physical and visual connection between the buildings and the open spaces. Close proximity to these open spaces will enable easy access both visually and physically from automobiles and by pedestrians. There are two open spaces in Dulany Precinct: The Crescent and The Gardens. The Crescent is defined by semicircular seven to eight story buildings and is bisected by the medianed Dulany Street. The King Street Metro Station and the George Washington Masonic Memorial will be visible from the Crescent. The narrow three block long Gardens create a linear space at the center of Carlyle which is surrounded by architecture of a grand scale with emphasis on the main building entrances.

4.1.2 USE

The first floor uses in Dulany Precinct are office and hotel; the predominant use is office. Because of these uses, the activity in Dulany Precinct will be highest during the morning and evening rush hours with moderate use during midday lunch hours, evenings and weekends. The types of uses are private and semiprivate.

Figure 4-2: Mt. Vernon Place, Baltimore, Maryland

Figure 4-3: Monument Avenue, Richmond, Virginia

4.1.3 IMAGERY

Dulany Precinct is the ceremonial center of Carlyle; this is achieved by its formal site plan. The ceremonial aspects will be enhanced with rich materials in a simple, clean application. The streetscape will be open airy, elegant, lush and green. The formal nature of the Gardens will also enhance the ceremonial aspects of the precinct.

4.2 MAJOR OPEN SPACES

The two major open spaces in Dulany Precinct are The Crescent and the Gardens; these two open spaces are a primary part of the ceremonial character of Dulany Precinct.

4.2.1 THE CRESCENT

The Crescent is one of the largest spaces in Carlyle; it transitions from Duke Street funneling the views into Carlyle from the King Street Metro Station and the George Washington Masonic Memorial. The semi circular shaped buildings define a space that is part of Duke Street in addition to providing a ceremonial entrance. The Crescent design shall be a "public art piece" and should project an image of Carlyle's traditional town planning and city design. The Crescent is the first space in the processional sequence of Dulany Precinct. The Crescent shall be formal and symmetrically balanced about the axis created by Dulany Street with landscape elements in the space that reinforce the Crescent form. The Crescent may be a location for a sculpture or Carlyle Sign Monument. It's design should use materials, such as brick, which are indicative of Carlyle's streetscape and buildings.

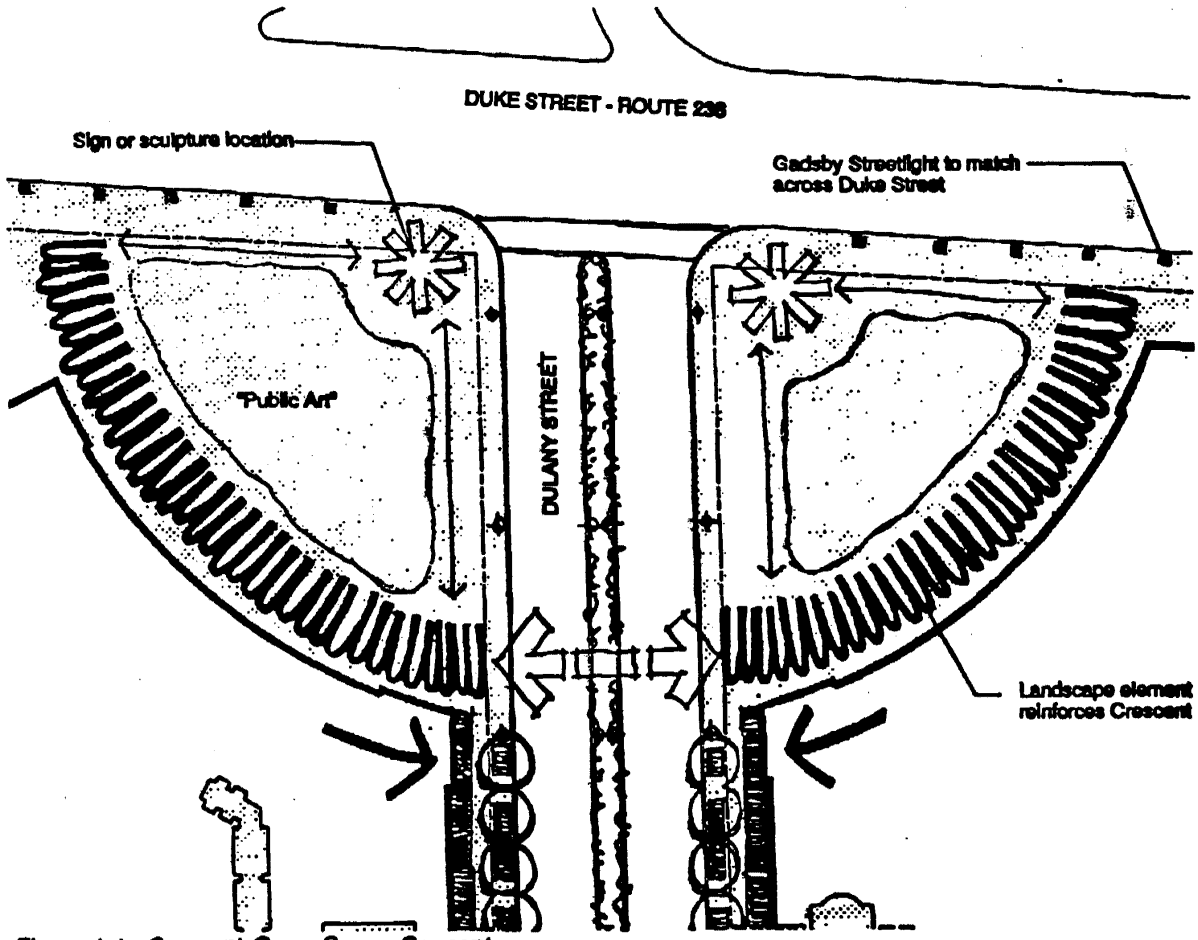


Figure 4-4: Crescent Open Space Concept

4.2.2 THE GARDENS

The Gardens continue over three blocks and are the focus of the precinct. They are oriented on the north-south axis of Dulany Street. Models for the Gardens include Mt. Vernon Place in Baltimore, Commonwealth Avenue in Boston, and Monument Avenue in Richmond. The Gardens should relate an English character, a green, well landscaped oasis, a soft space in contrast to the hardscape environs elsewhere in Carlyle. The Gardens will be a destination for pedestrians on a stroll and office workers during lunch; it will be a place for contemplation.

The Gardens shall be organized with a formal design having strong visual connections between them. They shall be balanced symmetrically about the north-south axis. Each of the three gardens should be distinct but similar. They will be linear in proportion and shall have an intimate scale. There shall be a clear hierarchy with the central garden having the most importance.

The sides of the Gardens along the north south axis shall form a semi-transparent edge to define the garden's interior spaces and reinforce the main north south axis. The axis shall be terminated in the upper and lower gardens by a focal element. The central garden shall be the primary focus; its design shall unify and connect the cross axis of the building entrances opposite each other. A landscape feature such as a fountain or statue shall be located at the intersection of the axes. Two minor cross axes are created by the major lobby entrances across the upper and lower gardens as well.

Fencing and columns, trees and plantings shall be used to articulate the Gardens' edge. Materials that may be used in the Gardens include granite or precast curbing and other elements, masonry walls, brick, metal fencing, sculpture, fountains and park pavilions.

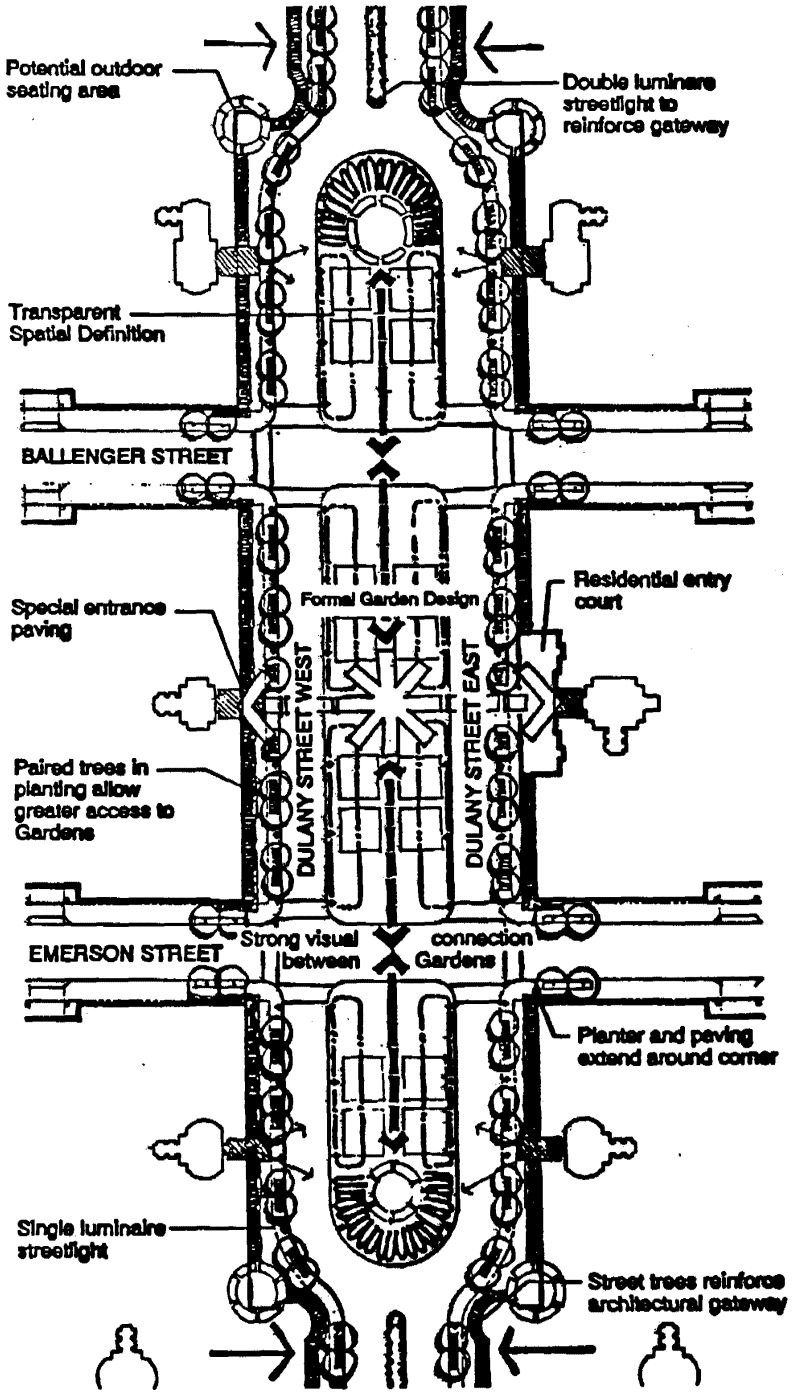


Figure 4-5: Gardens Open Space Concept

4.3 STREETSCAPE DESIGN

4.3.1 TYPICAL LAYOUT AND DIMENSIONS

There are two streetscape layouts for Dulany Precinct. One is for the Dulany Street East and West adjacent to the Gardens and the other is for the medianed portion of Dulany Street north and south of the Gardens.

GARDENS STREETS: For the streets along the Gardens, on the building side there shall be a eight foot, six inch curb zone with an eight foot, six inch pedestrian zone and an eight foot building zone. The curb zone will include a six inch curb with a one foot brick band behind the curb. Street trees will be planted paired in tree planting wells surrounded by a six inch precast concrete curb; they will be seven feet wide and extend five feet from the street trees at each end. The pedestrian zone is next to the curb zone and has a one foot band with a six foot paving field and a second one foot band. Along the street, one foot bands shall extend perpendicular to the curb across the walk to the building zone at each end of the street tree planting wells.

On the Gardens side of the street, there shall be an eight foot wide walk having a six inch curb and a one foot band behind the curb, a five foot wide

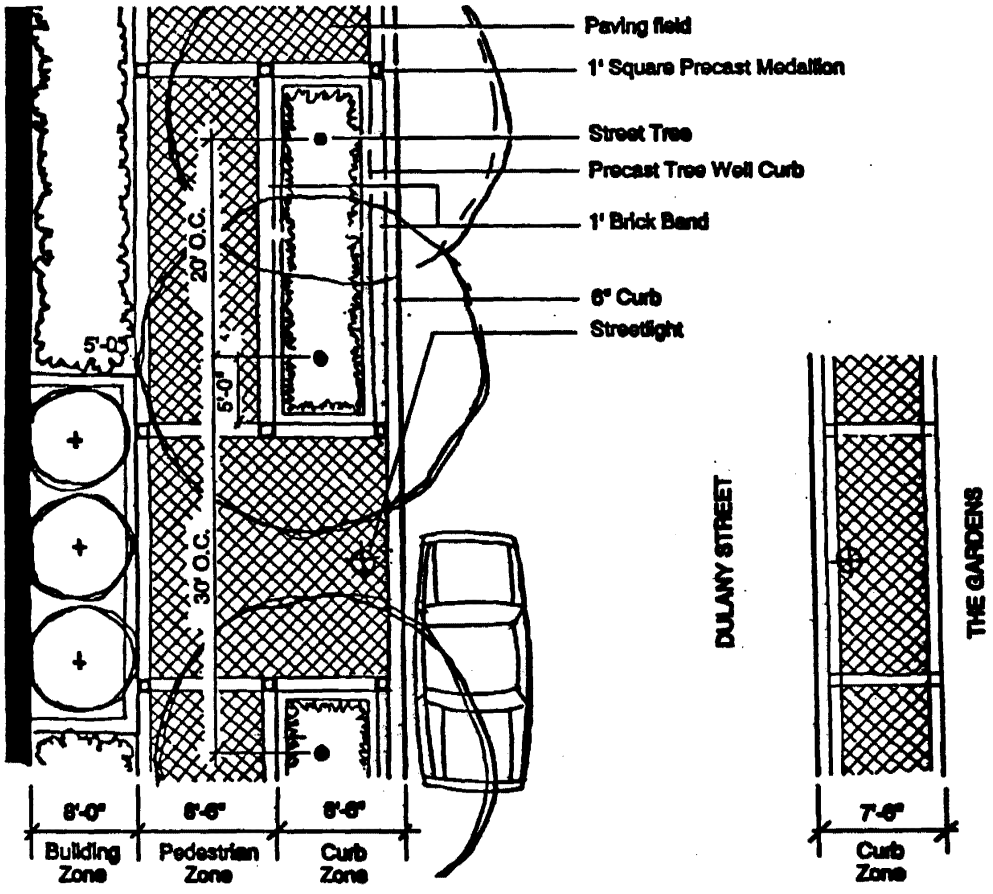


Figure 4-6: Dulany Precinct - Gardens Typical Streetscape

paving field and a one foot band along the edge of the walk. One foot bands perpendicular to the curb shall extend across the sidewalk matching the perpendicular bands across the street.

OTHER STREETS: The other streets in Dulany Precinct shall be treated in a similar manner as the streets adjacent to the Gardens, except that the trees shall be spaced uniformly at twenty feet on center paired in planting wells. The street has a twelve foot median which shall be landscaped and have double luminaire streetlights.

4.3.2 BUILDING ENTRANCES

MAJOR LOBBY ENTRANCE: If major lobby entrances are located centrally on the three Gardens as shown in the Block by Block Design Guidelines in the Development Plan, the street tree spacing may be interrupted on the streetscape to enhance and reinforce the cross axes of the Gardens.

4.4 HARDSCAPE

4.4.1 PAVING

STANDARD SIDEWALK PAVING: The standard sidewalk paving for Dulany Precinct shall be the King William Range Brick Paver as specified in the General Streetscape Guidelines. The standard pattern shall be a diagonal basket weave laid at forty five degrees from the centerline of Dulany Street. Twelve inch banding shall be the same brick laid in a running bond pattern across the band. At the intersections of the bands, there shall be a twelve inch square precast concrete medallion. To achieve uniform coloring of the medallions, they shall be cast color #1006 by Maryland Cast Stone, Inc., Rockville, Maryland or equal approved by Carlyle Development Corporation. The medallion shall be finished with a light sandblast.

PAVEMENT EDGES: Planter bed edges shall be either curbed or enclosed with a seat wall.

The street tree planting wells shall have a six inch precast curb. To achieve uniform coloring of the street tree well curbing, the curbs shall be cast with color #1006 by Maryland Cast Stone, Inc., Rockville, Maryland or equal approved by Carlyle Development Corporation. The curbs shall be finished with a light sandblast.

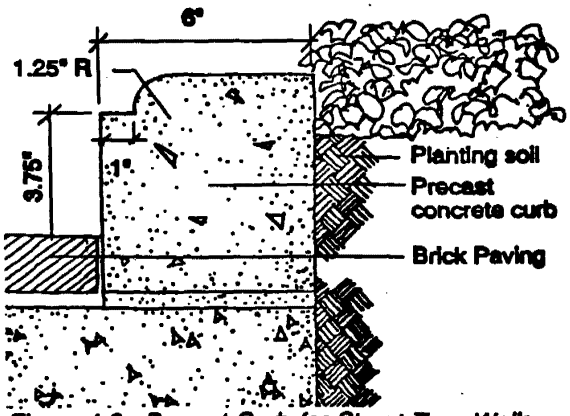


Figure 4-8: Precast Curb for Street Tree Wells

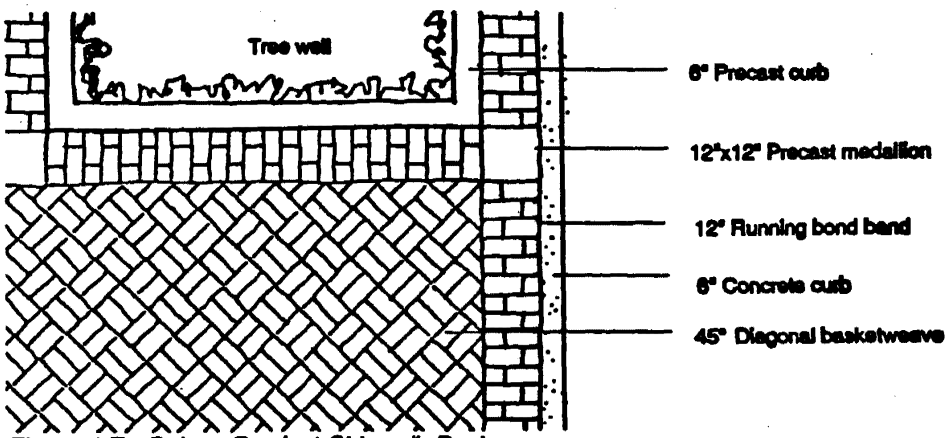


Figure 4-7: Dulany Precinct Sidewalk Paving

4.5 STREET FURNITURE

4.5.1 SEATING

FORMAL SEATING - BENCHES: Benches are prohibited in the streetscape except at bus stops.

INFORMAL SEATING: Seat wall planters shall be provided for thirty-three percent of the net plantable building facades in the building zone. Planters will be evenly dispersed along the building street wall and shall be coordinated with other planters in the building zone.

4.5.2 STREET FIXTURES

TRASH RECEPTACLES: One trash receptacle shall be provided at each street corner on the east and west side streets at or beyond the point of curvature of the curb.

4.5.3 PUBLIC SERVICES

NEWSPAPER VENDING MACHINES: Newspaper vending machines shall be permitted at street corners on the east-west side streets.

4.6 LIGHTING

4.6.1 STREETLIGHTS

Streetlights in Dulany Precinct shall be spaced to match the two streetscape layouts. For the streets adjoining the Gardens, the streetlights shall be single luminaire streetlights; they shall be spaced at fifty feet on center and shall be paired across the street. For the rest of the streets in Dulany Precinct, the streetlights shall be spaced at eighty feet on center and paired across the streets. In the median, a double luminaire streetlight shall be used and single luminaire streetlights shall be used on each side of the street. Streetlights at all intersections along Dulany Street shall be located at the point of curvature of the curb returns so that they are paired across Dulany Street.

4.7 PLANTING

4.7.1 STREET TREES

The street tree for Dulany Precinct shall be the Redmond Linden, *Tilia americana* 'Redmond'. The trees shall be spaced to match the streetscape layouts. On the streets adjoining the Gardens, the street trees shall be paired at twenty feet on center with the pairs spaced at thirty feet apart. On the other streets in Dulany Precinct, the street trees shall be spaced at twenty feet on center.

4.7.2 PLANTING BEDS AND PLANTERS

Landscape plantings in Dulany Precinct streetscape shall be uniform and formal. Planting shall be provided in the building zone for one hundred percent of the net plantable facade area. The plantings shall be a minimum of five feet wide and may extend to the full width of the building zone.

LAWN: Lawn is prohibited in the building zone.

SHRUBS: Shrubs shall be massed in formal structured plantings. The use of clipped hedges and plants with architectural forms is encouraged. Shrubs which are acceptable for use in Dulany Precinct include: Hollies, Boxwood, Sweet Box, Compact Burning Bush, Azalea, Yew, Photinia, Cherry Laurels, and Pyracantha.

TREES: Trees which are acceptable in Dulany Precinct include European Hornbeam, Crape Myrtle, Dogwood, Fringe Tree, Star Magnolias, Higan Cherry and Stewartia.

4.10 ARCHITECTURAL PROJECTIONS

4.10.1 AWNINGS/CANOPIES

No awnings are permitted in Dulany Precinct. Canopies may be used at major entrances.

4.11 TRANSITIONAL AREAS

4.11.2 TRANSITIONS BETWEEN PRECINCTS

JAMIESON PRECINCT TRANSITION: Jamieson Precinct is subordinate to Dulany Precinct. At Jamieson Avenue and Dulany Streets, the sidewalk paving shall change from Jamieson Precinct to Dulany Precinct standards at the extension of the build-to-line parallel to Dulany Street. The street trees shall be continuous along their respective streets. The building zone plantings on Dulany Street shall end at the build-to-line parallel to Jamieson Avenue. See Figure 4-9.

At Ballenger and Emerson Streets the street trees shall be continuous along the respective streets. Standard sidewalk paving will change from Dulany Precinct to Jamieson Precinct standards at the extension of the build-to line parallel to Dulany Street. The building zone plantings shall extend to the end of the side building wall for the building that faces onto Dulany Street. See Figure 4-10.

BALLENGER PRECINCT TRANSITION: Ballenger Precinct is subordinate to Dulany Precinct. The street trees shall be continuous along the respective streets. Standard sidewalk paving will change from Dulany Precinct to Ballenger Precinct standards at the extension of the build-to line parallel to Dulany Street. The building zone plantings shall extend to the end of the side building wall for the building that faces onto Dulany Street. See Figure 4-11.

EISENHOWER PRECINCT TRANSITION: Eisenhower Precinct is subordinate to Dulany Precinct. The two corners of Dulany Street and Eisenhower Avenue shall be treated symmetrically. See Figure 4-12. The area in front of the portal elements of Blocks M and N shall be designed to create small plazas in front of the building. The plazas shall be separated from the street edge and relate to the minor entrances at the portal elements. The standard sidewalk paving for Dulany Precinct shall extend to Eisenhower Avenue and the courtyard shall be paved with Dulany Precinct paving. The sidewalk paving shall change at the edge of the plaza to Eisenhower Precinct standard sidewalk paving.

The Dulany Precinct street trees shall extend to Eisenhower Avenue. There shall be three trees arranged in a quarter circle at each corner, with the one closest to Eisenhower Avenue aligning with the first row of trees along Eisenhower Avenue. The planters in the building zone for Dulany Precinct shall extend around the corner to Eisenhower Avenue a minimum of ten feet ending at an appropriate architectural feature. These planters shall be coordinated with the plaza design. Each plaza shall have at least one bench and one directory/kiosk within it.

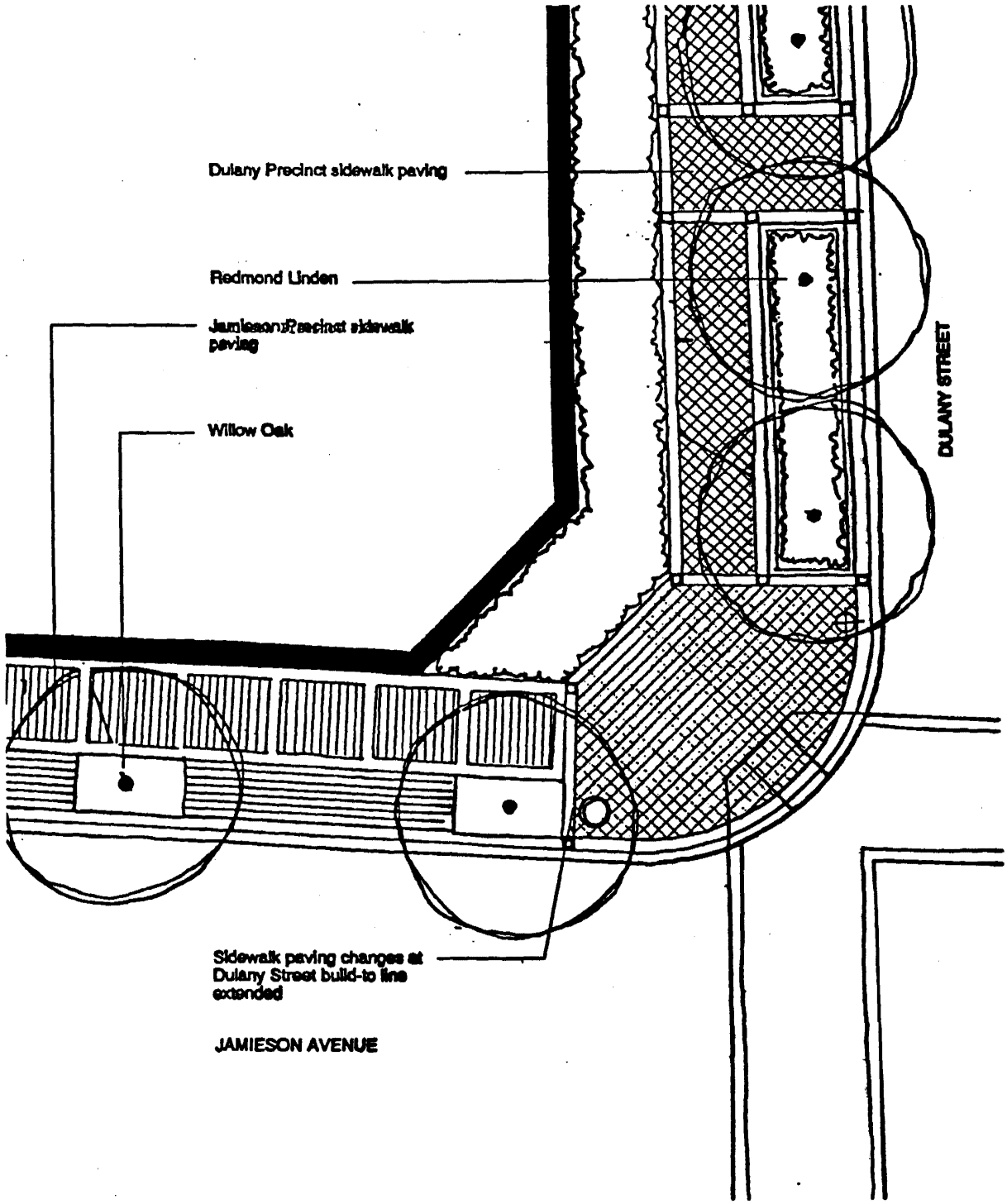


Figure 4-9: Jamieson Precinct Transition at Jamieson Avenue

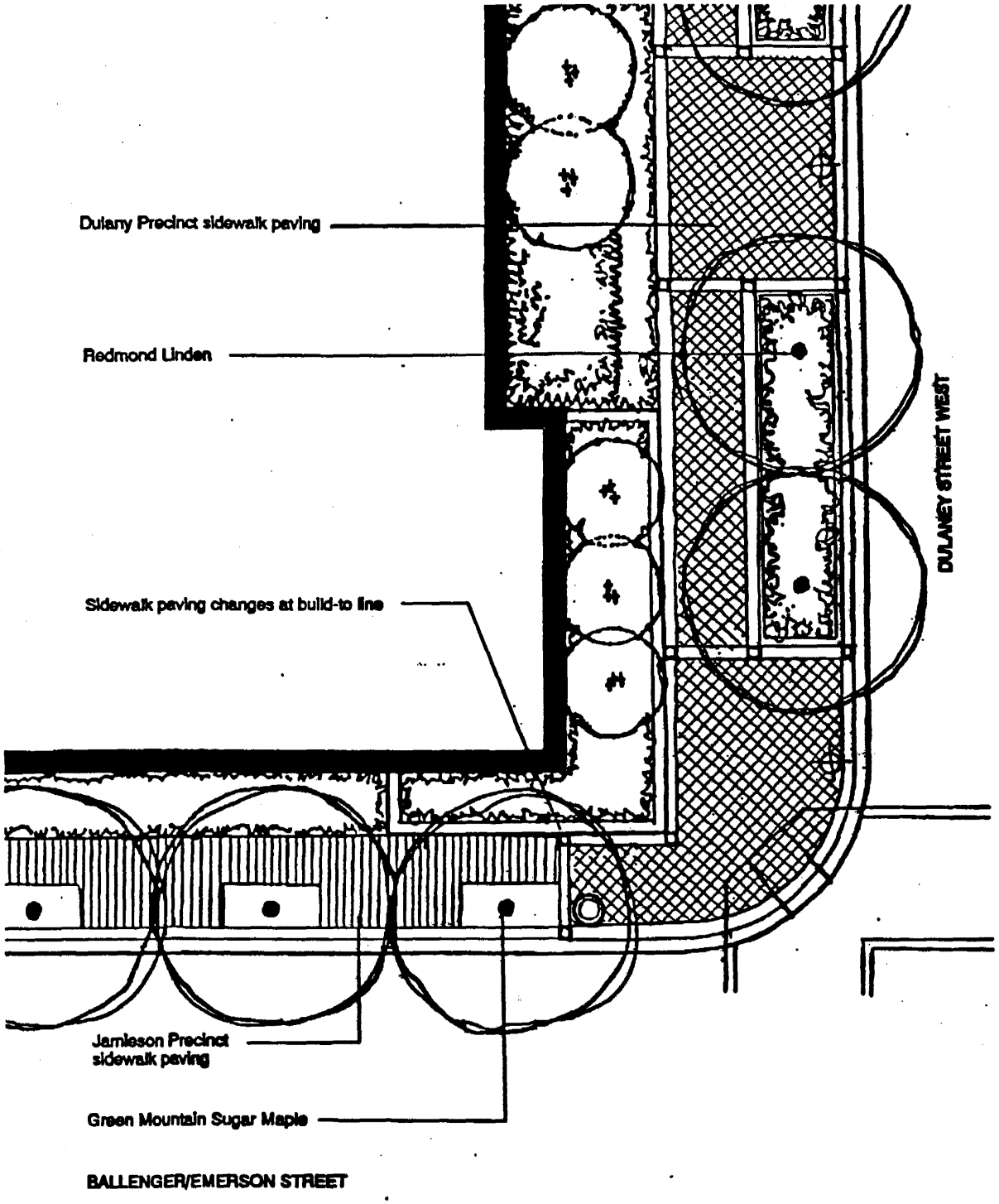
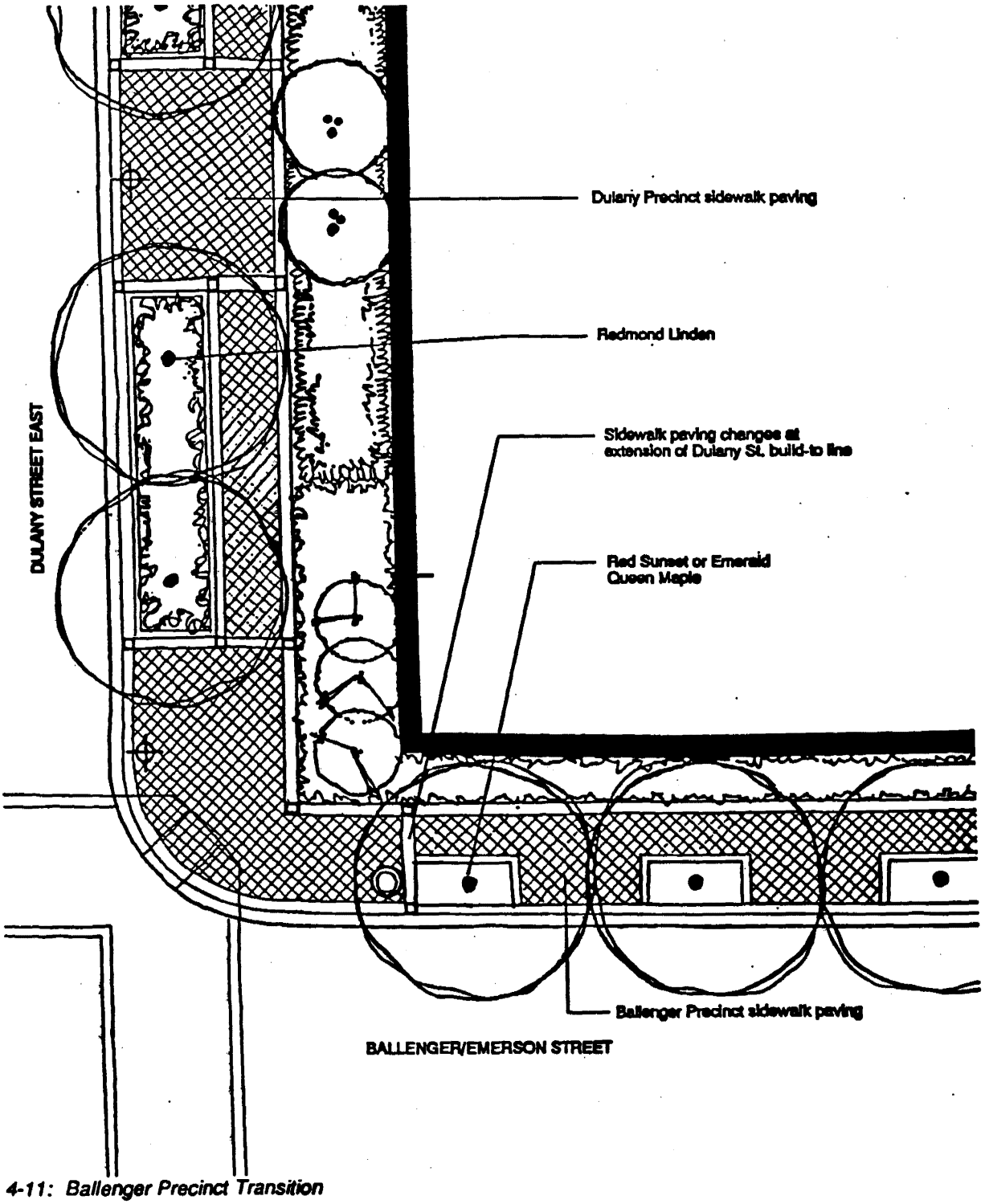


Figure 4-10: Jamieson Precinct Transition at Ballenger and Emerson Streets



4-11: Ballenger Precinct Transition

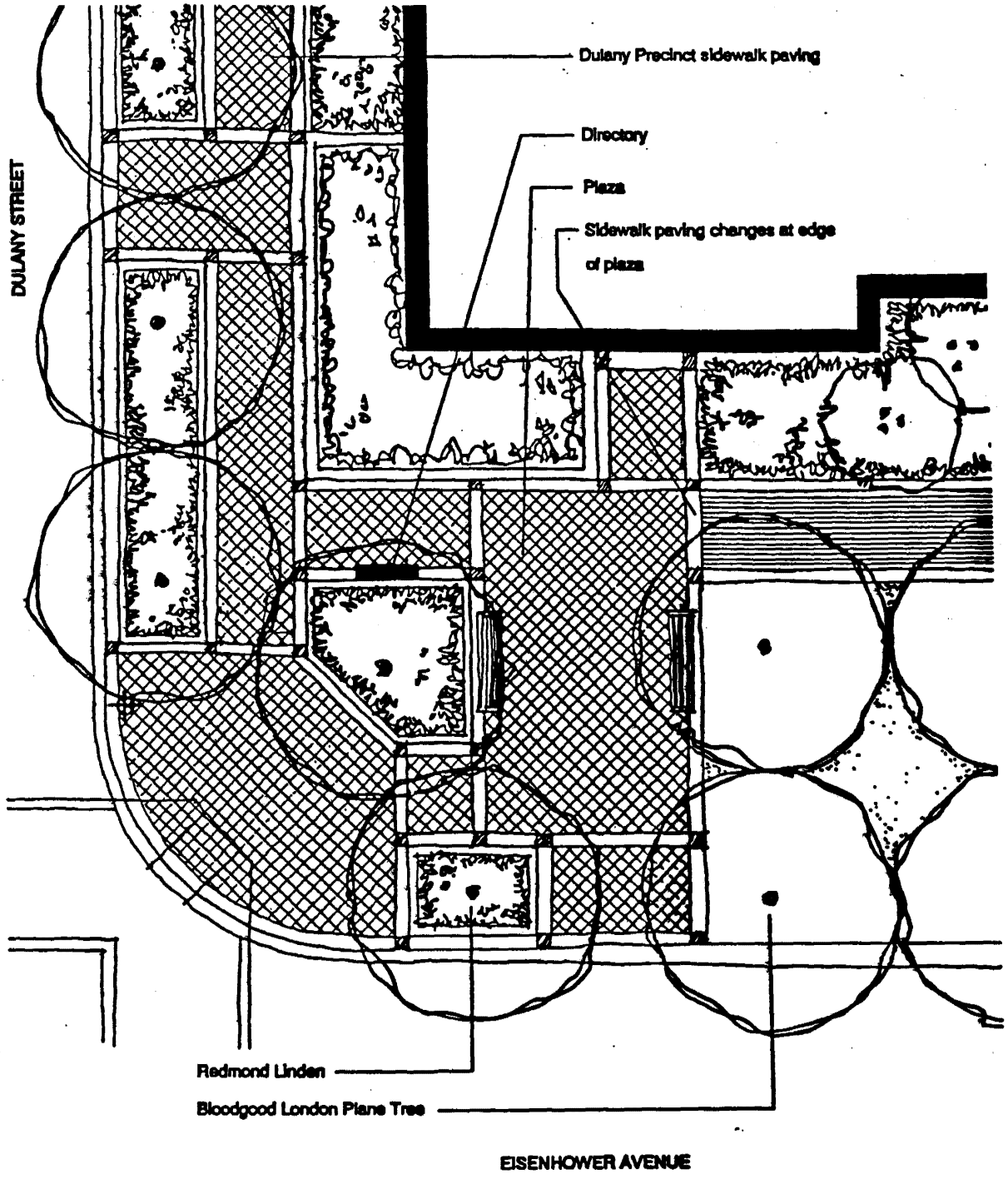


Figure 4-12: Eisenhower Precinct Transition

5 JAMIESON PRECINCT

Additional information and special requirements for the streetscape for Jamieson Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

5 JAMIESON PRECINCT

The focus of Jamieson Precinct will be the Alexandria Federal District Courthouse which will face onto Courthouse Square. The courthouse becomes very prominent in the civic image of Jamieson Precinct.

Jamieson Precinct forms the western edge of Carlyle. It encompasses the area from Duke Street to Eisenhower Avenue along the west side of Carlyle and is generally bounded by Dulany Precinct on the east, except where it continues along Jamieson Avenue to Holland Lane with an interruption at Carlyle Square.

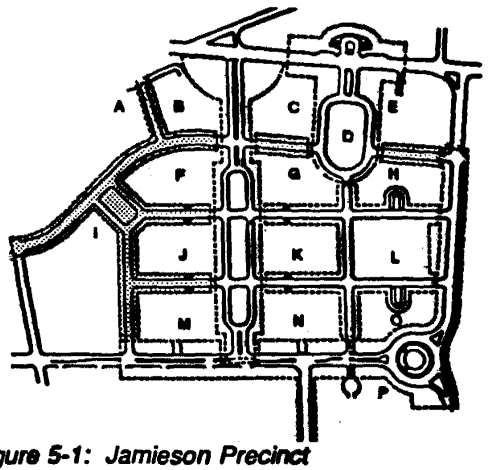


Figure 5-1: Jamieson Precinct

5.1 DESIGN CONCEPT AND CHARACTER

Jamieson Precinct will significantly contribute to the variety of use and types of places in Carlyle. It will add a public, civic component not found elsewhere which will be its focal point the courthouse at Courthouse Square. Making up the balance of the precinct is perhaps the greatest complement of mixed use of all the precincts in Carlyle. Together, the civic component and greater level of mixed use will provide a strong urban character.

5.1.1 CONTEXT

SITE PLAN: Jamieson precinct will consist of apartment and office towers with office buildings on the side streets. There will also be retail on the ground floors of the buildings along Jamieson Avenue and possibly facing onto Courthouse Square; this retail will be supplemental to the other uses in both the nature of the retail use and the its expression in the architecture. As stated previously, the focal point of the precinct will be the courthouse which faces onto the square. The long broad curve of Jamieson Avenue will present ever changing vistas to the pedestrian and driver as they move along it.

CIRCULATION: Jamieson Avenue will probably be a thoroughfare for drivers within Carlyle because of the connection to Mill Road and the Eisenhower Valley. Automobile circulation in the rest of Jamieson Precinct will be local traffic with people who have their destination in the precinct. Courthouse Square will get a great deal of pedestrian traffic especially at lunch time as will Jamieson Avenue leading to the shops at Carlyle Square and King Street Station.

OPEN SPACE: In Jamieson Precinct the open space is Courthouse Square. This small square is located off Jamieson Avenue and is bounded by streets on all sides. The streetscape around the square should be treated as part of the square since the views in the space will be very contained by the height and mass of the surrounding buildings.

5.1.2 USE

Jamieson Precinct is perhaps the most mixed use precinct of all the precincts of Carlyle. The predominant use in Courthouse Square is office with the major first floor use being retail. The street level will have a pedestrian interaction through the relationship of the retail and the street. The use of the streetscape will be heavy during the day with peak use at lunch time by office workers going to lunch, walking to nearby shopping and strolling. The uses in Jamieson Precinct will be a mix of public uses such as the courthouse and retail shops, semi-public uses such as the offices and private uses such as the residences.

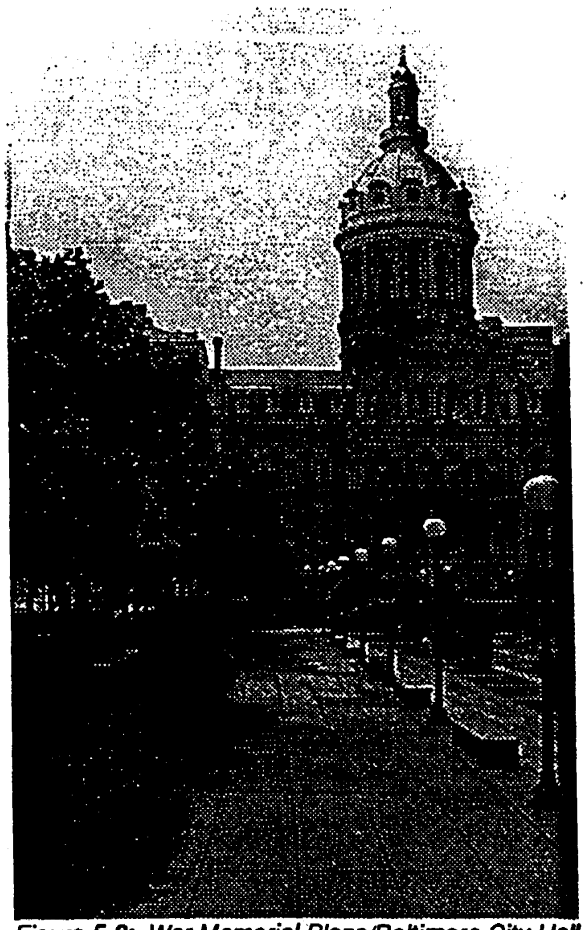


Figure 5-2: War Memorial Plaza/Baltimore City Hall

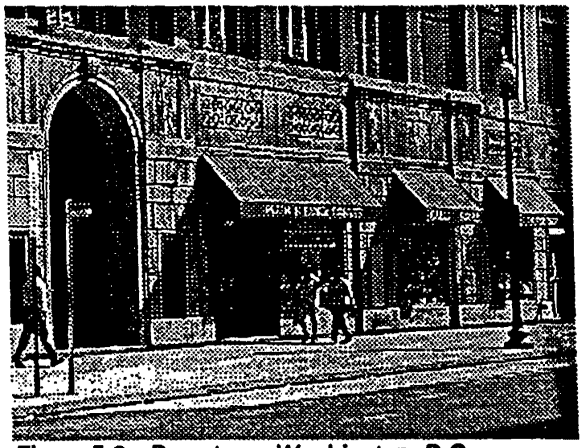


Figure 5-3: Downtown Washington, D.C.

Figure 5-4: Civic Bollards

5.1.3 IMAGERY

The image that Jamieson Precinct projects is that of a civic place such as War Memorial Plaza and the City Hall in Baltimore. The federal courthouse and the adjoining square give the feel of an authoritative place. The buildings in Jamieson Precinct will give a sense of ordered grandeur and the scale of the streetscape should be monumental yet peaceful. The square should express a sense of order and authority.

5.2 MAJOR OPEN SPACE

The single open space in Jamieson Precinct is Courthouse Square. This square was described in the Design Report and Development Plan as:

> ... a shaded paved plaza.... The Square takes on the scale of Savannah's Squares, Johnson Square, in particular. This square will be framed by mid-rise office and residential buildings. ...Unit paver brick, precast or granite cobble, is being explored for the floor of the plaza. This patterning will be repeated on the adjacent 20' wide sidewalk areas. Seating areas will be clustered under a grove of ginkgo trees. It is hoped that a sculpture garden can be incorporated under the trees as well. The court's principal feature will be a fountain marking the intersection of the many street axes which meet here.

Courthouse Square should be monumental in scale representing a grand gesture that supports the stature of the courthouse. The square should be a stately place; it should present an image of an urban place with a focal element which supports the civic nature of the precinct similar in character to the Grant Memorial in Washington.

The square is defined by the tall buildings on the

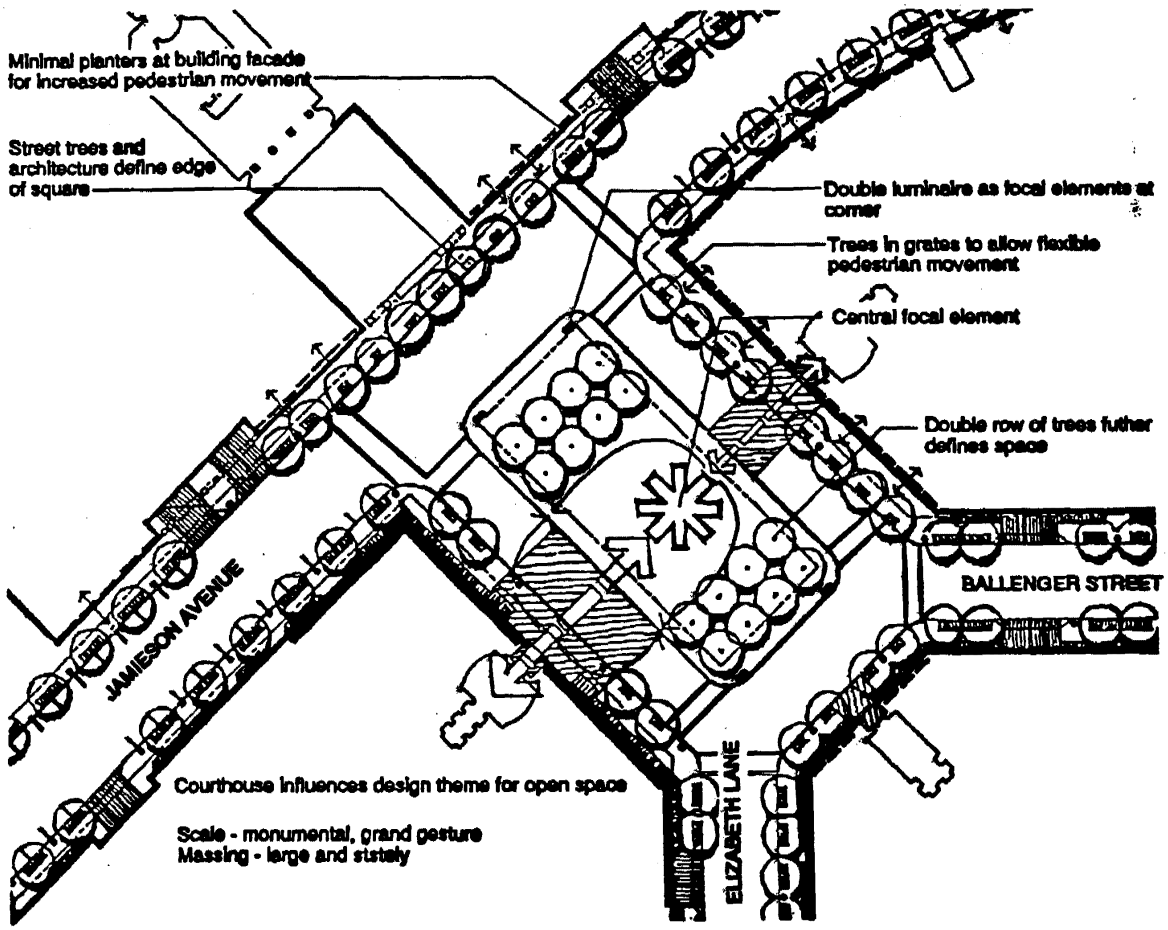


Figure 5-5: Courthouse Square Open Space Concept

four sides. The design for the square shall recognize and include the streetscapes along the buildings as part of the square. The interior edge of the square is not required to be treated as the typical streetscape for Jamieson Precinct and shall be designed as an integral part of the square to encourage flexible movement of people into the square. The use of tree grates in the streetscape around the square encourages this as well.

In order to emphasize the importance of the courthouse to Jamieson Precinct, the design of the square should focus on the courthouse. The primary axis of the square will be the cross axis which aligns to the courthouse. Visual and physical connections to the buildings at either side of the square shall be provided on this axis with emphasis given to the relationship with the courthouse building. The long axis of the square shall be secondary; no direct physical access shall be provided on this axis, although a visual connection may be provided. The middle portion of the square shall be a predominantly paved plaza with ample formal seating. This plaza shall focus on a central focal element such as a monument or a fountain. The ends of the square shall be planted with trees to provide a shady respite and to emphasize the courthouse axis. A double luminaire streetlight shall be provided at each interior corner of the square.

5.3 STREETSCAPE

5.3.1 TYPICAL LAYOUT AND DIMENSIONS

There are three similar streetscape treatments for Jamieson Precinct depending on the location within the precinct. These treatments are for Jamieson Avenue, Courthouse Square, and the remainder of the streets in Jamieson Precinct. Where two streetscape treatments intersect, they shall be designed to fit together and not change abruptly.

JAMIESON AVENUE: For all of Jamieson Avenue, the curb zone shall be six feet, six inches wide and shall have a one foot brick band behind the curb with a five foot wide by nine foot long flush street tree well. The building zone shall be a maximum of two feet, six inches wide and the pedestrian zone shall be flexible to take up the remaining width of the sidewalk. The pedestrian zone and the building zone shall be paved in a single six and a half foot by seven foot module with a one foot band around the inside edge of the module.

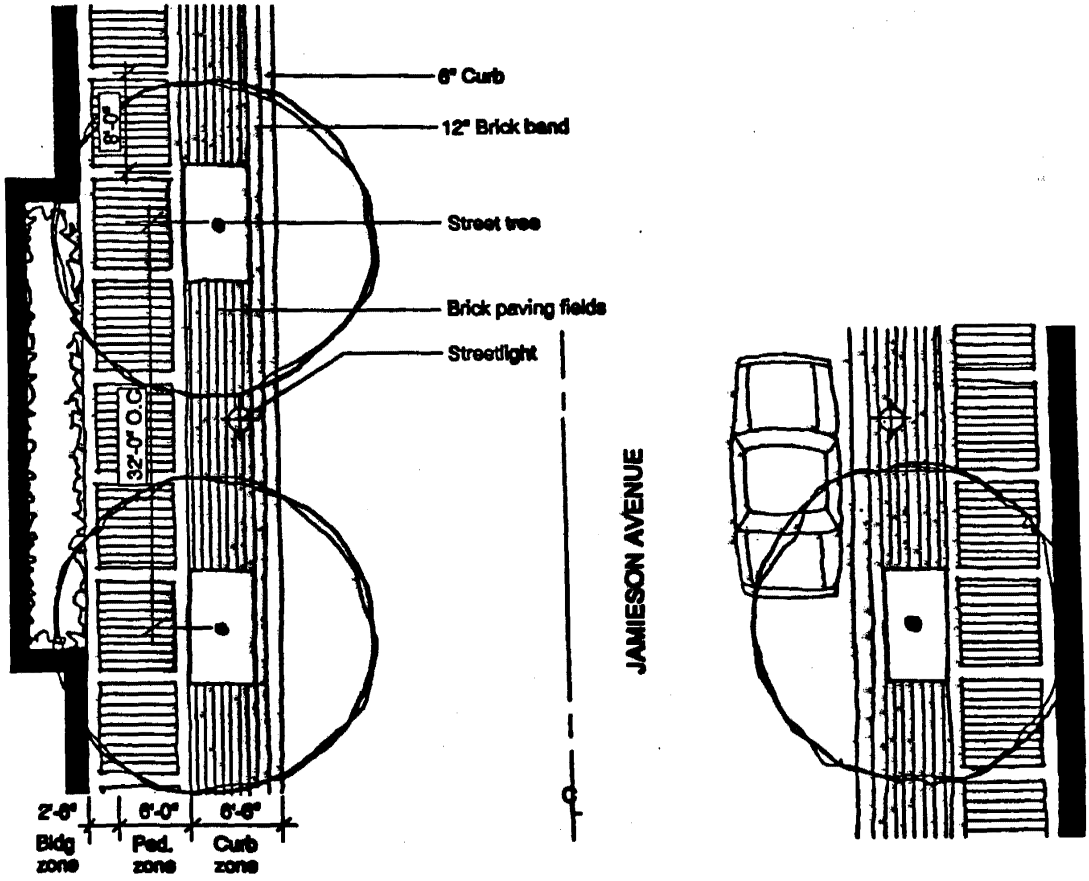


Figure 5-6: Jamieson Avenue - Typical Streetscape Layout

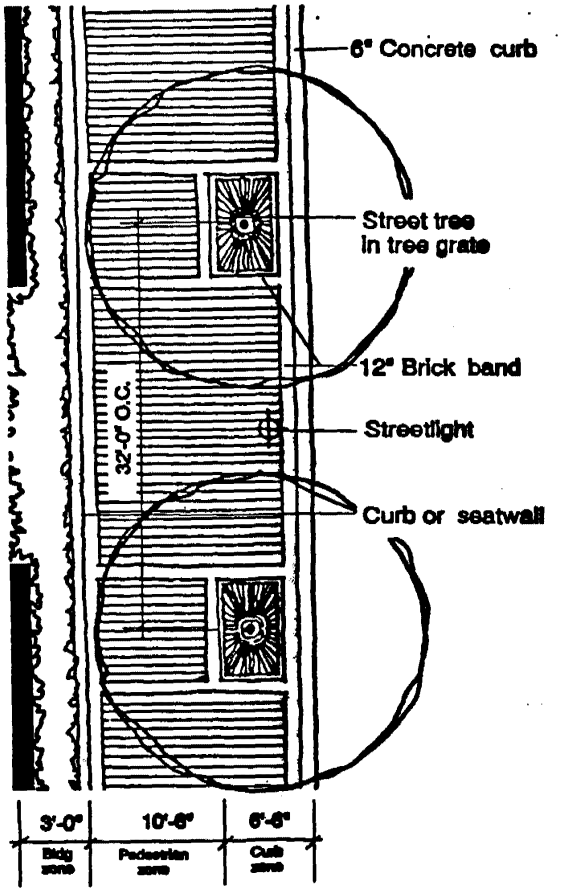


Figure 5-7: Courthouse Square - Typical Streetscape

COURTHOUSE SQUARE: The streetscape surrounding Courthouse Square shall have a six foot, six inch wide curb zone with a one foot band behind the curb. Street trees shall be installed in a five foot by eight foot tree well with tree grates as specified in Section 5.7.1 - Street Trees. The pedestrian zone shall be ten feet, six inches wide; the building zone shall be three feet wide and shall contain plantings as required in Section 5.7 - Planting. At each end of the tree grate there shall be a one foot brick band extending across the walk perpendicular to the curb. A one foot band shall also connect these two bands along the tree grate.

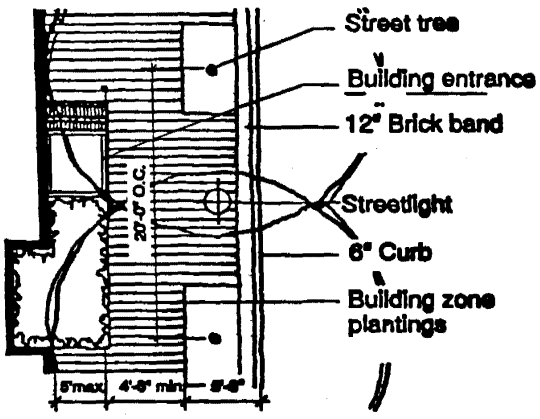


Figure 5-8: Other Streets in Jamieson Precinct - Typical Streetscape

OTHER STREETS: All other streets in Jamieson Precinct shall have a five and one-half foot curb zone with a one foot band running along the curb and a four foot wide tree well opening. The street tree well length shall be determined in eight foot modules. The pedestrian zone and the building zone shall be flexible to accommodate stoops, steps, building entrances, and planters. The pedestrian zone shall be four and one half feet wide minimum and the building zone shall be five feet wide maximum. Both shall be paved in a single simple paving with no banding.

5.3.2 BUILDING ENTRANCES

Building entrances shall conform to the requirements in the General Streetscape Guidelines and the following additional requirements:

MAJOR LOBBY ENTRANCE: Major lobby entrances facing onto Courthouse Square are encouraged to extend special paving to the curb, beyond the right of way. This will reinforce the strong relationship of the buildings to the square. Any special paving within the right of way will require approval by the City of Alexandria; and, the maintenance shall be the responsibility of the parcel owner.

5.3.3 VEHICULAR ACCESS ZONES

The requirements of the General Streetscape Guidelines shall apply with the following additions:

PARKING AND SERVICE ENTRANCES: For all parking and service entrances in Jamieson Precinct, the one foot brick band along the curb shall turn and delineate the edge of the parking and service entrance. The band shall extend to the building facade.

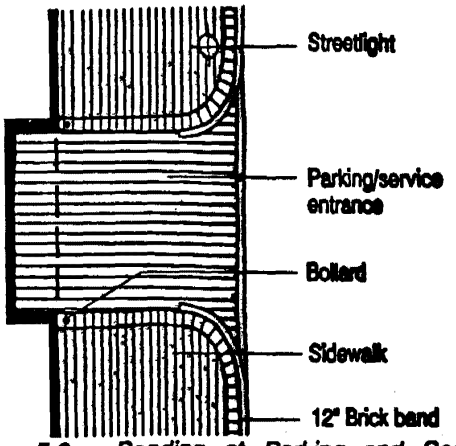


Figure 5-9: Banding at Parking and Service Entrance in Jamieson Precinct

DROPOFFS/LAYBYS: At the portion of Block A facing Courthouse Square, the use of a dropoff is encouraged; however, the rhythm and massing of the streetwall and streetscape shall be minimally interrupted. This may be achieved with an arcade or gateway wall which frames a courtyard.

5.4 HARDSCAPE

5.4.1 PAVING

STANDARD SIDEWALK PAVING: The standard sidewalk paving for Jamieson Precinct shall be the King William Range brick paver. All banding shall be twelve inches wide in a single basket weave pattern.

The paving fields will vary according to their location. Along Jamieson Avenue, within the rectangular modules in the pedestrian zone, the brick pavers shall be laid in a running bond pattern perpendicular to the curb. In the curb zone along Jamieson Avenue, the paving shall be a running bond laid parallel to the curb. For the Courthouse Square streetscapes, the paving shall be a running bond laid perpendicular to the curb in both the curb and pedestrian zones. For all other streets in Jamieson Precinct, the standard sidewalk paving pattern shall be a running bond perpendicular to the curb in all zones.

SPECIAL PAVING: For those buildings with lobby entrances on Courthouse Square which use special sidewalk paving, the special paving shall relate to the paving of Courthouse Square in addition to the building architecture.

PLANTER BED EDGES: Street tree wells shall be flush with grade in Jamieson Precinct except around the square where tree grates shall be used. See Section 5.7.1 - Street Trees for the grate specification. All planters in the building zone shall at a minimum have a curbed edge. Raised planters of seatwall height are acceptable as an alternative to this requirement.

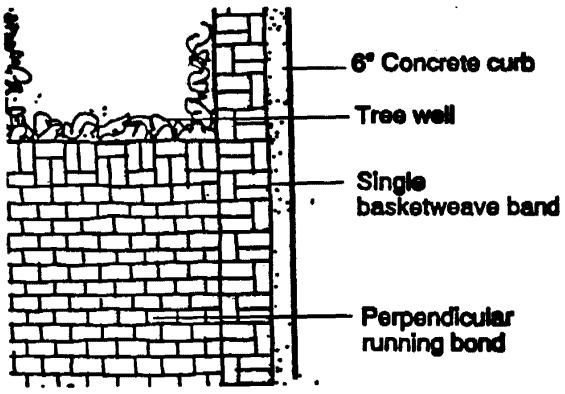


Figure 5-11: Courthouse Square Sidewalk Paving

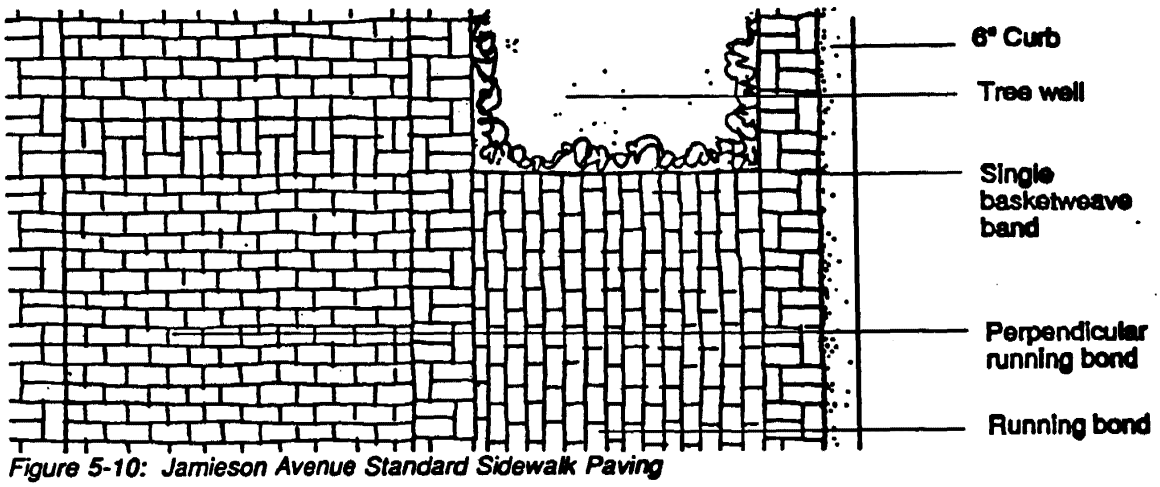


Figure 5-10: Jamieson Avenue Standard Sidewalk Paving

5.5 FURNITURE

5.5.1 SEATING

FORMAL SEATING - BENCHES: Benches shall be provided within Courthouse Square. They may also be provided if desired in the curb zone at the courthouse and Block F along the square.

5.5.2 STREET FIXTURES

TRASH RECEPTACLES: One trash receptacle shall be provided at all street corners. On Jamieson Avenue, one trash receptacle shall be provided for each 1600 linear feet of streetscape; the trash receptacles on the street corners may be included in the quantity to meet this requirement.

FENCES, GATES, COLUMNS AND WALLS: Fences, gates, columns and walls may only be used in association with residential uses in this precinct.

BOLLARDS: The use of decorative bollards is strongly encouraged in the Square.

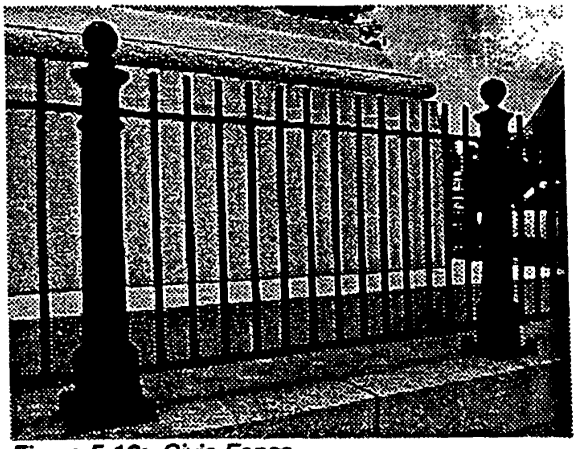


Figure 5-12: Civic Fence

5.6 LIGHTING

5.6.1 STREETLIGHTS

Streetlights in Jamieson Precinct are spaced according to the use of the area in the precinct. Along Jamieson Avenue which has retail uses, single luminaire streetlights will be spaced at sixty-four feet on center and paired across the street. The streetlights around Courthouse Square shall be paired single luminaire streetlights and will be treated in accordance with the requirements for lights at Major Lobby entrances with a base spacing of sixty-four feet on center. Streetlights with a double luminaire shall be located at the four interior corners of the square; refer to, Section 5.2.2 - Major Open Space. Streetlights on all other streets in Jamieson Precinct shall be single luminaire streetlights spaced at eighty feet on center and staggered across the street.

5.6.3 BUILDING LIGHTS

FACADE LIGHTING: Facade lighting of the courthouse is encouraged to highlight the civic architecture of the building. Facade lighting of all other buildings in Jamieson Precinct is prohibited.

5.7 PLANTING

5.7.1 STREET TREES

The street trees for Jamieson Precinct vary by location. Along Jamieson Avenue, the street tree shall be *Quercus phellos*, Willow Oak. These street trees shall be spaced at thirty-two feet on center. Around outside street edge of Courthouse Square, including the portion of Jamieson Avenue fronting onto the Square, the street tree shall be the Redmond Linden, *Tilia americana* 'Redmond'. These trees shall be spaced at twenty feet on center. No street trees shall be planted around the inside edge of the square. The street trees for the remainder of Jamieson Precinct shall be *Acer saccharum* 'Green Mountain', Green Mountain Sugar Maple; these shall be spaced at twenty feet on center.

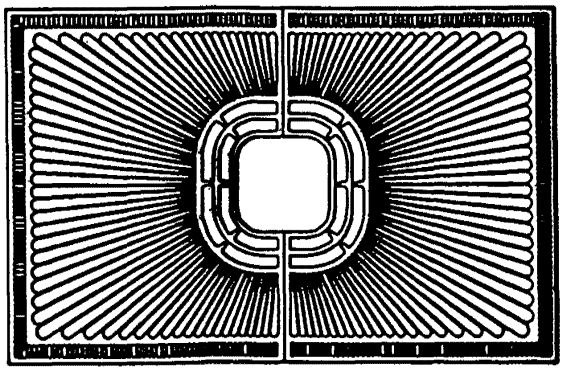


Figure 5-13: Centennial Series Tree Grate

Trees around the edge of Courthouse Square shall be installed in tree grates. The tree grate shall be a five foot by eight foot Centennial series tree grate by Ironsmith, Inc. Santa Ana, California.

All other street tree wells in Jamieson Precinct shall be flush with the pavement. These tree wells may be planted with groundcover plantings or seasonal flowers at the discretion of the parcel owner. The parcel owner shall be reponsible for the maintenance of the plantings in the tree wells.

5.7.2 PLANTING BEDS AND PLANTERS

Planting beds and planters are not required along Jamieson Avenue. For the rest of Jamieson Precinct, planting beds and planters shall be provided for eighty percent of the net plantable facade area except in front of retail uses. Planters and planting beds are not required in front of retail uses, however they are encouraged. Planters and planting beds shall be a minimum of three feet wide and a maximum of five feet wide. Plantings along Courthouse Square shall be simple, lush and dignified.

5.7.3 FREESTANDING PLANTERS

The use of freestanding planters in the building zone along Jamieson Avenue in front of retail shops is encouraged. These planters shall not obstruct safe pedestrian movement and shall not extend more than two and a half feet from the building facade.

Figure 5-14: Freestanding Planters

5.8 SIGNS

5.8.2 INFORMATION SIGNS

RETAIL AND PROFESSIONAL SIGNS: Projecting signs are not permitted. Retail signs shall be a uniform design for each building.

PROJECT DIRECTORIES/KIOSKS: A project directory shall be provided at the Jamieson Avenue end of Courthouse Square.

5.10 ARCHITECTURAL PROJECTIONS

5.10.1 AWNINGS/CANOPIES:

Retail uses along Jamieson Avenue may have retractable awnings. Awnings when provided shall be uniform in size and shape, and an integral part of the building design.

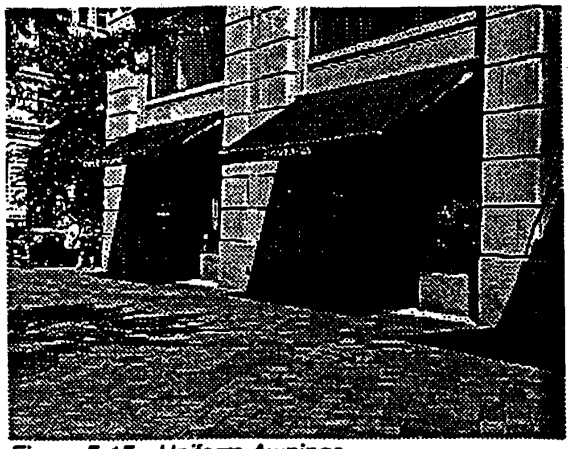


Figure 5-15: Uniform Awnings

5.11 TRANSITIONAL AREAS

5.11.2 TRANSITIONS BETWEEN PRECINCTS

DULANY PRECINCT TRANSITION: Jamieson Precinct is subordinate to Dulany Precinct. At Jamieson Avenue and Dulany Streets, the sidewalk paving shall change from Jamieson Precinct to Dulany Precinct standards at the extension of the build-to-line parallel to Dulany Street. The street trees shall be continuous along their respective streets. The building zone plantings on Dulany Street shall end at the build-to-line parallel to Jamieson Avenue. See Figure 5-16.

At the Ballenger and Emerson Street intersection with Dulany Street the street trees shall be continuous along the respective streets. Standard sidewalk layout and paving will change from Jamieson to Dulany Precinct standards at the extension of the build-to line parallel to Dulany Street. See Figure 5-17. The building zone plantings shall extend to the end of the side building wall for the building that faces onto Dulany Street.

CARLYLE PRECINCT TRANSITION: Jamieson Precinct is subordinate to Carlyle Precinct. The standard sidewalk layout and paving shall change from Jamieson Precinct to Carlyle precinct standard paving at the line created by the extension of the build to line of Blocks C and E. See Figure 5-18.

EISENHOWER PRECINCT TRANSITION: Jamieson Precinct is subordinate to Eisenhower Precinct. The first two street trees along Elizabeth Lane shall be Bloodgood Plane Trees to match Eisenhower Precinct Street Trees. The first street tree shall align to the second row of street trees along Eisenhower Avenue. The standard sidewalk layout and paving will change at the extension of the build-to line parallel to Eisenhower Avenue. The planting requirements for Eisenhower Avenue shall wrap around the corner extending ten feet minimum, along Elizabeth Lane and ending at an appropriate architectural feature. See Figure 5-19.

HOLLAND PRECINCT TRANSITION: Jamieson Precinct is subordinate to Holland Precinct. The street trees shall remain the same along their respective streets. The standard sidewalk layout and paving shall change at the point of curvature of the curb radius on Jamieson Avenue. See Figure 5-20. Plantings from the building zone on Holland Lane shall extend around the corner a minimum of ten feet and end at an appropriate architectural feature.

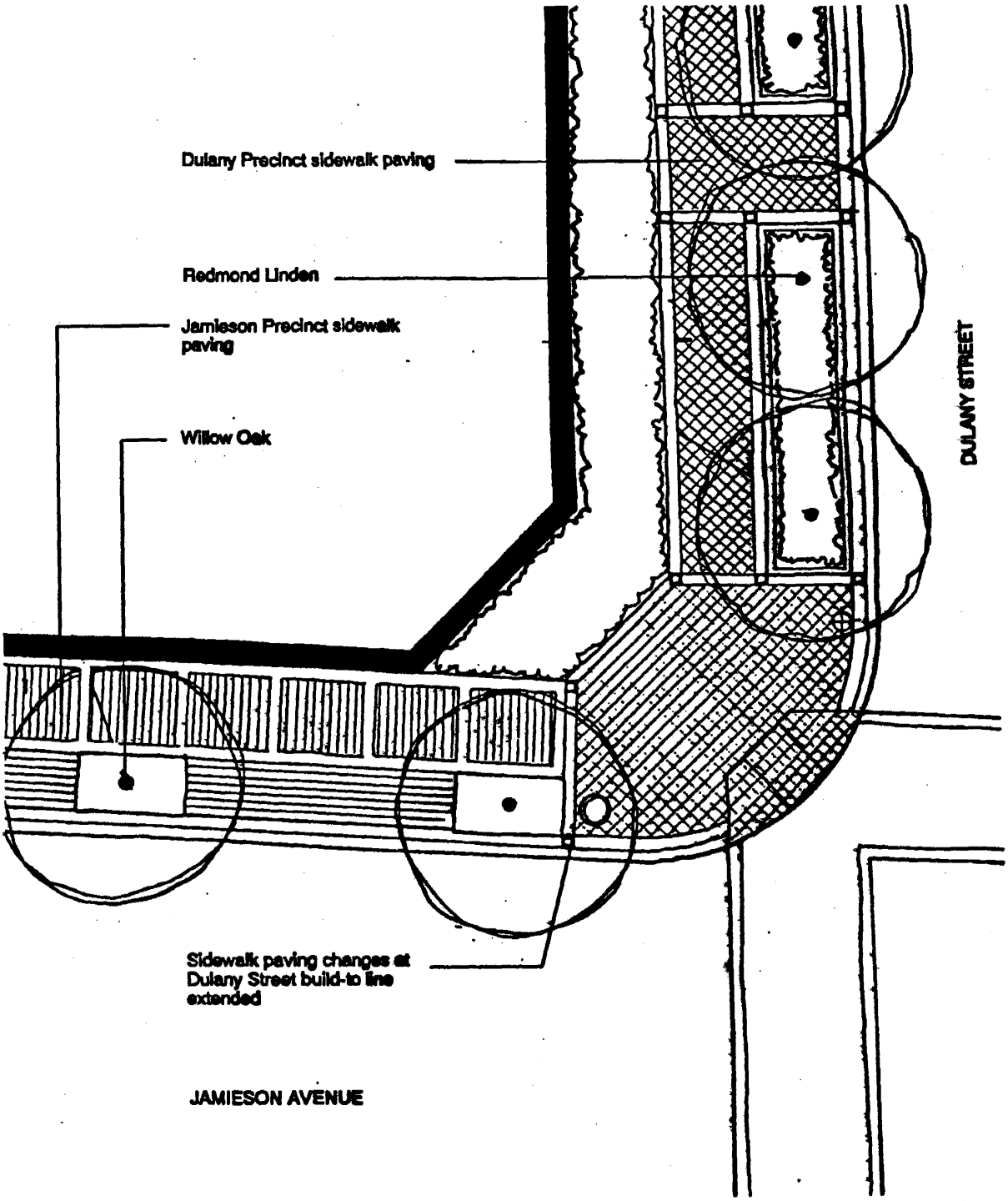


Figure 5-16: Dulany Precinct Transition at Jamieson Avenue

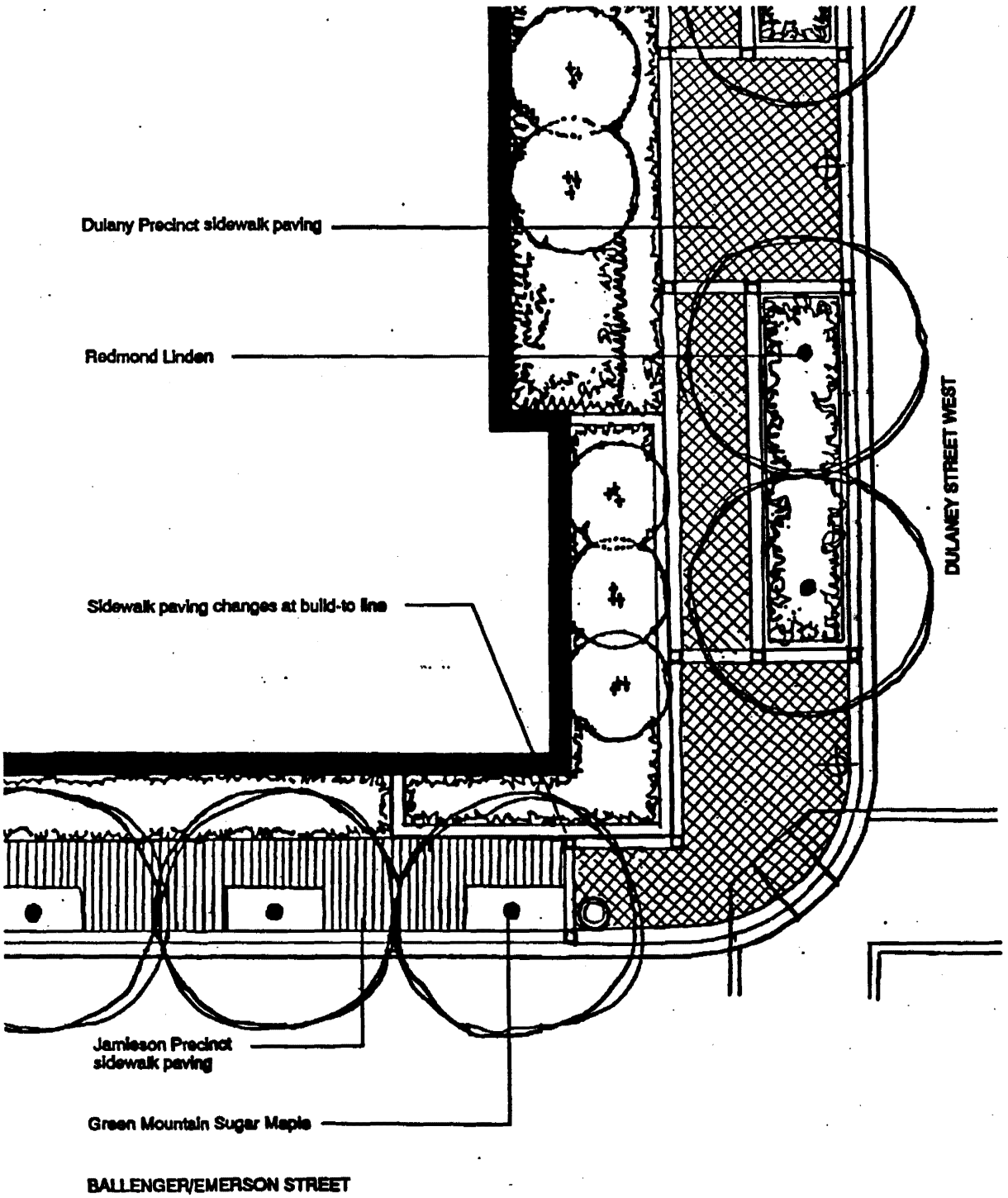


Figure 5-17: Dulany Precinct Transition at Ballenger and Emerson Streets

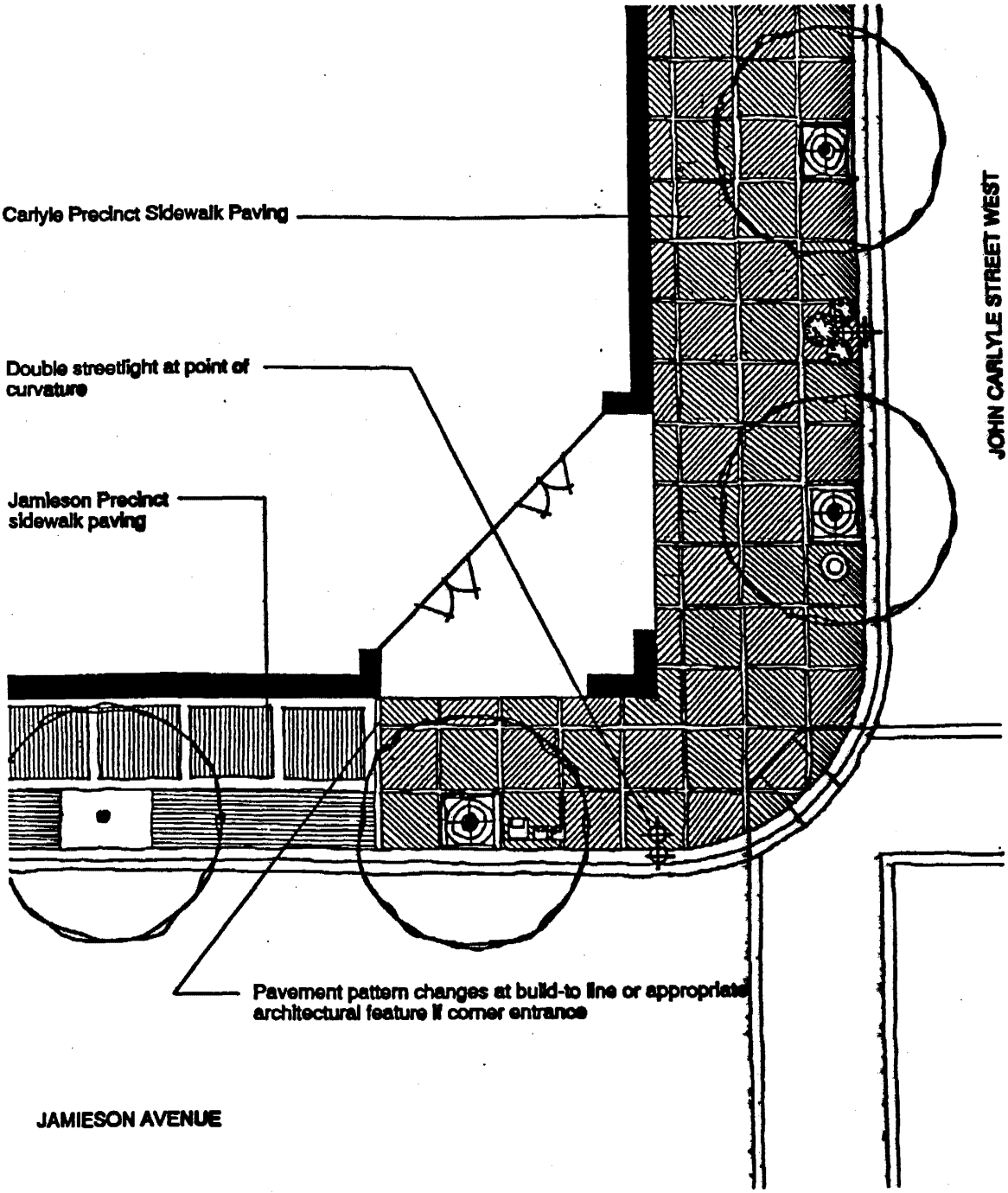


Figure 5-18: Carlyle Precinct Transition

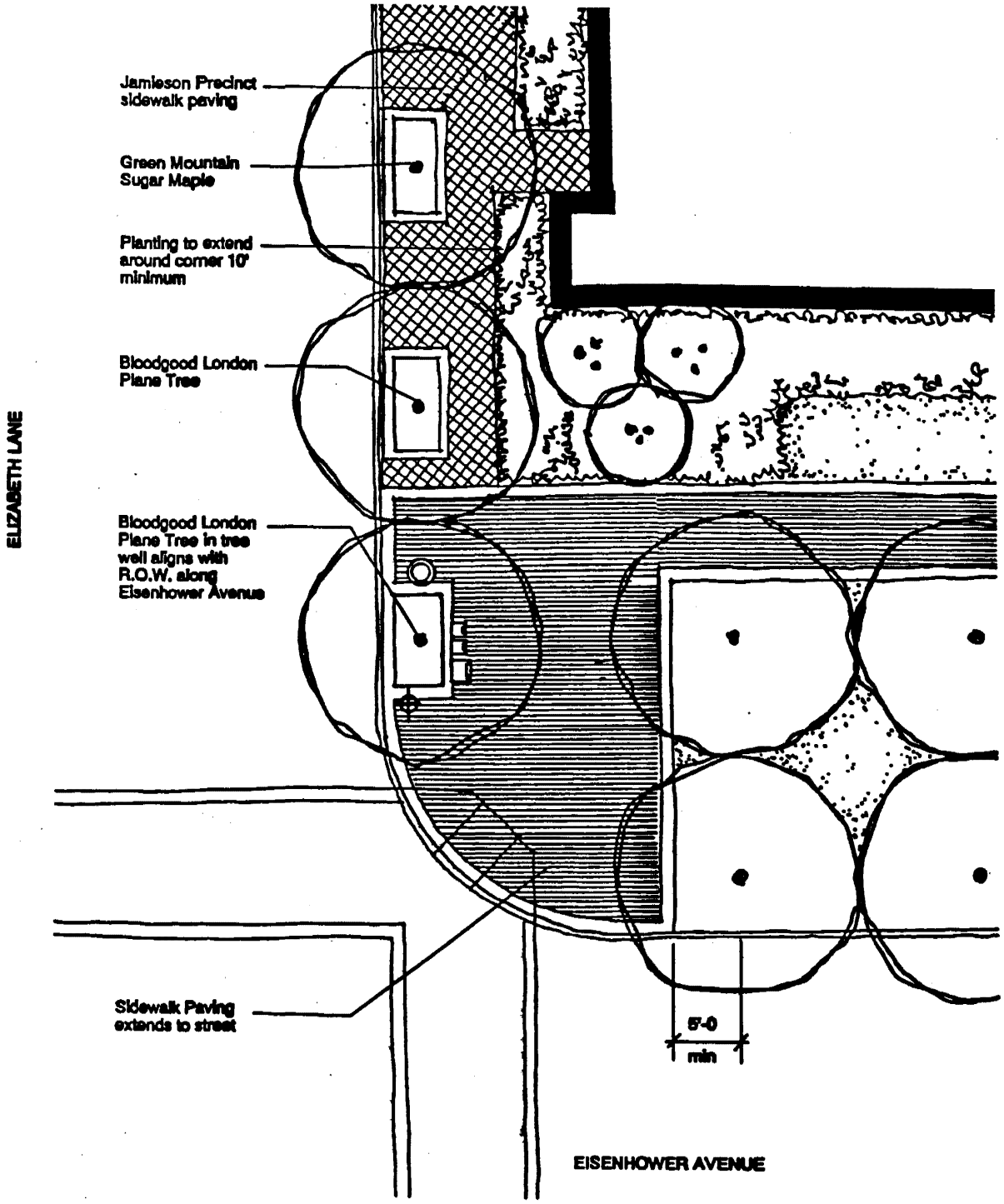


Figure 5-19: Eisenhower Precinct Transition

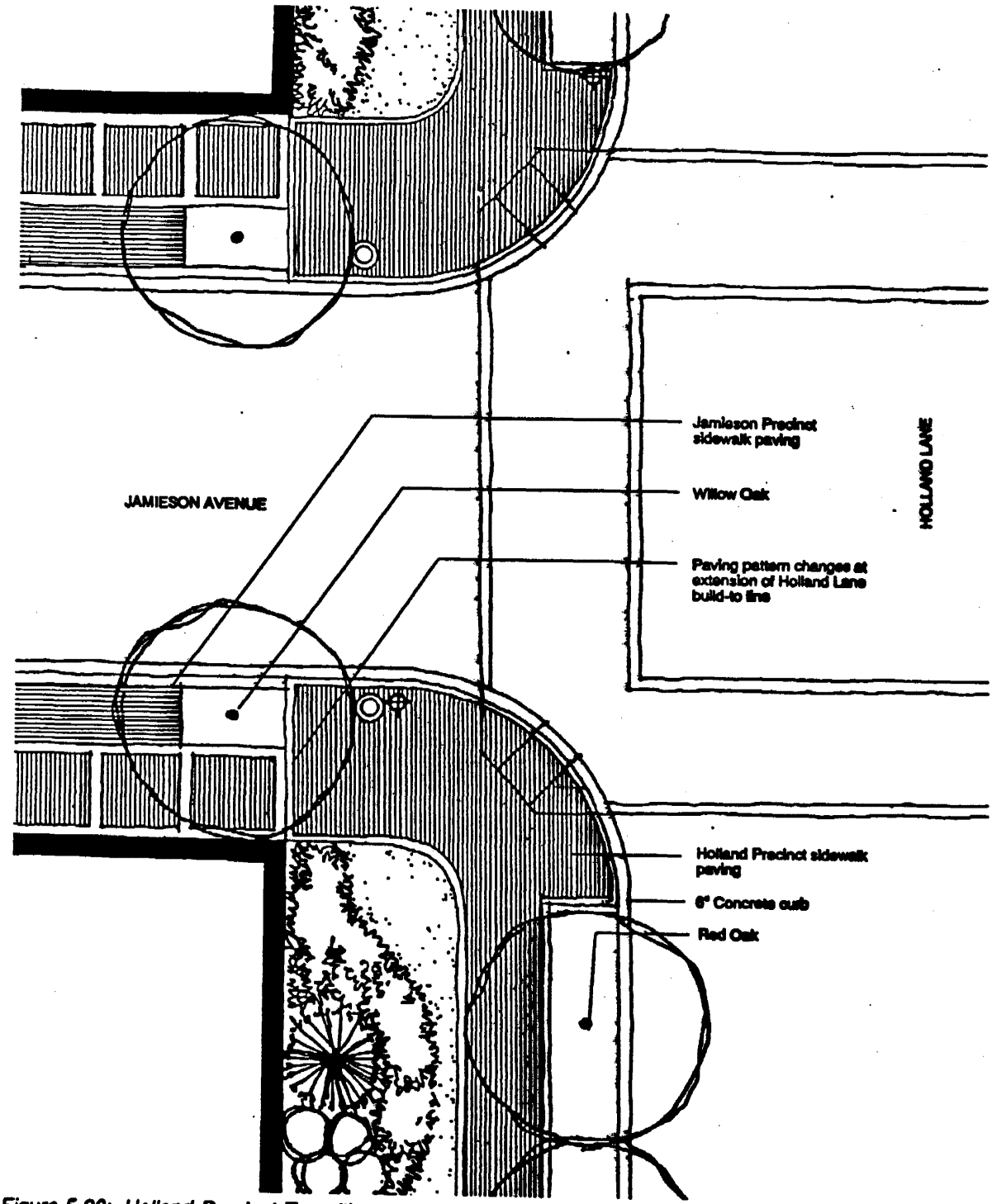


Figure 5-20: Holland Precinct Transition

5.11.3 TRANSITIONS TO AREAS ADJACENT TO CARLYLE

The general streetscape guidelines shall apply with the following addition.

WEST SIDE OF ELIZABETH LANE: The streetscape along the west side of Elizabeth Lane will be treated in a slightly different manner than the rest of Jamieson Precinct. A five and one half foot wide curb zone shall be provided; this curb zone shall be planted in lawn. Street trees will be planted in the lawn in the curb zone. A five foot wide walk shall be provided behind the curb zone. The walk shall be paved in a running bond pattern perpendicular to the street and shall have a twelve inch wide single basket weave band along each edge. The remaining three and a half foot area beyond the walk within the right-of-way shall be planted with an evergreen hedge.

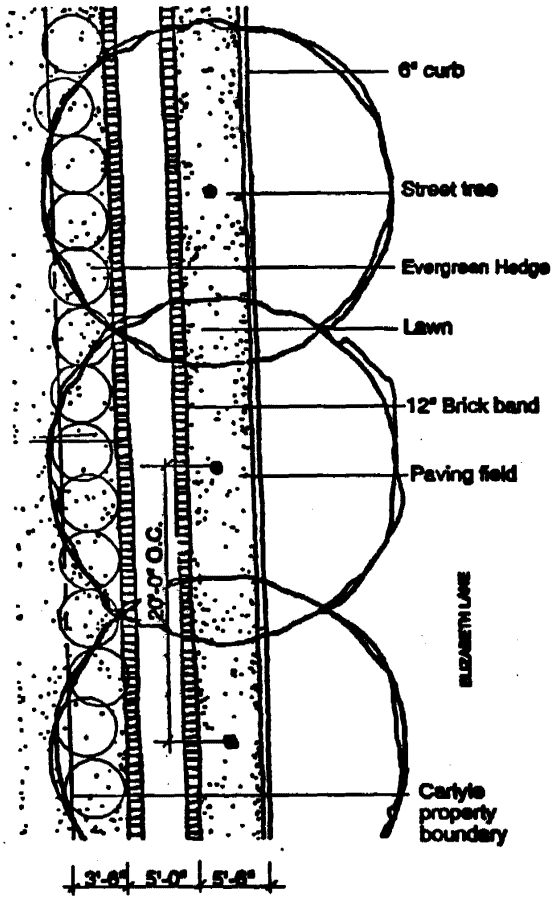


Figure 5-21: West Side of Elizabeth Lane

6 EISENHOWER PRECINCT

Additional information and special requirements for the streetscape for Eisenhower Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

6 EISENHOWER PRECINCT

Eisenhower Avenue is a gateway to Old Town from the west. As the development of the Eisenhower Valley increases, the importance of Carlyle at the eastern end of Eisenhower Avenue will be greater. The design concept for Eisenhower Precinct is a clean, simple strong boulevard lined with trees and lawn on each side. The terminus of Eisenhower Avenue is at the Rotary within Carlyle. The boulevard treatment will set apart Carlyle from the rest of Eisenhower Avenue to the west and focus views to the Rotary.

The Eisenhower Precinct forms the southern edge of Carlyle; it extends from Elizabeth Lane east to John Carlyle Street.

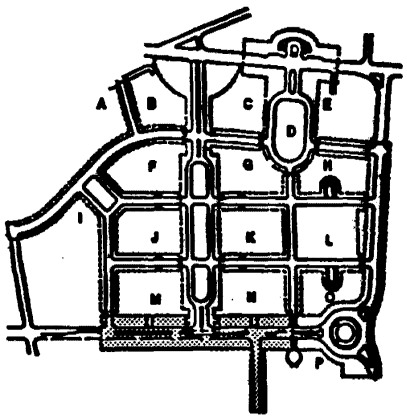


Figure 6-1: Eisenhower Precinct

6.1 DESIGN CONCEPT AND CHARACTER

The design concept for Eisenhower Precinct is for the boulevard to impart the character of a corporate office address.

6.1.1 CONTEXT

SITE PLAN: Eisenhower Precinct is set amidst nine story office buildings which are set back thirty-nine feet from the right-of-way. The large buildings with the generous setbacks create a grand scale in conjunction with the four lane roadway with median. The scale of the street relates more to the buildings and automobiles than the pedestrian. Despite the scale of the street, the urban feel of Carlyle is maintained by the consistent building line.

Part of the precinct is the southern edge of Carlyle and adjoins existing office and warehouse buildings along the south side of Eisenhower Avenue. This will be a place of transition in the streetscape. Eisenhower Precinct also becomes an entrance to Dulany Precinct and secondarily to Jamieson and Ballenger Precincts.

CIRCULATION: Eisenhower Avenue as a gateway to Old Town, will see a heavy amount of through automobile traffic. It will be used by many commuters on their way to and from work daily. Much of the activity from the automobiles and buses in the street to the pedestrians will be the movement of people to other destinations within Carlyle and elsewhere such as the Eisenhower Avenue Metro Station, which is just west of Carlyle on Eisenhower Avenue.

Part of the City of Alexandria Bike Trail System runs along Eisenhower Avenue. This bike trail will be an alternative for commuters to use to travel to work and connect Carlyle to the City's recreational trail system. Many other cyclists will pass through Carlyle on this trail.

OPEN SPACE: There is no major open space within Eisenhower Precinct. The precinct does, however, have a strong focus on the Rotary at Holland Lane due to the axial relationship of Eisenhower Avenue to the Rotary. The broad greensward of the streetscape will also provide a balance to the wide paved street.

To a lesser degree, Dulany Gardens has an influence on Eisenhower Precinct as well. Dulany Street marks that most prominent gateway to the interior of Carlyle on the southern side. The Gardens being close by, push Dulany Precinct out onto Eisenhower Avenue at Dulany Street.

6.1.2 USE

The buildings along Eisenhower Avenue will be predominantly office use with the major first floor use being office as well. The buildings may be single corporate headquarters or occupied by single major office tenants. The major entrances to these buildings will have the strongest relationship to the streetscape due to the scale of the street and the buildings. The office uses are semi-public to private uses so much of the activity will be from people who work and are visiting the offices.

6.1.3 IMAGERY

The classic boulevard image is that of a broad street with trees in lawn. The trees enhance the line and focus of the boulevard. Preferably the large office buildings should project corporate identities. The images may be defined through the use of large scale architectural detailings and unified bold massive planting along the buildings.

Figure 6-2: Queens Road, Charlotte, North Carolina

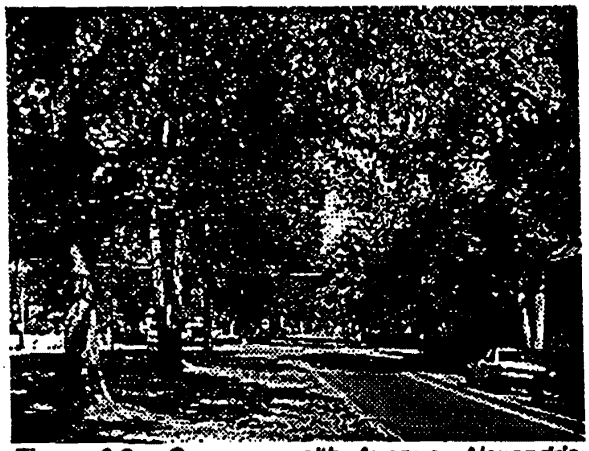


Figure 6-3: Commonwealth Avenue, Alexandria, Virginia

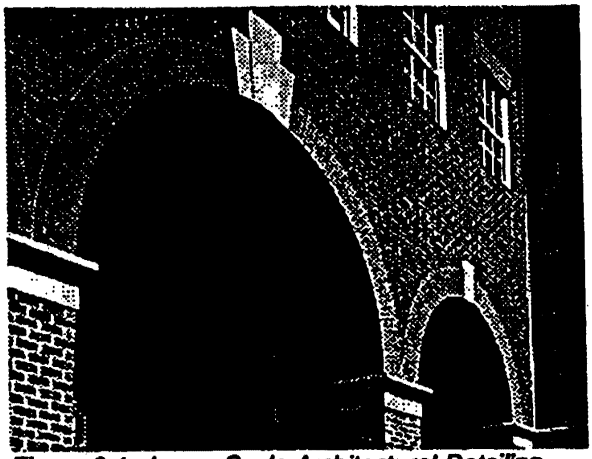


Figure 6-4: Large Scale Architectural Detailing

6.2 MAJOR OPEN SPACE

There is no major open space within Eisenhower Precinct; however, the Rotary in Holland Precinct is the focus of the Eisenhower Avenue axis. Refer to Section 7.2 for more information on the Rotary.

6.3 STREETSCAPE

6.3.1 TYPICAL LAYOUT AND DIMENSIONS

Eisenhower Precinct's streetscape is designed to strengthen the boulevard feeling of Eisenhower Avenue. The curb zone is thirty feet wide and contains a double row of trees set in lawn. The first row of trees shall be five feet from the face of curb; the second row shall be twenty-five feet from the face of curb. The curb zone shall be kept generally free and clear of furniture to enhance the boulevard image. The pedestrian zone shall consist of an eight foot walk located immediately behind the curb zone. The building zone shall be the remaining area between the pedestrian zone and the building facade.

Along Hooff's Run Drive, the curb zone shall be five feet wide with street trees planted centered in lawn. The pedestrian zone shall consist of a four foot wide sidewalk with eight inch bands on each side. The building zone shall consist of the remainder of the right-of-way and the two foot sidewalk easement.

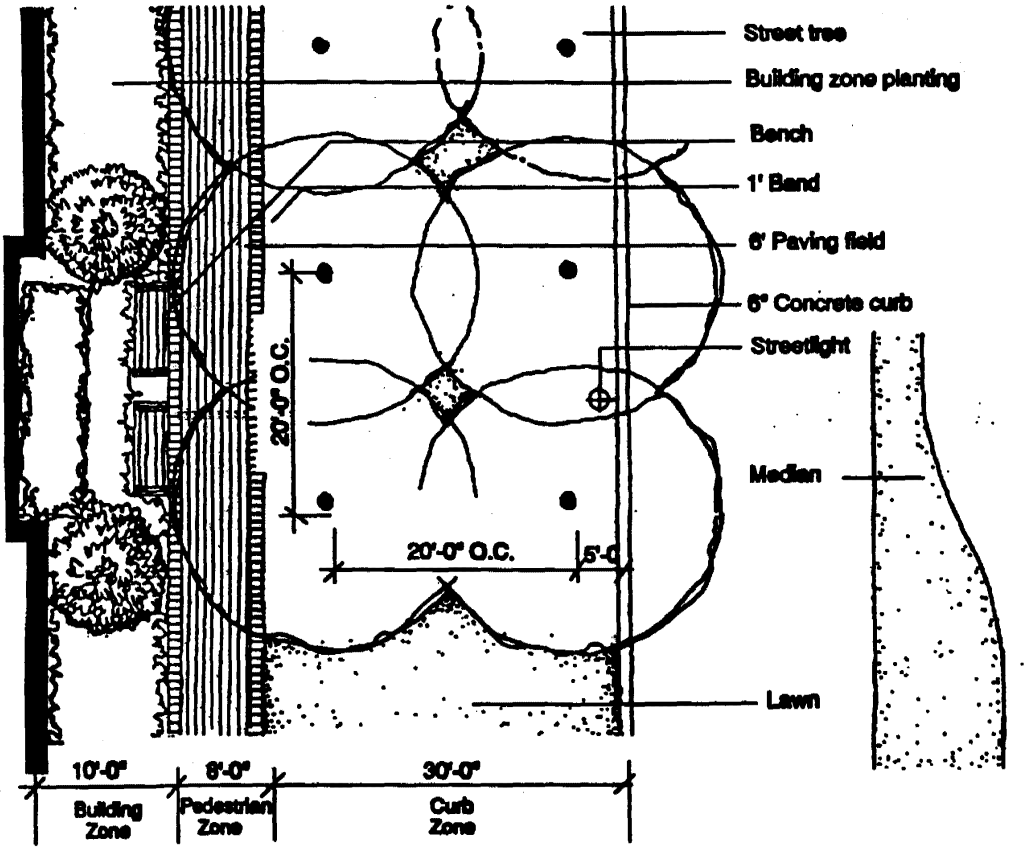


Figure 6-5: Eisenhower Precinct - Typical Streetscape Layout

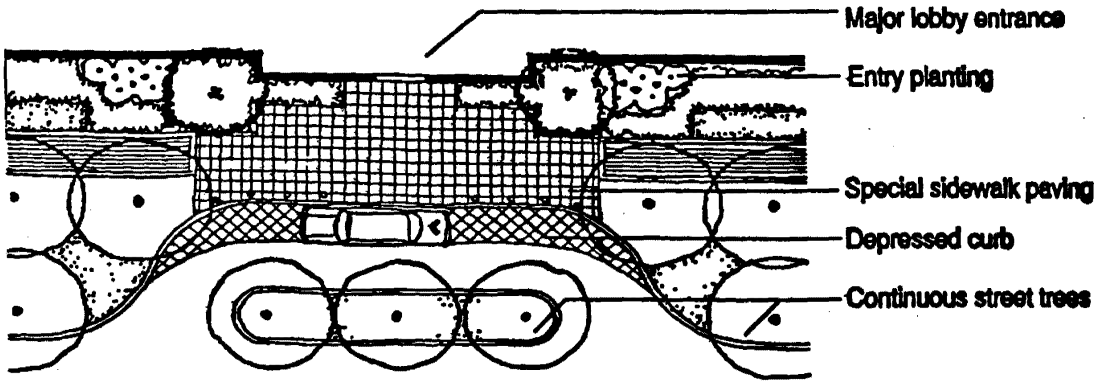


Figure 6-6: Eisenhower Avenue Dropoff

6.3.3 VEHICULAR ACCESS ZONES

DROPOFF/LAY-BYS: Dropoffs shall not substantially interrupt the first row of street trees along Eisenhower Avenue. In order to accomplish this an island shall be provided between the dropoff and the street; this island shall contain a minimum of three street trees spaced at twenty feet on center, aligned with the first row of street trees along Eisenhower Avenue. The spacing of these street trees in relation to the balance of the street trees along Eisenhower Avenue may need to be adjusted, however, these trees shall be arranged symmetrically about the building entrance centerline.

The spacing of streetlights may also need to be adjusted in order to best fit the specific design of the dropoff.

6.3.4 INTERSECTIONS

SIDEWALK PAVING: At all intersections, sidewalk paving shall extend to the curb along Eisenhower Avenue. Since all intersections in the Eisenhower Precinct are transitional areas to other precincts, refer to Section 6.11.2 - Transitions to Other Precincts, for specific requirements at each intersection.

6.4 HARDSCAPE

6.4.1 PAVING

STANDARD SIDEWALK PAVING: The standard sidewalk paving for Eisenhower Precinct shall be the King William Range Brick paver laid in a running bond pattern parallel to the street. A twelve inch brick band shall be provided along each edge of the sidewalk and along the curb where paving abuts the curb. The banding shall be laid in a running and stack bond.

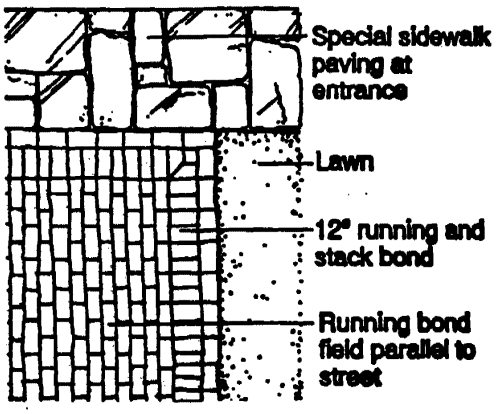


Figure 6-7: Eisenhower Precinct - Typical Paving Pattern

Along Hooff's Run Drive the paving shall be similar except the sidewalks shall have an eight inch rowlock band on each side.

PAVEMENT EDGES: All sidewalk and planter bed edges shall be flush with grade.

SPECIAL SIDEWALK PAVING: Special sidewalk paving when provided shall respond to the scale of the boulevard and the emphasis of major lobby entrances. Special paving may be integrated with the dropoffs and lay-bys as well.

6.5 FURNITURE

6.5.1 SEATING

Except as otherwise noted, seating may be provided in the building zone only.

6.5.2 STREET FIXTURES

TRASH RECEPTACLES: One trash receptacle shall be provided at each corner of all intersections.

BIKE RACKS: If bike racks are needed; they shall be located within the building zone on standard sidewalk paving.

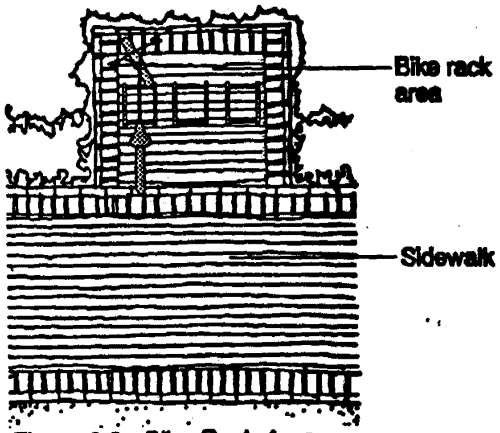


Figure 6-8: Bike Rack Area

CLOCKS, ART AND OTHER SPECIAL FEATURES: Clocks, art and other special features are permitted in the building zone only.

BOLLARDS: The use of bollards in lay-bys and dropoffs is encouraged.

6.6 LIGHTING

6.6.1 STREETLIGHTS

Single luminaire streetlights as specified in the General Streetscape Guidelines shall be provided along Eisenhower Avenue. They shall be spaced at eighty feet on center and paired across the street at Blocks O and P. Streetlights shall also be space at eighty feet on center along Hooff's Run Drive.

6.6.2 SPECIALTY LANDSCAPE LIGHTING

Along Eisenhower Avenue additional low level lighting may be necessary along sidewalks in order to meet the minimum lighting standards of the City of Alexandria.

MINIATURE LIGHTING: Miniature lights are prohibited in Eisenhower Precinct.

6.6.3 BUILDING LIGHTS

The general streetscape guidelines shall apply with the following addition.

FACADE LIGHTING: Lighting of facades at major entrances is encouraged in order to enhance the importance of entrances on Eisenhower Avenue.

6.7 PLANTING

6.7.1 STREET TREES

The street trees along Eisenhower Avenue shall be the Bloodgood Plane Tree, *Plantanus x acerfolia* 'Bloodgood'. Along Hooff's Run Drive the street trees shall be *Tilia cordata 'Greenspire'*; the Greenspire Linden. The street trees shall be planted twenty feet on center in lawn.

6.7.2 PLANTING BEDS AND PLANTERS

All planting shall be installed in at-grade planting beds within the building zone. The parcel owner shall provide continuous planting along 100% of the net plantable building facade. Plantings shall be a minimum of five feet wide and may extend to fill the building zone.

Planting design shall provide large masses to reinforce the grand boulevard scale of Eisenhower Avenue. Loose, unstructured, naturalistic planting design and plants such as unclipped Abelia, Forsythia or River Birch are not acceptable. Acceptable plants include Yews, Azaleas and Cherries.

6.7.3 FREESTANDING PLANTERS

Freestanding planters are prohibited in Eisenhower Precinct.

6.10 ARCHITECTURAL PROJECTIONS

6.10.1 AWNINGS/CANOPIES

Awnings and canopies are not permitted in Eisenhower Precinct.

6.10.2 PORTE COCHERES

Porte cocheres are permitted only in conjunction with dropoffs/lay-bys in Eisenhower Precinct.

6.11 TRANSITIONAL AREAS

6.11.2 TRANSITIONS BETWEEN PRECINCTS

JAMIESON PRECINCT TRANSITION: Eisenhower Precinct is dominant over Jamieson Precinct. The first two street trees on each side of Elizabeth Lane shall be Bloodgood Plane Trees to match the Eisenhower Precinct street trees. The first street tree on Elizabeth Lane shall align with the second row of street trees along Eisenhower Avenue. The standard sidewalk layout and paving shall change from Eisenhower Precinct standards to Ballenger Precinct standard paving at the line created by the extension of the build-to line parallel to Eisenhower Avenue. The planting requirements for the building zone for Eisenhower Precinct shall wrap around the corner extending ten feet minimum along Elizabeth Lane and ending at an appropriate architectural feature. See Figure 6-9.

DULANY PRECINCT TRANSITION: Eisenhower Precinct is subordinate to Dulany Precinct. The two corners of Dulany Street and Eisenhower Avenue shall be treated symmetrically. See Figure 6-10.

The area in front of the portal elements of Blocks M and N shall be designed to create small plazas in front of the building. The plazas shall be separated from the street edge and relate to the minor entrances at the portal elements.

The standard sidewalk layout and paving for Dulany Precinct shall extend to Eisenhower Avenue and the courtyard shall be paved with Dulany Precinct paving. The sidewalk paving shall change at the edge of the plaza to Eisenhower Precinct standard sidewalk paving.

The Dulany Precinct street trees shall extend to Eisenhower Avenue. There shall be three trees arranged in a quarter circle at each corner, with the one closest to Eisenhower Avenue aligning with the first row of trees along Eisenhower Avenue.

The planters in the building zone for Dulany Precinct shall extend around the corner to Eisenhower Avenue a minimum of ten feet ending at an appropriate architectural feature. These planters shall be coordinated with the plaza design as well. Each plaza shall have at least one bench and one directory/kiosk within it.

BALLENGER PRECINCT TRANSITION: Eisenhower Precinct is dominant over Ballenger Precinct. The first two street trees on each side of John Carlyle Street shall be Bloodgood Plane trees to match the Eisenhower Avenue street trees. The first tree on John Carlyle Street shall align with the second row of street trees along Eisenhower Avenue. The standard sidewalk paving shall change from Eisenhower Precinct standard paving to Ballenger Precinct standard at the line created by the extension of the build-to line parallel to Eisenhower Avenue. The planting requirements for the building zone for Eisenhower Precinct shall wrap around the corner extending ten feet minimum along Elizabeth Lane and ending at an appropriate architectural feature. Eisenhower Precinct and Holland Precinct are similar in design; neither shall be dominant. Each precinct's design shall extend to the curb on either side of John Carlyle Street. The location of the street trees along John Carlyle Street shall be coordinated to begin across from each other, and any other element shall be coordinated across John Carlyle Street. See Figure 6-11.

HOLLAND PRECINCT TRANSITION: Holland Precinct and Eisenhower Precinct streetscape design is similar. The transition between the two precincts at John Carlyle Street shall be made so that neither is dominant, and the experience of Eisenhower Avenue is continuous. See Figure 6-12. At Block P, the first two street trees along John Carlyle Street shall be Bloodgood Plane trees to match those along Holland; the first tree shall align to the second row of street trees along Eisenhower Avenue.

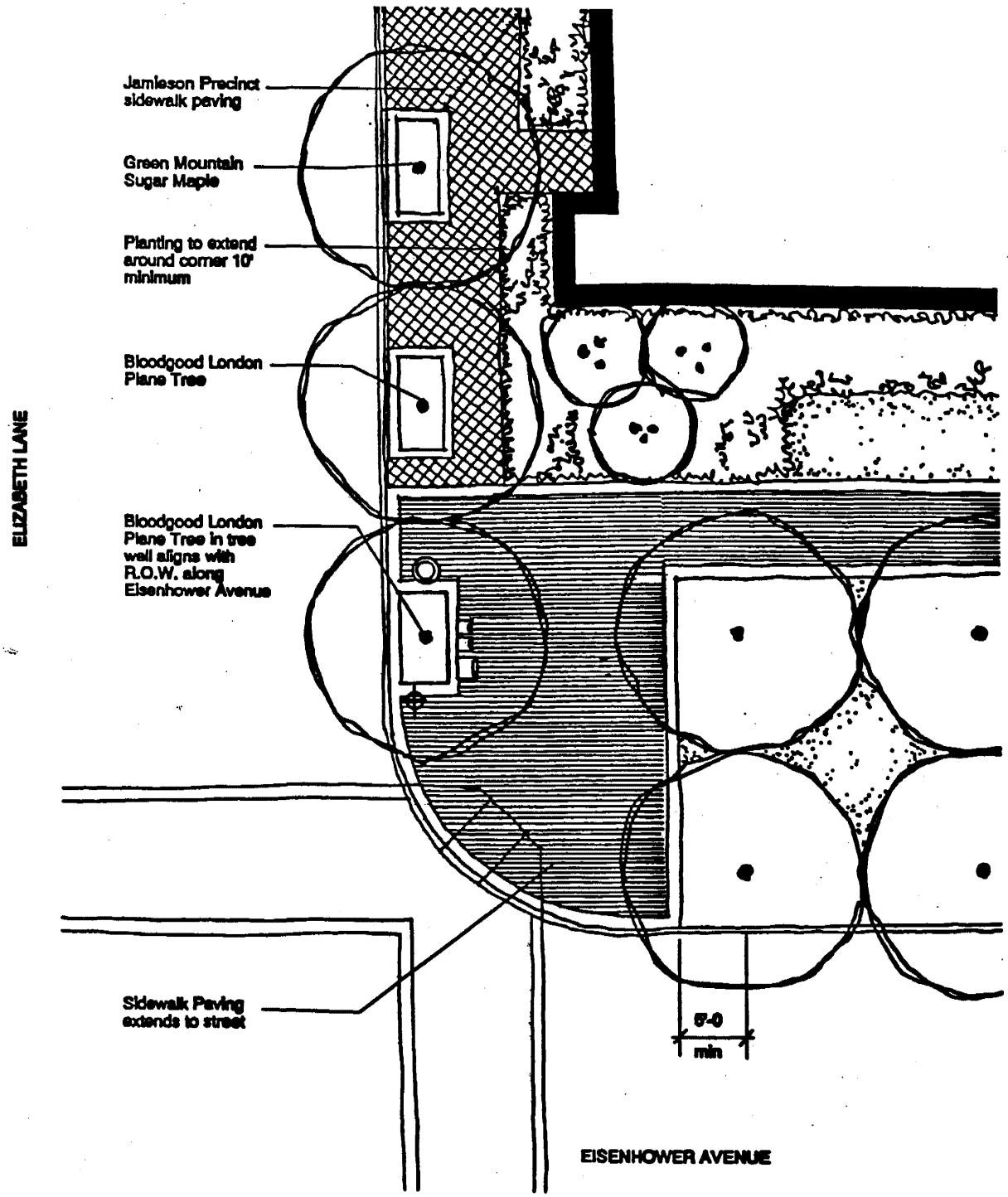


Figure 6-9: Jamieson Precinct Transition

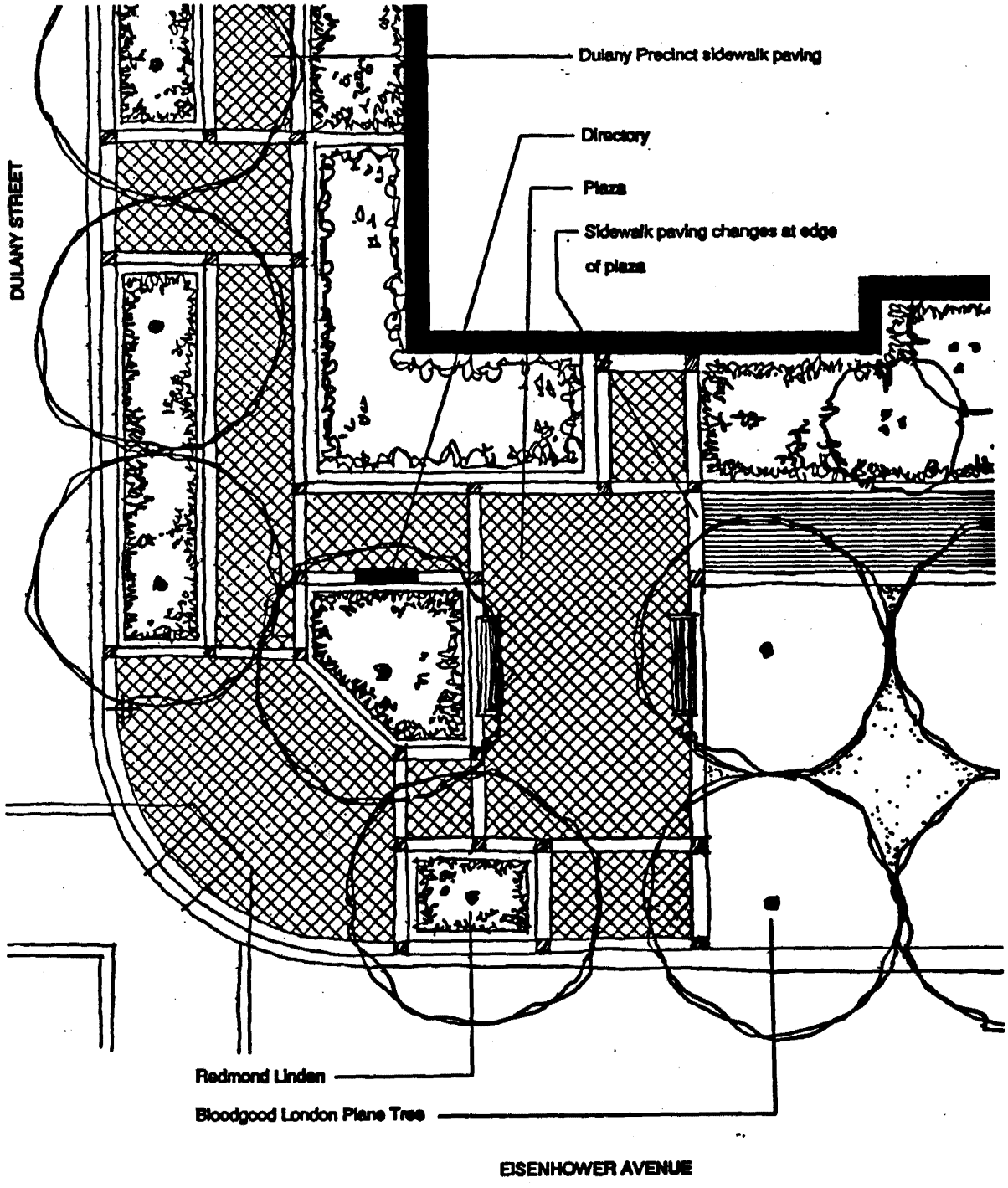


Figure 6-10: Dulany Precinct Transition

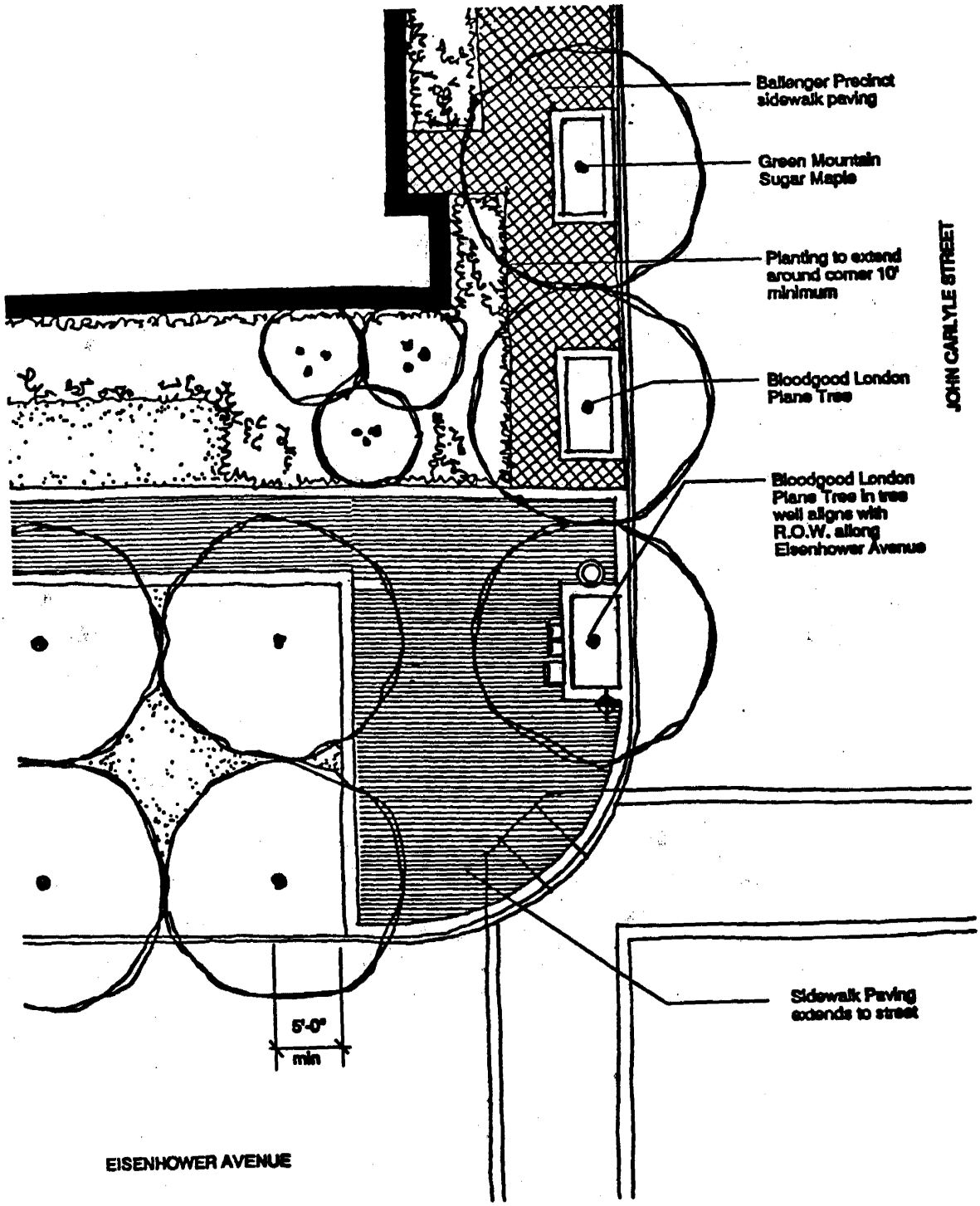


Figure 6-11: Ballenger Precinct Transition

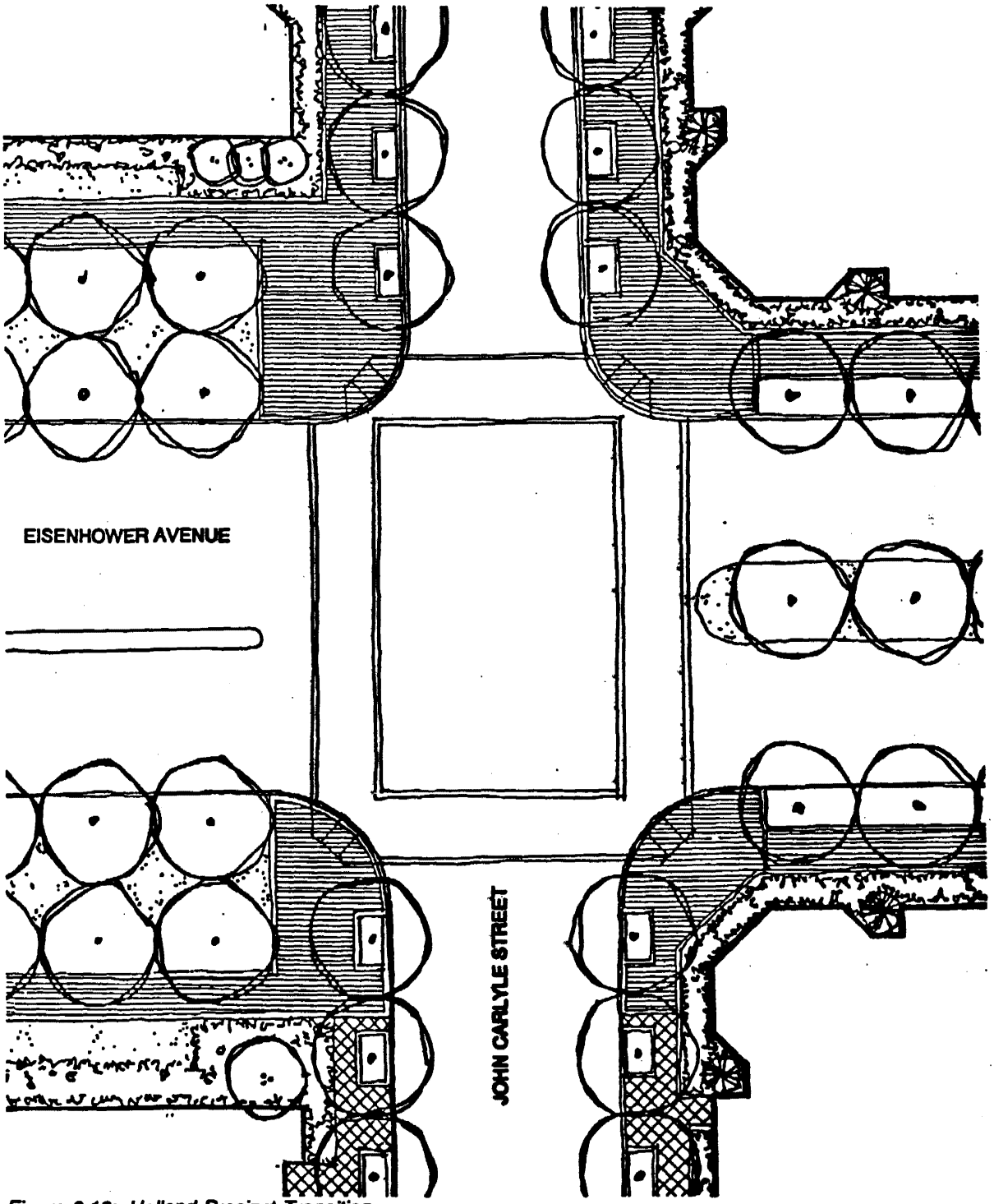


Figure 6-12: Holland Precinct Transition

7 HOLLAND PRECINCT

Additional information and special requirements for the streetscape for Holland Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

7 HOLLAND PRECINCT

A parkway is the design concept for Holland Precinct. The visual prominence of the nine acre public park adjoining this side of Carlyle will give this precinct the feel of being within a park. This park setting plays the strongest role in reinforcing the fifth principle of the development plan: to have the streets be a linear park. The goal for Holland Precinct is to enhance and reinforce the strong relationship between the park, the rotary, and a residential neighborhood.

Cooper Robertson and Partners summed up the design intent for Holland Precinct in the Design Report for Carlyle when they stated that Holland Lane is:

> ...envisioned as a tree lined boulevard with ... brick sidewalks and landscaped areas with... London Plane or similar type trees. The residential buildings which front this street and park will be configured so that a series of landscaped courtyards will face the park as well. These buildings will be developed to varying heights (four-to-six stories up to fifteen story towers), and street wall configurations to accentuate this parkway-like setting of the residential neighborhood.

Holland Precinct is located at the eastern edge of Carlyle. It is intended that the strong visual relationship with the park will be reinforced with informal naturalistic planting interweaving the park and the urban edge of Carlyle.

7.1 DESIGN CONCEPT AND CHARACTER

7.1.1 CONTEXT

Because Holland Precinct is on the eastern edge of Carlyle, this edge position makes it a strongly identifiable place due to the site plan and use of the precinct.

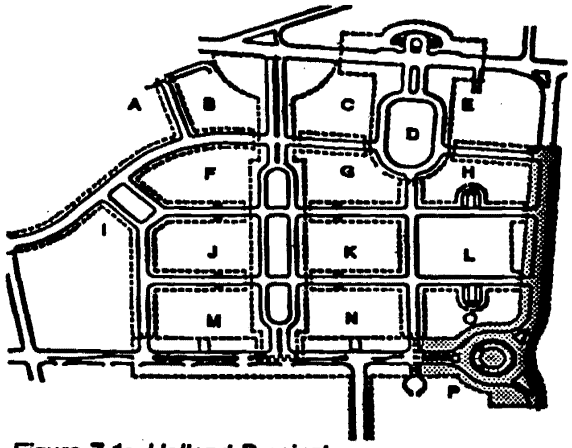


Figure 7-1: Holland Precinct

SITE PLAN: The combination of four, seven and fifteen story residential buildings along Holland Lane sharply define the western edge of the precinct. These buildings will be oriented to the park and will have a strong visual connection to the park and Old Town beyond over the tops of the trees. The mass of the buildings will be broken with street level and second story garden courts that will address Holland Lane and the sidewalk at street level. The primary entrances to these buildings will be on the opposite sides of the buildings facing onto Ballenger Mews; entrances on Holland Lane will be secondary. The streetscape ribbon of sidewalk and lawn along Holland Lane will not be interrupted by parking and service entrances, enhancing the park effect.

CIRCULATION: Because Holland Lane connects the Eisenhower Valley to Old Town, the amount of vehicular traffic on Holland Lane will be substantially more than on the interior streets of Carlyle. Holland Lane intersects Eisenhower Avenue at the Rotary in the southeast corner of Carlyle. The nature of the traffic on Holland Lane will be more through than local even though it provides access to Carlyle at the three east-west streets. The intersections of these three streets with Holland Lane provide strong points for pedestrian crossings to the park. The pedestrian traffic along Holland Lane will probably be minimal as most people will be going to the park or their residence. The bike trail along Holland Lane will add through bike traffic and provide easy access for Carlyle residents to the Alexandria bike trails system.

OPEN SPACES: There are two open spaces in the Holland Precinct; they are Alexandria African American Park and the Rotary.

Alexandria African American Park, which runs the length of the eastern edge of Carlyle, has large existing trees and other vegetation. Most of this will be preserved in the design for the park. These existing trees more than anything else establish the parkway image for Holland Precinct. The existing grade at Holland Lane is high and it quickly falls to a lower level at Hooff's Run.

The Rotary at the intersection of Holland Lane and Eisenhower Avenue will be a place many people will associate with their image of Carlyle because they will drive around it. The rotary is a strong geometric form and this form is reinforced by the buildings surrounding the west side of it. The Rotary is like many of the circles in Washington which are a focus for a neighborhood.

Figure 7-2: Trees and Lawn

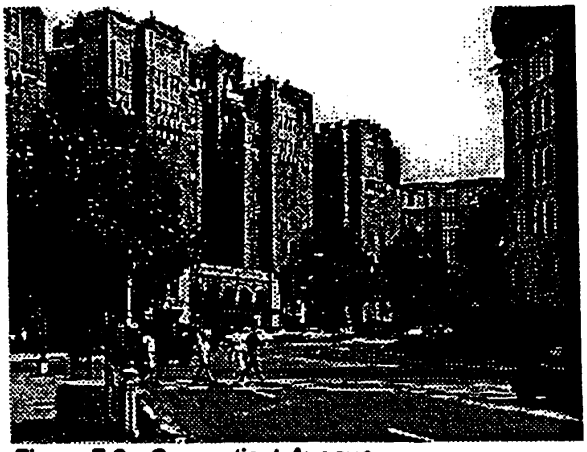


Figure 7-3: Connecticut Avenue

The adjoining residential buildings set in this parkway will be very much like Connecticut Avenue in Washington or Central Park in New York.

7.1.2 USE

In Holland Precinct, the major first floor use and the predominant precinct use are residential. Passive recreational use of the park is the next most important use in the precinct. The park provides a destination for pedestrians in the streetscape as well as influencing the character of Holland Lane. The park is a public use while the residential buildings are private uses. The street is the interface which provides the transition between the two.

Activity in Holland Precinct streetscape will be fairly constant through the day, with automobile traffic peaking at the morning and evening rush hours. Weekends will see a higher concentration of people strolling to the park and using the bike trails along Holland Lane especially during daylight hours.

7.1.3 IMAGERY

The image of a parkway is a pastoral one; that of a greensward containing large trees and lawn. The passive park is a place to stroll and enjoy picturesque views.

7.2 MAJOR OPEN SPACES

The major open spaces will contribute substantially to the parkway image of Holland Precinct. Every effort should be made to orient buildings and integrate the built edge of Carlyle to these spaces.

7.2.1 ROTARY

The Rotary at the intersection of Holland Lane and Eisenhower Avenue is the terminus to the long axis of the Eisenhower "boulevard." The strong geometric form of the circle defines the space and its character. The double row of street tree plantings and the building massing along the western edge of the Rotary reinforces the circular form. The design of the rotary shall be formal and symmetrical about the Eisenhower axis. There should be a focal element at the center of the rotary such as a statue.

The plantings should respond to the formal nature of the space, however, plants should be selected to relate to the streetscape and the existing vegetation in the park. A strong relationship between the Rotary and the park is encouraged.

Treatment of the streetscape on the inside edge of the rotary shall be as designed with the rotary.

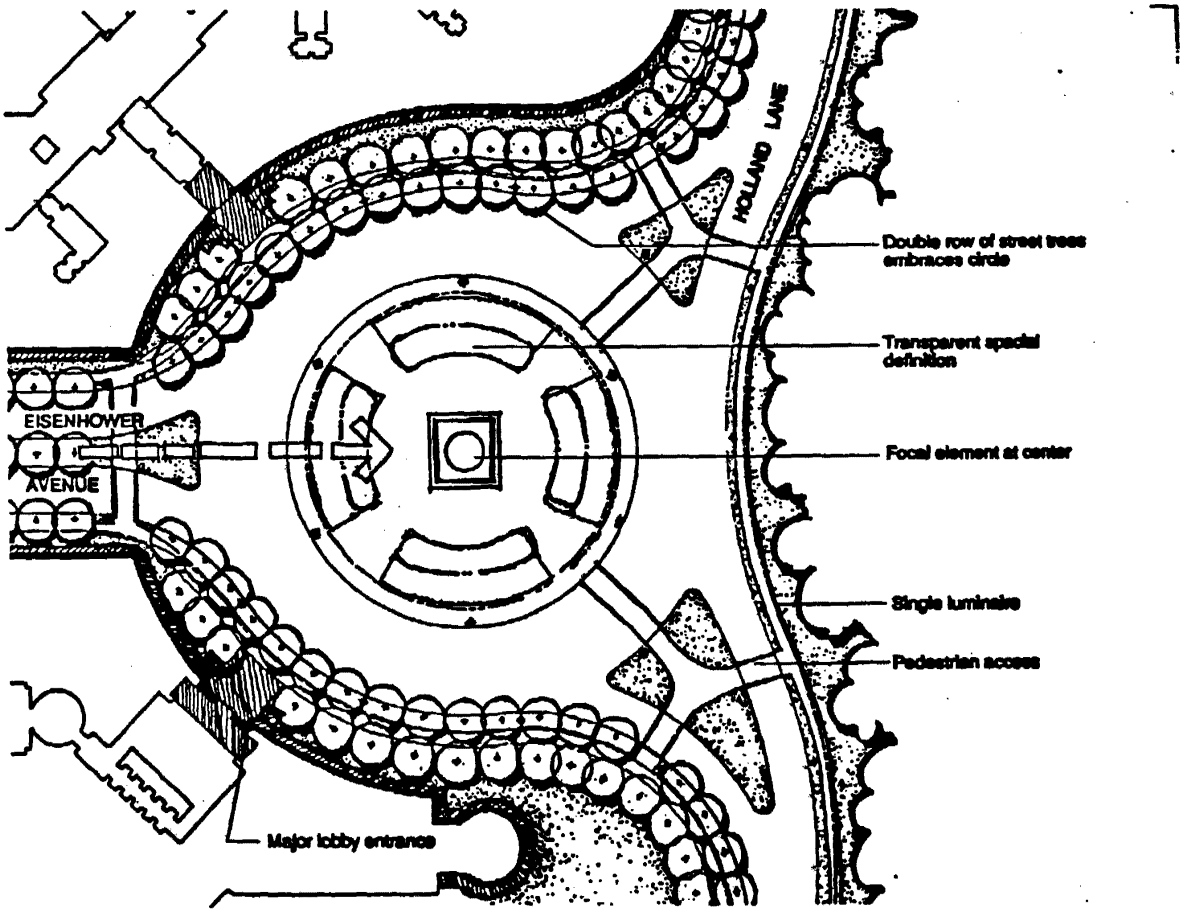


Figure 7-4: Rotary Open Space Concept

7.2.2 ALEXANDRIA AFRICAN AMERICAN HERITAGE PARK

The nine acre Alexandria African American Heritage Park is the largest open space in Carlyle. It will "commemorate individuals, groups, events, achievements and contributions by Black Americans who have had a marked effect on the City's character, development and history" (Cooper Robertson and Partners).

The design for the park should be clearly related to the streetscape along the Holland Lane edge. Because of the existing trees, no additional street trees shall be planted along the east side of Holland Lane. This will reinforce the visual connection to the park from Holland Lane and enhance the pastoral setting. Continuous sidewalk and street lighting however must be provided along Holland Lane; Refer to Section 7.3 Streetscape Design for the specific requirements. The pedestrian crosswalks of Holland Lane at the three intersections are strong pedestrian links to the park. These should also be reinforced in the park design.

7.3 STREETSCAPE DESIGN

7.3.1 TYPICAL LAYOUT AND DIMENSIONS

In Holland Precinct, the streetscape configuration is designed to enhance the parkway image. Because of the park on the east side of Holland Lane the streetscape configuration is not symmetrical. On the west side of Holland Lane, adjoining the residential buildings, the usual three streetscape zones will be strictly defined.

The curb zone will be a seven foot wide area within the right-of-way with street trees centered. This zone shall be planted with lawn with the street trees centered in the lawn. The pedestrian zone shall be defined as an eight foot wide sidewalk located immediately adjacent to the curb zone; the sidewalk shall have an eight inch band on each side. The building zone shall be the area from the edge of the sidewalk to the building facade, approximately fifteen feet. This area shall be landscaped with trees, shrubs, groundcover and lawn as required in Section 7.8 - Planting, and may be occupied by a portion of a garden court entrance.

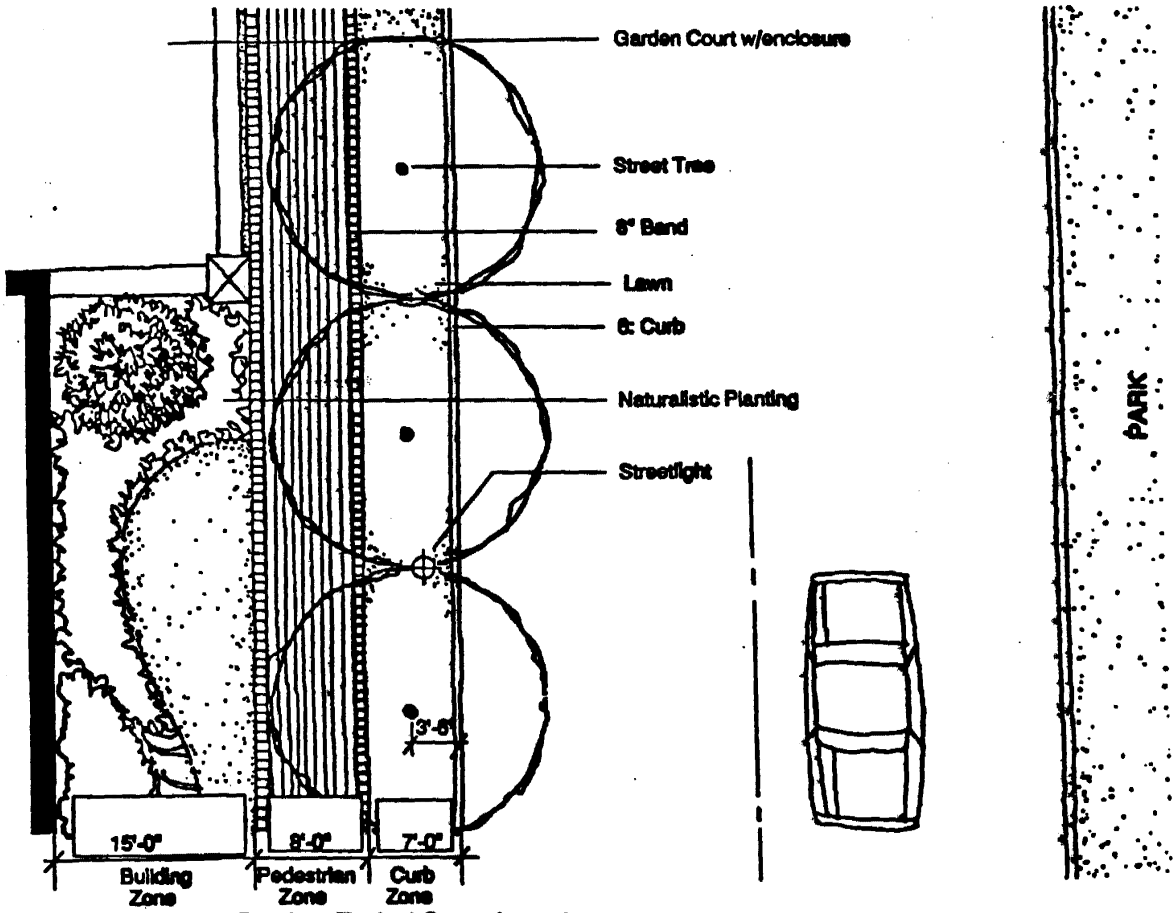


Figure 7-5: Holland Precinct Typical Street Layout

Figure 7-6: Garden Court

7.3.2 BUILDING ENTRANCES

MAJOR LOBBY ENTRANCE: Major lobby entrances of buildings facing the Rotary may be designed by the parcel owner, however, they may not interrupt the curb zone. No physical connection to the street with pavement will be permitted and the street trees within the curb zone shall be maintained at the specified spacing.

GARDEN COURTS: One garden court shall be provided for Blocks H, L and O facing onto Holland Lane. This garden court may extend into the building zone of the streetscape. If the garden court is elevated, a transition to the street shall be provided. The transition shall incorporate stairs with intermediate landings and planters in a manner which is graceful and embraces the street.The transition to the street shall be appropriately scaled to the building architecture and the sidewalk.

7.4 HARDSCAPE

7.4.1 SIDEWALK PAVING

STANDARD SIDEWALK PAVING: The standard sidewalk paving for Holland Precinct shall be the King William Range brick pavers in a running bond pattern parallel to the street. An eight inch rowlock band shall be provided along each edge of the sidewalk.

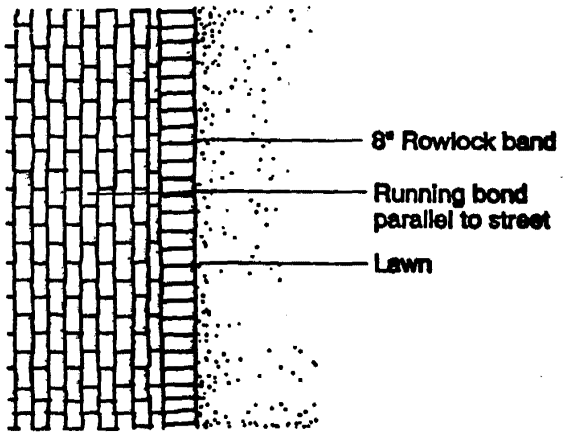


Figure 7-7: Holland Precinct Standard Sidewalk Paving

7.5 STREET FURNITURE

In order to enhance the pastoral nature of Holland Precinct, street furniture shall be kept to minimum. The following requirements apply in addition to those in Chapter Two.

7.5.1 SEATING

FORMAL SEATING - BENCHES: Benches shall be provided in garden courts in a quantity appropriate to the design. No other benches are permitted within the streetscape.

7.5.2 STREET FIXTURES

TRASH RECEPTACLES: One trash receptacle shall be provided in the curb zone at all street corners only.

FENCES, GATES, COLUMNS AND WALLS: The use of fences, gates, columns and walls as a means to provide the required enclosure for a Garden Court is encouraged. Fences and columns shall allow visual access to the garden court from the sidewalk.

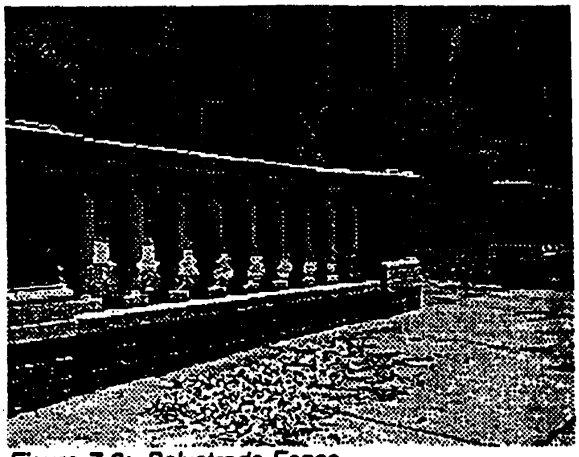


Figure 7-8: Balustrade Fence

7.6 LIGHTING

7.6.1 STREETLIGHTS

All streetlights in Holland Precinct shall be a single luminaire streetlight as specified in the General Streetscape Guidelines. Streetlights along Holland Lane shall be spaced at eighty feet on center and staggered across Holland Lane. Streetlights along Eisenhower Avenue shall be spaced at eighty feet on center and paired across Eisenhower Avenue. Streetlights around the Rotary shall be spaced at eighty feet on center and arranged in a formal manner.

At the intersections of Emerson and Ballenger Streets with Holland Lane, streetlights shall be placed to maximize vehicular and pedestrian safety. For example, a single luminaire may be placed on axis with the intersecting street, or streetlights may be placed on all four corners of the intersection.

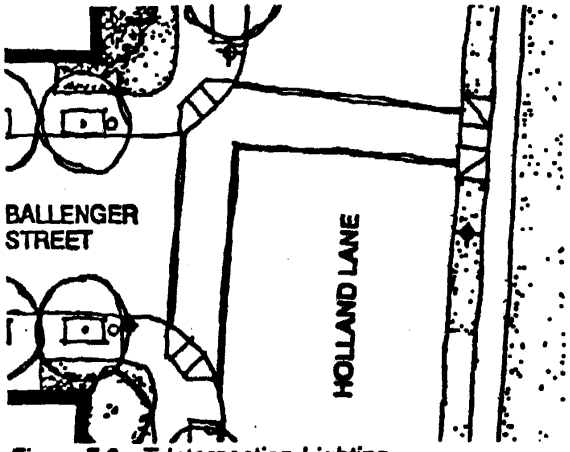


Figure 7-9: T Intersection Lighting

7.7 PLANTING

7.7.1 STREET TREES

Holland Precinct shall have two street trees. They shall be spaced at twenty feet on center.

Along the west side of Holland Lane, a single row of Red Oaks, *Quercus rubra*, shall be provided. Beginning at the point of curvature on Holland Lane before it joins the Rotary and around the western sides of the rotary, a double row of Bloodgood Plane Trees, *Plantanus x acerifolia*, shall be provided. The second row shall be fifteen feet behind the first row and shall be paired radially with the first row along the arc. All street trees in the curb zone in Holland Precinct shall be planted in lawn. There will be no street trees along the east side of Holland Lane.

In addition, a single row of Bloodgood Plane Trees shall be planted along the centerline of the median of Eisenhower Avenue between Blocks O and P.

7.7.2 PLANTING BEDS AND PLANTERS

Continuous at-grade planting beds shall be provided along 100% of the net facade length in the building zone against all buildings.

ROTARY AND EISENHOWER AVENUE FACADES: Planting beds along the Rotary and Eisenhower facades shall reinforce the formal geometric form of the rotary. Planting beds shall be a minimum of five feet wide and may extend to the full width of the building zone; however, a minimum of twenty-five percent of the building zone area shall be lawn.

Plant selections shall be native indigenous plants that relate to the existing vegetation in the park.

HOLLAND LANE FACADES: Planting beds along Holland Lane shall be designed in a naturalistic, pastoral manner to reinforce the visual connection across the street to the park. The planting beds shall be a minimum of five feet wide and may extend to the full width of the building zone; however, a minimum of thirty percent of the building zone shall be lawn. Mainly lower scale understory plantings should be used. The use of smaller shade trees, ornamental and flowering trees, and large shrubs is encouraged. The planting shall include a mix of evergreen and deciduous plants; plants shall be native or indigenous plants to relate to the existing vegetation in the park.

7.7.3 FREESTANDING PLANTERS

Freestanding planters are not permitted except in association with garden courts.

7.8 SIGNS

7.8.2 INFORMATION SIGNS

BUILDING IDENTIFICATION SIGNS: Since the primary entrances to the residential buildings are located within Ballenger Precinct, the primary signs shall be located there. Smaller secondary building identification signs may be provided, however, in association with garden courts only.

7.11 TRANSITIONAL AREAS

7.11.2 TRANSITIONS BETWEEN PRECINCTS

JAMIESON PRECINCT TRANSITION: Holland Precinct shall be the dominant precinct in the transition to Jamieson Precinct. The street trees shall remain the same as specified along each street and extend to the corners. The sidewalk pavement will change from the Holland standard paving to the Jamieson standard paving at the extension of the Holland Lane build to line. Plantings for Holland Precinct shall change to Jamieson Precinct. See Figure 7-10.

BALLENGER PRECINCT TRANSITION: Holland Precinct shall be the dominant precinct in the transition to Ballenger Precinct.

At Ballenger and Emerson Streets, the Holland Precinct sidewalk paving shall change to the Ballenger precinct paving at the point of curvature of the curb on the east west streets. See Figure 7-11. The street trees shall be the same on their respective streets. Plantings for Holland Precinct shall extend around the corner for a minimum of ten feet ending at an appropriate architectural feature.

At John Carlyle Street and Eisenhower Avenue, Holland Precinct shall be the dominant precinct. The first two street trees along John Carlyle Street shall be Bloodgood Plane Trees and the first tree shall align with the second row of trees from the curb along Eisenhower Avenue. All street trees beyond that shall be the Ballenger Precinct street tree. The standard sidewalk paving for Holland Precinct shall extend to the line of the sidewalk in front of Block N extended across John Carlyle Street. Plantings in the building zone shall extend a minimum of ten feet around the corner from Eisenhower Avenue and end at an appropriate architectural feature. See Figure 7-12.

EISENHOWER PRECINCT TRANSITION: Holland Precinct and Eisenhower Precinct streetscape design is similar. The transition between the two precincts at John Carlyle Street shall be made so that neither is dominant, and the experience of Eisenhower Avenue is continuous. See Figure 7-13. At Block P, the first two street trees along John Carlyle Street shall be Bloodgood Plane trees to match those along Holland; the first tree shall align to the second row of street trees along Eisenhower Avenue.

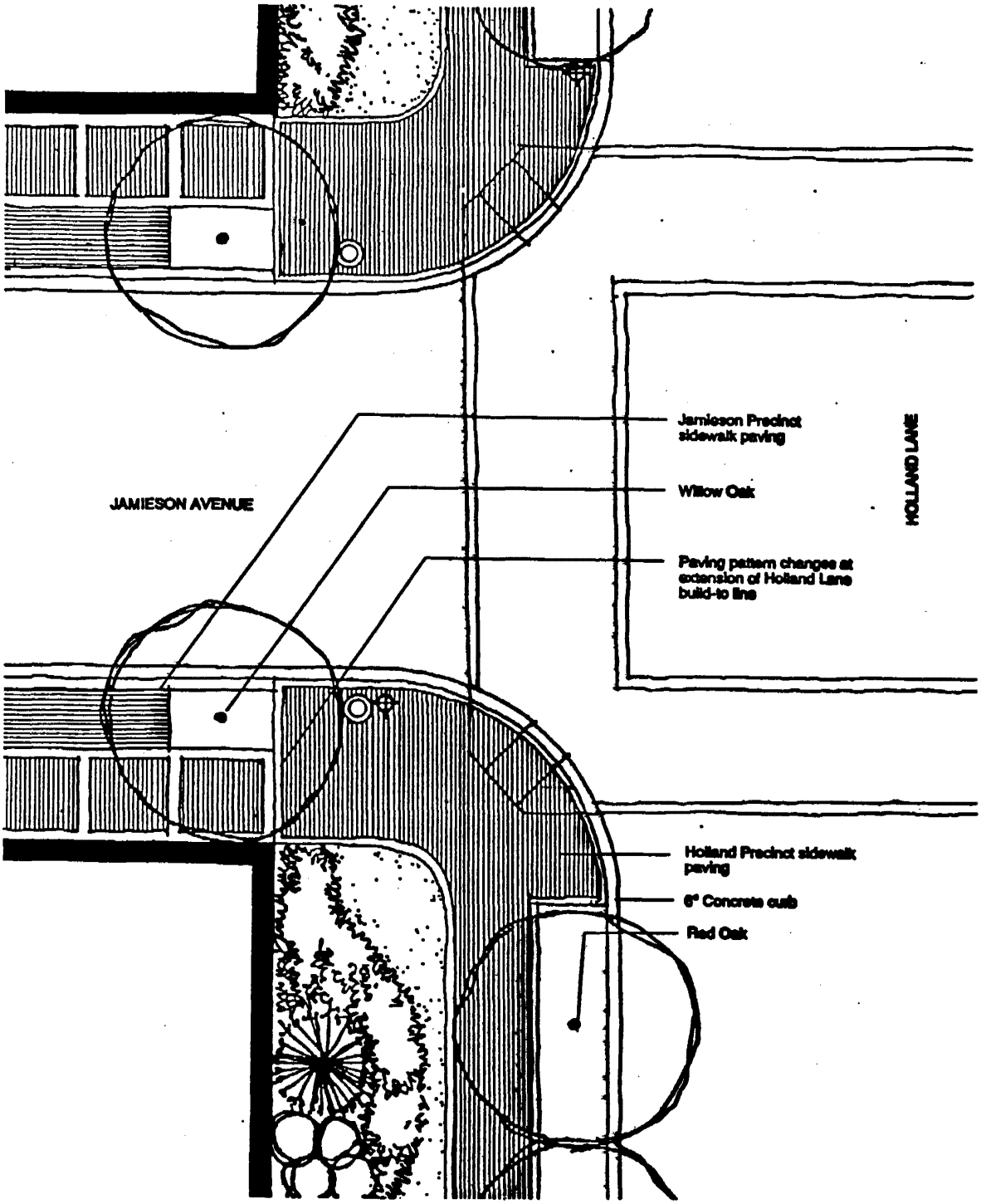


Figure 7-10: Jamieson Precinct Transition

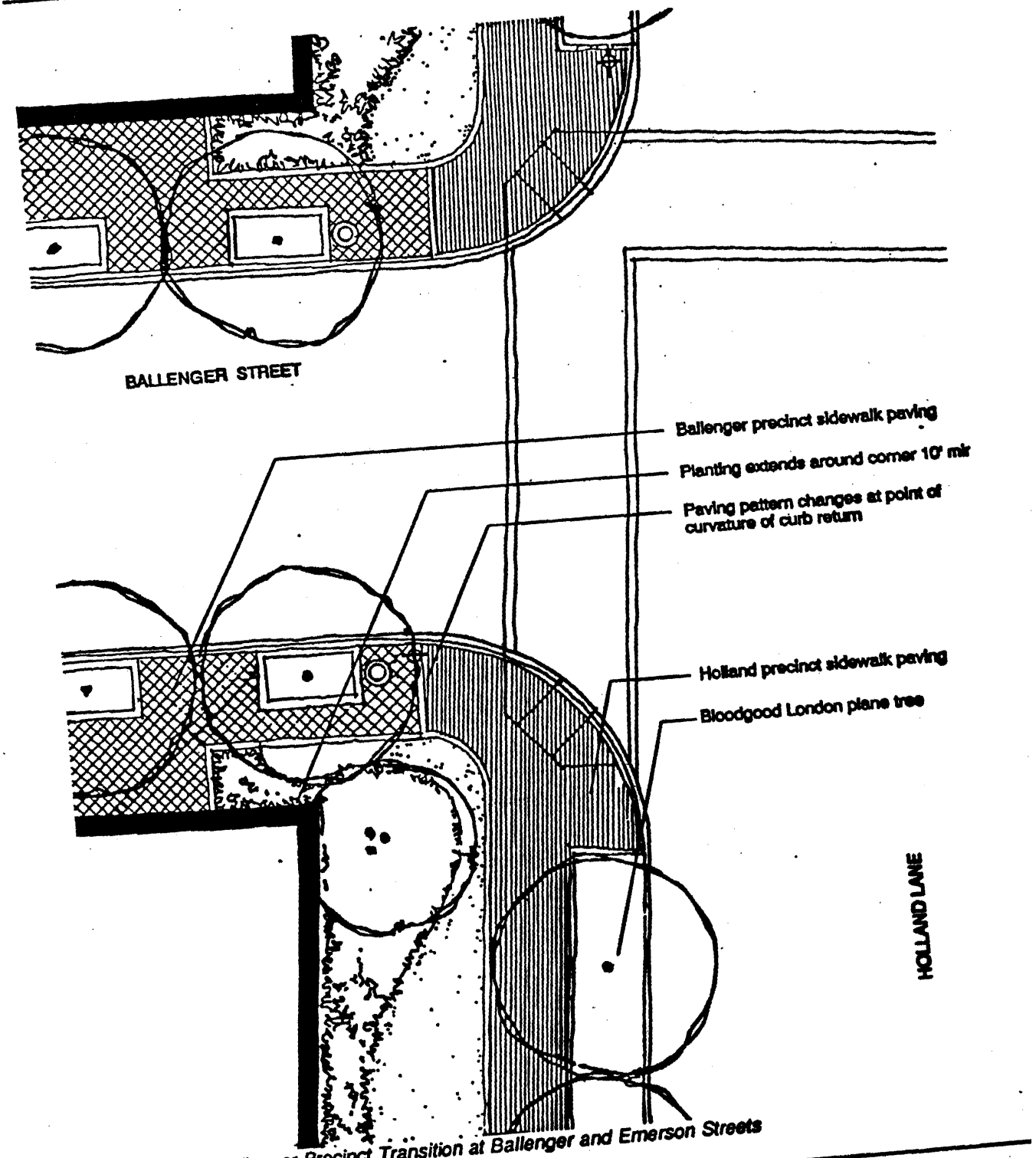


Figure 7-11: Ballenger Precinct Transition at Ballenger and Emerson Streets

LandDesign, Inc

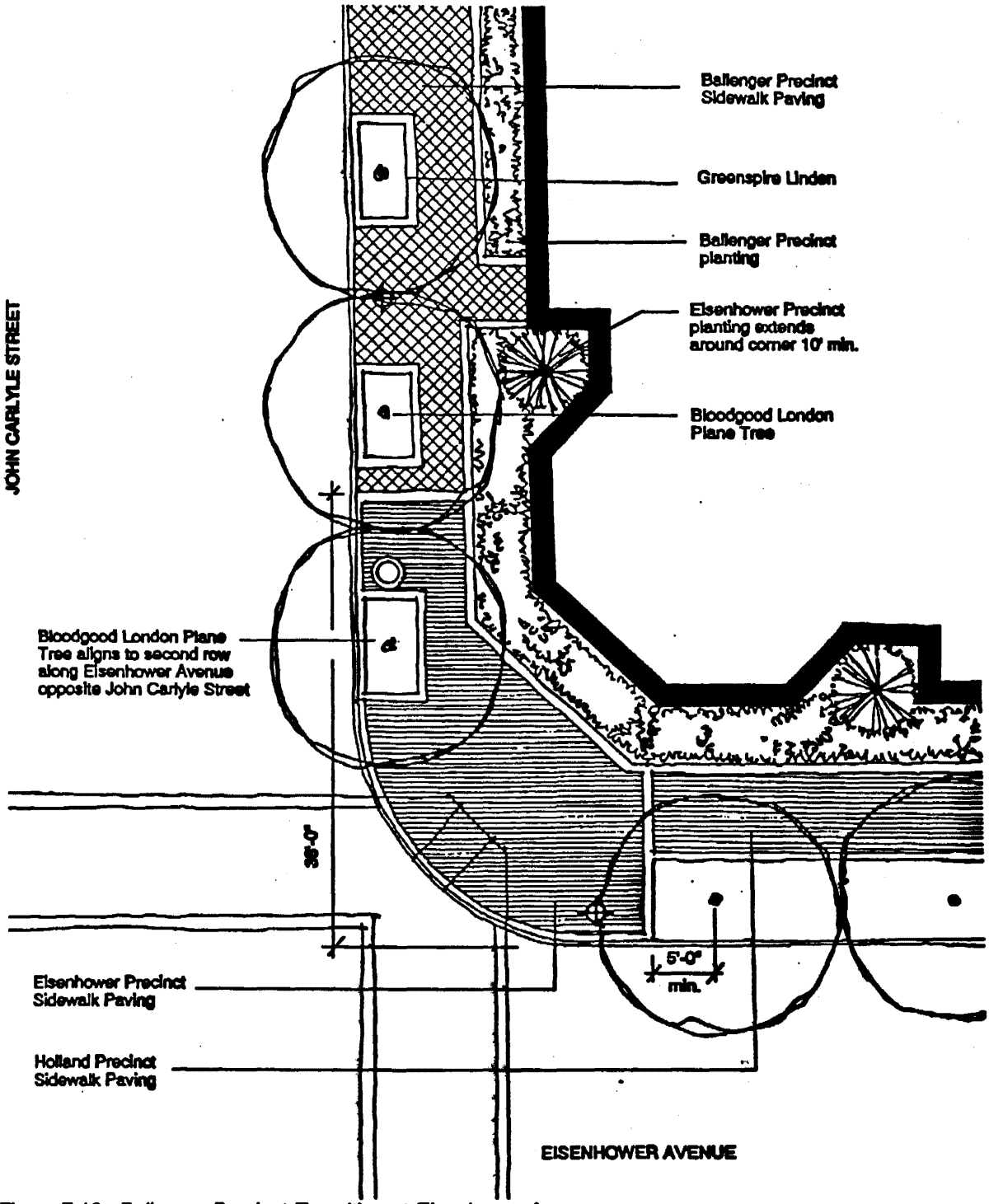


Figure 7-12: Ballenger Precinct Transition at Eisenhower Avenue

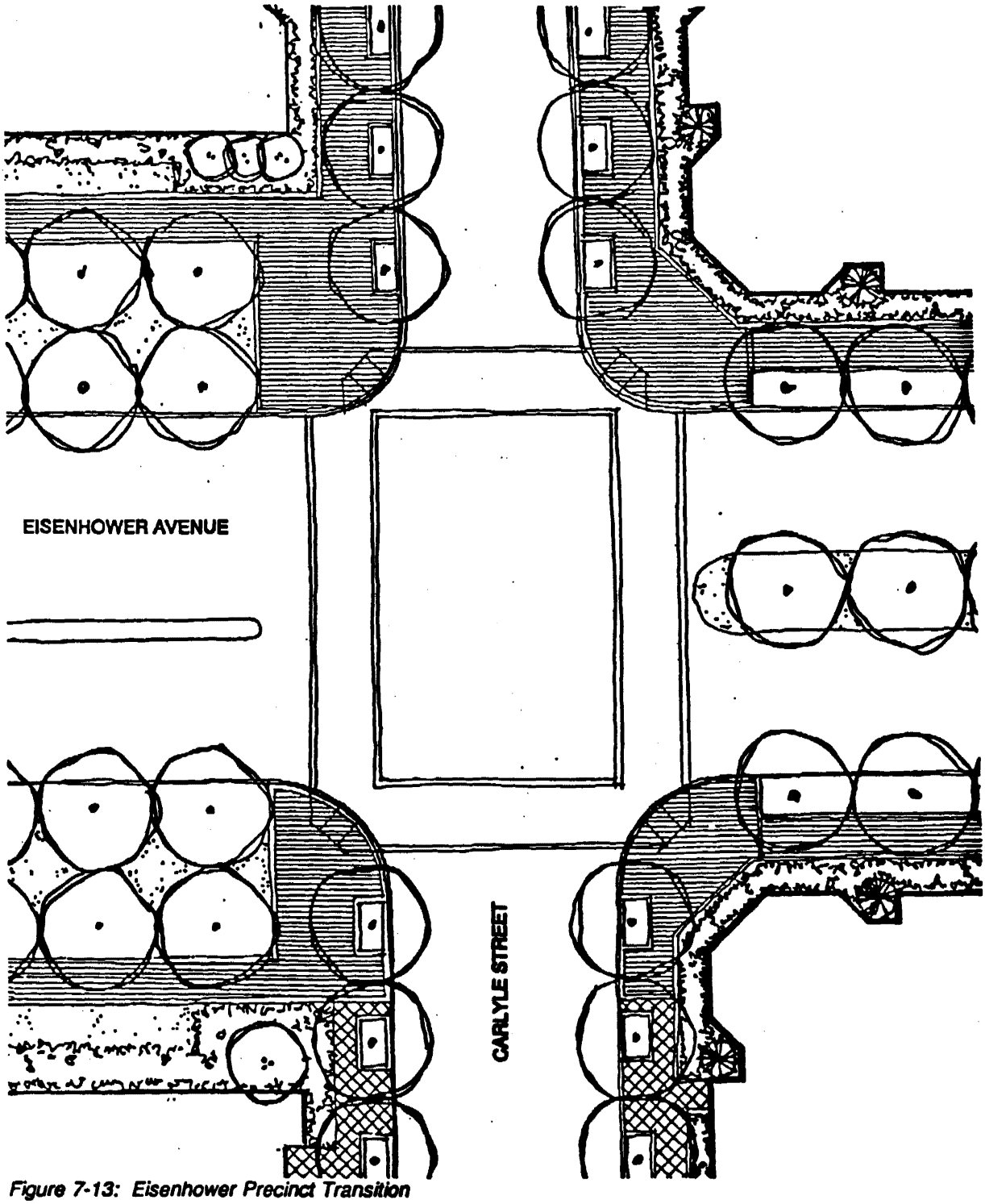


Figure 7-13: Eisenhower Precinct Transition

8 BALLENGER PRECINCT

Additional information and special requirements for the streetscape for Ballenger Precinct are outlined below. These guidelines shall apply in addition to the General Streetscape Guidelines; when a topic is not addressed, the General Streetscape Guidelines shall apply.

8 BALLENGER PRECINCT

Ballenger Precinct will be home to most of Carlyle's residents, as it is a primarily residential precinct. A combination of pedestrian oriented open spaces and a variety of buildings will make it an interesting place to stroll. Ballenger Precinct will best exemplify the first design principle of the Development Plan which states that the number and kinds of buildings will be diverse. Individual expressions of homes will add a charm and character to the precinct that will be reminiscent of Old Town.

Ballenger Precinct is located on the east side of Carlyle. It is enclosed by Carlyle Precinct to the north, Holland Precinct to the east, Eisenhower Precinct to the south and Dulany Precinct to the west.

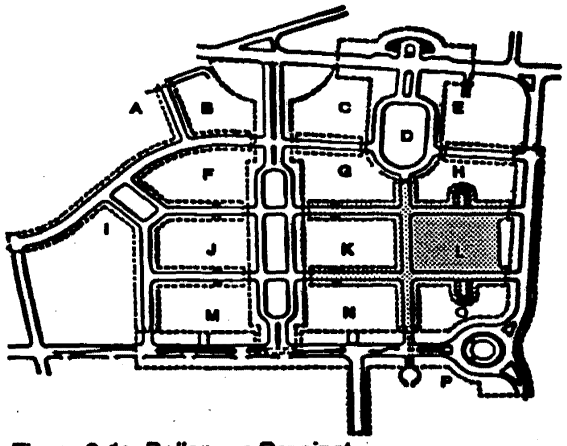


Figure 8-1: Ballenger Precinct

8.1 DESIGN CONCEPT AND CHARACTER

8.1.1 CONTEXT

SITE PLAN: The residential blocks of Ballenger Precinct are visually connected not only by the streets but by the open spaces within the precinct. Ballenger Precinct will have a mix of four story buildings with seven, twelve and fifteen story towers with major lobby entrances. The street wall will be animated with cut outs, balconies and bay windows.

CIRCULATION: Vehicular circulation in Ballenger Precinct will access three blocks in Ballenger Precinct at drop off courts adjacent to the towers allowing a slower zone of traffic to penetrate the residential blocks. Pedestrians will have many routes to choose in the Precinct. The major open space will provide cross block connections.

OPEN SPACE: Ballenger Mews, a cruciform space formed by the massing of the buildings is the focus of Ballenger Precinct. The mews links blocks H, K, L and O on the cross axes. The link crosses Ballenger and Emerson Streets connecting with the dropoff courts on the either side. This link forms an important visual and physical relationship for the buildings in Blocks H and O to the Mews. The streetscape should reflect this open space extension.

Ballenger Mews is more inwardly focused than any of the other open spaces in Carlyle. Unlike the other open spaces, it is not surrounded entirely by streets. The adjoining residential buildings will give it a more private and intimate feel. A day-care center may also be located adjacent to the Mews.

8.1.2 USE

The predominant use in Ballenger Precinct is residential. The main use of the streetscape will be the movement of people to and from work, to school, shopping and other daily routines. The streetscape could also be a place where children play while their parents sit on the steps of their house and chat with the neighbor. Leisurely strolling, walking the dog and pushing the baby carriage will also be a Ballenger Precinct activity. Most of the use of the streetscape will be fairly constant through the daylight hours with the use tapering off in the evening. The uses in Ballenger Precinct are semi public to private and, as in most residential neighborhoods, strangers are not as welcome.

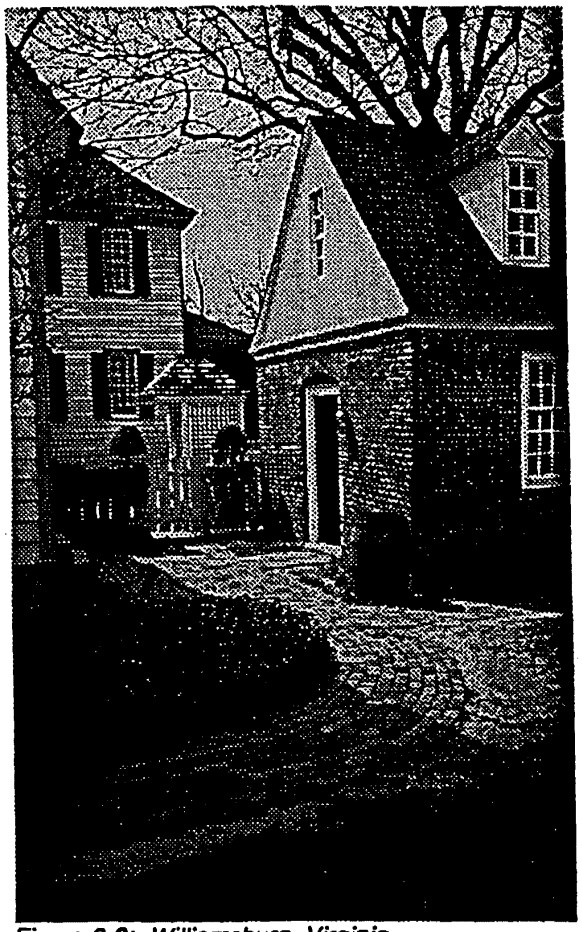


Figure 8-2: Williamsburg, Virginia

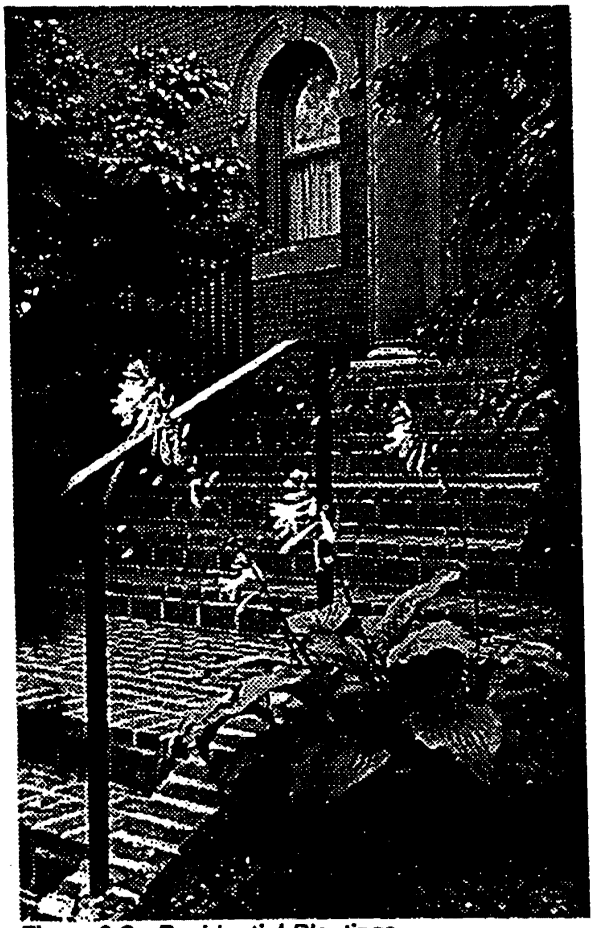


Figure 8-3: Residential Plantings

8.1.3 IMAGERY

Ballenger Precinct should invoke a comfortable, welcoming feeling of home with the associated sense of security. Varied architectural expressions and a varied landscape palette will give Ballenger a personal and residential feel. The street should be full of human scale details such as door knockers, stoops, shutters, window boxes, planters and pots.

8.2 MAJOR OPEN SPACE

The centerpiece of Ballenger Precinct is Ballenger Mews, a one and a half acre park. This open space will be a richly planted garden with contoured lawns and curvilinear walks. The Mews will be similar in character to Louisburg Square in Beacon Hill in Boston or the squares in Charleston, South Carolina. The Mews should be designed to be intimate in scale and naturalistic.

The cruciform shape of the Mews creates axial relationships to the buildings at each end. The cross axis extends from Block L into the residential courts in Blocks H and O. The street trees along Ballenger and Emerson Streets shall break to reinforce the relationship of the Mews to the courts. In addition, the residential courts in Blocks H and O shall be designed to focus onto the mews as well. See 8-4.

Vehicular and pedestrian entrances in the Mews and the residential courts shall be emphasized equally. Vehicular access areas shall be treated as pedestrian plazas. The areas adjoining the streets shall be fenced with transparent fencing to enhance the semiprivate feel of the mews while maintaining visual access from the street. The plantings in the Mews shall be layered in a definite hierarchy. Plantings shall include shade trees, ornamental trees, shrubs, flower beds and specimen plants. The greater portion of the ground plane shall be lawn.

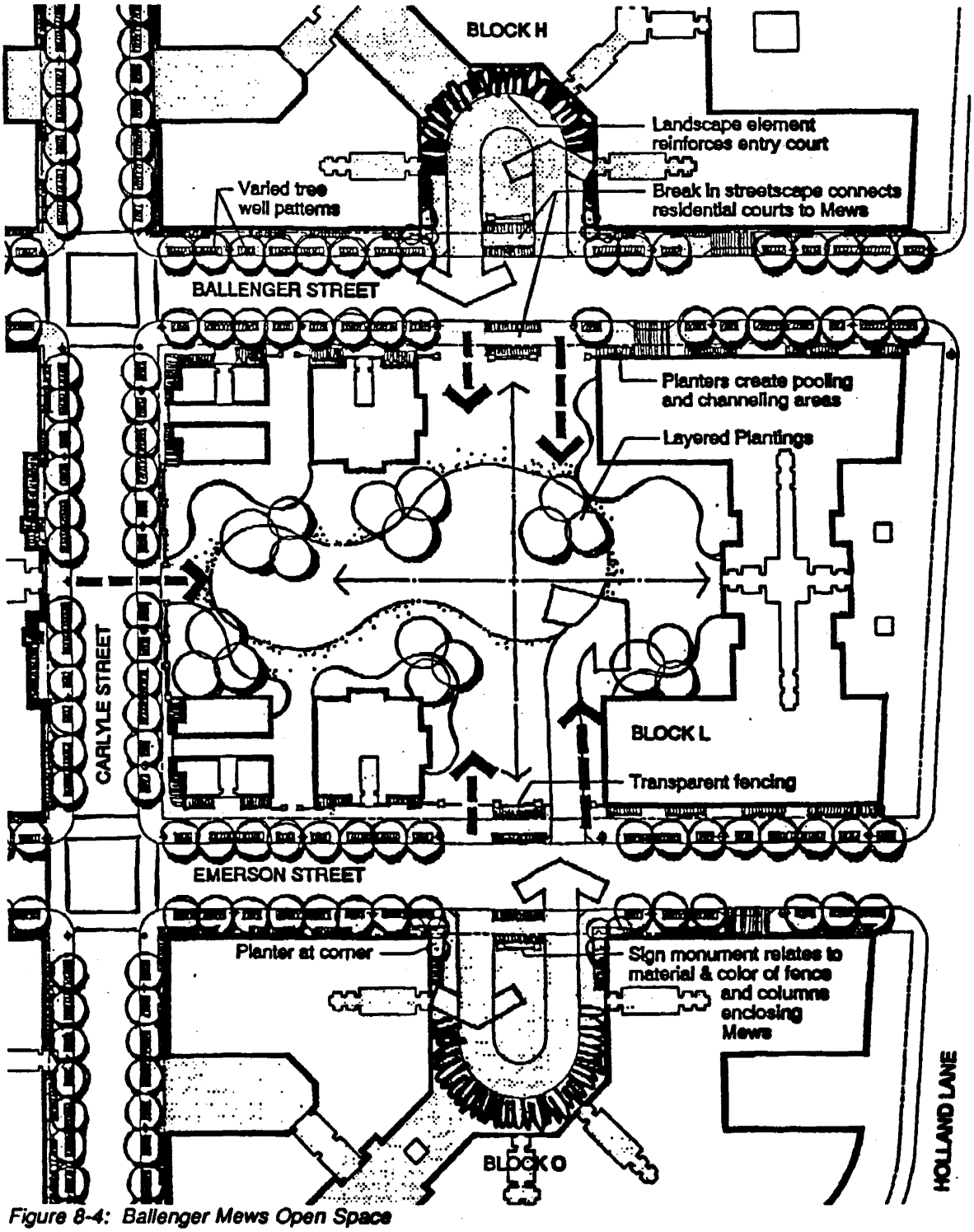


Figure 8-4: Ballenger Mews Open Space

8.3 STREETSCAPE CONFIGURATION

8.3.1 TYPICAL LAYOUT AND DIMENSIONS

The layout of the streetscape in Ballenger Precinct is designed to encourage variety especially at the interface of the building and pedestrian zones. The experience of walking along the sidewalk should be slightly meandering one, much like in the residential sections of Old Town.

In Ballenger Precinct, the curb zone shall be five and one-half feet wide with a four inch wide band at the back of the curb. The pedestrian zone shall be a minimum of four feet wide and clear of any obstruction. The building zone width shall vary in combination with the pedestrian zone, allowing the most flexibility to adjust widths of pavement and plantings as needed.

8.3.3 VEHICULAR ACCESS ZONES

DROPOFFS/LAYBYS: Dropoff loops and drives within Ballenger Precinct shall be designed as vehicular accessible pedestrian plazas. Drives shall be flush with walks and have no curbs. The intersection of the drive and the street shall be treated as a parking/service entrance.

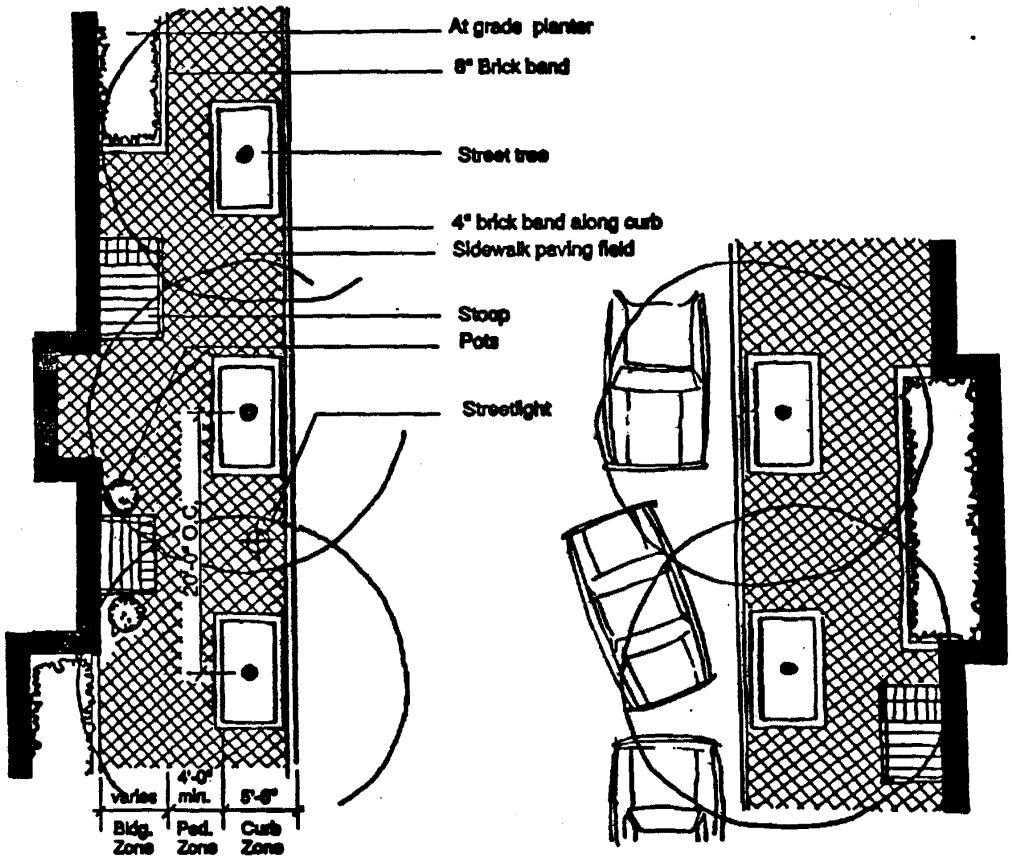


Figure 8-5: Ballenger Precinct Typical Streetscape

8.4 HARDSCAPE

8.4.1 STANDARD SIDEWALK PAVING

STANDARD SIDEWALK PAVING: The standard sidewalk paving for Ballenger Precinct shall be the King William Range brick paver. The brick pavers shall be laid in a herringbone pattern which is aligned at forty-five degrees to the curb. A single stretcher course band shall installed along the curb and a single row stack bond band shall be used to edge all flush at grade planters including street tree pits and building zone plantings.

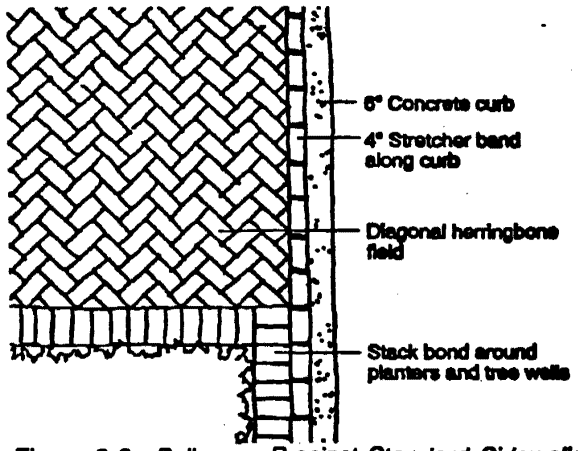


Figure 8-6: Ballenger Precinct Standard Sidewalk Paving

PAVEMENT EDGES: All planter bed and tree well edges shall be flush and at-grade.

8.4.2 CURBS

All curbs in Ballenger Precinct shall be six inch concrete curb and gutter.

8.5 FURNITURE

8.5.1 SEATING

FORMAL SEATING - BENCHES: Benches may be used in open spaces and garden courts only.

8.5.2 STREET FIXTURES

TRASH RECEPTACLES: Two trash receptacles shall be provided at each intersection within Ballenger Precinct. Two trash receptacles shall also be provided within fifty feet of the three street entrances to Ballenger Mews; additional trash receptacles may be provided as necessary.

FENCES, GATES, COLUMNS AND WALLS: The use of fences, gates, columns and walls to define gardens, private residential entrances and semiprivate courtyards is encouraged in Ballenger Precinct.

Figure 8-7: Residential Fence

8.6 LIGHTING

8.6.1 STREETLIGHTS

Single luminaire streetlights as specified in the General Streetscape Guidelines, shall be spaced at eighty feet on center and shall be staggered across the street in Ballenger Precinct. House side shields shall be installed in streetlights as needed to prevent light from directly entering residential windows.

8.6.2 SPECIALTY LANDSCAPE LIGHTING

The use of specialty landscape lighting is encouraged within Ballenger Precinct especially at residential dropoffs and within Ballenger Mews.

MINIATURE LIGHTS: Permanent miniature lights are prohibited in Ballenger Precinct.

8.6.3 BUILDING LIGHTS

FACADE LIGHTING: Facade lighting will not be permitted in Ballenger Precinct.

8.7 PLANTING

8.7.1 STREET TREES

In order to reinforce the variety desired in Ballenger Precinct, each street has a different street tree. The street tree for John Carlyle Street shall be the Greenspire Linden, *Tilia cordata* 'Greenspire'; for Ballenger Street, the Red Sunset Maple, *Acer rubrum* 'Red Sunset'; and for Emerson Street, the Emerald Queen Norway Maple, *Acer platanoides* 'Emerald Queen'. All street trees in Ballenger Precinct shall be spaced at twenty feet on center.

All other street tree wells in Ballenger Precinct shall be flush with the pavement. These tree wells may be planted with groundcover plantings or seasonal flowers at the discretion of the parcel owner. The parcel owner shall be reponsible for the maintenance of the plantings in the tree wells.

8.7.2 PLANTING BEDS AND PLANTERS

Planting beds are required in the building zone for a minimum of eighty percent of the net plantable facade. Planting beds shall be a minimum of three feet wide, and may extend to the full width of the building zone.

The plants below are suggested for use in Ballenger Precinct plantings.

SEASONAL COLOR: Tulips, Hyacinths, Mums, Daffodils, Geraniums, Hosta, Marigolds, Petunias, Ferns and Pansies.

SHRUBS: Azalea, Rhododendron, Wisteria, False Cypress, Witch Hazel

TREES: Dogwood, Magnolias, Cherry, Stewartia, Crape Myrtle and Japanese Silverbell; Spruce, Deodar Cedar, Southern Magnolia and American Holly; Ginkgo, Chinese Elm, English Oak and Zelkova.

8.7.3 FREESTANDING PLANTERS

The use of freestanding planters by individual residents is encouraged.

8.8 SIGNS

8.8.2 INFORMATION SIGNS

BUILDING IDENTIFICATION SIGNS: Freestanding building identification signs may be appropriate to the vehicular dropoffs in Blocks H and O. As stated in the General Streetscape Guidelines, freestanding signs require special approval from Carlyle Development Corporation.

8.11 TRANSITIONAL AREAS

8.11.2 TRANSITIONS BETWEEN PRECINCTS

HOLLAND PRECINCT TRANSITION: Holland Precinct shall be the dominant precinct in the transition to Ballenger Precinct.

At Ballenger and Emerson Streets, the street trees shall remain the same as specified along each street and extend to the corners. The sidewalk layout and pavement shall change from the Holland standard sidewalk paving to the Ballenger standard sidewalk paving at the point of tangency of the curb return. Plantings and building zone treatments for Holland Precinct shall turn the corner into Ballenger Precinct for a minimum of ten feet changing to Ballenger Precinct standard at an appropriate architectural feature. See 8-8.

At John Carlyle Street and Eisenhower Avenue, the first two street trees along John Carlyle Street shall be Bloodgood Plane Trees and the first tree shall align with the second row of trees from the curb along Eisenhower Avenue. All street trees beyond that shall be the Ballenger Precinct street tree. The standard sidewalk paving for Holland Precinct shall extend to the rear line of the sidewalk at Block N extended across John Carlyle Street to Block O. Plantings in the building zone shall turn the corner extending a minimum of ten feet and ending at an appropriate architectural feature.

EISENHOWER PRECINCT TRANSITION: Eisenhower Precinct is dominant over Ballenger Precinct. the first two street trees on John Carlyle Street shall be Bloodgood London Plane trees to match the Eisenhower Avenue Street Trees. The first tree on John Carlyle Street shall align with the second row of street trees along Eisenhower Avenue. See 8-10. The standard sidewalk layout and paving shall change from Eisenhower Precinct Standard paving to Ballenger Precinct standard paving at the line created by the extension of the rear line of the sidewalk parallel to Eisenhower Avenue. The planting requirements for the building zone for Eisenhower Precinct shall wrap around the corner extending ten feet minimum along John Carlyle Street and ending at an appropriate architectural feature.

DULANY PRECINCT TRANSITION: Ballenger Precinct is subordinate to Dulany Precinct. The street trees shall be continuous along the respective streets. Standard sidewalk paving will change from Ballenger to Dulany standard sidewalk paving at the extension of the build-to line parallel to Dulany Street. The building zone plantings shall extend to the end of the side building wall for the building that faces onto Dulany Street. See 8-11.

CARLYLE PRECINCT TRANSITION: Carlyle Precinct is the dominant precinct. The standard sidewalk layout and paving shall change form Carlyle Precinct standards to Ballenger Precinct standards at the line created by the extension of the build-to-line across John Carlyle Street. The street trees shall be as specified for the respective streets. The planting requirements for the building zone shall change at the same point as the sidewalk layout and paving. See 8-12.

8.11.3 TRANSITION TO AREAS ADJACENT TO CARLYLE

Ballenger Precinct is entirely within Carlyle; no transitions to areas adjacent to Carlyle is necessary.

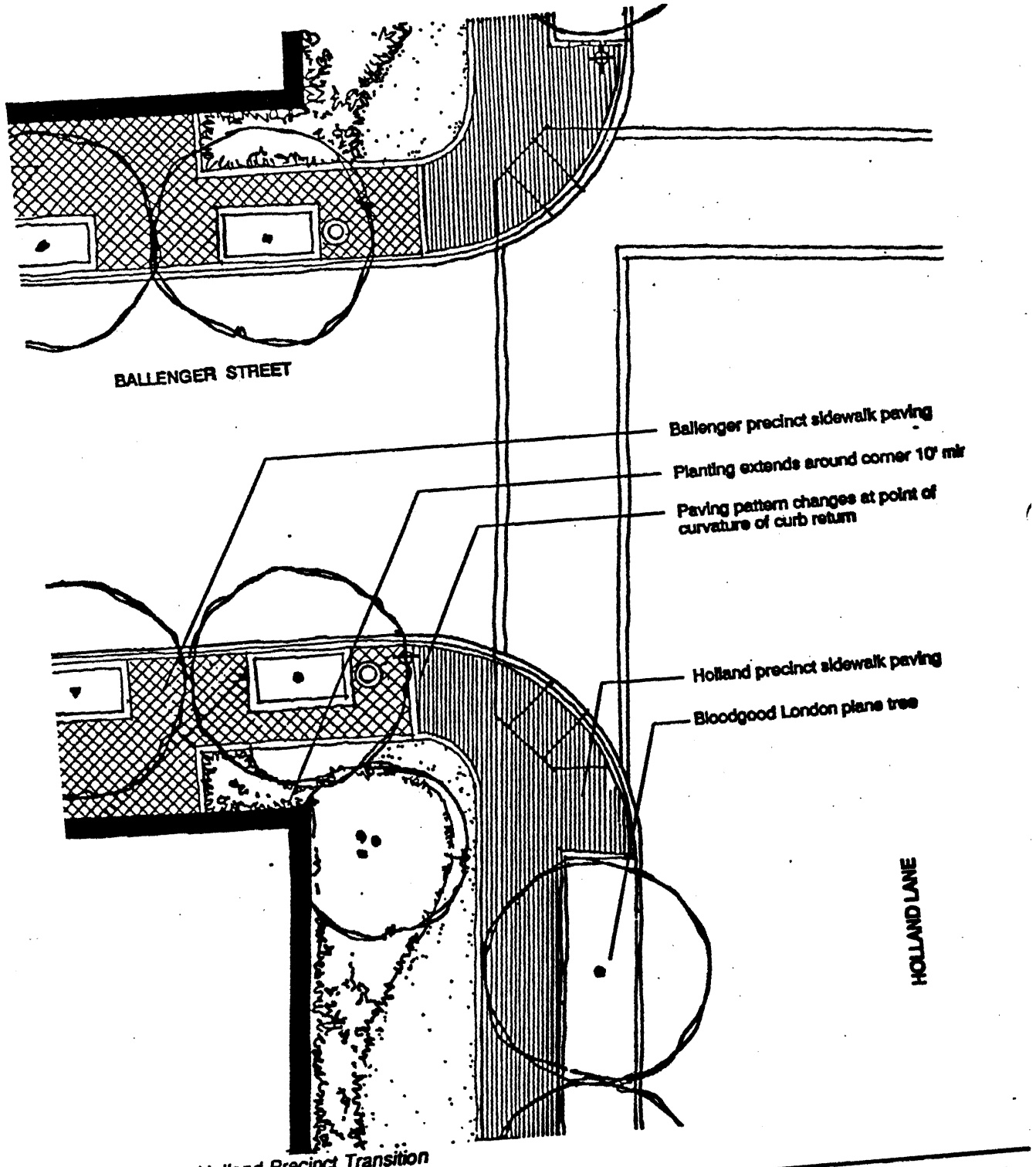


Figure 8-8: Holland Precinct Transition

LandDesign, Inc.

8-14

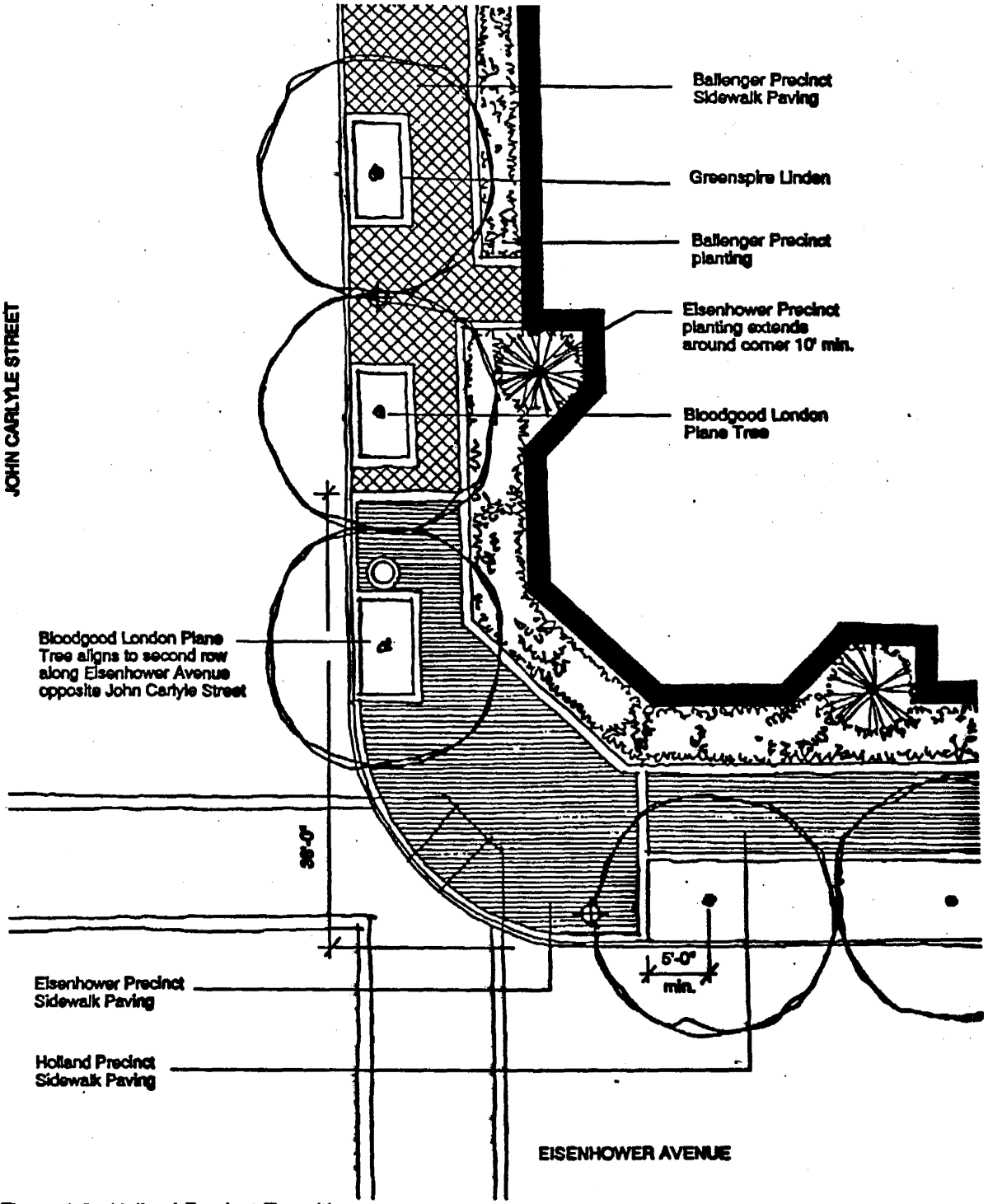


Figure 8-9: Holland Precinct Transition

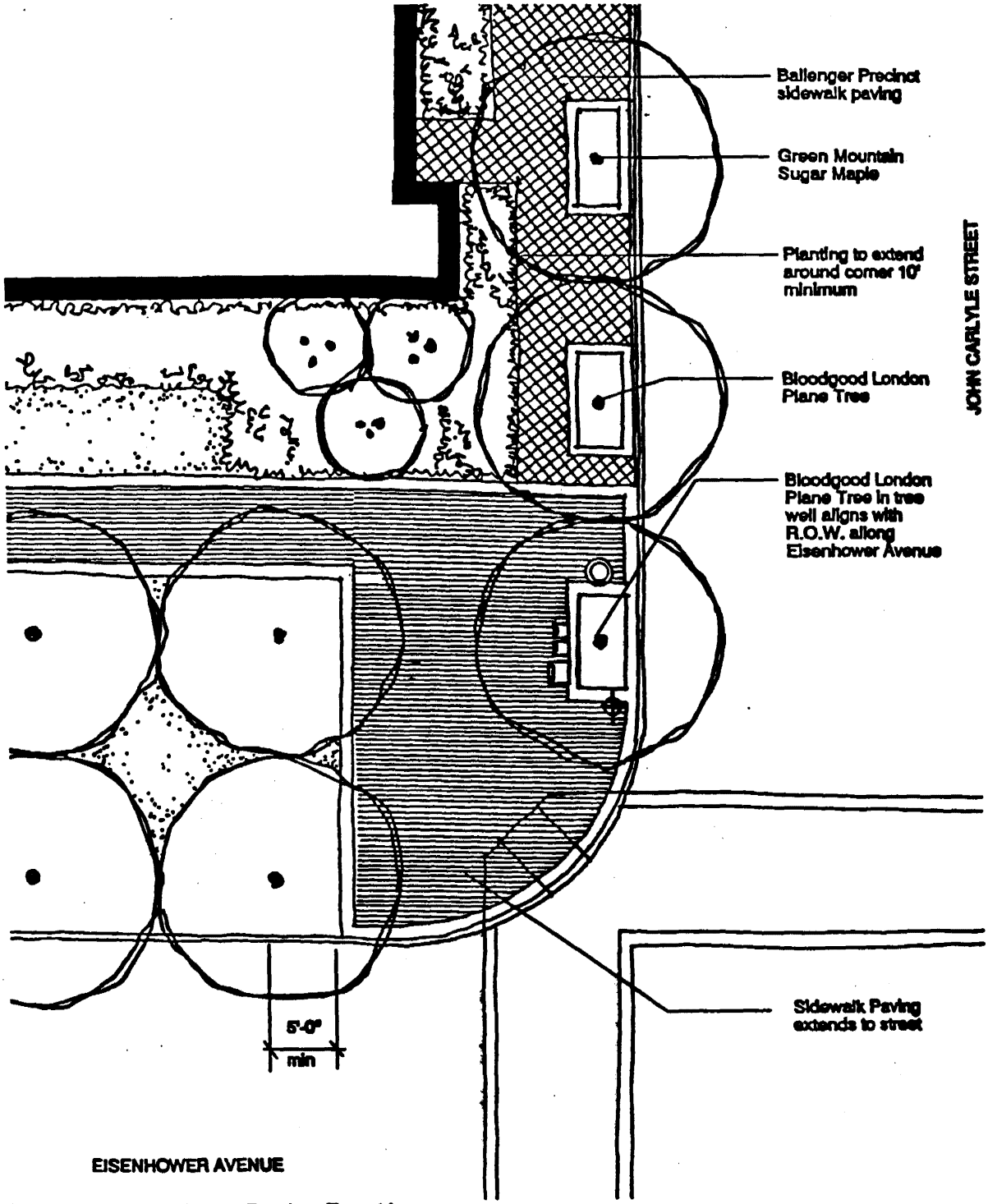


Figure 8-10: Eisenhower Precinct Transition

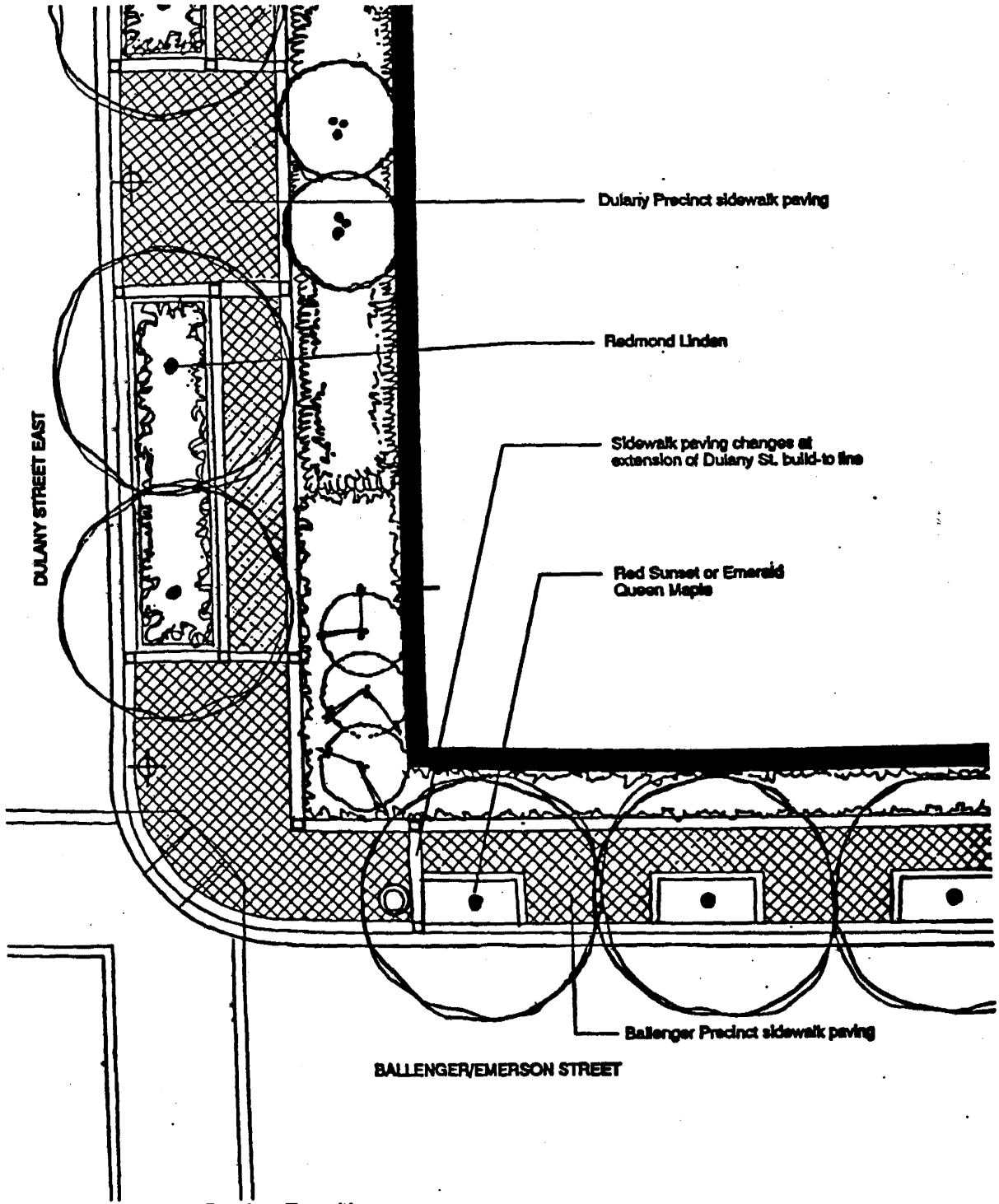


Figure 8-11: Dulany Precinct Transition

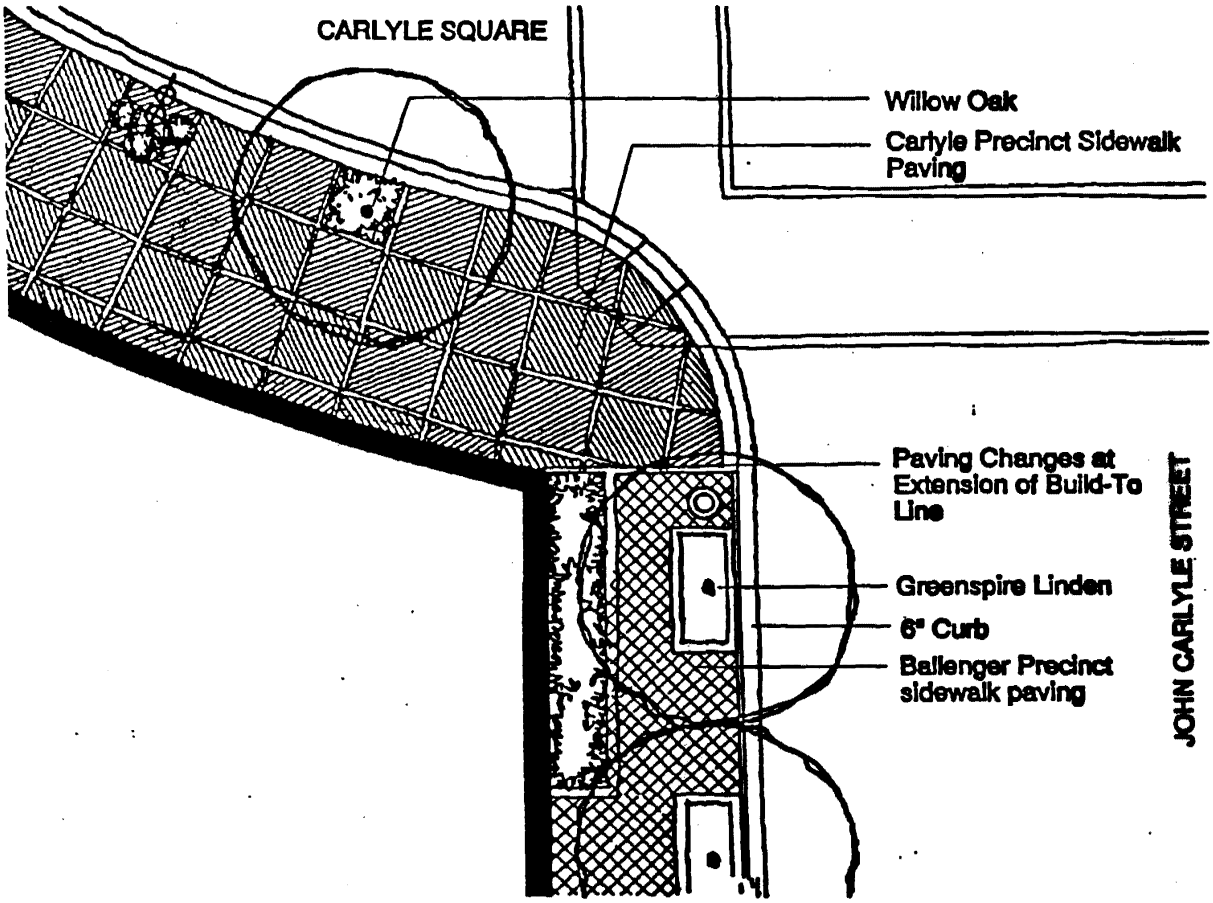


Figure 8-12: Carlyle Precinct Transition

This document was
prepared using Helvetica® in
WordPerfect® 5.1
DrawPerfect® 1.1

Eisenhower East

Alexandria, virginia

Approved by Planning Commission
March 2006

DESIGN GUIDELINES

EISENHOWER EAST
ALEXANDRIA, VIRGINIA

DESIGN GUIDELINES FOR THE EISENHOWER EAST SMALL AREA PLAN

Eisenhower East
Small Area Plan Guidelines
Alexandria, Virginia

TABLE OF CONTENTS

ii. INTRODUCTION

The Design Guidelines further refine the Urban Design principles set forth in the Eisenhower East Small Area Plan and establish the general requirements to achieve high-quality public spaces, streets, and buildings.

Designers and developers are strongly encouraged to achieve the highest quality design, whether in landscaping, building design, facade treatment, quality and use of materials, and/or architectural details.

The dimensions indicated are guidelines and depending on the context or site conditions, exceptions may be made for architectural merit or extenuating circumstances.

Carlyle Block P (Blocks 25B and 26A) is subject to the requirements of the SUP approved for the Carlyle project, which may differ from these guidelines. In addition, Hoffman properties are subject to the requirements of DSUP's 2005-0031 through 0035 and CDD # 2005-0002, which may differ from these guidelines

ORGANIZATION

The Guidelines are organized into the following chapters:

iii. DEFINITIONS

ACTIVE USE
Uses that create pedestrian interest and activity, such as residential, retail or other principal use with street-level activity; exclusive of parking, mechanical systems, or circulation of service facilities.

ARCHITECTURAL TREATMENT
The design of a facade, including materials, colors, elements (e.g. windows), overhangs, setbacks, projections, and articulation.

ARTICULATION
Modulation in a building's massing or facade that creates distinct building elements and breaks the potential monotony of a long blank expanse of uninterrupted wall.
(See also: Facade Articulation)

BUILDING HEIGHT
The vertical built limit of a building. The building height is prescribed in terms of number of stories from the average elevation of the sidewalk.

BUILD-TO-LINE (BTL)
A designated line along the length of the street to designate the placement of the streetwall. Typically, the build-to-line is established at the public right-of-way, and a percentage of the length of the streetwall is to abut the Build-to-Line. The BTL is designated on the Regulating Plan within the Design Guidelines.

BULB-OUT
An extension of the sidewalk into the street, usually at the intersection of two streets, designed to expand the sidewalk and narrow the roadway to facilitate pedestrian crossings.

FACADE
The exterior skin or face of a building, including the wall, windows, and ornamentation.

FACADE ARTICULATION
A change in material, texture, pattern, or a relief in plane of the building's exterior wall to create shadow lines and visual interest. Facade articulation should occur throughout the facade but an emphasis is placed on the pedestrian base; around entry ways, windows, and cornice lines; the top of the street wall; and the building top.

FOCAL POINT
A visual termination of a thoroughfare or a designated axis by a building, landscape, or sculptural element. Buildings that terminate a vista may be required to articulate its massing or facade.

FOOTPRINT
The area of the building's floor plate as measured typically at the ground plane.

GATEWAY
A visual recognition of entry into a site or district. On an urban design scale, a gateway denotes a change of "place" that is different in character or use. The gateway may be expressed architecturally through the building massing and/or accompanied by the architectural expression of a building facade or through landscape treatment.

MASSING
The physical size, shape and form of a building.

PEDESTRIAN SCALE
The size and arrangement of elements in the building and the environment that relate to and are compatible with human activities.

PEDESTRIAN ZONE
Land area between the building and street to accommodate pedestrian and bicycle circulation and amenities.

PUBLIC RIGHT-OF-WAY (R.O.W.)
The public or private land designated for pedestrian, bicycle and vehicular movement, including travel lanes, bike paths and sidewalks. The R.O.W.s are dedicated to the public realm through public ownership or access easement.

iii. DEFINITIONS

SETBACK
A mandatory minimum or maximum shift in location of the building wall in the horizontal plane.

SIDEWALK
The public pedestrian way typically located between the back of the curb and the outside edge of the public right-of-way or street wall.

SPECIAL ELEMENTS
Architectural features of highlight, used to unify or create a distinct place or location. Special elements may stand alone as focal elements, such as a statue, or they may be components of a larger piece of architecture, such as a corner element of a building or a building tower.

STREET FRONTAGE
A building facade, generally parallel to a street, defining the boundary of the public right-of-way. Street frontages overlap with the Build-to-Lines on the Street Frontage Plan. A hierarchy of street frontages differentiate the various levels of design into "A", "B", and "C" street frontages.

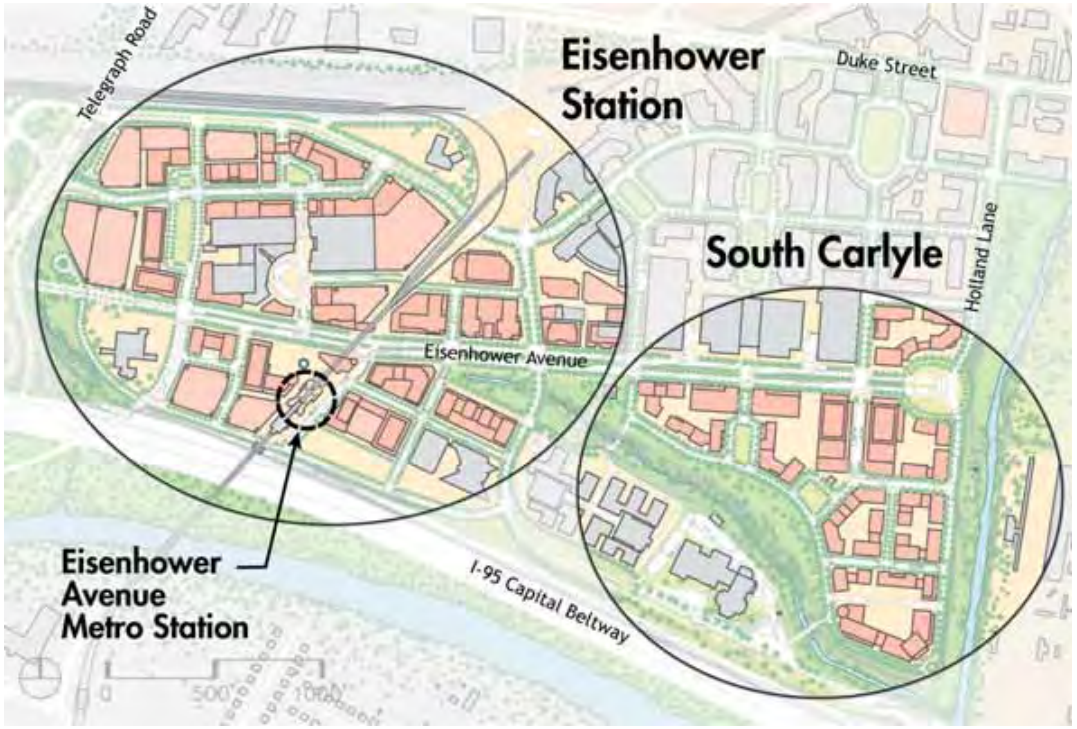
STREET FRONTAGE PLAN
A plan within the Design Guidelines that documents the required location of the Build-to-Lines per block and street frontage designations. Additional information includes: block areas, parcels, public right-of-ways, type of streets, street frontage designations, location of bulb-outs and crosswalks.

STREETSCAPE
All components of the street and the immediate surroundings that define and lend character to the area, including the trees, sidewalk, lighting, street furniture, graphics, paving materials and building facades.

STREETWALL
The facade of the building that defines the enclosure of the public space, or the street.

TOWER
A vertically-proportioned element of a building that rises above the Streetwall. Towers may draw attention to a location, act as a gateway element, or help to create an interesting skyline.

1. NEIGHBORHOODS



The Eisenhower East district is comprised of two distinct neighborhoods, Eisenhower Station and South Carlyle.

EISENHOWER STATION

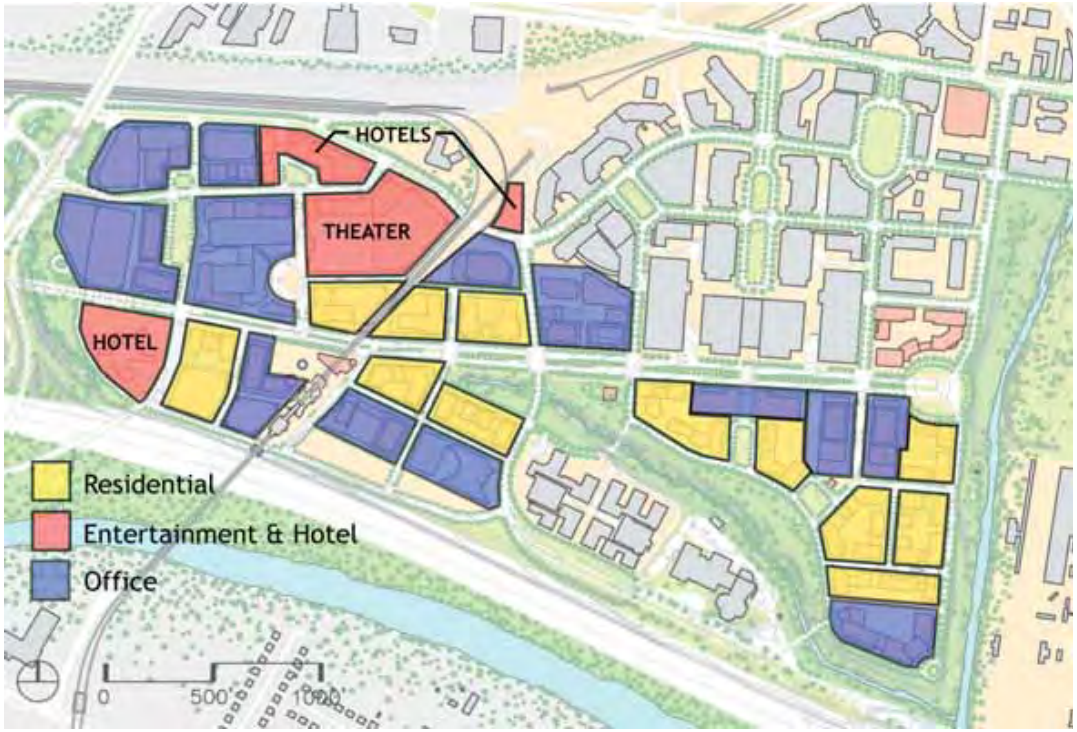
- taller buildings: 10-25 stories
- an entertainment/retail core
- mix of office, residential, and retail uses
- anchored by the Eisenhower Avenue Metro Station
- includes both green and hardscape parks and squares within the urban street grid

SOUTH CARLYLE

- generally shorter buildings: 4-15 stories
- a service retail street
- primarily residential neighborhood with office and retail
- surrounded by the Resource Protection Area parklands with fingers reaching into the neighborhood street system
- Carlyle Block P (Blocks 25B and 26A) to provide tower elements up to 200 feet.

2. LAND USE PRINCIPLES

The Eisenhower East Small Area Plan (EESAP) designates the primary land uses for the blocks within the Eisenhower East district. While the primary land use is shown in the diagram, the EESAP provides provisions for the transfer of primary land use from one block to another within an individual Coordinated Development District (CDD). Refer to the Eisenhower East Small Area Plan for details.



ENTERTAINMENT AND HOTEL

OFFICE

RESIDENTIAL

REQUIRED RETAIL LOCATION

Note: Ground floor retail may be provided in other locations, though not required by the Plan, within the maximum allowable gross floor area.

3. LAND USE GUIDELINES: RETAIL LOCATIONS

Required ground floor retail use is concentrated at important nodes and places within the plan. The primary concentration of retail occurs near the existing Eisenhower Avenue Metro Station and the existing Hoffman Theater. This area is envisioned as an entertainment core, with destination-type retail such as restaurants and shops. Retail is also required along John Carlyle Street in the southeast portion of the site. The retail in this location will serve the residential neighborhood of South Carlyle.

Retail Guidelines:

- Retail areas require a minimum of 15′ clear interior heights and a minimum retail depth of 50′
- Minimum 75% glazing required for retail storefronts along the streetwall
- Minimum of 20′ store front extension around the corner from a primary street where retail is required
- Diverse and individualized storefronts with varied materials, signage, lighting, and awnings
- Retail tenant signs shall be designed of high quality materials as an integral part of the building and relate in materials, color and scale to the remainder of the building
- Parapet and wall signs shall be limited to the first floor level
- Box signs are prohibited
- Storefront window signage is allowed up to 20% of the glass surface area
- Tables and other active uses adjacent to storefront windows are encouraged
- No permanent free-standing signs, with the exception of traffic and directional signage, shall be allowed

4. BOUNDARY & BLOCK ASSIGNMENTS: KEY

The project area is bounded by Duke Street to the north, Holland Lane to the east, Telegraph Road to the west, and I-95 to the south.

The block assignments designate the parcels within the project area and are referenced for codified build-to-lines, height, massing, architectural treatments, and landscape guidelines for the project.

4. BOUNDARY & BLOCK ASSIGNMENTS: CHART- EISENHOWER STATION

This chart reflects the development controls for each block within the Eisenhower Station neighborhood as adopted in the Eisenhower East Small Area Plan. The principal use of each block is listed, along with the allowable gross bulding area and maximum building height.

The amount of ground floor retail use is delineated for those blocks where retail is strongly desired.

Refer to "Boundary & Block Assignments: Key" on p. 7 for location of block assignments.

PROPERTY NAME/ OWNER	BLOCK	NET DEVELOPMENT SITE AREA*	PRINCIPAL USE	ALLOWABLE GROSS FLOOR AREA (gsf)	BUILDING HEIGHT (Stories)	MAXIMUM TOWER HEIGHT (Feet)	GROUND FLOOR RETAIL** (gsf)
Holiday Inn	1	179,119	Hotel	101,000	10-15	150	
Hoffman	2	168,400	Office	789,000	10-15	210	
West Side Gardens		34,800	Open Space				
Hoffman	3	98,700	Office	379,000	10-15	210	
Hoffman	4	59,700	Office	339,000	10-15	220	18,000
Hoffman	5	56,400	Hotel	304,000	10-15	220	20,000
Hotel Square		10,900	Open Space				
Hoffman	6	195,210	Office	1,036,000	10-15	150	33,500
New Retail	6	-	Retail	50,000	1-2	20-40	50,000
Hoffman	7	105,800	Retail	25,000	1-2	20-40	25,000
Existing Cinema	7	-	Retail	136,000			136,000
Hoffman	8	59,200	Residential	500,000	20-25	250	50,000
Hoffman	9A	82,500	Residential	407,000	15-20	220	15,000
Hoffman	9B	74,100	Office	956,000	20-25	250	50,000
Eisenhower Station	9B	28,300	Open Space				
Metro	10	9,700	Retail	4,000	1-2	20-40	4,000
Hoffman	11	66,600	Office	591,000	10-15	220	10,000
Hoffman	12	48,300	Residential	549,000	15-25	250	20,000
Mill Race	13	59,260	Residential	490,000	15-25	250	12,000
Hoffman	14	109,400	Retail	18,000	1-2	20-40	18,000
Approved Parking	14					100	
Andrews	16	20,822	Hotel	100,000	10-15	150	
Mill Race	17	77,540	Office	433,000	15-25	200	4,000
Mill Race	18	76,700	Residential	525,000	15-25	220	14,000
ATA	19	57,800	Residential	395,000	10-15	150	
RPA/Park	19	55,000	Open Space				
ATA	20	77,100	Office	585,000	10-15	200	
Simpson, Phase 1	23	60,100	Office	98,000	10-15	200	
Simpson, Phase 2	23	92,400	Office	304,000	10-15	200	

*The net development site area does not reflect surveyed information and is based on best available information.

**Reflects desired location and amounts. Accessory retail may be provided on sites not noted for retail.

4. BOUNDARY & BLOCK ASSIGNMENTS: CHART- SOUTH CARLYLE

This chart reflects the development controls for each block in th South Carlyle neighborhood.

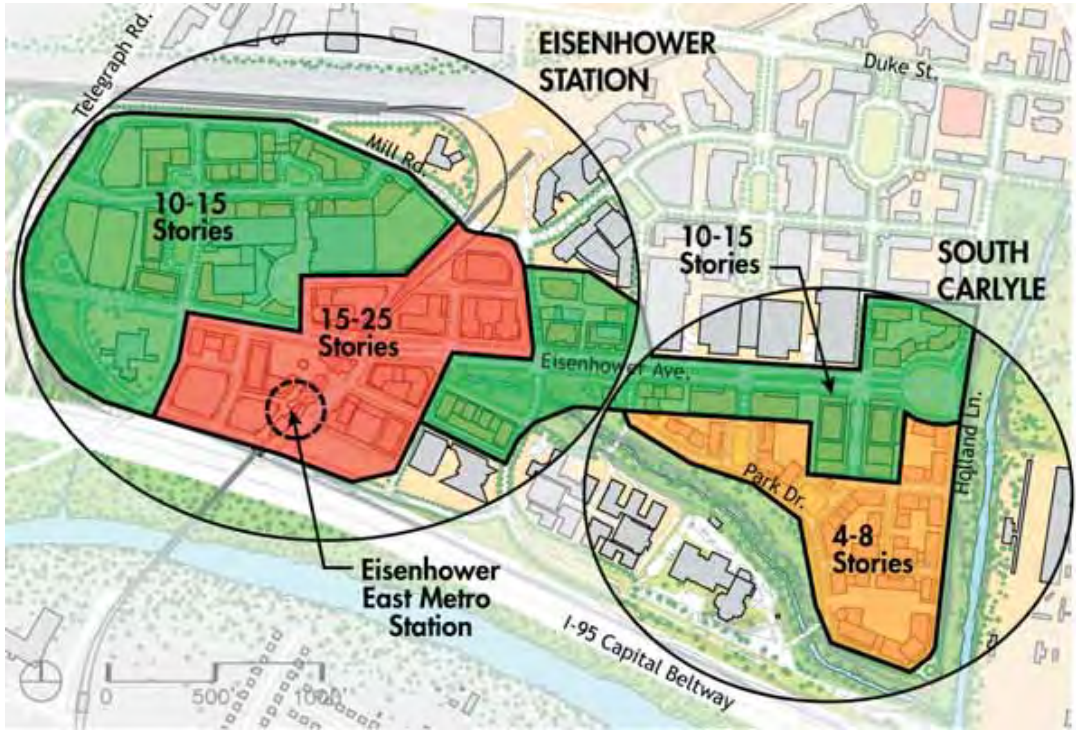
Refer to "Boundary & Block Assignments: Key" on p. 7 for location of block assignments.

PROPERTY NAME/ OWNER	BLOCK	NET DEVELOPMENT SITE AREA*	PRINCIPAL USE	ALLOWABLE GROSS FLOOR AREA (gsf)	BUILDING HEIGHT (Stories)	MAXIMUM TOWER HEIGHT (Feet)	GROUND FLOOR RETAIL** (gsf)
Park	22	116,000	Open Space				
Hoffman	24	61,100	Office	151,000	10-15	200	
Hoffman	24	48,200	Residential	144,000	4-8	100	
So. Dulany Gardens		15,300	Open Space				
Hoffman	25A	38,500	Office	135,000	10-15	200	
Hoffman	25A	60,400	Residential	96,000	4-8	100	
Carlyle	25B	66,800	Office	204,000	10-15	200	22,000
Carlyle Block P	26A	92,600	Office	411,000	10-15	200	34,000
City of Alex	26B	41,000	Residential	124,000	4-8	100	
So. Carlyle Square		28,200	Open Space				
Alex Mini-Storage	27	73,300	Residential	350,000	4-8	100	
Virginia Concrete	28	63,600	Residential	282,000	4-8	100	
Hooff-Fagelson	29	55,500	Residential	170,000	4-8	100	
Hooff-Fagelson	30	114,000	Office	512,000	10-15	200	
* The net development site area does not reflect surveyed information and is based on best available information.							
** Reflects desired location and amounts. Accessory retail may be provided on sites not noted for retail.							

5. BUILDING HEIGHTS

The Eisenhower East Small Area Plan clusters the taller buildings around the Metro station and along the Eisenhower Avenue street frontage. Building heights step down as the proximity from the Metro station and Eisenhower Avenue increases.

Building heights range from 10 to 25 stories in Eisenhower Station; heights range from 4-15 stories in the South Carlyle neighborhood.



15-25 STORIES IN HEIGHT

10-15 STORIES IN HEIGHT

4-8 STORIES IN HEIGHT

6. BUILDING SETBACKS

Setbacks and massing modulations for tower and building elements above the streetwall visually open the sky to the public realm of the streets, allowing more light to reach street-level.

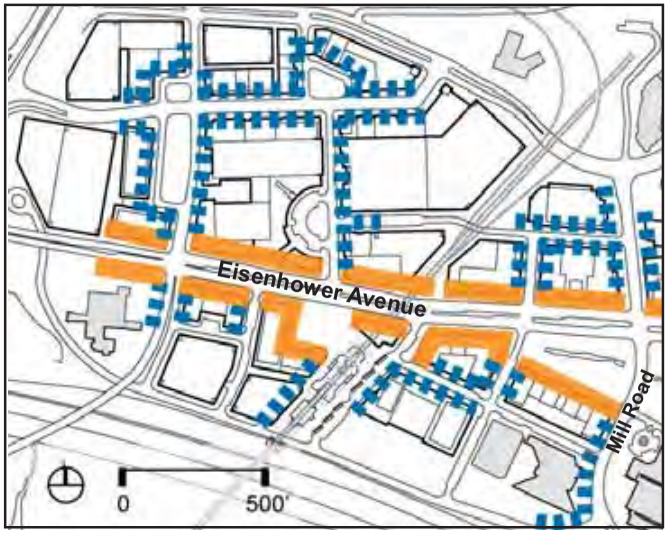
Buildings within the Eisenhower East district will meet the build-to-line at the streetwall and set back a minimum of 7' at specific heights above the sidewalk.

Given the generous width of the main boulevard, buildings along Eisenhower Avenue may have a taller streetwall, 50'-75' above the sidewalk. Buildings along all other streets, except those on "C"-frontage streets, shall have a streetwall of 40'-60' above the sidewalk.

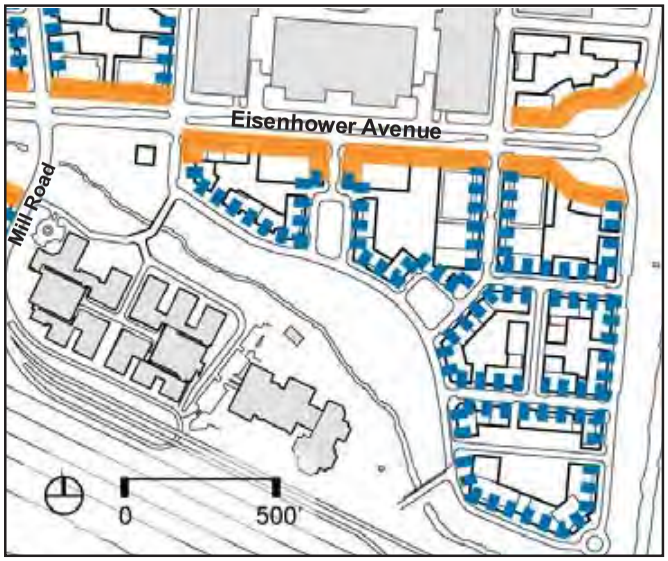
Refer also to Chapter 10 - Architectural Design Concept: Massing for details on setbacks and the allowance for building surfaces to continue without a setback.

Note: Building design and setbacks shall comply with fire access and other code requirements.

EISENHOWER STATION



SOUTH CARLYLE



7' MIN SETBACK AT 50'-75' HEIGHT

7' MIN SETBACK AT 40'-60' HEIGHT

7. ARCHITECTURAL ARTICULATION

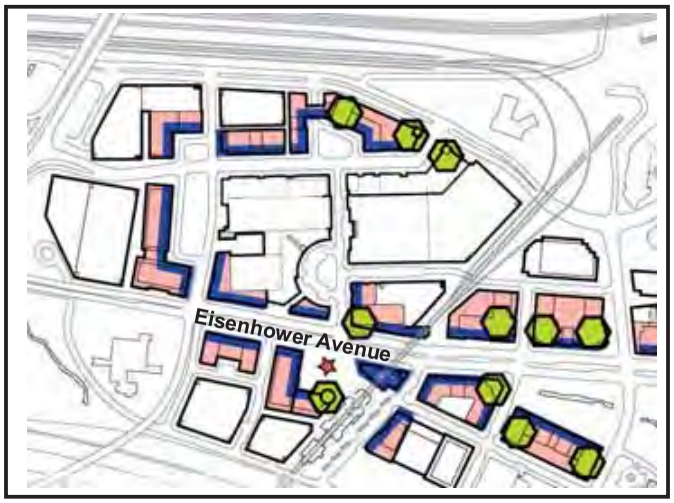
The Eisenhower East Small Area Plan identifies locations for special elements such as towers, gateway elements, corner elements, and focal points. These features draw attention to specific points of interest and mark the location of "entries" and "places."

Architecturally Significant Facades indicate facades that are the visually and physically prominent "faces" and "edges" of the plan and require the highest level of design excellence and materials. These facades should feature innovative use of materials, articulation, and increased transparency at the base of the facade.

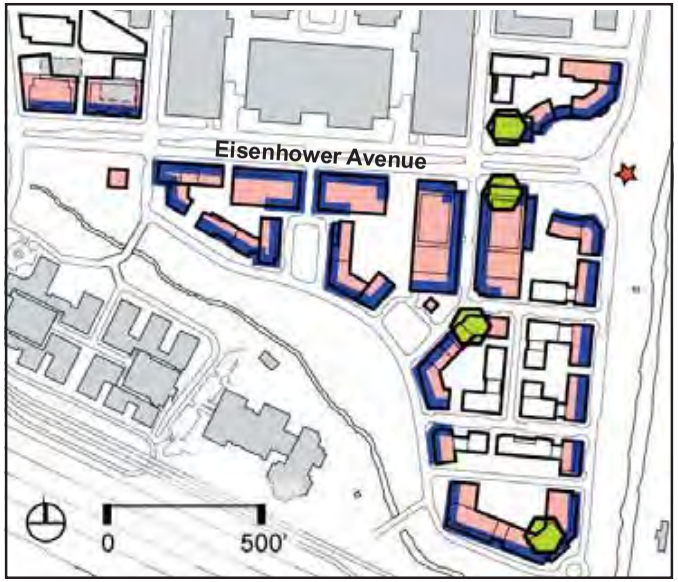
Architectural Features designate locations for distinctive architectural features to recognize special locations within the plan area.

Monument Locations designate opportunities to place civic monuments, fountains and/or public art.

EISENHOWER STATION



SOUTH CARLYLE



SIGNATURE ARCHITECTURAL SITES AND ARTICULATION

SIGNATURE ARCHITECTURAL SITE / ARCHITECTURALLY SIGNIFICANT FACADE

REQUIRED ARCHITECTURAL FEATURE (TOWERS, GATEWAYS, ARTICULATION OF BUILDING MASSING)

MONUMENT LOCATION

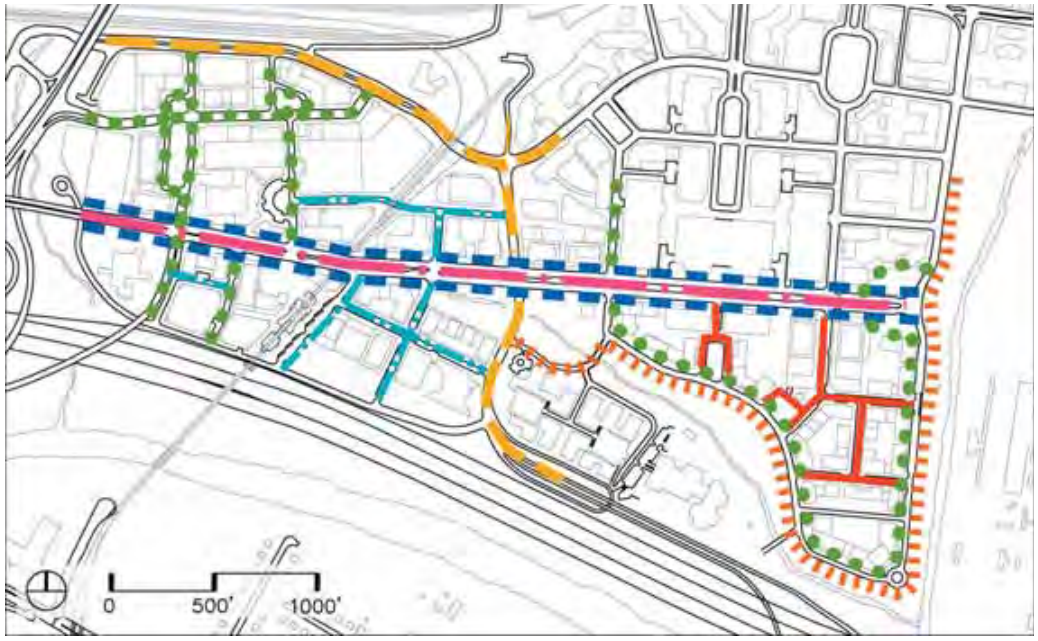
8. STREET TREE PLAN

The Street Tree Plan indicates the street tree species to be located along specific streets in the Eisenhower East district. The tree species are assigned to the various streets within the Plan based upon expected height, canopy and foliage.

The options given per street allow for flexibility; however, each block shall maintain a uniform aesthetic. Thus, only one species shall be planted per designation, with a potential exception in the median of Eisenhower Avenue.

Eisenhower Avenue, as the spine which unifies the entire district, shall be planted with a single species along its entire length, with the flexibility to alternate, per block, the tree species in the median.

On all other streets with 14-foot-wide sidewalks, the columnar or upright form of the tree species should be used.



LONDON PLANE TREE (PLATANUS X. ACERIFOLIA)

AMUR MAPLE (ACER GINNALA)
TRIDENT MAPLE (ACER BUERGERANUM)
SARGENT CHERRY (PRUNUS SARGENTII)
STAR MAGNOLIA (MAGNOLIA STELLATA)
RED MAPLE (ACER RUBRUM)
WILLOW OAK (QUERCUS PHELLOS)
GINGKO (GINKGO BILOBA - MALE ONLY)

RED MAPLE (ACER RUBRUM)
WILLOW OAK (QUERCUS PHELLOS)

LITTLELEAF LINDEN (TILIA CORDATA)
GINGKO (GINGKO BILOBA)

LACEBARK ELM (ULMUS PARVIFOLIA)
JAPANESE ZELKOVA (ZELKOVA SERRATA)

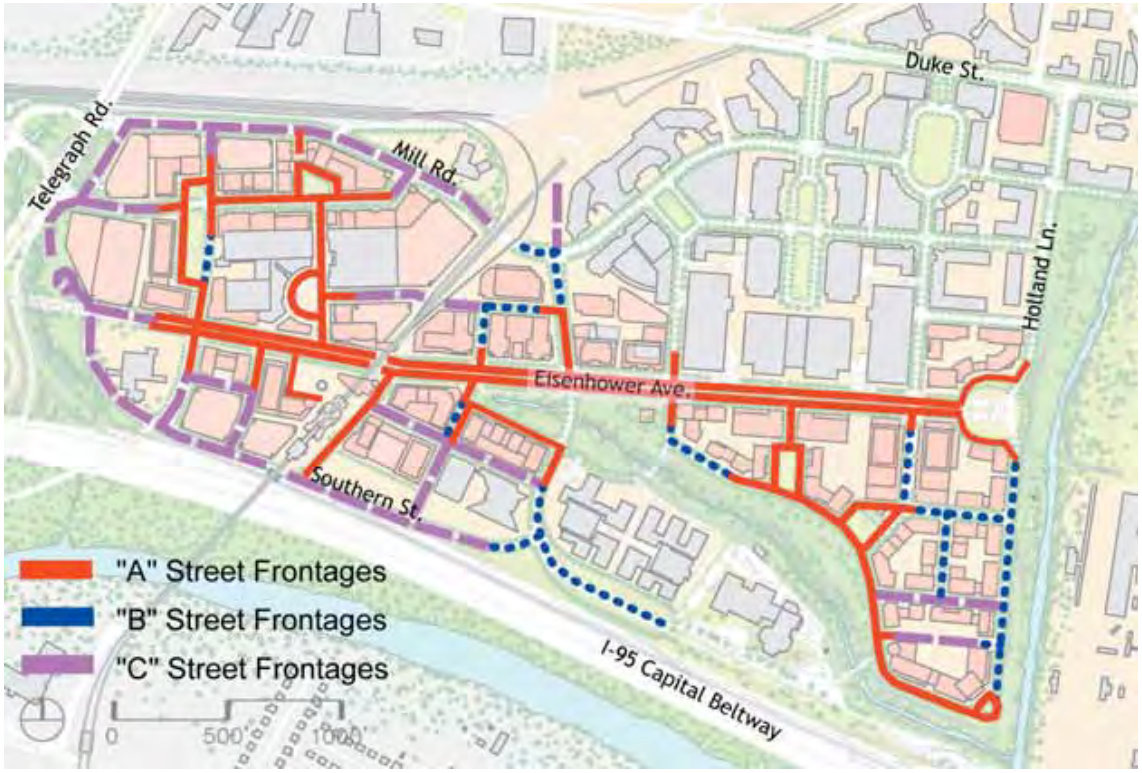
GOLDEN RAINTREE (KOELREUTERIA PANICULATA)
JAPANESE PAGODA TREE (SOPHORA JAPONICA)

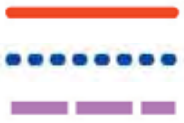
AMERICAN YELLOWWOOD (CLADRASTIS LUTEA)
SWEET GUM (LIQUIDAMBAR STYRACIFLUA)
SAWTOOTH OAK (QUERCUS ACUTISSIMA)
RED OAK (QUERCUS BOREALIS)

9. STREET FRONTAGE DESIGN PRINCIPLES: INTENT

The Eisenhower East Small Area Plan (EESAP) identifies new public streets to augment the existing public and private street pattern, creating a comprehensive and interconnected urban street grid. A hierarchy of streets differentiates the various street types by their function, character, and design. All street frontages are designated as "A", "B", or "C", with "A" street frontages requiring the highest quality design. New buildings adhere to specified guidelines for each type of street. The classification of street frontages is designed to ensure a quality pedestrian environment in the most public areas while providing defined locations for the necessary access, service and parking needs of the neighborhood.

The built environment along the various street frontages provides visual enclosure and definition of the public street . The location of the streetwall varies based on the classification of street as shown on the Street Frontage Plan on p. 15.





A STREET FRONTAGE

B STREET FRONTAGE

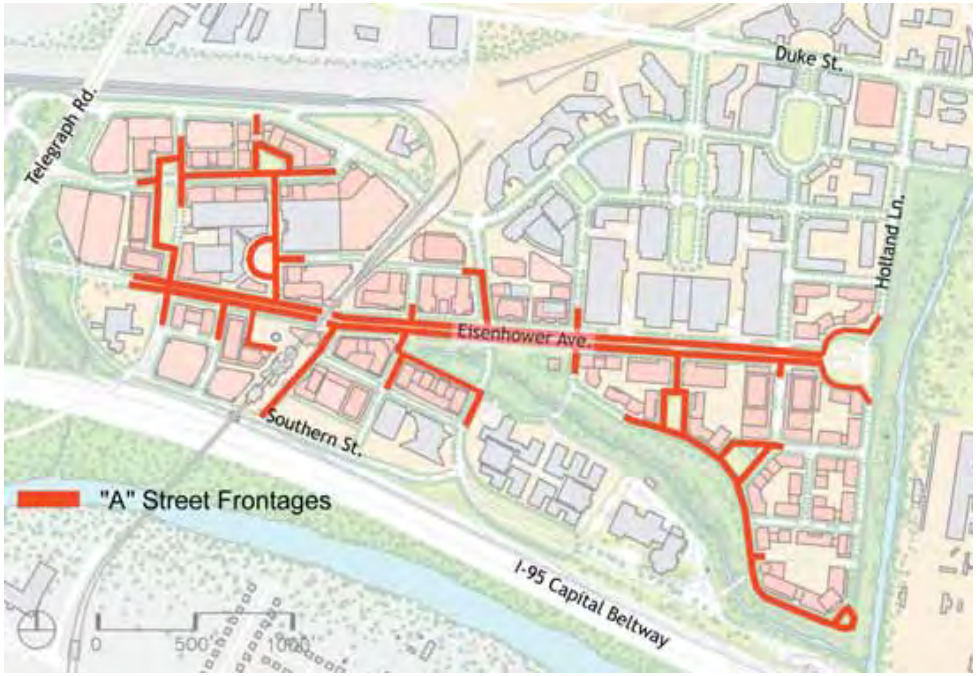
C STREET FRONTAGE

9. STREET FRONTAGE DESIGN PRINCIPLES: STREET FRONTAGE PLAN

The Street Frontage Plan designates the design classification for each block in the Eisenhower East area. For each type of street frontage (A, B and C), these guidelines outline specific design requirements for new buildings and the adjoining streets, including:

- Build-to-Line
- Building Setbacks
- Building Entry
- Curb Cuts
- Parking Structures
- Facade Guidelines
- Landscape Guidelines
- Street Tree Species

The following sections discuss the guidelines for building along the various street frontage types.



9. STREET FRONTAGE DESIGN PRINCIPLES: "A" STREET FRONTAGES

"A" streets are the primary streets within the Eisenhower East district and set the character and tone for the community.

Buildings with "A" street frontages have the most restrictive guidelines to ensure the highest quality character and appearance.

"A" streets include Swamp Fox Road, Stovall Street, roads fronting the Eisenhower Avenue Metro station, Mandeville Lane, the majority of Park Road, and roads fronting parks or open space.

DESIGN PRINCIPLES:

- Buildings shall front the street
- Main pedestrian building entries shall be located along "A" street frontages
- Active uses shall be located on all street frontages
- Highest quality of architectural facade and streetscape treatment shall be used
- No curb cuts or service alleys shall be visible along "A" street frontages
- Structured Parking shall be screened with active uses of at least 30' in depth from the building face
- Active retail uses shall be a minimum of 50' in depth

9. STREET FRONTAGE DESIGN PRINCIPLES: "A" STREET FRONTAGES

"A" STREET DESIGN PRINCIPLES

- **Build-to-Line:** A minimum of 90% of the building facade (below height of required setback) shall meet the Build-to-Line

- **Setbacks:** 7'-20' setbacks. Setbacks shown are generalized, and exact building setbacks are subject to compliance and approval with all applicable fire access and code requirements as may be employed by the City as part of the review process.
  - Eisenhower Avenue - at 50'-75' height
  - All other streets - at 40'-60' height
  - 30%-40% of each street frontage may be exempt from setback requirement. See Chapter 10, "Architectural Concept Design: Massing - Setbacks" on p. 24

- **Building Entry:**
  - Main pedestrian building entries shall be located along "A" street frontages no less than 50' apart
  - Main pedestrian building entries must be at sidewalk elevation

- **Curb Cuts:** No curb cuts for service or parking entrances, service alleys, or loading docks shall enter or exit from or be visible along "A" street frontages

- **Parking Structures:**
  - Parking structures shall be screened with active uses to at least 30' in depth from the building face
  - Parking structures shall be screened with active uses to at least 50' in depth from the building face on retail building frontages

- **Facade:**
  - Any architectural feature, including bay windows, protruding from the building facade may not extend more than 4' past the build-to-line and may not exceed 12' in width for individual elements. Any projection must be more than 15' above the sidewalk elevation
  - The building facade shall articulate a clear base, middle and top to the building. See Chapter 10, "Architectural Concept Design: Massing - Top, Body, Streetwall Base" on p. 23 for examples

- **Landscape:**
  - Public Realm sidewalk improvements/ landscaping is required
  - Entry courtyards and recesses must be landscaped

9. STREET FRONTAGE DESIGN PRINCIPLES: "B" STREET FRONTAGES

"B" streets are the secondary streets of a neighborhood. They connect primary streets to each other and to service streets, and provide access options through the neighborhood.

The design principles governing "B" street frontages are not as restrictive as those governing "A" street frontages.

"B" street frontages occur along most of Mill Road, John Carlyle Street, and Holland Lane, among others.

DESIGN PRINCIPLES:

- Buildings shall front the street
- Main pedestrian building entries shall be located along "B" street frontages, except where located on "A" frontages
- Active uses at the ground floor shall be a minimum of 50' on "B" street frontages
- Parking may come to the facade above the ground floor provided that architectural treatment is used on the facade to mask the parking and to screen the interior light fixtures, ceiling pipes, exposed raw concrete, etc.
- High-quality architectural facade and streetscape treatment is required
- Only one curb cut per block face shall be permitted
- Shared curb cut access is allowed

9. STREET FRONTAGE DESIGN PRINCIPLES: "B" STREET FRONTAGES

"B" STREET DESIGN PRINCIPLES

- **Build-to-line:** A minimum of 75% of the building facade (below height of required setback) shall meet the build-to-line

- **Setbacks:** 7'-20' setbacks at 40'-60' height
  - 30%-40% of each street frontage may be exempt from the setback requirement. See Chapter 10, "Architectural Concept Design: Massing - Setbacks" on page 24

- **Building Entry:**
  - Main pedestrian building entries shall be located along "B" street frontages (except where located on "A" street frontages) spaced no less than 25' apart

  - Main pedestrian building entries must be at sidewalk elevation

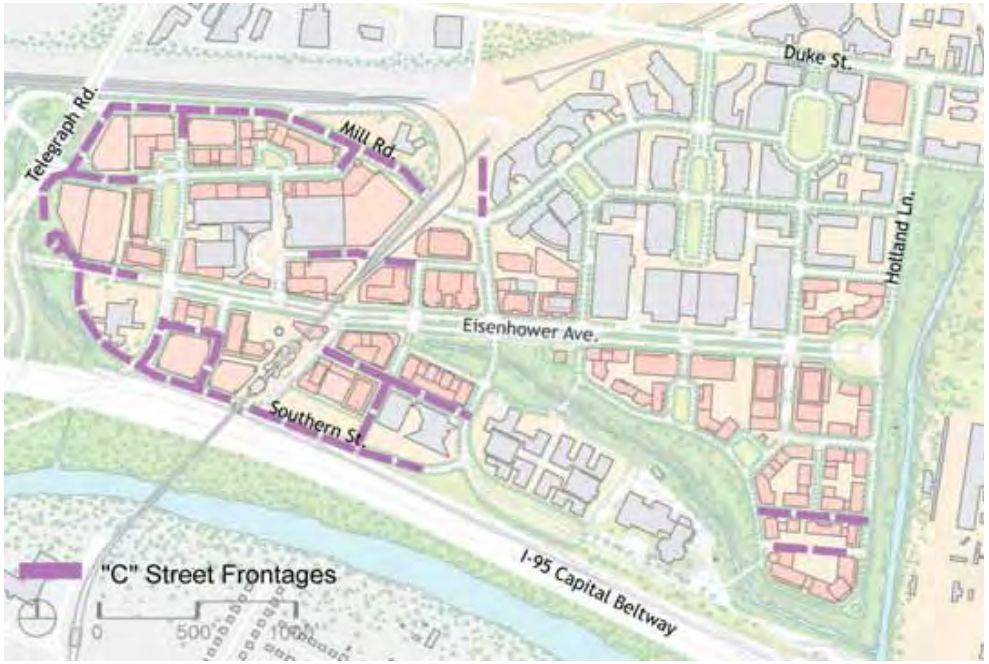
- **Facade:**
  - Any architectural feature, including bay windows, protruding from the building facade may not extend more than 4' past the build-to-line and may not exceed 12' in width for individual elements. Any projection must be more than 15' above the sidewalk elevation

  - The building facade shall articulate a clear base, middle and top to the building. See Chapter 10, "Architectural Concept Design: Massing - Top, Body, Streetwall Base" on page 23 for examples

  - The building facade must articulate a residential scale with varied surface articulation of color, scale, and material. (See Chapter10, "Architectural Design Guidelines")

- **Landscape:**
  - Public Realm sidewalk improvements/ landscaping is required

  - Entry courtyards and recesses must be landscaped



9. STREET FRONTAGE DESIGN PRINCIPLES: "C" STREET FRONTAGES

"C" streets provide a means of access to service entries and parking structures as well as tertiary streets through the neighborhood. They are the least public in nature of all the streets and, therefore, less restrictive in design.

At Eisenhower Station "C" streets are generally located along the periphery of the site area to provide access to the parking structures and complete the street network.

The "C" streets allow the "A" and "B" street frontages, the more public frontages within the district, to retain the higher design requirements.

DESIGN PRINCIPLES:

- Parking structures may extend to the street facade
- Curb cuts, alley, and parking garage entrances are permitted on "C" street frontages
- Structured parking facades shall be architecturally treated to be in harmony with the overall building design and to screen interior light fixtures, ceiling pipes, exposed raw concrete, etc.

9. STREET FRONTAGE DESIGN PRINCIPLES: "C" STREET FRONTAGES

"C" STREET DESIGN PRINCIPLES

- **Build-to-Line:** Buildings shall generally be built to the Build-to-Line
- **Setbacks:** Building setback of 5'-10' required above 40'-60' streetwall
- **Building Entry**- Parking garage and service entrances may be located on "C" street frontages. Main pedestrian building entries generally shall not be located along "C" street frontages
- **Curb Cuts**- Curb cuts are permitted on "C" street frontages
- **Parking Structures**- Structured parking facades shall be architecturally treated to be in harmony with the overall building design and to screen interior light fixtures, ceiling pipes, exposed raw concrete, etc.
- **Facade:** Facades shall be an integrated component of the overall building design
- **Landscape:**
  - Public Realm sidewalk improvements/ landscaping is required
  - Entry courtyards and recesses must be landscaped

Architecturally Treated Parking Garage

10. ARCHITECTURAL CONCEPT DESIGN: INTENT

Much of a neighborhood's character is derived from its buildings, which taken together not only provide scale and enclosure, but also act as a canvas for architectural expression.

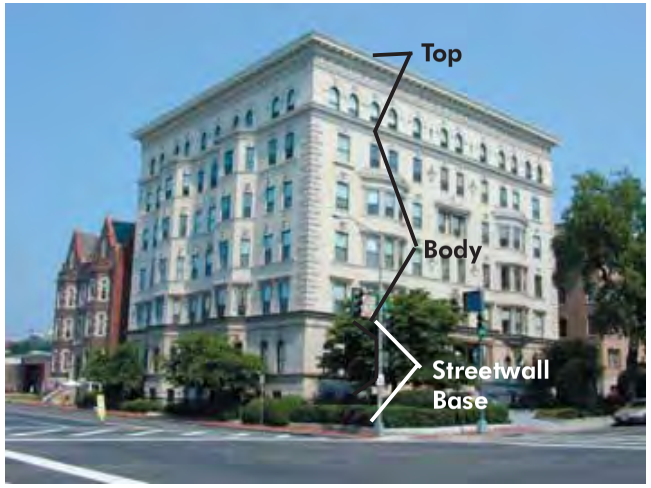
The architecture of the Eisenhower East district, adjacent to historic Old Town Alexandria, is intended to be high-quality and recall certain characteristics of Old Town while maintaining a distinct expression suited for a vibrant, larger-scale, mixed-use urban development. Material palettes; proportion of solid wall versus glass; vertically-oriented bays and windows; a fine grain of facade articulation; and a perceived top, body, and streetwall base all contibute to a shared architectural expression throughout the district and its surrounding neighborhoods.

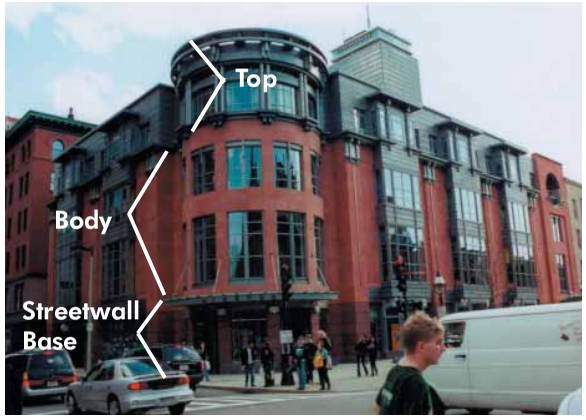
The following chapter illustrates, through examples, the conceptual design intent for office, residential, hotel, and retail architectural expression.

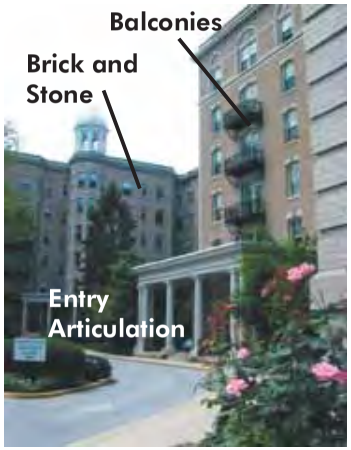
10. ARCHITECTURAL CONCEPT DESIGN: MASSING

TOP, BODY, STREETWALL BASE

- Top
  - Articulated skyline
  - Strong cornice, setback, etc.
- Body
  - Bulk of the building
  - Facade articulations, bay windows, balconies, multiple rhythms, etc.
- Streetwall Base
  - Pedestrian-scaled
  - Highly articulated facade treatment
  - Primarily transparent





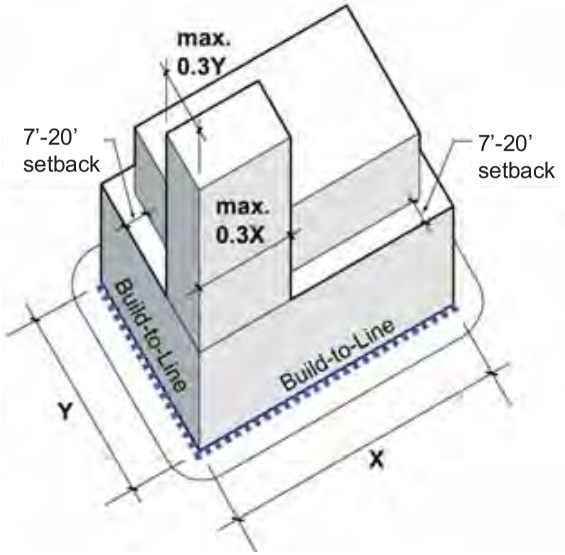


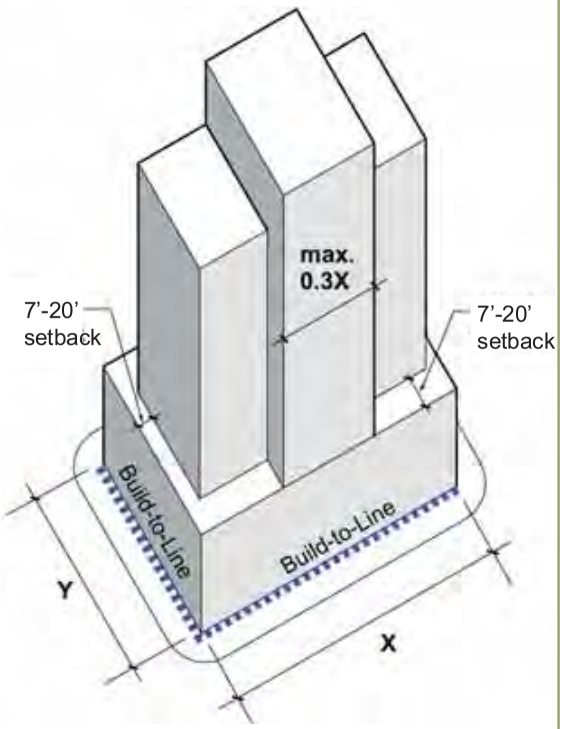
10. ARCHITECTURAL CONCEPT DESIGN: MASSING

SETBACKS

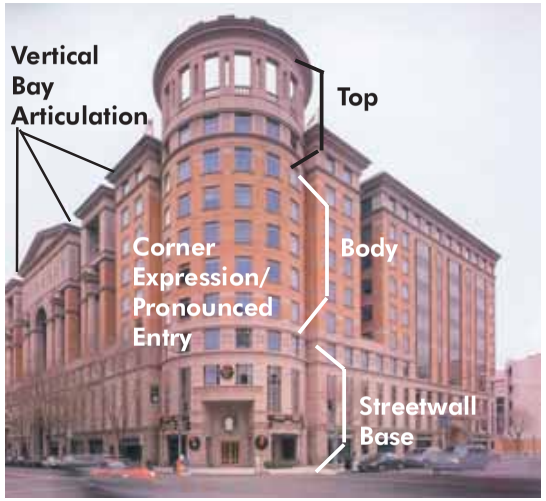
- Eisenhower Avenue - 7'-20' building setback above a 50'-75' high streetwall
- Other streets - 7'-20' building setback above a 40'-60' high street wall
- Exceptions
  - A portion of the facade above the streetwall can remain coplanar to the streetwall facade
  - Maximum of 30% of length of streetwall on any given facade

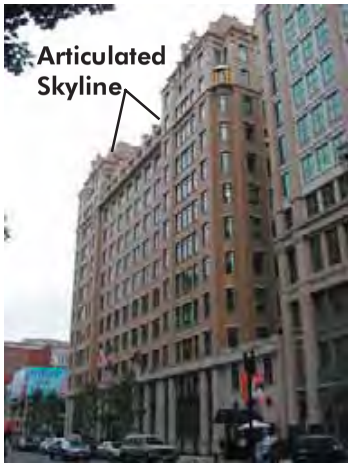
Setbacks shown are generalized, and exact building setbacks are subject to compliance and approval with all applicable fire access and code requirements as may be employed by the City as part of the review process.



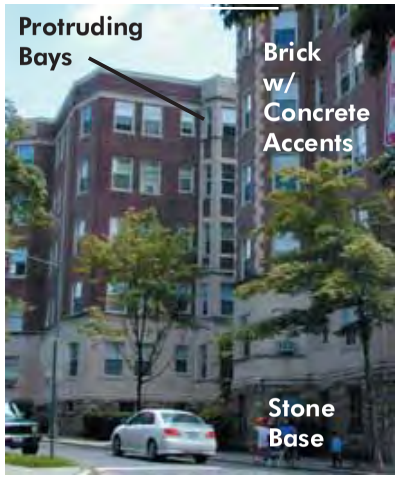


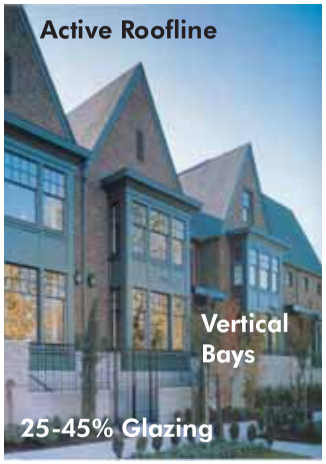
10. ARCHITECTURAL CONCEPT DESIGN: ARCHITECTURAL EXPRESSION

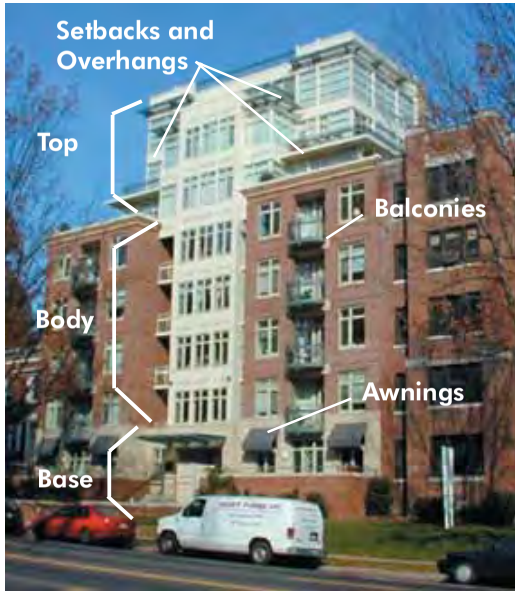




- All buildings shall have vertical fenestration
- Simple geometric shapes in plan and elevation
- Roof may be pitched or flat with an articulated skyline
- Highest quality materials and details at pedestrian level
- Horizontal expressions such as a frieze band are strongly encouraged as architectural expressions
- Balance in the proportion of glass to wall to provide a predominantly solid surface, with windows placed within the wall
- Use of reflective or darkly-tinted glass, or strip/ ribbon windows, is not permitted
- HVAC and mechanical equipment shall be integrated in the overall building design
- Light-weight curtain wall construction as accent only







10. ARCHITECTURAL CONCEPT DESIGN: ARCHITECTURAL EXPRESSION

The following are encouraged:

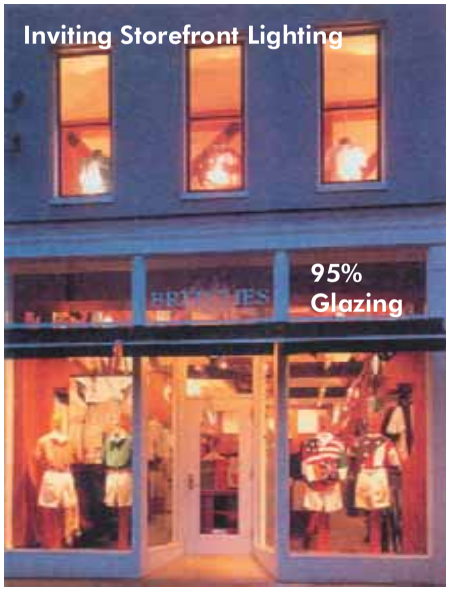
- Entryways
  - Pronounced entryways with canopies
  - Courtyard entryways with landscaping required
- Bay Windows/Balconies
  - Protruding bays
  - Protruding/recessed balconies
  - Vertically-oriented bays/balconies
- Active ground floor use on "A" (primary) and "B" (secondary) street frontages
- Articulation of top, body, and base
- Active roofline
- High quality materials:
  - brick, concrete, stone or other solid materials with similar properties
  - "heavier" materials closer to the ground
  - trim materials may be of stone, metal or similar material
- Glazing not to exceed 50% of the overall facade, excluding retail component

10. ARCHITECTURAL CONCEPT DESIGN: ARCHITECTURAL EXPRESSION

RETAIL

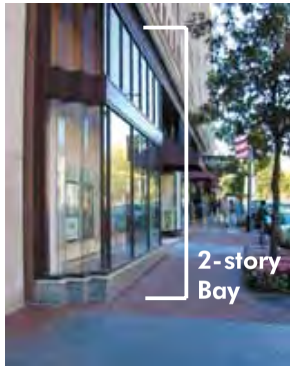
- Pronounced entryways, with canopies where appropriate
- Awnings/covered walkways
- Protruding/recessed bays
- Outdoor seating for restaurants/cafes
- Street furniture
  - Benches
  - Planters/flower boxes
- Individualized storefronts/signage
- 15′ minimum floor-to-ceiling height
- 75-95% glazing on retail storefronts

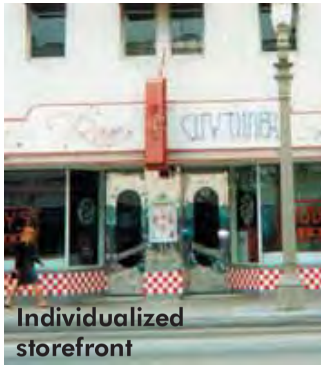
* 20-40- retail bay spacing

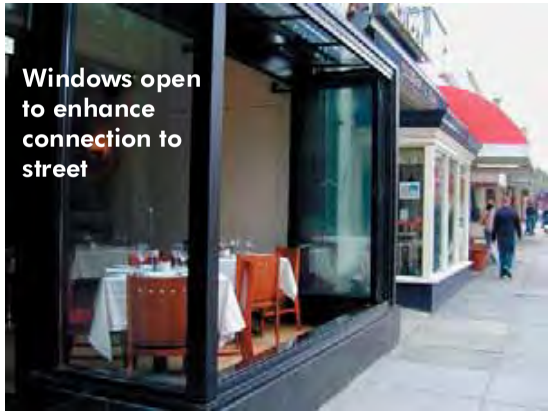


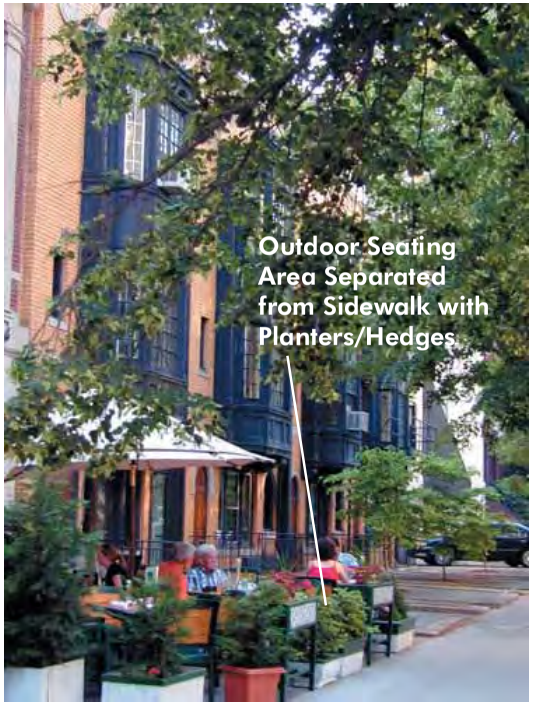
10. ARCHITECTURAL CONCEPT DESIGN: ARCHITECTURAL EXPRESSION

RETAIL









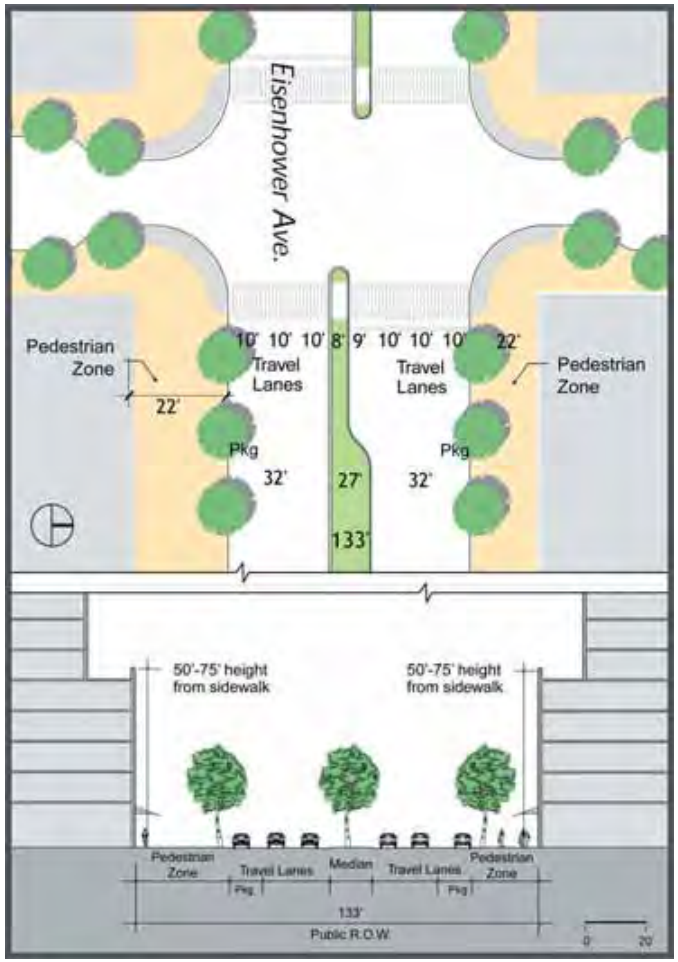
11. STREET SECTIONS: INTENT

All good streets share certain characteristics, including a streetwall to define the public space and a strong pedestrian environment, that contribute to its success. The streets of Eisenhower East are intended to be public streets and are designed to promote the development of a thriving urban neighborhood by setting parameters for those characteristics. The following pages discuss specifics for Eisenhower Avenue, John Carlyle Street, and the typical street within Eisenhower East.

Eisenhower Avenue serves as the spine - a major boulevard - spanning the new Eisenhower East district, and is one of the primary public spaces within the district. Eisenhower Avenue unifies the two neighborhoods within Eisenhower East, Eisenhower Station and South Carlyle, while simultaneously lending to each neighborhood a distinct characteristic: an incorporated bike lane in Eisenhower Station and a park median in South Carlyle.

John Carlyle Street is a retail street in South Carlyle, serving the local offices during the day and providing retail for the residences in the neighborhood. John Carlyle Street acts as the gateway into the South Carlyle neighborhood from Eisenhower Avenue, terminating in a square that opens to the "Meadows" and the Resource Protection Area parkland.

The typical street sets the tone and character for the Eisenhower East Small Area Plan as the most prevalent street in the district. The parameters guiding the design of the typical street ensure a consistent standard for the bulk of the district, allowing the more prominent public streets to stand as unique environments.



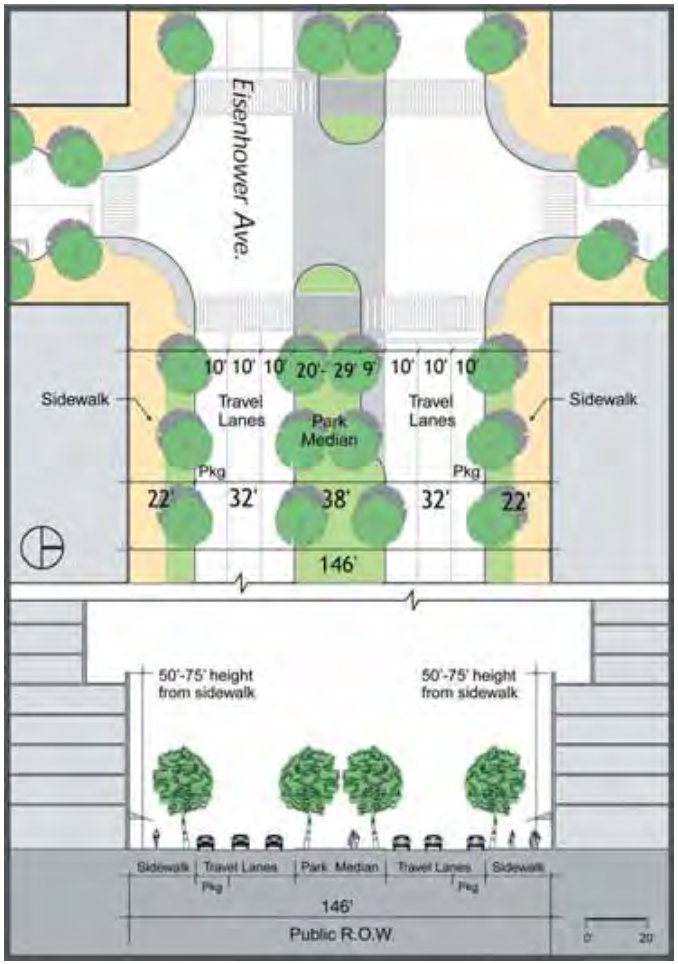
11. STREET SECTIONS: EISENHOWER AVENUE

WEST (FROM TELEGRAPH ROAD TO MILL ROAD)

- **Public Right-of-Way -** 130'-134'
- **Roadways**
  - Four 10' Travel Lanes (two-way)
  - Two 10' Parking Lanes , exclusive of gutter pan, devoted to short-term parallel parking 24/7 until traffic needs warrant an additional travel lane. Note: the parking lane is 10' to accommodate travel during peak periods.
- **Median - Varying width as follows:**
  - **West of Metro lines –** 17 - 19 feet, reducing to minimum 8 feet at location of left turn lanes
  - **East of Metro lines – 19-**26 feet, reducing to 9-17 feet at location of left turn lanes
- **Pedestrian Zone -** 22' to include a bike path incorporated into the sidewalk. The location and width to be determined.
- **Crosswalk -** 8'-10' delineated by a change in material, paving pattern, texture, and/or color
- **Bulb-outs -** None in the Eisenhower R.O.W., but located at the intersecting streets

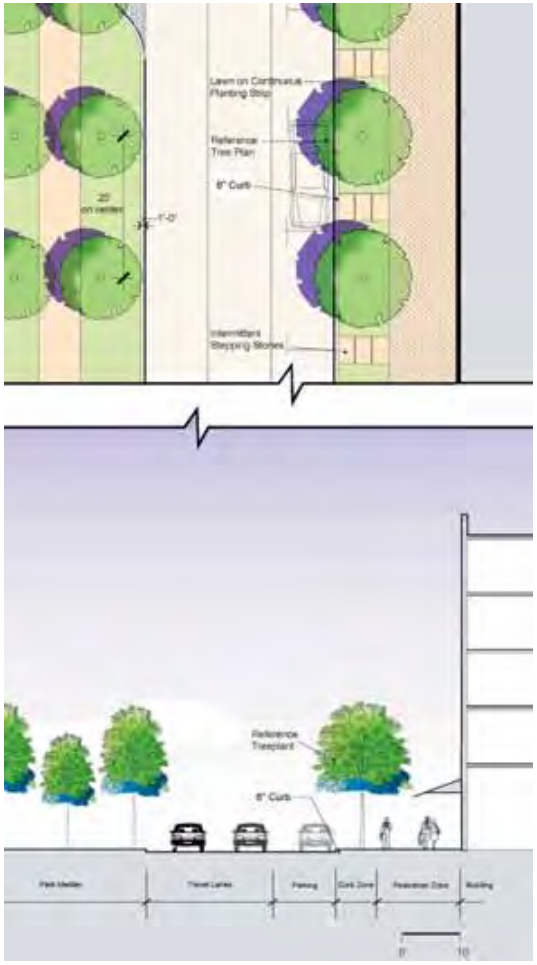
11. STREET SECTIONS: EISENHOWER AVENUE

EAST (FROM MILL ROAD TO HOLLAND LANE)



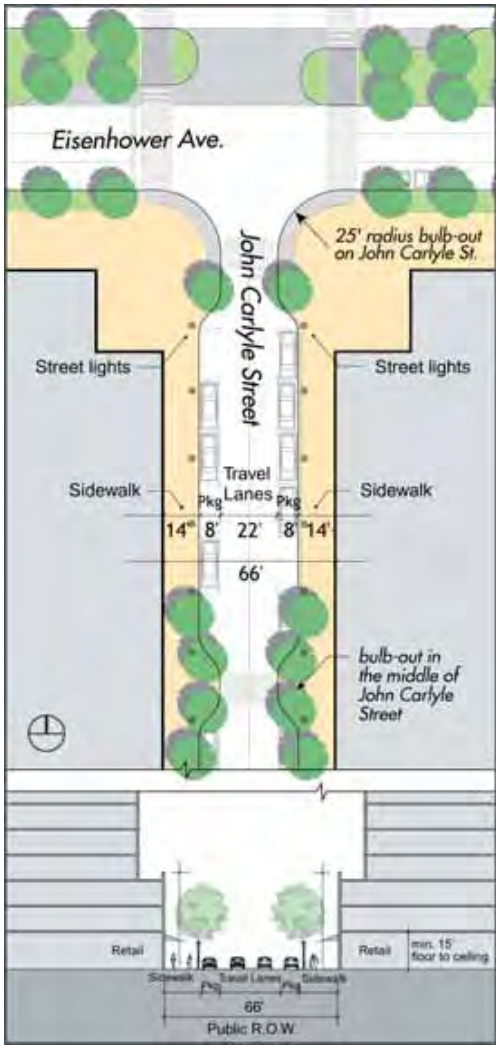
- **Public Right-of-Way -** 140'-146'
- **Roadways**
  - Four 10' Travel Lanes (two-way)
  - Two 10' Parking Lanes, exclusive of gutter pan, devoted to short-term parallel parking except during designated peak traffic hours
- **Median -** 38 feet park median, reducing to
  - 20 feet at intersection of Eisenhower and Mill Road
  - 29 feet at other location of left turn lanes
- **Pedestrian Zone -** 22' to include a bike path incorporated into the sidewalk. The location and width to be determined.
- **Crosswalks -** 8'-10' brick Crosswalks with concrete edge band
- **Bulb-outs -** None in Eisenhower R.O.W., but located in east/west direction at intersecting streets

11. STREET SECTIONS: EISENHOWER AVENUE



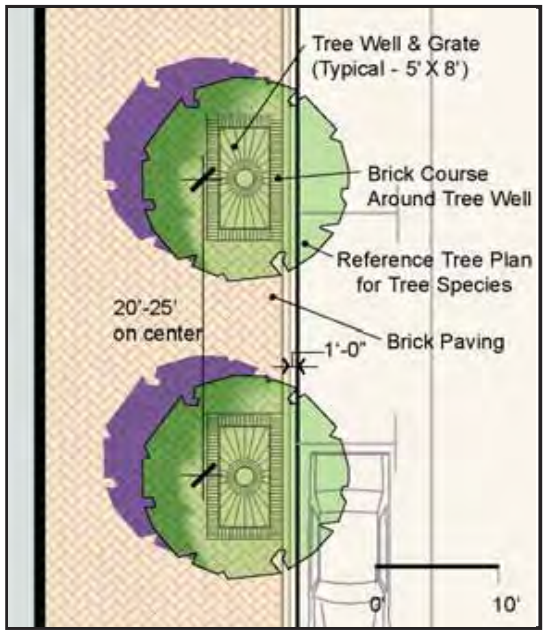
STREET TREES

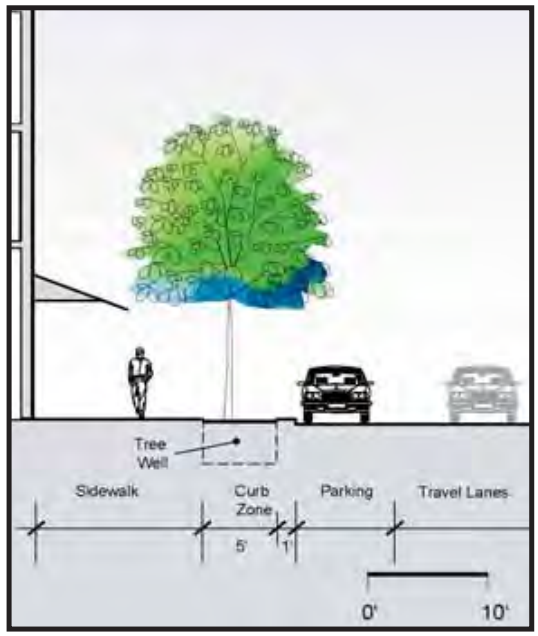
- **Tree Spacing and Size -** 25′ on center; minimum 3″-3.5″ caliper
- **Tree Wells** - 5′x10′ well with groundcover plantings. See Chapter 12, "Public Realm Concept Design: Streetscape Elements"
- **Tree Trench -** Trees planted in a 5′-wide continuous tree trench beneath the sidewalk
- **Street Trees -** refer to Street Tree Plan on p. 13 for tree species



11. STREET SECTIONS: JOHN CARLYLE STREET

- **Building Face to Building Face -** 66'
- **Roadways**
  - Two 11' Travel Lanes (two-way)
  - Two 8' Parking Lanes, devoted to short-term parallel parking
- **Median -** none
- **Sidewalks** - 14' brick Sidewalk in herringbone pattern with optional decorative concrete pavers
- **Bike Lane -** none
- **Crosswalks -** 8'-10' brick crosswalk with concrete edge band
- **Bulb-outs -** 25' radius at intersections; additional bulb-out in the middle of the street to minimize distance of pedestrian crossing

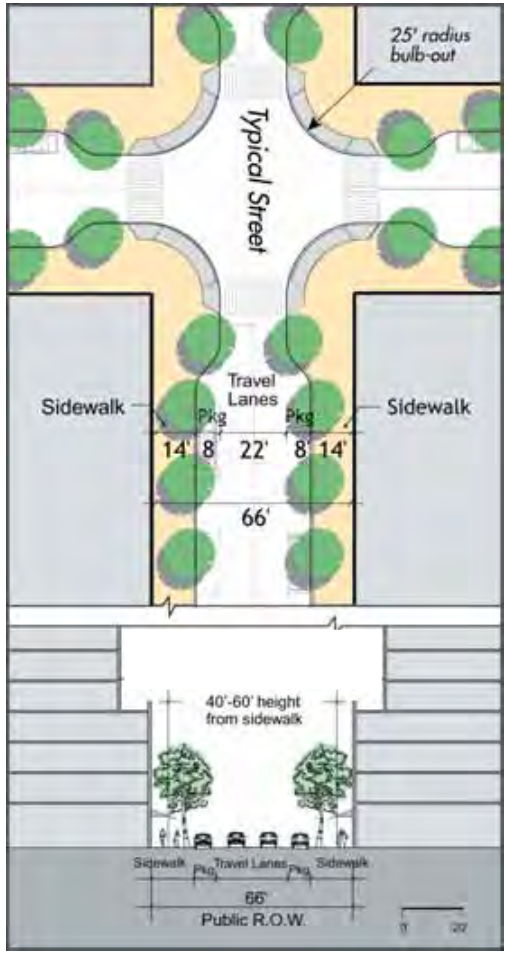




11. STREET SECTIONS: JOHN CARLYLE STREET

STREET TREES

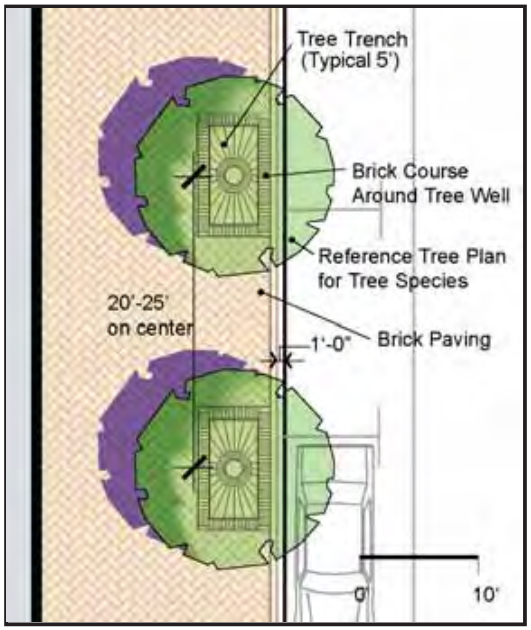
- **Tree Spacing and Size**
  - Trees located only around bulb-outs
  - 20'-25' on center
  - minimum 3"-3.5" caliper
- **Tree Wells** - 5'x8' well covered with an iron grate. See Chapter 12, " Public Realm Concept Design: Streetscape Elements"
- **Tree Trench -** Trees planted in a 5'-wide continuous tree trench beneath the sidewalk
- **Street Trees -** Refer to Street Tree Plan on p. 13 for tree species. Columnar variety of tree species should be used.

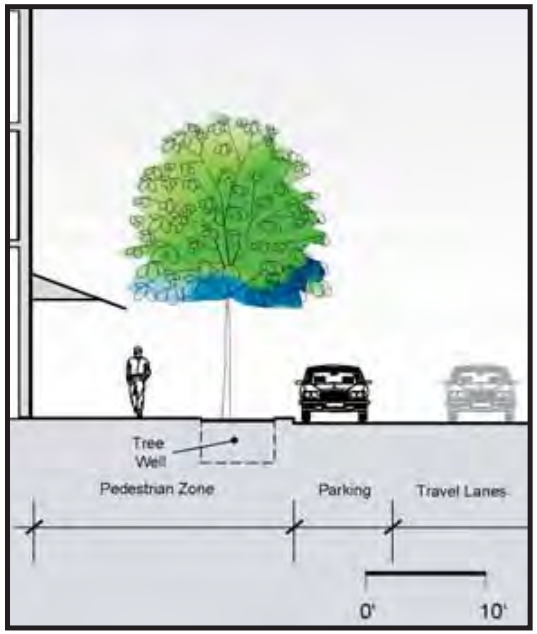


11. STREET SECTIONS: TYPICAL STREET

- **Building Face to Building Face -** 66'
- **Roadways**
  - Two 11' Travel Lanes (two-way)
  - Two 8' Parking Lanes, devoted to short-term parallel parking
- **Median -** none
- **Sidewalks** - 14' brick sidewalk in herringbone pattern.
- **Bike Lane -** none
- **Crosswalks -** 6'-8' wide brick Crosswalk with concrete edge band
- **Bulb-outs -** 25' radius at intersections with ADA accessible ramps

The design of "C" Frontage streets may be modified during the development process with the approval of the Directors of Planning & Zoning and Transportation & Environmental Services, provided a minimum right-of-way of 50 feet is maintained.





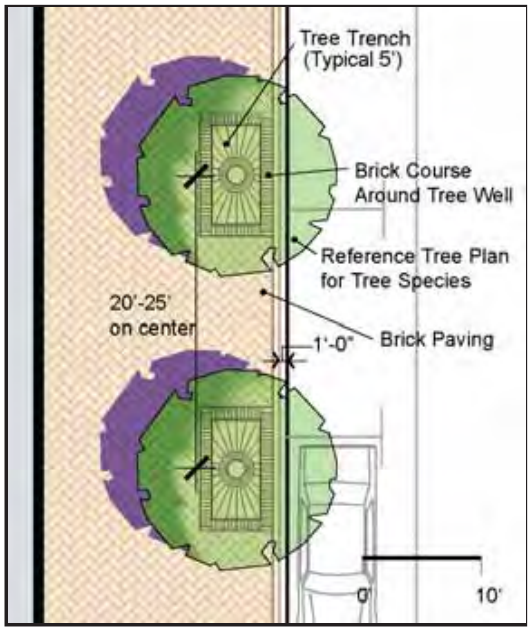
11. STREET SECTIONS: TYPICAL STREET

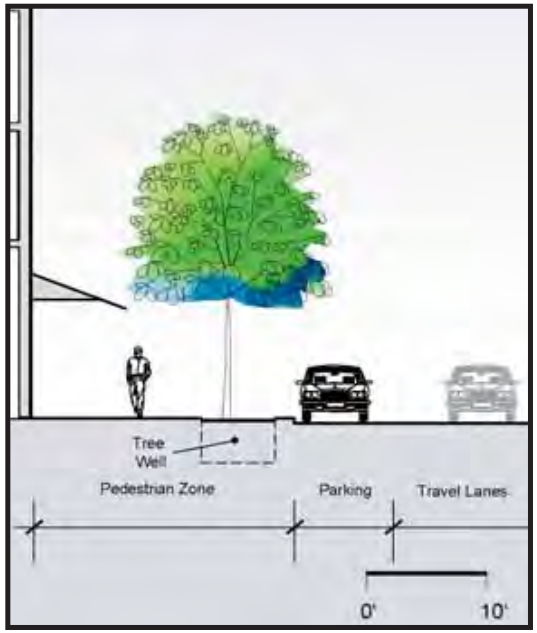
STREET TREES- NON-RETAIL BLOCK

- **Tree Spacing and Size -** 25' on center; minimum 3"-3.5" caliper
- **Tree Wells** - 5'x8' well with groundcover plantings. See Chapter 12, " Public Realm Concept Design: Streetscape Elements"
- **Tree Trench -** Trees planted in a 5'-wide continuous tree trench where located beneath the sidewalk.
- **Street tree -** refer to Street Tree Plan on p. 13 for tree species. Columnar variety of tree species should be used.

11. STREET SECTIONS: TYPICAL STREET

STREET TREES- RETAIL BLOCK

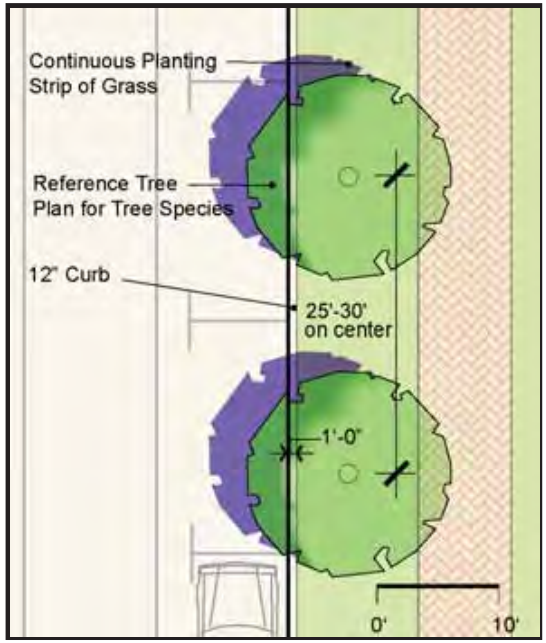




- **Tree Spacing and Size -** 25' on center; minimum 3"-3.5" caliper
- **Tree Wells** - 5'x8' well covered with an iron grate. See Chapter 12, " Public Realm Concept Design: Streetscape Elements"
- **Tree Trench -** Trees planted in a 5'-wide continuous tree trench where located beneath the sidewalk
- **Street Trees -** refer to Street Tree Plan on p. 13 for tree species

11. STREET SECTIONS: TYPICAL STREET

STREET TREES- PARK FRONTAGE



- **Tree Spacing and Size** - 25'-30' on center; minimum 3"-3.5" caliper
- **Tree Wells** - 5'x8' well with groundcover plantings. See Chapter 12, " Public Realm Concept Design: Streetscape Elements"
- **Tree Trench** - Trees planted in a 5'-wide continuous tree trench where located beneath the sidewalk
- **Street Trees** - refer to Street Tree Plan on p. 13 for tree species

12. PUBLIC REALM CONCEPT DESIGN: INTENT

Open space is a valued asset of the Eisenhower East Small Area Plan. A system of parklands, squares, and plazas are woven into the street grid to provide residents and visitors with a venue for formal and informal social gatherings, community activities, and places of respite.

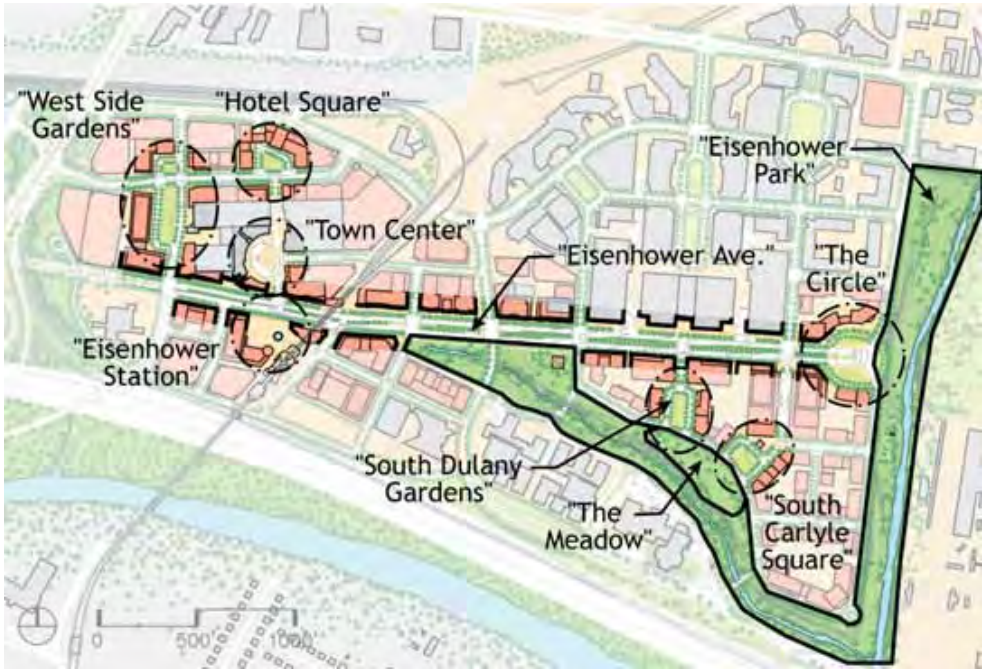
Ample seating, ample shady and sunny spots, and pedestrian access through and around these spaces are extremely important to create a truly usable park. Additional programming of these spaces, with festivals and social activities, together with the participation of community and local establishments, contribute greatly to their success as good urban parks.

The Resource Protection Area is envisioned as a natural park system straddling the stream valley and encompassing the waterways and watershed in the district. The parklands, including 'Eisenhower Park' and 'The Meadows', which bound the South Carlyle neighborhood, are seen as areas for passive recreation, replete with biking and hiking trails, tying back to the city.

Neighborhood parks, nestled within the urban street grid, are seen as places for active or passive uses, with open grassy areas or fully landscaped gardens.

Hardscape plazas, such as 'Eisenhower Station' and 'Town Center' are extensions of the sidewalk, widened to allow for higher pedestrian traffic and activity. They are located in the center of the Eisenhower Station neighborhood, anchored by the Eisenhower Metro Station and the entertainment /retail core along Swamp Fox Road. They are envisioned as highly animated spaces with a strong relationship to their adjacent uses.

All of the various open spaces within the district express their individuality in their differences in type, location, and neighboring uses; however, they retain a unified character with the use of similar streetscape elements such as street lamps, trash receptacles, sidewalk material, and benches.



12. PUBLIC REALM CONCEPT DESIGN: PARKS & SQUARES PLAN

- Neighborhood Parks and Squares
  - "West Side Gardens," "Hotel Square," "South Dulany Gardens," "South Carlyle Square," "The Circle"
  - active and passive use
  - lined with street trees
  - grassy areas with landscaping
  - hardscaped paths
  - setting for fountains, monuments, or statues

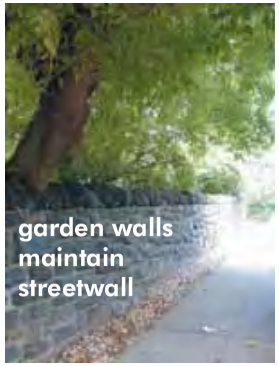
- Hardscape Plazas
  - "Eisenhower Station," "Town Center"
  - extension of sidewalk
  - a "place" for active use
  - incorporates ample seating areas
  - landscaping in planters or pots
  - setting for fountains, monuments, or statues

- Parklands
  - "Eisenhower Park," "The Meadows"
  - active and passive use
  - natural setting
  - biking and hiking trails
  - Creek runs through the park

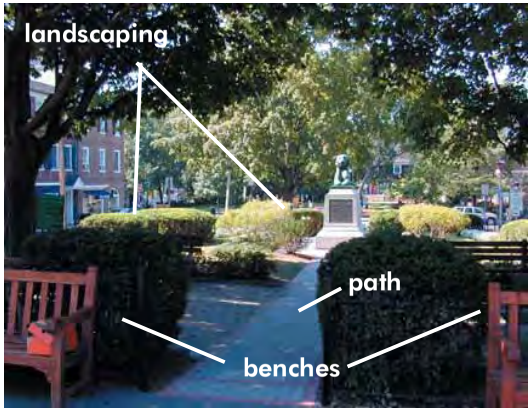
- "Eisenhower Avenue"
  - Tree-lined boulevard with tree-lined park median

12. PUBLIC REALM CONCEPT DESIGN: PARKS & SQUARES

- provide a landscaping strategy so that each park or square retains a unique character yet is in harmony with the others in the district
- provide pedestrian paths/access through and around each park or square
- create usable spaces for active or passive recreation
- provide ample seating/benches
- provide shaded areas
- incorporate fountains, monuments, etc. as centerpieces or focal points



rendering of Resource Protection Area and the South Carlyle neighborhood



12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

The quality of the streetscape is governed, in large part, by the details - the minor components that together comprise the character of the street. The components of the streetscape include not only the building facade and street trees, described in earlier chapters, but the landscaping, street lighting, and street furniture, including benches, signage, bike racks, refuse and recycling containers.

The repetition of these features throughout the Eisenhower East district helps to visually unite the neighborhood. The pictures on this page serve as examples of these streetscape components that add character and quality to a street.

- Continuous rhythm of street trees lining both sides of the street

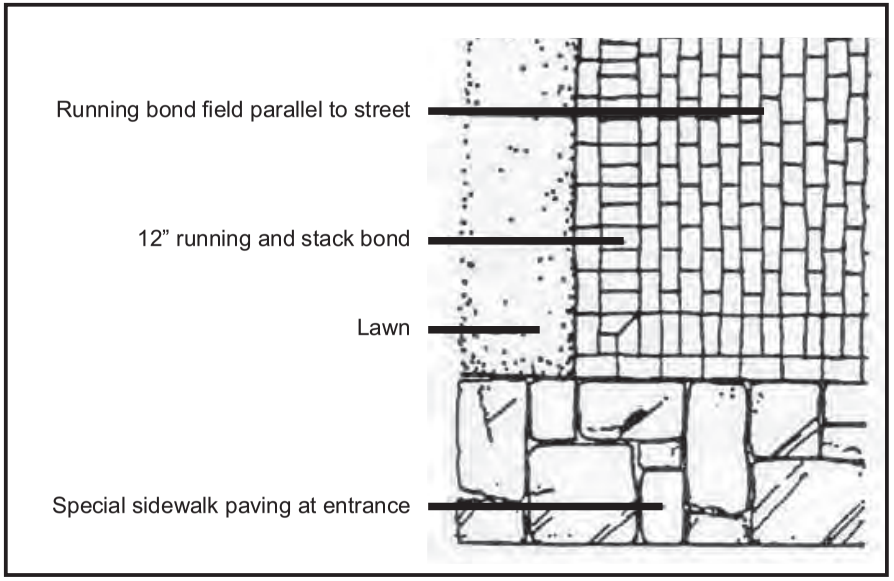
- Unified street furniture
  - street lighting
  - sidewalk
  - benches
  - trash receptacles
  - bicycle racks
  - signage

- Landscaping
  - garden walls
  - hedges/planters
  - planting strip/tree wells

12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

STREET LIGHTING

- Fixtures shall be single luminaire "Acorn" streetlights, as used in Carlyle, along public sidewalks. Additional street lighting may be required to meet street lighting standards
- Fixtures shall have a standard black finish
- All streetlights shall be placed to avoid conflict with street trees
- Where located next to residential, house side shields shall be installed in streetlights as needed to prevent lighting from directly entering residential windows
- Eisenhower Avenue Placement - Fixtures should be paired across Eisenhower Avenue
- John Carlyle Street Placement - Fixtures along this retail street should be coordinated with street tree spacing and paired across John Carlyle Street
- Typical Street Placement - Fixtures should be equally staggered across the street



Above: Running Bond pattern
At right: Herringbone pattern

12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

SIDEWALKS

- All sidewalks on A and B Streets shall be 4"x8" red brick, laid in accordance with City of Alexandria standards
- All sidewalk and planter bed edges shall be flush with grade
- Eisenhower Avenue
  - Running bond paving pattern parallel to street
  - 12" brick band in running and stack bond located along edge of sidewalk, bike path and abutting curb
  - Special paving may be integrated at building entrances
  - Bike path surface materials to be dertermined by, Planning and Zoning, Transportation and Environmental Services and Recreation, Parks and Cultural Activities
- John Carlyle Street and Typical Streets: Herringbone pattern with 12" brick band on edge of sidewalk and abutting curb

12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

BENCHES

- Benches located on public streets shall be the Timberform Restoration Series manufactured by Columbia Cascade or similar as approved by the City of Alexandria. The exact bench type within the series may be selected by the property owner
- A minimum of two benches shall be provided in each block in appropriate locations based on the specific ground floor use and the location of bus stops and public open space
- The bench seats shall be yellow cedar and the metal frames shall have a standard black, powdercoat finish
- Benches located within "Eisenhower Park" and "The Meadows" shall be 6-foot black, Victory Stanley Classic Series, CR96 or similar as approved by the City of Alexandria

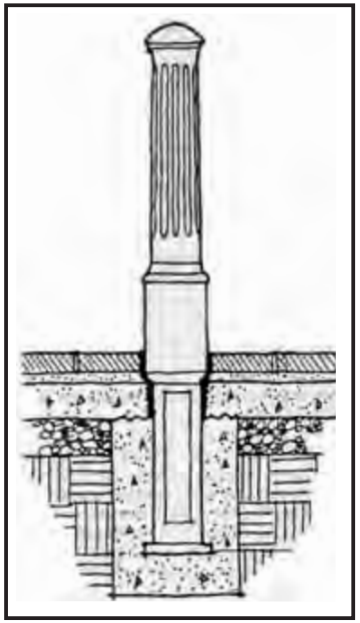
12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

TRASH RECEPTACLES

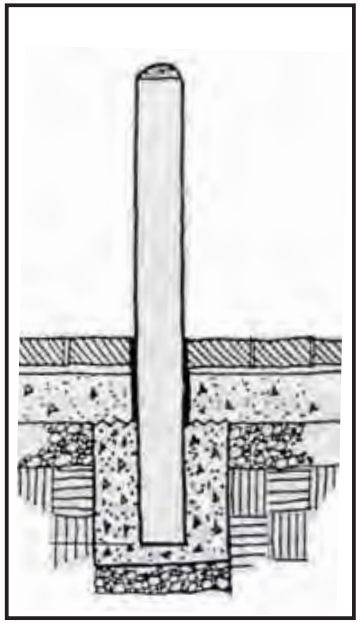
- The trash receptacle to be used throughout Eisenhower East is the Iron Site Bethesda Series Receptacle (model SD-42) by Victor Stanley or equal as approved by the City of Alexandria
- Trash receptacles shall have a black, powdercoat finish
- Trash receptacles shall be generally located near the curb
- One trash receptacle shall be located at each intersection
- Two additional trash receptacles shall be located mid-block on streets with retail frontage

BIKE RACKS

- To encourage and facilitate biking as a means of transportation, bike racks shall be provided
- Bike racks should be placed in groups at convenient, safe, well-lit paved areas in the building or curb zone
- Bike racks shall also be provided in parking garages
- Desired style: Manhattan by Canterbury International or similar equivalent, finished with black enamel, powdercoat finish



Decorative Bollard



Simple Bollard

Decorative Bollard

12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

BOLLARDS

- Bollards may be used as traffic control and safety/protection devices
- Decorative bollards shall be used in high visibility areas, where bollards are required and approved during site review
  - Desired style: Princeton Embedded (direct burial) Cast Iron Bollard by Spring City Electrical Manufacturing Company, or approved equivalent; finished in black to match streetlight poles
- Simple bollards may be used in less visible areas, such as building walls at service and parking entrances, that require protection from automobiles. Desired style - simple round concrete-filled metal post with a concrete cap, painted in one color to match the building architecture

12. PUBLIC REALM CONCEPT DESIGN: STREETSCAPE ELEMENTS

TREE WELLS

- Tree wells shall be flush with the sidewalk pavement
- Except as required along John Carlyle Street, tree wells shall be planted with groundcover plantings
- Appropriate ground cover are English Ivy, Pachysandra, Periwinkles, Liriope, and Mondo Grass; seasonal color may be added
- Tree well plantings shall be maintained by the adjoining property owner
- On John Carlyle Street, tree wells shall include tree grates. Desired type to be O.T. Series grate by Urban Associates, Snohomish, Washington, or equivalent, as approved by the city of Alexandria

Categorical Exclusion for the Eisenhower Avenue Widening
Alexandria, VA

May 2011
(REVISED June 2012)

DATE: 05/2/2011
REVISED: 05/3/2012
REVISED: 08/10/2012

CATEGORICAL EXCLUSION
DOCUMENTATION

Date CE level document approved by FHWA VA Division: June/19/2008
FHWA Contact: John Simkins
Route: 6588
State Project Number: U000-100-135, C501, PE101, RW201
From: Holland Lane
To: Mill Road
Federal Project Number: STP-5401(743)
County/City: City of Alexandria
UPC ID: 77378
Project in STIP:Yes☒

Project Description: The project consists of widening Eisenhower Avenue from Mill Road to Holland Lane. This project is intended to relieve congestion and improve safety along Eisenhower Avenue, Mill Road, and Holland Lane. The construction of two ramps from the Capital Beltway was completed in 2010, significantly increasing the volume of traffic along several roadway networks in the area. The Capital Beltway ramps increased traffic volumes at the intersection of Eisenhower Avenue and Stovall Street as well as the intersection of Eisenhower Avenue and Mill Road. The increased vehicular volume causes failing levels of service at these intersections as well as other intersections along the corridor such as the intersection with Holland Lane at the eastern project terminus. The project will include improvements to the Eisenhower Avenue/Mill Road intersection including widening in the southwest quadrant along Mill Road, addition of a second left turn lane from Eisenhower Avenue to Mill Road, sidewalk improvements along the north side of Eisenhower Avenue, improvements to all crosswalks in the intersection, and select mill and overlay. The improvements at the Eisenhower Avenue/Holland Lane intersection include widening of Eisenhower Avenue to the south to include two thru lanes westbound, a left turn lane at John Carlyle Street, a variable width grassed median generally 9.5 feet in width, two thru lanes eastbound, and a right turn lane onto Holland Lane. The project will consist of four thru lanes in total; all other lanes are to be turn lanes. In addition, the existing roundabout will be removed and replaced with a traffic signal at a tee intersection to improve traffic operations and since a roundabout widening will not fit within the existing right- of-way. The sidewalk along the north and south sides of Eisenhower Avenue will be improved. Other miscellaneous improvements will be made along the corridor which includes improving curb cut ramps and the addition of a mid-block crosswalk in front of the Patent and Trademark Office.

CE Category 23 CFR 771.117: (d)(1)
Description of Category: Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g. parking, weaving, turning, climbing).

USGS Map ☒

Logical Termini and Independent Utility: **Yes** ☒ **N/A** ☐
(For Non-highway construction only, explain in comments below)
The project would provide a Gateway Entrance into the City of Alexandria, which includes the widening of Eisenhower Avenue plus landscaping, streetscaping, and pedestrian/bicycle friendly amenities. The termini are between Mill Road and Holland Lane. These termini are logical since Eisenhower Avenue is wider west of Mill Road. Eisenhower Avenue exhibits the same number of thru lanes (four total) west of Mill Road, but the typical section is wider, due to inclusion of on-street parking west bound. The African American Heritage Park, located on the eastern edge of Holland Lane, prevents any further extension of Eisenhower Avenue. Traffic would increase due to redevelopment in the project corridor. Widening Eisenhower Avenue would create increased capacity for traffic independent of any other highway improvements. It would also provide greater access to the Eisenhower Avenue Metro Station, thus providing expanded use of public transit regionally.

Typical Section:

The typical section of Eisenhower Avenue consists of four, 11-foot thru travel lanes with additional left turn lanes. Off-peak parking would be located on both sides of the road. A sidewalk would be located on both sides of the road, and a 5′ bike lane is planned for the east bound lanes from Hooffs Run Drive to Holland Lane. The typical section of Eisenhower Avenue also shows a 9.5′ median. The outer lanes would have curb and gutter on the outside edges. See Attachment 2 for graphic representations of typical sections.

Structures: Bridges will not be constructed as part of this project. A 9′ extension to an existing 7′x4′ box culvert under Mill Road is planned.

SOCIO-ECONOMIC	PRESENT		IMPACTS	
	YES	NO	YES	NO
Minority/Low Income Populations	☐	☒	☐	☒
Disproportionate Impacts to Minority/Low Income Populations: Yes ☐ No ☒				
Existing or Planned Public Recreational Facilities	☒	☐	☐	☒
Source: City of Alexandria Department of Recreation, Parks, and Cultural Activities, January 31, 2011. Personal communication between AECOM Judith Charles and Beth Carton, Park Planner. Plan sheet depicting the project area in relation to the African American Heritage Park (Attachment 3) Census 2010, City of Alexandria (attachment 25)				
Community Services	☒	☐	☐	☒
Source: Personal Communication between AECOM Judith Charles, Senior Environmental Planner, with the City of Alexandria, Chief of Police Station, Fire Department, and Sheriff's Office. January 31, 2011. Google Maps 2008 (attachment 4)				
Consistent with Local Land Use: Yes ☒ No ☐				
Source: City of Alexandria 2010 Zoning Map, Personal Communication with Planning Department, January 2011, Eisenhower East Small Area Plan, June 2006 (attachment 5)				

Minority / Low Income Populations

Per the 2010 U.S. Census, this portion of the City of Alexandria does not contain a disproportionately greater percentage of minority or low income populations. There are no impacts to minority and low income populations since the project has no relocations and the scope of work does not involve substantial impacts to existing infrastructure typically used by lower-income people. Since there are no impacts, no impacts would be disproportionate to minorities or low income populations.

Existing or Planned Recreation Facilities

The African American Heritage Park, owned by the City of Alexandria, is located at 500 Holland Lane on the east side of Holland Lane. This area is adjacent to, but outside, the limits of disturbance for the proposed project. The current curb line would not move and all improvements under the project plan would be made completely within the existing right-of-way. Therefore, there would be no impact on the park (see Attachment 3: Plan sheet showing no impact on the African American Heritage Park).

Community Services

Police, Sheriff and Fire Department Services,
The closest police and sheriff station is located at the Public Safety Center, 2003 Mill Road (see Attachment 4 Community Services.) The closest fire station is Fire Station No. 5 located at 1210 Cameron Street. Police and fire communications are consolidated at the Public Safety Center. No impact is anticipated on the police, sheriff, or fire departments' services as a result of the proposed project. There will be no changes to access to community services as a result of this project.

Bus Services

No additional bus stops are planned along Eisenhower Avenue as a result of the proposed road improvements. Pedestrian access to existing bus stops would be provided during construction. Bus stops would be reconstructed along the north side of the road at the same locations. Bus stops would be moved along the south side of the road due to the roadway widening. There would be no significant impact on bus service to the local community as a result of the proposed road widening. The Alexandria Public School System reports 6 buses with approximately 32 stops that would have temporary impacts due to construction of the project; however, no long term impacts are anticipated.

Educational Centers

The Learning Tree International, a for profit educational center located at 1925 Ballenger Avenue #200 in Alexandria, helps serve the training needs of technology and management professionals in the Washington, D.C. and Northern Virginia area. Short-term construction activities for the proposed road improvements would not have a significant impact on public access to the educational center as there are alternate routes available (see Attachment 4).

Local Land Use

Per the *Eisenhower East Small Area Plan (June 2006)* and the City of Alexandria 2012 Zoning Map this section of Eisenhower Avenue is located within Coordinated Development Districts (CDDs) #1, #2, and #11. Publicly owned lands within these CDDs are zoned UT for utilities and transportation. There would be no conflict with the current land use or zoning (see Attachment 5: Section of Zoning Map: City of Alexandria, 2012).

SECTION 4(f) and SECTION 6(f)	**YES**	**NO**
Use of 4(f) Property: Acres:	☐	☒
Individually Eligible Historic Property:	☐	☒
Contributing Element to Historic District:	☐	☒
Source: National Register of Historic Resources Inventory (Accessed October 2010); Office of Historic Alexandria Website (Accessed October 2010); Email correspondence between AECOM and the Department of Recreation, Parks, and Cultural Activities, City of Alexandria, VA. January2011 Email correspondence between A. Morton Thomas and Associates and the VA Dept. of Historic Resources April 6, 2012 (attachment 18)		
Public Recreation Area:	☐	☒
Public Park:	☐	☒
Public Wildlife/Waterfowl Refuge:	☐	☒
Planned Public Park, Recreation Area, Wildlife or Waterfowl Refuge:	☐	☒
Source: Email correspondence between AECOM and the Department of Recreation, Parks, and Cultural Activities, City of Alexandria, VA. (January)		
Constructive Use:	☐	☒
Section 4(f) Evaluation Attached:	☐	☒
Conversion of 6(f) Property: Acres:	☐	☒

Comments

Per VDHR concurrence of no effect, no Individually Eligible Historic Properties or Contributing Elements to a Historic District were found within the Area of Potential Effects (APE). (See Attachment 6: Historic Resource Map). Consultation with the Virginia Department of Historic Resources has determined that "No Historic Properties will be affected by the undertaking". (See Cultural Resources below) There are no right of way or easement acquisitions from publically owned parks, wildlife refuges, or public areas open to the public in addition to not creating significant impacts to historic properties.

The African American Heritage Park would not be impacted by the proposed project. Please see the discussion about the park in the above section on Community Services.

CULTURAL RESOURCES	COMPLETE	N/A
Source: 2009. Geomorphological Assessment of the Eisenhower Avenue Widening Project in Alexandria, Virginia (February) 2011. Email correspondence between AECOM and the Preservation Archaeologist, City of Alexandria, VA (March). Email correspondence between AMT and the VA Dept. of Historic Resources (April 6, 2012) attachment 18		
"No Effect" Pursuant to 1999 DHR Agreement	☐	☒
Phase I Architecture Conducted	☐	☒
Phase II Architecture Conducted	☐	☒
Phase I Archaeology Conducted	☒	☐
Phase II Archaeology Conducted	☐	☒

Effect on Historic Properties: The City of Alexandria and the Virginia Dept. of Historic Resources determined there would be no impact on archaeological resources
DHR Concurrence on Effect: Yes ☒ Concurrence Date: April 6, 2012
MOA Attached: Yes ☐ N/A ☐

Comments

In July 2008, there was a site plan comment to the city that prompted a geomorphological study. It stated the following:

"It is likely that there is deep fill from Holland Lane through the 2200 block of Eisenhower Avenue along the development right-of-way. In this eastern section of the project area, there is low potential that the road construction will penetrate the fill layers and cause disturbance to buried soil deposits that could contain significant archaeological sites. There is little information available about previous disturbances, grading, or filling in the western section of the project area from the 2300 block of Eisenhower to Stoval Street. This area has potential to yield archaeological resources that could provide insight into both Native American and early historical settlement. Prior to the submission of the 60% plan; a pedologist/geomorphologist should monitor the placement of a series of soil borings at approximate 100-foot intervals (maximum of 12) within the construction right-of-way from the 2300 block of Eisenhower

Avenue to Stovall Street. The results of the borings will be analyzed to determine the presence or absence (and depth, if present) of any buried soil layers with potential to contain archaeological resources.

(This is not your typical soil boring analysis performed for load-bearing and engineering purposes. It needs to be done by a professional who can interpret the findings to ascertain landscapes of the past and to determine the possibility for the recovery of buried cultural resources.) The information from the soil boring analysis will then be used by City archaeologists in the review of the 60% plans to determine if there is potential for the road construction to be deep enough to cause disturbance to buried soil deposits that could contain significant archaeological sites. Contact Alexandria Archaeology to obtain a scope of work for the pedological/geormorphological investigation."

As a result of this site plan comment, a geomorphological study was conducted by Daniel Wagner in 2009 (*Geomorphological Assessment of the Eisenhower Avenue Widening Project in Alexandria, Virginia*) [see attachment 7]. The study indicates that there is at least six feet of fill over the floodplain deposits along Eisenhower Avenue from Telegraph Road to Stovall Street. Wagner concluded that the floodplain in this location was far too poorly drained and unstable to support human occupation. Overlays of the current topography on a 1929 USGS map indicate that the area from Stovall Street to Holland Lane contains even deeper fill layers over floodplain deposits. It is likely that this area would be equally unsuitable for human occupation. Thus, even if construction activities were to penetrate the natural soil levels below the fills, this project can be deemed to have no effect on archaeological properties. The estimated depth of construction is in the five to six foot range for drainage inlets and approximately two feet for excavation.

	PRESENT		**IMPACTS**	
NATURAL RESOURCES	**YES**	**NO**	**YES**	**NO**
Surface Water (Name: Tributary to Hoofs Run)	☒	☐	12 Linear ft.	
Source: USGS topographic map of Alexandria and 30% plans (see Attachment), Field reconnaissance. Attachment 1				
Federal Threatened or Endangered Species: Terrestrial: None Aquatic: None Plants: None	 ☐ ☐ ☐	 ☒ ☒ ☒	 ☐ ☐ ☐	 ☒ ☒ ☒
Source: Correspondence with VA Dept. of Game and Inland Fisheries, July, 2008, Department of Conservation and Recreation, August, 2008, Attachments 9 and 10				
100 Year Floodplain: If "Yes" then identify the regulatory floodway zone:	☐	☒	☐	☒
Source: FEMA map of Alexandria, VA FM5155190005D, Attachment 11				
Wetlands: There are no wetlands within the project area.	☐	☒	0.0 Acres NoneType	
Source: US Fish and Wildlife Service Wetland Mapper data, accessed June 27, 2008 (see Attachment 12). Field reconnaissance, Attachment 13.				
Permits Required: Per the VA DEQ, this project qualifies for VWP General Permit WP3 and a Regional Programmatic General Permit (12-SPGP-01)	☒	☐		
Compensatory Mitigation Required:	☐	☒		
Source: Email correspondence and site visit with DEQ, Margaret Quigley, Aug. 1, 2012 attachment 23				

Surface Water

Approximately 12 feet of Old Cameron Run would be impacted by construction and would be converted to a culvert to accommodate the extra lane on Mill Road [see attachment 8]. The Old Cameron Run Channel drains to Hooffs Run, which drains to Cameron Run. The culvert would carry the tributary to Hoofs Run, which would be impacted by this stream modification. The proposed project was reviewed by the Department of Game and Inland Fisheries (DGIF). According to DGIF records, Cameron Run is an Anadromous Fish Use Area.

To reduce potential effects to migrant fish during spawning season by allowing necessary flow in Cameron Run from construction of the box culvert extension, DGIF recommends all in-stream work follow a time-of-year restriction from February 15 through June 30 of any given year. In-stream activities should be conducted during low or no-flow conditions, using non-erodible cofferdams to isolate the construction area, blocking no more than 50 percent of the stream flow at any given time, stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, and revegetating barren areas with native vegetation. Floodplain culverts shall be installed to carry bankfull discharges at a minimum. Strict adherence to erosion and sediment controls is also recommended. Adhering to these conditions would cause construction impacts on anadromous fish in Cameron Run that are less than significant. No construction work is proposed within Cameron Run. The proposed culvert extension is to be constructed within Mill Creek. Adhering to DGIF recommendations will prevent sediment from entering Cameron Run, via Mill Creek. Mill Creek is a tributary to Cameron Run. No mitigation as a result of the culvert extension is required or committed.

Federal Threatened or Endangered Species

Correspondence with the Virginia Department of Game and inland Fisheries (VDGF) indicates that the bald eagle (*Haliaeetus leucocephalus*), a federal species of concern/state threatened may occur in the project area during breeding season. This species may occur in the project area if appropriate habitat exists; bald eagles build their nests in tall trees along rivers, lakes, the sea coast, coastal marshes, reservoirs and large lakes. There are no lakes, sea coast, coastal marshes, reservoirs, or large lakes near the project area. It is unlikely that the proposed project would cause significant adverse impacts on federal threatened or endangered species.

Correspondence with the Virginia Department of Conservation and Recreation (DCR) indicates that the proposed action will not affect any documented state-listed plants or insects. There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

A USFWS project review has indicated that there are no threatened or endangered species or suitable habitat within the project area.

	Present		IMPACTS	
AGRICULTURAL/OPEN SPACE	**YES**	**NO**	**YES**	**NO**
Open Space Easements	☐	☒	☐	☒

Source: No easement currently held by Virginia Outdoors Foundation (VOF) will be affected by this project, VDOT April 24, 2008 Based on a City of Alexandria GIS Planning and Development Viewer of the project vicinity, there are no existing VOF open space easements within a 1-mile radius of the project area. City of Alexandria GIS, September 7, 2012, attachment 26, Telephone and email correspondence with Larry Wilkinson, District Conservationist with the USDA – NRCS Leesburg, VA, August 6, 2012 ,Attachment 20				
Agricultural/Forestal Districts	☐	☒	☐	☒
Source: A search of City of the Alexandria GIS Planning and Development Viewer of the project vicinity determined that no Agricultural or Forestal Districts within a 1-mile radius of the project area. City of Alexandria GIS, September 7, 2012, attachment 26 ,Telephone and email correspondence with Larry Wilkinson, District Conservationist with the USDA – NRCS Leesburg, VA, August 6, 2012 ,Attachment 20				

Comments

There would be no impacts on open space easements or agricultural/forestal districts as a result of the proposed project.

FARMLAND	**YES**	**NO**
NRCS Form CPA-106 Attached: Rating:	☐	☒
Alternatives Analysis Required:	☐	☒
If Form CPA-106 is not attached check all that are applicable:		
Land already in Urban use:	☒	☐
Entire project in area not zoned agriculture:	☒	☐
NRCS did not respond within 45 days:	☐	☒
Source: Search indicates no prime farmland within a 1-mile radius of the project area. City of Alexandria GIS, September 7, 2012, attachment 26, telephone and email correspondence with Larry Wilkinson, District Conservationist with the USDA – NRCS Leesburg, August 6, 2012 attachment 20		

Comments

There would be no impacts on prime farmland as a result of the proposed project.

INVASIVE SPECIES	**Present**		
	YES	**NO**	**UNKNOWN**
Invasive Species in the project area:	☐	☐	☒

Comments

Virginia Department of Conservation and Recreation (DCR) indicated that the potential exists for some VDOT projects to further the establishment of invasive species. All seeds used will be tested in accordance with the Virginia Seed Law to ensure there are no prohibited Noxious Weed-Seeds in the seed mixes.

Mitigation for disturbance within the RPA shall be provided. Invasive species found within the RPA between Mill Road and Mill Run Road and in the area along the north side of the stream channel will be

removed and replaced with native species as compensation for RPA impacts. Work performed would need to adhere to the Erosion and Sediment Control Law (§10.1-560 *et seq*. of the Code of Virginia) and the Stormwater Management Act (§10.1-603.1 *et seq.* of the 6 Code of Virginia). The project would be compliant with these regulations and there would be no significant adverse impact from invasive species.

AIR QUALITY See comments below.	**YES**	**NO**
Air Analysis Required: If "No", indicate which exemption it falls under: ☐ Exempt Project – According to 40 CFR 93.126 (table 2 exempt project), the project is identified as being exempt from air quality analysis. Since the project is exempt from an air quality analysis, it can be concluded that the project will not significantly impact air quality nor will it cause or contribute to an exceedance of the National Ambient Air Quality Standard for carbon monoxide. ☐ LOS Criteria – All of the intersections/interchanges in the project area or directly affected by the project are forecasted to operate at a level of service (LOS) of "C" or better in the design year. According to 40 CFR 93.123, only a qualitative analysis must be conducted for this project, therefore, it can be reasonably concluded that this project will not significantly impact air quality nor will it cause or contribute to an exceedance of the National Ambient Air Quality Standard for carbon monoxide. ☐ Traffic Volume – The project does not include or directly affect any roadway whose design year daily traffic volume would exceed the traffic thresholds outlined in the Memorandum of Understanding (MOU) between VDOT and FHWA for streamlining the project-level air quality analysis process. Modeling using "worst" case parameters has been conducted for these thresholds and it has been determined that projects below these thresholds, such as this one, would not significantly impact air quality nor will it cause or contribute to an exceedance of the National Ambient Air Quality Standards for carbon monoxide.	☒	☐
Air Analysis Attached:	☒	☐
Source: HMMH, Eisenhower Avenue Widening Project Air Quality Analysis Technical Report, August 3, 2012, attachment 14		
Maintenance or Non-Attainment Area:	☒	☐
In Long Range Plan & TIP:	☒	☐
Source: Alexandria, Virginia, Eisenhower East Small Area Plan, April 2003; National Capital Region Transportation Planning Board, July 15, 2009.		

Comments

The proposed road widening would not cause or contribute to any new localized CO violations or increase the frequency or severity of any existing CO violations. The temporary air quality impacts from construction are not expected to be significant. Construction activities are to be performed in accordance with VDOT's current "Road and Bridge Specifications." The specifications are approved as conforming to

the State Implementation Plan and require compliance with all applicable local, state, and federal regulations.

NOISE	YES	NO
Type I Project:	☐	☒
Source: Email correspondence with VDOT Noise abatement April 27, 2012 [see attachment 15]		
Noise Analysis Attached:	☐	☒
Barriers Under Consideration:	☐	☒
Source: Virginia Department of Transportation, Highway Traffic Noise Impact Analysis Guidance Manual, July 13, 2011 Rev. September 16, 2011, Correspondence with VDOT, April 27, 2012, Attachment 15		

Comments:
The project has been determined to be a Type III as scoped; therefore a noise analysis is not required.

RIGHT OF WAY AND RELOCATIONS	YES	NO
Residential Relocations: If "Yes", number:	☐	☒
Source: Communications w/ City Project Manager on relocations		
Commercial Relocations: If "Yes", number:	☐	☒
Source: Communications w/ City Project Manager on relocations		
Non-profit Relocations: If "Yes", number:	☐	☒
Source: Communications w/ City Project Manager on relocations		
Right of Way required: If "Yes", acreage amount: 1.8 acres all proffered to the City by the developers. The three properties proffering the land are: Simpson Development Properties Co. (TM 073.03-01-06), 2111 Eisenhower Ave. LP(TM 073.03-01-01) and Carlyle Development Corp. (TM 079.01-01-14) The right of way will be donated.	☒	☐
Source: 1.8 acres - Construction documents City of Alexandria Real Estate Assessor's Office, attachment 16		

Comments
There would be no residential, commercial, or non-profit relocations required as part of the proposed road improvements.

	PRESENT		IMPACTS	
	YES	NO	YES	NO
Septic Systems or Public Water Supplies:	☐	☒	☐	☒
Source: Virginia Department of Health, letter dated July 25, 2008 ,attachment 17				

Hazardous Materials:	☒	☐	☒	☐
Source: Thomas L. Brown Associates, P.C. Geotechnical Report, Widening of Eisenhower Avenue, Alexandria, Virginia. June, 2008 and September 2008. General Services Administration. Draft Environmental Impact Statement for the U.S. Patent & Trademark Office Consolidation. May, 1998. Alexandria, Virginia. A Final Report of Alexandria City Landfill South Payne Street. August, 1983.				

Comments

There are no anticipated impacts to septic systems or public water supplies from construction of Eisenhower Avenue. There is also minimal risk of off-site contamination or exposing contaminated soils due to the limited amount and shallow depth of land disturbance.

Hazardous Materials are present for this project as described in the Geotechnical Report by Thomas L. Brown Associates, P.C. and as summarized below.

Fill soil was encountered in all borings collected by Thomas L. Brown Associates and extended to the termini of borings 3 and 9. The highest level of groundwater was observed at boring B-3 with water encountered at 3.5 feet. Perched or trapped water conditions are anticipated. Seasonal and/or long-term fluctuations of the site's groundwater levels should also be anticipated. BTEX can be found at numerous sites including areas for fuel operations, refineries, gasoline stations, and gasification sites. Benzene is highly mobile in soil and groundwater. It is recommended that some kind of arrangement either involving edge drains or free draining materials be installed along and beneath the pavement to provide for the expedient removal of all waters that may otherwise become entrapped beneath the pavement. The bottom of the excavation shall be sloped to drain surface runoff to sump pumps from where water would be pumped out to approved locations. Groundwater shall be maintained at a depth of at least 3 feet below the lowest point of excavation during construction. The anticipated depth of excavation is two feet with the exception of drainage inlets, which would range in depth to five to six feet.

According to the Geotechnical Reports prepared by Thomas L. Brown Associates, P.C., soil samples S-2 (2.5 to 4 feet), S-4 (7.5 to 9 feet), S-5 (10 to 11.5 feet), and S-6 (13.5 to 15.0 feet) from boring B-3 and sample S-4 (8.5 to 10 feet) from boring B-9 had PID readings (i.e., above 190 ppb). Elevated levels of benzene, ethylbenzene, toluene, and xylene (BTEX) were observed in samples S-2 and S-5 from boring B-3. The benzene levels were highest in S-2 with a concentration of 155,000 µg/kg. Boring B-3 is located on Parcel 073.04-03-14. Boring B-9 is located on Parcel 073.03-02-24.

According to the 1983 Alexandria City Landfill Report on the South Payne Street Landfill, the exact boundaries of the landfill are not known. The landfill covered a large area in southeastern Alexandria, north of I-495 and Cameron Run, between U.S. Route 1 and Telegraph Road, and south of Eisenhower Avenue. The site observation and assessment, conducted on March 14, 1983, revealed no on-site environmental contamination.

According to the 1998 Draft Environmental Impact Statement for the U.S. Patent and Trademark Office, elevated levels of subsurface methane were discovered in the southern section of the Carlyle Development Project (three parcels abutting Eisenhower Avenue in the study area) and were associated with sections of the landfill (roughly corresponding to parcel 073.03-02-25). The majority of buildings in the area were constructed with methane degassing systems. According to the above mentioned EIS, various environmental and geotechnical studies were performed for the Carlyle Development Project

prior to 1998. A portion of parcel 073.03-02-25 was identified as having contaminated materials however the nature of the contamination is unknown and the site remediation has already occurred. Several areas of the Carlyle site also contained surface and subsurface soils that indicated levels of lead, which would be deemed hazardous if transported. There would be no significant hazardous waste impact from the proposed project. Block 25 is fully built out. The proposed road widening would hold the existing curb and no soil would be removed.

CUMULATIVE AND INDIRECT IMPACTS	Present		
	YES	NO	N/A
Present or reasonably foreseeable future projects (highway and non-highway) in the area;	☒	☐	☐
Impact same resources as the proposed highway project (i.e. cumulative impacts):	☒	☐	☐
Indirect (Secondary) impacts:	☒	☐	☐
Source: City of Alexandria, Eisenhower East Small Area Plan; Development Activity in Alexandria, Second Quarter 2008.			

Comments

The projects presented below impact above mentioned resources in a similar manner as the proposed widening of the Eisenhower Avenue project.

Residential Development

Project	Address	Type
Alexan Carlyle/Carlyle Center	310 Hooffs Run Dr.	Mid-rise Apartments
Carlyle Block O	601 Holland Ln.	High–rise & Mid –rise apts.
Hoffman 11 & 12	2010 Eisenhower Av.	High–rise & Mid –rise apts.
Hoffman 24 & 25A	2000 Eisenhower Av.	High–rise & Mid –rise apts.
American Trucking	2100 Mill Rd.	High–rise & Mid –rise apts.

Commercial Development

Project	Address	Office/Retail Sq. Ft.
Eisenhower Center III	2320 Mill Rd.	98,499
Patent & Trade Center Non-Federal Use Blk J	2050 Ballenger Av.	68,356

Patent & Trade Center Non-Federal Use Blk K	1900 Ballenger Av.	61,642
Carlyle Block P	2000 Eisenhower Av.	770,000
Hoffman 2 & 3	200 Stoval , 2410 Mill Rd.	497,000
Hoffman 8	2301 Eisenhower Av.	492,904
Hoffman 9A & 9B	2400 Eisenhower Av.	830,000
Hoffman 24 & 24A	2000 Eisenhower Av.	180,000
ATA Office	2250 Mill Rd.	585,000
Block O	601 Holland Ln.	5,946

The projects listed above surround the project area. Along with the Eisenhower Avenue Widening, they represent a substantial amount of infrastructure, residential, and commercial development within an existing urban setting.

The Eisenhower Avenue Widening and the residential/commercial development would have indirect and cumulative growth inducing effects. The use of Eisenhower Metro would increase. These changes would result in incremental changes in traffic and noise impacts. However, these incremental changes would not result in significant impacts on traffic and noise. There would be no significant socio-economic or cultural resources indirect or cumulative impacts. Since the area is already urban, there would be no significant indirect or cumulative impacts on natural resources.

The proposed project would conform to the assumptions in the conformity analyses for the Constrained Long-Range Transportation Plan and the Transportation Improvement Plan, which are the long-range planning documents that include roadway projects throughout the region. There would be no indirect or cumulative impacts on air quality.

PUBLIC INVOLVEMENT	**YES**	**NO**
Substantial Controversy on Environmental Grounds:	☐	☒
Source: City of Alexandria Project Manager, March 15, 2011		
Public Hearing: If "Yes", type of hearing: Willingness	☐	☒
Other Public Involvement Activities: The CE will be made available for public review and comment. If "Yes", type of Involvement:	☐	☒

COORDINATION

The following agencies were contacted during development of this study:
United States Department of Agriculture – Natural Resources Conservation Service
United States Department of the Interior – U.S. Fish and Wildlife Service
United States Army Corps of Engineers
Virginia Department of Transportation
Virginia Department of Game and Inland Fisheries
Virginia Department of Conservation and Recreation (Natural Heritage Program)
Virginia Department of Health
Virginia Department of Historic Resources
Virginia Department of Environmental Quality
City of Alexandria

City of Alexandria Fire Department
City of Alexandria Police Department
City of Alexandria Sheriff Office
City of Alexandria Parks Department

A Comparative Evaluation of the Safety Performance of Roundabouts and Traditional Intersection Controls

This project meets the criteria for a Categorical Exclusion pursuant to 40 CFR 1508.4 and 23 CFR 771.117 and will not result in significant impacts to the human or natural environment.

Shashi S. Nambisan and Venu Parimi

Abstract: One consideration influencing the deployment of roundabouts is that they help improve the safety characteristics of an intersection. This is partly because of factors such as the elimination of conflict points, and the reduction in the speeds of vehicles that traverse the intersection. This paper summarizes the results of a safety analysis of the roundabouts located in the Las Vegas metropolitan area in the USA. The Las Vegas metropolitan area has had several new roundabouts installed over the last decade or so. The evaluation consists of a comparison of traffic crashes in the proximity of roundabouts with those at comparable conventional stop controlled and signalized intersections. Traffic volumes were used to normalize the number of crashes. Five years of crash data were used for the study and the comparison of the intersection controls is done with respect to the time of the crash, contributing factors, type of crash, roadway conditions etc. Statistical tests were used to evaluate the significance of these results. The results indicate that intersections that had minor and medium levels of traffic volumes roundabouts were generally safer than the intersections that were stop controlled and signalized. However, high volume intersections with signalized traffic controls appeared to be safer than the corresponding candidate roundabouts. But, the results for the high volume intersections were statistically not significant.

INTRODUCTION

Traffic circles have been a part of United States (US) transportation system since the early 1900s. However, these traffic circles faded away from the transportation scenario because of the high accident and congestion rates caused due to the priority given to vehicles entering the intersection. It was not until the adoption of the 'modern roundabout' in the United Kingdom during the 1950s that a new meaning was given to the circular intersection design. These modern roundabouts reflect a number of improvements over the traffic circles such as entering vehicles yielding to circulating traffic, addition of a splitter island, no crosswalks in circulating path etc. Since 1990, the US has witnessed an increased use of roundabouts, in part due to their potential advantages in terms of safety and capacity over stop-controlled intersections. The general thought about roundabouts is that they increase the safety characteristics of an intersection by a reduction of conflict points and an overall lowering of the speeds of circulating and through vehicles.

The objective of this paper is to present the results of a safety analysis of roundabouts in comparison with conventional stop controlled and signalized intersections. These roundabouts and intersections are located in the Las Vegas metropolitan area in the state of Nevada, USA. Crash data for a 5 year period are used for the study and the comparison of the intersection controls is done with respect to the time of the crash, contributing

factors, type of crash, roadway conditions etc. Some statistical tests are also preformed to evaluate the significance of the results.

INTERSECTION SAFETY

Crashes occur at intersections because motor vehicles are in conflict with one another when crossing or turning in traffic. According to the US Federal Highway Administration (FHWA) Intersection Safety Brief (2003), intersection safety is a national priority for numerous highway-safety organizations because of the relatively high percent of crashes at intersection locations. In the year 2000, more than 2.8 million intersection-related crashes occurred in the US, representing 44 percent of all reported crashes. About 8,500 fatalities (23 percent of total fatalities) and almost one million crashes with injuries occurred at or near an intersection. The cost to society for intersection-related crashes is approximately $40 billion a year. The data shown in Table 1 support the FHWA notion of ranking intersection safety on the top of their priority list.

Table 1: Key Highway and Traffic Safety Statistics in the US for the Year 2000

Indicator of Interest	**Number**	**Percent Total**
Total Fatality Crashes	37,409	
Total Intersection Related Fatality Crashes	8,474	**22.6**
Total Injury Crashes	2,070,000	
Total Intersection Related Injury Crashes	995,000	**48.1**
Total Property Damage Only (PDO) Crashes	4,286,000	
Total Intersection Related PDO Crashes	1,804,000	**42.1**
All Crashes	6,394,000	
Total Intersection Related Crashes	2,807,000	**43.9**
Total Fatalities	41,821	
Total Intersection Related Injured persons	1,596,128	

Improving the engineering of intersections is a first step toward reducing crashes because vehicle conflicts combined with characteristics of street design often results in crashes with roadside objects, pedestrians, and other vehicles (Janssen, 2003).

MODERN ROUNDABOUTS

The modern roundabout is a type of circular intersection that has been successfully implemented in Europe and Australia over the past few decades. Despite the tens of thousands of roundabouts in operation around the world, there are only a few hundred in the United States. The lack of acceptance may generally be attributed to the negative experience with traffic circles or rotaries built in the first half of the twentieth century. Severe safety and operational problems caused traffic circles to fall out of favor by the 1950s. However, substantial progress has been achieved in the subsequent design of circular intersections, and a modern roundabout should not be confused with the traffic circles of the past.

The modern roundabout is defined by the following principles that distinguish it from a traffic circle:

1. Modern roundabouts follow the "yield-at-entry" rule in which approaching vehicles must wait for a gap in the circulating flow before entering the circle. Many traffic circles in the US require circulating vehicles to grant the right of way to entering vehicles. Some traffic circles also use stop signs or signals to control vehicle entry.
2. Modern roundabouts involve low speeds for entering and circulating traffic, as governed by small diameters and deflected entrances. In contrast, traffic circles emphasize high-speed merging and weaving, made possible by larger diameters and tangential entrances.

According to the FHWA publication, *Roundabouts: An Information Guide* (2000), roundabouts may improve the safety of intersections by eliminating or altering conflict types, by reducing speed differentials at intersections, and by forcing drivers to decrease speeds as they proceed into and through the intersection. The reasons for the increased safety are:

1. Roundabouts have fewer conflict points in comparison to conventional intersections. The potential for hazardous conflicts, such as right angle and left turn head-on crashes is eliminated with roundabout use. Single-lane approach roundabouts produce greater safety benefits than multilane approaches because of fewer potential conflicts between road users, and because pedestrian crossing distances are short. A four-leg single-lane roundabout has 75% fewer vehicle conflicts points, compared to a traditional stop controlled intersection.
2. Low absolute speeds associated with roundabouts allow drivers more time to react to potential conflicts.
3. Since most road users travel at similar speeds through roundabouts, i.e., have low relative speeds, crash severity can be reduced compared to some traditionally controlled intersections.
4. The entering driver, after looking out for pedestrians, only has to look to the left for an acceptable gap to enter into the traffic flow. Weaving only occurs in multiple-lane roundabouts, where it is simplified by the low speeds.
5. Reduced delays at roundabouts compared to signalized intersections decrease the level of frustration and aggressiveness of drivers, making them safer drivers. In addition, slower speeds make drivers more congenial and aware of their environment. The driver notices other road users more readily, especially the more vulnerable users.
6. Pedestrians need to cross only one direction of traffic at a time at each approach as they traverse roundabouts, as compared with unsignalized intersections. The conflict locations between vehicles and pedestrians are generally not affected by the presence of a roundabout, although conflicting vehicles come from a more defined path at roundabouts (and thus pedestrians have fewer places to check for conflicting vehicles).

PREVIOUS SAFETY STUDIES ON ROUNDABOUTS

Jacquemart (1998) compiled various safety studies that were undertaken on roundabouts. The findings are summarized below:

The Netherlands

In 1992, a before-and-after study was conducted in the Netherlands of 181 roundabouts that were previously stop controlled or signalized intersections. They found that the number of accidents in a year dropped by 51% on an average and the injury accidents decreased by an average forty four percent.

Australia

A before-and-after study of 73 roundabouts in Australia conducted in the year 1981 showed a reduction of 74 percent in the casualty (i.e., fatality) accident rate and a 32 percent reduction in property damage accidents.

Germany

In 1996, 34 modern roundabouts in Germany were studied. This study found that the number of fatalities and severe injuries decreased from 18 to 2. The number of accidents with heavy property damage decreased from 24 to 3.

France

France studied about 83 roundabouts in the year 1986, and concluded that the transformation of regular intersections into roundabouts yielded significant safety benefits. While the fatalities reduced by 88 percent, the injuries fell by approximately 78 percent. Another study of 522 roundabouts in the year 1988 found that 90 percent of them had no injury accidents at all.

Switzerland

In Switzerland, two roundabouts built in 1977 and 1980 were studied for 4-8 years after they were converted as roundabouts from the conventional intersections. The findings of the study were that there were reductions of 75 percent in total accidents and 90 percent in the number of injuries.

Other Studies

Studies in other countries have also indicated similar safety findings. A study by Frith and Harte (1986), of the Ministry of Transport in New Zealand concluded that roundabouts appear generally to offer greater safety benefits than signals.

In summary, most of the studies show that roundabouts improve safety. However there are a few studies that have shown problems with the usage of roundabout, quoting that this type of intersection control increases the number of crashes.

STUDY AREA

The Las Vegas metropolitan area is a relatively new urban area. Urban style development in Las Vegas began during the first half of the twentieth century. At that time this desert community had ample land for sprawl. A majority of the population and economic growth in this area has occurred over the last 20 years. The low-density template used to develop the desert city provided a traditional street grid pattern.

Figure 1 depicts the study area also known as the "Las Vegas metropolitan area." It includes the cities of Las Vegas, Henderson, and North Las Vegas along with parts of unincorporated Clark County (such as Lone Mountain, Spring Valley, Enterprise, Paradise, Whitney, Winchester), which is a substantial portion of land under the administrative jurisdiction of Clark County. The study area was estimated to have 1.55 million residents and an average thirty five million visitors per year (Las Vegas Convention and Visitors Authority, 2002), creating a tourism industry and economic base for support businesses that lures an average of 5,000 new residents to the area each month. The current population of the area is approximately 1.7 million.

Figure 1 – Cities and Townships in the Las Vegas Metropolitan Area

The explosive growth in the Las Vegas metropolitan area has posed challenges to the government officials and engineers who manage and operate the road network. One challenge is providing adequate road capacity to address the increase in the demand for travel resulting form the population and economic growth in the region. This is necessary to keep travel delays within acceptable levels. However, the capacity enhancements are not keeping pace with the increase in demand of road use. This results in problems such as traffic congestion, travel delays, intersection gridlock, and high rates of crashes.

Many factors affect a roadway's ability to handle traffic efficiently. The operations at intersections along the roadway are critical to move traffic safely and efficiently. The most commonly used types of intersections in the Las Vegas metropolitan area are the stop controlled and signalized intersections.

The first modern roundabout in the United States was built in the year 1991 in the community of Summerlin in the Las Vegas metropolitan area. Several others have since been constructed in this area and their key characteristics are summarized in Table 2 (Janssen, 2003).

Table 2: Roundabouts in the Las Vegas Metropolitan Area

Intersection	Constructed	Geometry
City of Las Vegas		
Town Center Drive / Village Center Circle	1991	4-leg / 2-lane
Hills Center Drive / Village Center Circle	1992	4-leg / 1-lane
Hills Drive / Lonspur Drive	1992	3-leg / 1-lane
Town Center Drive / Hualapai Way	1995	4-leg / 3-lane
Town Center Drive / Banbury Cross	1995	4-leg / 3-lane
Crystal Water Way / Lake South Drive	1995	4-leg / 1-lane
Carriage Hill / Park Vista / Vista Run	2001	3-leg / 1-lane
Vista Center / Vista Run / Park Vista	2003	3-leg / 1-lane
City of Henderson		
Grand Hills / Rio Secco	1999	3-leg / 2-lane
Kelso Dunes / Julia	2002	3-leg / 1-lane
Kelso Dunes / Marks	2002	4-leg / 1-lane
City of North Las Vegas		
Carey / Hamilton	2001	4-leg / 2-lane
Carey / Revere	2001	4-leg / 2-lane
Carey / Belmont	2001	4-leg / 2-lane
Unincorporated Clark County		
Blue Willow / Desert Marigold / Desert Primrose	1999	4-leg / 1-lane
Navajo Willow / Desert Marigold / Havenwood	1999	3-leg / 1-lane
Spotted Leaf / Golden Willow / Havenwood	2000	4-leg / 1-lane
Pavilion Center / Desert Primrose / Spotted Leaf	2000	3-leg / 1-lane
Flamingo / Granite Ridge	2002	3-leg / 1-lane

METHODOLOGY

The objective of this research study is to perform a safety analysis of roundabouts in the study area by comparing them with intersections in the study are that have traditional traffic controls. Intersection related crashes are studied for this reason. Crashes occurring within a 300-feet buffer zone of a study intersection are identified as intersection-related crashes. The research methodology involves the following steps.

A. Safety Analyses

A safety analysis of roundabouts and the traditional intersections is based on the following statistics related to intersection-related crashes.

Crashes per Year

This value is found out by dividing the total number of crashes occurring at each location (# Crashes) by the number of years of data (N). In this analysis N = 5.

$$Crashes / Yr = \left(\frac{\#Crashes}{N} \right)$$

Crashes per Million Vehicles

The Crashes per Year is not the only or the best good of the safety performance of an intersection, because it does not account for the total number of vehicles using the intersection. The value of Crashes per Million Vehicles (Crashes / MV) accounts for the vehicle exposure at an intersection in terms of the Average Daily Traffic (ADT) at the particular location. Crashes / MV is the number of crashes per million vehicles using the intersection and it is computed by using the following equation,

$$Crashes / MV = \left(\frac{Crashes / Yr \times 1{,}000{,}000}{ADT \times 365} \right)$$

Injury Crashes per Year

Injury Crashes per Year are similar to that of Crashes per Year except that this metric takes into account only the injury crashes. Injury Crashes per Year are found out by using the following equation,

$$InjuryCrashes / Yr = \left(\frac{\#InjuryCrashes}{N} \right)$$

Injury Crashes per Million Vehicles

This is similar to Crashes per Million vehicles. It is computed as the number of crashes involving injuries per million vehicles entering a particular intersection.

$$InjuryCrashes / MV = \left(\frac{InjuryCrashes / Yr \times 1{,}000{,}000}{ADT \times 365} \right)$$

B. Selection of Roundabouts for the Study

Six modern roundabouts that suit the description of a “modern roundabout” from the *FHWA Roundabouts - An Information Guide* are selected for analysis purposes. All roundabouts are selected from within the jurisdiction of the City of Las Vegas. These are the first six listed in Table 2, and they have been in use at least since 1995.

C. Obtain Average Daily Traffic Counts for the Selected Roundabouts

The City of Las Vegas Traffic Engineering Department used tube-counting machines to conduct the ADT counts. Twenty-four hour tube counts were obtained from computer programs designed to process information from these counters (Janssen, 2003).

D. Classification of Roundabouts

Depending upon the ADT levels, the six roundabouts were classified into three categories. If the ADT value at an intersection is less than 10,000, it is classified as a minor intersection. Intersections with ADT ranges from 10,000 to 20,000 are grouped as medium intersections. Locations with ADT in excess of 20,000 are classified as major intersections. Based on these criteria, three of the six selected roundabouts are major intersections, one is a medium intersection, and the other two are minor intersections.

E. Identification of *Comparable* Stop Controlled / Signalized Intersections

Comparable traditional traffic controlled intersections were selected using the location of the intersection and the average daily traffic (ADT) as the matching criteria. After matching for location and ADT, the intersections were crosschecked for similar geometrics to the selected roundabouts (i.e. a three-leg roundabout would be compared to a three-leg stop controlled intersection and a four-leg roundabout to a four-legged stop controlled / signalized intersection).

Eight intersections with traditional traffic controls were identified. Three of the eight intersections are minor intersections, two of which are two-way stop controlled intersections and the other is a one-way stop controlled intersection. Two all-way stop controlled intersections were selected in the medium intersections group and three signalized intersections were chosen in the major intersections classification.

F. Obtain Crash Data for Each Intersection

The number and characteristics of intersection-related crashes at all the study intersections were obtained from the Nevada Department of Transportation (NDOT) for the years from 1997 to 2001. The Safety Engineering Division at NDOT, in cooperation with Nevada Department of Motor Vehicles and Public Safety, and various state and local law enforcement agencies maintains and updates the crash database. The crash reports prepared by the law enforcement officers at the scene of a crash are used as the basis for preparing the data. Each crash is recorded as an entry into a crash database covering various details about the crash including the time and date of the crash, geometric conditions of the roadway etc.

G. Comparison of Findings

For each of the five years, details related to intersection-related crashes at the selected locations were recorded. The crash records are then classified based on their traffic control. In an effort to investigate whether bad light, wet roads etc. influenced the safety characteristics of roundabouts, the results were compared according to the following criteria:

1. Severity of Crashes: Fatal crash involves loss of life in the crash, whereas if any road user sustains an injury, it is termed as an injury crash, and if the crash involves property damage only it is termed to be PDO crash.
2. Light Conditions: Daylight, dark and dusk are the different light conditions used document the prevailing light at the time of a crash.
3. Roadway Environment: The three different roadway environments are wet, dry and muddy conditions.
4. Types of Crashes: Various types of crashes include head-on collision, rear-end collision, left-turn collision, sideswipe collision, angle collision, and ran-off-road.
5. Contributing Factors of Crashes: The various contributing factors for a crash include improper turns, improper lane changes, going too fast, and failure to yield.

FINDINGS

The six roundabouts and eight conventional intersections that were identified for this analysis are listed in Table 3 along with their ADT counts. Key statistics from safety analyses of these intersections are also reported in Table 3.

Table 3: Crash Statistics for the Selected Intersections from 1997 to 2001

Name	Control	ADT	Crashes / Year	Injury Crashes / Year	Crashes / MV	Injury Crashes / MV
MINOR INTERSECTIONS						
Hills Dr / Longspur	Roundabout	2,668	0.2	0.0	0.21	0.00
Crystal Water Wy / Lake South Dr	Roundabout	5,718	1.4	0.2	0.67	0.10
Harmony Ave / Michael Wy	One-way Stop	2,357	0.4	0.0	0.46	0.00
Alpine Pl / Brush St	Two-way Stop	5,202	1.6	1.0	0.84	0.53
Edmond St / O'Bannon St	Two-way Stop	5,750	3.6	0.8	1.72	0.38
MEDIUM INTERSECTIONS						
Hills Center Dr / Village Center Cir	Roundabout	12,021	2.2	0.6	0.50	0.14
Marion Dr / Washington Ave	All-way Stop	11,019	3.2	1.2	0.80	0.30
Oakey Blvd / Tenaya St	All-way Stop	14,701	2.6	1	0.48	0.19
MAJOR INTERSECTIONS						
Town Center Dr / Village Center Cir	Roundabout	21,480	12.0	0.6	1.53	0.08
Town Center Dr / Banbury Cross St	Roundabout	24,563	12.6	2.0	1.41	0.22
Town Center Dr / Hualapai Wy	Roundabout	26,660	25.2	3.0	2.59	0.31
Tenaya St / Vegas Dr	Signalized	21,901	4.6	1.2	0.58	0.15
Arville St / Pennwood	Signalized	22,151	8.4	2.4	1.04	0.30
Arville St / Oakey Blvd	Signalized	28,913	7.0	2.8	0.66	0.27

It can be seen from Table 3 that the number of crashes, Crashes / MV and Injury Crashes / MV for roundabouts are lesser than that of intersections with traditional traffic control in the minor and medium level intersections. However, the roundabouts that fall into the

major intersections category have more crashes than the signalized intersections. Even though the total number of crashes was more for the roundabouts, the number of injury crashes was in the same range for both roundabouts and intersections with traditional controls. A detailed description of the findings is presented next.

Minor Intersections

The minor intersections which are controlled by roundabouts had crash rates / MV between 0.21 and 0.67 (an average of 0.44) while the traditional intersections controlled by stop signs had crash rates / MV ranging between 0.46 and 1.72 (an average of 1.07). The roundabouts had injury crashes / MV ranging from 0 to 0.1 (an average of 0.05) while the stop controlled intersections in comparison had injury crash rates / MV between 0 and 0.53 (an average of 0.3).

The aforementioned statistics indicate that the roundabouts studied have an advantage in safety over the stop-controlled locations in the minor intersections category. These roundabouts had 58.8% fewer crashes / MV and 83.3% fewer injury crashes / MV than the companion stop controlled intersections.

Medium Intersections

There was only one medium roundabout available for the paper which had a crashes / MV value of 0.5 and an injury crashes/ MV value of 0.14 for the five year period. In comparison the stop-controlled intersections had crash rates / MV varying from 0.48 to 0.8 (an average of 0.64) and injury crashes between 0.19 and 0.30 crashes / MV (an average of 0.24).

The statistics in the preceding paragraph also reveal that the safety of the roundabout investigated is better than the companion stop controlled intersections at the medium sized intersections. The roundabouts had 21.9% fewer crashes / MV and 41.7% fewer injury crashes / MV than the corresponding stop controlled intersections.

Major Intersections

The three roundabouts in this category experienced large number of crashes in the last two years of the five-year period. These roundabouts had an average annual crash frequency of 16.67 as compared to 6.67 for the companion signalized intersections. The crash rates / MV varied from 1.41 to 2.59 crashes / MV (an average of 1.84) at the roundabouts and from 0.58 to 1.04 crashes / MV (an average of 0.76) at the signalized intersections.

Even though there were a larger number of crashes at the roundabouts, not many of them are injury crashes. Actually the values of Injury Crashes / MV are comparable for the signals and roundabouts. The injury crash rates for roundabouts ranged between 0.08 and 0.31 injury crashes / MV (an average of 0.2) and between 0.15 and 0.30 injury crashes/ MV (an average of 0.24) for the signalized intersections. This statistic reveals that even though the roundabouts evaluated have had a higher number of crashes than their companion signalized intersections, they are a little safer in terms of crash severity.

A higher number of crashes at the roundabouts creates an impression that the signalized intersections are safer compared to roundabouts at the candidate major intersections. This contradicts the findings from Europe that the roundabouts are safer than the signals even when the daily traffic entering the roundabouts is high. Some of the possible reasons for this high crashes / year number are listed next.

A simple design modification could possibly change the findings significantly. The Town Center Drive / Village Center Circle roundabout had three lanes of traffic just like the other two major roundabouts on Town Center Drive but a small change in design (i.e. forcing the outer lane for right turning movements exclusively and allowing the traffic to circulate in the inner two lanes) had reduced the conflict points and thereby the crash rate significantly (Janssen, 2003). The other two roundabouts are also undergoing re-design based on this finding. Another reason may be poor markings and signage at the roundabouts. As most of the drivers in the United States are not very familiar with the roundabout control, they likely are confused without proper signage and markings.

Comparison of Results

Severity of Crashes: A comparison of the severity of crashes occurring at the subject roundabouts and stop controlled / signalized intersections is shown in Table 4. The injury crashes at the conventional intersections are significantly higher than at the roundabouts. This suggests that the roundabouts are safer than the regular intersections in terms of crash severity.

Table 4: Comparison of Crash Severity at Roundabouts and Intersections with Traditional Traffic Control

Crash Severity	Roundabouts	Traditional Intersections
Fatal	0.00 %	0.00 %
Injury	11.94 %	33.12 %
Property Damage Only	88.06 %	66.88 %

Light Conditions: Figure 2 provides a comparison of crashes at the subject roundabouts and traditional intersections with respect to the prevailing lighting conditions. More crashes occur during dark conditions at stop-controlled / signalized intersections when compared to the roundabouts.

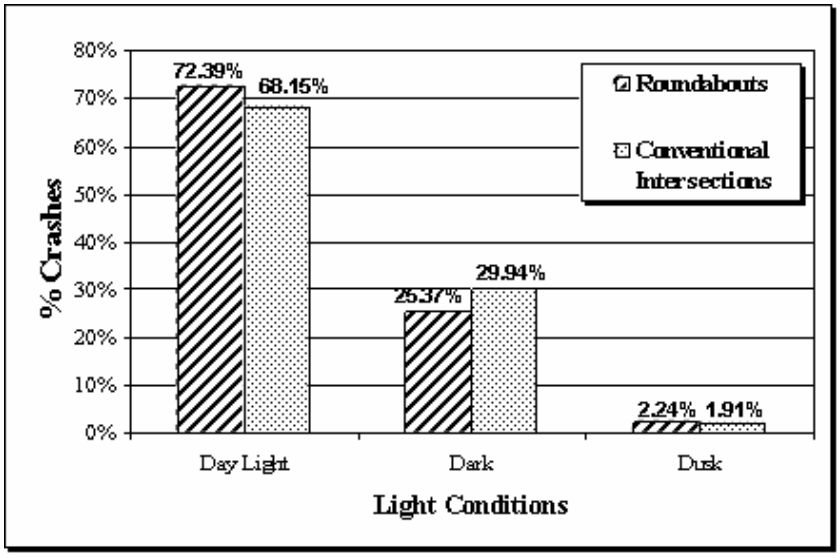


Figure 2: Crashes and Light Conditions at Roundabouts and Conventional Intersections

Roadway Environment: The roundabouts had 8.21% of the crashes during wet road conditions versus the 11.46% at conventional intersections. This comparison is shown in Figure 3.

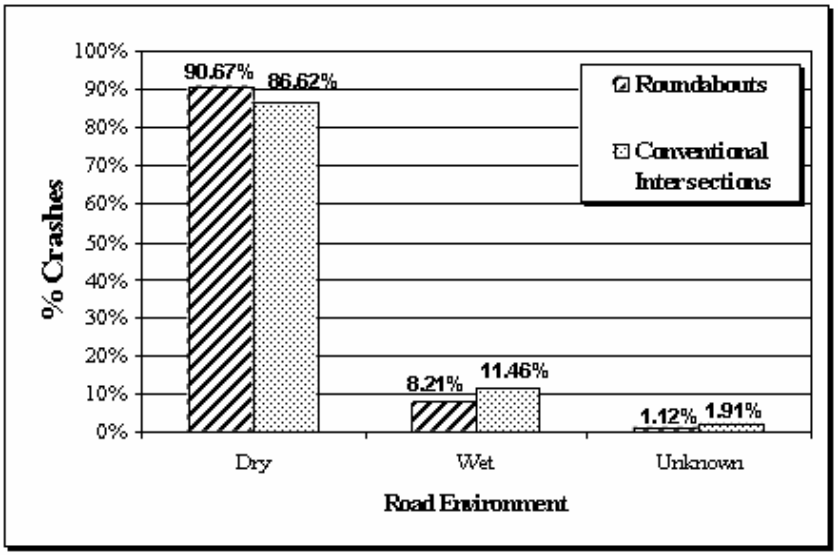


Figure 3: Comparison of Crashes at Roundabouts and Conventional Intersections With Respect to Roadway Environment Conditions

Type of Crashes: Table 5 shows a comparison of the crash types occurring at the subject roundabouts versus the subject stop / signal controlled intersections. The severe injury crashes at the stop/ signal controlled intersections can be attributed to the higher

percentage of angle and rear end crashes at these intersections. Most of the crashes at the roundabouts (nearly 60%) are found to be minor sideswipe collisions. Nearly eighteen percent of the crashes at roundabouts included vehicles running off the roadway.

Table 5: Types of Crashes at Roundabouts and Stop Controlled / Signalized Intersections

Crash Type	Roundabouts	Traditional Intersections
Angle Collision	8.21 %	36.31 %
Rear End Collision	8.51 %	24.84 %
Left Turn Collision	1.12 %	9.55 %
Side Swipe Collision	60.07 %	8.28 %
Hit Parked Vehicle on Roadway	0.75 %	4.46 %
Ran-off Road	18.28 %	7.64 %
Other	2.99 %	8.92 %

Contributing Factors of Crashes: Nearly 48% of the crashes at the subject stop controlled / signalized intersections are caused because of a driver's failure to yield to traffic. Most of the crashes occurring at the subject roundabouts are caused due to improper lane changes, inattentive driving and making improper turns. These factors can be attributed to the confusion in the minds of the drivers, caused by the lack of awareness of or familiarity with the modern roundabouts. Those and other contributing factors towards crashes and their prominence at the roundabouts and the stop / signal controlled intersections are summarized in Table 6.

Table 6: Contributing Factors of Crashes at Roundabouts and at Intersections with Traditional Traffic Control

Causal Factor	Roundabouts	Traditional Intersections
Improper Lane Change	14.93 %	1.27 %
Improper Turn	29.48 %	4.66 %
Failure to Yield	10.82 %	47.77 %
Inattentive Driving	18.66 %	10.83 %
Speed too Fast for Conditions	8.96 %	8.28 %
Failure to Reduce Speed	2.99 %	12.10 %
Other	14.18 %	15.29 %

STATISTICAL ANALYSIS

The results summarized in Table 3 show that the roundabouts studied are safer than the corresponding stop / signalized controlled intersections studies in the minor and medium level intersection category. It also shows that there is a higher crash rate at the roundabouts studied than at signalized intersections studied in the major intersection category. In order to validate these findings a statistical significance test is performed.

The t-statistic test

The t-statistic test is widely used to estimate the difference between two means of populations with unequal variances. A certain confidence interval is also associated with the test that would compare the two means. The confidence interval for the difference between two means specifies a range of values within which the difference between the means of the two populations may lie. The confidence interval for the difference between two means contains all the values of $\mu_1 - \mu_2$ (the difference between the two population means) that would not be rejected in the two-sided hypothesis test of the following:

Null Hypothesis, $H_0: \mu_1 - \mu_2 = 0$
Alternate Hypothesis, $H_1: \mu_1 - \mu_2 \neq 0$

If the confidence interval includes 0 we can say that there is no significant difference between the means of the two populations, at a given level of confidence. The width of the confidence interval provides an indication of how uncertain we are about the difference in the means. Alternatively, the null hypothesis for the analysis would be as follows: H_0: The crash rate at roundabouts (μ_R) is equal to that of conventional intersections (μ_C). If $\bar{x}_R$ and s_R^2, and $\bar{x}_C$ and s_C^2 are the means and variances of the crashes at roundabouts and conventional intersections of sample size n_C and n_R respectively, from approximate normal distribution with unknown variances, an approximate $(1-\alpha)\times 100\%$ confidence interval for $\mu_C - \mu_R$ is defined as follows:

$$\left(\bar{x}_C - \bar{x}_R\right) - t_{\alpha/2}\sqrt{\left(\frac{s_C^2}{n_C} + \frac{s_R^2}{n_R}\right)} < \mu_C - \mu_R < \left(\bar{x}_C - \bar{x}_R\right) + t_{\alpha/2}\sqrt{\left(\frac{s_C^2}{n_C} + \frac{s_R^2}{n_R}\right)}$$

where $t_{\alpha/2}$ is the t-value with

$$\nu = \frac{\left(s_C^2/n_C + s_R^2/n_R\right)^2}{\left[\left(s_C^2/n_C\right)^2/\left(n_C - 1\right)\right] + \left[\left(s_R^2/n_R\right)^2/\left(n_R - 1\right)\right]}$$

degrees of freedom, leaving an area of $\alpha/2$ to the right.

The analysis is performed first to compare the crash rates at different levels of classification of intersections i.e., minor, medium and major intersections. Many a times, the test resulted in a very wide interval indicating that more data are needed in order to deduce definitive findings. Thus, more roundabouts and stop-controlled intersections need to be studied to validate the roundabout advantage over the stop-controlled intersections. Moreover, the crashes occurring at different locations vary according to the site-specific characteristics and because very few intersections are considered, the resulting values of sample variances (s_C and s_R) are very large. Hence, the injury crashes occurring at the intersections are considered, as they are comparable and the variances resulting are small in number. The means of injury crashes for intersections and roundabouts are compared and the results follow.

Table 7: Statistical Significance Results for Injury Crashes

Null Hypothesis	Intersection Classification	Statistically Significant?	Level of Confidence
H_o: $\mu_R < \mu_C$	Minor	Yes	80%
H_o: $\mu_R < \mu_C$	Major	No	-
H_o: $\mu_R < \mu_C$	Minor and Medium	Yes	95%
H_o: $\mu_R < \mu_C$	Minor, Medium and Major	No	-
Note: μ_R – Population Mean of Injury Crashes at Roundabouts			
μ_C – Population Mean of Injury Crashes at Intersections with Traditional Traffic Control			

The results in Table 7 provide statistical support that the roundabouts evaluated are safer than the stop/ signal controlled intersections studied at the minor and medium level intersections. The statistical analysis is not performed individually for the medium level intersections, because only one roundabout is considered for the study.

CONCLUSIONS

Because of the negative experience with traffic circles or rotaries built in the earlier half of the twentieth century, the usage of roundabouts is still very limited in the United States. However, progress has been made in the design of circular intersections and various safety studies from different countries has proven that the roundabout control is superior to the stop / signal control at intersections. Recent trends show that roundabouts are slowly gaining support in this country.

The findings of the study reported herein indicate that roundabout control is safer than stop / signal control at the minor and medium level intersections evaluated. Even though the findings for the major roundabout intersections are not similar, it is believed that improved road design and public awareness would increase intersection safety at such roundabouts. These results need to be validated when more data become available or by other safety studies with similar scope. Until then, traffic engineers can make use of the findings as guidance while deciding on a type of traffic control at intersections.

A limitation of this paper is choosing the ‘comparable’ intersections randomly, based on the ADT counts. A more organized procedure needs to be developed to support the decision of choosing these ‘comparable’ intersections with traditional traffic control.

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Authors' Information

Shashi S. Nambisan, Ph.D., P.E.
Professor of Civil Engineering
Director, Transportation Research Center
University of Nevada Las Vegas
4505 Maryland Parkway, Box 454015
Las Vegas, NV 89154-4015
Phone: +1-702-895-1325,
Fax: +1-702-895-4401
E-mail: shashi@ce.unlv.edu

Venu Parimi, E.I.
Transportation Engineer In-Training
Stantec Consulting Inc.
7251 W. Charleston Blvd
Las Vegas, NV 89117
Phone: +1-702-258-0115,
Fax: +1-702-258-4956
Email: vparimi@stantec.com