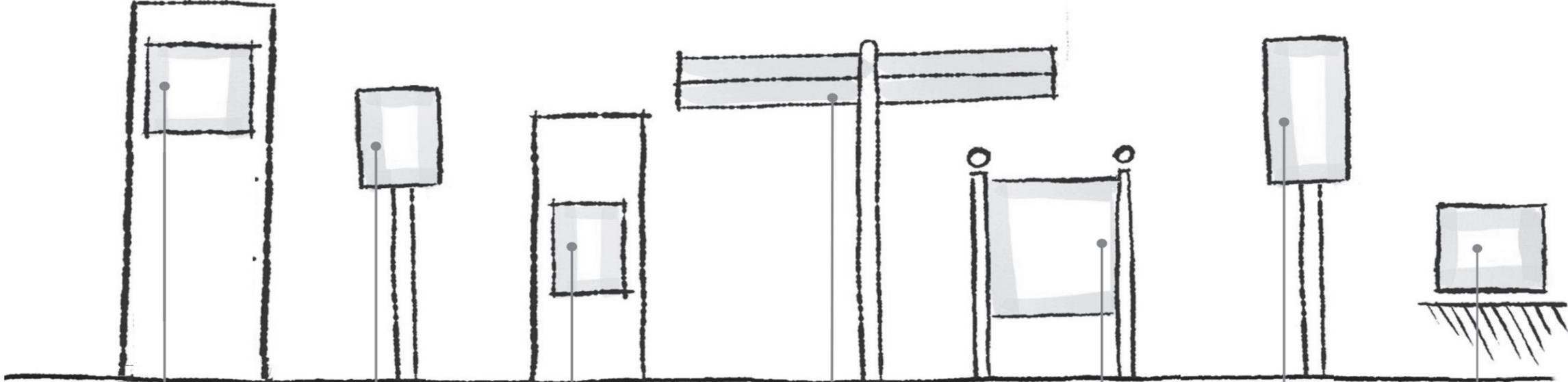


3.1 - Sign Types: Function, Location and Content

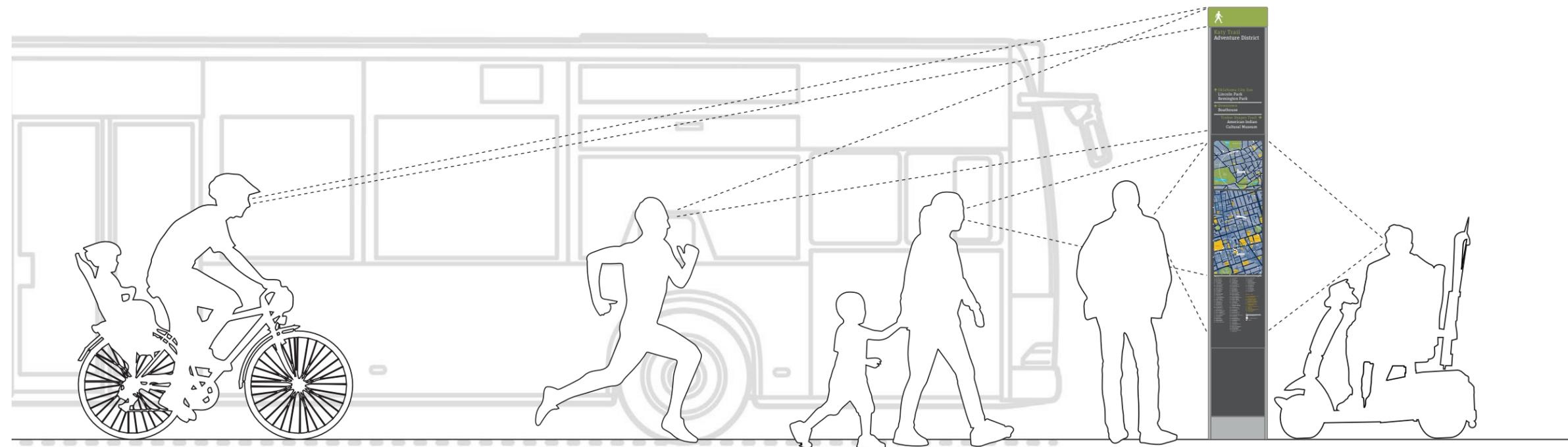
The Kansas City Regional Wayfinding System, like most systems, includes several different types of signs, each with a unique function. The schematic below explains the different sign functions and where each type is typically used.



Sign Type	Welcome	Arrival	Information	Fingerpost	Interpretive	Post Marker	Ground Marker
Function	Provides a welcome to the area, describes what there is to do and how to move around	Provides direction to the parking lot for the trail arrival point	Provides information to navigate transit, trail, local area and find places	Provides information to navigate trails, local areas and find places	Provides local area knowledge about a place	Provides details about the onward route, to help people understand if it is appropriate	Provides information as to trail name and mile location
Location	Welcome points and arrival points	Welcome points and arrival points	Decision points in busy areas with high density of destinations and routes and connections on transit	Decision points in environments with low density of destinations, homing beacon; as route confirmation	Key nodes in areas in which local, historical, cultural, ecological, or social stories enrich people's understanding of places	Decision points where route passes through areas	At regular interval consistent application along named route
Content	Identify access nodes from neighborhoods and confirm point of arrival/ departure	Parking symbol, directional copy and arrow	Local biking/walking train and bus maps, onward journey options	Directional content to specific destinations or an adjacent neighborhood via an adjacent route	Images, maps, stories (editorial copy) describing community, historical, cultural, commercial, or social stories.	Path name degree of difficulty, length of route, etiquette, rules of route and contact details	Name, brand color, and mileage

3.2 - Information Structure

The structure of information on each sign caters to different user tasks, reading strategies, and physical distance from the sign. Some information is provided using graphics or in a text size that allows the user to maintain motion while still gathering critical information from the sign. Other more detailed information and mapping requires stopping and looking more closely at the sign. Average reading distances have been estimated with direct reference to data on the relationship between text size and reading distances. The example below of a map-based entrance sign is typically a workhorse in trail and pedestrian wayfinding. This diagram demonstrates recognition of the sign and its function by physical features.



Identification

Recognition of the sign and its function by physical features, notably the beacon at the top of the sign.

Example: trail/path/transit name/symbol

Passing glance

Establishing what information is shown or quickly checking orientation.

Example: addressing and directional panel

Brief study

Scan of most salient information on maps.

Example: place names

In-depth use

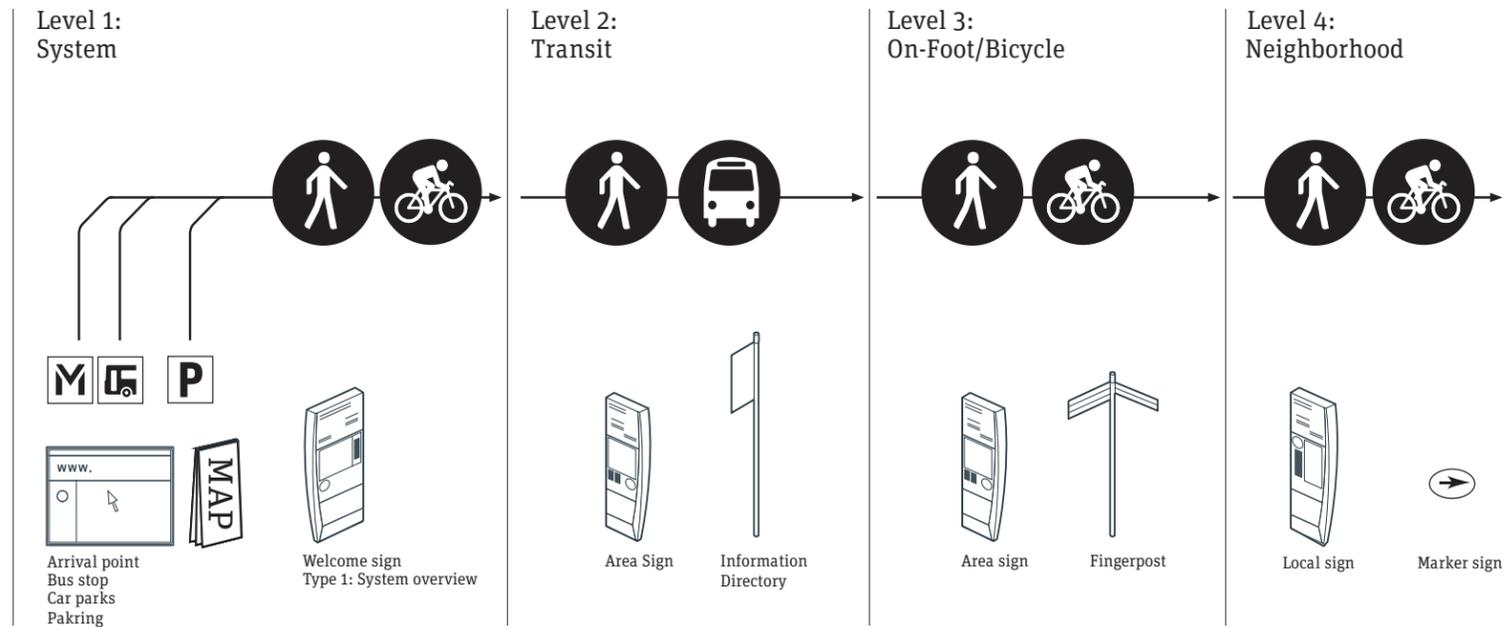
Thorough reading and searching maps and index.

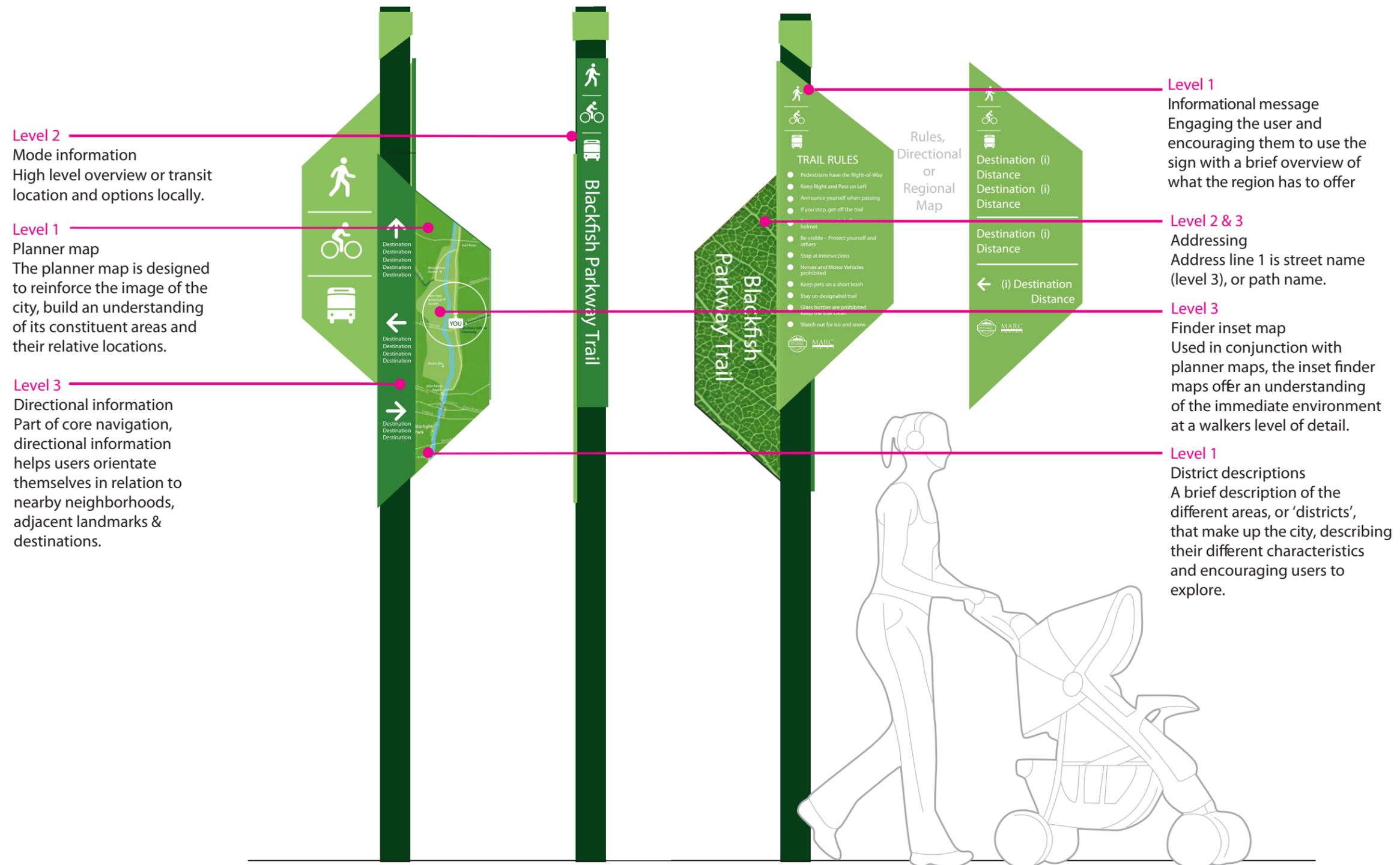
Example: destination labels

3.3 - System Architecture

The wayfinding strategy for the Kansas City Region is based in a system architecture that recognizes that walking and bicycling signage must also consider and connect to other forms of transportation. The sign family integrates walking and bicycling information needs with those of different transportation modes.

The wayfinding system architecture includes multiple levels of information as shown in the two following graphics. Depending on the level of information needed and the user, different sign types can be used. The family of signs shown in this report includes several monolithic sign elements based on the stakeholder committee desire for the inclusion of some map-based signs. Map-based signs also provide opportunities to install similar elements in transit and other off-trail facilities.





Level 2
 Mode information
 High level overview or transit location and options locally.

Level 1
 Planner map
 The planner map is designed to reinforce the image of the city, build an understanding of its constituent areas and their relative locations.

Level 3
 Directional information
 Part of core navigation, directional information helps users orientate themselves in relation to nearby neighborhoods, adjacent landmarks & destinations.

Level 1
 Informational message
 Engaging the user and encouraging them to use the sign with a brief overview of what the region has to offer

Level 2 & 3
 Addressing
 Address line 1 is street name (level 3), or path name.

Level 3
 Finder inset map
 Used in conjunction with planner maps, the inset finder maps offer an understanding of the immediate environment at a walkers level of detail.

Level 1
 District descriptions
 A brief description of the different areas, or 'districts', that make up the city, describing their different characteristics and encouraging users to explore.

Route Support Sign

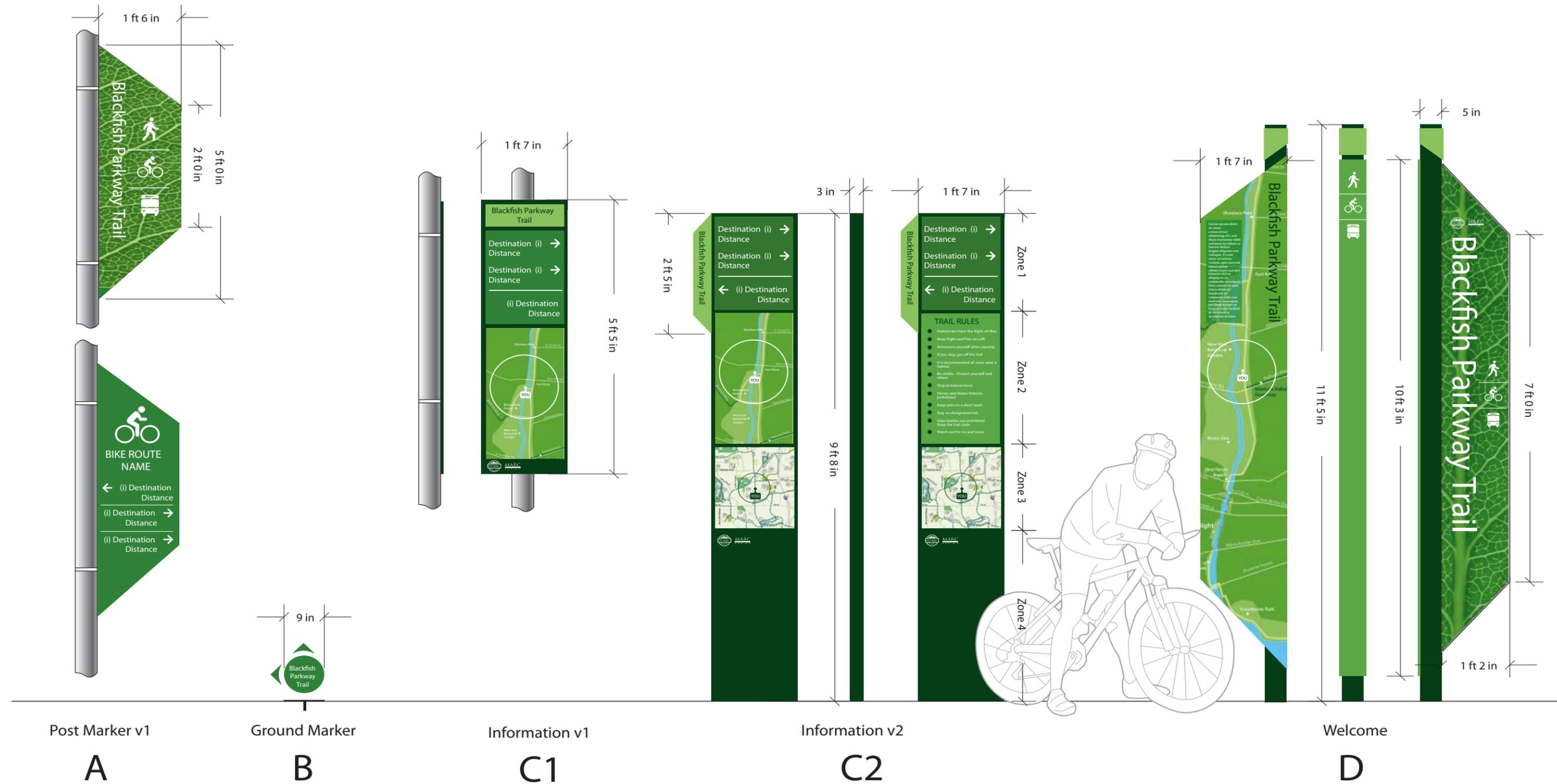
3.4 - Sign Family Concepts

The complete sign family for the Kansas City Regional Wayfinding System is shown on the next two pages with additional details for each sign type provided on the following pages. The names of the signs indicate their purpose and use. Additional information regarding sign placement and system implementation is included in Chapters 4 and 5.

Note:

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on these drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

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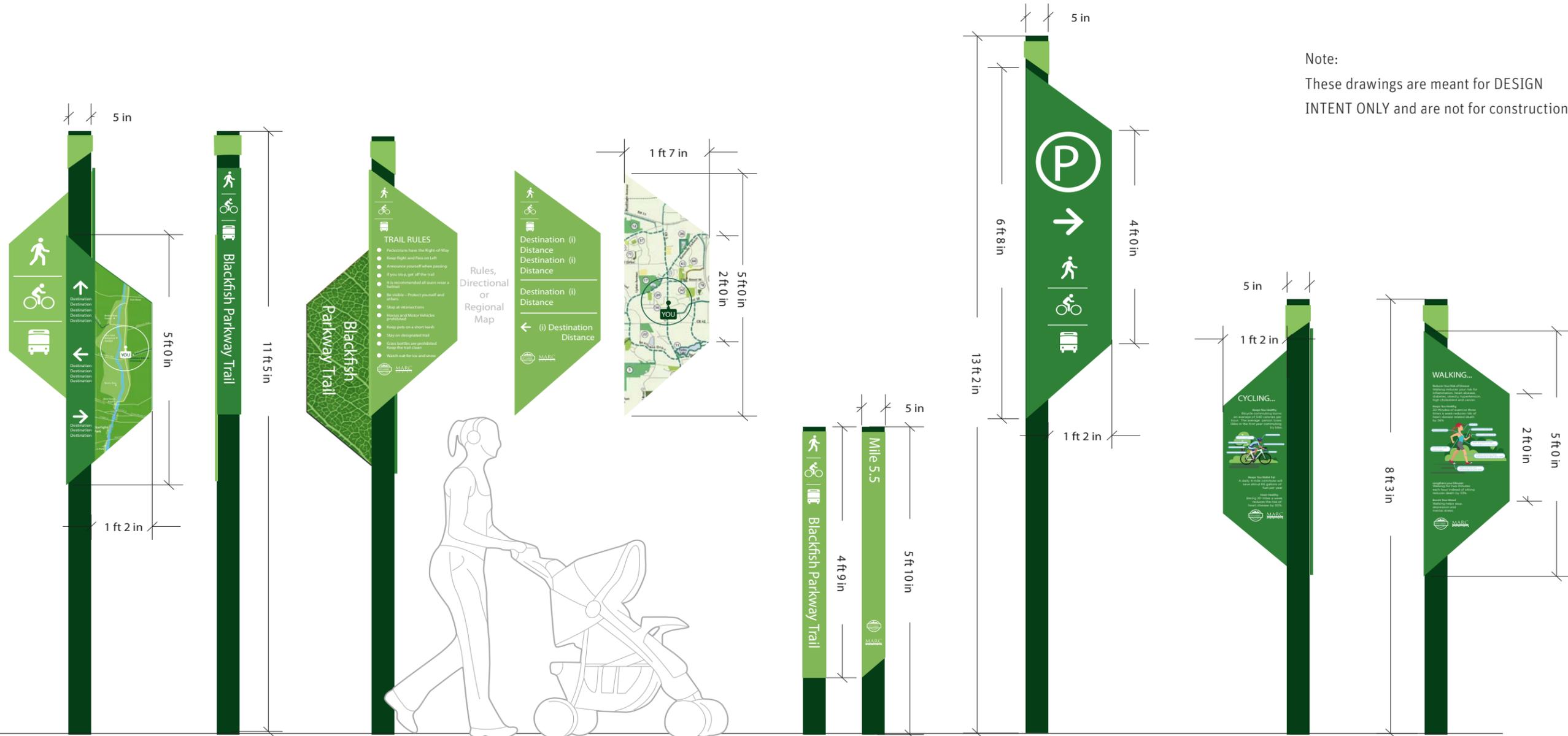
Pole mounted aluminum blade sign. Strap mounted boxed .125 panel with painted background and applied cut/cast vinyl graphics.

1/2-in thick aluminum disk with 2-in long threaded stud welded for embedment and epoxy to surface. Routed graphics recessed 1/8-in and painted with enamel.

Pole mounted aluminum blade sign. Strap mounted boxed .125 panel with painted background 1/16-in digital high pressure laminate panel over aluminum face.

Boxed aluminum .125 skin with internal frame. Modular frame mounted in four face zones by compartmentalized graphic areas. Painted aluminum box with direct printed graphics.

Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print.



Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction.

Information v3

E

Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print.

Post Marker v2

F

Painted aluminum box with direct printed graphics, with painted 5-in square aluminum pole.

Arrival

G

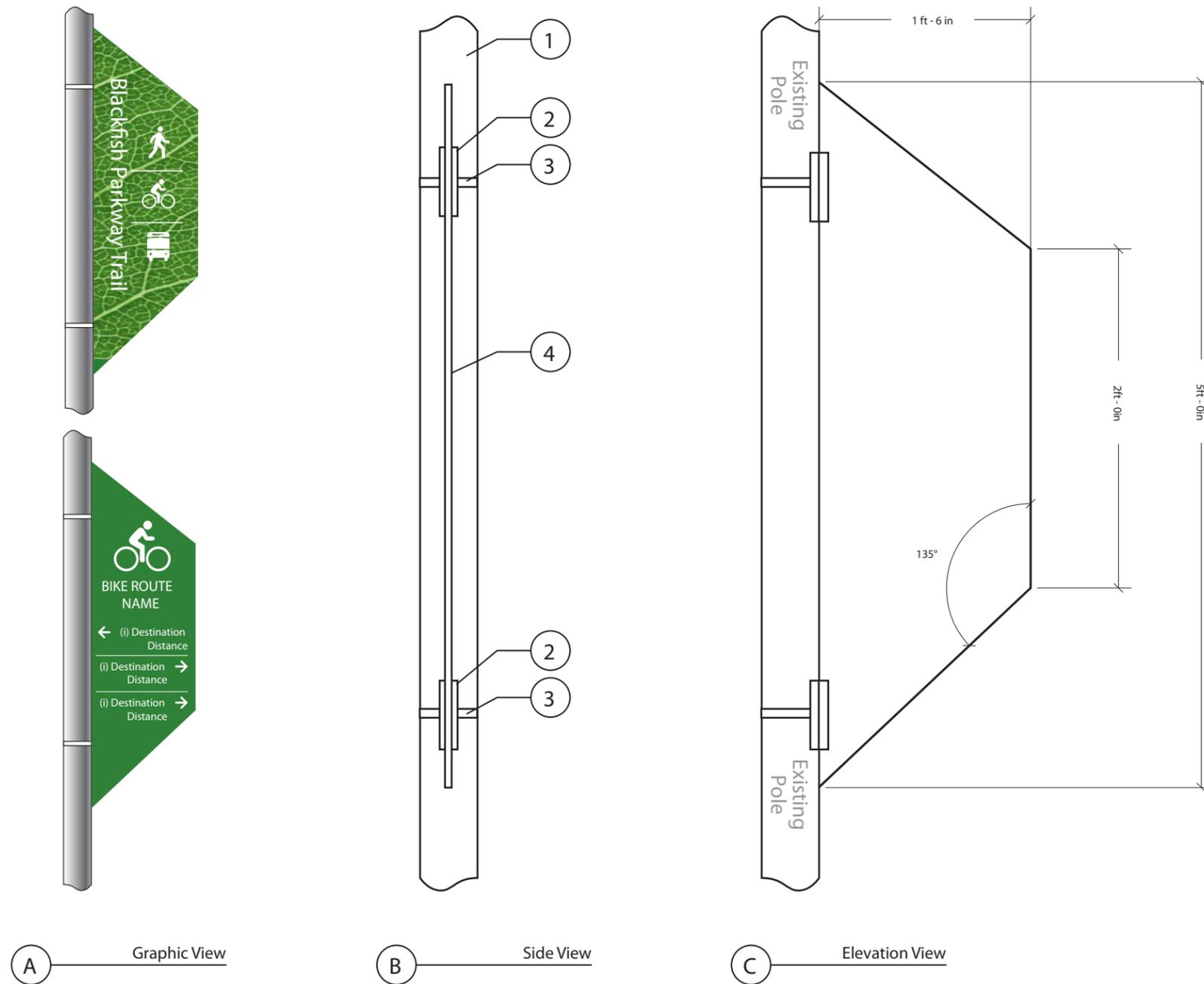
Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Single graphic panel is painted with Matthews paint and applied with reflective cut cast vinyl.

Interpretive

H

Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print.

Post Marker v1 - Design Concept A



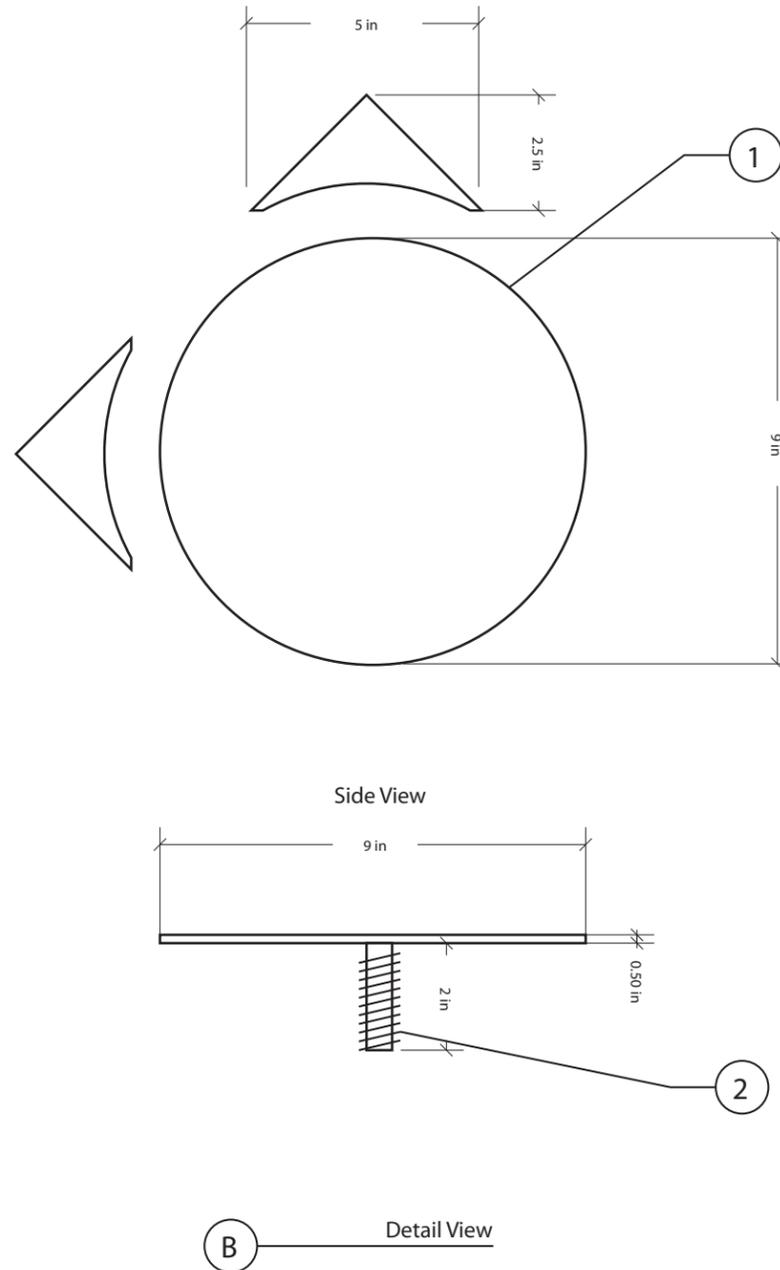
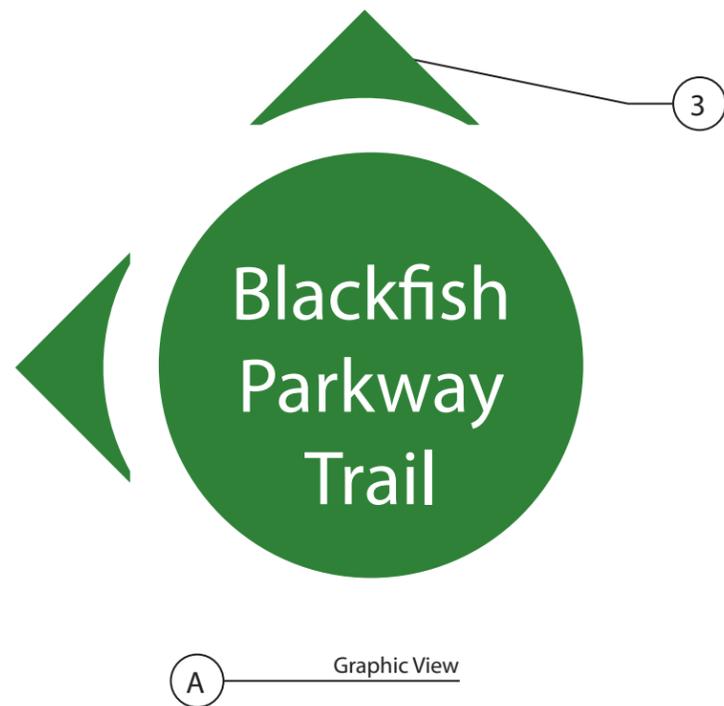
Sign Type A Post Marker v1

Pole mounted aluminum blade sign. Strap mounted boxed .125 panel with painted background and applied cut/cast vinyl graphics.

1. Existing pole.
2. Aluminum wing bracket for horizontal mounting of sign to pole.
3. Strap attachment from pole to wing bracket
4. 1/4-in thick aluminum panel painted background and vinyl graphics. UV over-laminate.

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

Ground Marker - Design Concept B



Sign Type B Ground Marker

1/2-in thick aluminum disk with 2-in long threaded stud welded for embedment and epoxy to surface. Routed graphics recessed 1/8-in and painted with enamel.

1. 1/2-in thick aluminum disc routed 1/8-in and infill painted with enamel.

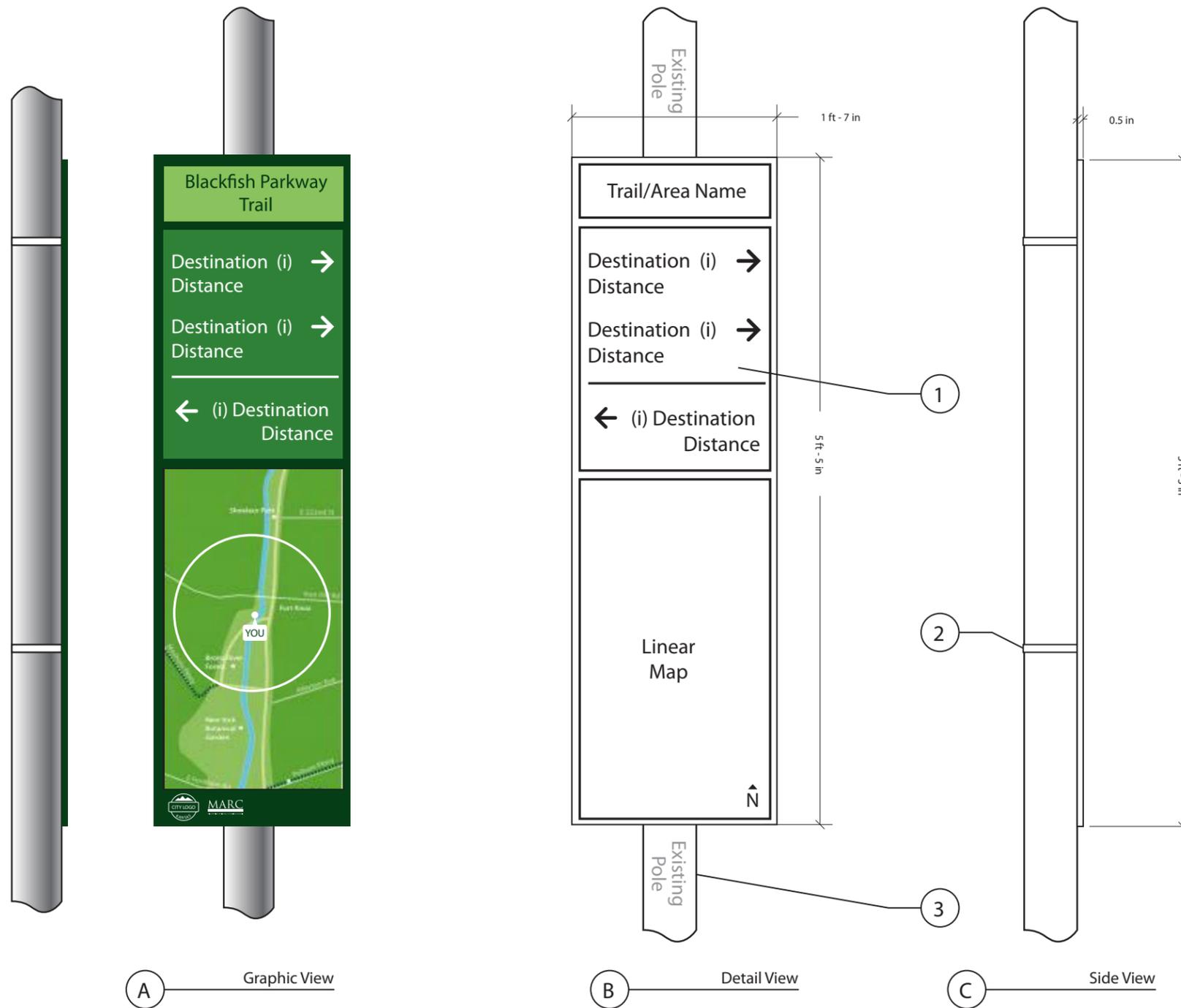
2. Threaded stud for mounting into fresh poured concrete.

3. Arrowform thread stud mount into fresh poured concrete.

Note:

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

Information v1 - Design Concept C1



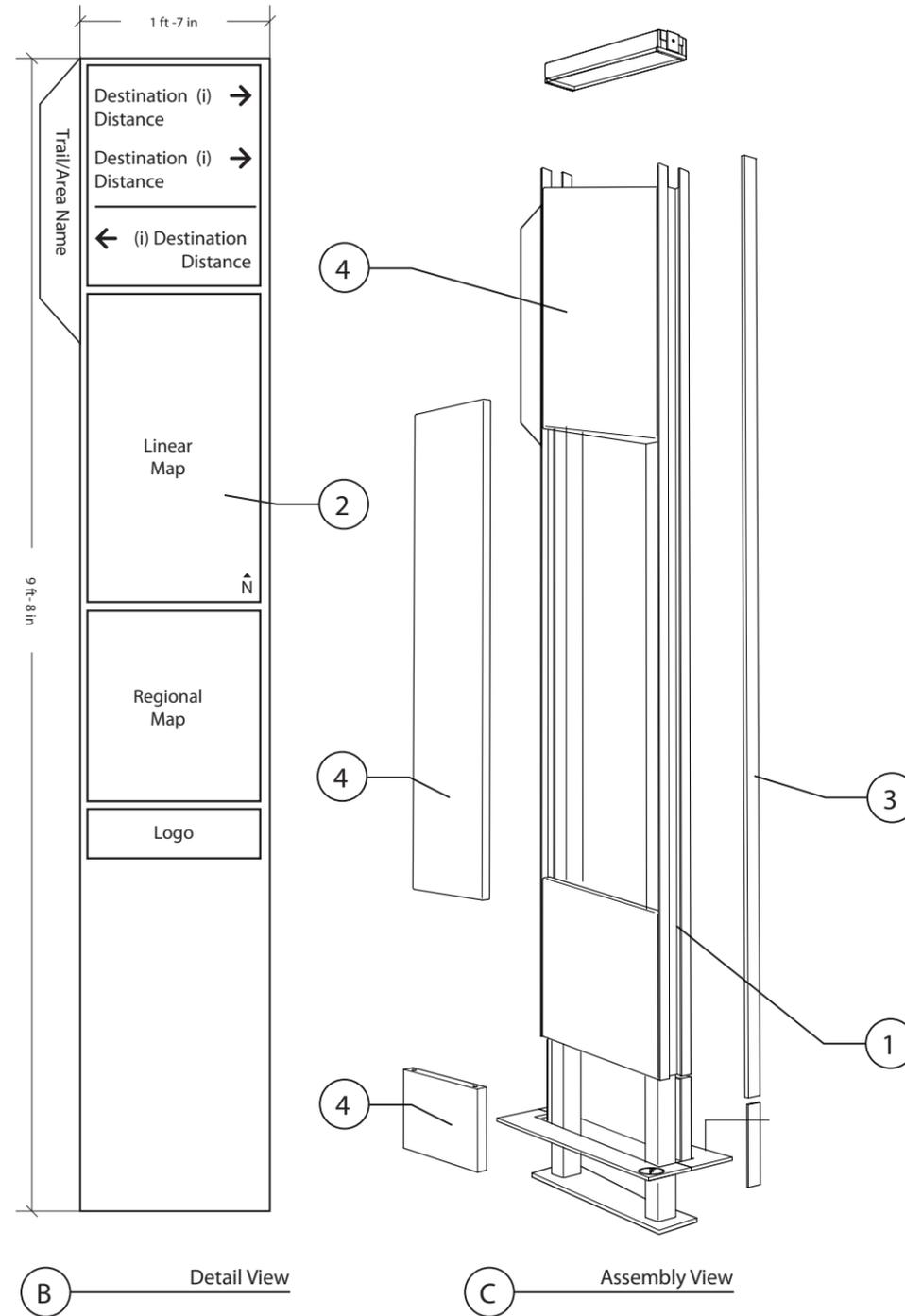
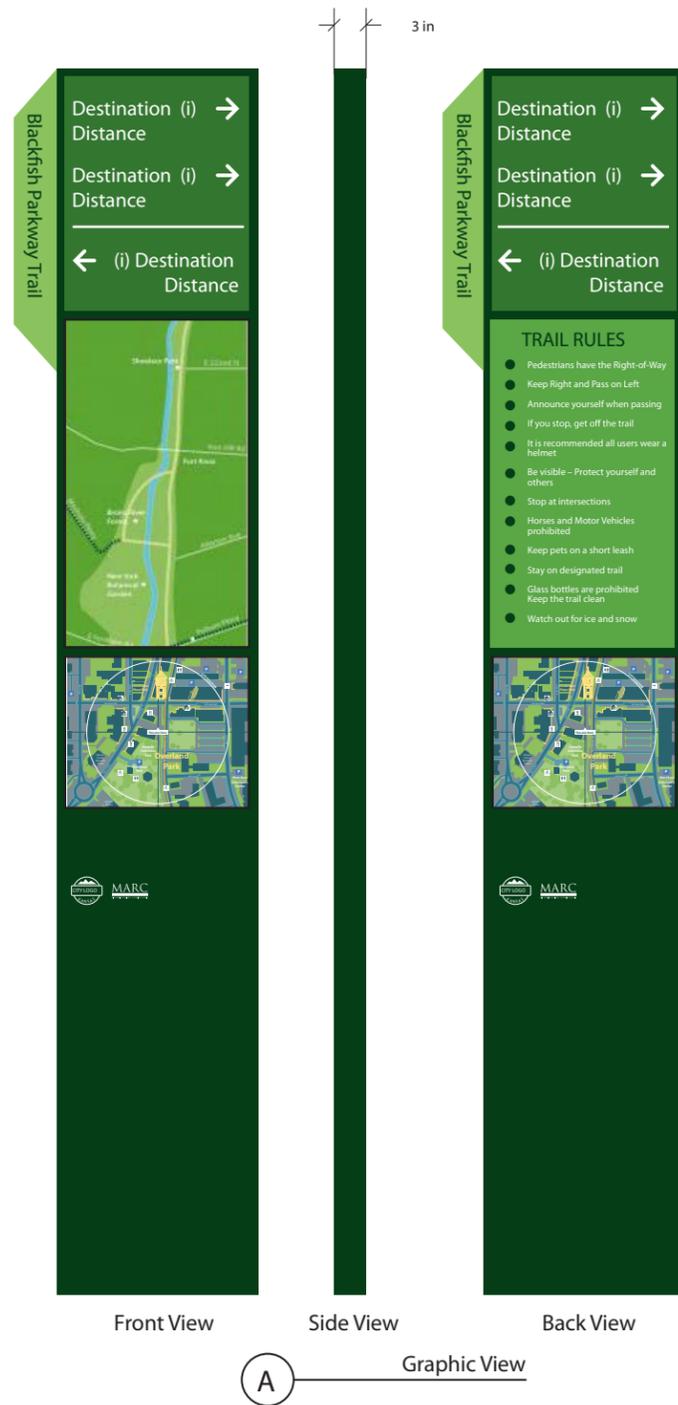
Sign Type C1
Information v1

Pole mounted aluminum blade sign. Strap mounted boxed .125 panel with painted background 1/16-in digital high pressure laminate panel over aluminum face.

- 1/2-in thick digital high pressure laminate panel. iZone, Fossil or Folia brands.
- Pole strap collar fastener attached to thread bracket on dHPL panel.
- Existing pole

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

Information v2- Design Concept C2



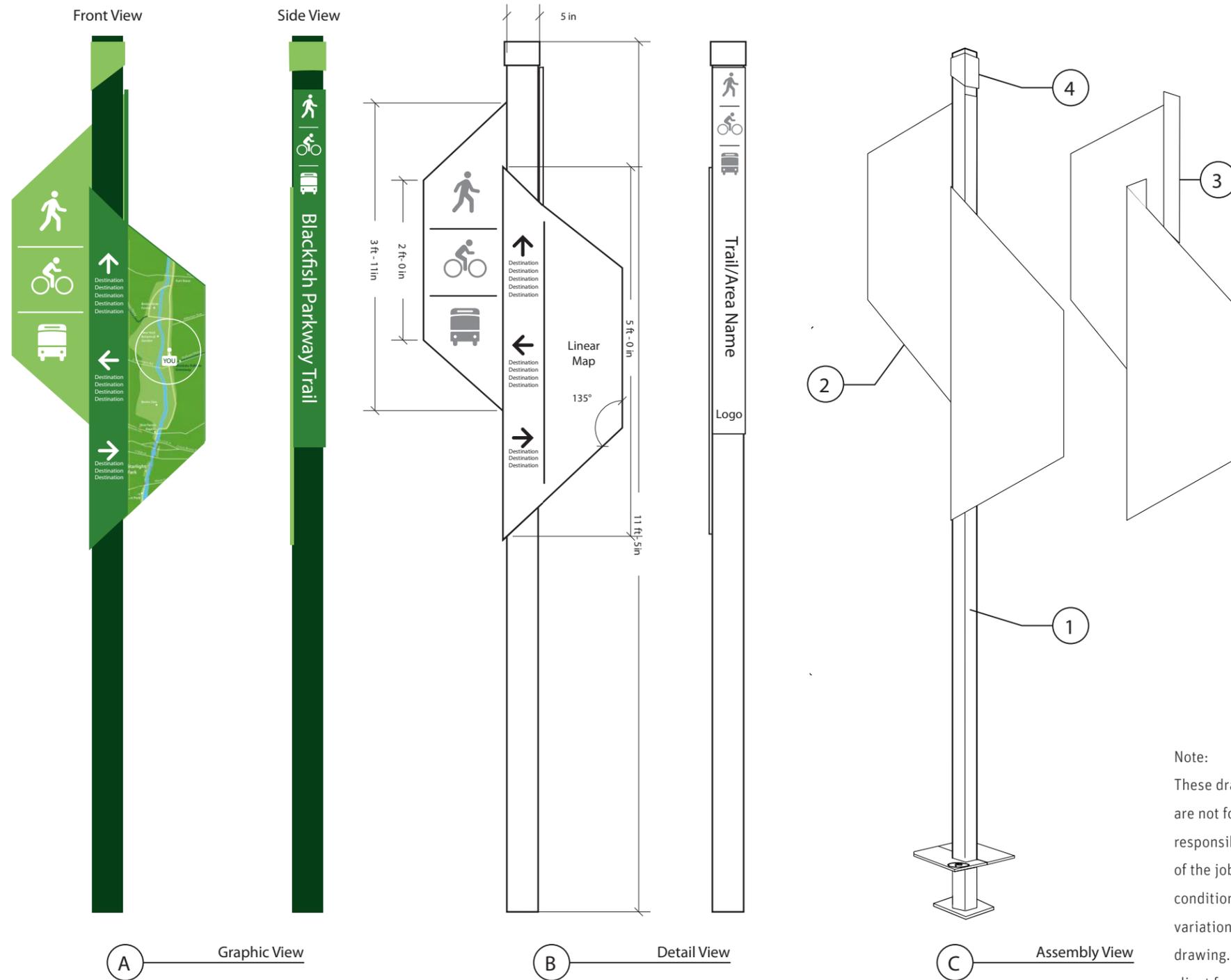
Sign Type C2
Information v2

Boxed aluminum .125 skin with internal frame. Modular frame mounted in four face zones by compartmentalized graphic areas. Painted aluminum box with direct printed graphics.

1. Aluminum construction rail mounted panel system with side channels and concealed fasteners.
2. Steel base plate.
3. Powder coated side trim.
4. Digital graphic art, text and map panels.

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

Information v3 - Design Concept E



Sign Type E Information v3

Flexible modular sign system with interchangeable panels. Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print or dHPL panels from iZone, Fossil or Folia over alum. Graphics on all sides of panel.

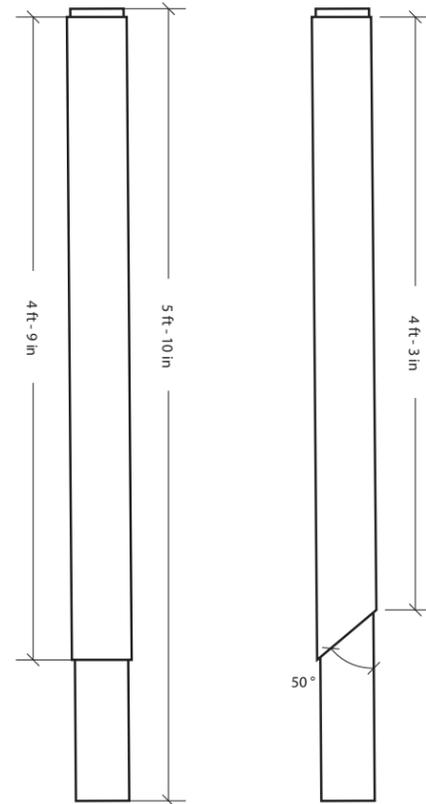
1. Square aluminum powder coated post.
2. Graphic panel. Direct print, dHPL panel porcelain panels.
3. Graphics on all sides and return.
4. Powder coat painted top finial.

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

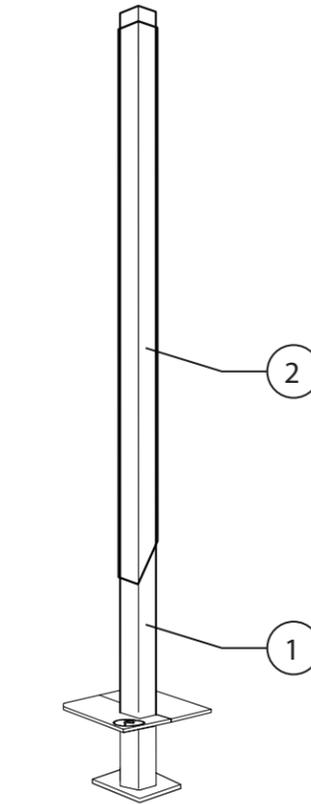
Post Marker v2 - Design Concept F



A Graphic View



B Detail View



C Assembly View

Sign Type F Post Marker v2

Painted aluminum box over square post with direct printed graphics. with painted 5-in square aluminum pole.

1. Square aluminum powder coated post.
2. Graphic panel painted with automotive grade finish and applied reflective vinyl.

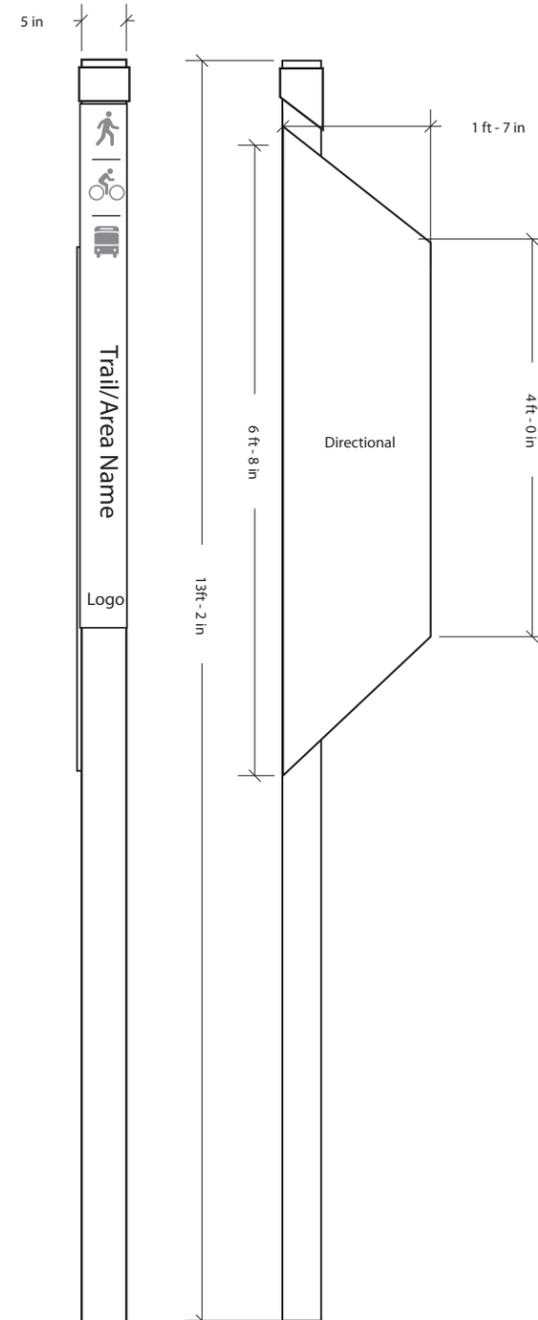
Note:

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

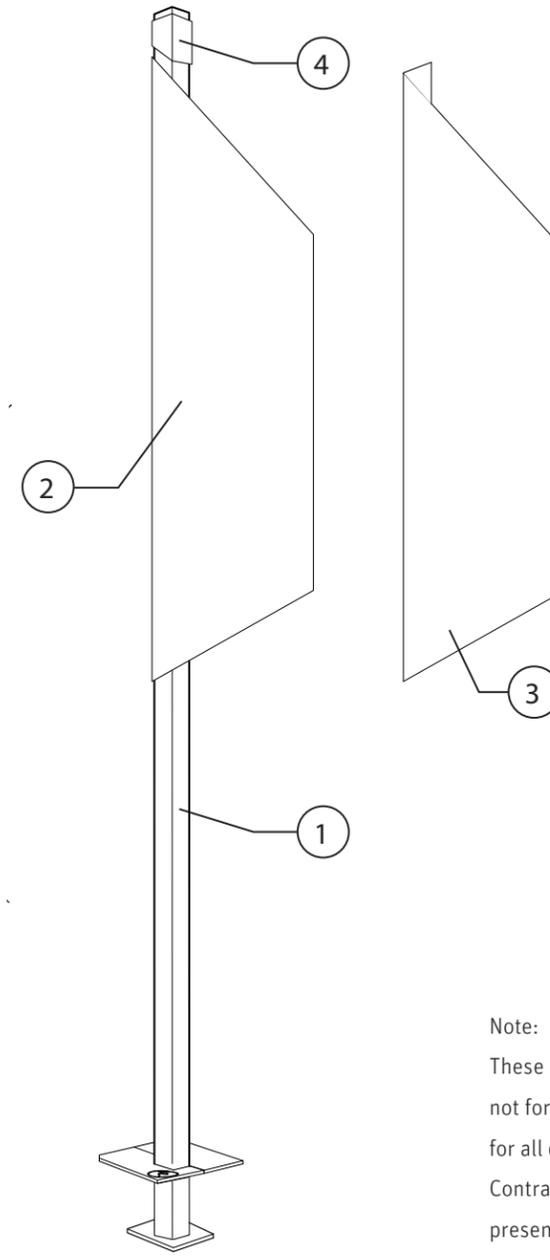
Arrival - Design Concept G



A Graphic View



B Detail View



C Assembly View

Sign Type G Arrival

Flexible modular sign system with interchangeable panels. Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print or dHPL panels from iZone, Fossil or Folia. Graphics on all sides of panel.

1. Square aluminum powder coated post.
2. Graphic panel painted with automotive grade finish and applied vinyl.
3. Retro-reflective graphics on sign face per DoT standards.
4. Powder coat painted top finial.

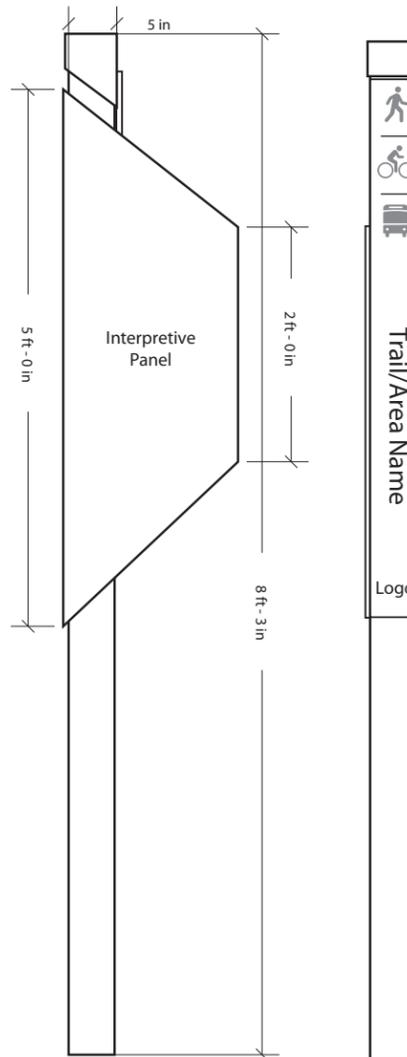
Note:

These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

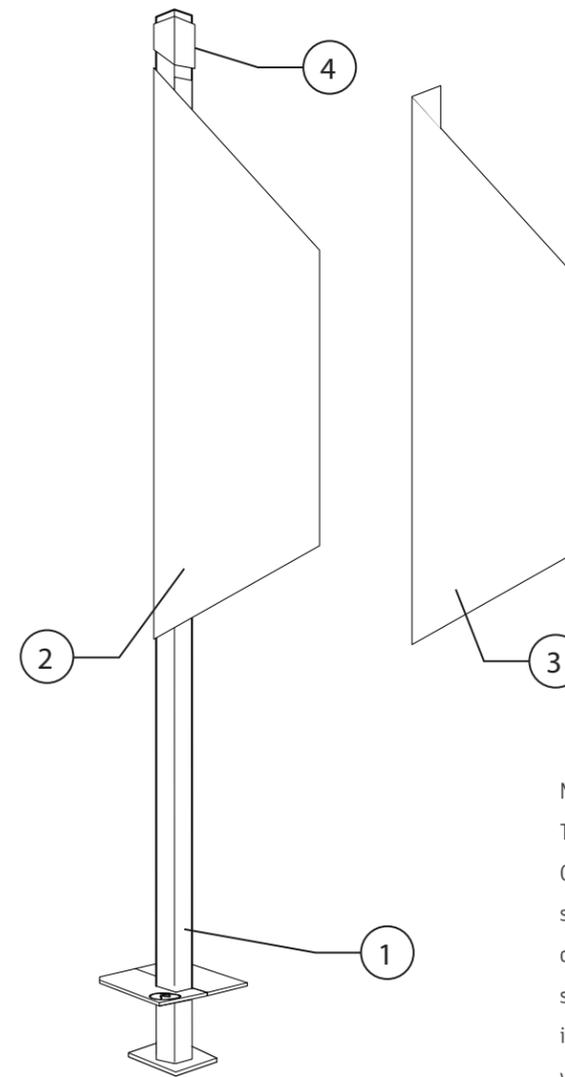
Interpretive - Design Concept H



A Graphic View



B Detail View



C Assembly View

Sign Type H Interpretive

Painted square 5-in pole and finial cap. Aluminum panel wraps around side of pole. Two graphic panels are painted as direct print.

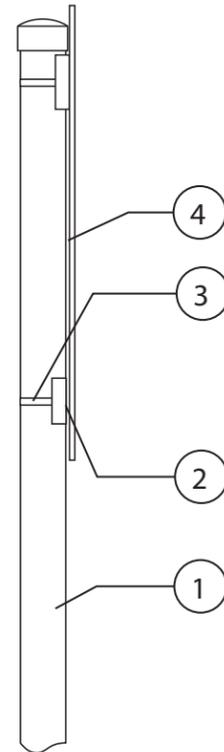
1. Square aluminum powder coated post.
2. Graphic panel. Direct print, dHPL panel porcelain panels.
3. Graphics on all sides and return.
4. Powder coat painted top finial.

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

Bike Route Destination - Design Concept I



A Graphic View



B Side View



C Elevation View

Sign Type I Bike Route Destination

Pole mounted aluminum blade sign. Strap mounted boxed .125 panel with painted background and applied cut/cast retro-reflective vinyl graphics.

1. Existing pole.
2. Aluminum wing bracket for horizontal mounting of sign to pole.
3. Strap attachment from pole to wing bracket.
4. 1/8-in thick aluminum panel painted background and vinyl graphics. UV over-laminate.

Note:
These drawings are meant for DESIGN INTENT ONLY and are not for construction. Contractor shall verify and be responsible for all engineering, dimensions and conditions of the job. Contractor shall be familiar with the site and conditions it presents. The client must be notified of any variations from the dimensions and conditions shown on this drawing. Shop drawings and details must be submitted to client for approval prior to proceeding with fabrication.

3.5 - Construction Materials & Environment

The sign concepts included in the Kansas City Regional Wayfinding System were designed with flexibility in mind when it comes to specific materials. Some jurisdictions may choose to use materials that are more durable, yet also more expensive while others may prefer to use less expensive materials and replace them more frequently while still maintaining a cohesive system. Some considerations regarding materials are provided below.

When designing a wayfinding system, the material selection must match the environmental conditions in which they will exist. Specifications of durable materials for the sign program shall take into account the environment, temperatures, and climate within the Midwest. In all cases, the manufacturer guidelines will be the primary reference for material suitability. Materials may be exposed to the following conditions:

- UV radiation from sun exposure
- High-temperature fluctuation
- High wind and rain
- Snow and ice
- Vandalism

Painted and direct print type graphic applications on pedestrian wayfinding systems prevent vandalism as many trail sign programs are in remote or less populated areas that are prone to attack.

Other durable surfaces include digital high-pressure laminate and porcelain graphic panels. Both of these are used by the National Park Service UniGuide Sign Standards for implementation of durable signs, which are prone to high volumes of hands-on touching by visitors.

Level of applicability for the Kansas City Region exterior environment uses:

Vehicular	Pedestrian	Material
●	●	Metal
◐	◐	Painted Surfaces
●	◐	Powder Coat Paint Surface
◐	◐	Vinyl Surfaces
◐	●	High Pressure Laminate
◐	●	Porcelain Enamel

● Excellent ◐ Good ◑ Medium ◒ Poor

Metals



Steel and aluminum should be coated to prevent weathering damage. Powder coating and anodizing will give an even hard-wearing finish. Automotive-grade paint finishes include Axzo Nobel and Matthews paints and will appear in like-new condition for 10-15 years with proper maintenance. For longer durations, use materials in their natural finish such as weathering steel or exterior treated aluminum. Compartmentalized (kit-of-parts) construction will enable major sign components to be long-lasting. At the same time, graphic areas, which have a limited life due to change in messaging, can be made from a less durable material.

Vinyl Surfaces (3M/Avery)



Vinyl is an inexpensive way to implement a sign system but generally do not last more than a few years in most exterior environments. Poor colors for a sunny environment include black, red, and green will get the most gradation and will be noticeably faded in 3 to 5 years. Protective surface treatment includes UV resistant clear coat that may extend the life of the solid colors by a few years.

3.6 - Sign Fabrication, Assembly and Installation Guidance

The family of signs that make up the Kansas City Regional Wayfinding System can be fabricated using outside vendors or created in-house depending on the materials selected and the in-house capabilities and equipment. The specific materials and sign dimensions for each sign are provided in the sign concept drawings provided earlier in this chapter. The basic assembly instructions are also presented in those drawings. Engineering for structure and wind-load will need to be done prior to fabrication. The specific colors to be used are to be determined as a construction documentation effort. The set of icons and graphics are provided in the table below.

Graphic Icons



Etiquette

- | | | | |
|-------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------|
|  | Pedestrians have the Right-of-Way |  | Horses and Motor Vehicles prohibited |
|  | Keep Right and Pass on Left |  | Keep pets on a short leash |
|  | Announce yourself when passing |  | Stay on designated trail |
|  | If you stop, get off the trail |  | Glass bottles are prohibited |
|  | It is recommended all users wear a helmet |  | Keep the trail clean |
|  | Be visible - Protect yourself and others |  | Watch out for ice and snow |
|  | Stop at intersections | | |

3.7 - Accessibility

Americans With Disabilities Act Standards

The 2010 ADA Standards for Accessible Design provides specific guidance for the design of communication elements, including signs. The following standards from Section 703.5—Visual Characters should be considered when designing wayfinding signs for outdoor use.

Finish and Contrast

Signs are more legible for persons with low vision, as well as persons with color vision deficiency (i.e., colorblindness), when the value contrast (light vs. dark) between the characters and the background is kept high. This may be achieved by using light characters on a dark background or dark characters on a light background.

Visual characters and their background should both have a non-glare finish. Consider additional factors that affect the ease with which the text can be distinguished from its background including shadows cast by lighting sources, surface glare, and the uniformity of the text and its background colors and textures.

Character Properties

Case

Uppercase, lowercase or a combination

FOX

✓ correct

fox

✓ correct

Fox

✓ correct

Style

conventional forms; Not italic, script, or decorative

Fox

✓ correct

Fox

✓ correct

Fox

✗ incorrect

Proportion

Letter width 55% to 110% of letter height

ABC

✓ correct

ABC

✗ too wide

ABC

✗ too narrow

Weight

Stroke thickness 10% to 30% of letter height

ABC

✓ correct

ABC

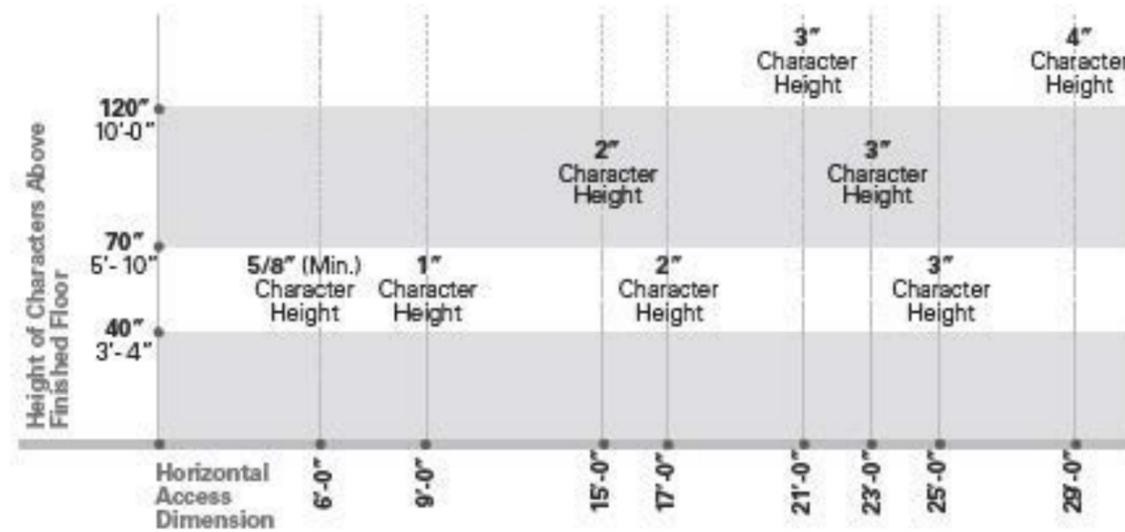
✗ too heavy

ABC

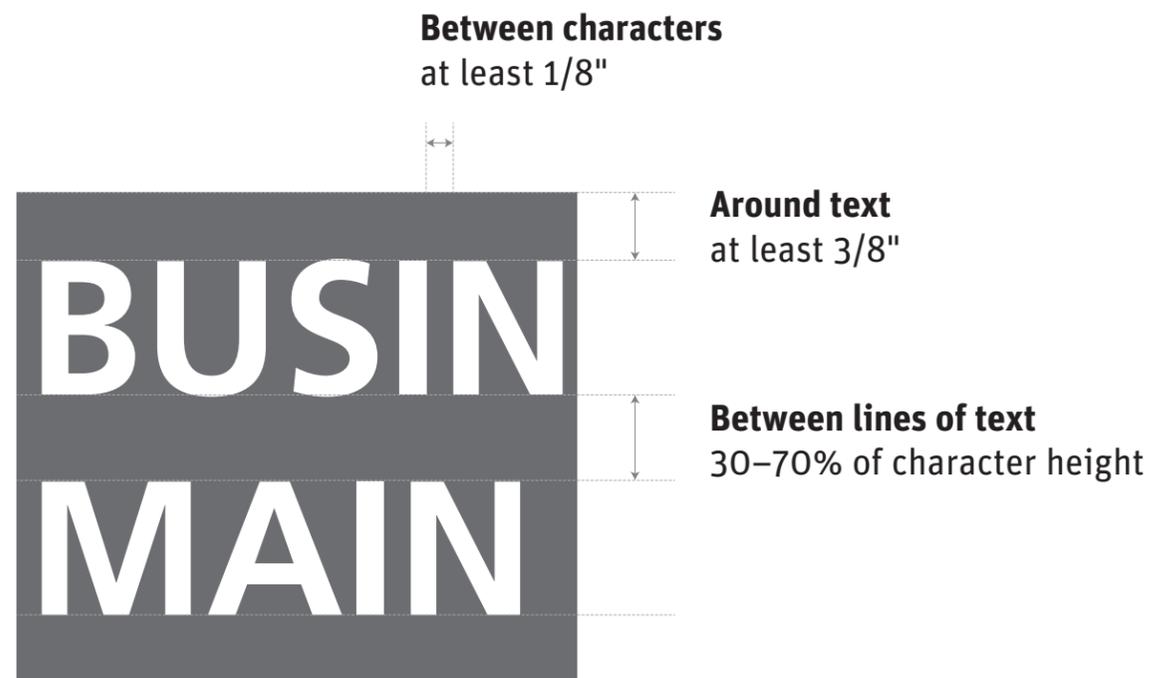
✗ too thin

Character Height

Visual character and size requirements for legibility



Character and Line Spacing



MUTCD Chapter 9 Guidance

The Federal Highway Administration’s MUTCD specifies the standard for all wayfinding signs installed on any street, highway, bikeway, or private road open to public travel. Commonly referred to as “on-street” signs, the MUTCD states these signs should be designed so that:

- Legibility and size combine with placement to permit adequate time for response
- Uniformity, size, legibility, and reasonableness of the message combine to command respect

The MUTCD also recommends the arrangement and amount of text on on-street wayfinding signs:

- Decision signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions.
- A straight ahead location should always be placed in the top slot followed by the destination to the left and then the right. If two destinations occur in the same direction, the closer destination should be listed first followed by the farther destination.
- Arrows should be placed for glance recognition, with straight and left arrows placed to the left of the destination name, and right arrows placed to the right of the destination
- Approved fonts for include the Federal Series (series B, C, or D), also known as Highway Gothic, and Clearview.
- A light-dark contrast 70% needs to be achieved between foreground (text and graphics) and background.

Community Wayfinding Standards

Wayfinding signs may allow for an expression of community identity, reflect local character, and provide more information than signs which strictly follow the basic guidance of Part 9 in the MUTCD. Section 2D.50 of the MUTCD describes community wayfinding signs as follows:

1. Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other users to key civic, cultural, visitor, and recreational attractions and other destinations within a city or a local urbanized or downtown area.
2. Community wayfinding guide signs are a type of destination guide sign with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.

Colors

Per the community wayfinding standards, color coding may be used on wayfinding guide signs to help users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area. Community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system.

The MUTCD prohibits the use of some background colors, known as “assigned colors,” for community wayfinding signs in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users. “Assigned colors” consist of the standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink. Green is the standard color for guide signs. Blue and brown are also used for traveler information including destination and street name signs. The remaining colors are eligible for use on community wayfinding signs provided they are sufficiently different from “assigned colors.”

Green, blue and brown are approved for use on traveler information signs and have been accepted by some DOTs for wayfinding signs. The remaining colors not having restricted uses are appropriate for wayfinding signs per the community wayfinding standards.

Abbreviations

The use of abbreviations should be kept to a minimum when placing destination names on signs. When insufficient space is available for full wording, abbreviations may be used. MUTCD accepted abbreviations are included in the table below. Unless necessary to avoid confusion, periods, commas, apostrophes, question marks, ampersands, and other punctuation marks or characters that are not letters or numerals should not be avoided.

MUTCD Compliant Abbreviations

Message	Abbreviation	Message	Abbreviation
Alternate	ALT	Miles Per Hour	MPH
Avenue	AVE	Minute(s)	MIN
Bicycle	BIKE	Mount	MT
Boulevard	BLVD	Mountain	MTN
Bridge	BR	National	NATL
Center (as part of a place name)	CTR	North	N
Circle	CIR	Parkway	PKWY
Court	CT	Pedestrian	PED
Crossing (other than highway)	X-ING	Place	PL
Drive	DR	Road	RD
East	E	South	S
Hospital	HOSP	Street	ST
Information	INFO	Telephone	PHONE
International	INTL	Terrace	TER
Junction / Intersection	JCT	Trail	TR
Mile(s)	MI	West	W

Emerging Technology to Enhance Accessibility

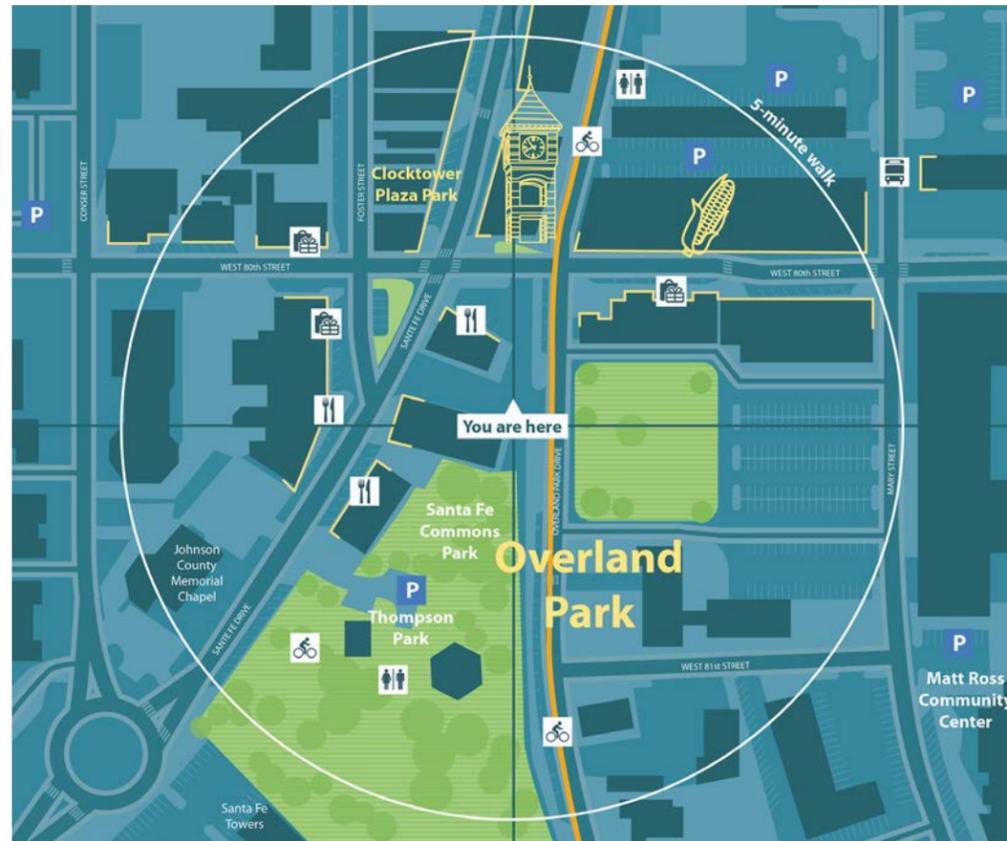
The integration of digital technology into everyday lives has created enhanced opportunities for accessible wayfinding strategies. Accessible audio based navigation tools can communicate turn-by-turn wayfinding guidance to users through their smartphones, thus creating inclusive experiences and promoting independent navigation for blind and vision impaired persons. Though this technology has primarily been deployed to date in indoor environments, it beginning to be texted and implemented for use in public transit systems:

- A 2019 trial commissioned by the Los Angeles County Metropolitan Transit Authority which employed open standard audio based wayfinding technology found that 95% of the study participants would be more likely to use public transit if the technology were deployed on a permanent basis. (source: <http://www.wayfindr.net/wp-content/uploads/2020/01/Wayfindr-LA-Metro-Trial-Report.pdf>, accessed 3/18/2020)
- Sound Transit in the Puget Sound region of Washington State is currently pursuing an Accessible Mobility on Demand grant from the Federal Transit Administration to implement an audio navigation system to enhance access both to and through transit stations.

3.8 - Opportunities to Integrate Other Information Channels

The new wayfinding system should ultimately be linked to other informational channels that serve the Kansas City Region. The development of these information sources goes beyond the scope of this project, but should be considered as future activities to enhance the implementation of the wayfinding system.

- **Regional Wayfinding Map.** The development of a detailed map that uses a consistent style and that incorporates key routes, landmarks and consistent naming conventions throughout the region will be an important future component of the wayfinding system to ensure that signs with maps are consistent and therefore easy for the user to understand. This detailed view map would require coordination with land-use/GIS information. This content could include landmark building footprints, amenities, restroom, food, accessible routes and street crossings. Stylistically consistent maps, like the one shown in this example from Overland Park can be used across information platforms.



- **Mobile Devices.** The integration of technology into the wayfinding system will reinforce the message of innovation as a core value of the Kansas City Region and its technological and entrepreneurial spirit. Tourists, residents, and business owners now expect incorporation of these types of devices and applications. These wayfinding tools are a part of everyone's daily routine. Consideration should be given to a variety of technological wayfinding approaches including end-user technology such as mobile devices and websites utilizing open available data sources.
- **End User Technology.** This is the utilization of technology where information is communicated to users through their personal device (smartphone, tablet or computer). This concept does not require the region to invest in hardware or infrastructure and eliminates issues of vandalism, theft, etc. The only investment is in development of the software framework, content and ongoing maintenance (content updates).
- **Open-Data Philosophy.** This transparency of information improves efficiency in city operations while encouraging the public and technology developers to create software utilizing the available data feeds. Best practices necessitate a series of data feeds that should be created or made available. This would encourage robust effort by outside developers to create usable wayfinding tools for visitors. Through the use of regional open GIS and planning data, as well as other information that may be available through partnerships with public and private institutions, a smartphone mobile application can be developed specifically for the Kansas City Region. The following types of data would be helpful to wayfinding and in some cases general tourism information:
 - » **Smart Phone App.** A Kansas City Region multi-modal centric mobile application can help visitors maximize their experience while in the region. Unlike signage, which is stagnant in the environment, mobile applications allow a visitor to request, search and discover new and specific information at any point and time during their journey. In developing a mobile application there are overarching philosophies, as well as functional and design criteria that need to be established.

- » **App Functionality.** The mobile app can act as a hand-held “hub” that unifies the information of standalone apps for individual businesses/services into a single app. The individual apps can also exist for people who are looking for specific information. The mobile app will have a variety of categories, including things to do, events, hotels, attractions, shopping, restaurants, college campuses, hiking trails, bicycle paths, parking lots, services, emergency points and any other point of interest (POI) in or near the Kansas City Region. It also allows layering additional categories to a current location, so that one may discover other options related to a current search. “I am going to a museum...is there a bus stop or bike trail nearby?” It also allows visitors to view and use other information about a POI like a website, phone number and hours.
- » **Potential Features.** The following are potential features that may be considered within the mobile application. These may be integral to the data feed or provide the ability to link to a third-party source.
 - Map-based location services with GPS
 - Transportation mode option (bike, walk, transit, car-share, bike-share, auto)
 - Parking information (locations and real-time space occupancy)
 - Attraction categories
 - Retail promotions
 - Events calendar and live entertainment schedules
 - Multiple languages - cultural tourism
 - Traffic reports
 - Current construction delays
 - Push alerts (Opt-In)
 - Local news
 - Post reviews of attractions visited
 - Facebook
 - Twitter
 - Customer feedback
- » **QR Codes.** QR Codes help visitors connect to specific information through scanning technology. Visitors scan codes using a free app on their mobile phones and are promptly directed to online information about events, parking, dining or shopping. The visitor is engaged at the maximum point of impact by using a device that is central to their daily lives, the mobile phone. Note these can only be used on non-roadway signs as they are not allowed by the MUTCD.
- » **Text Message Maps.** Static orientation maps (at bus shelters, kiosks or on signs) can include a “text message number”. When keyed in, the user receives a return text message with information about the destination. This can be a short message about events, hours of operation, or the best place to park, functioning as a low-cost solution and little physical maintenance. The maps (and QR Codes) can both be integrated into existing infrastructure elements, such as bus shelters, bike racks, and existing poles.
- » **Interactive Wayfinding, Interactive Screens, Kiosks, and Maps.** There are a multitude of products that can be utilized. This becomes a physical extension of the Kansas City Region wayfinding system and website. These signs may be located at key intersections and gathering points or integrated into a micromobility hub where biking, walking and transit options come together and also be used to assist with management of curbside uses.. This portal to information can provide real-time data, promote events and provide downloadable information. These landmark elements become beacons of orientation and further reinforce the tech savvy attitude of the region and its progressive culture. The success of these elements is based on the usefulness of the content they provide, and the ability of the region to care for them physically and content-wise. It is also important that the design reflects the overall identity of the wayfinding system, so the elements are recognized as an extension of the other elements implemented as part of the system.



04. Placement Guidance

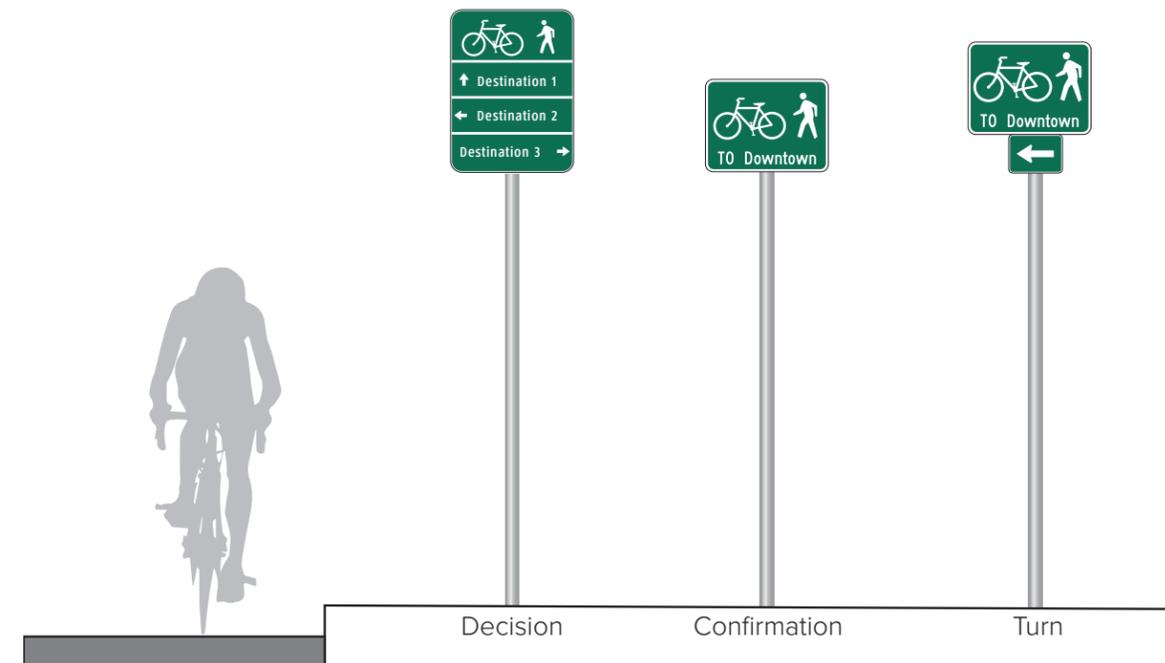
4.1 - Wayfinding Placement Guidance

Consistent and appropriate placement of wayfinding elements helps to provide a legible wayfinding system while ensuring the signage elements do not create undue safety hazards. Many communities find that implementing a wayfinding system as a component of a pedestrian, bicycle and transit network enhances other encouragement efforts because it provides a visible invitation to new users, while also encouraging current or experienced users to explore new destinations. General guidance by the American Association of State Highway Transportation Officials (AASHTO) regarding sign placement includes:

- Guide signs may be used to designate continuous routes that may be composed of a variety of facility types and settings.
- Wayfinding guidance may be used to provide connectivity between two or more major facilities, such as a street with bike lanes and/or sidewalks and a shared-use path.
- Wayfinding may be used to provide guidance and continuity in a gap between existing sections of a facility, such as a bike lane or shared-use path.
- Road/path name signs should be placed at all path-roadway crossings to help users track their locations.
- Reference location signs (mile markers) assist path users in estimating their progress, provide a means for identifying the location of emergency incidents, and are beneficial during maintenance activities.

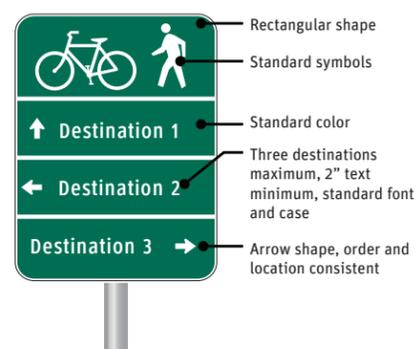
Fundamental Navigational Elements

Fundamental navigational elements are the foundation of a wayfinding system to guide bicyclists and pedestrians to their destinations while traveling along designated facilities. These fundamental elements include decision signs, confirmation signs, and turn signs. The MUTCD (Section 9B.20) provides standards relating directly to on-street bicycle networks, but the same sign types and placement considerations apply to off-street shared-use paths. Design of fundamental navigational elements may differ from on-street, MUTCD-regulated facilities in that they may consider other modes beyond bicycles (e.g. pedestrians, skateboards, scooters, etc.), and opportunities exist for more flexible sign design and branding.



Decision Signs

Decision signs mark and are placed prior to the junction of two or more routes. These signs also inform users how to access nearby destinations. These signs include destinations that can be paired with distances in time and/or mileage, and arrows. Users can orient themselves within the network based on key destinations including culturally significant landmarks, shopping districts, and other recreational facilities. To maintain simplicity, decision sign assemblies should not display more than three destinations.



Function and Content

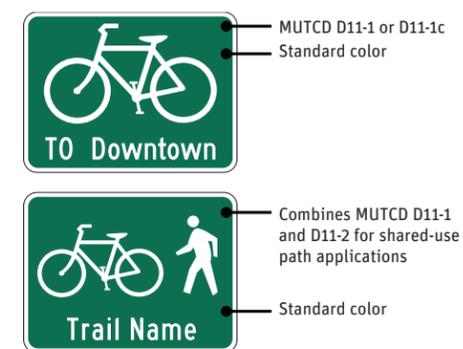
- Mark the junction of two or more routes
- Inform users of designated routes to access key destinations
- Maximum of three destinations
- Provide direction and distance to destinations
- May include travel times to destinations

Placement

- For on-street applications, place 50-100 feet prior to a decision point; for off-street: 25-50 feet. These are adequate distances for bicyclists and pedestrians to see and respond to sign messaging. Exact distances will vary depending on context
- Place at key junctions alongside a designated route to indicate nearby destinations
- Left turns for bicyclists require special consideration. The decision sign should be placed at a distance before the intersection based on the number of turn lanes the bicyclist needs to merge across to make a legal left turn:
 - » Zero lane merge: 50 feet
 - » One lane merge: 100 feet
 - » Two lane merge: 200 feet

Confirmation Signs

Confirmation signs identify designated routes. They build confidence by confirming that the user is on the correct path or route, especially after turns. In on-street applications, these signs increase awareness of bicyclists by informing motorists of their presence. Confirmation signs are an integral component of any trail or bike route network that crosses roads, changes direction, and has intermediate access points between trail or route beginning or end.



Function and Content

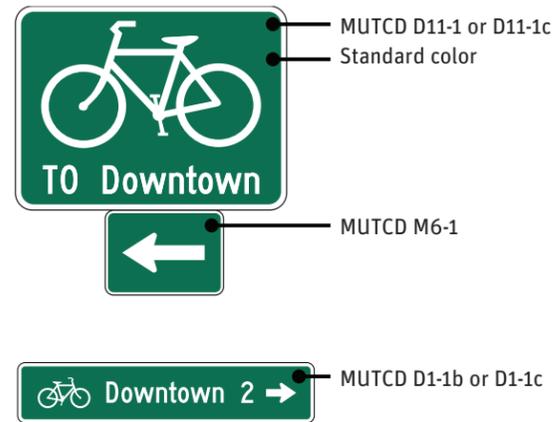
- Placed after access points along a trail or bike route network, as well as after decision or turn signs
- Spaced periodically along a trail or bike route network to maintain a consistent level of confidence that users are still traveling along the same route
- Do not indicate a change in direction
- May have informational or branding content such as the name of the route
- May include up to one directional destination (e.g. downtown)

Placement

- After decision signs and decision points
- Locations where a designated route is not linear as well as after complex intersections (e.g. intersections with more than four approaches, roundabouts, or indirect routing)
- In off-street applications, approximately every 1/4 to 1/2 mile unless another type of wayfinding sign or pavement marking is present within the interval
- In on-street applications, within 50-100 feet immediately following turns to confirm designated route
- If the signed route is approaching a turn, turn signs or decision signs should be used instead of confirmation signs

Turn Signs

Turn signs indicate where a designated route turns from one street or trail onto another. Turn signs are at key points of navigation for bikeway users. Turn signs direct bicyclists and pedestrians where to turn to remain on the designated route.

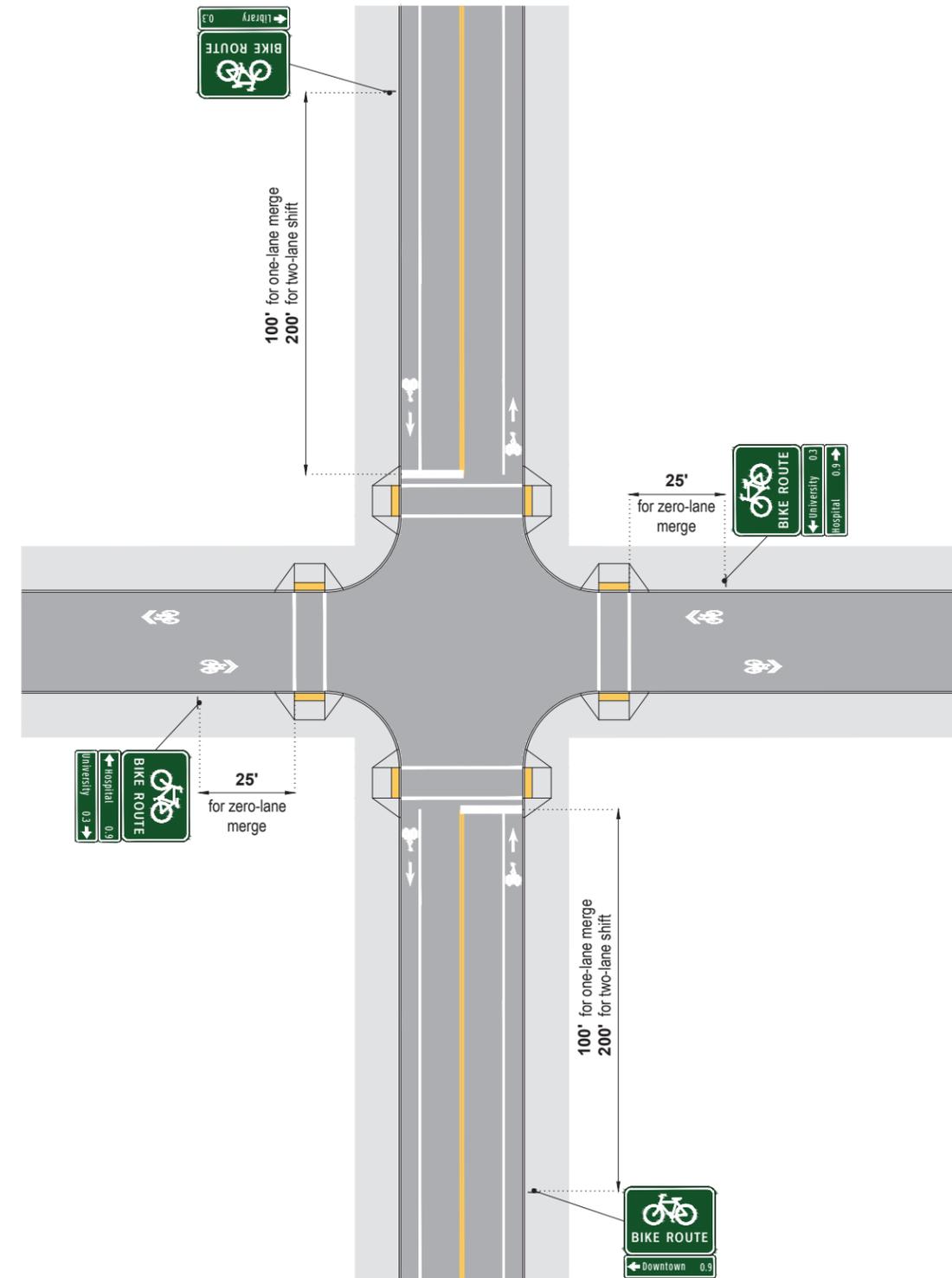


Function and Content

- Clear direction for bicyclists and pedestrians to turn when a route transitions from one roadway or trail to another
- May be a combination of a confirmation sign (MUTCD D11-1) and directional arrow (MUTCD M6-1) or a stand-alone decision plaque (MUTCD D1-1, D1-1b)
- May include travel distance to destination (MUTCD D1-1a, D1-1c)

Placement

- In on-street applications, 50-100 feet in advance of the turn
- In off-street applications, 25-50 feet in advance of the turn
- Left turns for bicyclists require special consideration. The turn sign should be placed at a distance before the intersection based on the number of turn lanes the bicyclist needs to merge across to make a legal left turn:
 - » Zero lane merge: 50 feet
 - » One lane merge: 100 feet
 - » Two lane merge: 200 feet
- In locations where there are two or more intersecting trails or bike routes, a decision sign should be used



On-Street Turn Sign Placement Guidance

Vertical and Lateral Clearance

The Architectural and Transportation Barriers Compliance Board and the AASHTO Guide for the Development of Bicycle Facilities provide guidance for safe and accessible design for the built environment. The following are standards that should be considered when placing wayfinding signs.

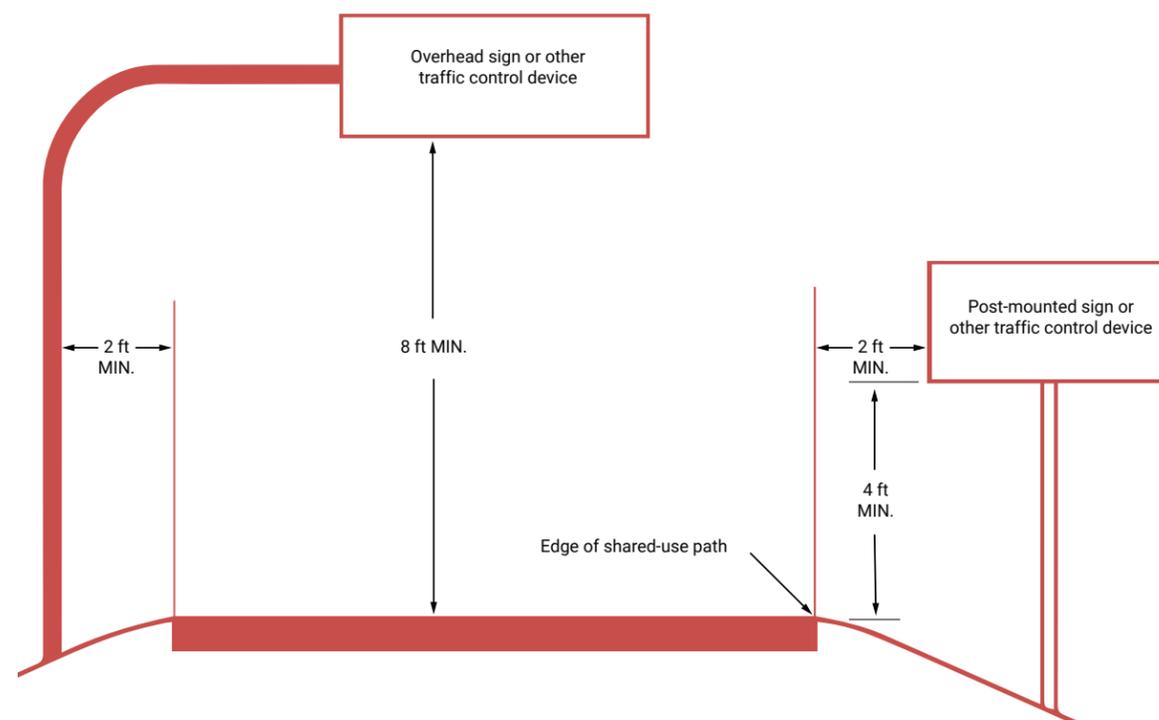
Vertical Clearance

On-Street: Vertical clearance shall be a minimum of 84” when adjacent to a sidewalk or on-street environment.

Off-Street: Vertical clearance shall be 96” high maximum (when overhanging the path), or 48” minimum from the grade of the path to the bottom of the sign and 24” from the edge of the path tread to the edge of the sign when the sign is mounted adjacent to the trail.

Lateral Clearance

Lateral clearance shall be a minimum of 24” from edge of path or curb



Minimum AASHTO clearances for signs along shared-use paths

Pedestrian Wayfinding

Wayfinding systems often relate to accessible routes and pedestrian circulation beyond the designated shared-use paths and facilities addressed by MUTCD and AASHTO guidance. It is therefore important to consider technical guidance from the ADA in order to implement wayfinding signs and other elements that do not impede travel or create unsafe situations for pedestrians, bicyclists, and/or those with disabilities.

Post-Mounted Objects

Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12”, the lowest edge of such sign or obstruction shall be 27” minimum or 80” maximum above the finished floor or ground.

Protruding Objects

Objects with leading edges more than 27” and not more than 80” above the finished floor or ground shall protrude 4” maximum horizontally into the circulation path.

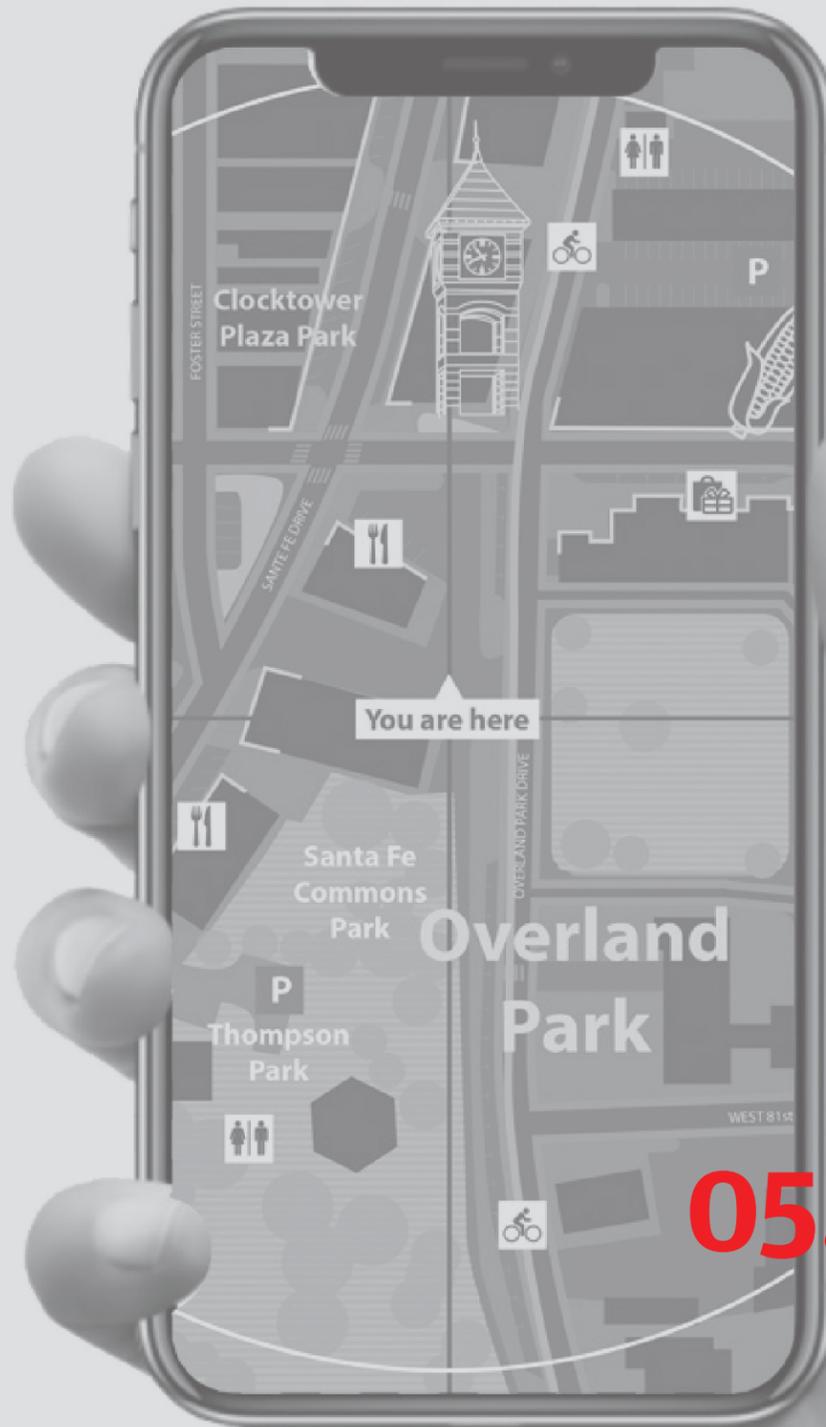
Required Clear Width

Protruding objects may not, in any case, reduce the clear width required for accessible routes. Generally, this requirement is met by maintaining 4’ minimum clear width for people maneuvering mobility devices. This requirement applies to sidewalks and other pedestrian circulation paths.



Minimum ADA clearances for protruding, overhead, and post-mounted objects

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05. Implementation and Next Steps

The previous pages summarize the Connecting Our Region planning process, provide concept drawings for the sign family types to be used, and present general sign placement guidance and considerations. This chapter provides a high-level overview of the steps that will be necessary to fully implement and coordinate the Kansas City Regional Wayfinding System. Much of the work will need to be done at the local level and then coordinated regionally to ensure consistency throughout the region. It is likely, that given the variation in the sizes of the jurisdictions and their available resources, implementation may occur at a different pace throughout the region.

5.1 - Next Steps for Individual Jurisdictions

The most immediate steps that should occur at the local level include:

1. Identify Key Destinations and Nodes of Access

Each local jurisdiction and community will need to determine the destinations that will be important to sign using the wayfinding system. Once determined at the local level, the routes and destinations will also need to be coordinated at the regional level to determine which destinations have regional significance. In addition, naming conventions will need to be regionally agreed upon to achieve consistency throughout the system. Most communities will already have a sense of key pedestrian and transit routes and important destinations. The frequency with which the local jurisdiction plans to update their signs will in part determine the destinations they sign to. If they are planning to update the signs on an infrequent basis, it will be important to only sign to locations that are unlikely to change such as parks and landmarks as opposed to businesses that may change more regularly. It will also be important for each community to identify key nodes of access, such as parks and trailheads, intersections, and points at which adjacent communities connect.

2. Establish a Hierarchy of Destinations

Once the key destinations for a local community have been identified, each community should determine a hierarchy of destinations as discussed elsewhere in this report. It will be useful to think of various levels of destinations.

Wayfinding relies on the clear communication of destination names that are consistent, recognizable, and legible. In many cases there will be more possible destinations than can be included on a wayfinding sign, therefore a system of progressive disclosure is used to

gradually present information as it becomes more relevant. Disclosing information in stages relies on an agreed upon hierarchy of destinations.

The guidance below describes an approach for organizing potential destinations to which pedestrians, bicyclists and transit users may want to travel. Signs should follow a consistent approach throughout the Kansas City Regional Wayfinding System so the system is predictable and builds trust among users. Once a destination is named on a sign, it should be included on subsequent signs until the destination is reached.

Potential destinations can be assigned to one of three groups based upon their usefulness as navigational references for pedestrians and bicyclists:

- Level 1 – City Centers & Districts
- Level 2 – Regional Destinations & Landmarks
- Level 3 – Local Destinations

Level 1 destinations receive priority on wayfinding signs on local routes and corridors, followed by Level 2 and Level 3. Level 1 and 2 destinations are typically included on signs for bicyclists, and level 3 destinations are typically included on signs for pedestrians. Transit users may fall into the category of bicyclist or pedestrian depending on how the travel to and from transit stops. Destinations will be signed at differing intervals for bicyclists and pedestrians, because bicyclists travel greater distances at higher speeds, while pedestrians travel at lower speeds and may stop more frequently to read detailed signs or maps. All destinations to be signed should be open and accessible to the public.

Level 1 – City Centers & Districts

Level 1 destinations provide orientation for inter- and intra-municipal trips. They include city centers, historic, commercial, or cultural districts, and universities. Emphasis should be placed on districts providing a mix of services and attractions.

Level 2 – Regional Destinations & Landmarks

Level 2 destinations are specific regional attractions that generate a large amount of traffic. These include transit stations, major tourist venues, regional parks, open spaces, and major landmarks.

Level 3 – Local Destinations

Level 3 destinations are specific local attractions within a neighborhood. They include community centers, libraries, transit stops, elementary schools, and local parks.

3. Develop Routes and Placement Plans

After destinations have been determined it will be necessary to identify the key walking, bicycling and transit routes to these destinations and to develop a corresponding sign placement plan for each route, and eventually for the entire local wayfinding system.

4. Determine Proposed Sign Locations

Plan for specific locations, installation allowances, overhead and underground obstructions, accessibility considerations and develop map with sign positions.

5. Sign Location Plan

Plot specific sign locations on a scaled map and verify approvals from regulatory authorities with oversight in the public realm. Sign location plans are typically provided in a graphic or geo-referenced mapping program to convey specific location and orientation. Each sign shall have a key to uniquely identify the sign.

6. Sign Removal Plan

Places that are installing signs where older sign programs exist should consider developing a plan to remove the old signs and reduce clutter.

7. Determine Costs and Budgets for Implementation

After destinations, routes and a local sign placement plan have been determined, local jurisdictions should then determine the budget needed for local implementation. and verify budget with fabricator, graphic artist or general contractor for construction alignment with other associated projects. Opportunities for regional cost savings and potential regional funding sources are discussed in the following section on regional coordination.

For cost planning purposes, cost estimates for both fabrication and installation were gathered from three different vendors and are shown in the following table. By using a modular, “kit-of-parts” design, the wayfinding signs presented in this report can be updated, maintained and repaired at a relatively low cost. Additional cost savings may be achieved by ordering higher quantities of signs and potentially having multiple jurisdictions order sign panels and other materials collectively.

SIGN TYPE	PRODUCT	UNITS	Walton Signs		Jones Sign		Star Signs	
			EACH	EXTENDED	EACH	EXTENDED	EACH	EXTENDED
A	Pole mounted aluminum Blade sign 1'-6" x 5'	15	\$ 1,100	\$ 16,500	\$ 1,375.00	\$ 20,625	\$ 1,600.00	\$ 33,000,000
B	Ground Marker 9" Diameter -	15	\$ 320	\$ 4,800	\$ 1,200.00	\$ 18,000	\$ 800.00	\$ 14,400,000
C1	Pole mounted aluminum Flat Panel 1'-7" x 5'-5"	15	\$ 1,000	\$ 15,000	\$ 950.00	\$ 14,250	\$ 1,900.00	\$ 27,075,000
C2	Boxed .125 w/Internal Frame 1'-7" x 9'-8"	15	\$ 2,300	\$ 34,500	\$ 5,350.00	\$ 80,250	\$ 5,000.00	\$ 401,250,000
D	Alum Panel wraps 5" Pole 1'-7" x 11'-5"	15	\$ 3,700	\$ 55,500	\$ 1,750.00	\$ 26,250	\$ 5,000.00	\$ 131,250,000
E	Alum Panel wraps 5" Pole 1'-7" x 11'-5"	15	\$ 3,200	\$ 48,000	\$ 1,650.00	\$ 24,750	\$ 4,800.00	\$ 118,800,000
F	5" Aluminum Pole 5" x 5'-10"	15	\$ 1,200	\$ 18,000	\$ 1,050.00	\$ 15,750	\$ 1,800.00	\$ 28,350,000
G	Alum Panel wraps 5" Pole 1'-2" x 13'-2"	15	\$ 2,900	\$ 43,500	\$ 1,850.00	\$ 27,750	\$ 4,500.00	\$ 124,875,000
H	Alum. Panel wraps 5" Pole 1'-2" x 8'-3"	15	\$ 2,500	\$ 37,500	\$ 1,450.00	\$ 21,750	\$ 4,600.00	\$ 100,050,000
	Install			\$ -		\$ -		\$ -
	INSTALLS			\$ -		\$ -		\$ -
A	Pole mounted aluminum Blade sign 1'-6" x 5'	15	\$ 600	\$ 9,000	\$ 950.00	\$ 14,250	\$ -	\$ -
B	Ground Marker 9" Diameter -	15	\$ 600	\$ 9,000	\$ 125.00	\$ 1,875	\$ -	\$ -
C1	Pole mounted aluminum Flat Panel 1'-7" x 5'-5"	15	\$ 1,000	\$ 15,000	\$ 850.00	\$ 12,750	\$ -	\$ -
C2	Boxed .125 w/Internal Frame 1'-7" x 9'-8"	15	\$ 1,000	\$ 15,000	\$ 1,250.00	\$ 18,750	\$ -	\$ -
D	Alum Panel wraps 5" Pole 1'-7" x 11'-5"	15	\$ 1,000	\$ 15,000	\$ 1,250.00	\$ 18,750	\$ -	\$ -
E	Alum Panel wraps 5" Pole 1'-7" x 11'-5"	15	\$ 1,000	\$ 15,000	\$ 1,250.00	\$ 18,750	\$ -	\$ -
F	5" Aluminum Pole 5" x 5'-10"	15	\$ 1,000	\$ 15,000	\$ 850.00	\$ 12,750	\$ -	\$ -
G	Alum Panel wraps 5" Pole 1'-2" x 13'-2"	15	\$ 600	\$ 9,000	\$ 1,350.00	\$ 20,250	\$ -	\$ -
H	Alum. Panel wraps 5" Pole 1'-2" x 8'-3"	15	\$ 1,000	\$ 15,000	\$ 950.00	\$ 14,250	\$ -	\$ -
				\$ -		\$ -		
Shipping	Trucking	1	\$ 1,400	\$ 1,400				Included
PM	PM - Time to coordinate	1	\$ 3,500	\$ 3,500				\$ 15,000
PA	Permit Acquisition (city fees NOT included)	1	\$ 1,400	\$ 1,400				\$ 2,000
Design	Design-Production Drawings	1	\$ 1,100	\$ 1,100				Included
Engineer	Engineering	1	\$ 2,000	\$ 2,000	15%	\$ 57,262		\$ 5,000
Survey	Survey and Mapping	1	\$ 1,400	\$ 1,400				
	TOTAL (does not include taxes and city permit fees)			\$ 401,100		\$ 439,012.00		\$ 472,000

8. Message Schedule

Determine messaging for signs based upon the best practices of wayfinding and regional priorities described in this Guidebook including progressive disclosure, predictability and accessibility. Sign to destinations in a planned and consistent manner following guidance regarding nomenclature, abbreviations, etc. coordinated through the recommended regional wayfinding committee. Message schedules are typically provided in spreadsheet format with alignment to the sign location plan key to clearly convey the message for each sign, type, side and orientation.

9. Graphics

Develop detailed art and maps for the specific sign location. Some signs require custom artwork and maps. This artwork shall be done by a professional graphic designer to convey legibility and accuracy of information for legibility.

10. Engineering/Site Analysis

Signs shall be engineered to verify structural need, construction needs for foundations, longevity and durability.

11. Fabrication

Fabrication of signs should be done by an experienced architectural sign fabricator with experience in constructing, engineering and installation of similar sign programs.

12. Construction Administration

A member of the design or client team with experience in architectural signage shall review the fabrication process including review of shop/engineering drawings to confirm design intent. Verify color and material samples. Confirm messaging final layouts and observe construction and installation.

13. Maintenance

Client shall develop maintenance plan and budget to ensure signs remain in suitable condition and are inspected annually for defects, vandalism and damage.

In addition to the steps that individual jurisdictions should take toward implementing the

5.2 - Regional Coordinating Steps

Kansas City Regional Wayfinding System, a number of steps need to occur at the regional level to ensure ongoing coordination.

1. Develop Memorandums of Understanding for Implementation.

Using Operation Greenlight and other examples of regional cooperation, Memorandums of Understanding between MARC and member jurisdictions should be sought to ensure the activities below are well-coordinated.

2. Coordinate Implementation and Promotion of the Wayfinding System through an Existing or New MARC Committee.

The existing Wayfinding Stakeholder Committee created for Connecting Our Region should become a subcommittee of an existing MARC Committee or institutionalized as a new committee that meets quarterly with the purpose of general implementation coordination and promotion of the Kansas City Regional Wayfinding System. Potential items that would benefit from coordination include:

- Identifying key regional destinations for signing, destination hierarchies, naming conventions, and maps.
- Forming purchasing partnerships to leverage economies of scale when utilizing outside vendors for sign fabrication and installation.
- Forming partnerships to apply jointly for grants from regional funding sources and private foundations.

3. Identify and Pursue Additional Funding Sources Where Needed.

There are many ways to fund the implementation of the wayfinding system. In addition to local funding sources for individual jurisdictions signage, the committee described above should seek ways to fund this project as a region or through partnerships of adjacent jurisdictions. The section below provides a number of different funding sources for which wayfinding activities are eligible. By working together and proposing this as a system-wide approach to health and wellness, larger national organizations and foundations are more likely to fund this as a block grant program. Once this project is financially anchored, approach local funders, foundations and business to backfill any funding gaps.

4. Coordinate Steps to Integrate the Wayfinding System into Other Information Channels.

As mentioned throughout this report, it will be important to have a consistent look and feel between the signs of the Wayfinding System and other information channels. The printed Bicycle Map that MARC coordinates development of would be a great place to start implementing a cohesive look and feel to regional wayfinding information. Integration technology such as web and mobile tools will also require regional coordination.

5.3 - Potential Funding Sources: Wayfinding Signage Funding Grants and Partnerships

From Federal grants, to local and match grants this project could be funded in part by applying to the following grant making organizations. The participating entities may also create partnerships with local private organizations, businesses, and schools to help fund signs.

HUD

U.S. Department of Housing and Urban Development's Community Development Block Grant program, from funds that are eligible to be used for non-CDBG

Website:

https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs

Use Case:

<https://www.telegram.com/news/20180115/southbridge-finds-its-way-to-funding-wayfinding-signs>

Transportation

Transportation Alternatives Set-Aside <https://www.marc.org/Transportation/Funding/FHWA/Transportation-Enhancements-Transportation-Alternatives>

Health and Wellness

BlueKC - (would need to apply via a 501c3)

<https://www.bluekc.com/consumer/blue-kc/charitable-giving.html>

Aetna - (apply via RFP via 501c3)

<https://www.aetna-foundation.org/>

RWJ (upcoming) (would need to apply via a 501c3)

<https://www.rwjf.org/en/how-we-work/grants-explorer/funding-opportunities.html>

Health Forward - (would need to apply via a 501c3)

<https://healthforward.org/grantees-and-applicants/what-we-fund/foundation-defined-grants/healthy-communities/>

William G. Pomeroy Foundation - (would need to apply via a 501c3)

<https://www.wgpfoundation.org/apply-for-grant/>

REI - (would need to apply via a 501c3)

<https://www.rei.com/blog/stewardship/rewilding-our-cities>

National Forest Foundation

<https://www.nationalforests.org/grant-programs/map>

Private donations can also bolster the funding. Many of the local family foundations organizations below could be approached to bundle funding for signage.

The Bank of America Charitable Foundation, Inc.

Hall Family Foundation

The Francis Family Foundation

The H & R Block Foundation

State Street Foundation, Inc.

Hallmark Corporate Foundation

U.S. Bank Foundation

William T. Kemper Foundation

Oppenstein Brothers Foundation

Butler Manufacturing Company Foundation

John W. and Effie E. Speas Memorial Trust

Sprint Foundation

The Shumaker Family Foundation

The McGee Foundation

Illinois Tool Works Foundation

Miller-Mellor Association

Thomas S. Watson Family Foundation

R. A. Long Foundation

The Breidenthal-Snyder Foundation