



TIRZ 15

Public Improvements Guide

April 2021

Llewelyn-Davies Sahni II, LLC in association with EHRA Engineering

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The guidance and ongoing input at every stage of the work effort provided by the board and the project committee was very valuable to the team in forming the Public Improvements Guide.

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INTRODUCTION



This document contains suggested development guidelines for public improvements and is intended to provide urban design and materials to be used as reference for developers/consultants operating or planning to redevelop within TIRZ 15. The intended GOAL of this publication is to convey the quality and resultant ambiance to private developers as well as professionals engaged in planning and design within or adjacent to the public ROW. Professionals with commissions in the area are encouraged to reinforce the existing character as well as design diversity of the area fabric and to echo in the design of new and/or renovated existing structures, when possible.

Guide Objectives

To establish the scope, range and **design criteria** for elements that constitute the streetscape within TIRZ 15.

To encourage and ensure the use of appropriate **materials** that are easy to maintain, durable and of high quality.

The guidelines are intended to be made available to parties interested in real estate redevelopment within the area. The design and development management process is structured to allow for review by TIRZ 15 professional consultants, to make design recommendations to the developer/consultants as necessary for final approval by the TIRZ Board.

Use of the Guide

The Guidelines are to be used by developers and their consultants as well as by the public and private agencies when proposing any new development or renovation of existing structures within TIRZ 15. All proposed public improvements within the right-of-way are to be coordinated with the East Downtown Management District or the East End District staff for approval.

INTRODUCTION

The guidelines are intended to be TIRZ 15 board approved recommendations, but do not supersede any codes or ordinances adopted by the City of Houston, other governmental agencies as well as private utility companies.

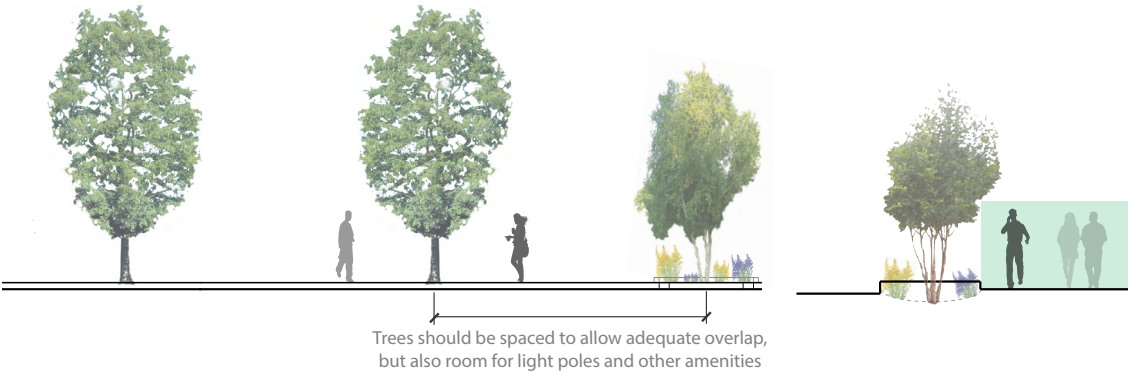
TIRZ 15 Location & Configuration

TIRZ 15 is located east of CBD Houston, and is contained within the boundary of EaDo Management District and the East End District.

TIRZ 15 encompasses approximately 122 city blocks (or 175 acres) located east of IH-69 and north of IH-45. Canal Street forms the northern boundary which runs along the Railroad tracks, forming the eastern boundary.

1.0 LANDSCAPE

1.1 INTRODUCTION



Goals

- To allow for a **sense of arrival** to EaDo or East End.
- To **enhance** the **appearance** of the District.
- To increase/maintain **land values**.
- To set criteria for acceptable plant material suited for **local growing conditions**.

Characteristic Considerations

- A number of characteristics were considered when selecting the trees, shrubs and ground cover.
- Trees should have a wide shade cover, shape the streetscape and be compatible with the streetscape pattern.

The shrubs and ground cover should be aesthetically attractive, non-invasive and commercially available.

Design Recommendations

- Trees used shall be at least 4-6” minimum caliper in size.
- All plant material to be of a healthy stock, grown in a nursery and reasonably free of die-back, disease, insects, eggs, bores and larvae. At the time of planting, all plants shall have a root system, stem and branch form that will not restrict normal growth, stability and health for the expected life of the plant.
- All landscape should have a 2 year maintenance agreement with the landscape contractor.

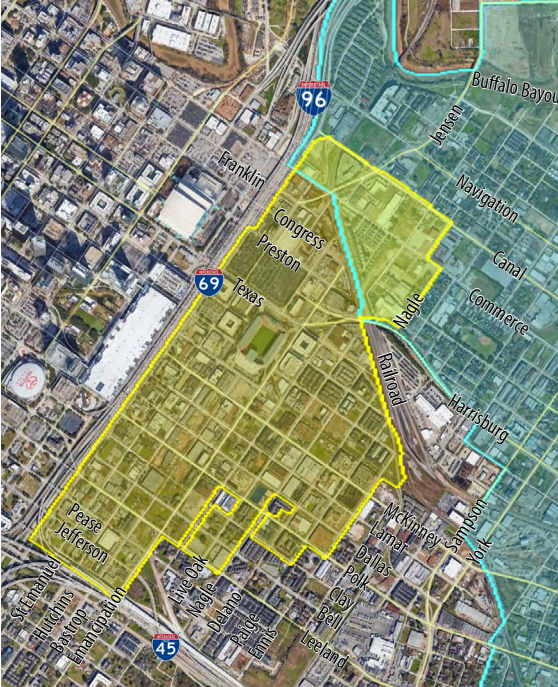
- All plant material to follow the following standards by:
1. ANSI Z60.1 American Standard for Nursery Stock, most current edition.
 2. “Grades and Standards”, latest edition of Texas Association of Nurserymen Specifications, Austin, Texas 78704.
 3. ANSI A 300 – Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current edition and parts.
 4. Pruning practices shall conform to recommendations “Structural Pruning: A Guide For The Green Industry” most current edition; published by Urban Tree Foundation, Visalia, California.

1.2 EAST DOWNTOWN (EADO) MANAGEMENT DISTRICT AND EAST END DISTRICT

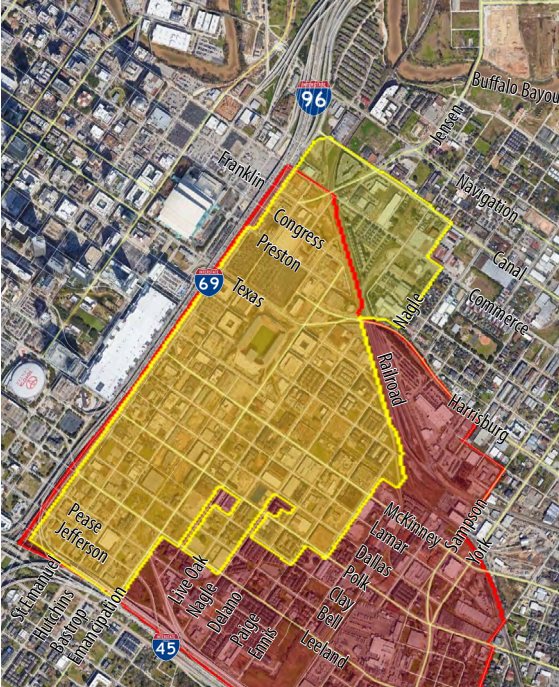
East Downtown Redevelopment Authority/TIRZ 15



East End District



East Downtown (EaDo) Management District



Area Management Districts

TIRZ 15 area falls within two management districts: East Downtown (EaDo) Management District, and the East End District. The area within the TIRZ 15 boundary, north of Commerce Street and Navigation Boulevard and east of the UP Railroad line lies in the East End District, and the area that is within the TIRZ 15 boundary south of Commerce Street and Navigation Boulevard and west of the railroad falls within the EaDo Management District.

It is recommended that the exact location of property to be redeveloped, be verified prior to commencing professional project design effort as TIRZ 15 boundary may change over time.

LEGEND

TIRZ 15

East Downtown (EaDo) Management District

East End District

1.2.1 LANDSCAPE PLANTING

Goals

- To provide **visual richness** and color/contrast, spatial definition and pedestrian scale to the hard urban environment.
- To provide **shade** from the hot summer sun and to **reduce glare**.
- To provide a **windbreak** from cold winter winds.
- To **reduce** air pollution.
- To separate and **buffer pedestrians** from vehicular flow.
- To allow **sunshine** to penetrate to pedestrian areas in winter.

Design Recommendations

- Plant materials are in four general groups:
- A. Street Trees - Large canopy trees suitable for an urban environment.
 - B. Small Trees - Smaller trees typically used for color and richness in pedestrian areas.
 - C. Shrubs - Low level plantings used for richness and visual separation.
 - D. Ground Cover/Annuals/Perennials/Vines - Ground level plantings used in special areas for color and accent.
- A major function of street trees is to help buffer vehicular and pedestrian movement on city streets. Street trees provide a basis for a citywide pedestrian linkage system and to provide a scale to the overall streetscape environment.
- Street trees should be planted directly in-ground and designed for location. Select trees from a palette based on coordination with CenterPoint. Tree grates should be used where appropriate and/or necessary. Tree grates should be pedestrian rated and should comply with all ADA requirements. For more information, refer to the Texas Accessibility Standards. Trees are to be planted in a defined plant bed. Tree roots should be

- encouraged to grow and expand naturally to allow the street tree to attain a maximum mature size.
- Utility lines may be a constraint to planting in-ground in some locations. Early investigation into existing conditions should be made to determine the extent of these constraints.
- In no case should “street trees” be planted in confined, above-grade planters.
- For street trees, if a tree grate is needed, the tree grate size should be 4’-0” wide minimum with expandable centers for future growth and should be integrated into the sidewalk scoring pattern. Methods should be established to discourage the accumulation of trash and debris in tree grate wells.
- Tree guards should be designed to protect trees on parade routes.
- Typical street tree spacing, depending on the species, should be in a minimum of 20’-0” on center. Tree planting patterns are to be balanced on both sides of the street when possible.
- To provide adequate clearance for passing vehicles, 10’-0” clearance should be required under overhanging branches.
- In general, street trees should be planted in a size large enough to make immediate space-forming impact. The planted size should be such that an average person can view underneath the canopy (4”-6” minimum caliper size).
- Small trees should be used selectively. The most appropriate use is for color and accent in passive or semi-active pedestrian spaces. Clustering of small trees should maximize their impact.
- In general, small trees should be planted in-ground to maximize growth potential. Tree grates, if used, should be used in a scaled size with the small tree (4’-0” minimum width).
- Small flowering trees should be planted at a minimum of 2” caliper, 6’-0” to 8’-0” height.
- Shrub plantings should not obstruct the sightline of an average person, parallel to the ground plane. This should encourage a general feeling of spaciousness throughout the project area and should increase the sense of personal security (maximum height 4’-0” above grade).

- Ground covers/annuals/perennials/vines can be effectively used for color and accent in pedestrian and vehicular areas. When located at activity nodes, a concentration of colorful, low-scale planting can reinforce the active nature of the space.
- The range of available plant species identified in this section makes it possible to provide bright color virtually the whole year round.
- In all cases, landscape plantings should be planted in a sufficient amount of an appropriate planting mixture. This planting mix should be permeable enough to prevent an excessive build-up of standing water. In no case should plants be planted in unamended soil.
- The hot climate makes it imperative that appropriate plant materials are selected. In addition, it is desirable to minimize the number of different species used so that both visual consistency and simplified maintenance is achieved. The use of xeriscape planting techniques is encouraged.
- The plant materials list in this section represents a palette of plants for use in TIRZ 15.

1.2.2 STREET TREES



LEGEND

- 1** Acer Rubrum Var. Drummondii (Red Maple) ¹

A single straight trunk tree with an average height of 30 feet tall. Leaves are green in the Spring and red in the Fall.
- 2** Betula Nigra (Heritage River Birch)

A multi-trunked tree with an average height of 20 feet tall. Flowers are green catkins and upright.
- 3** Quercus Shumardii (Shumard Red Oak) ²

A columnar trunk with an average height of 40 feet tall. Upright, oval form when young. Coarse texture and dense foliage. Leaves are green in the Spring and red in the Fall.
- 4** Platanus Mexicana (Mexican Sycamore)

A single straight trunk tree with an average height of 40 feet tall. Upright, oval to pyramidal form with tall trunk. Coarse texture leaves.
- 5** Taxodium Mucronatum (Montezuma Cypress) ³

A single straight conical trunk tree up to 60 feet tall. Leaves bloom in February and March.
- 6** Ulmus Crassifolia (Cedar Elm) ²

A single straight trunk tree up to 40 feet tall. Leaves are green with a rounded canopy. Flowers in late summer to early autumn. Not showy.

Image Hosted on Pixabay and Courtesy of Users: ¹FlorianJung
Images Courtesy of Lady Bird Johnson Wildflower Center and Photographers: ²Sally and Andy Wasowski; ³Peter Loos

1.2.3 SMALL/ORNAMENTAL TREES



LEGEND

- 1** Lagerstroemia Indica (Catawba Crape Myrtle) ¹
A multi-trunked tree up to 15 feet tall. Flowers appear in deep purple clusters.
- 2** Lagerstroemia Indica (Tuscarora Crape Myrtle) ²
A multi-trunked tree up to 16 feet tall. Flowers appear in coral-pink clusters.
- 3** Prunus Mexicana (Mexican Plum) ³
Single trunk tree up to 20' tall. Upright to mounding form, open in density with medium texture. Flowers are white and pink and bloom in the Spring.

- 4** Ilex Vomitoria (Yaupon Holly) ⁴
A multi-trunked tree up to 25 feet tall. Flowers are small and white.
- 5** Cercis Canadensis (Eastern Redbud) ⁵
A multi-trunked tree up to 30 feet tall. Flowers appear in pink and bloom in the Spring.

Image Hosted on Pixabay and Courtesy of Users: ¹Leechentou; ²Sarangib
Images Courtesy of Lady Bird Johnson Wildflower Center and Photographers: ³Joseph A. Marcus; ⁴Annie Paulson Gillespie; ⁵W.D. and Dolphia Bransford

1.2.4 PLANTER SHRUBS



LEGEND

- 1

Diates Bicolor (Fortnight Lily)¹

Delicate iris like, pale yellow flowers with large, vivid maroon colored blotches. Narrow swordlike foliage.
- 2

Muhlenbergia Capillaris (Gulf Coast Muhly)²

Ornamental grass with flowers are pink and bloom from September to November.
- 3

Liriope Gigantea (Giant Liriope)³

Thick tufted clumps of strap-shaped foliage. Flowers are white and bloom in the Summer.
- 4

Rosmarinus Officinalis ‘Prostratus’ (Prostrate Rosemary)⁴

Low spreading at 2’ height with a fine texture leaf. Small light blue to lavender flowers in clusters starting in late spring.
- 5

Hesperaloe Parviflora (Red Yucca)⁵

Thin clumps of radiating leaves originating from a central crown. Shrimp-pink, nodding, flowers on long leaning stalk above the rosette of foliage. Blooms from May to early fall.
- 6

Malvaviscus Drummondii (Turk’s Cap)⁵

Nearly evergreen perennial with heart shaped leaves. Produces small bright red flowers from summer to first frost.

Image Hosted on Wikipedia and Courtesy of User: ¹Fan Wen; ³Elf; ⁴Margalob;
Images Courtesy of Lady Bird Johnson Wildflower Center and Photographers: ²Joe Marcus; ⁵Sally and Andy Wasowski

1.2.5 PLANTER GROUNDCOVER & PERENNIALS



LEGEND

- 1

Trachelospermum asiaticum (Asian Star Jasmine) ¹

Fast growing dense evergreen mat 15" deep groundcover. Medium-fine texture.
- 2

Ophiopogon Japonicus (Mondo Grass) ²

Ornamental grass blooms from June to July.
- 3

Lantana Montevidensis (Trailing Lantana 'Purple') ³

Flowers are purple and blooms in the Spring through the Summer.
- 4

Lantana Montevidensis (Trailing Lantana 'New Gold') ⁴

Flowers are bright golden yellow and blooms in the Spring through the Summer.
- 5

Verbena x hybrida 'Homestead' (Verbena) ⁵

Flowers are lavender/blue that bloom from early Spring through late Fall.
- 6

Cynodon Dactylon (Bermuda Grass) ⁶

Perennial warm-season grass and grows from late Spring through Summer.

Image Hosted on Wikipedia and Courtesy of Users: ¹ Epibase; ² Supportstorm; ³ Forest and Kim Starr; ⁴ Bidgee; Images Courtesy of Lady Bird Johnson Wildflower Center and Photographers: ⁴ Alan Cressler ; ⁵ W.D. and Dolphia Bransford

1.2.6 LOW IMPACT DEVELOPMENT (LID) FEATURES

Left: Silva Cell, Image: DeepRoot.com

Top Right: Curb Extension Planter, Image: Philadelphia Water Department

Bottom Right: Curbside Planter, Image: Chris Hamby



Goals

To provide LID features throughout TIRZ 15 to **supplement the overall capacity** of the storm system as well as **slow run off** rates.

To **filter** out some of the pollutants that travel into the storm sewers.

To encourage **natural infiltration** back into the ground.

To counteract the heat island effect by substituting pavement with **vegetation**.

Design Recommendations

Based on the recent city incentives program to encourage green infrastructure, rain gardens, bioretention systems, permeable pavements and rain water harvesting are encouraged within the right-of-way.

Silva Cells or similar should be used when possible to allow for storm water storage and tree growth. It is highly recommended to use a modular suspended pavement system to support a larger tree growth and allows for the opportunity for on-site stormwater management.

LID planting areas should be placed in the public right of way, adjacent to the street side curb. They should be a minimum of 5' wide. The length should be determined by frequency and interrupting elements such as utilities and driveways.

LID planting areas typically take two similar forms. The first, which is most easily

used when there should already be street construction, is the street side planter box. It comes in two variations, including an option for a parallel parking access walkway. The second version can be used to replace the current, or be an additional curb extension. This type is most common in retrofitting applications. Design Teams are to reference the "Harris County Low Impact Development & Green Infrastructure Design Criteria for Storm Water Management" adopted, April 2011.

Curbside LID Planter/Bioswale

The details of a planting area may vary and should be engineered for the area's needs. The top layer should be designed to allow for a depth of freeboard below the grade of both the street and sidewalk to ensure proper drainage. The top layer may be flat or gently sloped depending on the desired aesthetic, infiltration rate and pollutant reduction requirements. A lower/no slope should help more infiltration and particulate reduction, but may reduce the overall "first-flush" drainage capacity of the planter.

Street inlets spaced appropriately should encourage reasonable flow into the planter. Small sidewalk inlets should also be spaced appropriately to mitigate ponding on walking surfaces.

Certain areas should include an overflow drain, the inlet to which should be located 2 inches above planted grade and tie into the

existing or new storm water pipe. If there is an overflow drain used, special attention and extra maintenance is advised to reduce the amount of silt or dirt that may accumulate in the drainage system. A series or singular check dam(s) may be needed if the planter exceeds 10' in length or the expected street runoff may be a higher than anticipated volume. In general, they may be a tamped clay bump, wood wall or metal wall. For the specific construction of these dams refer to engineered standards.

In instances where on-street parking occurs, a minimum 16" walking surface should abut the planter. Metal grates should bridge the inlets in these locations to ensure a continuous walking surface. These surfaces should be either concrete or equivalent pavers. The retaining structure should be poured concrete and placed with an additional 6" ledge towards the inside of the planter.

Curb Extension LID Planter

Curb extensions should be located before intersections on streets where there is on-street parking available. They can serve as traffic calming elements, that both more tightly frame the intersection and also reduce walking distance for pedestrians. Curb extensions can be added to existing curb conditions or in newly constructed street sections and should be designed as such.

Plants should be selected and approved by LID type and specific project design.

2.0 STREETScape

2.1 INTRODUCTION

Goals

Streetscape or sidewalk elements design to be **in response** to the unique physical and social characteristics of East Downtown Houston (EaDo).

When possible, design elements should reflect the area’s **history**, associating it with the coming growth and change.

All streets, sidewalks and public places should be designed for **universal accessibility**.

Characteristic Considerations

Street experience for visitors should be unique. Sidewalk standards set out in this document should be met or exceeded. Developers are encouraged to propose wider sidewalk widths in response to user needs, such as: pedestrians, service and delivery vehicles, on street parking, drop-off/ pick-up zones and other needed amenities. For efficient traffic movement, lane width for each street should be respected by the developer. Coordinated color scheme, sidewalk texture should respect existing conditions, possibly integrating the “old” into an overall design, where possible.

Design Recommendations

Design of all sidewalks and public places to address both security and safety of pedestrian and other users while minimizing conflicts with vehicular traffic.

To ensure the safety of pedestrians and the visually impaired, in particular, where abrupt changes in level may exist. Surfaces visually experienced by pedestrians and users should be defined by contrasting color, textures and/ or materials.

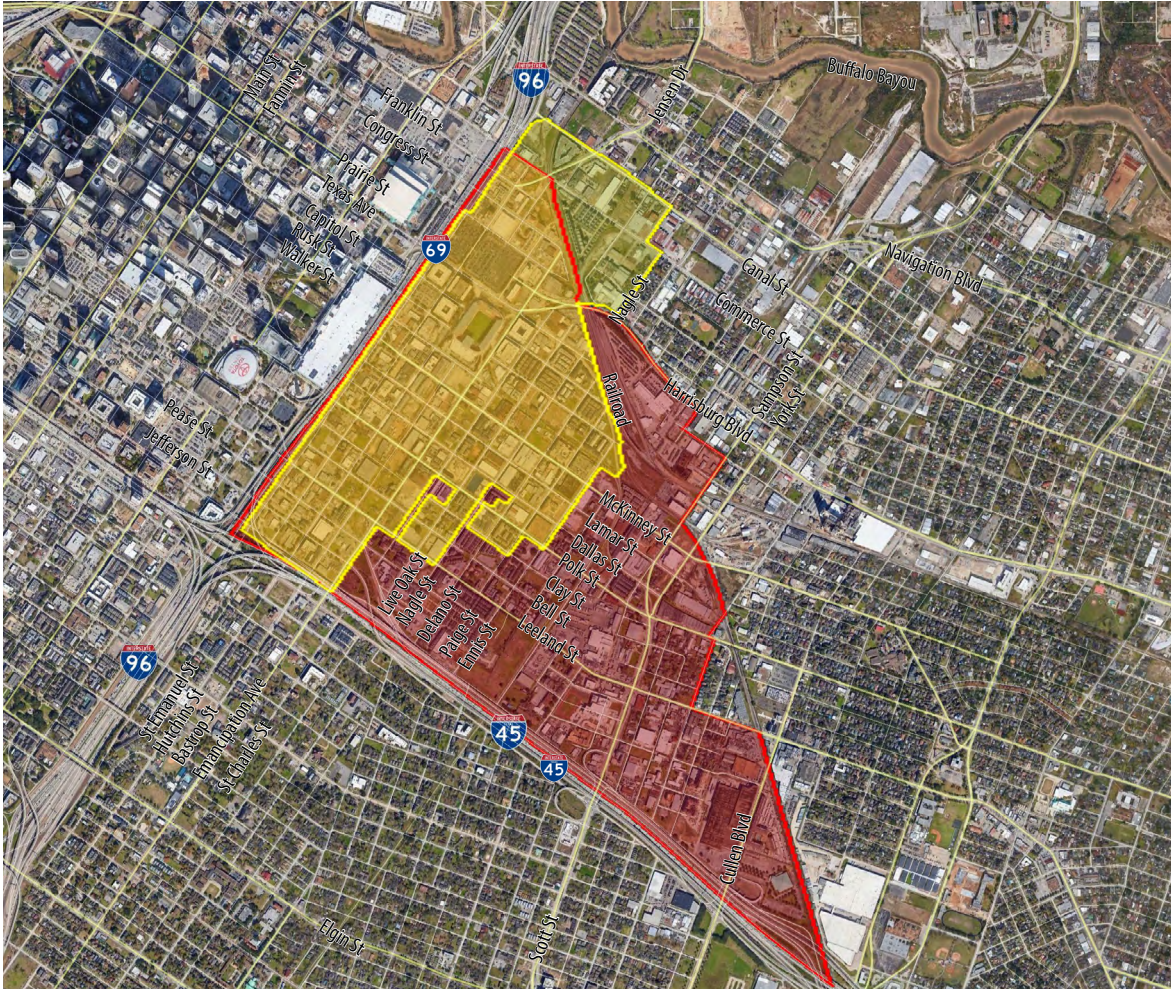
All transit stops, parking bays, servicing areas, drop-off zones and any other street-related conditions should be designed to provide safe vehicular use and minimize conflict with pedestrians.

All street element materials should be resistant to vandalism, fading and bleach.

All elements and components should be designed for low cost maintenance, ease of replacement and repair.

The guidelines are intended to be TIRZ 15 board approved recommendations, but do not supersede any codes or ordinances adopted by the City of Houston, other governmental agencies as well as private utility companies.

2.2 EAST DOWNTOWN (EADO) MANAGEMENT DISTRICT



All improvements within the TIRZ 15 and East Downtown (EaDo) Management District are encouraged to follow the guidelines described in some detail below. Before commencing redevelopment work the developer is encouraged to contact the Management District to ensure that the guidelines to be used are up to date.

- LEGEND
- TIRZ 15
 - East Downtown (EaDo) Management District



Goals

To allow for **safe** movement within the pedestrian environment.

To **preserve**, where appropriate, existing sidewalks which in condition, quality and character are deemed suitable and compliment proposed improvements.

Design Recommendations

All improvements to conform to Texas Accessibility Standards.

Sidewalks should have sufficient pitch for positive drainage toward the street, to convey run-off (1/4" per foot wherever possible).

Sidewalk area at corners should be sufficient to allow for stacking of pedestrians waiting to cross the street.

To minimize conflicts between normal pedestrian flow, transit passenger waiting area as well as shoppers exiting/entering buildings.

Vehicular traffic should have unobstructed views across street corners. New or rehabilitated building entrances should be prohibited at street corners.

Where necessary, establish an easement as a transitional zone between existing storefront material(s) and proposed sidewalk material(s).

Provide for smooth textured non-slip and impervious surface.

Joints between same or different materials/elements should be a maximum of 1/2" width.

Use of a non-glare surface, color and texture is encouraged.

2.2.1 SIDEWALKS

Monolithic paving should require expansion joints between the curb and every change in materials. Expansion joints should be designed to minimize cracking of paving material(s) and should fit into the pattern of the sidewalk.

Concrete sidewalks should have standard scoring patterns that permit economic removal of complete modules.

Concrete sidewalk repair, replacement and installation of posts and furniture should respect joint and scoring patterns.

Elements constructed on the sidewalk which penetrate the surface paving material should be located so as to minimize the number of irregularly shaped cuts to the paving.

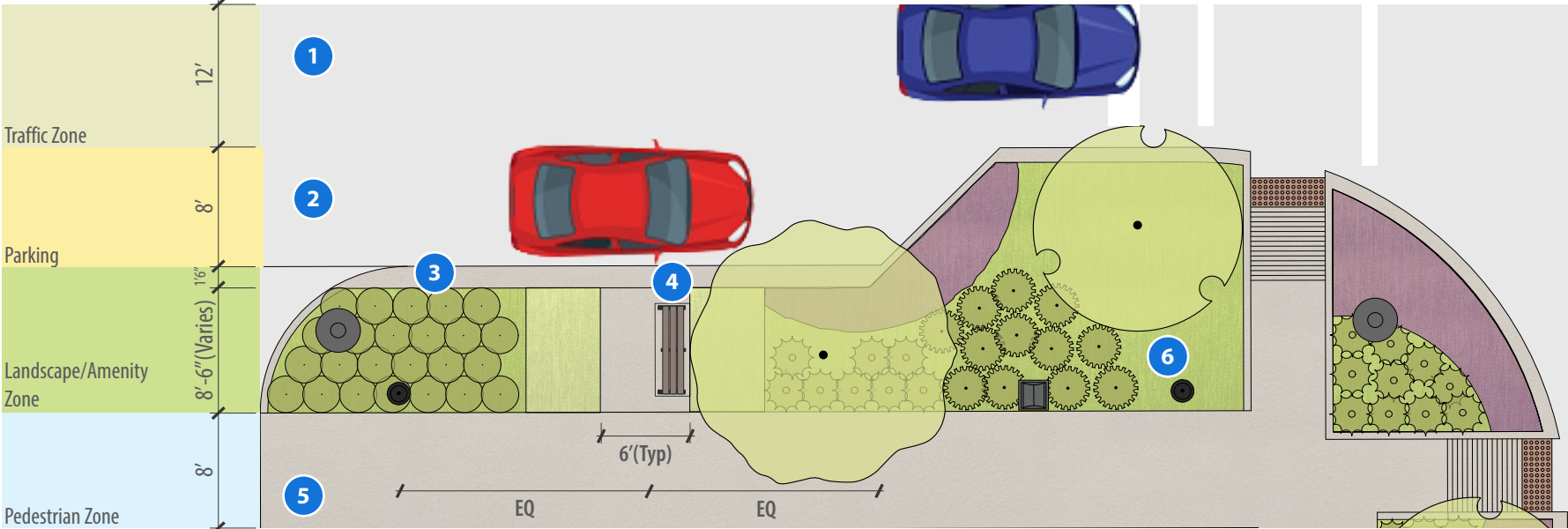
Materials should be impervious, durable, stain resistant and have integral color.

Top Left: Sidewalk Design, Image: La Citta Vita
Bottom Left: Wide Sidewalk, Image: Oran Viriyincy
Bottom Middle: Retail Frontage, Image: Brett VA
Bottom Right: Sidewalk Design, Image: John Gillespie
Right Middle: Paver Strategy, Image: Karen Mardahl
Top Right: Brick Pavers, Image: Amy Bonilla

2.2.2 SEATING

Manufacturer: Root Lab
Product Name: EaDo Bench
Specifications: Backed or Backless
Black Powder Coated Stainless Steel & Rosewood Oil Ipe Wood
Surface Mounted or Embedded in Concrete
Intermittent Dividers
** EaDo Branding is Optional*
Website: rootlabtx.com
Location: Amenity Zone

Manufacturer: Landscape Forms
Product Name: Austin Bench
Specifications: Backed or Backless
Low Sheen, Matte Black Metal & Ipe Woodgrain
Surface Mounted or Embedded in Concrete
Intermittent Dividers
Website: landscapeforms.com
Location: Amenity Zone



PLAN

Goals

To provide an adequate amount of **durable** and **attractive seating** for diverse users and various pedestrian related activities.



Images: Root Lab | Landscape Forms

Design Recommendations

Benches should be located outside the direct line of pedestrian traffic.
Seating materials should have minimum heat absorption characteristics.
Seating materials should be non-porous, splinter-proof and vandal resistant.
Seating units should be durable and stain resistant and sloped to shed water.
Seating should be designed to discourage lying horizontally, as well as skateboarding.

Application

The plan above illustrates the location of the pedestrian and landscape/amenity zones. Within each zone, the recommended location and minimum spacing of the concrete pad for the bench is described.
Mounting should be dependent on location. Possible mounting options should be verified by a Root Lab's (supplier) representative prior to design or installation.
Location of benches to be provided by the developers within the street ROW should be coordinated with the TIRZ's design consultant.

LEGEND

- | | |
|----------------|-----------------------|
| 1 Street | 4 Bench |
| 2 Parking Lane | 5 Sidewalk |
| 3 Curb | 6 Pedestrian Lighting |

2.2.3 BICYCLE RACKS

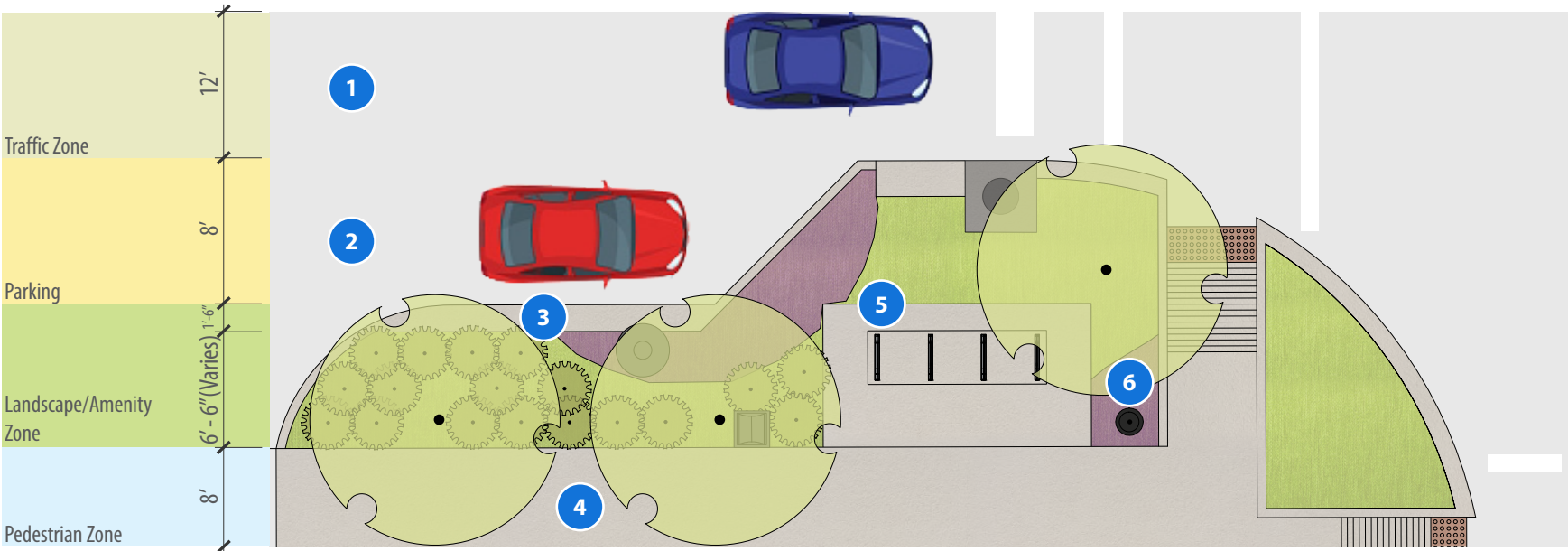


Manufacturer: Root Lab
Product Name: EaDo Bike Rack
Specifications: Black Powder Coated Stainless Steel
Surface Mounted
** EaDo Branding is Optional*
Website: rootlabtx.com
Location: Amenity Zone

Goals
To provide for **secure** temporary storage of bicycles along the sidewalk or pedestrian path.

Design Recommendations
Bicycle racks should be placed in areas near cyclist destinations.
Bicycle parking areas should not impede pedestrian pathways.
Racks should be located in clearly visible and lit areas to maximize security.
Bicycles should be placed at a minimum of 36" apart from centerline to centerline.
One bicycle space is required for a building use that contains more than 5,000 SF of GFA. An additional space is required for each incremental 25,000 SF per City of Houston Code, Chapter 26, Sec 26-496.

Images: Root Lab



PLAN

Four additional bicycle spaces may be added to reduce one parking space requirement. The maximum reduction in the number of parking spaces shall be 10 percent of the number of parking spaces required per City of Houston Code, Chapter 26, Sec 26-497.

Application
The plan above illustrates the location of the pedestrian and landscape/amenity zones. Within each zone, the recommended location and minimum spacing of the concrete pad for the bicycle racks is illustrated.
Mounting should be dependent on location. Possible mounting options should be verified by a Root Lab's (supplier) representative prior to design or installation.

- LEGEND
- | | |
|-----------|-----------------------|
| 1 Street | 4 Sidewalk |
| 2 Parking | 5 Bicycle Rack |
| 3 Curb | 6 Pedestrian Lighting |

2.2.4 WASTE RECEPTACLES

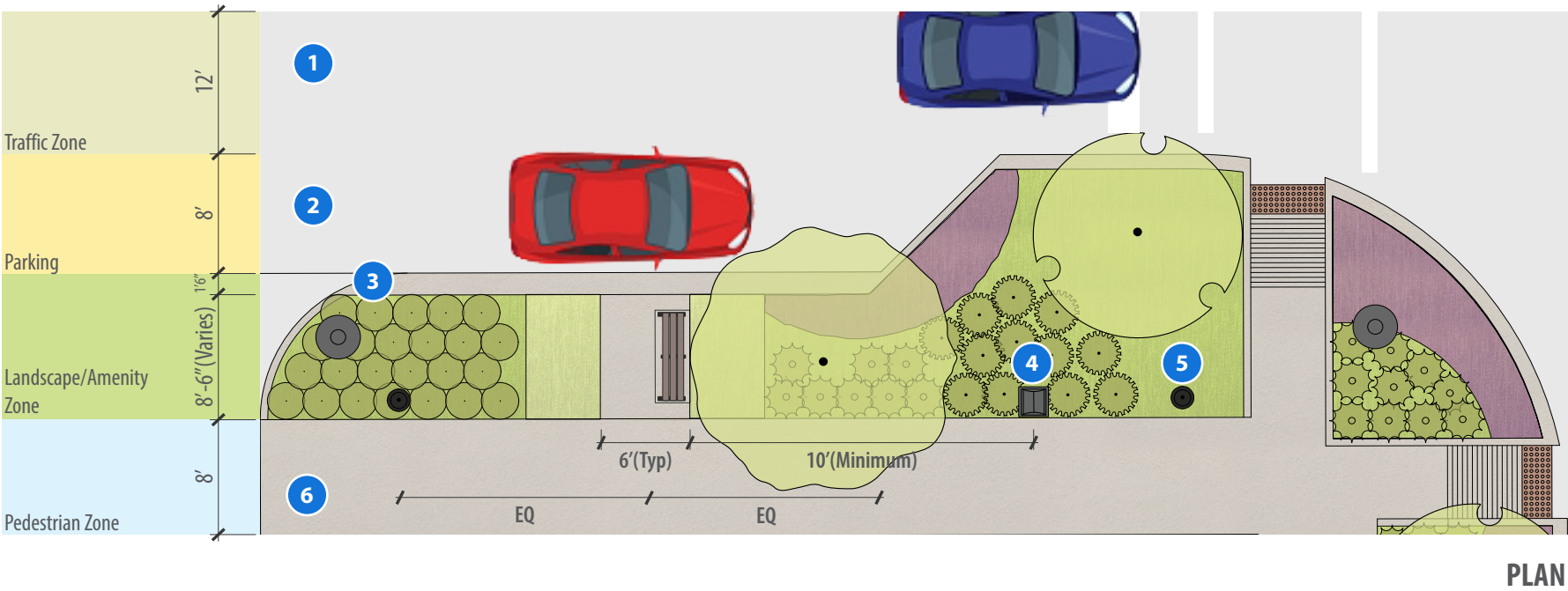


Manufacturer: Root Lab
Product Name: EaDo Litter Bin
Specifications: Black Powder Coated Stainless Steel and Rosewood Oil lpe Wood
Surface Mounted
30 Gallon
Key Lock
** EaDo Branding is Optional*
Website: rootlabtx.com
Location: Amenity Zone

Goals
To provide for **convenient** and **hygienic** trash collection.
Trash bin to be **visually compatible** with the adjacent streetscape environment.

Design Recommendations
The placement of the waste receptacles should be a minimum 10' from benches, within the Amenity Zone.

Images: Root Lab



Application
The plan above illustrates the location of the pedestrian and landscape/amenity zones. Within each zone, the recommended location and minimum spacing of the waste receptacle and the concrete pad for the benches are illustrated.
Mounting should be dependent on location. Possible mounting options should be verified by a Root Lab's (supplier) representative prior to design or installation.

- LEGEND
- | | | | |
|---|---------|---|---------------------|
| 1 | Street | 4 | Waste Receptacle |
| 2 | Parking | 5 | Pedestrian Lighting |
| 3 | Curb | 6 | Sidewalk |

2.2.5 PEDESTRIAN LIGHTS



Manufacturer: Lumec
Product Name: Urbanscape
Specifications: Powder Coated Black Aluminum
Surface Mounted
Website: signify.com
Location: Amenity Zone

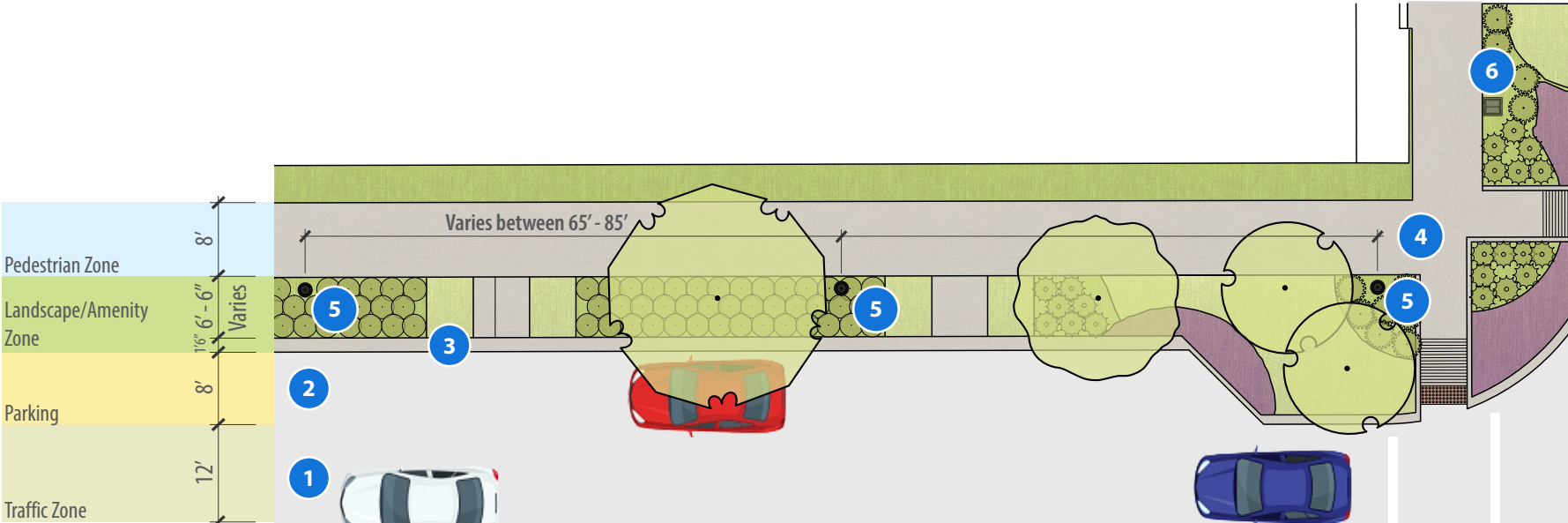
Goals

To provide enhanced lighting along pedestrian areas supporting **safety** and **security**.
To minimize **discomfort** caused by **glare** from lighting fixtures and streetscape surfaces.
To promote **civic events** and other activities in the evening and after dark hours.

Design Recommendations

To respond to the changing volume but constant flow of vehicular and pedestrian traffic, a lighting design component “hierarchy” is recommended for use throughout the project area. This may create an enjoyable experience for the user in terms of variety and texture. Each discrete area may require a different situation, however, overall design application and equipment used should be consistent throughout.
Pedestrian luminaires which are shorter than roadway lights are more readily seen at the pedestrian scale. As such, they should play a major role in supporting the character of the

Images: Lumec

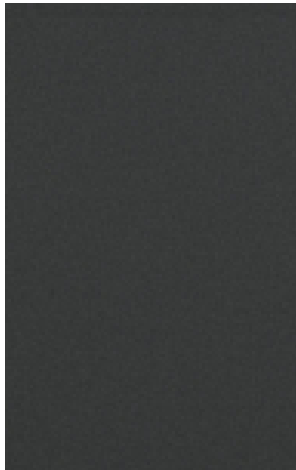


PLAN

area. Pole locations should be coordinated with street tree placement to minimize shadows from trees and to organize the street appearance.

- LEGEND
- | | |
|-----------|-----------------------|
| 1 Street | 4 Sidewalk |
| 2 Parking | 5 Pedestrian Lighting |
| 3 Curb | 6 Waste Receptacle |

2.2.6 BOLLARD LIGHTS



Manufacturer: Lumec
Product Name: Sleekvision Bollard
Specifications: Powder Coated Black Aluminum
Surface Mounted or Removable if Needed
Wired LED Light
Website: signify.com
Location: Special Area Accent Light

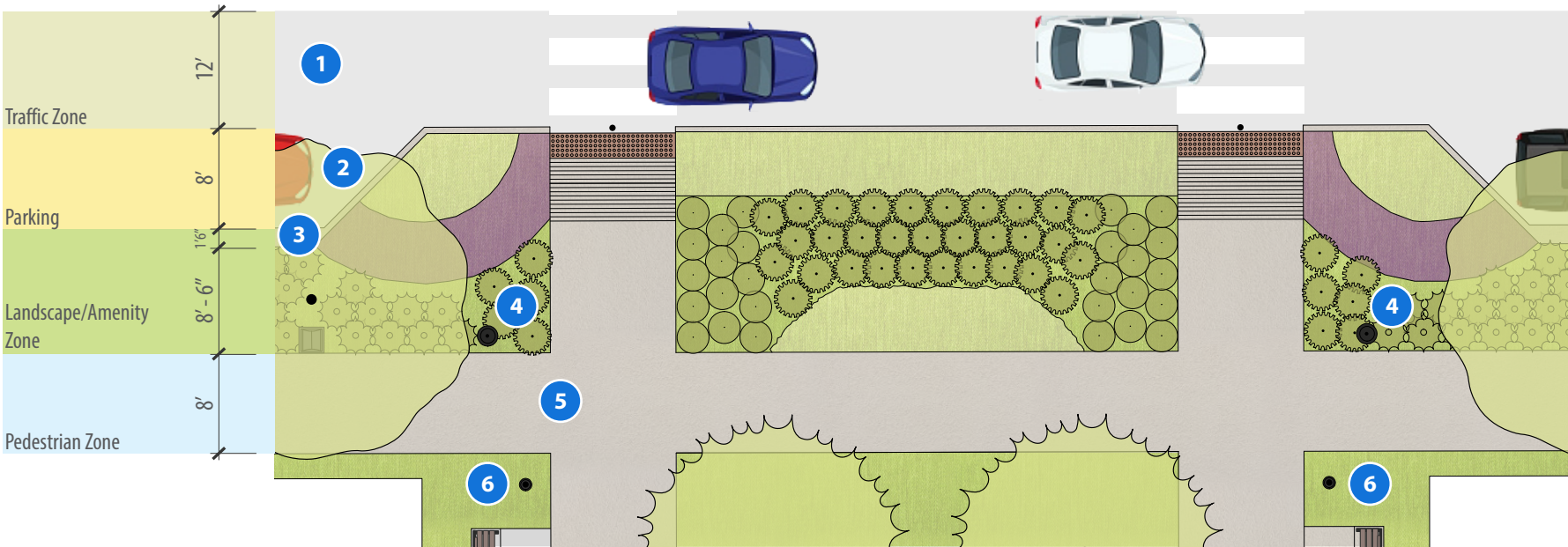
Goals

To provide an accent area light in special areas.
To promote **pedestrian activity** by highlighting public areas of interest as an amenity thus complementing adjacent retail and building illumination.

Design Recommendations

Accent lighting should be used to identify destination points, seating areas and should service special events.
All fixtures shall be UL listed for damp location. Electrical components shall be pre-wired with quick connect fasteners for ease of maintenance. All ballasts shall be a high power factor. When possible, lighting

Images: Lumec



PLAN

components and parts are standardized, to ensure ease of replacement and repair and image of the area. The developer should coordinate the location of pedestrian lighting relative to the boundary of the right of way with the TIRZ planning/design consultants.

- LEGEND
- | | |
|--------------------|-----------------------|
| 1 Street | 4 Pedestrian Lighting |
| 2 Parallel Parking | 5 Sidewalk |
| 3 Curb | 6 Bollard Light |

2.2.7 SIGNAGE



PRIMARY DISTRICT BRAND LOGO



REVERSE DISTRICT BRAND LOGO



SIMPLE DISTRICT BRAND LOGO



Design Recommendations

Three logo types:

- Primary
- Reverse
- Simple

Pantone Colors:

- Blue
 - CMYK: 85 62 32 12
 - RGB: 53 92 125
 - HEX: 355c7d
 - Pantone: 5405 C

- Orange
 - CMYK: 9 52 100 1
 - RGB: 225 139 38
 - HEX: e18b26
 - Pantone: 7413 C
- Lime
 - CMYK: 25 0 75 0
 - RGB: 199 220 105
 - HEX: c7dc69
 - Pantone: 374 C

Facit Extra Light
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789#

Facit Regular
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789#

Facit Semibold
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789#

Carbon Thin
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789#

Carbon Bold
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789#

PRIMARY TYPOGRAPHY

- Smoke
 - CMYK: 70 58 52 32
 - RGB: 73 81 86
 - HEX: 495156
 - Pantone: 445 C

HEADINGS/CALLOUTS/ACCENTS TYPOGRAPHY

Font Family:

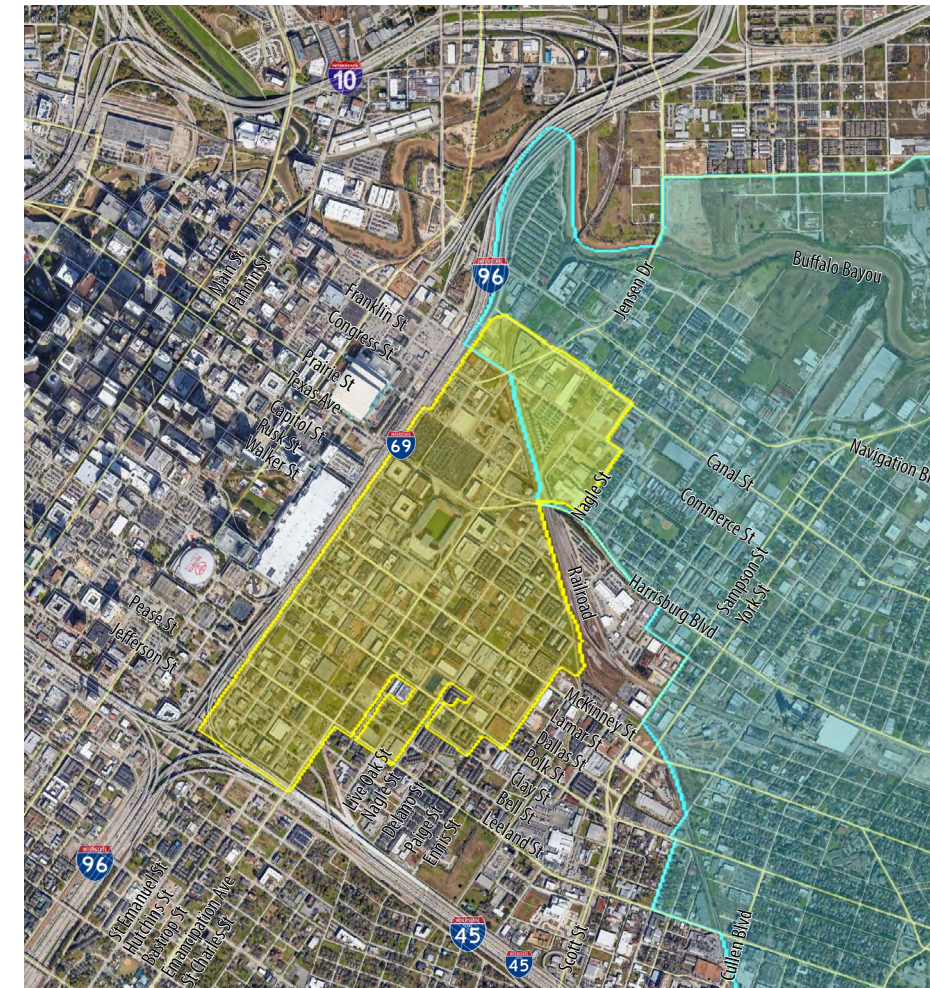
- Primary
 - Facit Extra Light
 - Facit Regular
 - Facit Semi Bold
- Headings/Callouts/Accents
 - Carbon Thin
 - Carbon Bold

2.3 EAST END DISTRICT



All improvements within the TIRZ 15 and East End District are encouraged to follow the guidelines described in some detail below. Before commencing redevelopment work the developer is encouraged to contact the Management District to ensure that the guidelines to be used are up to date.

The guidelines are intended to be TIRZ 15 board approved recommendations, but do not supersede any codes or ordinances adopted by the City of Houston, other governmental agencies as well as private utility companies.

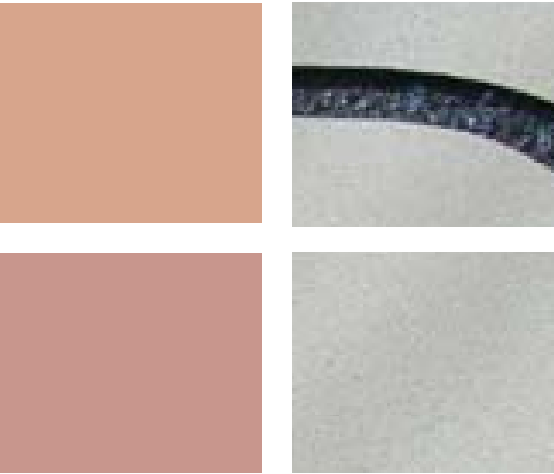
For amenity related information, please contact the East End District and for additional information, visit <https://www.eastenddistrict.com/design-resources/>.



LEGEND

-  TIRZ 15
 East End District

2.3.1 SIDEWALKS



LEGEND

- 1 Ramp/Landing Connection
- 2 Street Name Marker
- 3 Bronze Medallion
- 4 Sidewalk Landing Pad
- 5 Sidewalk Landing Pad
- 6 Retaining Wall/Sidewalk @ROW



Design Recommendations

Ramp/Landing Connection:

- Landing should be concrete brick pavers in herringbone pattern using Pavestone Holland series with Georgia Blend color
- Ramp should be grooved colored concrete (brick red)
- Truncated dome edges (charcoal) should be used as detectable warning pavers.

Street Name Markers:

- 1/4" Sandblasted text of street names in cast stone.

Bronze Medallion:

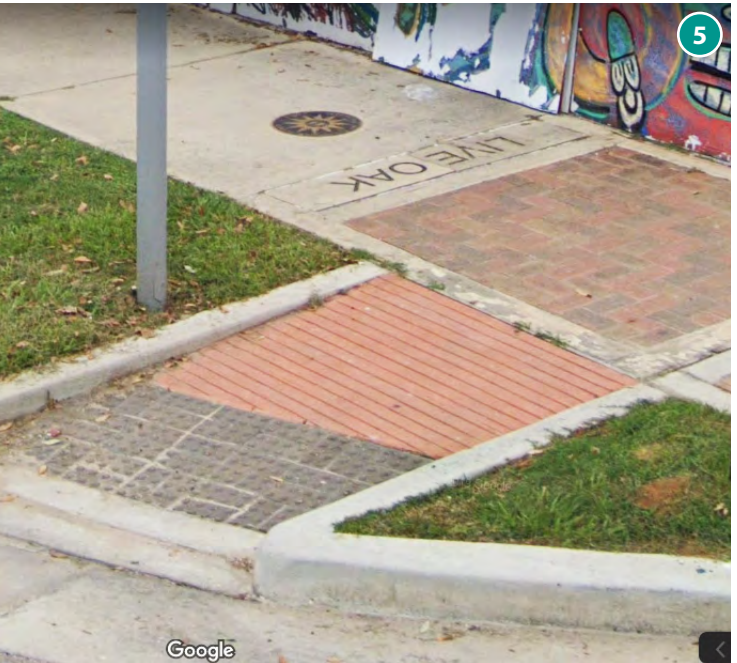
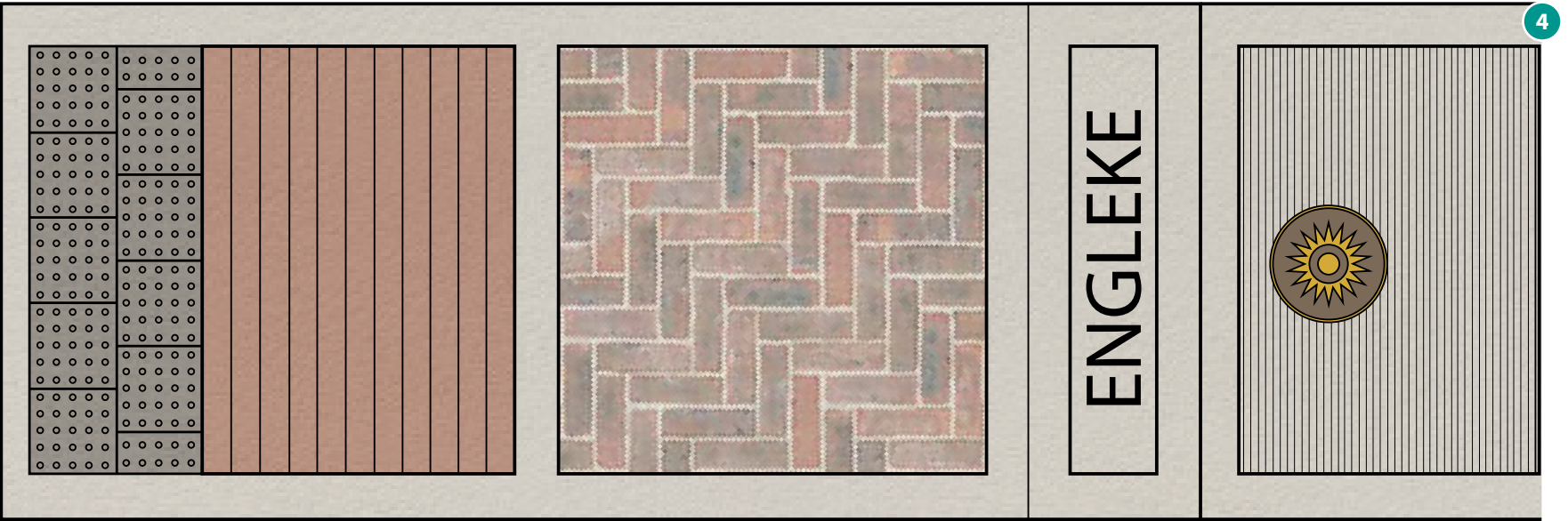
- 16" Diameter bronze medallion placed after the landing brick pavers.

Sidewalk Landing Pads:

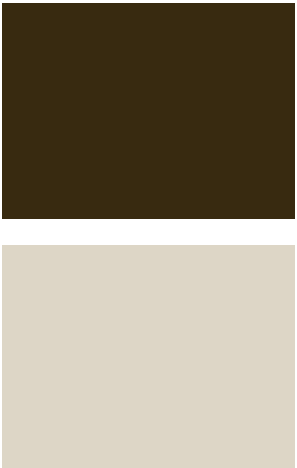
- Landings should have detectable warning signs.

Retaining Walls:

- Maintain landscape along sidewalks in place.
- Act as detectable warning signs when going up and down ramps.



2.3.2 MEDALLION SIGNAGE



Design Recommendations

- 16" diameter bronze medallion
- Satin bronze on raised areas with leatherette texture on background painted a dark oxide stain
- Medallion to be flush with concrete walk grade

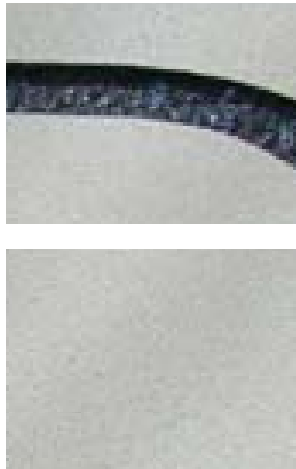
Refer to specifications and detailed drawing from East End District for proper location on sidewalk

Final design and specifications will be provided by the East End District upon request.



Images: East End District; Google

2.3.3 CAST STONE

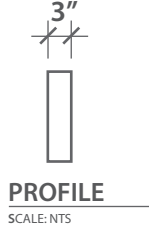


Design Recommendations

All cast stone panels to be manufactured as dimensioned above. Cast stone letters to be sandblasted and painted dupont 3258 dark bronze urethane with catalyst. Color specified can be sourced from:

Carr-Redwine Inc.
7101 Long Drive Houston, TX 77087
(713) 643-2691

Letter font type is arial centered both ways.
Depth of sandblast to be maximum 1/4" deep.
Cast stone color to match existing.



Images: Google



2.3.4 PEDESTRIAN LIGHTS



Images: Google



Design Recommendations

Color Finishes:

1. Matthews MP 32195 “Staid Gray”, acrylic polyurethane, semi-gloss
2. Matthews MP 10158 “Just Gray”, acrylic polyurethane, gloss finish
3. Matthews MP 26749 “Spring Green”, acrylic polyurethane, semi-gloss
4. Matthews MP 24340 “Mardi Gras Teal”, acrylic polyurethane, semi-gloss
5. Matthews MP 12601 “Kiwano Orange”, acrylic polyurethane, semi-gloss
6. Matthews MP 11477 “Bright White”, acrylic polyurethane, semi-gloss



7. Pantone 7468 C Dark Blue

LED Specifications:

- 16, 4000K (neutral) Philips Lumileds Luxeon R LED’s, injection molded, acrylic optical plates, IP66 rated LED array, type II light distribution.
- Integral Philips Advance Xitanium LED driver, class 1, IP66 rated, 350mA, IntelliVolt 120-277 VAC, RoHS compliant, >3kV surge suppression built in, RoHS compliant.
- Dimming Schedule:
 - 100% - 5:30-10:35 PM
 - 70% - 10:36-12:55 AM
 - 40% - 12:56-4:00 AM
 - 70% - 4:01-7:13 AM



2.3.5 SIGNAGE



DISTRICT BRAND - SQUARE LOGO PATTERN



DISTRICT BRAND - RECTANGULAR LOGO PATTERN 1



DISTRICT BRAND - RECTANGULAR LOGO PATTERN 2



Design Recommendations

Pantone Colors:

- 2eb7c7
- 000000
- ffffff

Font Family: Cervo Regular

Acceptable Alternate Fonts:

- All White
- All Black

Logo Background:

- “East End” in black - light background
- “East End” in white - dark background



CULTURAL DISTRICT WALL PANEL

Design Recommendations

Cultural District Wall Panel to be building mounted and should be 1’-0” x 1’-0”.

Pantone Colors:

- 375 C Green
- 021 C Orange
- 3115 C Light Blue
- 7468 C Dark Blue
- 80% Black

Sign system consists of simple components and standard fabrication techniques & materials: painted aluminum sign posts with aluminum panels painted with industrial paints; vinyl and painted graphics; tamper-proof stainless steel hardware.

For more detailed information regarding wayfinding and signage standards, contact the East End District.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890
CERVO REGULAR

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890
CERVO MEDIUM

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890
CERVO MEDIUM ITALIC

SIGNS - PROJECT TYPE STYLES

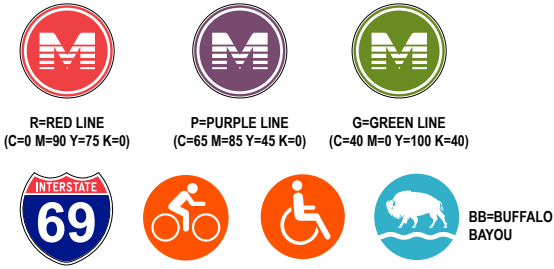


Project Finishes

1. Matthews MP 32195 "Staid Gray", acrylic polyurethane, semi-gloss
2. Matthews MP 10158 "Just Gray", acrylic polyurethane, gloss finish
3. Matthews MP 26749 "Spring Green", acrylic polyurethane, semi-gloss
4. Matthews MP 24340 "Mardi Gras Teal", acrylic polyurethane, semi-gloss
5. Matthews MP 12601 "Kiwano Orange", acrylic polyurethane, semi-gloss
6. Matthews MP 11477 "Bright White", acrylic polyurethane, semi-gloss
7. Matthews Clear Coat MP 42228SP, semi-gloss



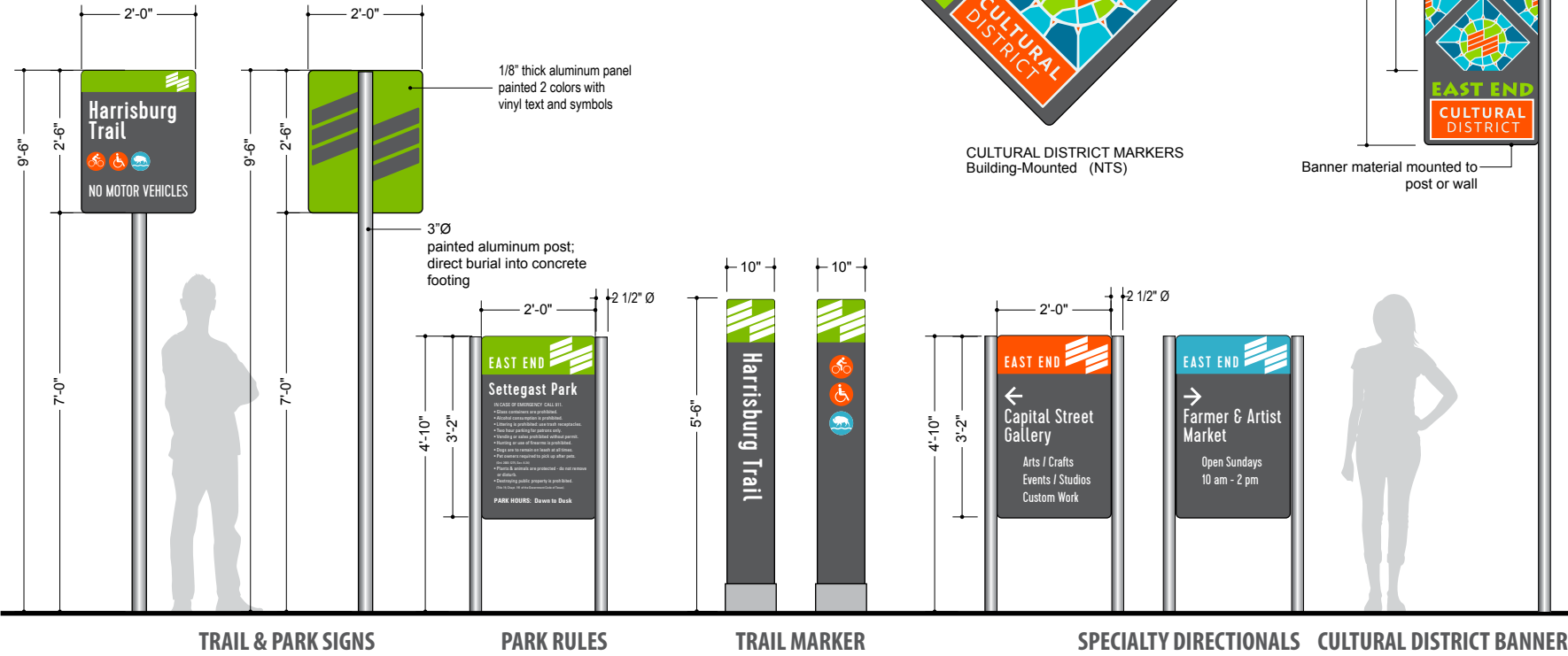
SIGNS - PROJECT SYMBOLS

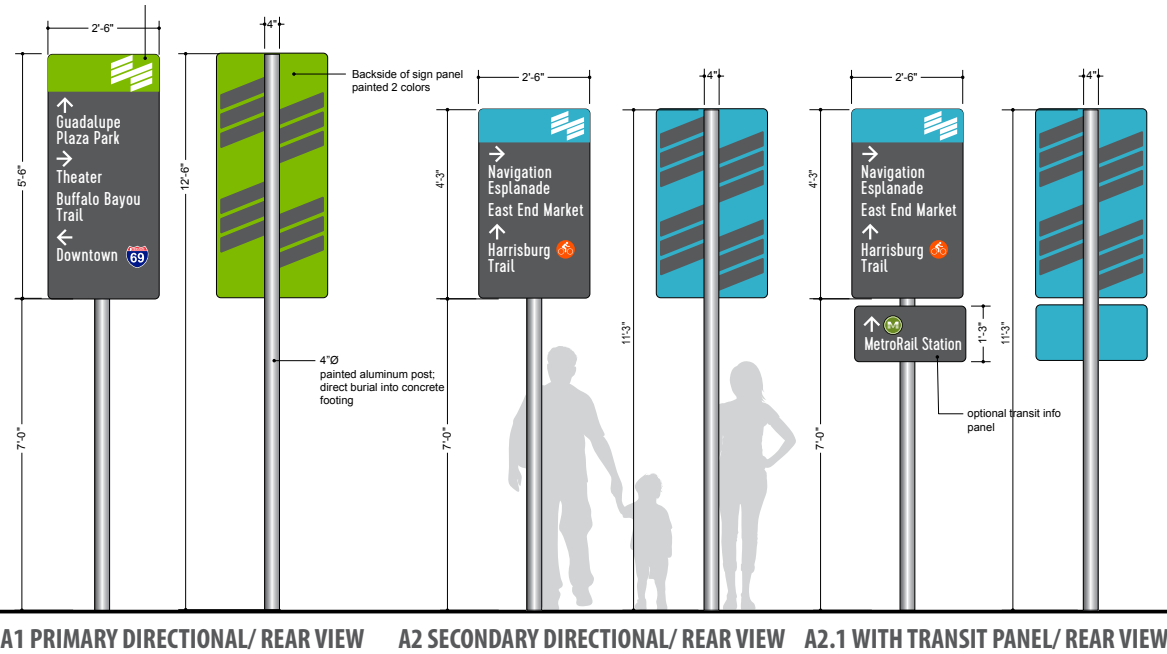


SIGNS - PROJECT SYMBOLS

Project Materials

- Sign Panels:** Aluminum sheeting; .125 or .25 as specified in drawings
- Sign Posts:** Round extruded aluminum posts; diameter as specified (6061 T6 Schedule 40)
- Paints:** Matthews Acrylic Polyurethanes, semi-gloss for sign panels; hi-gloss for posts
- Vinyl Text/Graphics:** 3M Scotchcal Graphic Film, 7725-White
- Map Panels:** i-Zone 1/8" thick High-density Laminate, Exterior, Ice finish



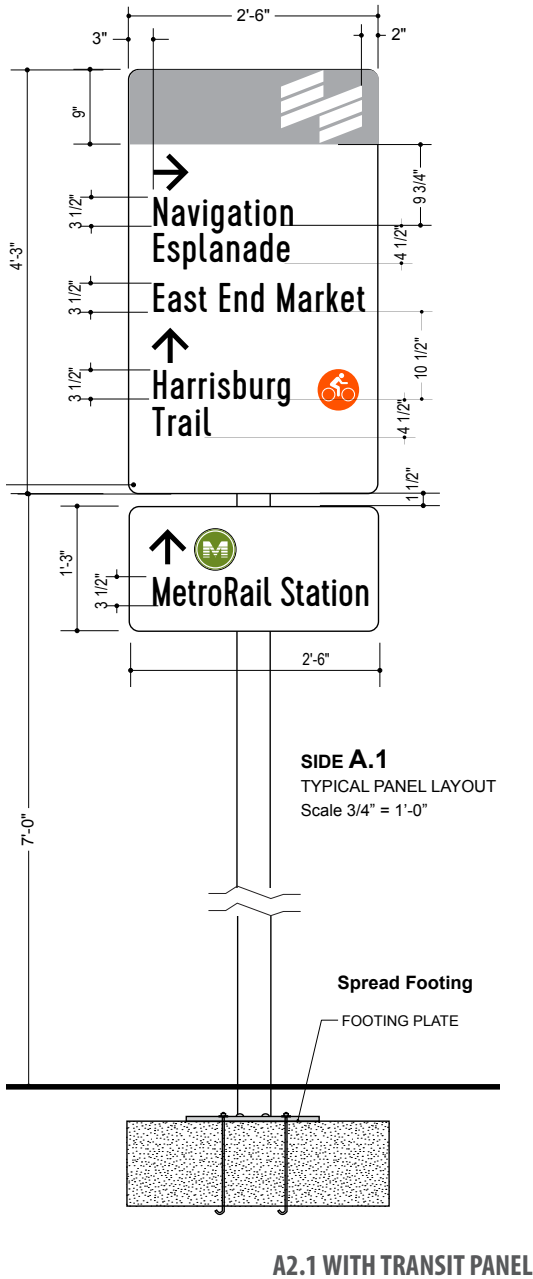
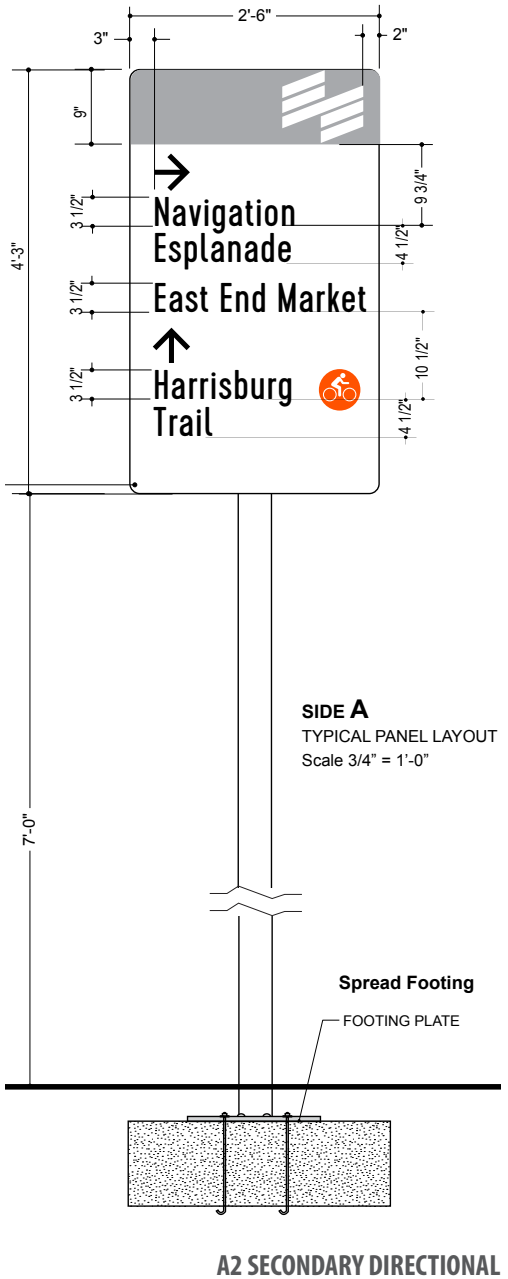
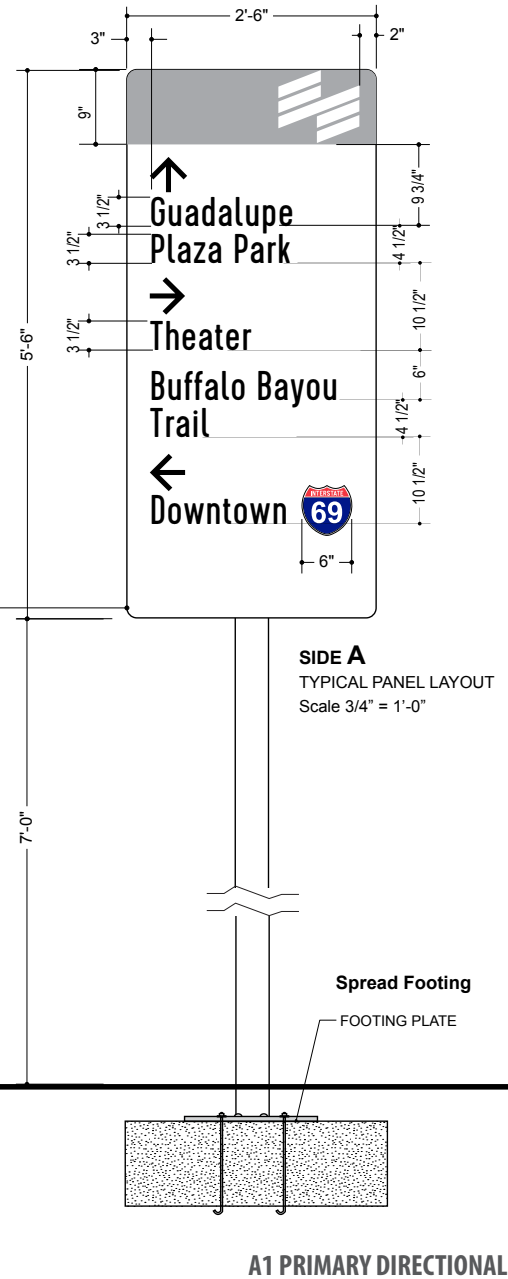


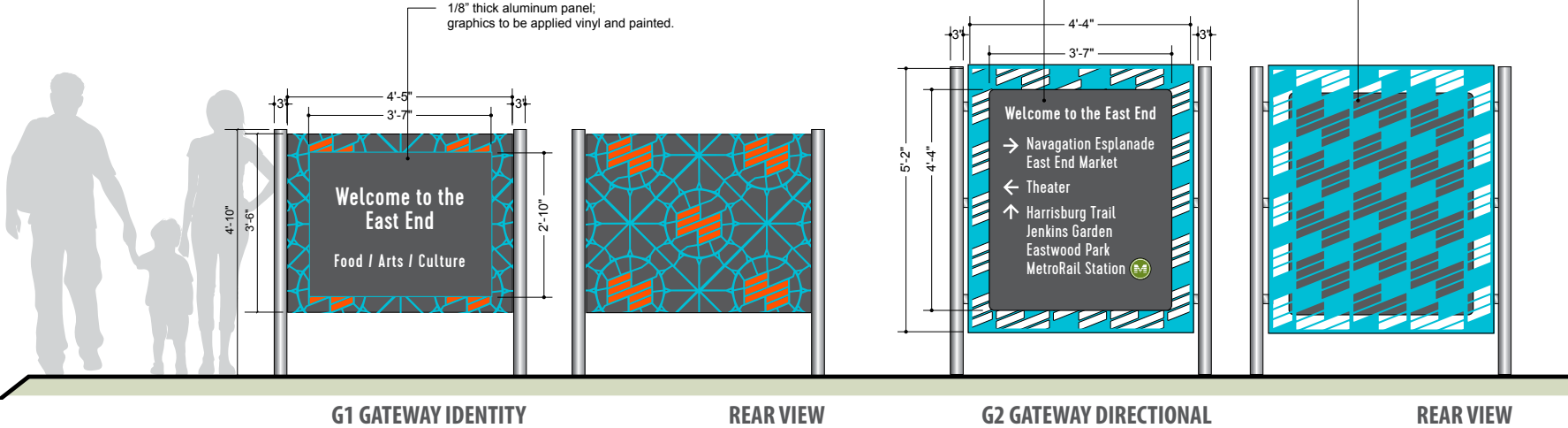
Directional Specifications/Notes

1. SIGN PANEL: 1/8" (.125) aluminum panel painted P-1 & P-4 semi-gloss finish. Edges to be radiused. Panel to be mounted to post with carriage bolts or brackets painted to match. Components to be engineered to conform to code-specified wind loads.
2. TEXT & ARROWS and LOGO at top of sign face are 3M 7725 White vinyl. TYPEFACE is CERVO REGULAR. 3. SIGN POST is 4" Ø round aluminum post painted P-2: Matthews MP 10158 "Just Gray", hi-gloss. Post to be mounted to spread-footing

engineered and provided by fabricator, unless mounted to concrete surface where post is to be welded to base plate and anchored to concrete surface. FABRICATOR is responsible for development of detailed shop drawings showing structural components, connections, hardware, and specifications. Fabricator is also responsible for drawings showing connections to foundations. Structural details shown are for design intent only.

All structural drawings must be sealed by an engineer.





Specifications/ Notes

Sign system consists of simple components and standard fabrication techniques & materials: painted aluminum sign posts with aluminum panels painted with industrial paints; vinyl and painted graphics; tamper-proof stainless steel hardware.

1. Fabricator is required to submit four (4) 6" x 6" samples each of specified color on material base indicated per drawings for review and approval by the Owner and Designer. Paint samples must be finished according to specifications.
2. Fabricator to provide four (4) samples of

vinyl specified and brushed stainless steel finish samples.

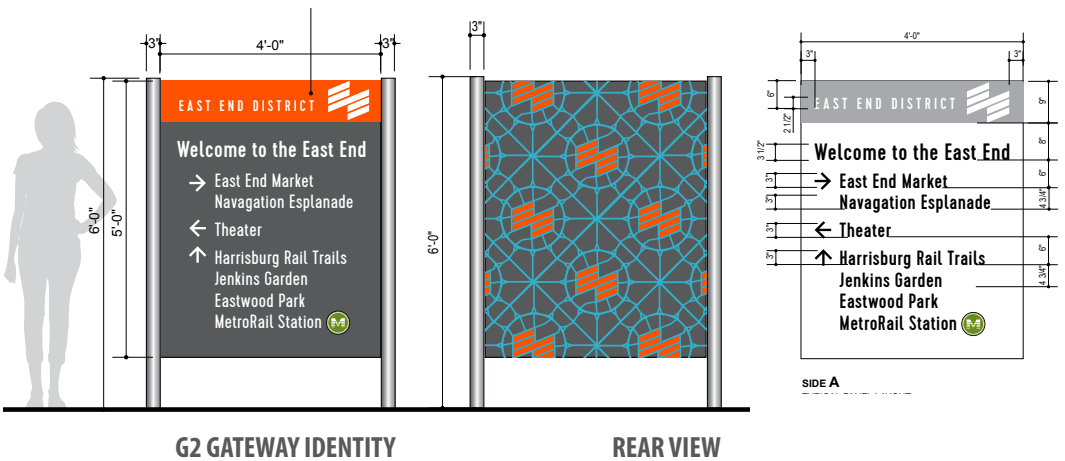
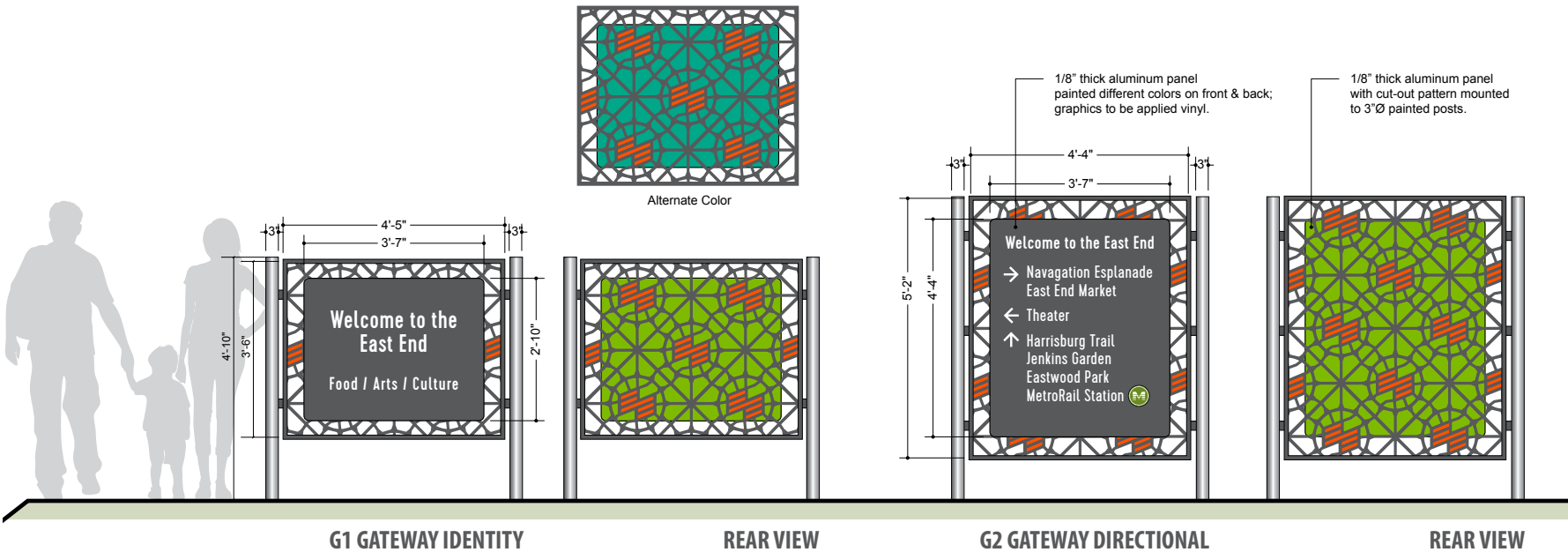
3. Matthews Acrylic Polyurethane paints are to be used on sign panels. Surfaces must be primed as specified by the manufacturer and paints must be applied according to manufacturer's specifications.
4. "MP" color codes refer to Matthews Acrylic Polyurethane paints manufactured by Matthews Paint Company (1-800-323-6593).
5. Sign pylon, posts, and footings are stainless steel with a vertical-brushed finish. All mounting and structural hardware should be stainless steel.

Design Standards for Small Cell Poles

Small cell poles should match the District's standard pole color design of lighting and wayfinding poles. For reference, the paint is Matthews Paint #10158 Just Gray, glossy.

Single, round, smooth surface pole.

Small cell components and wiring should be encased with the new small cell pole.





Llewelyn-Davies Sahni
5120 Woodway Dr. Suite 8010
Houston, TX 77056
www.theldnet.com

in association with



EHRA Engineering
10011 Meadowglen Ln.
Houston, TX 77042
www.ehrainc.com

Contact | Sherry@edratirz15.org