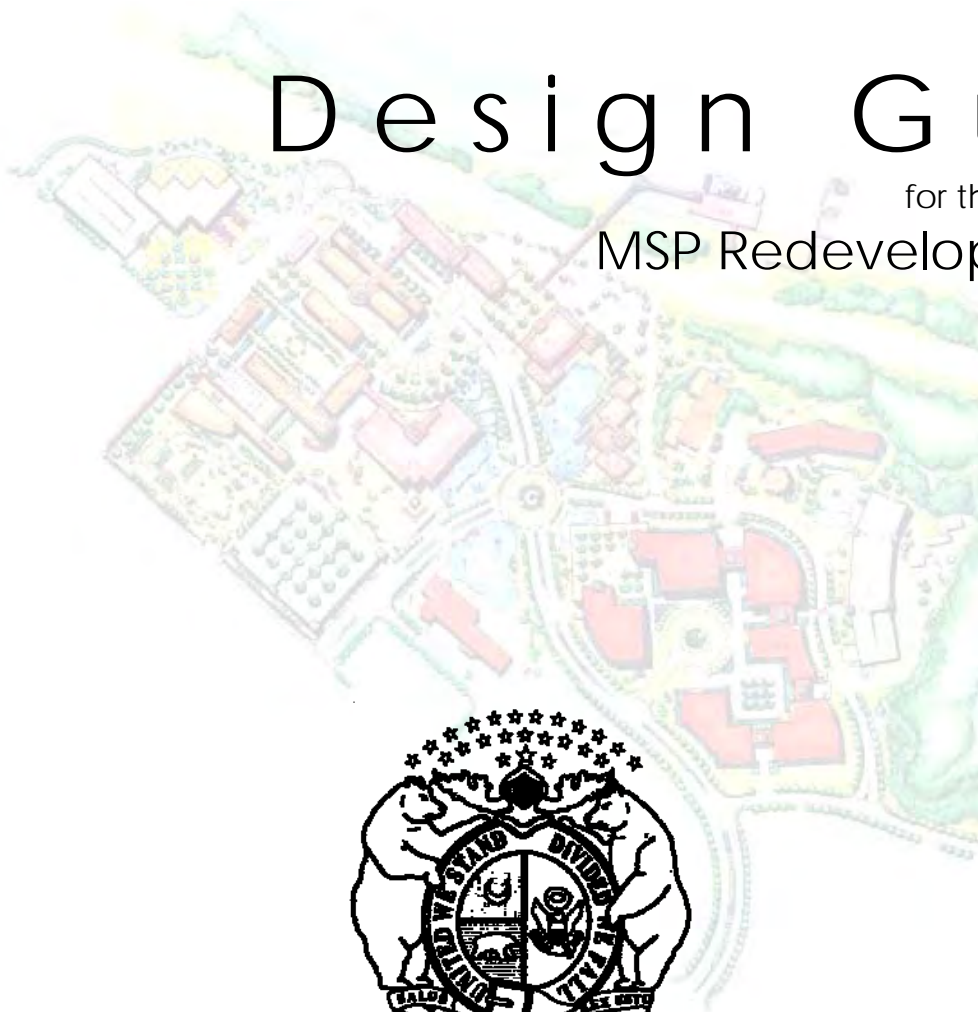


**MSP Redevelopment Commission**

# Design Guidelines

for the  
MSP Redevelopment District



**MSP Redevelopment Commission**

# Design Guidelines

for the  
MSP Redevelopment District

January 2006



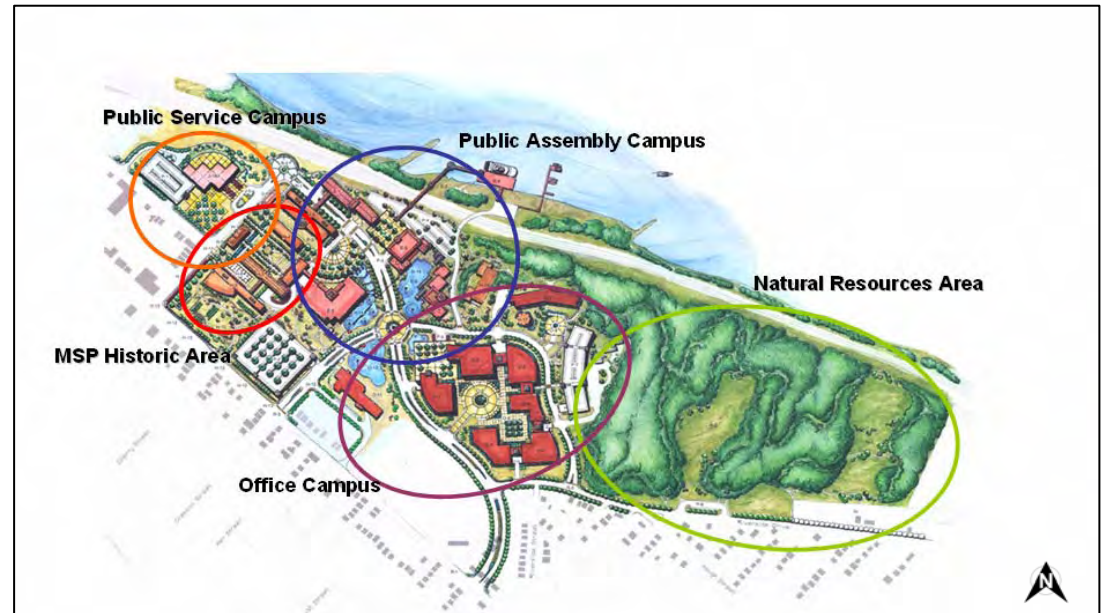
*“Make no little plans; they have no magic to stir men’s blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever growing insistency. Remember that our sons and grandsons are going to do things that would stagger us. Let your watchword be order and your beacon beauty.”*

*Daniel Burnham - 1907*

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- 5.0 Circulation Design Standards
- 6.0 Landscape Design Standards
- 7.0 Site Elements Design Standards



The MSP Framework Plan

### Development Standards *(Under Separate Cover)*

Parcel Breakdown

Graphic Sections

Plans (Site Plans, Landscape Plans, Grading Plans & Utility Plans)

Plant Material Selection Matrix

# 1.0 Introduction

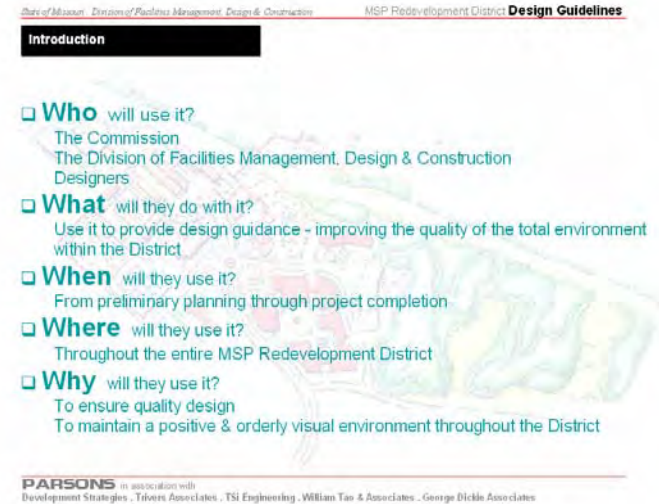
## Purpose

The MSP Redevelopment District will convey a visual image established by its architectural and historical character, arrangement of facilities, circulation patterns, and features in the landscape. This image will emerge as clear, orderly, logical and attractive; or cluttered, confused, and unattractive. In order to achieve this objective the MSP Redevelopment Commission has completed a Design Guideline (this document) and a companion document titled Development Standards (under separate cover).

The purpose of the *Design Guidelines* is to provide design guidance for standardizing and improving the quality of the total environment of the District. This includes not only the visual impact of features on the District, but also the impact of projects on the total built and natural environment. The improvement of the quality of visual design and development and use of sustainable design and development practices have a direct and future impact on the quality of life for those who work, visit or seek entertainment in the District.

The Design Guidelines include standards and general guidelines for the design issues of site planning; architectural character, colors and materials; vehicular and pedestrian circulation; and landscape elements, including plant material, seating, signage, lighting, and utilities. The design guidelines incorporate sustainable design, quality of design, low maintenance, historical and cultural considerations, durability, safety, and compatibility.

The purpose of the Development Standards is to firmly and accurately fix, locate and illustrate the concepts contained in the framework plan, to provide future planning and design efforts to follow precise layout guidelines.



## 1.0 Introduction

### Goal

The goal of the Design Guidelines and the Development Standards is to provide a clear, comprehensive approach to establish and maintain a positive visual imagery throughout the District and implement appropriate standards. This is accomplished by providing a systematic development process that is defined through description, analysis, synthesis, and implementation.

### Objectives

The objectives of the Design Guidelines are:

To provide a set of general design standards and guidelines that define color, materials, style, signage, and other aspects of design for selected visual elements.

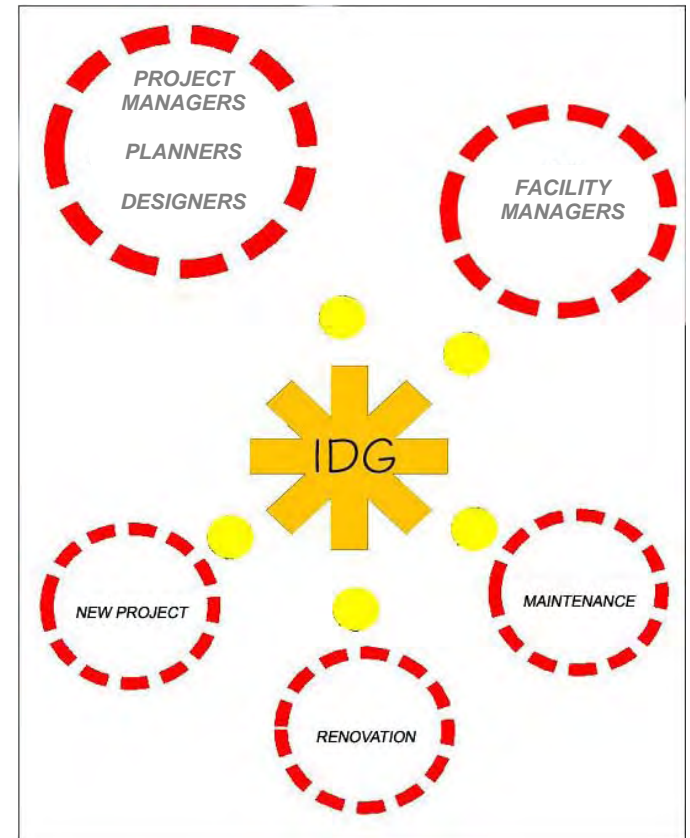
To provide standards and guidelines for the selection of materials for new construction and renovation projects.

To provide guidance for accomplishing sustainable development.

### Audience

The Design Guidelines are to be used by individuals involved in decision-making, design, construction, and maintenance of facilities.

The ultimate success of the guidelines is dependent upon the commitment of the MSP Commission and State of Missouri to apply the standards.



## 1.0 Introduction

### Organization

This Design Guideline is organized to facilitate the preparation and execution of projects to improve the visual image within the District and ensure design conforms to these standards.

### When to use the Guidelines

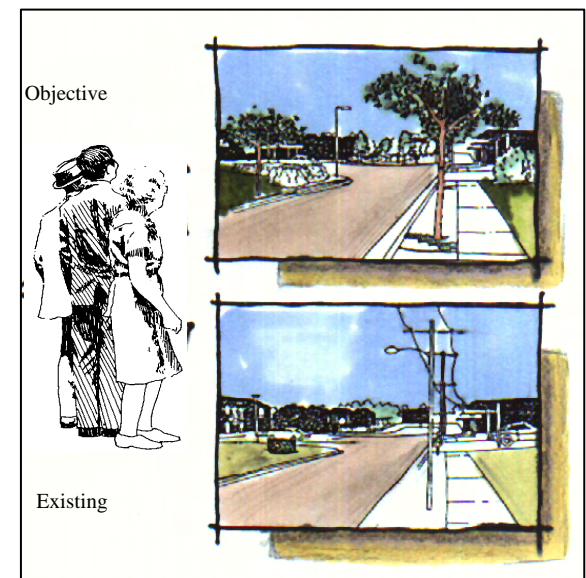
This IDG provides installation-specific design data. This document will be used as a reference to acquire recommendations and standards on the design of all facilities, new roads, road widening, parking, sidewalks and other pedestrian paths, bicycle paths, access control points, site furnishing selection and placement, signage selection and placement, lighting selection and placement, utility corridor selection, and utilities. Clearing of plant materials and planting of new plant materials will be based upon the guidance herein.

### Maintaining the Design Guideline

Since the Design Guide is a "living document," keeping it up-to-date and accurate will ensure its continued usefulness. Therefore, it will become necessary to revise it as budget, standards, and other conditions generate new planning and design requirements and in response to facility user feedback.

### Sustainable Design and Development

Practicing the principles of sustainable design in the planning, design, construction and operation of infrastructure and facilities is a smart business practice. Protect our natural resources and reducing our impacts on the natural environment is achievable when we create high-performance, healthy, energy efficient and safe buildings.



## 1.0 Introduction

### Summary of Design Elements

During the preparation of the Design Guidelines and Development Standards the MSP Redevelopment Commission provided input into the preparation of the design guidelines. Recommendations were presented, discussed, resolved and incorporated herein. The listing below summarizes the presentations made to the Commission.

- November 16, 2005  
Summary presentation of the Design Guidelines and Development Standards
- April 27, 2005  
Presentation of preliminary plans, graphic sections, parcel breakdown and the Wall.
- October 27,2004  
Facility walk through and presentation of Summary of design elements.
- September 22, 2005  
Presentation of site, building and circulation design guidelines.
- July 28,2004  
Presentation of data collection and emerging design guidelines for discussion and input.

The following Tables summarize the basic decisions made during the preparation of the design guideline.

# 1.0 Introduction

## Summary of Design Elements

Design Elements	Visual Zones				
	MSP Historic Area	Public Service Campus	Public Assembly Campus	Office Campus	Natural Resources Area
Pedestrian Hardscape	Weathered Concrete	Decorative Concrete & Stone Unit Pavers	Decorative Concrete & Stone Unit Pavers	Decorative Concrete & Stone Unit Pavers	Asphalt, Gravel and Woodchip
Site Furnishings	Black - Metal	Black - Metal	Black - Metal	Black - Metal	Earth Tones Wood And Metal
Landscape	Sugar Maple Zone	Linden/Ash/Crab Zone	Linden/Ash/Crab Zone	Linden/Ash/Crab Zone	Oak/Hickory/Dogwood Zone
Height	Addition - 2 Story Restoration - Original	3-5 Story	3-5 Story	3-5 Story	1 Story
Color Theme & Materials	Red Brick Buff Limestone Clear Glass Black/Buff Brick Accent	Red Brick Buff Limestone/Concrete Clear/Gray Tinted Glass Black/Buff Brick Accent	Red Brick Buff Limestone/Concrete Clear/Gray Tinted Glass Black/Buff Brick Accent	Red Brick Buff Brick Buff Limestone/Concrete/EIFS Clear/Gray/Green Tinted Glass Black/Buff/Red Accent	Earth Tones Wood And Metal



# 1.0 Introduction

Design Elements	Visual Zones				
	MSP Historic Area	Public Service Campus	Public Assembly Campus	Office Campus	Natural Resources Area
Brick	Yes	Yes	Yes	Yes	
Limestone	Yes	Yes	Yes	Yes	Yes
EIFS				Yes	
Wood					Yes
Glass				Yes	
Architectural Concrete		Yes	Yes	Yes	
Metal*					
Concrete Block					

\*Architectural Ornamentation allowed

# 1.0 Introduction

Design Elements	Visual Zones				
	MSP Historic Area	Public Service Campus	Public Assembly Campus	Office Campus	Natural Resources Area
Windows	Vertical	Vertical	Vertical	Horizontal, Vertical and Full Panel	
Banding	X	X	X	X	
Roof Line	Addition – Flat Restoration - Original	Gable Barrel	Gable Barrel	Gable Barrel	

Parking Garage: Concrete structure with brick or limestone articulation on highly visible elevations and architectural concrete finish elsewhere.

# 1.0 Introduction

Design Elements	Visual Zones				
	MSP Historic Area	Public Service Campus	Public Assembly Campus	Office Campus	Natural Resources Area
Streets/Parking Lots	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Curbs	Concrete	Concrete	Concrete	Concrete	Concrete
Roundabouts	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	
Drop-off Areas	Concrete, Asphalt & Decorative Pavers	Concrete, Asphalt & Decorative Pavers	Concrete, Asphalt & Decorative Pavers	Concrete, Asphalt & Decorative Pavers	
Service Drives	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Primary Pedestrian Walks	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Asphalt
Secondary Walks	Concrete	Concrete	Concrete	Concrete	Asphalt
Trails	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt or Gravel
Primary Crosswalks	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	Concrete & Decorative Pavers	
Secondary Crosswalks	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt

## 2.0 Design Guide Analysis Criteria

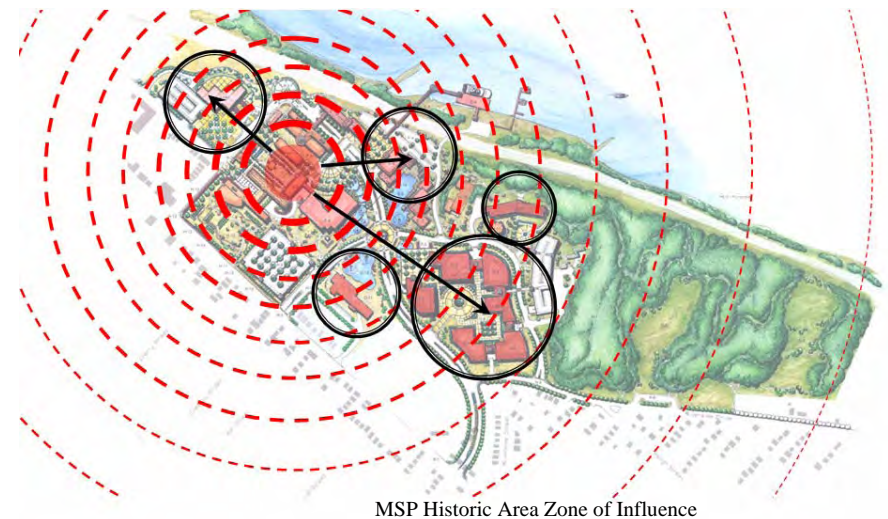
### Introduction

The MSP Redevelopment Master Plan identifies several areas or ‘Visual Zones’, which are unique in respect to their historic significance, land use types and geographic location. The zones include; Public Service Campus, MSP Historic Area, Public Assembly Campus, Office Campus and the Natural Resources Area. Each visual zone will be developed so that it will have its own distinct architectural character, which will be an integral part of the overall visual assets of the MSP Redevelopment District.

### Methodology

Each visual zone within the MSP Redevelopment District has some degree of influence on the development of adjacent visual zones. This chapter describes how each of the visual zones were identified and how the interrelationship of visual zones influences was determined.

The MSP Historic Area contains the majority of the buildings, which will remain, be restored or renovated as part of the MSP Redevelopment. The character of the existing buildings to remain within the MSP Historic Area shall become ‘theme generators’ for other ‘visual zones’ within the MSP Redevelopment District. The extent of influence will depend on the ‘visual zones’ land use types and proximity to the Historic Area. The greater distance the ‘visual zone’ is from the Historic Area the lesser the



## 2.0 Design Guide Analysis Criteria

design influence the Historic Area will have on the ‘visual zone’. Therefore the MSP Historic Area will have a greater influence on the Public Service Campus and Public Assembly Campus ‘visual zones’ than on the Office Campus and Natural Resources Area ‘visual zones’ based on relative proximity and land use.

### Visual Zones

Visual Zones are delineated by the visual characteristics of an area, defined as the ‘look and feel’ of an area together with the dominant features that help to define its image.

Visual themes create a perception of unification within the visual zone.

Design consistency creates visual themes and provides a ‘sense of place’. This design guide outlines how development and redevelopment within each of these visual zones should occur so that each zone will be unique with respect to its architectural character, materials, furnishings and landscape development. The following five design components, described in chapters 3 through 7, provide development guidelines and standards for each of the identified visual zones.

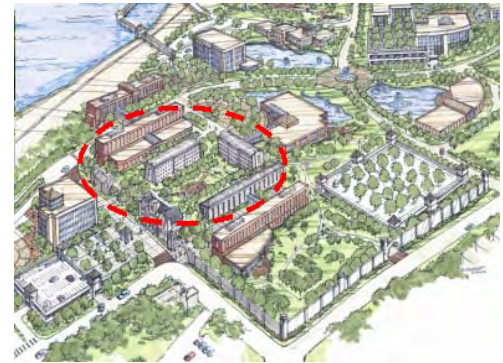
- Chapter 3.0 Site Planning Design Standards
- Chapter 4.0 Building Design Standards
- Chapter 5.0 Circulation Design Standards
- Chapter 6.0 Landscape Design Standards
- Chapter 7.0 Site Element Design Standards

## 2.0 Design Guide Analysis Criteria

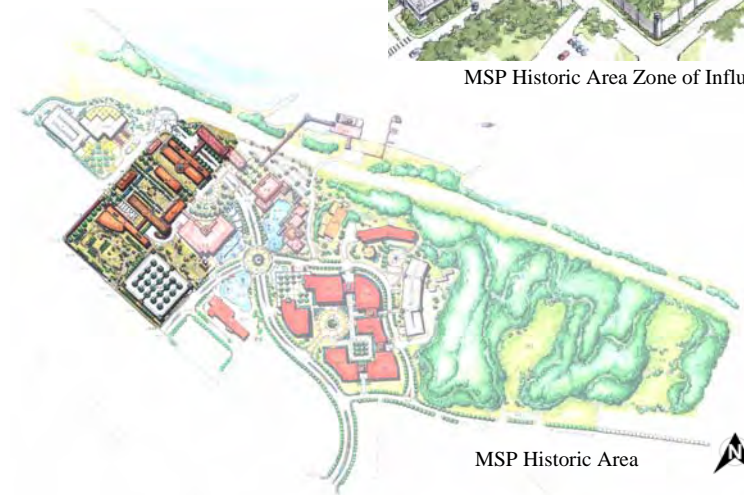
**MSP Historic Area:** As stated above, the MSP Historic Area is the primary visual zone and ‘theme generator’ within the MSP Redevelopment District, and will be the primary influencing factor for all other visual zones within the District. Proposed facilities within the MSP Historic Area include office space, conference center, MSP museum, hotel, structured parking and plaza development.

Theme generators within the MSP Historic Area:

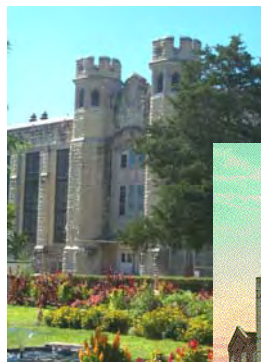
- Gas Chamber
- Prison Wall
- Housing Unit 1
- Housing Unit 2
- Housing Unit 3
- Housing Unit 4
- Housing Unit 5



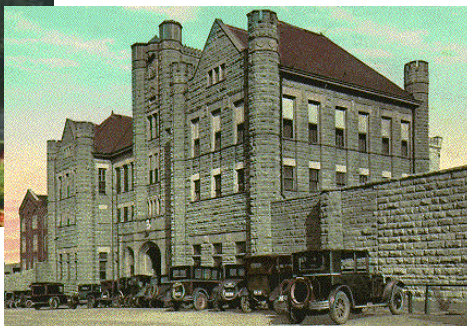
MSP Historic Area Zone of Influence



MSP Historic Area



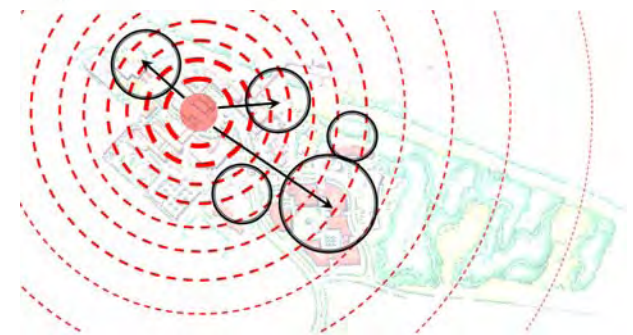
Housing Unit 3



Housing Unit 1



Housing Unit 4



MSP Historic Area Zone of Influence

## 2.0 Design Guide Analysis Criteria

**Public Service Campus:** The Public Service Campus is located immediately northwest of the MSP Historic Area and will consist primarily of public service office space, structured parking and plaza and courtyard development.

The Public Service Campus, being directly adjacent to the MSP Historic Area, will be highly influenced by the architectural styles and character associated with the existing historic area.

Theme generators from the MSP Historical Area:

- Roof lines
- Building massing, form, scale and proportions
- Doors and window fenestrations
- Formality
- Materials
- Color and texture
- Compliment vs contrast



MSP Historic Area Influence on the Public Service Campus

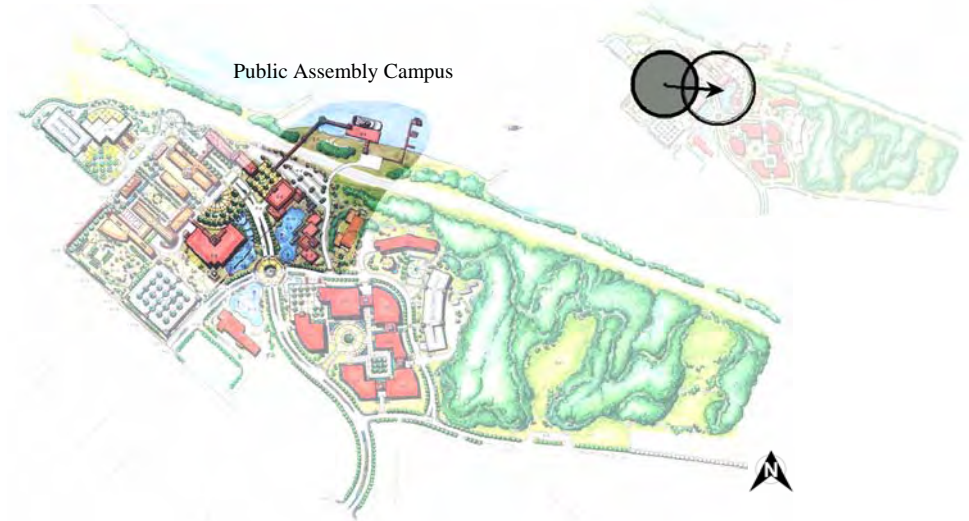


## 2.0 Design Guide Analysis Criteria

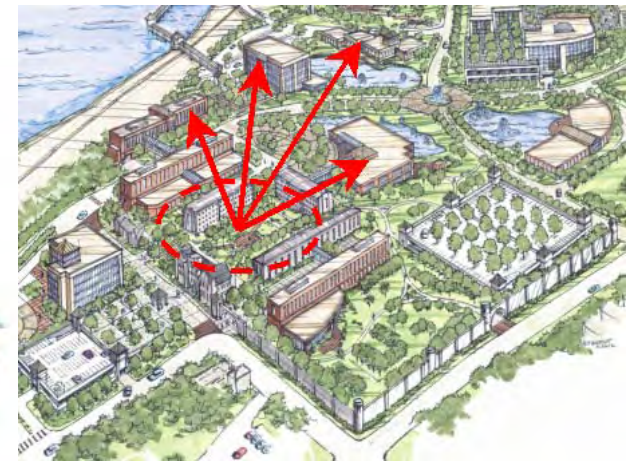
**Public Assembly Campus:** The Public Assembly Campus is located immediately northeast of the MSP Historic Area and will consist of a public assembly facility, hotels, retail / commercial development, structured parking, pedestrian plazas and water features, an elevated link to the rivers edge and an excursion boat landing. The Public Assembly Campus, being directly adjacent to the MSP Historic Area will be highly influenced by the architectural styles and character associated with the existing historic area.

Theme generators from the MSP Historical Area:

- Roof lines
- Building massing, form, scale and proportions
- Doors and window fenestrations
- Compliment vs contrast
- Informality vs formality
- Materials
- Color and texture



MSP Historic Area Influence on the Public Assembly Campus





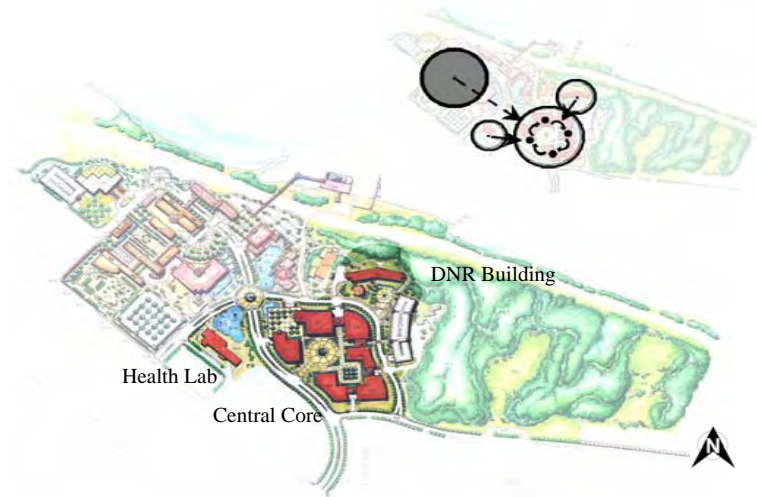
## 2.0 Design Guide Analysis Criteria

**Office Campus:** The Office Campus is located southeast of the MSP Historic Area and will consist of mixed-use office space, structured parking, water features, plazas and courtyards. The DNR Building and the State Health Lab have recently been completed within the Office Campus ‘visual zone’. The DNR building is located on the northern edge of the campus overlooking the Missouri River and the Health Lab is located on the southeastern edge adjacent to East Capitol Street.

The Office Campus is somewhat removed geographically from the MSP Historical Area, therefore will not be as strongly influenced by the historic district as the Public Service and Public Assembly Campus. The structural character of the DNR building and the Health Lab will share architectural influences with the MSP Historic Area in the architectural theme development of the central core area of the Office Campus ‘visual zone’. The central core area of the Office Campus is configured as an integral clustered development; therefore, all buildings within the core shall be closely aligned with regards to structural character. As the core develops the previously development facilities within the core will have the strongest influence on the structural character of the new development to ensure a compatible visually unified core development.

Theme generators from the Historical Area and the DNR & Health Lab:

- Building massing, form, scale and proportions
- Doors and window fenestrations
- Informality vs formality
- Materials
- Color and texture



Zone of Influence From MSP Historic Area and From The DNR Building and the Health Lab



DNR Green Building

## 2.0 Design Guide Analysis Criteria

**Natural Resources Area:** The Natural Resources Area occupies the eastern half of the MSP Redevelopment District. Its primary function is preserved woodlands and ‘open space’, however it does contain recreation trails, picnic pavilions and other recreational amenities.

Based on the remote geographic location and its unique land uses and distinctive character, the Natural Resources Area will have an architectural treatment unique to itself. The use of brick, limestone and other materials found in adjacent ‘visual zones’ will provide subtle visual ties creating a sense of total site unification and cohesion throughout the MSP Redevelopment District.

Theme generators:

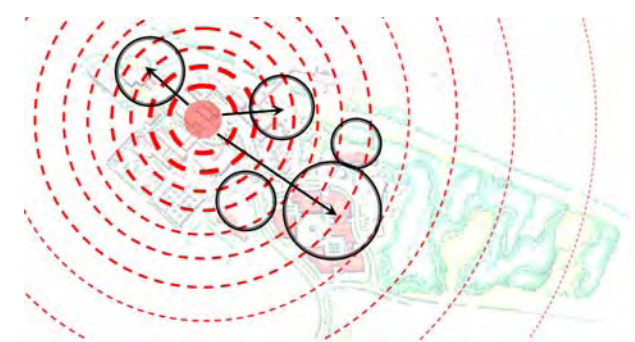
- Naturalized woodlands
- Open prairie
- Trails
- Wildlife
- Views and vistas



Jogging Trail



Picnic Area



MSP Historic Area Zone of Influence

### 3.0 Site Planning Design Standards

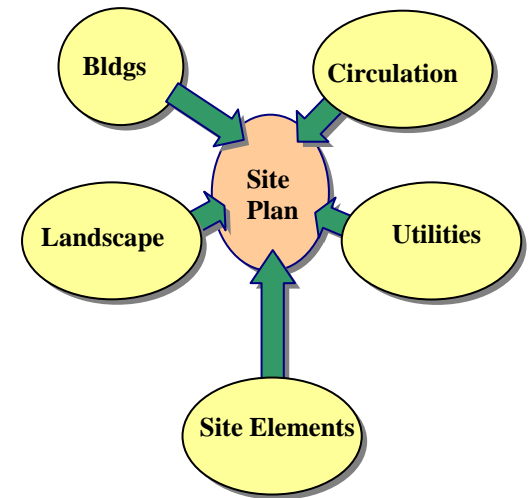
#### Introduction

Site Planning is the process of arranging an external physical environment in complete detail to include the structures, circulation patterns, and other elements that form the built environment. The site planning and design process is used to develop a project that fulfills facility requirements and creates the optimal relationship with the natural site. Site planning, including program analysis, site analysis, site verification, and concept development should be completed by civil engineering and landscape architectural professionals experienced in site development projects. Environmental documentation will be prepared prior to site development to support the construction activity in accordance local, state and federal requirements.

The Development Standards (under separate cover) component provides the spatial arrangement of the MSP Redevelopment District. The Framework Plan provides information that forms the foundation for site planning and is a mechanism for ensuring that individual projects are sited to meet overall district requirements.

Four other chapters herein are dependent upon site planning for their location and spatial relationships. The other four components are identified below and discussed in chapters four through seven.

- Building Design Standards
- Circulation Design Standards
- Landscape Design Standards
- Site Elements Design Standards



### 3.0 Site Planning Design Standards

#### Site Planning Objectives

The goal of site planning for the MSP Redevelopment District is to produce an attractive, aesthetically coordinated, sustainable development. Sustainability in this case requires the built environment to be designed and constructed to preserve and enhance the natural and manmade environment. New manmade facilities are designed as a part of the environment to minimize negative environmental impacts. General site planning techniques resulting in sustainable development are cost efficient because they conserve energy and reduce construction and maintenance cost. Typical site planning objectives include the following.

Preserve natural site features such as topography, hydrology, vegetation, and tree cover.

Locate facilities with consideration of climatic conditions such as wind, solar orientation, and microclimate.

Preserve the natural site by molding development to fill around existing land forms and features. This development approach minimizes extensive earthwork, preserves existing drainage patterns, and preserves existing vegetation.

Plan for facilities to be clustered to preserve land and reduce construction cost. Clustering should occur on the flattest land areas. Room for expansion should be provided. When clustering facilities, security protection measures must be considered.

The use of locally available materials is a sustainable practice.



The use of locally available materials is a sustainable practice and plan for facilities to be clustered.



### 3.0 Site Planning Design Standards

#### Site Planning Considerations

The site analysis and subsequent site planning determine the primary “fit” of the development to its environment. The determination of primary issues that provide basic location and organization of spatial relationships are determined during the site planning process.

All structures or facilities must meet the standards of the Americans with Disabilities Act Accessibility Guidelines (ADAAG). This includes the avoidance of site barriers through the use of curb cuts, ramps, handrails, and grade-level entrances to avoid site barriers. Provide designated handicapped parking spaces in all major parking lots/structures and drop-off zones for persons with mobility impairments.

Existing structures should be designed and/or modified for handicapped accessibility. Special care should be given to retrofitting accessible designs to structures within the redevelopment district. Consideration should be given to location, materials compatibility and general design appropriateness in relation to the existing structure, while still maintaining accessibility objectives.

Environmental issues to consider in the preparation of a site plan include any action or proposal that has a detrimental affect on a site area’s land, water or air quality. The location of facilities on land that results in minimal disturbance to the existing topography, vegetation and drainage patterns greatly reduces the negative impact on the environment. It is the MSP Redevelopment Commission’s responsibility to ensure that all National Environmental Policy Act (NEPA) documentation is started before the site development process begins.



Modifications to structures for handicap accessibility shall respect the historic structure’s integrity

## 3.0 Site Planning Design Standards

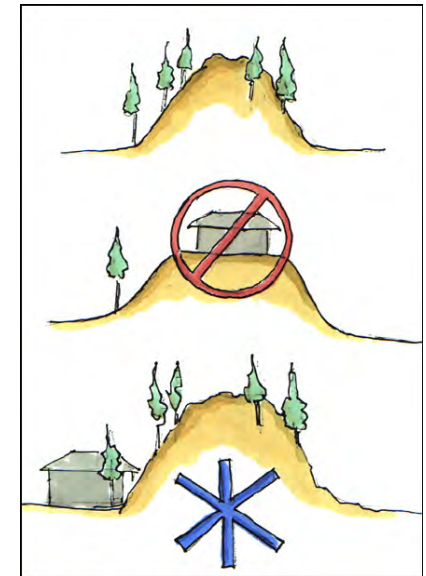
### Site Planning Design Criteria

The site planning component of the MSP Redevelopment District comes first in the design process and determines the general location of the other components. Consequently, site planning must consider the criteria for architectural design, circulation, landscape architecture and site elements. Site planning criteria is divided into two categories, natural conditions and manmade conditions. Each is discussed separately in the following paragraphs. These criteria are to be utilized for the assessment of the visual and spatial impacts of site planning.

#### Natural Conditions

The natural terrain is a major determinant of the layout and form of the installation. The following guidelines should be used to maintain the natural topography:

- Maintain natural ground slopes and elevations.
  - Develop new building sites on previously disturbed sites.
  - Align roadways and buildings along topographic lines.
  - Locate facilities that have expansive ground coverage on relatively flat terrain.
  - Use moderately sloping areas for buildings with less ground coverage area.
  - Avoid development on steep slopes..
  - Provide a reasonable balance of cut and fill.
- The site planning team will consider the following hydrologic concerns for natural drainage corridors, floodplains, and waterways during the site planning process.
- Preserve and maintain natural drainage areas and floodplains.
  - Limit development in floodplains to open spaces and recreation uses.
  - Preserve rivers, lakes, streams, or other waterways, and incorporate them into the design.



Develop Around Existing Landforms

### 3.0 Site Planning Design Standards

The installation will be designed in response to local climatic conditions to provide a more comfortable environment, and reduce the demands for heating and cooling.

Plan the site development to maximize the warming effect of solar radiation in winter and reduce the impact of cold winter winds.

Plan the site to minimize solar heat gain, maximize shade during July and August and take advantage of seasonal breezes.

Preserve and enhance positive views and vistas such as The Missouri River and screen unattractive views and vistas such as utility structures. Visual extensions through open spaces provide a sense of orientation, relief, and enjoyment.

Protect and preserve existing native vegetation. This preservation reduces maintenance and enhances sustainability.

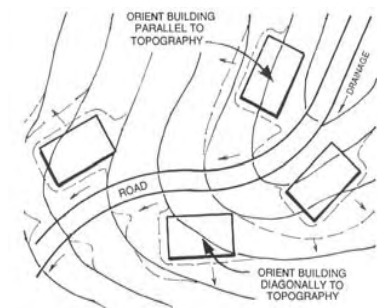
#### Manmade site Conditions

The site plan provides the locations of the manmade development that will occur on site. It establishes the spatial relationships as well as the relationships between manmade and existing natural features. Manmade site conditions include all development within the redevelopment district to include buildings, roadways, parking lots, walkways, walls, fences, utilities, and other facilities. Buildings, roadways, parking lots and above ground utilities are the primary manmade visual determinants.

The following site planning guidelines will be used in the visual and spatial review of the district:

Minimize solar heat gain for cooling and maximize solar heat gain and retention for heating.

Locate buildings with consideration for the microclimate conditions of the site that result in variances in wind or light because of adjacent land forms, structures, or trees.



Orient Buildings and Roads to Topography

### 3.0 Site Planning Design Standards

Orient outdoors pedestrian areas for most comfortable wind and sun exposure.  
Orient windows according to impact of climatic conditions.  
Design and locate roads to provide a hierarchy of traffic carrying capacities.  
Design and locate parking lots to minimize visual impact of broad expanses of pavement and vehicles.  
Design and locate pedestrian walkways and bicycle paths to fit the physical environment, and provide a comfortable pedestrian experience, limiting conflicts with vehicular traffic.  
Locate trees and shrubs to buffer harsh natural conditions.  
Deciduous material provides for sun in the winter and shade in the summer. Evergreen material provides windbreaks for cold north winds.  
Design and locate site elements to blend with and enhance the physical environmental.



Screen Parking Areas



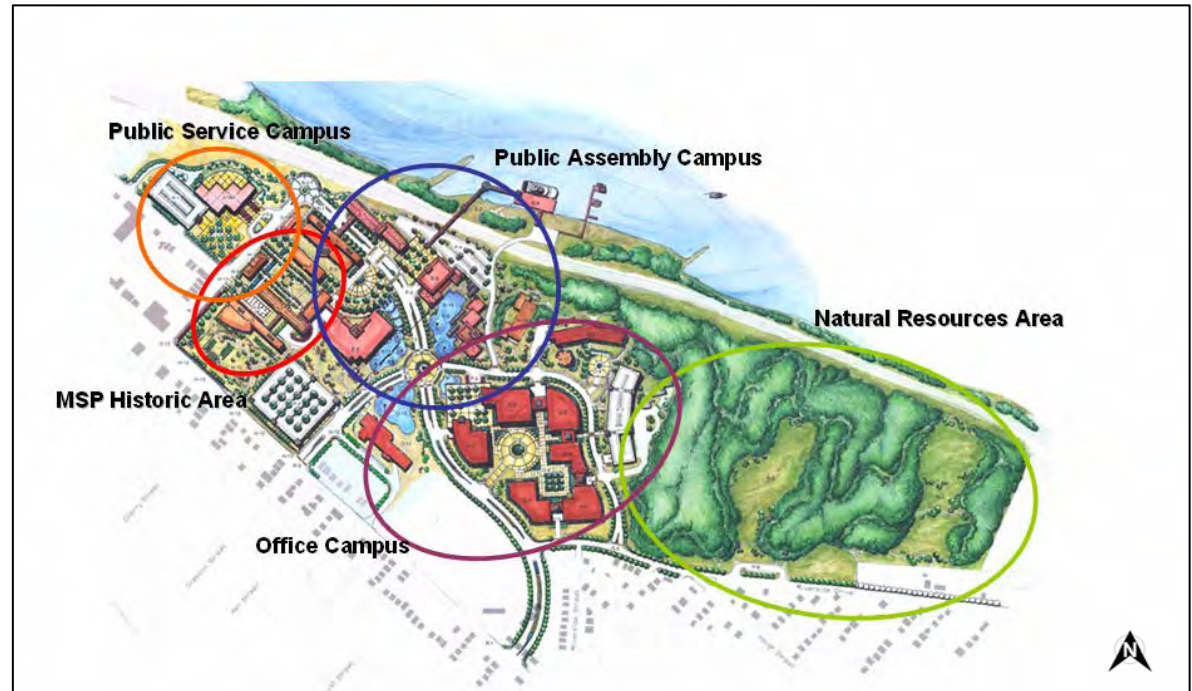
## 4.0 Building Design Standards

### Introduction

This section provides standards and guidance pertaining to the development of various building components to be incorporated within the MSP Redevelopment District. The Building Design Standards is a tool to be used by the MSP Redevelopment Commission, the State of Missouri and Design Consultants to aide in the cohesive unified development throughout the District. All building design should be completed by registered architects and supported by the appropriate engineering disciplines.

The design character of the buildings that make up the MSP redevelopment affects the overall image of the District. Design character is influenced by many factors including structural character, placement and configuration of entrances and service areas, plazas and courtyards, accessibility compliance, additions and renovations and exterior materials and colors.

As defined in Chapter 2.0 Design Guide Analysis Criteria, the MSP Redevelopment District is subdivided into 5 distinct ‘visual zones’ based on historical context, geographic location and land use. The zones include; Public Service Campus, MSP Historic Area, Public Assembly Campus, Office Campus and the Natural Resources



MSP Visual Zones

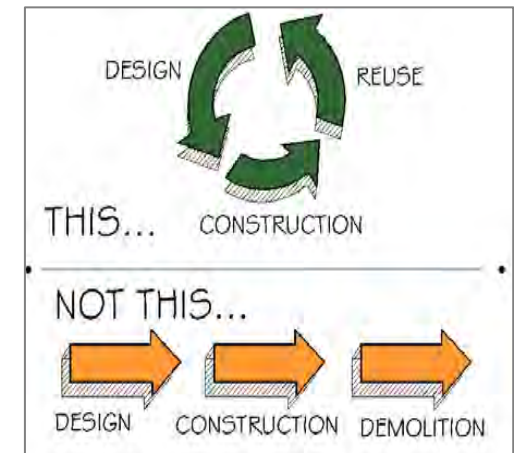
## 4.0 Building Design Standards

Area. Each visual zone will be developed so that it will have its own distinct architectural character, which will be an integral part of the overall visual assets of the MSP Redevelopment District.

The Building Design Standards that follow are intended to define an architecturally compatible image for the MSP Redevelopment District. Well-articulated goals and guidelines will help to establish a visually unified cohesive development, which will be sensitive to the historical preservation issues while allowing for creative design solutions for future projects.

### Building Design Objectives

**Sustainability:** Incorporate sustainable design into all renovations and new development. Sustainable design and development is an integrated approach to the planning, design, construction, operation and maintenance of facilities in a collaborative and holistic manner among all stakeholders. It is a systematic process and engineering practice with how-to-do guidance, checklist, tools and scoring systems. Sustainable design bases every design decision on the greatest long-term benefit to the natural environment. The basic objective of sustainability is the protection of the natural environment by reducing the waste and consumption of energy, land, materials, water and other natural resources. Efficient site planning and adaptive reuse of existing facilities within the MSP Redevelopment District provides many opportunities to achieve sustainable design objectives. The re-use of existing materials and/or the use of on-site materials will also help to provide cohesion and unity throughout the District. Financial incentives can be obtained for developments that follow the U.S. Green Building Council LEED (Leadership in Energy and Environmental Design) Green Building Rating System.



Sustainable Design Process

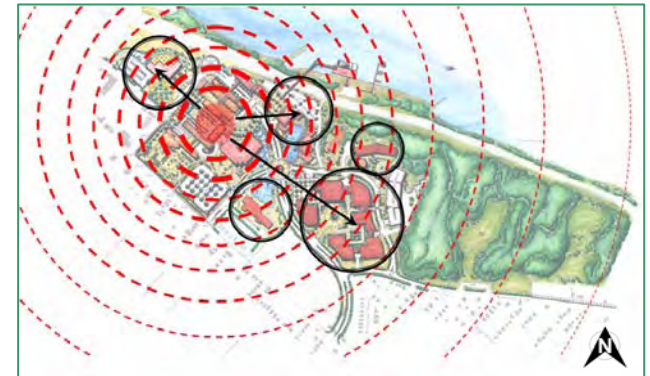
## 4.0 Building Design Standards

**Historic Preservation:** Preserve and restore the historically significant structures located in the MSP Historic Area. Utilize the established architectural theme and character of the MSP Historic Area as a guide to influence future renovations and development throughout the MSP Redevelopment District. The intent is not to reproduce these historical buildings, but to use desirable characteristics for functional and aesthetic purposes, while incorporating modern design features, materials and construction techniques. Existing architectural assets should be used as a starting point in the development of an overall architectural theme. As the theme is incorporated into new development and renovation projects, a sense of history unique to the MSP Redevelopment District should (will) emerge. New modernized construction techniques and materials should be carefully evaluated to ensure that they do not negatively compromise the design character and detract from the overall image and cohesive nature of the development. An appropriate blend of existing building materials can add interest and variety to the development, however if done incorrectly can result in a loss of cohesiveness and disorganized visual appearance.

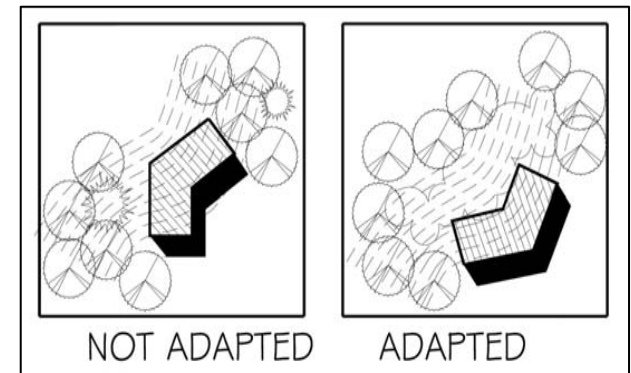
**Site Adaptation:** Adapt buildings and associated site development to natural site conditions. Preserve and enhance natural site features such as existing vegetation, landforms and scenic views and vistas. Design buildings and configure site development in response to climatic opportunities and constraints.

### Structural Character

Structural character is created as a result of the building’s scale and proportion, massing and form, color, texture, materials and fenestration. The compatible coordination of structural character within the Redevelopment District provides a consistent and cohesive ‘sense of order’ and ‘sense of place’.



MSP Historic Area's Zone of Influence



Adapt Building Design to Site Conditions

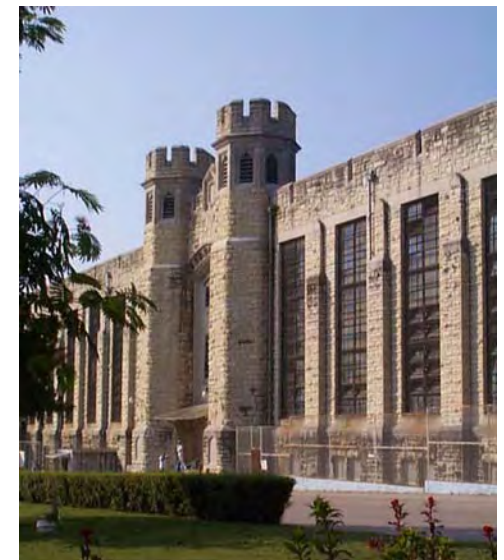
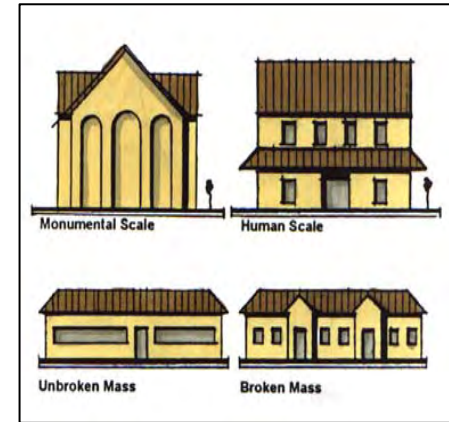
## 4.0 Building Design Standards

**Scale and Proportion:** Scale refers to how the size of a building element, or space, is perceived in relation to humans. Proportion refers to the relative scale and mass of building elements. Buildings that include predominant vertical facades, which dwarf the individual, are defined as monumental in scale. Buildings with more horizontal facades designed to relate more to the size of the human figure are defined as human scale. Building scale and proportion can be visually manipulated through site development, courtyards and plazas, roof form, fenestrations, building massing and landscape plantings. New facilities should convey an appropriate sense of scale consistent with other facilities within the ‘visual zone’. Additions and modifications should be designed with massing, scale and proportion that compliment the existing building. Relate the height, footprint, scale and proportion of new buildings to adjacent structures and the prevailing scale within the development areas.

**Massing:** The massing of a building refers to its overall bulk, or the volume of space, which the building occupies. When massing a new building, the size and proportion of its exterior envelope and elevations should be designed to relate compatibly with adjacent structures within a ‘visual zone’. Massing and form play a major role in establishing the character of a structure. While a controlled palette of colors and materials is used to create visual continuity, massing and form should be used to contribute visual interest, visual hierarchy, and building identity, through manipulation of scale, proportion, fenestration and site context.

**Form:** A building’s form is determined by an articulation of its size, mass, shape and proportions. The size and proportion of its wall elevations and roof types significantly impact the form of a structure. To reinforce the architectural theme and provide unity and cohesiveness, building forms should remain consistent throughout a ‘visual zone’.

**Color:** Colors should be selected on the basis of the desired appearance, its compatibility with adjacent buildings and the prevailing color scheme and character of the ‘visual



Architectural Character Influenced by Scale & Proportion, Massing and Form

## 4.0 Building Design Standards

zone'. Materials of similar color and texture, utilized consistently throughout a 'visual zone' contribute to a cohesive unified design theme. Color is closely linked to the appropriate selection of exterior building materials and is a critical design element in relating adjacent buildings and creating a compatible visual environment within a 'visual zone'.

Color also has the ability to modify climatic conditions. Generally, light-colored building exteriors tend to reflect solar radiation and promote heat loss, but increase glare; dark-colored exteriors tend to absorb solar radiation, promoting heat gain and reduce glare.

**Texture:** The use of materials of similar texture on buildings helps to provide visual continuity for the 'visual zone'.

**Material:** Exterior building materials should provide a cohesive and consistent architectural character within a 'visual zone'. All new construction should be compatible with the established architectural character within the 'visual zone'.

Types of materials selected should vary based on climatic conditions, thermal qualities, reflectivity and durability.

Avoid cluttered, cosmetic applications of a number of different materials on a facade. Materials should be used consistently on all facades of a building.

Materials should be selected based upon their appropriateness to the building type, climatic conditions, and the prevailing architectural design and landscape character of the 'visual zone'.

Materials distinctive to an established architectural character should be adhered to consistently throughout a 'visual zone'. Historic styles should not be imitated where it is inconsistent with function requirements and construction economies. The use of similar



Character Influenced by Color and Materials



Architectural Character Influenced by Materials, Color and Texture

## 4.0 Building Design Standards

materials, complimentary colors and a compatibly scaled building can successfully relate new buildings to an historic style or setting.

**Fenestration:** Building fenestration is articulated primarily with features such as doors, windows, and building details.

The perception of a buildings shape, size, scale, proportion and visual weight is affected by its surface fenestrations. The shape, size, scale and proportions of these properties can be altered or manipulated to establish systems of rhythmic or hierarchical fenestration. Building fenestration systems can relate-to or contrast fenestrations articulation patterns of the surrounding built environment. Fenestrations within a ‘visual zone’ should be similar in arrangement, design, size and proportion for architectural compatibility and visual consistency and continuity.

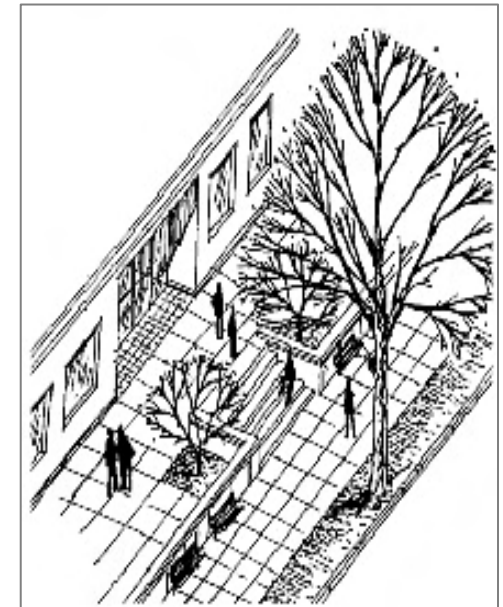


Architectural Fenestrations Influence the Building's Relative Size, Shape and Visual Weight

### Structural Elements

Structural elements including building entrances, service areas, plazas and courtyards have a profound affect on the visual character of a building or group of buildings. Structural elements shall be designed so that they are an integral part of the structure, visually compatible and unifying.

**Building Entrances:** A building entrance is a primary feature of any building design. The entrance should be defined and recognizable as the point of entry regardless of the size or importance of the building.



Entrance is Positive Visual Experience

## 4.0 Building Design Standards

The entrance to a building should be in a prominent location and should be oriented toward the primary adjacent public spaces such as a courtyard, lawn, parking lot, or street.

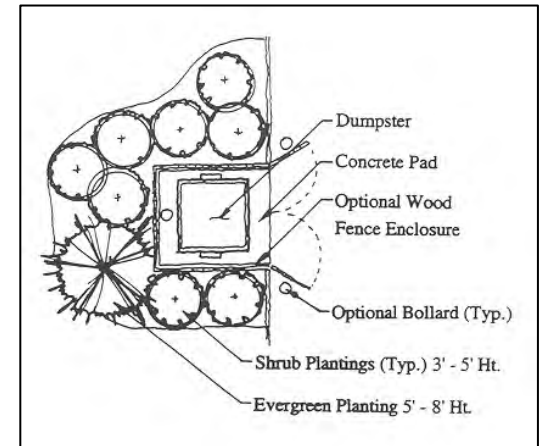
Covered entrances should be integrated into the overall building design to visually define the main access points to the structure and reinforce pedestrian circulation. Use entrance canopies, awnings and landscape features in conjunction with well-articulated building facades to enhance the main entrances of existing buildings.

The details of an entrance should be designed to provide continuity with other entrances to the building and the entrances of adjacent buildings within the ‘visual zone’.

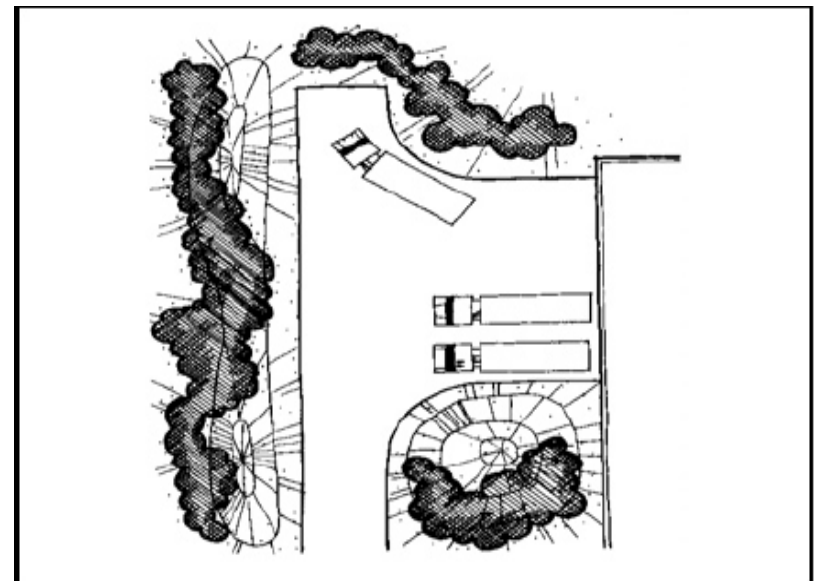
All new and renovated structures or facilities must comply with the Americans with Disabilities Act (ADA) accessibility guidelines. Compliance with the (ADA) shall be addressed with the least possible negative impact on the visual character of existing and historic structures. New structures shall take advantage of existing site conditions and grades to accommodate building accessibility that is harmonious and visually appropriate to the structure.

**Service Areas:** Service areas, such as loading docks and trash dumpsters, should be screened from the views of primary use areas such as entrances, courtyards, gathering areas, streets and parking lots.

Service areas should be screened with walls and/or berms and appropriate landscape development. Screen walls should be between six and eight feet high and should be constructed of the same materials as the primary



Screen Dumpster Enclosures



Plants and Berms in Service Area Presents a Positive Visual Image

## 4.0 Building Design Standards

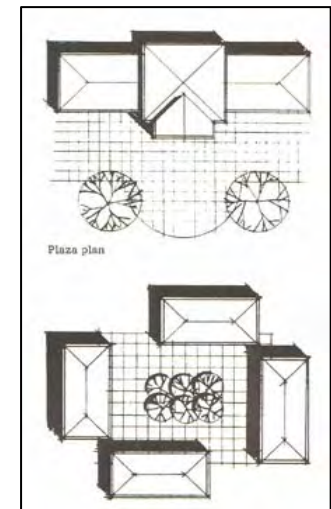
adjacent structure in order to maintain visual continuity and unity within the ‘visual zone’.

**Plazas and Courtyards:** The development of exterior spaces as plazas and courtyards can affect the mass, scale and relief to a building wall which can positively affect the character of the building.

To insure compatibility and visual unity, plazas and courtyards should be developed utilizing the same materials and construction details of the adjacent structures or grouping of buildings within a ‘visual zone’.

### Visual Zones

As defined in Chapter 2.0 Design Guide Analysis Criteria, the MSP Redevelopment District is subdivided into 5 distinct ‘visual zones’ based on historical context, geographic location and land use. The zones include; MSP Historic Area, Public Service Campus, Public Assembly Campus, Office Campus and the Natural Resources Area. Each visual zone will be developed so that it will have its own distinct architectural character, which will be an integral part of the overall visual assets of the MSP Redevelopment District. In addition, select ‘visual zones’ will influence the design character of adjacent ‘visual zones’ creating continuity throughout the MSP Redevelopment District.



Plazas and Courtyard Development Shall Complement Structure



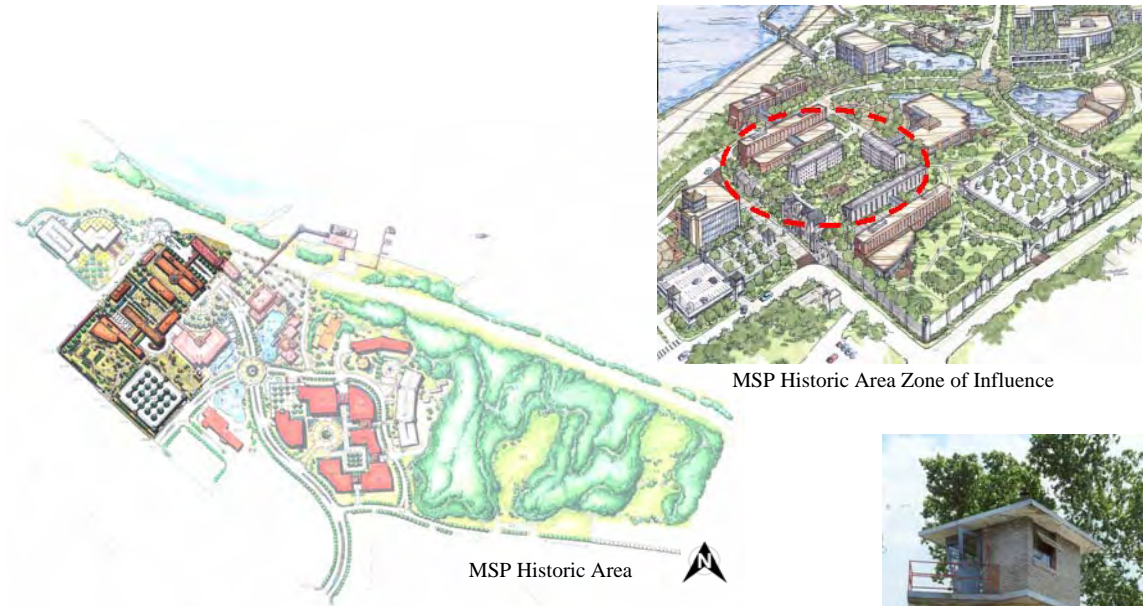


## 4.0 Building Design Standards

**MSP Historic Area:** The MSP Historic Area contains the majority of the buildings, which will remain, be restored or renovated as part of the MSP Redevelopment. Buildings and structures to remain include Housing Units 1, 2, 3, 4 and 5, the gas chamber, the guard towers and the majority of the prison wall. Proposed facilities within the MSP Historic Area include office space, conference center, MSP museum, hotel, structured parking and plaza development.

Reconstruction includes the historic dining hall, the guard towers and the wagon wheel gate at the prison wall. The dining hall will be reconstructed to its original architectural style and detailing utilizing the existing foundation as part of the redevelopment. The reconstruction will recreate the original quadrangle formed by the dining hall and housing units 1, 3 and 4. The reconstruction shall be based on accurate photographs and detailed sketches of the original structure.

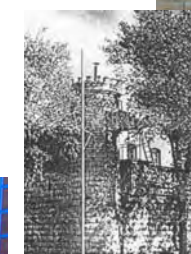
The guard towers and wagon wheel entrance gates will be restored to their original condition utilizing photographs and other available data to verify existing architectural and structural detailing. For further discussion of the wall see Chapter 7.



MSP Historic Area Zone of Influence



Existing Guard Tower

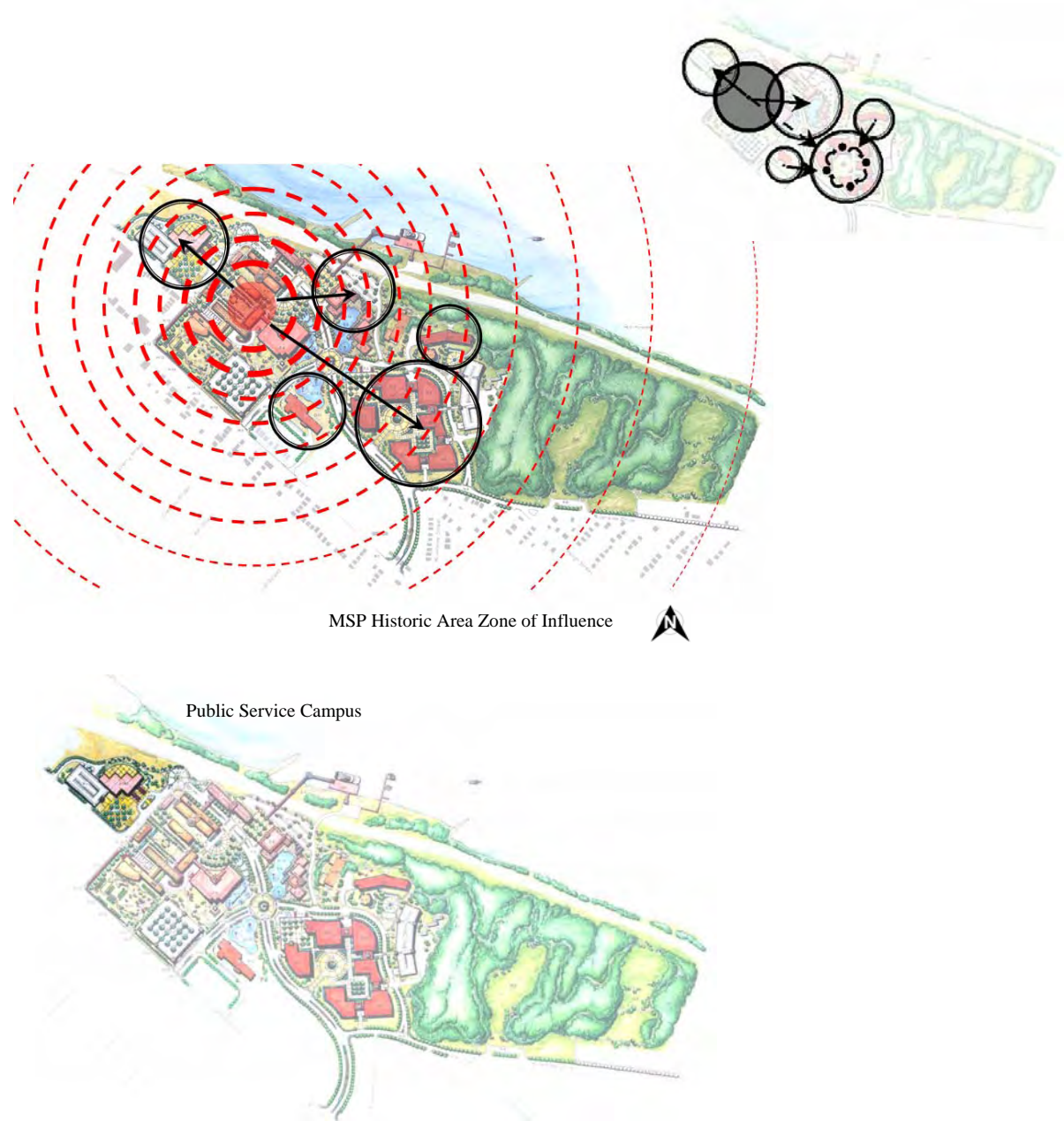


Historic Guard Tower

## 4.0 Building Design Standards

The structural character of the existing buildings within the MSP Historic Area shall become ‘theme generators’ for other ‘visual zones’ within the MSP Redevelopment District. Structural character or ‘theme generators’ include scale and proportion, massing and form, color, texture, materials and architectural fenestrations. The extent of influence will depend on the ‘visual zones’ land use types and proximity to the Historic Area. The greater distance the ‘visual zone’ is from the Historic Area the lesser the design influence the Historic Area will have on the ‘visual zone’. Therefore the MSP Historic Area will have a greater influence on the Public Service Campus and Public Assembly Campus ‘visual zones’ than on the Office Campus and Natural Resources Area ‘visual zones’ based on relative proximity and land use.

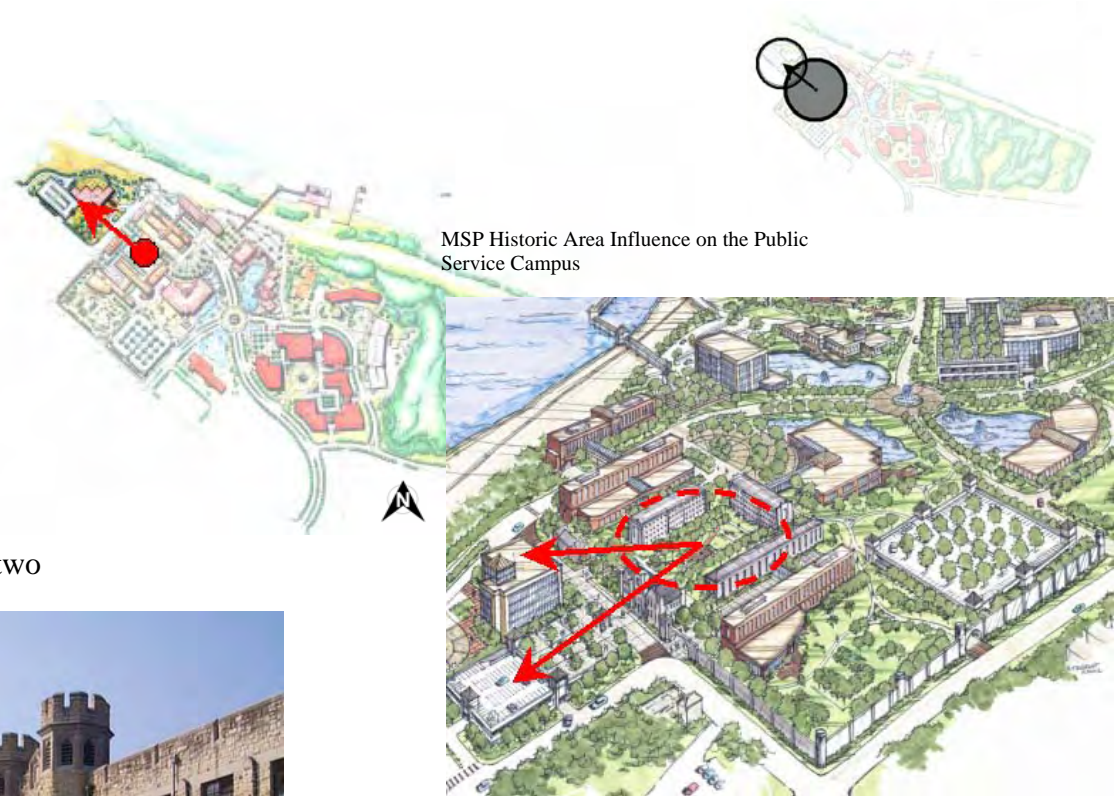
**Public Service Campus:** The Public Service Campus is located immediately northwest of the MSP Historic Area and will consist of public



## 4.0 Building Design Standards

service office space, structured parking and plaza and courtyard development.

The Public Service Campus being directly adjacent to the MSP Historic Area will be highly influenced by the architectural styles and character associated with the existing historic area. The proposed land uses and building types proposed for the Public Service Campus are consistent with the mass, form, scale and proportion of the MSP Historic Area. Selection of the appropriate materials, colors and textures will visually link the two areas creating an implied unity between the two ‘visual zones’.



MSP Historic Area Influence on the Public Service Campus



Potential Architectural Treatment Influenced by Window Fenestrations, Scale, Proportion, Massing and Form of Historic Structures. Blended Materials Provide Unity and Cohesiveness.



Architectural Character Influenced by Scale and Proportion, Massing and Form



## 4.0 Building Design Standards

**Public Assembly Campus:** The Public Assembly Campus is located immediately northeast of the MSP Historic Area and will consist of a public assembly facility, hotels, retail / commercial development, structured parking, pedestrian plazas and water features, an elevated link to the rivers edge and an excursion boat landing.

The Public Assembly Campus, being directly adjacent to the MSP Historic Area will be highly influenced by the architectural styles and character associated with the existing historic area. The public assembly facility and hotels planned for the Public Assembly Campus are consistent with the mass, form, scale and proportion of the MSP Historic Area. Although the mass, scale and proportions of the retail / commercial facilities are not consistent with the historic district, appropriate materials, colors and textures will visually link the two areas creating unity and visual cohesion between the two ‘visual zones’.



MSP Historic Area Influence on the Public Assembly Campus

### 4.0 Building Design Standards



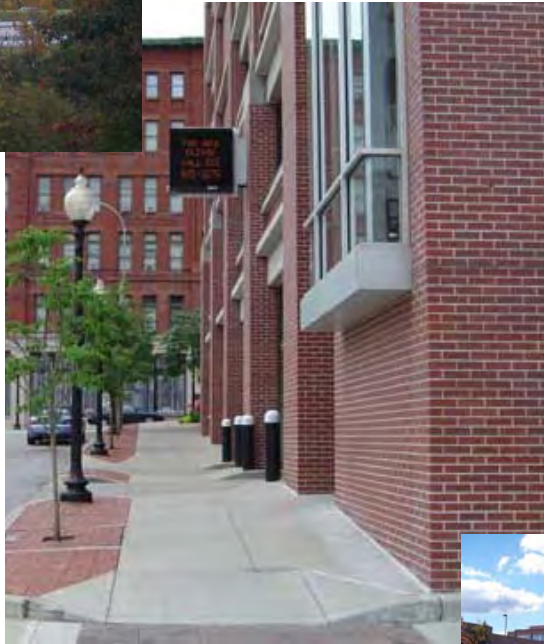
The Mass, Scale, Proportions, Color and Texture of these Buildings are Compatible with Existing Buildings Found in the MSP Historic Area.



Potential Architectural Treatment of the Public Assembly Facility Influenced by the Structural Character of Housing Unit 3. Compatible Massing, Scale and Proportion Combined with Similar Architectural Fenestrations and Material Banding help to Create Design Unit



Interior View of Windows at Housing Unit 3



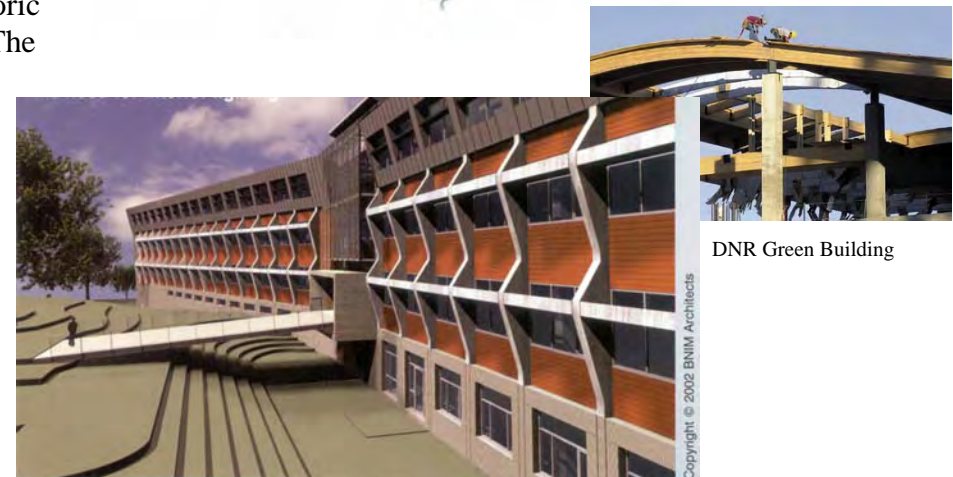
Window Fenestration and Horizontal Brick and Limestone Banding on Housing Unit 2



## 4.0 Building Design Standards

**Office Campus:** The Office Campus is located southeast of the MSP Historic Area and will consist of mixed-use office space, structured parking, water features, plazas and courtyards. The recently constructed DNR Building and the State Health Lab are within the Office Campus ‘visual zone’. The DNR building is located on the northern edge of the campus overlooking the Missouri River and the Health Lab is located on the southeastern edge adjacent to East Capitol Street.

The Office Campus is somewhat removed geographically from the MSP Historical Area, therefore will not be as strongly influenced by the historic district as the Public Service and Public Assembly Campus’s will be. The structural character of the DNR building and the Health Lab will share architectural influences with the MSP Historic Area in the architectural theme development of the central core area of the Office Campus ‘visual zone’. The central core area of the Office Campus is configured as an integral clustered development; therefore, all buildings within the core shall be closely aligned with regards to structural character. As the core develops the previously development facilities within the core will have the strongest influence on the structural character of the new development to ensure a compatible visually unified core development.



### 4.0 Building Design Standards

The office facilities planned within the Office Campus are consistent with the mass, form, scale and proportion of other 'visual zones' within the MSP Redevelopment District, therefore architectural compatibility can be readily achieved through the use of structural character elements such as color and texture of construction materials and architectural fenestration.



Zone of Influence From MSP Historic Area and From The DNR Building and the Health Lab



Structured parking compatible with adjacent Natural Resources Area.



Compatible use of materials on structured parking facility.



Architectural fenestrations of office buildings and courtyard compatible with Housing Unit 2.



## 4.0 Building Design Standards

**Natural Resources Area:** The Natural Resources Area occupies the eastern half of the MSP Redevelopment District. Its primary function is preserved woodlands and ‘open space’, however it does contain recreation trails, picnic pavilions and other recreational amenities.

Based on the remote geographic location and its unique land uses and distinctive character, the Natural Resources Area will have an architectural treatment unique to itself. The use of brick, limestone and other materials found in adjacent ‘visual zones’ will provide subtle visual ties creating a sense of total site unification and cohesion throughout the MSP Redevelopment District.



Natural Resources Area



Picnic Area



Structured Parking Adjacent to the Natural Resources Area



Limestone Wall



Limestone Table



## 4.0 Building Design Standards



Section Looking North



Section Looking West

## 5.0 Circulation Design Standards

### Introduction

The image of the MSP Redevelopment District will be greatly determined by the design and location of roadways, walkways, and parking lots. The primary roadway system and parking lots utilize considerable amounts of land and are a visually dominant element of any development. The location of the plan’s primary circulation elements are shown on the Master Plan presented in Chapter 1 and further illustrated in this Chapter. This section discusses the details of circulation design and impacts.

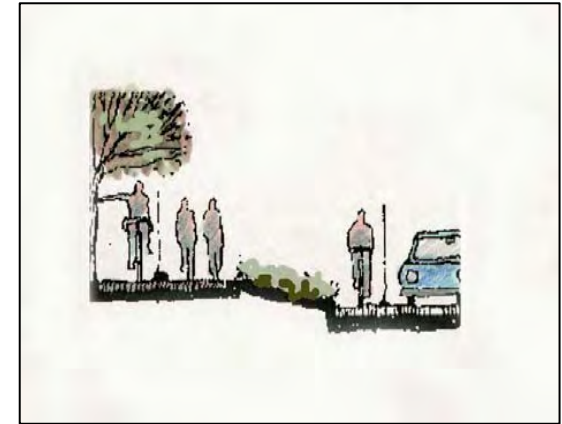
The circulation system provides a primary vantage point from which to view all aspects of the MSP Redevelopment District. Safe and efficient vehicular movement results in better orientation and contributes to the development of a positive environment for workers and visitors alike. The circulation component is used to assess the circulation elements of the District and identify specific characteristics that provide visual continuity and theme identity.

Roadways, pedestrian walkways, and bicycle trails will be designed to provide a hierarchy of circulation and carrying capacity. Functionally, a hierarchical network can be created that separates incompatible types of traffic. This separation of traffic promotes sustainability because it results in more efficient energy consumption.

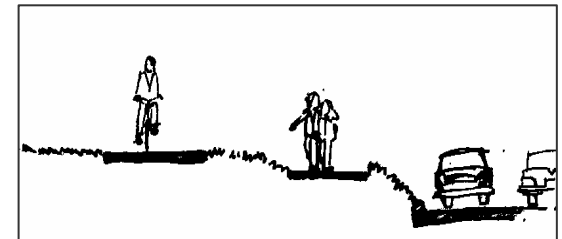
Visually, the circulation hierarchy can be reinforced through design, planting, signage and lighting to promote a more attractive visual experience and promote a sense of orientation.

### Circulation Objectives

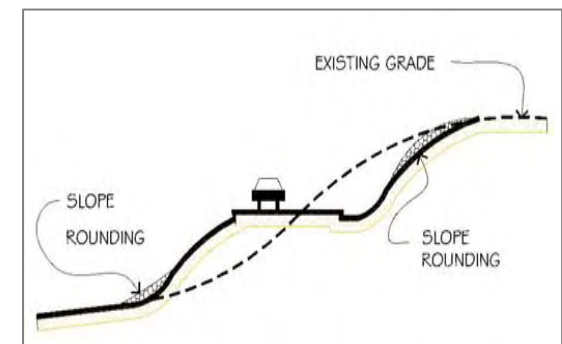
The goal for the circulation system on the installation is to establish a sustainable system that promotes aesthetic appeal, environmental preservation, and energy conservation



Vehicular/Pedestrian System



Provide Pedestrian/Bicycle/ Vehicular Access

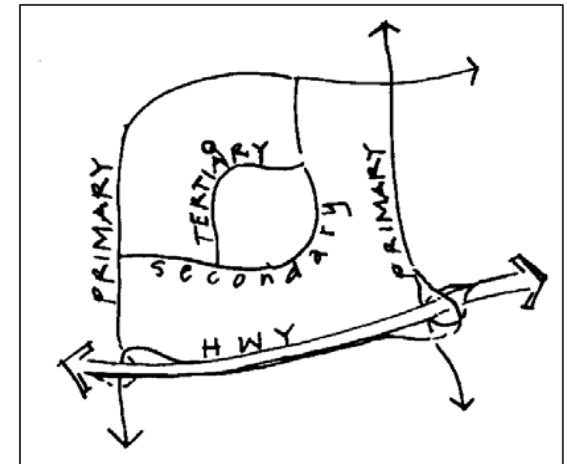


Adapt Circulation to Topography

## 5.0 Circulation Design Standards

while providing safe and efficient circulation. The objectives below should be followed to achieve a sustainable circulation system:

- Provide circulation that meets security requirements and promotes and enhances public health and safety.
- Provide a system of circulation that includes all forms of vehicular and pedestrian circulation.
- Provide a system that includes hierarchies of vehicular and pedestrian traffic flow.
- Adapt the circulation system to the natural conditions of the site.
- Improve the existing circulation network for expansion, safety, way finding and appearance.
- Promote maintenance and repair of existing and proposed circulation systems.



Roadway Hierarchy

### Roadway Hierarchy

The roadway network should functionally and visually reflect a logical hierarchy of traffic circulation. The network should separate types of traffic by function and volume, ranging from through traffic to local traffic. The visual character of each segment of the network should appropriately convey its role and function within the overall network. The basic network is classified in terms of the type, character, and appearance.

**Highways** provide primary high-speed traffic access to, and around an area. The Whitton Expressway provides highway access to the MSP Redevelopment District and will provide the



Roadway Classification

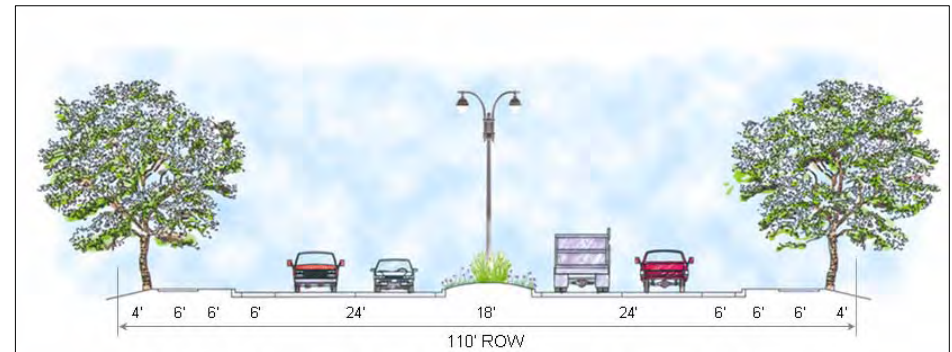
## 5.0 Circulation Design Standards

first impression of the District to all arriving via the highway. Plantings, lighting and signage should be coordinated with City, County and State officials in the future redesign of the expressway.

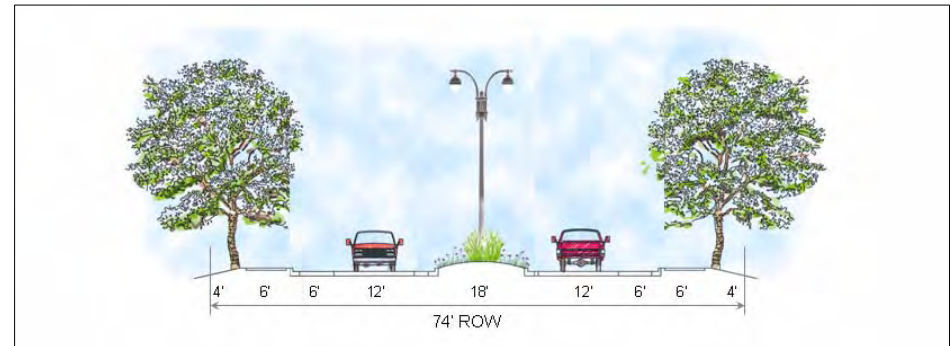
**Primary Roadways** are arterial routes that connect major activity centers, provide the primary access through the area and provide the means by which most people will view the District. The MSP Parkway, the Lafayette Street entrance and the

Chestnut Street entrance are classified as primary roadways. These roadways will carry the heaviest volume of traffic that results in high visibility corridors. Primary roadways are designated as boulevards, parkways or avenues. Design characters include:

- Continuous, through-traffic alignments that are relatively straight or large-radii curvilinear to handle moderate to heavy traffic.
- Alignments that form the boundary between different land uses are preferable to alignments that transect a land use zone.
- Controlled access and a minimum of curb cuts limited to entranceways to major facilities or building groups.
- At-grade intersections with signal controls.
- On-street parking prohibited.
- Medians, street lighting, signage, and planting that enforces the importance of the road.
- Concrete curbs, gutters, sidewalks and asphalt roadway pavement.



Primary Road at MSP Parkway



Primary Road at Chestnut Street and at Lafayette Street

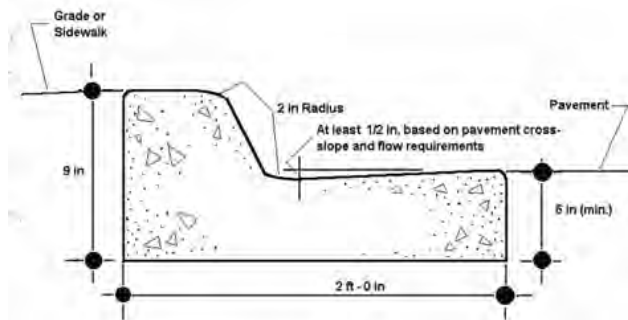


## 5.0 Circulation Design Standards

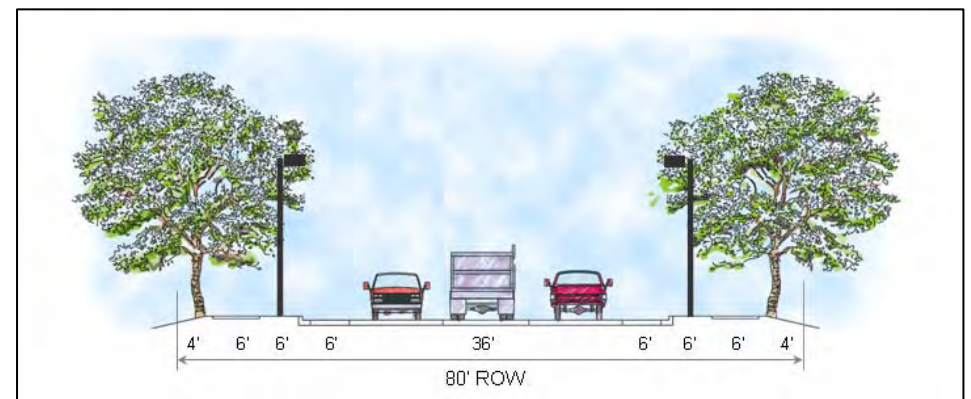
- Bike Lanes in each direction.

**Secondary Roadways** serve as connectors between primary roads and tertiary roads and typically connect primary roads to adjacent land use zones. Secondary roads accommodate moderate to slow traffic speeds with one moving lane in each direction. On-street parking should be prohibited and left-turn lanes provided at intersections with primary roads. Design characteristics include:

- Continuous through-traffic alignment between primary roads, either straight or curvilinear based upon the design speed topography and land pattern.
- Direct access to abutting sites.
- On-street parking generally prohibited.
- Street lighting, signage, and planting that reflects the moderate-to-slow speed nature of traffic and the character of the land use.
- Concrete curbs, gutters, sidewalks and asphalt roadway pavement.
- Bike Lanes in each direction.



Roadway Classification



Secondary Road

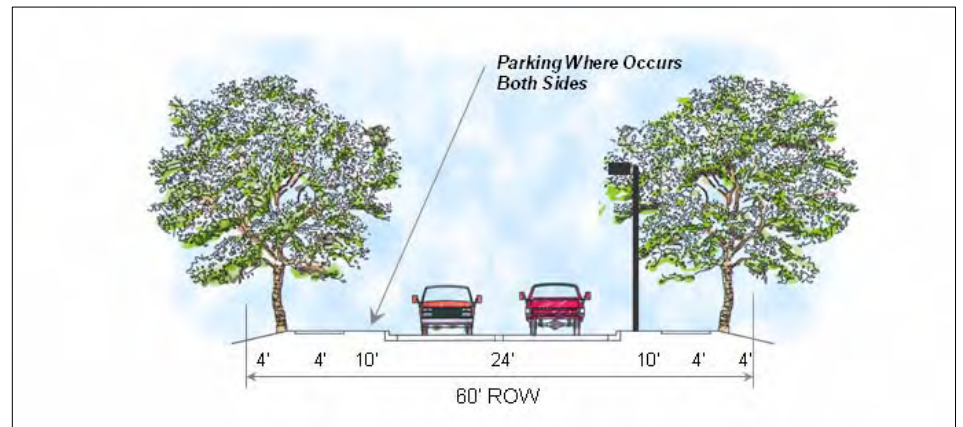
## 5.0 Circulation Design Standards

**Tertiary Roadways** provide access to individual facilities, parking and service areas. They are designed to handle low speed, low volumes of traffic, with one lane in each direction. Tertiary roadways make use of “T” intersections and cul-de-sacs to reduce through traffic, promote safety, and limit noise impacts from truck traffic. Design characteristics include:

- Alignments designed to discourage through-traffic.
- Alignments are relatively short, straight or curvilinear keeping with topography, land use, and slow speed nature of traffic.
- Generally a maximum of one moving traffic lane in each direction.
- On-street parking generally prohibited, however may occur in select locations.
- Sidewalks maybe limited to only side, depending upon need.
- Concrete curbs, gutters, sidewalks and asphalt roadway pavement.



Roadway Classification



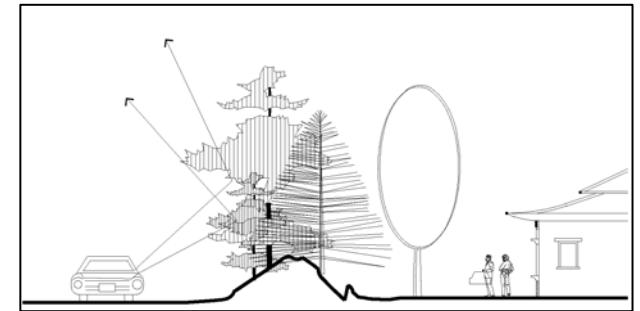
Tertiary Road

## 5.0 Circulation Design Standards

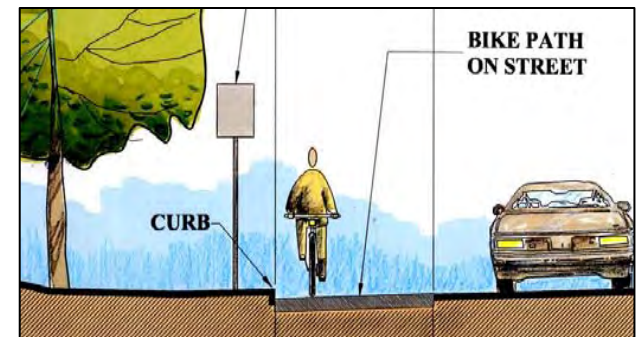
### Roadway System Design

The location and design of new circulation system alignments as well as improvements to the existing system should be prepared to promote development sustainability. They should be designed to minimize impacts, relieve driver monotony, and provide a positive visual experience for the user, without compromising safety. The following design techniques should be applied to circulation system design.

- Mold cut and fill slopes to blend into the natural landform.
- Minimize pedestrian and bikeway crossings.
- Use natural topographic conditions to create grade separated pedestrian and bikeway road crossings wherever possible.
- Adapt circulation to preserve vegetation. Design roads, walkways, and bike paths to minimize disturbance to existing vegetation, encourage re-vegetation in disturbed areas, and reduce the visual impact of landscape disturbance.
- Minimize cut and fill to reduce the limits of clearing.
- Clear only for sight distances rather than uniform right-of-way clearing.
- Utilize tree wells or retaining walls to preserve specimen trees or significant vegetation areas.
- Provide optimum conditions for re-vegetation by following proper planting and maintenance techniques.
- Restore vegetation to disturbed areas using naturalistic plantings of native plant material.
- Minimize adverse impacts on adjacent land uses.
- Roads and parking should be physically separated from other land uses utilizing noise abatement techniques such as berms, walls and plant material to reduce noise levels.



Landscape and Berm Buffer



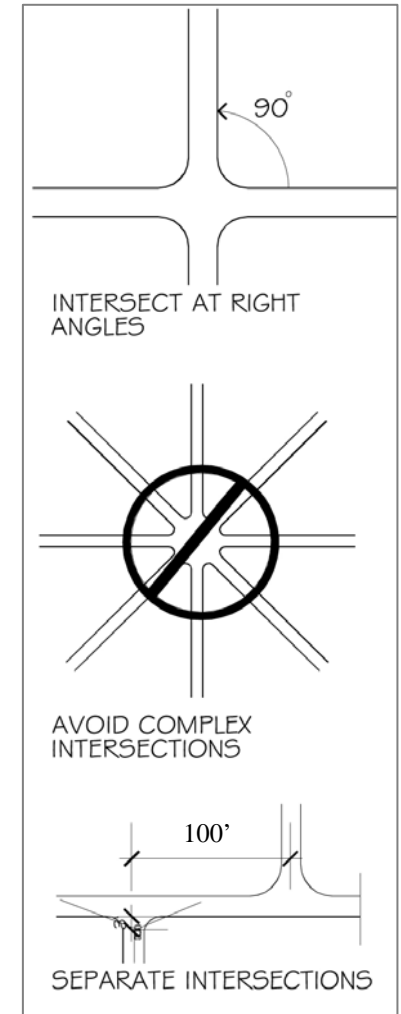
Dedicated Bike Lane

## 5.0 Circulation Design Standards

### Intersections

Intersections are the most dangerous areas of a circulation system. They should be planned or improved to provide safe and efficient traffic flow for both pedestrian and vehicular traffic. The following design techniques should be used to plan or improve intersections:

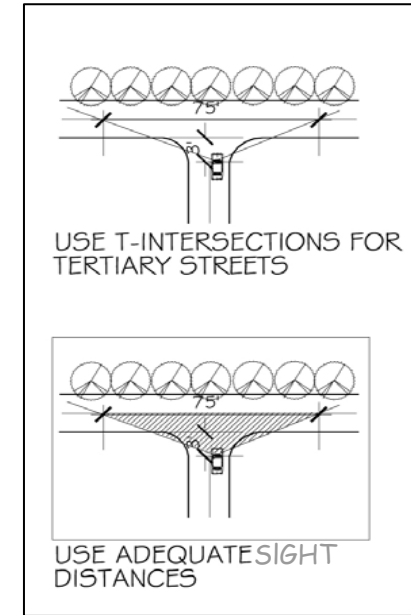
- All roadways should intersect at right angles (90 degrees), although 85-95 degrees is acceptable.
- Avoid dangerous, complex intersections of more than two streets intersecting at one point or offset intersections.
- Eliminate intersections that are in close proximity to one another. They should be no closer than a minimum distance of 100 feet.
- Use T-intersections for tertiary road intersections with secondary or primary roads to reduce conflict and promote safety.
- Provide turning lanes at all intersections along primary roads to eliminate interference with through traffic flow.
- Minimize intersections along primary roads to reduce points of conflict and increase safety.
- Include adequate sight distances to meet minimum standard requirements at all intersections. The sight distance triangle is formed from the location from where the driver is waiting to cross or enter a traffic lane to a point 75 feet down the centerline to the right and the left.





## 5.0 Circulation Design Standards

- Minimize pedestrian and bicycle intersections with primary streets.
- Provide crosswalks at all intersections where necessary, marked with paint or vinyl strips or identified with a different paving surface.
- Provide pedestrian access to persons with disabilities in accordance with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).



Entrance Feature

## 5.0 Circulation Design Standards

### Roundabouts

There are two roundabouts located within the MSP Redevelopment District. One is located at the intersection of the MSP Parkway and Chestnut, the other is located at the intersection of Lafayette and the MSP Parkway. While each roundabout is unique, they contain several common design goals including:

- They must accommodate tractor trailer truck traffic.
- They need to incorporate pedestrian and bicycle traffic crossing.
- The roundabouts should be considered as entry features, containing decorative paving, planting, lighting and water features.

The roundabout at Lafayette Street does not have a planted center island, instead it will contain decorative pavement patterns to direct the vehicular traffic. The north one quarter of the round about will contain a portico feature to establish its identity as a main entrance and to direct views to the river valley beyond. The roundabout at Chestnut Street contains a combination water feature and planting area within the circle, and decorative paving delineating the traffic lanes. The roundabouts will be designed to Federal Highway Administration standards.



Roundabout Locations



## 5.0 Circulation Design Standards

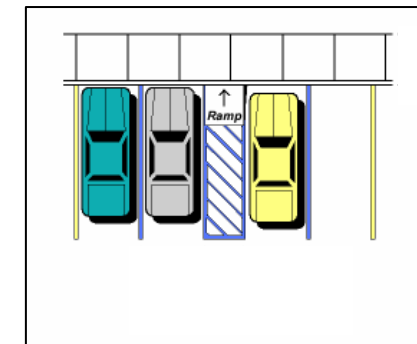
### Parking Requirements

The total quantity of parking in any one location will vary with the needs of the adjacent facilities. The following are general parking requirements.

- All parking lots will be accessible to persons with disabilities. The number of accessible spaces shall be provided in conformance with the required minimum number of accessible spaces shown below.
- For initial planning and programming, allocate 400 square feet of parking lot area per car. The total provides adequate minimum space for the parking spaces, access drives, and planting islands that make up a parking lot.
- Promote means of access other than vehicular such as walkways and bikeways.

Total spaces in parking area	Required minimum number of accessible spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2% of total
1001 and up	20 plus 1 for each 100 over 1000

Required Minimum Number of Accessible Parking



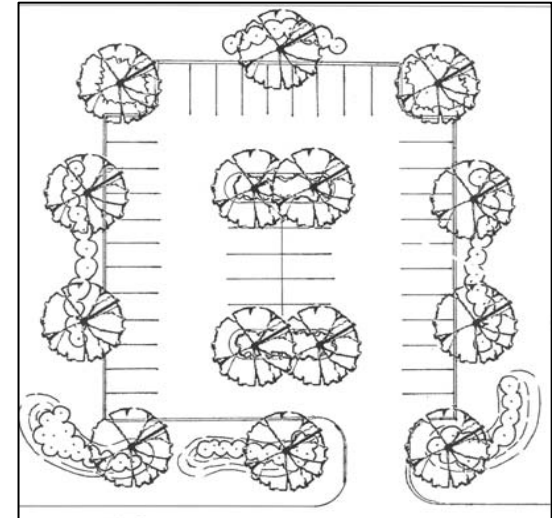
Accessible Parking Space

## 5.0 Circulation Design Standards

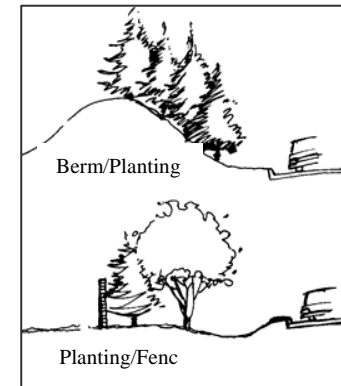
### Parking Lot Location and Design

Parking areas can be designed and enhanced to provide a more pleasing impact and a more comfortable physical experience for the user. The following design techniques should be used to create more aesthetically pleasing, physically comfortable parking lots.

- Locate parking lots between and behind buildings to reduce the visual impact.
- Design parking lots to be efficient in the design and placement of access drives and parking spaces. All drives providing direct access to parking spaces should provide spaces on both sides of the drive.
- Provide planting areas at the ends of all rows of parking spaces. Provide islands with trees within the main parking lot to soften the visual expanse of the parking lot, provide shade and/or wind breaks.
- Use natural topography and existing trees to visually screen parking areas from adjacent facilities and other parking bays.
- On street parking along primary and some secondary streets should be avoided.
- Parking lots should be paved with asphalt with white markings and contain concrete curb and gutter.



Provide Tree Islands to Soften Views



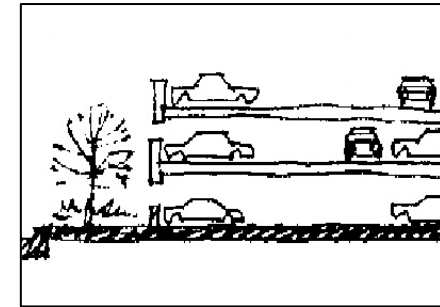
Trees/Berms/Walls Screen Parking Lot

## 5.0 Circulation Design Standards

### Parking Structures

Parking structures, both below grade and above grade, provide for greater parking capacity in densely developed areas where available land is scarce. Parking structures are expensive, but they provide a number of benefits including efficient land use, reduced visual impact and protection of vehicles from inclement weather.

- Materials of the parking structure should be compatible with adjacent architectural facilities and elements
- Preferred construction materials include concrete structure with brick (and/or) limestone articulation on highly visible elevations and architectural concrete finish elsewhere.
- Minimize height, three levels above grade maximum.
- Highly visible areas of the structure should be architecturally enhanced.
- Roof-top and wall planters.
- Use landscape materials to blend and soften the visual impact of the parking structure.



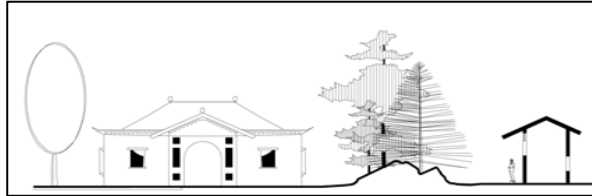
Parking Structures are Desirable



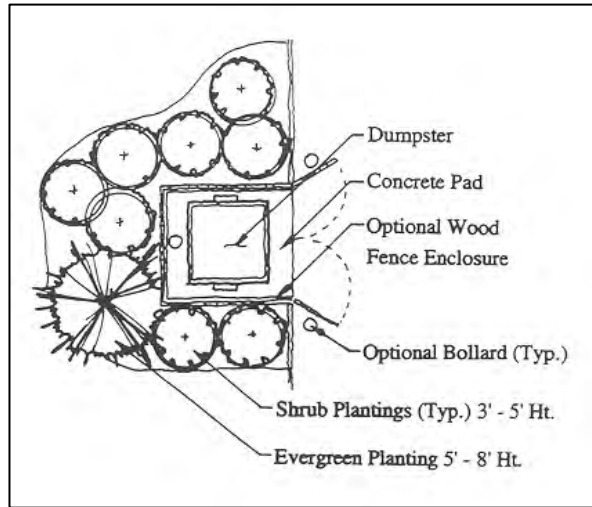
## 5.0 Circulation Design Standards

### Service Areas

Facilities that require pickup and deliveries should have a service area that allows for easy access to a loading dock exclusively for service vehicles. These areas should be designed to provide direct, easy access for vehicles. They should be screened from public view to reduce negative visual impacts.



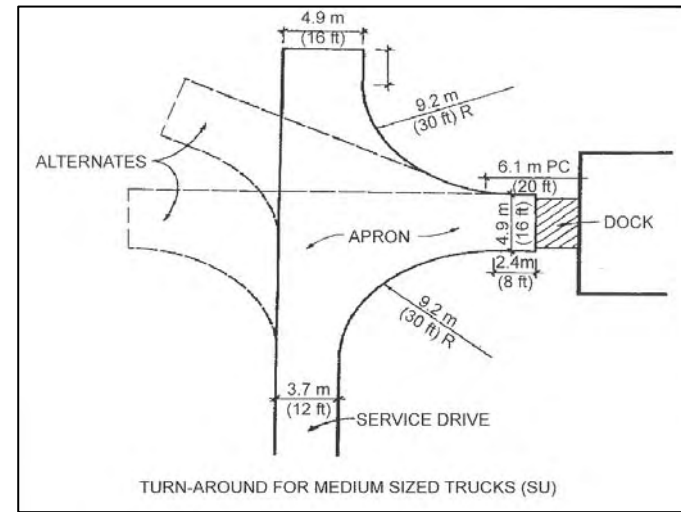
Trees/Berm Screen Service Area



Typical Dumpster Area



Service Areas



Typical Loading Area

## 5.0 Circulation Design Standards

### Drop-Off Areas

Facilities that include a high percentage of persons arriving by vehicle should include a vehicle drop-off area for users.

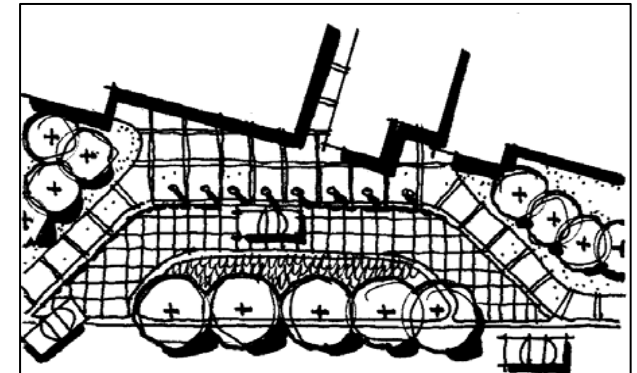
- Use physical barriers to define the area.
- Barriers may include curbing, planters, or other barriers together with signage to identify and restrict access.
- The driveway shall be configured so that vehicles can be restricted if necessary.
- ADA Compliant.
- The material and character shall be compatible with the building Architecture.
- Pavement material shall be compatible with the architectural character of the building.
- Comply with current safety and security measures.



Drop Off Area Locations



Office Campus Drop Off Area



Drop Off Area Enhancements

## 5.0 Circulation Design Standards

### Walkways and Pedestrian Circulation

Walkways provide connections for pedestrians between buildings, parking lots and other areas. Well designed and located pedestrian walkways also provide a desirable alternative to total dependence on motor driven vehicles.

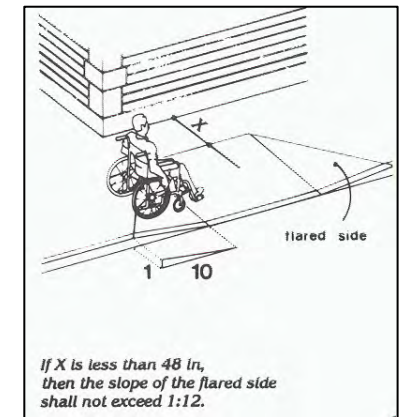
The goal is to encourage the use of walkways as an alternative means of circulation. Pedestrian walkways should be designed and located to provide a comfortable, enjoyable experience for the user. The use of walkways within the District promotes development sustainability by conserving energy, reducing air pollution, and decreasing the land requirement for parking. Walkways provide a means to increase physical fitness as well.

In order to achieve this goal the following objectives must be met:

- Provide walkways that are designed at a pedestrian scale to be comfortable and pleasant.
- Provide safe and secure pedestrian facilities that are separate from vehicular and railroad traffic.
- Provide amenities for pedestrians.
- Provide accessibility to all users, including physically impaired or challenged persons. All street and driveway crossings shall be ramped, marked, and accessible to persons with disabilities in accordance with ADA requirements.
- Provide links to major attractions and generators of pedestrian traffic.
- Provide design consistency throughout the walkway.
- Bike Lanes in each direction.



Alternate Means of Access Other Than Vehicular



Provide Accessible Routes



## 5.0 Circulation Design Standards

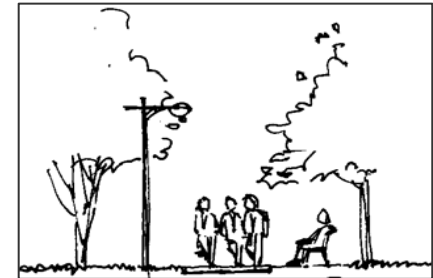
### Walkway Network Hierarchy

Sidewalks are classified to conform to the roadway system hierarchy - Primary, secondary, and tertiary walkways. Non- roadway oriented sidewalks should be sized and placed where people will use them rather than creating worn “shortcut” paths.

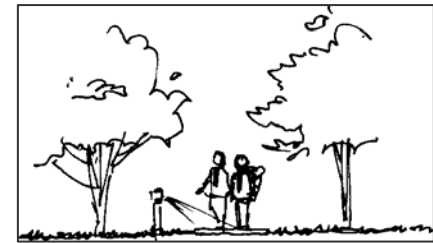
**Primary walkways** should be placed along both sides of primary roadways, wherever possible. These walkways are also used for high volume pedestrian routes to facilities and should be designed along axis lines relating to adjacent building entries, plazas, or streets. They should be paved with concrete or decorative pavers. Primary walkways should be sized to accommodate anticipated pedestrian use. They should have a minimum width of 6 feet and a maximum width of 10 feet in high use areas.

**Secondary walkways** should be provided along one or both sides of secondary and tertiary streets. They are designed to carry moderate volumes of pedestrians between activity centers. They should provide access to building entrances, plaza areas, or streets. They should be paved with concrete. These walkways should be sized to accommodate anticipated pedestrian use, but not less than 6 feet wide.

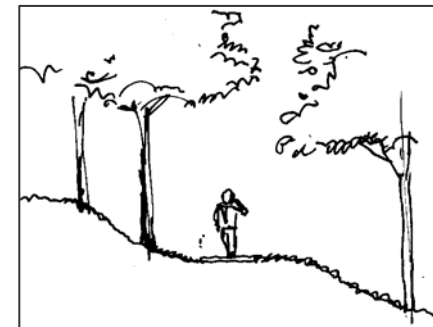
**Tertiary walkways** provide pedestrian walkways in the Natural Resources Area for casual walking and hiking. They can be paved with bituminous asphalt or constructed with gravel or woodchips. The layout of the walkway should have a meandering and curvilinear alignment. Walkways should have a minimum width of 4 feet. Gravel and wood chip trails should have a minimum width of 4 feet. Where paths are designated for use by bicyclists and pedestrians, these widths should be increased to a minimum width of 8 feet.



Primary Walkways



Secondary Walkways



Tertiary Walkways

## 5.0 Circulation Design Standards

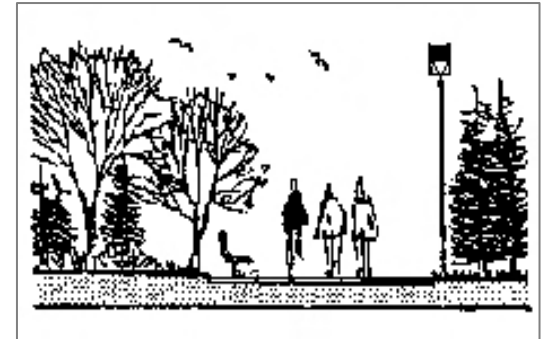
### Site Amenities at Walkways

Utilize site furnishings to reinforce the walkway system hierarchy. Provide directional and informational signage, where appropriate. Locate site furnishings, such as benches, tables, waste receptacles, drinking fountains, and signage in response to travel distance and traffic volume.

Site furnishings should be placed at regular intervals along walkways, parallel to the walk and facing the flow of pedestrian traffic.

### Landscaping at Walkways

Use a combination of canopy and ornamental trees along sidewalks to provide shade, define the path, provide visual interest, and discourage the creation of “shortcuts.” Utilize evergreen buffer plantings to screen harsh winds and undesirable views. Discourage the use of flowering/fruit bearing trees and shrubs along walkways because of threat of insects or other problems.



Place Landscape and Site Furnishings Along Walkways



## 5.0 Circulation Design Standards

### Bikeways

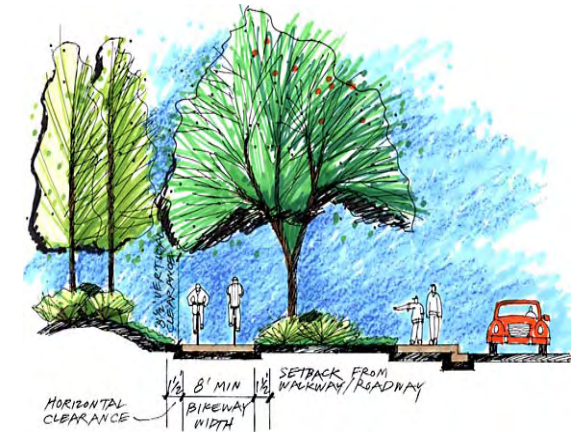
The use of bicycles as alternatives to the automobile has become more acceptable to the general public and a method of reducing the automobile vehicle trips within an workplace environment thus reducing the need for greater carrying capacity of streets and parking areas. Also, cycling is a popular recreation activity that is enhanced by the availability of a safe and well planned system of bike trails.

A bikeway system should provide direct routes between primary traffic and destination within the District. This network should be continuous and minimize conflicts between bikes, pedestrians, and vehicles. Bikeways should be planned and designed according to the classifications that define the level of separation they maintain from roadways and walkways. The ideal solution for the development of bikeways is to physically separate them from both roadways and walkways.

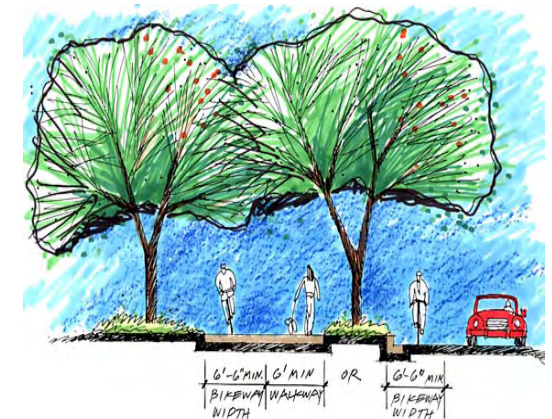
Bikeways are design according to the following classifications:

**Class I Bikeway.** A Class I Bikeway is intended for the exclusive use of bicycles. While it may parallel a roadway, it is physically separated by distance or a vertical barrier. Class I Bikeway considerations include:

- A class I Bikeway provides the safest and most efficient means of bicycle travel and is the preferred option for bikeway development.
- Crossing of a Class I Bikeway by pedestrians, train, or automobile should be minimized.
- If a Class I Bikeway does not closely parallel a roadway, it should be designed to provide appropriate bikeway gradient and curvature.
- Class I Bikeways require the greatest amount of space and advance planning to reserve land and assure appropriate routing.



Class I Bikeway



Class II Bikeway

## 5.0 Circulation Design Standards

**Class II Bikeways.** A Class II Bikeway shares the right-of-way with a roadway or walkway. It is indicated by a bikeway pictograph on the pavement and a continuous stripe on the pavement or separated by a continuous or intermittent curb or other low barrier. Class II Bikeway considerations include:

- Because some separation is provided for bicycle travel, a Class II Bikeway provides some level of safety for the bicyclist and pedestrian.
- While crossing by pedestrians or automobiles are discouraged, they are not as controllable as they are on a Class I Bikeway because the Class II Bikeway is adjacent to the walkway or roadway.
- Because Class II Bikeways are tied to the adjacent roadway or walkway, route selection is important to maintain appropriate bikeway gradient and curvature.
- Class II Bikeways generally require less space than Class I Bikeways because they follow the alignment of and share the right-of-way with a roadway or walkway.
- 

**Class III Bikeways.** A Class III Bikeway shares the right-of-way with a roadway or walkway. It is not indicated by a continuous strip on the pavement or separated by any type of barrier, but it is identified as a bikeway with signs. Class III Bikeway considerations include:

- Because no separated is provided, there is a higher potential for safety conflicts between automobiles and bicycles and between bicycles and pedestrians.
- Class III Bikeways provide continuity within the bikeway network and designate preferred shared routes to minimize potential conflicts. To maintain safety for bicyclist and pedestrians, Class III Bikeways should be developed, if possible, only where automobile and pedestrian traffic is moderate to light.



Class III Bikeway

## 5.0 Circulation Design Standards

- Because Class III Bikeways share the roadway or walkway, route selection is important to maintain appropriate bikeway gradients and curvature.
- Class III Bikeways require the least space because they share the pavement with a roadway or walkway.

### General Guidelines.

Wherever possible, provide a designated right-of-way for bike traffic, separate from vehicular and pedestrian routes.

Locate bikeway crossings away from vehicular intersections with crossings marked on the street pavement.

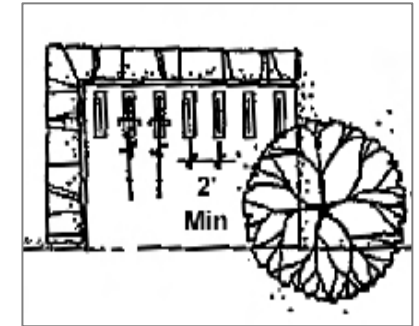
When separate bicycle right-of-ways are not feasible, designate bikeway lanes with paint on the right-hand side of roadways.

Bikeways should never share undesignated space with roadways except at crossings.

Bicycle facilities shall be in conformance with the Guide for the Development of Bicycle Facilities – AASHTO 1999 (or current version)

**Bikeway Furnishings.** Encourage use of the bicycle system by making trails visually attractive and providing pedestrian amenities in appropriate locations. Provide site furnishings such as benches, tables, waste receptacles, drinking fountains, and signage along paths. Location of these amenities should be in response to travel distance and traffic volume.

**Bicycle Storage.** Provide bicycle storage racks in areas that can be visually supervised and in close proximity to building entrances, high activity areas, major workplaces, and recreational facilities, while avoiding conflicts with pedestrian circulation.



Provide Convenient Bicycle Storage

## 5.0 Circulation Design Standards

**Landscaping.** Use a combination of canopy and ornamental trees along bicycle paths for shade, route definition, and visual interest. Provide evergreen buffers to screen harsh winds and undesirable views.

**Crosswalks.** Provide crosswalks at all intersections of roads and walkways/bikeways. When laying out the crosswalk, consider the following:

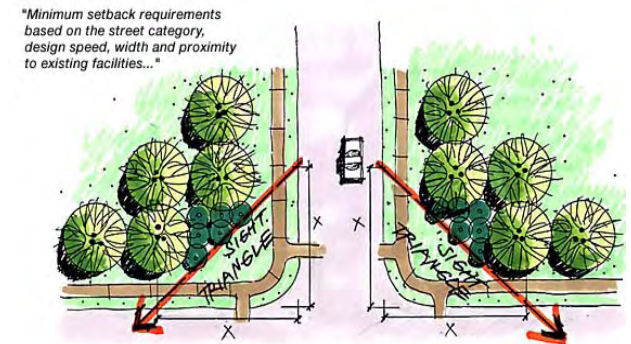
- Extend walk's paving across the road in heavily used areas.
- Provide a clear line of sight for motorist and pedestrians. Do not plant in sight lines. Walkways should meet the road at 90 degree angles.
- Adequate light should be provided.
- Provide barrier-free access at all intersections.

### Walkway and Bikeway Lighting Design

Roadway lights and building exterior lights can serve also as walkway and bikeway lights. Maximum use will be made of multi-purpose lighting systems.

Values are dependent upon whether walkways and bikeways are adjacent to roadways or are isolated from vehicular traffic.

When adjacent to roadways, walkways and bikeways will be illuminated to not less than one-half the maintained illumination required for adjacent roadways. Areas having in grade, such as stairs and ramps, will require special treatment. Crosswalks in the middle of the block will be illuminated to 1.5 to 2 times the normal roadway lighting level.



Adequate Sight Lines Give Pedestrians an Unobstructed View of Crosswalks

## 5.0 Circulation Design Standards

When remote from roadways, walkways and bikeways will have a minimum of 5 lux (.5 footcandle) average illumination measured in lo-foot levels. Pedestrian tunnels will have 40 lux (4.0 footcandles), stairways will have 6 lux (0.6 footcandles), and overpasses will have 3 lux (0.3 footcandles) illumination.

Where pole mounted light illuminate only walkways or bikeways, shorter poles are most suitable, but luminaire height will not be less than 10 feet. Construction will be such as to minimize vandalism by use of break-resistant lenses, tamperproof screws, and sturdy poles.

The federal Manual of Uniform Traffic Control Devices (MUTCD) provides standards signs and markings for bicycle lanes and related bicycle facilities. See the MUTCD, Chapter 9 and any applicable amendments for traffic controls for bicycle facilities standards.

### Circulation System Materials

The Material Schedule table provides guidance for the selection of materials for the District’s circulation system. Exceptions to these options should be avoided and only allowed for temporary facilities that will be replaced within a one year time period.

Vehicular & Pedestrian Circulation System Material Schedule	Concrete	Decorative Pavers	Asphalt	Gravel	Woodchips
<b>Vehicular Circulation</b>					
Primary Streets			X		
Secondary Streets			X		
Tertiary Streets			X		
Parking Lots			X		
Curbs & Gutters	X				
Round-a-bout	X	X			
Motor Court	X	X			
Drop-off Areas	X	X	X		
Service Drives			X		
<b>Pedestrian Circulation</b>					
Primary Walks	X	X			
Secondary Walks	X				
Tertiary Walks			X	X	X
Primary Cross Walks		X			
Secondary Cross Walks			X		
Tertiary Cross Walks			X		
Courtyards		X			
Plazas		X			
Building Entry Plaza		X			
Secondary Building Entry	X				

## 6.0 Landscape Design Standards

### Introduction

The Landscape Design Standards includes the selection, placement and maintenance of plant material within the MSP Redevelopment District. Landscape plantings will provide a simple and cost effective enhancement to the general appearance of the District.

The visual image conveyed by MSP is defined not just by architectural character and site organization, but also by an attractive, organized landscape design. The presence of plant material greatly enhances visual character and environmental.

Plantings add an element of human scale to open spaces and can be used functionally to screen undesirable views, buffer winds, reinforce the hierarchy of the circulation system or provide a visual transition between dissimilar land uses.

### Landscape objectives

The overall objective of the use of plant material within MSP is to improve the physical and psychological well being of the people who visit and work on within the District. This is achieved through the following objectives:

- Preserve and enhance urban trees, forest lands, and detailed planting features such as shrubs and groundcovers.
- Improve the overall visual quality of MSP through the use of native plant material to:
  - Blend built environment with the natural environment.
  - Provide scale and comfort to pedestrian environments.
  - Reinforce the hierarchy of the circulation system.
  - Screen unsightly views or elements.
  - Buffer incompatible land uses.



Use Native Plants to Minimize Maintenance



Provide Comfort to Pedestrian Environment



Landscaping Reinforces Circulation Hierarchy



## 6.0 Landscape Design Standards

- Minimize maintenance through the use of native plant materials, which require less maintenance.

### Principles of landscape development

Landscape design is based on the following principles.

- **Unity.** The selection and placement of plant material can be used to blend, screen, and soften incompatible architectural or other unattractive visual impacts. Plant material as a unifying element can be placed in front of a building or view to frame and enhance the visual impact.
- **Balance.** Plant material can be selected and placed to provide visual equilibrium or balance through the use of either a symmetrical or asymmetrical planting scheme. Symmetrical plantings are generally more formal while asymmetrical plantings are informal.
- **Contrast.** Plant material can be selected and placed to provide differences in size and shape that add interest to the environment. Plants can be located to provide a backdrop for other plants such as a hedge behind a bed of annuals or perennials.
- **Rhythm.** Repetition of a single plant or a mass of plants provides visual interest and formality to the landscape. Rhythm produces emphasis and unity and is especially effective in articulating main circulation routes.
- **Color and Texture.** Plants can be selected and placed to provide visual interest according to their color and texture. Colors are classified as either warm (red, orange, yellow) or cool (violet, blue, green). Texture is classified as either coarse or fine.
- **Simplicity.** Landscape plans should be broad and simple in form to limit excessive maintenance. Plant material should be grouped in beds with simple edges that are easy to mow. Small turf areas should be avoided because of the difficulty of mowing. The use of annuals should be minimal because of the high maintenance requirements.
- **Ultimate Effect.** The landscape plan should be prepared with consideration for the mature size of all plants. The spacing of all material should utilize nursery industrial



Simplicity and rhythm.



Contrasting color and texture can complement building materials.



Perennials are used over annuals and a simple edge is provided for easy mowing.

## 6.0 Landscape Design Standards

standards for mature material to account for spread as well as height. The ultimate height of the material should also be considered in relation to windows and other visual concerns.

- **Spatial Articulation.** Plants can be selected and placed to create enclosed spaces or to separate spaces from one another. They can also be used to direct people by visually defining and reinforcing patterns of movement. The degree of enclosure, separation, or movement is dependent upon the density, form, and type of plants used.

### Landscape design guidelines

Proposed plantings must be reviewed to ensure that site conditions (soil, topography, adjacent uses, and architecture) and climatic criteria (sun, shade, and moisture requirements) are considered in the desired plant design and selection (i.e., form, texture, color, size). The uses and users of the site must also be considered. Landscape planting plans should be approved by qualified personnel to provide quality assurance and promote design consistency within each visual zone.

The following paragraphs present landscaping guidelines for the various locations of plant material use.

- **Foundation Planting.** Foundation planting provides a green background for additional plantings, adds scale and character to the building, helps to integrate the building with its surroundings, screens HVAC and other utilities and helps create a sense of arrival.
  - Focal and seasonal plantings should be located at building entries for pedestrian interest.
  - Use the architecture of the building to evaluate the planting design and selection of plants.
  - Plant materials should not block windows and views from interior spaces.
  - Trees shall be setback from the building walls to provide space for mature growth and to prevent root systems from damaging the foundation.



Rhythm



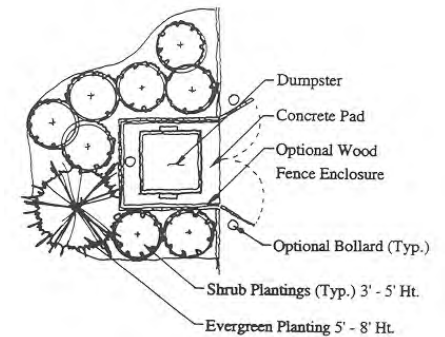
Hedges can add to spatial articulation



Foundation Plantings Help Screen Utilities

## 6.0 Landscape Design Standards

- A symmetrical foundation planting design should be used for a symmetrical building.
- Due to the possibility of insect problems (bee stings, etc.) do not plant flowering plants near entrances.
- Screening.
  - Windscreens. Use a combination of evergreen and deciduous trees to provide windbreak protection from prevailing winds. Windbreak plantings should be irregular in form, rather than straight and evenly spaced, in order to provide more effective wind control.
  - Screening of Dumpsters. Landscape planting should be used to supplement wood fence and masonry wall dumpster enclosures.
- Buffer Planting. Use a mixture of evergreen and deciduous trees and shrubs to visually separate land uses and to help separate visual zones.
- Open Space Planting. Enhance open space areas with planting. Use a mix of evergreen, deciduous, and flowering trees. Plant the same kind of trees in massive groupings to impact the vast open areas.
- Street Trees. Street tree plantings should be used to reinforce vehicular hierarchy, orient and direct traffic, upgrade views and to visually de-emphasize on-street parking. Also, in the design of a street tree planting, separate plant species may be used to identify distinctive details or areas of MSP, for example, a particular land use relationship, historical area, public service campus or other similar entity.
  - Use formal street trees in single rows to visually reinforce primary and secondary roads. Use regularly spaced and uniformly shaped deciduous trees to provide a formal appearance.
  - Use informal groupings of street trees along tertiary routes. Utilize medium size deciduous trees to screen on-street parking along roadways. Set trees 3 feet from the back edge of sidewalks. Spacing should be uniform, except where curb cuts interrupt regular spacing.



Screen Dumpsters



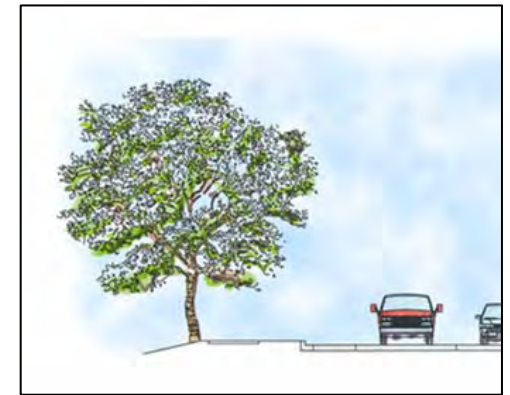
Buffer Adjacent Land Uses



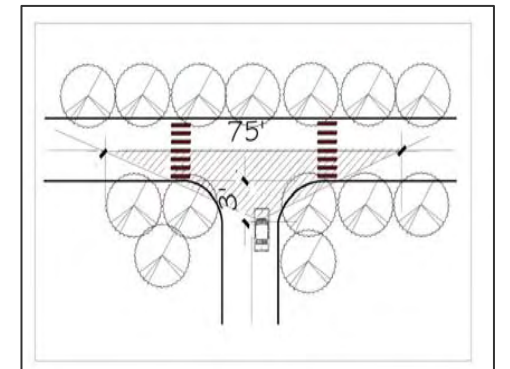
Enhance Open Spaces with Plantings

## 6.0 Landscape Design Standards

- As a general rule, street trees should be deciduous species, resistant to salt and root pressure, and should have a 10' to 12' high clearance between the street pavement and branch height to allow adequate clearance for pedestrian and vehicle traffic to pass unimpeded by lower branches.
- The street tree layout should be coordinated with the layout of proposed street lighting.
- Appropriate plant heights should be used within sight triangles to ensure safe views from intersections.
- Weeping trees should not be used in locations where they may hang over the roadway or block views.
- **Parking Lot Planting.** Parking lots are often the least attractive elements on site. The use of landscape plant material and earth berms can greatly improve the appearance of these areas as well as help define circulation and reduce heat gain during summer months.
  - Use shade tree plantings at parking lots to reduce glare and moderate ambient air temperatures on the lot. Optimum spacing of parking lot shade trees is 35 to 40 feet on center.
  - Choose trees and shrubs that require minimum maintenance and will not litter the parking area with leaves, fruit, or nuts.
  - Consider sight distances near entrances and exits when selecting and placing plant material.
  - Select trees, shrubs, and ground covers that can withstand harsher conditions, such as sun, glare, heat, and reduced water supply.
  - Use a mix of evergreen and deciduous plant material to screen parking areas from adjacent uses.
- **Environmental Control Planting.** When properly placed, plants can provide environmental benefits, as well as address visual concerns.



Street Tree Plantings



Street Trees Reinforce Roadway Hierarchy



Surface Parking

## 6.0 Landscape Design Standards

- Use deciduous trees and shrubs at courtyards, buildings and along streets to provide shade, moderate temperatures and reduce glare during the summer months while allowing solar exposure in the winter.
- Locate deciduous plantings on the southeast and southwest corner of buildings or courtyards to mitigate solar radiation and glare due to heat build-up and lower sun angles in the mid-morning and late afternoon hours.
- Use mixed massings of deciduous shrubs and evergreen trees and shrubs to provide sound control along primary and secondary roads.
- **Image Planting.** The image of the MSP District is formed by the visual impressions that exist within the District. The primary locations of highly visible images are along primary circulation systems, and at areas of high concentrations of people can be improved by the use of trees, shrubs, and ground cover.
- **Entrances to MSP.** The entrances and streetscapes into MSP are areas to place landscaping that will develop a strong visual image and provide visual interest during all four seasons. The entrance to MSP creates the first visual impression for the visitor.
  - The landscape materials and planting areas should be proportional in scale to the hierarchy of the street on which they are located.
- **Xeriscape.** Xeriscape is the conservation of water and energy through creative and adaptive landscape design. Xeriscape landscapes provide attractive solutions that save money, water, and maintenance. An established, properly maintained xeriscape needs about one-third the water of a traditional turf-based landscape. Some xeric plants require almost no supplemental watering once they are established. An established xeriscape also requires less maintenance than a traditional landscape. Following are some principles of Xeriscape planning:
  - **Planning and Design** - A beautiful xeriscape starts with a good design. The physical characteristics of the site should be considered and so should the needs and aesthetic requirements.



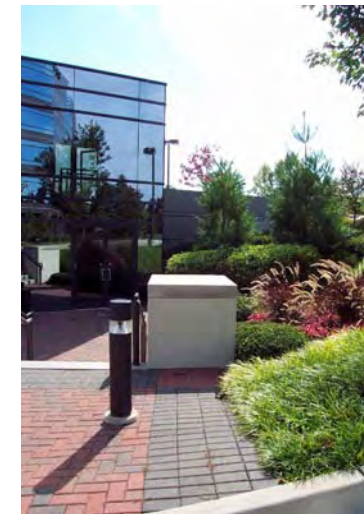
First Impression



Image Planting

## 6.0 Landscape Design Standards

- Soil Improvements - To enable soil to better absorb water, soil amendments may be required before planting. If landscaping with native plants, soil amendments may not be necessary. Some well-adapted xeric plants prefer poorer soils. For these plants, loosening the soil is all the soil preparation required.
- Limited Turf Areas - Drought-tolerant grasses such as buffalo grass and blue grama grass may be substituted for water-demanding bluegrass in many situations. Consider reducing the size of the lawn and planting water-wise groundcovers and shrubs.
- Efficient Irrigation - A well-planned and well-maintained irrigation system can significantly reduce a traditional landscape's water use. For the most efficient use of water, irrigate turf areas separately from other plantings. Other irrigation zones should be designed so low-water-use plants receive only the water they require. Turf lawns are best watered by sprinklers. Trees, shrubs, flowers, and groundcovers can be watered efficiently with low-volume drip emitters, sprayers, and bubblers.
- Mulching - Mulch cover the soil and minimize evaporation, cool the soil, reduce weed growth and slow erosion. Mulch can also provide landscape interest and offer protective cover until plants mature. Organic mulches—including bark chips and wood grindings are commonly used in planting beds. Inorganic mulches, such as gravel and decomposed granite, can be used to add texture and color under trees and around shrubs.
- Proper Maintenance - Although most successful xeriscapes are low maintenance, they are not no maintenance. Keeping your xeriscape beautiful and water thrifty through a program of well-timed mowing, fertilizing, pruning, pest control, and weeding will ensure successful landscape development. To ensure continued water savings, keep irrigation systems



## 6.0 Landscape Design Standards

properly adjusted. A well-planned and maintained xeric landscape requires even less work as it matures.

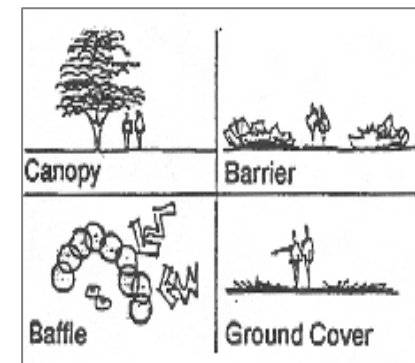
### Plant material selection

Trees, shrubs, ground cover and turf are the major elements of a planting composition. Basic plant selection criteria should consider creating a unified composition utilizing native materials for low maintenance and sustainability, avoiding incompatible colors, textures and forms, and matching the appropriate plant to the land use, situation and environmental condition.

The ability of plant material to provide lasting benefit is dependent upon the plant's hardiness and its appropriateness to the site use. Major factors affecting plant hardiness are soil type, organic content, temperature, moisture and light. These climatic conditions can be modified to an extent by specific site conditions, such as wind protection, solar orientation and planting design, to create microclimates.

Selecting appropriate plants for a given condition is only one aspect of planting design. Compositional arrangement to provide texture variety and to accent site and building features is another. The selection and composition of a planting design requires an understanding of each plant's characteristics, form, and environmental needs as well as how each plant can relate to and complement other plants in the design. Plants are used in four basic design categories:

- Canopy
- Barrier
- Screen (or Baffle)
- Groundcover



Basic Design Categories

## 6.0 Landscape Design Standards

### Plant suitability matrix

The plant suitability matrix is designed to help the designer choose the best plant for each particular set of design requirements. The plants that appear on the matrix categories were selected for their hardiness and their ability to survive in this geographical area. To use them effectively, the design requirements must be well defined for the specific site. A select group of plant materials has been divided into the following three categories:

- trees
- shrubs
- groundcover and vines

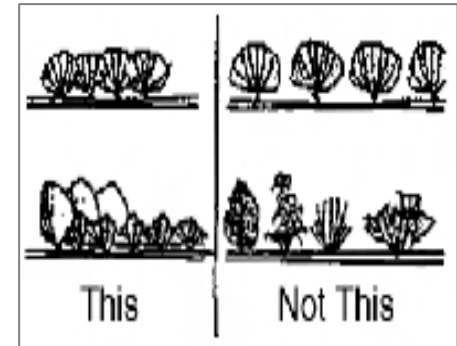
In the matrix, the plants appear by their botanical name, followed by their common name, design characteristics, cultural information, recommended use and miscellaneous notes.

### Plant material installation

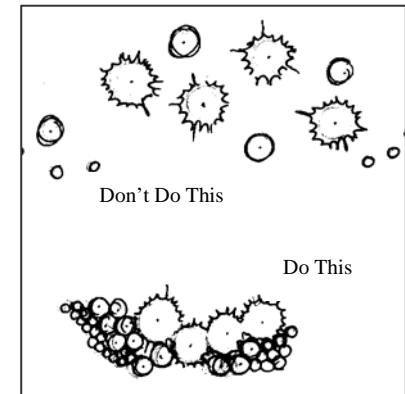
A key step in assuring successful planting is to select plants of the highest quality. Plant material should be of the size, genus, species, and variety to comply with the recommendations and requirements of the "American Standard for Nursery Stock" ANSI Z60.1.

General Guidelines for Plant Installation.

- At planting time, thin plants by removing one-third of the vegetative material.
- Spray all evergreens with an antidesiccant within 24 hours of planting.
- Water all plants thoroughly during the first 24-hour period after planting.
- Site all plants and stakes plumb.
- Space plants according to their mature size.
- Install plant materials in groups for greater impact.
- Installation of Lawn Areas.



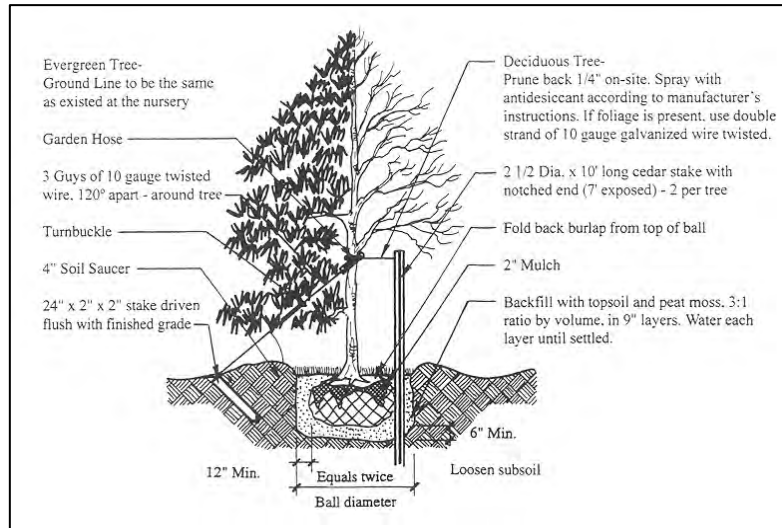
Space Plants According to their Mature Size



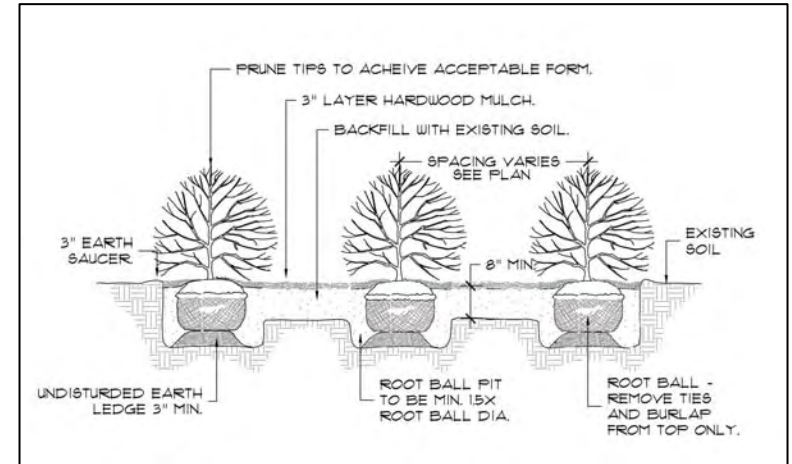
Grouped Plants Have Greater Impact



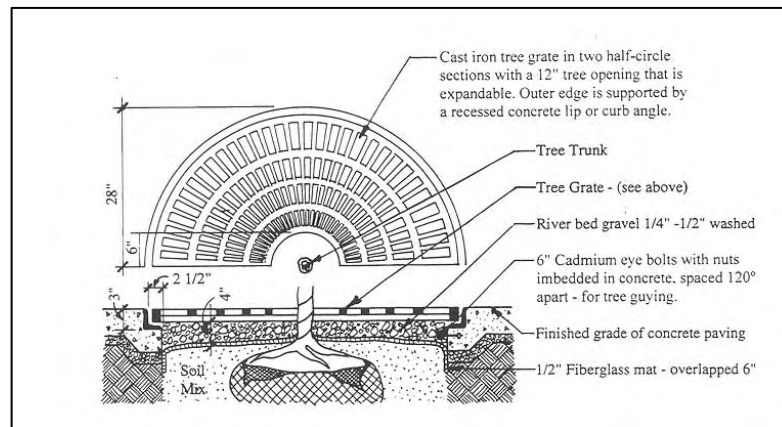
## 6.0 Landscape Design Standards



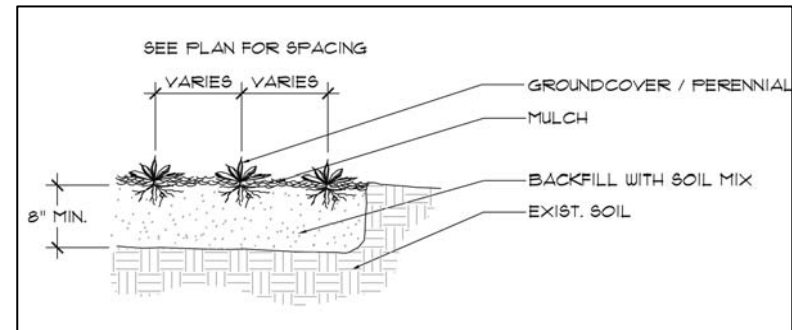
Deciduous and Evergreen Tree Planting Detail



Typical Shrub Planting Detail



Tree Grate Installation



Typical Groundcover Planting Detail

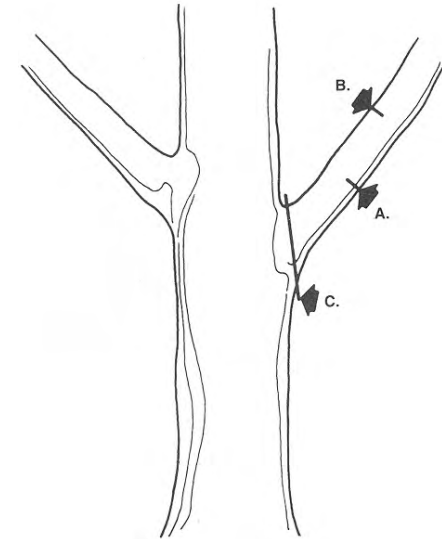
## 6.0 Landscape Design Standards

### Maintenance of plant material

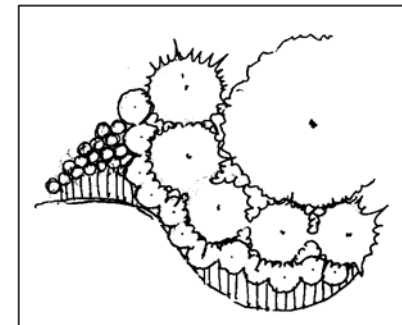
The ease of maintenance should be one of the primary goals when considering the success of any planting design.

**Pruning.** In general plant material should be allowed to conform to its natural shape. This practice allows the plant to mature in a healthy manner, and saves the time and energy required for trimming. The pruning of trees and shrubs is done to maintain overall plant health, direct plant growth, maintain a desired shape, and increase flower or fruit development.

- Pruning Shrubs.
  - Do not prune shrubs flat across the top.
  - Prune branches yearly on thick-branched shrubs and at the base of the shrub.
  - When pruning deciduous shrubs prune shrub stems as close to the ground as possible and shrub branches as close to the stem as possible.
  - When "thinning out" deciduous shrubs prune about one-third of all branches where they meet their main stem.
- Pruning Trees.
  - Remove a large limb by making three cuts as follows:
  - Make the first cut at the bottom of the branch 12-24 inches from the branch attachment (Cut A).
  - Make the second cut on the top of the branch within 1 inch of the undercut (Cut B).
  - Make the final cut just beyond the outer portion of the branch collar (Cut C). The first two cuts were necessary to remove the weight of the branch to allow cut #3 to be clean without ripping the bark.
  - Never cut the central leader of the tree.
  - Coniferous evergreens trees should be pruned, during the spring, by snipping off new growth. Avoid geometrically shaping plant material while pruning.



Proper Tree Pruning Procedures



Group Plants in Mulched Beds to Reduce Maintenance

## 6.0 Landscape Design Standards

### Mulching.

- Use mulch around the base of plant material to provide for greater moisture and help inhibit the growth of weeds and grasses. Mulch should be maintained at a depth of 2 to 4 inches.
- The best time to mulch for water conservation is in the late spring. Apply mulch immediately to new fall plantings.

Ground Cover Maintenance. Although ground covers do not require pruning, they may be periodically dug up in the spring or fall for propagation and to prevent overcrowding in their beds.

### Tree protection and preservation

Existing urban trees and forest should be preserved if they are in good health. Construction should be planned to provide for the preservation of significant trees.

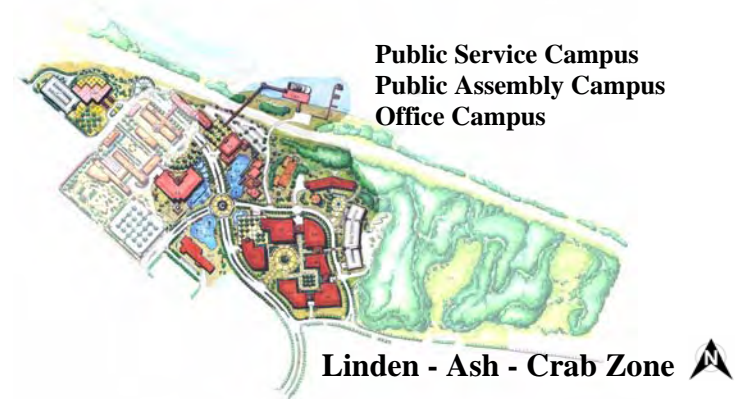
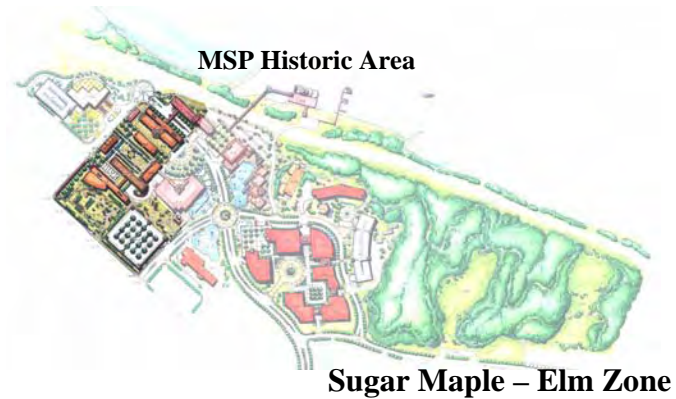
During the clearing and construction process, trees should be protected from damage. Construction barricades should be erected to protect the existing trees to be preserved. The barricades should be placed at the drip line of the tree. Existing trees that cannot be preserved should be considered for transplanting to a different location on site or to a different site.

Changes in the grade of the soil around trees can cause extensive root damage and eventually death of the tree. To prevent damage to the tree, it is important to maintain the existing grade for at least the size of the trees canopy.



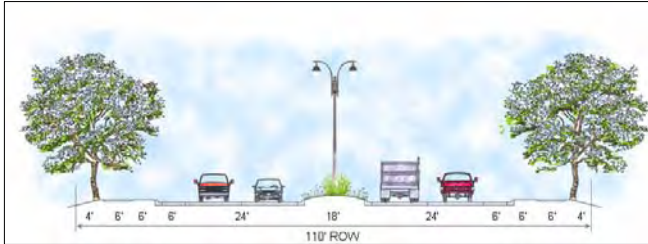
Construct a Barrier at Drip Line During Construction to Maintain Grade

## 6.0 Landscape Design Standards



## 6.0 Landscape Design Standards

### MSP Parkway



- Japanese Zelkova
- Red Maple

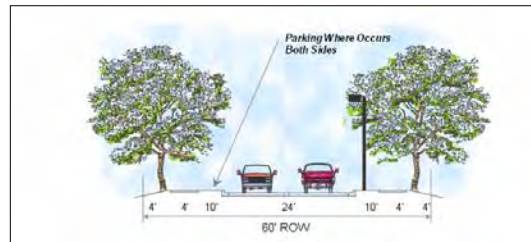


### Lafayette Street and Chestnut Street

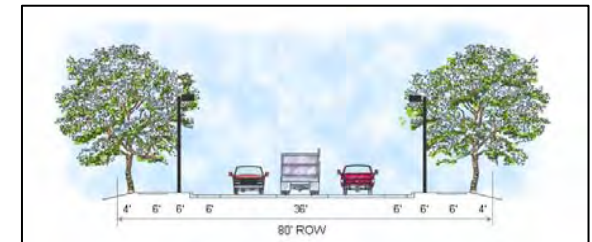


- Ginko
- Red Maple

### Secondary and Tertiary Roads



- Littleleaf Linden
- Red Maple



## 7.0 Site Element Design Standard

### Introduction

Site elements include outdoor furnishings and amenities used throughout the MSP Redevelopment District. All site furnishings should meet the requirements of the Americans with Disabilities Act (ADAAG) and the Uniform Federal Accessible Standards (UFAS). These elements include the following five categories of amenities:

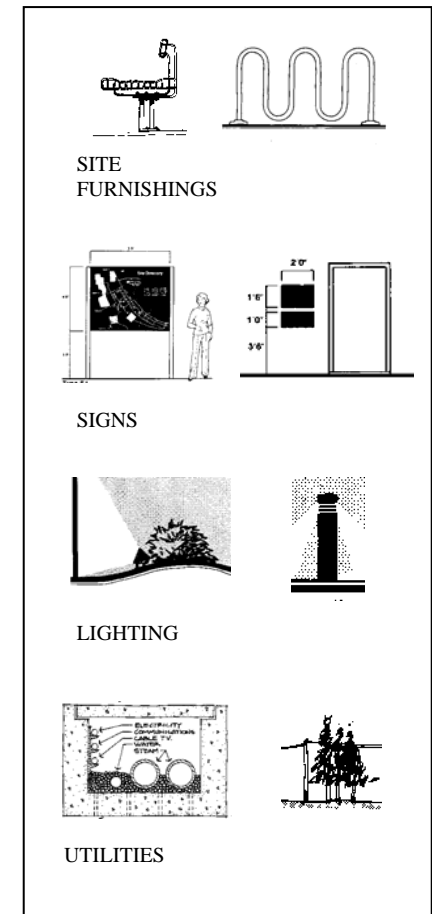
- Site Furnishings
- Signs
- Lighting
- Utilities
- Water Features

The five sub-components help establish the themes within the different visual zones of the MSP Redevelopment District. The specific site elements and amenities should, to the extent possible, reflect the character of the surrounding visual zone. This allows for ease of maintenance and consistency with the surrounding visual zone. The five sub-components and their visual impacts are discussed in detail in this section.

### Site Element Objectives

The site elements have been selected to enhance the visual quality of the MSP Redevelopment District while enhancing its sustainability. To this end, site elements should meet the following objectives:

- Provide site elements that are appropriate to their intended function.
- Establish a coordinated system of site elements that provide consistency and continuity throughout the various visual zones while conveying an overall sense of organization.



Site Elements

## 7.0 Site Element Design Standard

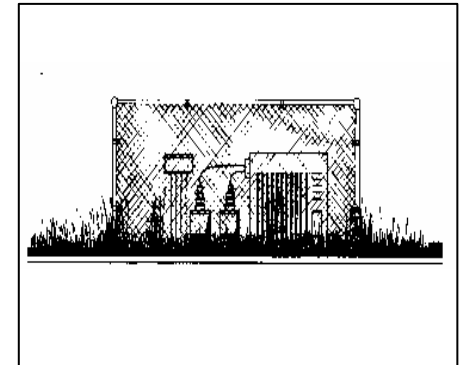
- The design and location of the various site elements should express an image, character, and scale appropriate for its immediate visual zone.
- Use recycled/salvaged materials wherever possible.
- Minimize maintenance and repair through the use of efficient products that are vandal-proof.
- Minimize negative visual and environmental impacts of all utility systems.

### Site Furnishings

Site furnishings include all of the outdoor amenities and furnishings found within the MSP Redevelopment District. These outdoor furnishings should be located in coordinated clusters to provide areas of combined amenities, and avoid the haphazard proliferation of furniture elements around the Redevelopment District. All furnishings shall be accessible to, and usable by, persons with disabilities, in accordance with the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Uniform Federal Accessibility Standards (UFAS), with the most stringent standards to apply in the event of conflicts.

Site furnishings include the following:

- Seating
- Tables
- Shelters
- Kiosks
- Walls and Fences
- Trash Receptacles
- Dumpsters
- Flagpoles



Negative Visual Impact



Outdoor furnishings should be located in coordinated clusters

## 7.0 Site Element Design Standard

- Movable Planters
- Bicycle Racks
- Tree Grates
- Bollards
- Monuments/Memorials
- Drinking Fountains

### Seating

Seating includes benches and walls, as well as tables and movable chairs.

### Benches

Benches should be located in areas of high pedestrian use, and arranged to encourage socialization within a pleasant outdoor setting. This includes pedestrian nodes along primary walkways, at major building entryways, courtyards, and at bus stops. Benches should be sited on concrete pads adjacent to walkways. Provide proper clearance around benches, a minimum 2'0" setback from adjacent sidewalks and a minimum of 5'0" between front of bench and any stationary obstacle. Provide appropriate planting treatment for visual definition and seasonal shade.

### Bench Design

Visual Zone: Natural Resources Area



Outdoor seating area



Standard bench for the Natural Resources Area Visual Zone.



## 7.0 Site Element Design Standard

Visual Zone: Public Service Campus  
Public Assembly Campus  
Office Campus



Public Service Campus Bench



MSP Historic Area Bench

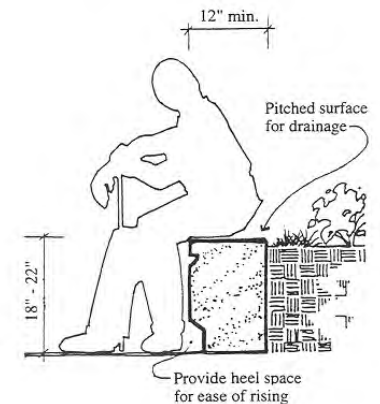
Visual Zone: MSP Historic Area

### Seating Walls

Wherever possible, seating should be incorporated into planter boxes or retaining walls, particularly at building entrance areas. Seating walls should be integrated into the overall area design and the pedestrian circulation system. Seating walls should generally be between 18” and 22” high, and 12” to 18” wide and constructed of textured concrete or brick in a manner to complement or match the materials of the adjacent buildings.

### Tables

Locate tables together with seating that is oriented to the user needs of socializing, relaxing, or eating in less formal spaces with a pleasant setting and attractive view.



Retaining Wall/Seating

## 7.0 Site Element Design Standard

Small groupings of tables in high visibility areas should be placed within proximity of recreation or food service facilities. These groupings should be located on hard pavement areas adjacent to walkways. Pavement should be constructed of exposed aggregate or broom finish concrete. Incorporate tree plantings and overhead trellis structures within these areas to provide shade and spatial definition.

### Table Design

Visual Zone: Natural Resources Area



Natural Resources Area Table

Visual Zone: Public Service Campus  
Public Assembly Campus  
Office Campus



MSP Historic Area Table



Public Service Campus Table

Visual Zone: MSP Historic Area

## 7.0 Site Element Design Standard

### Shelters

Bus shelters should be located at major facilities along the bus routes. Bus stops should relate to major pedestrian walkways, and be placed on concrete pads. Provide a minimum 3'0" clearance between shelters and the edge of walks.

Bus shelters should provide protection from wind, rain and sun with an overhead roof with enclosure on three sides. Side enclosures should be a clear transparent, unbreakable type material to allow for adequate visibility. Bus shelter design typically should be simple and consistent throughout the visual district, matching the existing buildings in terms of materials, scale and detail. Bus shelter design should have similar character as that for kiosks. Bus shelters should have a minimum size of 5' by 8' with a minimum height of 6'-6" from floor to underside of roof. The shelters should include an integral bench, trash receptacle, and ashtray.

### Picnic Shelters

Picnic shelters should be strategically located and sized for shared use to discourage the proliferation of small shelters scattered throughout the Natural Resources Area. Picnic shelters can be open on all sides. The minimum size should be 20 feet square with a minimum 8-foot vertical clearance.

### Kiosks

Kiosks can be used as information centers at pedestrian nodes within the various visual zones. Provide kiosks only where they are needed on a concrete base adjacent to walkways. Allow a minimum of 3' clearance on all sides. Kiosk design should blend compatibly with other site furnishings and with the architectural character of the visual zone in terms of form, scale and materials. A similar design treatment should be established for kiosks and shelters.



Shelter for all Visual Zones

## 7.0 Site Element Design Standard

### Walls and Fences

Walls and fencing should be used to provide visual screening, define pedestrian plaza areas, wind screening, pedestrian and vehicular control, security, and to retain soil. The design of walls and fences should fulfill their function in harmony with the character and appearance of their setting.

### Walls

Low walls should be used to define pedestrian court areas and provide informal seating. Screening walls can be used where appropriate to screen building service areas. Walls adjacent to walkways should be free of any projections, such as signs or drain pipes that would pose a hazard to passing pedestrians. Construction of walls should incorporate either brick to match adjacent buildings, with stone or concrete cap, or concrete with a textured finish and stone or concrete cap. Retaining walls may be constructed of brick, native stone, versa-lock modular stone with a light tan finish, or concrete block with a light tan stucco finish, concrete block planters, or other appropriate material. Walls used to screen service areas or trash enclosures should incorporate landscape plantings to help reduce the negative visual impact of these areas.

### Fences

Fences should be utilized for screening of service areas and site utilities, particularly dumpsters. Screen fencing should consist of square tubular metal posts and rails with vertical wood fence boards. All fence posts should be securely anchored with concrete footings. All metal posts and framework should be painted standard black and wood fencing should be western cedar. Hardware shall be stainless steel to prevent rust. Chain link fences should be screened with trees and shrubs. The use of chain link fence should be held to a minimum. Where Chain link fencing is required, it should be black vinyl coated.



Retaining Wall Constructed of native stone to be used where project budgets allow.



Ornamental fencing with heavy duty posts.

## 7.0 Site Element Design Standard

### Trash Receptacles

Trash containers should be highly visible and accessible for effective litter control. Containers should be located conveniently along walkways, near major pedestrian intersections, near building entrances and near seating and eating areas. Containers should be of a design that is compatible and in harmony with other site furnishings.

### Trash Receptacle Design

Visual Zone: Natural Resources Area



Natural Resources Area Trash Receptacle

## 7.0 Site Element Design Standard

Visual Zone: Public Service Campus  
Public Assembly Campus  
Office Campus



All zones other than the MSP Historic Area.

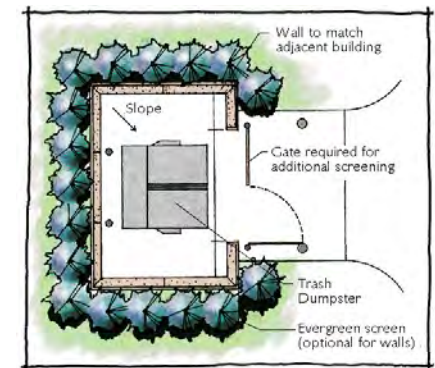


MSP Historic Area Trash Receptacle (black)

Visual Zone: MSP Historic Area

### Dumpsters

The location of dumpsters can have a significant visual impact and should be addressed as part of an overall building design and incorporated in site planning. To the greatest extent possible, incorporate dumpster placement into areas screened with walls, fencing, or plant material. Avoid locating dumpsters near major circulation or use areas. Dumpsters should be directly accessible by way of a paved service drive or parking lot with adequate overhead clearance for collection vehicles. Incorporate plantings to buffer the visual impact of screen walls. Walls or fencing should be a maximum 6' in height. Provide a minimum 3' clearance on each side between screen walls and dumpsters to



Enclose Dumpsters with Walls, Fences, or Plantings and Place on Concrete Pad

## 7.0 Site Element Design Standard

allow adequate pedestrian and truck access. All dumpsters should be placed on concrete pads with aprons large enough to encompass the bearing points of the service vehicle.

### Flagpoles

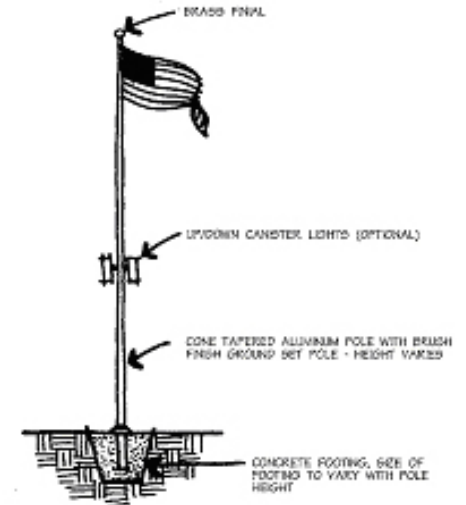
The standard flagpole is a tapered mill finish aluminum, fitted with a gold anodized finish “ball” finial. The mounting detail should be simple with a concrete base flush at grade. A concrete pad should be used when poles are located in lawn areas. In plaza areas, flagpole locations and mounting details should be integrated into the paving pattern. Flagpoles should include lighting and may be accented with planting beds around the base of the flagpole.

### Planters

Movable pre-cast concrete planters may be used outside building entrances to provide seasonal color and interest and function as security threat barriers when needed. Planters should be located so they block uninterrupted vehicular access to a building, but not so they excessively impede pedestrian movement. Several planters of various sizes should be grouped together to produce an aesthetically pleasing display.

### Planter Sizes and Design

Visual Zone: All Zones



Standard Flagpole



Planter shall have similar detail to historic buildings within the MSP Historic Area.

## 7.0 Site Element Design Standard

Visual Zone: Public Service Campus



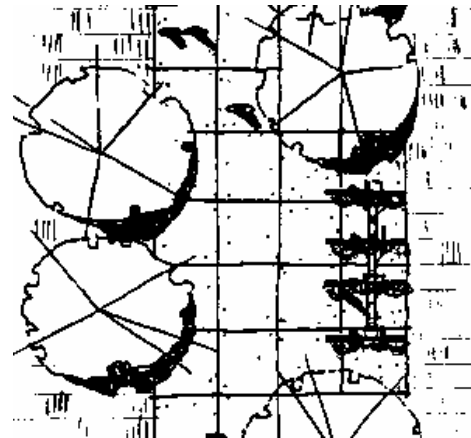
Public Service Campus Planters

### **Bicycle Racks**

Bicycle racks should be provided at key destination locations. They should be located on a concrete surface where they will not impede pedestrian movement or block building entrances.

### **Bicycle Rack Design**

Visual Zone: Public Service Campus  
Public Assembly Campus  
Office Campus



Typical Bicycle Parking Area

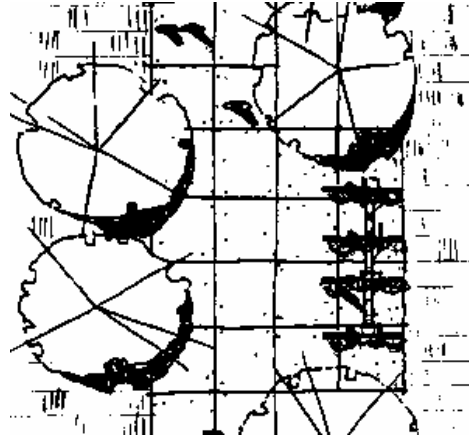


All zones except the Historic Area.  
Color: black



## 7.0 Site Element Design Standard

Visual Zone: MSP Historic Area



Typical Bicycle Parking Area



MSP Historic Area Bicycle Rack

### Tree Grates

Tree grates should be used when installing trees in large paved areas such as pedestrian plazas and walks. Tree grates and planting pits should be a minimum of 5' x 5'.

## 7.0 Site Element Design Standard

### Tree Grates Design

Visual Zone: Natural Resources Area



Natural Resources Tree Grate

Visual Zone: Public Service Campus  
Public Assembly Campus  
Office Campus



Public Service, Public Assembly & Office  
Campus Tree Grate

Visual Zone: MSP Historic Area



MSP Historic Area Tree Grate

## 7.0 Site Element Design Standard

### **Bollards**

Bollards are utilized to separate vehicular and pedestrian traffic, to direct access, or as decorative elements in pedestrian areas.

### **Bollard Design**

Visual Zone: All Areas



Bollards – All Areas

### **Public Art (outdoor)**

The Redevelopment Commission supports the concept of public art within the District. Art form, subject, theme and location are items that will be considered by the Commission as proposed art displays are presented. Criteria that will be used to evaluate public art display include:

- Public Art is different than architectural sculptural at the buildings entry plaza.
- Themes should be founded in the rich historical and cultural aspects of the State, City and District.
- Public art should be strategically located to be viewed from multiple directions, be in scale with the surrounding outdoor space.
- Public art themes should not be commercial or political.
- Public art should be accomplished in good taste that reflects the values of the citizens of Missouri.



Three Angel Musicians by Carl Milles

## 7.0 Site Element Design Standard

### Monuments and Memorials

Monuments and memorials should be carefully designed and placed in prominent locations to serve as visual focal points within the District.

### Drinking Fountains

Outdoor drinking fountains should not be provided, except to support larger gathering areas if convenient to a potable water supply line. All drinking fountains should meet the requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Uniform Federal Accessibility Standards (UFAS) standards.

### Drinking Fountain Design

Visual Zone: All Areas

Visual Zone: MSP Historic Area



The Missouri Veterans Memorial at the Capitol Complex



All Areas Except Historic Area - Drinking Fountain (black)



MSP Historic Area Drinking Fountain

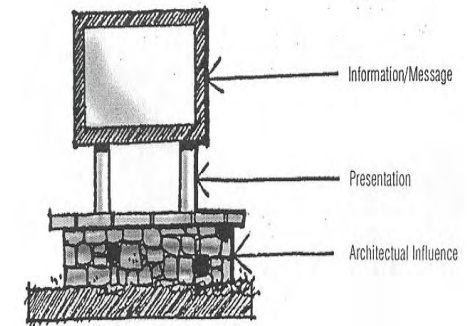
## 7.0 Site Element Design Standard

### Signs

Signs are used to visually communicate information. They are highly visible features that should be attractive and compatible with their surroundings. Careful consideration must be given to what a sign says, how it is said, its visual appearance and organization, its location, structural support system, and relation to other signs within the different MSP Redevelopment District Visual Zones. Standardized signage systems facilitate movement, provide a sense of orientation, and reinforce standards of excellence. Signage creates a unifying element throughout the MSP Redevelopment District that ties the visual zones together and builds a reference and continuity that translates into confidence and reassurance when traveling throughout the District.

There are several basic design characteristics that, by serving to convey necessary information clearly and attractively, are an integral part of any successful signage system. An effective strategy provides only needed information, avoids redundancy and eliminates over-signing with resultant clutter and visual confusion. Sign messages must be clear, simple, and easy for motorist to process quickly.

It is essential that the system be applied uniformly and consistently throughout the entire MSP Redevelopment District. The importance of consistent implementation extends from the larger issues of sign type and size down to accurate color continuity and matching typestyles. Sign location is a very important ingredient within the system. Signs must be located at significant decision points and oriented to provide clear sight lines for the intended user. Close coordination of locations with respect to landscaping, utilities, adjacent signage, and various other street design elements is important to ensure long-term maximum visibility.



Signing Language Helps Establish a Signing System



## 7.0 Site Element Design Standard

Sign typestyle, line spacing, color, and size all combine to create the crucial design characteristics of legibility. This aspect of sign design should take into consideration users such as motorists, pedestrians or bicyclists, and the relative travel speed at which each type of user will be traveling when viewing the signs.

### Vocabulary-Communications

A common language has been created for establishing a signing system. The different components that create the sign package have been named and referred to within the total signing system. The creation of a "signing language" helps generate a unified connection within sign types that make up a signing family.

- The “signing language” must include:
  - Information/Message
  - Presentation
  - Architectural Influence
  - Graphic Architecture

### Visual Hierarchy

The entire signing system must communicate through a range of sign and typestyle sizes the relative importance of the individual activity that the sign identifies. The system should follow a logical progression from a point of origin to the desired destination. A stated method of ranking supports the visual standard of hierarchy within the signing system. Signs can be organized within assigned classes with emphasis on the function and image of the district.



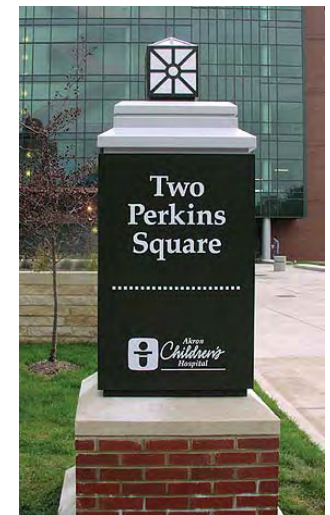
## 7.0 Site Element Design Standard

Within each class, the level of architectural influence evokes the importance of the sign to the MSP Redevelopment District. This is also critical to the idea of progression. The importance of a sign must be presented in its size and level of detail. As individuals move closer to their destination within the MSP Redevelopment District, the scale of the sign becomes progressively smaller and the level of the message more detailed.

### Types of Signs

#### Information / Identification Signs

These are signs that identify entrances to the MSP Redevelopment District, areas within the District, major tenants, buildings and organizational or functional components. They identify a location, and greet the visitor at that location. They should be compatible in scale and character with the architecture and also blend with the natural surroundings.



Identification Sign

## 7.0 Site Element Design Standard

### Building Identification Signs

All address shall be assigned so they are compatible with the United States Postal Services automated delivery point sequencing. Place addresses by the front entrance of the building so they can be seen. Place both the street name and address number on the building if both the building number and street address are visible from the street. Buildings without identification signs shall have the address number and street name centered above the main entrance or located to the right side. Where necessary, building numbers will be located at a building corner, if visible from the main street and on building side facing parking lots. The size of the sign should be appropriate for the scale of the building and mounting height.

### MSP Redevelopment District Identification Signs

MSP Redevelopment District identification signs consist of two types:

- Main entrance sign identifies the principal visitor entrance.
- Secondary entrance sign identifies entry points with relatively high volumes of visitor traffic.



Building Identification Sign



District Identification Sign



## 7.0 Site Element Design Standard

### Wheeled Electrical Signs

Wheeled electrical signs will be prohibited within the MSP Redevelopment District except on a temporary basis. Temporary landscape elements should be used whenever possible in conjunction with these types of signs. No sign of this type will be left in place for longer than six (6) months. After which time, the sign will be removed.

### Directional Signs

These signs guide the motorist or pedestrian in, around, and out of the Redevelopment District. The legibility and placement of these signs, as well as the ordering of information, is critical to their effectiveness. These signs should be placed in central locations and at major decision points along circulation routes.



Directional Signs

## 7.0 Site Element Design Standard

### Street Signs

Street name identification signs should be designed with the same lettering, color and materials as other information signs.

### Regulatory Signs

These signs provide the rules for travel and parking within the various visual zones of the MSP Redevelopment District. They include speed signs, turning and lane use signs, warning signs, parking control signs, etc. Related to these signs are pavement markings and traffic signals.



## 7.0 Site Element Design Standard

### Electronic Exterior Signs

All exterior flashing signs, traveling lights, or signs animated by lights of changing degrees of intensity or color are prohibited.

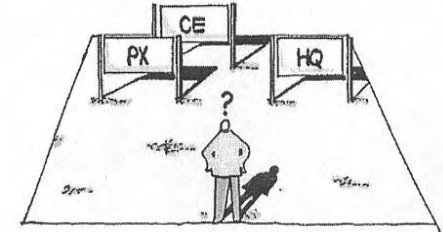
### Sign Placement

Placement of signs differs according to the type of sign and the specific site constraints. The following guidelines apply to placement of the majority of signs.

- Do not place more than one sign at any location. Traffic rules are the exception to this rule.
- Place signs in areas free of visual clutter and landscape materials.
- Place signs in locations that allow enough time for the user to read and react to the message.
- Signs should not be placed to block sight lines at intersections.
- Place signs approximately 1.2 meters (4 feet) above ground level to be within 10 degrees the driver's line of vision. Provide proper placement to avoid a hazard to children.

### Visual Clutter

Over-signing detracts from a uniform sign system and if left uncontrolled will eventually destroy the integrity of the system. Clutter creates confusion and ineffectiveness. Often motorists and pedestrians are confused by the bombardment of messages that have no relationship to each other, or the communication is on such a minimal level that the sign serves no purpose.



Visual Clutter Causes Confusion

## 7.0 Site Element Design Standard

### Location Maps

The location map is an integral element of a comprehensive signage system. The location map display provides information and sense of place to the viewer. The design and construction should be of compatible architectural materials found throughout the district. The location map should contain the following characteristics within the design.

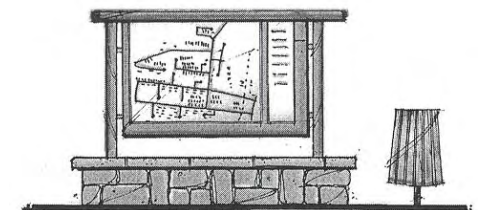
- Plexiglas covered map for protection
- Architectural compatible materials used for the base
- Paved walk-up area
- Litter receptacle
- Provide adjacent parking
- Provide current takeaway maps

### Lighting

Lighting is a functional requirement of the MSP Redevelopment District that also impacts the visual environment. The Redevelopment District's lighting system conveys a sense of order and organization. There are five primary types of lighting utilized within the MSP Redevelopment District. They are:

- Roadway Lighting
- Pedestrian Lighting
- Parking Lot Lighting
- Outdoor Architectural Lighting
- Security Lighting

The primary visual problem that exists with exterior lighting in many larger development areas has been the lack of overall coordination of a lighting system. A lighting system



Location Maps Provide a Sense of Place

## 7.0 Site Element Design Standard

provides the proper type of lighting for different lighting requirements and locations. A system is composed of six primary components – fixtures, light height, type of pole, light spacing, type of lamp, and level of intensity of lamp. All lighting should be located or designed to prevent undesirable spillover of light into other areas. Spotlights in particular should be aimed or screened to prevent glare that could blind motorists or pedestrians or the surrounding neighborhood.

### Light Fixtures

A lighting fixture is the frame or housing for holding the lamp in position and for protecting it from damage. Light fixtures should be selected and located to maintain the minimum foot-candle requirements for safety and security purposes. Beyond that, aesthetic considerations should take precedence. Lighting fixtures are grouped into the five general categories as defined below.

### Cutoff Lighting

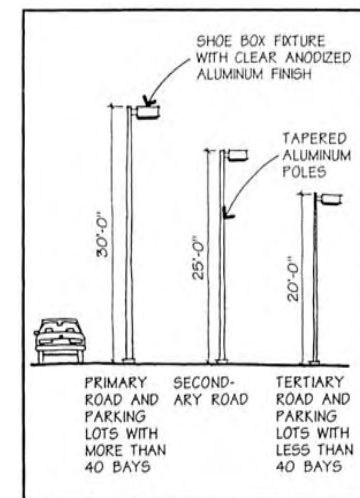
The term cutoff lighting refers to the large fixtures placed on poles and used to illuminate streets and parking lots. Many times, they are designed to cut off light traveling to the top and sides of the fixtures, concentrating it down onto the parking lot. The fixtures reduce the spillover of light where it is not wanted.

### Utility Lighting

Refers to simple, inexpensive fixtures that are used in utilitarian or service areas of low visibility.

### Bollard Lighting

Refers to fixtures that are mounted on or in a short post to illuminate pedestrian areas. They can also be used as physical barriers between pedestrian and vehicular traffic.



Pole Height Determined by Function

## 7.0 Site Element Design Standard

### **Spotlighting**

Refers to high intensity fixtures that concentrate light into a narrow beam and are used to highlight signs and other important objects. Spotlights should be screened by landscaping or other methods so they are inconspicuous during the day.

### **Wall-Mounted Lighting**

Refers to fixtures attached to the wall of a building or a wall bordering a walkway or stairway.

### **Light Fixtures and Poles**

The light fixture size should be proportional to the intended pole height. Light poles should be consistent and provide uniformity throughout the MSP Redevelopment District. The pole height shall be determined by their intended function.

## 7.0 Site Element Design Standard

### Lamp Characteristics

Selection of a lamp involves evaluating its optical control, efficiency, lamp color rendition, lamp life, cost and maintenance. The following is a summary of the characteristics of typical lamp types.

#### Incandescent

- Superior color rendition
- Inexpensive
- Good optical control
- Short life span
- Lowest efficiency

#### High Pressure Sodium

- Poor color rendition
- Broad application
- Low maintenance
- Superior optical control
- Superior life span
- Excellent efficiency
- Expensive

#### Low Pressure Sodium

- Poor color rendition
- Good efficiency
- Superior life span
- Expensive



Pole mounted pedestrian scale

## 7.0 Site Element Design Standard

### Fluorescent

- Good color rendition
- Poor optical control
- Good life span
- Good efficiency in mild climates
- Produces glare

### Metal Halide

- Superior color rendition
- Superior optical control
- Efficiency better than mercury vapor but poorer than pressure sodium.
- Expensive

### Mercury Vapor

- Good color rendition
- Good foliage lighting
- Good life span
- Good efficiency
- Inexpensive



MSP Parkway Lighting



## 7.0 Site Element Design Standard

### Light Design Matrices

	TYPICAL AREAS OF USE											
	Entrances	Primary Roadways	Secondary Roadways	Tertiary Roadways	Primary Walkways/Bikeways	Secondary Walkways/Bikeways	Courtyards	Buildings	Landscaping	Signs & Monuments	Large Parking Lots	Small Parking Lots
LAMP	Incandescent											
Halogen	•	•					•					
Mercury Vapor		•	•	•	•	•		•				
Florescent												
Metal Halide		•	•	•	•	•	•	•	•			
High Pressure Sodium	•	•								•	•	

LEVEL		20	15	10	10	2	50					
Lux (lx)												
Footcandles (fc)		2	1.4	0.9	0.9	0.25					1	1

HEIGHT												
40' Max		•					•	•	•		•	
25' Max		•			•	•		•	•			•
15' Max			•	•								
Varies		•							•			

	TYPICAL AREAS OF USE											
	Entrances	Primary Roadways	Secondary Roadways	Tertiary Roadways	Primary Walkways/Bikeways	Secondary Walkways/Bikeways	Courtyards	Buildings	Landscaping	Signs & Monuments	Large Parking Lots	Small Parking Lots
FIXTURE	Cutoff		•	•	•						•	•
Utility	•											
Bollard												
Spot								•		•		
Wall Mount												

SPACED												
120' Max		•	•	•							•	
90' Max												•
Varies								•		•		

## 7.0 Site Element Design Standard

### Utilities

Utility systems provide the basic infrastructure of power, communication, water, and sewer services necessary for the operation of the MSP Redevelopment District. Utilities play a key role in determining the visual quality of the entire Redevelopment District. Their primary impact on the visual quality is the result of the clutter of overhead utility lines and poorly designed storm drainage systems.

The visual and environmental impact of utilities should be minimized whenever possible. Also, the systems should be designed to minimize maintenance and repair. The result is a more sustainable utility system that will promote the entire MSP Redevelopment District. The primary components of the utility system and recommendations for their location and design are included below.

### Overhead Transmission Lines

Unightly overhead utilities should be relocated underground wherever possible to reduce negative visual impacts, and reduce maintenance and repair requirements. When underground locations are not possible, the negative visual impacts should be minimized by using the following design techniques:

### Overhead Transmission Lines Location

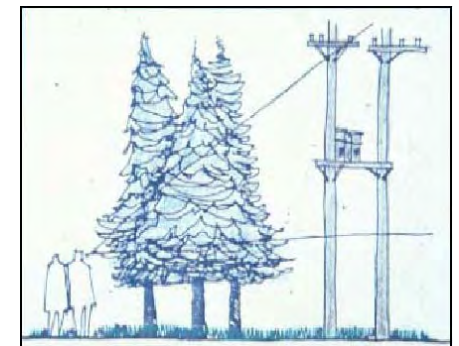
Overhead transmission lines should be aligned along edges of differing land use areas to avoid dividing an area and creating gaps or unusable areas. They should conform to natural landforms that can be utilized to screen them from public view. Hills should be crossed obliquely rather than at right angles. Alignments along hillcrests or steep grades should be avoided.

### View Screening

Minimize long views or silhouette views of overhead transmission lines from along roads and other public viewing areas. Avoid the “tunnel effect” of long, straight, uninterrupted



Soften Impact of Overhead Lines



Screen Utilities to Reduce Negative Impact

## 7.0 Site Element Design Standard

views along the alignment by clearing vegetation only within the right-of-way that threatens the overhead lines. Jog the alignment at road crossings and periodically undulate and feature plant materials along the edges of the right-of-way.

### **Distribution Lines**

Power distribution lines should also be located underground to minimize negative visual impact, and reduce maintenance. If overhead, they should be located out of view from main public visibility areas or screened to be as unobtrusive as possible. Avoid alignments of overhead lines along major circulation corridors. Use minor streets, alleyways, rear lot lines, and vegetation or topography that provide screening and minimize visual impact. Minimize the number of poles and pole height, and use poles that blend into their surroundings to reduce visual impact. Poles should also be multi-functional for power, telephone, cable television, street lighting, etc., to reduce visual clutter.

### **Substations and Transformers**

Substations and transformers should be designed and located to minimize their visual impact and be compatible with the character of their setting. Substations are best located in industrial use areas rather than in major public circulation areas. They should be screened from public view by using plant material, berms, and walls.

### **Water**

A water storage tank that has visual strength in its form can be used as a focal point or identifying landmark that can provide a sense of orientation within the MSP Redevelopment District. Fire hydrants should be highly visible and free of any screening. They shall be per City Standard.

## 7.0 Site Element Design Standard

### Storm Drainage

Storm drainage systems should be appropriate to the character of development they serve. Storm drainage systems in densely developed areas require curbs, gutters, and underground lines. Storm drainage systems in natural areas can utilize drainage swales and ditches that are contoured to be compatible with the natural landform. Where retention ponds are required, they should be designed to appear as a natural amenity that is part of the natural contour of the land, rather than a square or rectangular hole in the ground. Retention ponds that are designed to be dry most of the time can be utilized for recreational purposes or as open space. In either case, the areas should be designed to conform to the natural contours of the land. Large hard surfaced parking lots should have covered drainage at the entry to prevent water draining into adjacent streets.

### Water Features

The use of water in various forms is encouraged in the MSP Redevelopment District. Water features within the District are envisioned to include the following:

- Ponds
- Lakes
- Streams
- Channels
- Waterfalls
- Fountains

### Ponds and Lakes

Ponds and lakes should be designed with a variety of edge conditions including native rocks, and stones, formal paved edges, and naturalized plantings. The design of water features should include informal, naturalistic curves and bends to reveal a series of



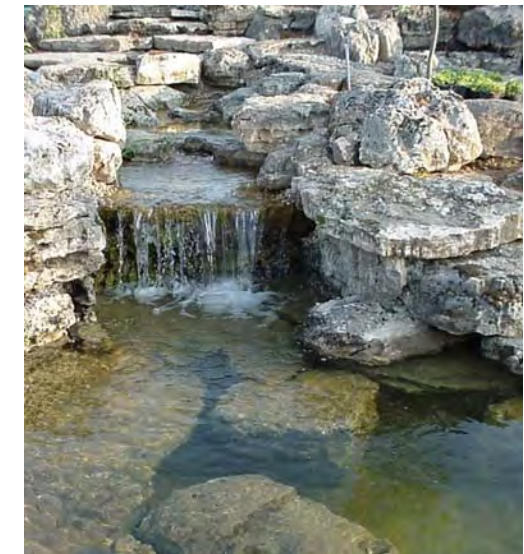
## 7.0 Site Element Design Standard

interesting views. Promote human interaction with water by using naturalized edge conditions which also serve as gentle barriers to safely control users. Utilize pollution prevention and treatment/recycling to make water features attractive, healthy and safe.



### Streams, Channels and Waterfalls

Streams and channels should also be designed with a variety of edge conditions including native rocks, and stones, formal paved edges, and naturalized plantings. The design of streams and channels should reflect the flow and movement of a naturally occurring



## 7.0 Site Element Design Standard

waterway. Create a series of events along the waterway which encourage people to explore and enjoy the water feature. Utilize landscape plantings to also create a series of outdoor spaces which reflect the scale character, and use of the surrounding area. Utilize the audible and cooling properties of water by locating seating and viewing opportunities near these events.

### Fountains

Fountains provide attractive focal points in the outdoor environment. They should be interesting, engaging, and unique. Fountains should also be encouraged in landscaped and hardscaped courtyards and plazas. In order to provide the least restrictions on creativity, the minimal standards should be followed:

- Fountains should be supplemented with street furniture including benches, trash receptacles, and seat /planter walls.
- Fountain edges should include lips or rims tall enough to limit unsupervised access by small children.
- Fountain edges should permit informal seating.
- Adequate width and depth to limit over spray and splash should be provided.
- Utilize wind sensors to control wind blown overspray.



## 7.0 Site Elements Design Standard

### The Wall

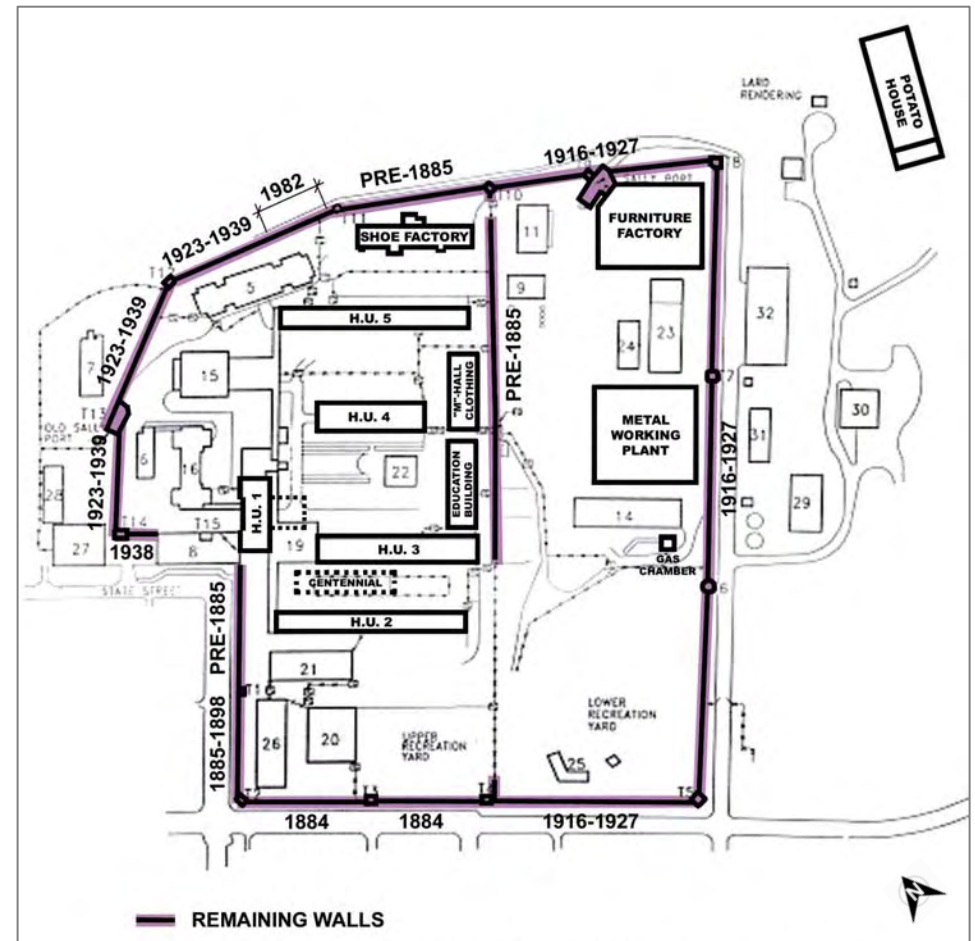
#### Introduction

Since the beginning of its existence, the MSP site has had one predominant public identity, the wall. It is still the public’s first impression of MSP. Over the years it has captivated the imaginations of thousands of passer-byes, neighbors, visitors, curiosity seekers, prisoners and on and on. The wall has and continues to play an enormous role in formulating opinions, feelings and memories as well as creating spatial definition along its perimeter. It is these characteristics that make the wall a desirable element to incorporate into the future redevelopment of the District.

#### General Information

The Wall was constructed over a period of time ranging from Pre-1885 to the 1980’s and contains a variety of construction dates, materials and existing conditions. The earliest date is unknown at this time although a stone wall was contracted for construction as early as 1834. The stone walls have been modified over time as the prison was enlarged and security improved. Some stones have early markings by prisoners, quarrying and earlier uses. The MSP Framework Plan incorporates a significant portion of the existing stone wall with minor modifications.

The illustration below identifies the wall location relative to the Framework Plan and the location of the various wall features.



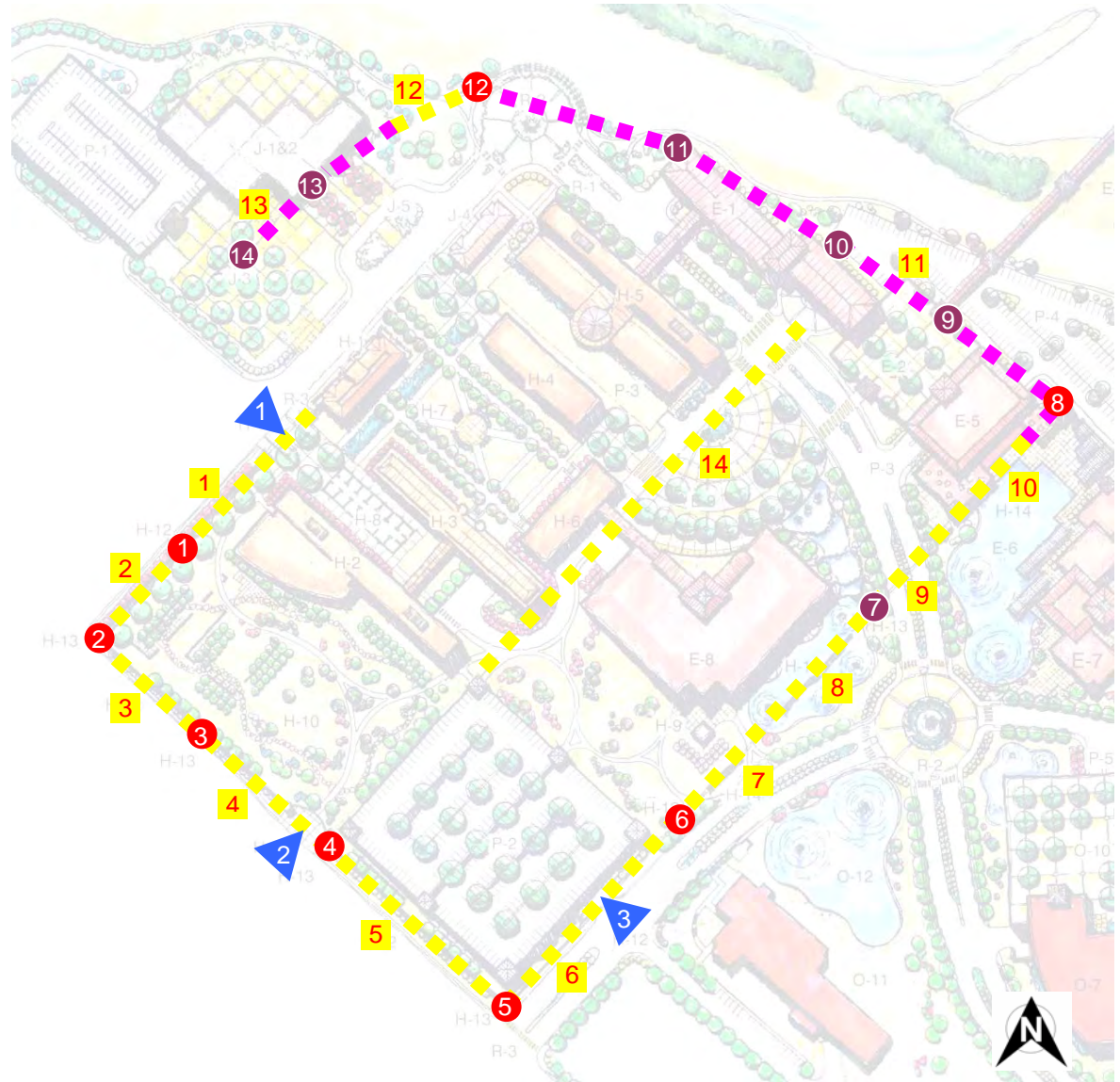
Approximate Dates of Wall Construction

## 7.0 Site Elements Design Standard

### The Wall Plan

**Legend Items – See Descriptions**

- Wall Openings ▲ 1
- Wall Treatment 1
- Guard Tower to Remain 1
- Guard Tower Removed 7
- Wall to Remain
- Wall Removed





## 7.0 Site Elements Design Standard

### Wall Openings ▲ 1

The MSP Framework Plan identifies 3 separate openings in the existing wall. These wall openings should be clearly defined as different from restored wall sections or wall repairs.

The openings include:

1. Pedestrian access through the wall via a “wagon gate” opening.
2. Pedestrian access through the wall via a “wagon gate” opening, located west of Tower 4.
3. Vehicular access through the wall. The wall opening should be defined with an architectural feature such as a “guard tower” entry portal to define the wall edges.



Wagon Gate



Wall Opening 1



Wall Opening 2

## 7.0 Site Elements Design Standard



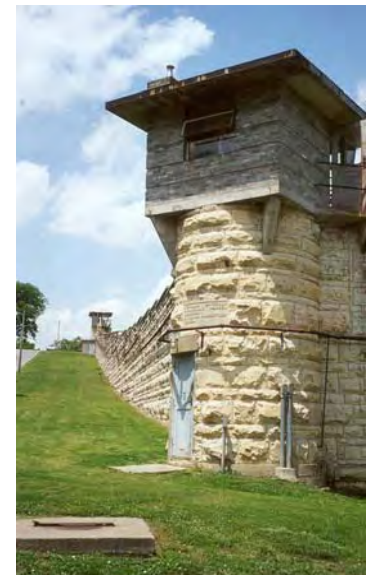
Existing Turret at Tower 2



Tower 4



Tower 5 Then



Tower 5 Now



Tower 8



Tower 10



Towers 10, 11 and 12

## 7.0 Site Elements Design Standard

### Guard Tower Treatments (continued)

1 7

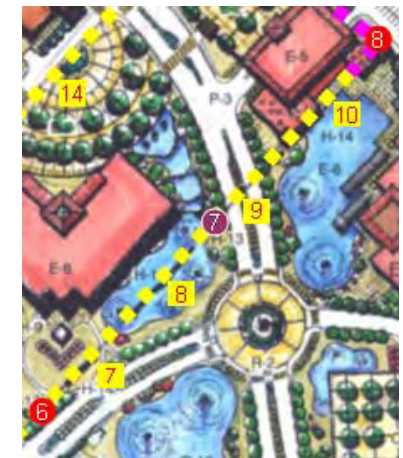
7. Tower to be removed. The Tower location will be marked with stone surface treatment and interpretative signage.
8. Tower to be reconstructed. The stone Tower will be square in shape with wing walls and a castle turret constructed of stone.
9. Sally port/train gate to be removed. Location to be marked as a stone ground plane marker and interpretative signage.
10. Tower to be removed. (TBR and replaced with a ground plane stone tower footprint and interpretative signage).
11. Tower to be removed. (TBR and replaced with a ground plane stone tower footprint and interpretative signage).
12. Tower to be reconstructed as a stone square tower similar to its existing form retrofitted with “castle” type turret and wing walls.
13. Old Sally Port to be removed.
14. Tower to be removed. Tower location in plaza marked with stone surface treatment and interpretative signage.



Tower 8



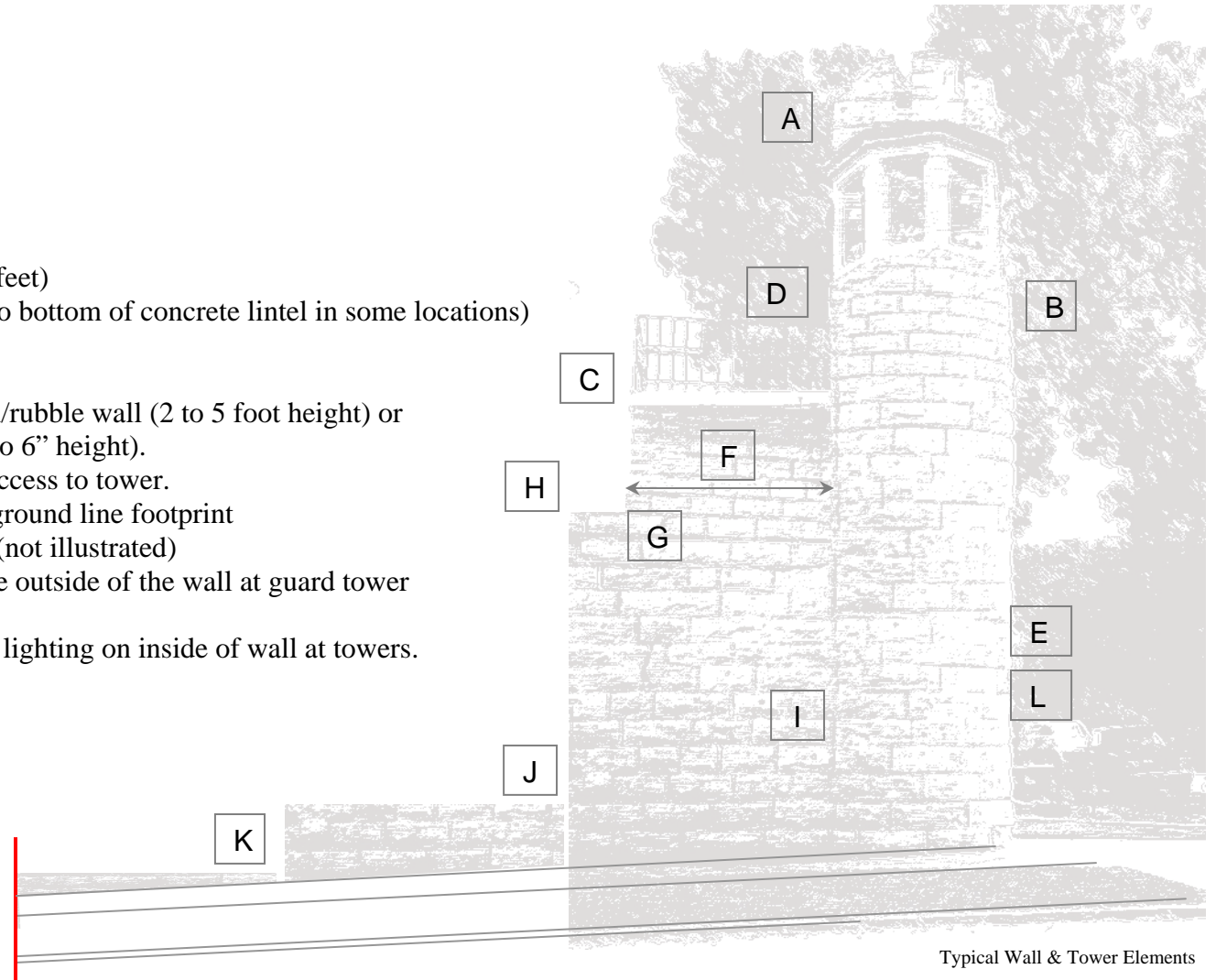
Tower 10



## 7.0 Site Elements Design Standard

### Typical Tower & Wall Elements

- A. Castle Turret Motif
- B. Stone material
- C. Observation Platform
- D. Wrought Iron guardrail
- E. Square or Round Shape
- F. Wing wall (approximately 5 feet)
- G. Step-down from wing wall (to bottom of concrete lintel in some locations)
- H. Top of wall
- I. Level wall courses
- J. Remnant wall/landscape wall/rubble wall (2 to 5 foot height) or
- K. Ground plane design line (0 to 6" height).
- L. Remove ground plane door access to tower.
- M. Use original tower to create ground line footprint for towers that are removed (not illustrated)
- N. Provide accent lighting on the outside of the wall at guard tower (not illustrated)
- O. Provide "search" light theme lighting on inside of wall at towers. (not illustrated)



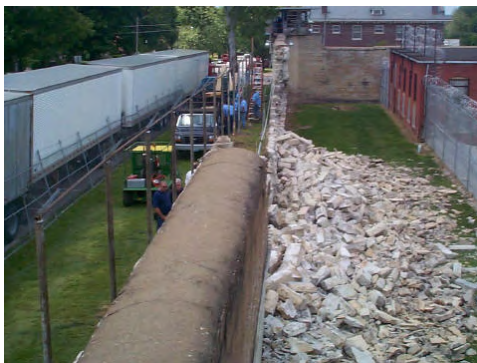
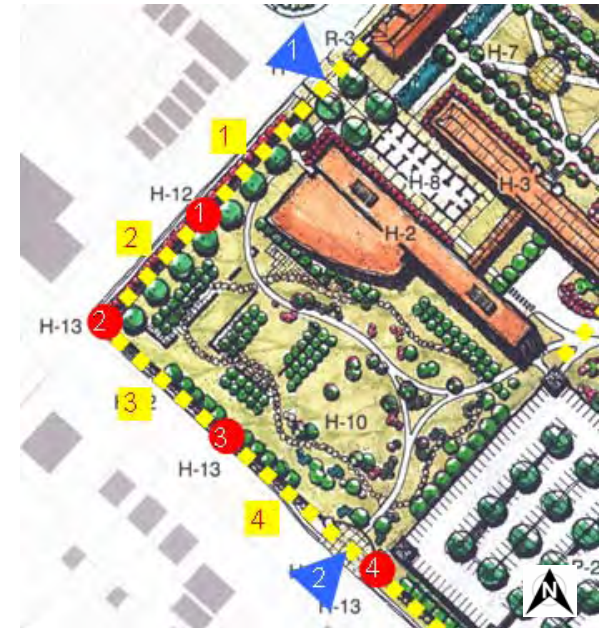
Typical Wall & Tower Elements

## 7.0 Site Elements Design Standard

### Wall Treatments 1

Each section of the existing wall will be incorporated into the redevelopment plan in a specific and unique manner as described below.

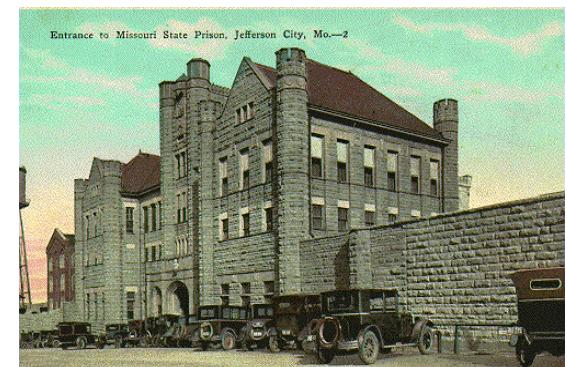
- 1-2 This section of the Wall begins at Housing Unit #1 and progresses in a southerly direction paralleling Lafayette Avenue approximately 288 feet to Tower #1, then southerly again an additional 237 feet to Tower #2. This section of the wall will remain in place at its current height. After removal of the Administration Building, the wall will be rebuilt extending to Housing Unit #1 and a wagon gate pedestrian entry will be established approximately 70 feet south of HU#1.
  
3. Continuing from Tower 2 the Wall runs easterly, paralleling E. Capitol Avenue, approximately 254 feet to Tower 3. The Wall in this section that has toppled will be rebuilt to match the existing wall's material, color and pattern. The existing and rebuilt wall will be decreased in height to just below the existing concrete lintel of the existing wall. This height reduction will extend between Tower 2 and 3.



View of Toppled Wall



Existing Concrete Lintel



Housing Unit #1

## 7.0 Site Elements Design Standard

4. From Tower 3 the Wall continues easterly an additional 246 feet to Tower 4. A portion of the Wall between Tower 3 and 4 has spalled and may be at risk of toppling. This section of the existing Wall will be rebuilt, matching existing wall material, color and pattern to that of the existing wall. The wall will be reconstructed and decrease in height to just below the existing concrete lintel of the existing wall. A pedestrian wagon gate opening in the wall will be provided immediately west and incorporated into the reconstruction of Tower 4.
5. From Tower 4 the wall extends easterly approximately 411 feet along E. Capitol Avenue to Tower 5 at Chestnut Street. This section of the wall will remain unchanged. The proposed structured parking (P-2) inside the wall will “step-up” the hill between Tower 5 and 4, while striving to keep the top of the structured parking visually concealed behind the stone wall.
6. From Tower 5 the wall turns to the north paralleling Chestnut Street and extends approximately 440 feet to Tower 6. The wall treatment between Tower 5 and 6 consist of creating an opening in the Wall to the lower recreation yard for the purpose of parking access. The wall opening is located approximately 220’ north of Tower 5. In conjunction with the wall opening an entry portal to define the wall edges should be established. The portals should replicate the wall theme and be in scale with the width of the wall opening.



Structured Parking Profile

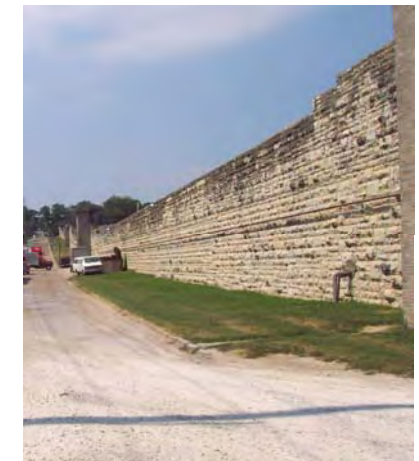
## 7.0 Site Elements Design Standard

7-8. From Tower 6 northward, the wall changes dramatically from its existing condition. The wall from Tower 6 to Tower 7 (to be removed TBR) is approximately 460 feet. This section of the wall (7) begins as a typical wing wall north of Tower 6. The wing wall ends and becomes a “design line” or surface treatment of stone material on the ground plane through walkways or a low field stone remnant wall in open lawn areas. This Wall treatment will follow the original wall alignment extending northward toward Tower 7 (TBR). From the “design line” or field stone remnant wall extending from Tower 6, the wall will change again (8) as the alignment enters a proposed pool of water. The wall height will be just above the water line of the pool so that the direction and bearing of the wall are preserved. This portion of the wall may vary in height to accommodate signage and may appear as a field stone remnant wall similar to the landside wall previously described. The wall material will be salvaged stone. The rubble wall through the water will extend to the site of Tower 7. Tower 7 will be removed and replaced with a tower footprint made of stone; the wall will extend out of the pool and connect to the tower footprint near the proposed MSP Parkway.



9-10. The existing wall between Tower 7 (TBR) and Tower 8 (to be rebuilt) is approximately 450 feet in length extending in a northerly direction from Tower 7. From Tower 7, the wall (9) treatment is a ground plane design line, made of stone as the projected wall alignment crosses the proposed MSP Parkway. Once north of the parkway the Wall (10) treatment will be incorporated into the design concept as a stone ground plane design line or low landscape wall line that terminates in the retail urban plaza near existing Tower 8. Tower 8 will be rebuilt as a square stone tower with wing walls and castle turret. Ground plane design line walls will extend from the rebuilt wing walls preserving the bearing of the existing wall that will be removed.

11. From Tower 8 the existing wall turns to the west and extends approximately 250 feet to the old sally port/train gate. From the old sally port the wall continues in a westerly direction 210 feet to Tower 10 (TBR and replaced with a ground plane tower footprint). From Tower 10 the

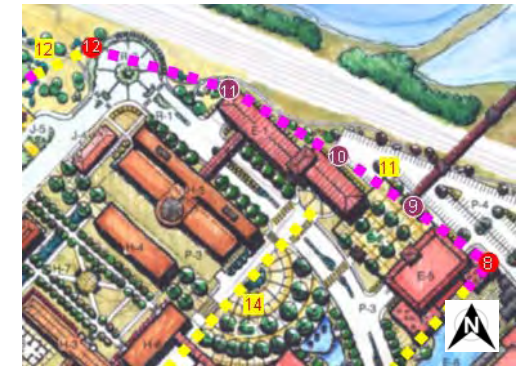


The Wall Along Chestnut Street

## 7.0 Site Elements Design Standard

existing wall continues in a westerly direction for approximately 308 feet to Tower 11 (TBR and replaced with a ground plane tower footprint). From Tower 11 the wall turns west south west and extends 353 feet to Tower 12. The wall treatment from Tower 8 to Tower 12 will include a combination of a stone design line in the ground plane to a low landscape wall for the purpose of maintaining the alignment and historic demarcation of the historic wall. Between Tower 6 and Tower 12, the prison wall as it is today will no longer exist.

12. From Tower 12 the existing wall turns southwest and extends 323 feet to the sally port. From rebuilt Tower 12 the wall will extend east a short distance to the Lafayette Street roundabout as a stone site retaining wall. From Tower 12 the wall will extend approximately 120 feet to the southwest along the original wall alignment, as a stone site retaining wall. The remaining wall to the sally port will be removed.
13. From the sally port the existing wall extends south 210 feet to Tower 14. The wall will be removed in this area.



Towers 10, 11 and 12

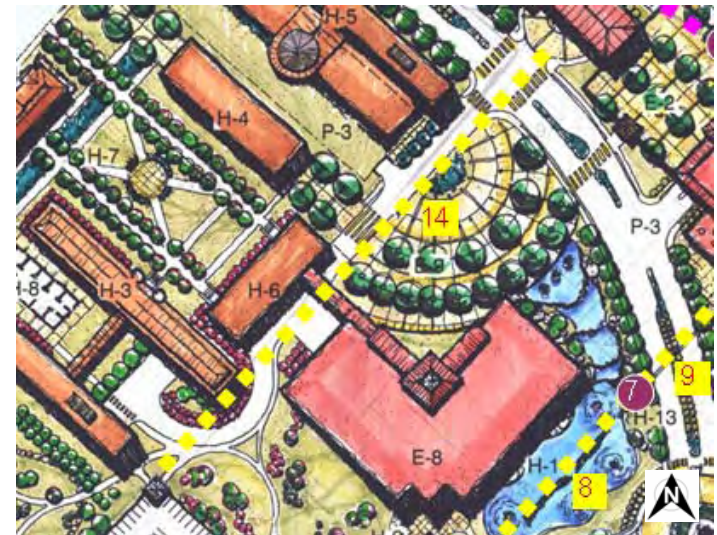


## 7.0 Site Elements Design Standard

14. The Pre-1885 wall extends from Tower 10 in a southerly direction for approximately 805 feet. Immediately adjacent to Tower 10 the wall begins as a tower wing wall, dropping down to a curb height wall for a short distance then ending at the edge of the service road pavement behind the Shoe Factory. The wall reappears south of the access drive as a low field stone remnant wall stepping up in height as the grade change



increases. As the wall traverses south, it becomes a significant retaining wall on the low side and a low field stone remnant wall on the high side of the wall. The Pre-1885 wall disappears into the hillside East of Housing Unit #3. Originally the Pre-1885 wall extended all the way south to Tower 4. The change in land uses proposed in the MSP Framework Plan will eliminate the need for the existing wall to remain in place as a site retaining wall. The plan will require extensive fill material to be placed on the low side of the wall, thus eliminating its existence. The plan calls for the wall to be incorporated into the proposed improvements as a ground plane design line made of wall stone that can be viewed all the way from Tower 4, through the MSP Interpretative Garden, through the Public Assembly Facility plaza, across the MSP Parkway terminating in the entry plaza of the proposed hotel. The proposed wall design line will follow the Pre-1885 wall alignment and will be visible and unbroken as it traverses the site.



## 7.0 Site Elements Design Standard

### General Wall and Tower Improvement Guidelines

- Any new wall openings should be clearly defined as different from the wall with careful and consistent detailing.
- Stone from wall/tower demolition will be salvaged and stored on site for future use by the MSP Commission.
- Tower reconstruction will be accomplished with existing stone to match existing stone Tower (base) material, color and pattern. Existing turrets will be removed and rebuilt with stone “castle” motif.
- Wall reconstruction will be accomplished with existing wall stone to match existing adjacent stone wall material, color and pattern.
- Existing pipes, conduits, utility structures, temporary fencing (when safety hazard are eliminated) or other non-appropriate appurtenances will be removed from, or away from the wall.
- Throughout the entire length of the wall, numerous opportunities will be available for interpretative signage. On the walls that remain, artwork (ie painting of Sonny Liston) or markings will be preserved in place. Artwork deemed significant by the MSP Commission, on walls to be removed, will be salvaged.
- Lighting of the wall will consist of :
  - 1) Tower theme lighting on the interior of the wall, characterized as a search light that shines/focuses on features in proximity to the tower.
  - 2) Interior walls will relay on spillover lighting from walkway, parking and building light sources.
  - 3) Lighting the “public” side of the wall will consist of spill over lighting from surrounding improved street lights. Each Tower will receive focus lighting from fixtures mounted on adjacent street light standards.
  - 4) The three wall openings will be further enhanced with ground mounted accent lighting, bollard lighting and walkway lighting. The two pedestrian and one vehicular wall opening are intended to be the brightest points along the public side of the wall.



Concept Lighting at Wall

## 7.0 Site Elements Design Standard

### The Wall Plan

#### Legend Items – See Descriptions

- Wall Openings ▲ 1
- Wall Treatment ■ 1
- Guard Tower to Remain ● 1
- Guard Tower Removed ● 7
- Wall to Remain ■ ■ ■ ■
- Wall Removed ■ ■ ■ ■

