

DALLAS FORT WORTH INTERNATIONAL AIRPORT

5

## DIGITAL SIGNAGE STANDARDS & GUIDELINES

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DFW



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LOCHNER



1.0 DFW WAYFINDING OVERVIEW

1.1	Introduction	1-1
1.1.1	Overview	1-1
1.1.2	Wayfinding Philosophy	1-2
1.1.3	Wayfinding Evaluation Criteria	1-4
1.1.4	General Placement Guidelines	1-6
1.1.5	Wayfinding Application	1-7
1.1.6	Wayfinding Sign System Overview	1-9
1.1.7	General Graphic Standards	1-11
1.1.8	Wayfinding Sign Families	1-16
1.1.9	Governing Bodies, Codes & Regulations	1-19
1.1.10	Change Procedures/Sign Replacement	1-21
1.2	Wayfinding Analysis and Application	1-22
1.2.1	Overview	1-22
1.3	Design Criteria	1-23
1.3.1	Overview	1-23

2.0 WAYFINDING GRAPHIC STANDARDS & GUIDELINES

2.1	Messages	2-1
2.1.1	Overview & Functions	2-1
2.1.2	Message Hierarchy	2-1
2.1.3	Message Terminology	2-1
2.1.4	Message Application	2-3
2.1.5	Message Function & Heirarchy Relationships	2-3
2.2	Typography	2-4
2.2.1	Overview	2-4
2.2.2	Type Spacing	2-5
2.2.3	Legibility	2-6
2.3	Symbols	2-7
2.3.1	Overview	2-7
2.3.2	Symbols List	2-8
2.4	Arrows	2-9
2.4.1	Overview	2-9
2.4.2	Arrow Application Guidelines	2-9
2.5	Colors	2-12
2.5.1	Overview	2-12
2.5.2	Color Design Considerations	2-12
2.5.3	Color Application Guidelines	2-12

2.6	Art, Advertising and Amenities	2-13
2.6.1	Overview	2-13
2.7	Wayfinding Sign System Overview	2-14
2.7.1	Overview	2-14
2.7.2	Sign Type - General Overview	2-14
2.8	Digital Display Hardware	2-15
2.8.1	Quick Reference Optimal Viewing Distance	2-15
2.8.2	Optimum Viewing Angle Guide	2-15
2.8.3	Pixilation Considerations	2-15
2.8.4	Display Content Viewing Distance	2-16
2.8.5	Text Size and Viewing Distance	2-16
2.8.6	Active Roadway Dynamic Signs	2-17
2.8.7	LCD vs. LED Compared to Pixel Pitch	2-19
2.8.8	Detailed Optimal Viewing Distance Guide	2-19

3.0 SIGN TYPES - TERMINALS/GATE AREAS

3.1	Sign Type Index	3-1
3.1.1	Overview	3-1
3.2	Sign Types	3-4
3.2.1	Directionals	3-4
3.2.2	Identification	3-17

4.0 WAYFINDING PLAN

4.1	Terminal A	4-1
4.1.1	Conceptual Wayfinding Plan	4-1
4.2	Terminal B	4-4
4.2.1	Conceptual Wayfinding Plan	4-4
4.3	Terminal C	4-7
4.3.1	Conceptual Wayfinding Plan	4-7
4.4	Terminal D	4-11
4.4.1	Conceptual Wayfinding Plan	4-11
4.5	Terminal E	4-14
4.5.1	Conceptual Wayfinding Plan	4-14

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# 1.0

## **1.0 DFW WAYFINDING OVERVIEW**

- 1.1 Introduction
- 1.2 Wayfinding Analysis and Application
- 1.3 Design Criteria

1.1 INTRODUCTION

1.1.1 OVERVIEW

Airports can be complex and difficult spaces to navigate. Numerous factors affect public perception and levels of customer service with the associated airport. This is particularly true when airport modifications or upgrade programs are undertaken. Older terminals, typically have outdated and inconsistent wayfinding signage systems not reflective of current world principals and standards, and improvement projects create even more challenges for individuals functioning within the airport’s wayfinding processes.

It must be understood that regardless of an individual facility’s demarcation, the wayfinding pathways extend to and from the surrounding roadways, parking, curbsides, terminals and concourse areas. Facility architecture, services, functions and amenities, as well as vertical and horizontal routes, must always be carefully considered and viewed as part of the airport’s interconnected and overall wayfinding system. A solid understanding of graphic/visual cues and human behavioral responses to wayfinding processes is paramount, and the established wayfinding system must also function seamlessly, within the built environment, without user hesitation or confusion, regardless of what area of the airport is being navigated.

As an airport continues to evolve, it is important that it’s wayfinding and signage systems be designed to accommodate these changes in a long-term holistic and adaptable manner. The primary focus should be on continual iteration and growth of the wayfinding system for the betterment of the airport’s customer service experience rather than what’s most convenient or pre-established. If an airport’s existing wayfinding system has elements that function well, but could be improved upon to make the system function better for the majority of its users, enhancements should be considered and implemented.

BACKGROUND

DFW is committed to providing an enhanced, state of the art passenger experience throughout the airport campus. Much of this relies of the ability of the wayfinding system to change and adapt to differing conditions and messaging requirements. As technology continues to shape the world, the traveling public expects technology to provide direction, guidance and information in a convenient and accessible manner. To that end, DFW shall use digital signage to augment and compliment the current wayfinding system.

To incorporate digital signage, the current airport signage wayfinding plan and guidelines-standards will require modification and updating. Specifically, guidelines for digital signage are established in this document to include proportional dimensions, similar to the existing wayfinding signage and other digital displays. In addition, content guidelines are required to avoid wayfinding conflicts and signage saturation. The approach is holistic, considering all visual elements sharing the vista. The overall intent is to complement the existing static signage and create seamless wayfinding airport wide.

Recognizing the complexity of their redevelopment plans, DFW commissioned the team of Labozan Associates, Inc. (LAI), Lochner and Moye Consulting (referred to within this document as the Project Team) to provide digital signage guidelines. During several stakeholder workshop meetings, the Project Team

analyzed and presented several conceptual enhancement solutions that can establish a new holistic, refreshed and more effective DFW wayfinding signage system.

PROJECT GOALS

At the initiation of the project, several goals and objectives were introduced: DFW desires to be recognized as one of the best airports in the world, and sees wayfinding signage as a tool to achieve this recognition. The Wayfinding Digital Signage Standards and Guidelines will serve as a blueprint for addressing how digital signage can eventually replace existing wayfinding signage system as it relates to the overall growth of the Airport The project should yield a set of easy to understand guidelines for the holistic implementation of digital signage to effectively communicate the Aiport’s basic philosophy and requirements with stakeholders, architects and designers to ensure the system is successfully transformed. The philosophies established in the Digital Signage Standards and Guidelines will support the transition from stardard non-digital signage to a digital signage system.

PURPOSE

This document presents information regarding the general development and planned implementation of DFW's new digital wayfinding signage system within all DFW airport property modernization programs. It will briefly establish recommendations for enhancement to all wayfinding signage being developed for the public accessible areas of DFW.

SCOPE

The Digital Signage Standards and Guidelines’ scope includes the development of general philosophy, criteria and guidelines for the digital signage and wayfinding system Airport-wide in public use areas.

Topics covered within this document:  
Wayfinding Philosophy and Evaluation Criteria  
General Observations  
General Recommendations  
General Graphic Standards

Signs covered by this document:  
All interior wayfinding directional, identification and informational signs within public use areas only

Signs not covered by this document:  
Tenant/concession/retail/advertising signs and standards  
Directory map artwork  
Flight Information Display Systems (FIDS)  
Baggage Information Display Systems (BIDS)  
Common Use Terminal Equipment (CUTE)  
Regulatory or life safety/egress signs  
Egress evacuation map artwork  
Branded Airline elements/systems/signs  
Non-public, airside/runway/exterior or back-of-the-house areas/signs

DOCUMENT ORGANIZATION

This document is organized into four chapters:

1.0 DFW Wayfinding Overview  
Purpose, background, scope of work, general requirements/design criteria and description of the DFW wayfinding system. Also includes general wayfinding factors and planning.

2.0 Wayfinding Graphic Standards & Guidelines  
Specific graphic and design criteria/standards applicable to all DFW wayfinding signage:  
Message Standards - includes standardized message hierarchy for each category organized by sign type/message priority (primary, secondary and tertiary).  
Typography - includes descriptions for all wayfinding related typography.  
Symbol Standards - includes descriptions and list of all wayfinding related universal symbols.  
Arrow Standards - includes arrow standards, sizes, applications/meanings, rotation angles and placement.  
Color Standards - includes all color standards as applicable to the overall wayfinding system.  
Art, Amenities and Advertising - includes recommendations for addressing wayfinding signage in relation to art, amentity and advertising signage.  
Wayfinding Sign System Overview - includes general overview and recommended sign type identification system as applicable to the overall wayfinding system.  
Digital Signage system strategy and standards  
Digital Signage hardware requirements

3.0 Sign Types - Terminals/Gate Areas  
Overview, sign type index and design intent drawings for all wayfinding signage applicable to DFW’s Terminals/Gates areas.

4.0 Wayfinding Plan  
Conceputal wayfinding plans for five typical pathways, showing possible opportunities for digital wayfinding signage locations and what the sign faces might look like.



1.1.2 WAYFINDING PHILOSOPHY

FOUNDATION AND BASICS

Wayfinding, as a process of increasing good customer service and well implemented design within built environments, has become an important consideration for companies and organizations of all sizes throughout the world. As a means of understanding the multifaceted topic of wayfinding as it applies to a large and complicated multimodal facility such as DFW, the following identifies several basics and foundations for good wayfinding:

What is ENVIRONMENTAL GRAPHIC DESIGN?

- The art of graphically presenting information or concepts to direct, influence or suggest a desired outcome, based on subjective and objective factors
- Is it an “Art” or a “Science?”...it’s actually a fusion of both

What is WAYFINDING?

- The processing of providing graphic direction and information to facilitate navigation through the built environment
- Enabling a journey: wayfinding, applied to Signage and Environmental Graphics, translates the process into logical and sequential units of information; a cognitive exercise in navigation

What is SIGN BRANDING/IDENTITY?

- Two or three dimensional presentation of a concept, relating to the desired essence and experience of product, service, facility or entity
- Establishing/reinforcing signage brand, helping to create a “sense of place”

The “VOICE OF THE OWNER”

- Wayfinding and Signage represents the “voice” of the owner, and should be assuring and calming
- Tonality can be passive/aggressive or positive/negative and should be considered in context of the surroundings

WAYFINDING ACCLIMATION

- Process of learning the wayfinding prompts and cues required for a journey (start to finish)
- Wayfinding must educate, creating user expectations for wayfinding to be provided

AUDIENCE

- Customer is #1; wayfinding should first and foremost accommodate the passenger and visitor

SIMPLICITY

- Less is really better
- Visual clutter can render wayfinding signage impotent & ineffective

LOCATION, PLACEMENT, FREQUENCY

- The right wayfinding element, at the right place, at the right time

- Horizontal/vertical: location, placement and frequency are critical

WAYFINDING CONSISTENCY

- For the entire pathway, wayfinding should be presented in a similar manner, perpendicular to circulation

STANDARDIZE

- Messages, fonts, colors, symbols, shapes, proportions, heights, placements, graphics, motif, branding and sub-branding

JOURNEY INCLUSIVE

- Intermodal / Multimodal: several methods of transportation can be taken to/ from the airport, and within the airport (i.e. inter-terminal shuttles/trains)

SIGN & MESSAGE HIERARCHY

- Establish a sign type and message hierarchy ranking and stick to it

MESSAGING LIMITATIONS

- Only provide messaging and direction when absolutely necessary

MEMORABLE

- Only provide messaging and direction when absolutely necessary

KIT OF PARTS (sign family)

- Tool box/kit-of-parts, sign types and application for all wayfinding requirements, current and future (hanging, wall mount, etc.)

PROACTIVE/REACTIVE WAYFINDING

- Provide signage for 90% of the audience, not 10%, (consequences)

IT’S NOT ALWAYS A SIGN

- Enhance and augment wayfinding with art, flooring, landscaping, furniture, lighting, fixtures, advertising, architecture, etc.

HOLISTIC, 3D LANDSCAPE

- Consider and coordinate with art, advertising, retail, & advertising to create a more holistic visual landscape, “The Big Picture”

IT, FIDS/BIDS, WEBSITE, DYNAMIC SIGNS

- Critical component of the wayfinding, not a subset of IT

ADA and ACCESSIBILITY

- Controls font, size, contrast, placements, etc.
- Very beneficial, forces discipline

ALL ENCOMPASSING

- Wayfinding should be inclusive and considerate of various airport departments (i.e. retail/concessions, marketing, digital signage, parking, etc)

SIGNAGE PROGRAM ELEMENTS

In conjunction with a set of sound wayfinding foundation and basics, a successful wayfinding program should always include a basic set of documentation that is created and organized in the following manner:

Wayfinding Signage Standards and Guidelines

- Establishes visual consistency among the following elements:
  - Terminology and hierarchy of messages
  - Typography
  - Symbology
  - Arrows (style, placement and usage)
  - Colors
  - Materials
  - Hardware Specifications

Wayfinding Signage Observations and Recommendations

- Identifies wayfinding strategy and logic
- Provides holistic solutions on how to integrate and apply wayfinding into various airport facility zones or areas (i.e. terminal walkways, gates etc...)
- It is the “why” behind the airport’s planned wayfinding solutions

Wayfinding Signage Design Intent Documents

- Provides details for fabrication and implementation within a specific wayfinding signage project
- Includes all sign types, design intent notes/specifications, detailed face layouts, general mounting detailing, intended sign usage and specific locations for it’s associated project and area of scope

DFW WAYFINDING SIGNAGE PHILOSOPHY

Develop ONE Signage System

Though there are varying facilities within the airport system that will be supported by signage, it must always maintain continuity throughout. Development of separate unassociated systems for each area (roadways, parking, terminals, gates) could dramatically alter the overall wayfinding. Additions, modifications and/or relocation of signs on the roads could have an impact on the wayfinding in the terminal. Therefore, developing and maintaining one cohesive, consistent and comprehensive system will enhance the travelers’ decision-making process and perception of DFW as a whole.

Celebrate the Experience of Travel

Regardless of how common place air travel has become, the personal experience of leaving one’s home, flying across the country, and arriving at a different destination is still an amazing event. Through decorative graphics, banner programs, wall graphics, sculpture, and thematic treatment of the signage elements whenever appropriate, celebrate that special travel experience and be supportive of all travelers, both local and foreign. Graphic enrichment programs should be supported by strong community and administrative policy thereby reflecting the values of the region and giving the traveler a taste of Dallas/Fort Worth.

Create an Identity for DFW

One of the most important aspects of the signage system is the opportunity it offers to establish an entirely new visual image for DFW. With a fresh, consistent, and dynamic visual image in place, the public will be encouraged to take another look at how to navigate at DFW. But the changes must be more than skin deep. Real communication improvements must be made, and the more significant the change, the more significant the awareness of it will be.

Design a System for Today and the Future

In an ever changing facility like DFW there is rarely, if ever, a good time to implement a major change-out of the signage program. Current uses often compete with future needs for available dollars. Good design practice requires stepping back, taking a hard look at the long term, and developing a series of scenarios, which serve both the near and long term. If planned properly, flexibility and fluidity of design will address most of the issues that arises.

DFW WAYFINDING DESIGN APPROACH

When designing wayfinding signage for implementation at DFW, three primary guidelines should be referenced and consistently followed during any conceptual, design and implementation phasing processes:

Signage Designed to Enhance the Passenger Experience

- The Passenger Experience is positive, enhanced by ease of wayfinding and promotes exploration of the Airport
- Eliminate visual clutter by concentrating and organizing messages into fewer and more deliberate signs
- Utilize appropriately sized graphics
- Display limited, succinct, and consistent nomenclature
- Use messages that are supported by universal symbols
- Adhere to ADA and add seamlessly into signage
- Signage should use widely accepted terminology, phrasing, and symbology
- Implement signage system Airport-wide, from the Roadways through the Parking facilities, and into and throughout the Terminal and Gates
- The sign system, facility design and operations should work in concert to facilitate easy-to-understand and easy-to-follow wayfinding
- Nomenclature, design styles, colors, typography, symbols and other design details should be appropriately consistent throughout all parts of the Airport
- The sign system should utilize a discreet family of sign types and maximize their use, while minimizing the use of non-standard sign types
- Focus on delivering the right message, in the right place, at the right time

Signage that Complements the Surrounding Environment

- Identify and reserve a color palette exclusive for signage, and apply this in a limited and controlled fashion
- Be harmonious with general interior and exterior architecture
- Visualize signage as an architectural enhancement, interesting and pleasing in form and graphics

Signage Designed to be Controllable and Manageable

- Integrate electronic application with implementation of new technologies and information sources
- Allow an appropriate level of variation commensurate with variations in designs of facilities
- The signage program should recognize the continuing evolution and expansion of the Airport
- It should provide credible and effective temporary signage
- It should provide design standards for future projects that can be effectively and efficiently applied by all design teams
- Encourage comprehensive coordination between multiple signage design teams for continuity
- The signage system should be maintainable over long-term time frames, and at a reasonable cost

1.1.3 WAYFINDING EVALUATION CRITERIA

INTRODUCTION

While reviewing an existing wayfinding system, it is important to have a set of criteria from which to evaluate it. Wayfinding signs should always adhere to a basic set of guidelines that include several factors, including consistent copy styles/sizes, terminology, recognizable and universally accepted symbols, uniform colors systems, and recognizable sign types.

Prior to developing an updated Wayfinding Signage Observations and Recommendations, it was fundamental to understand the existing wayfinding signage at DFW. The Wayfinding Project Team analyzed all relevant existing materials by site visits, capturing photos, and reviewing existing and/or planned sign program documentation.

This section lists key elements that were used by the Wayfinding Project Team in evaluating the existing wayfinding system at DFW. For additional reference, wayfinding industry standard criteria and factors are also covered within the following documents:

- Guidelines for Airport Signing and Graphics - Terminal and Landside, Latest Edition
- ACRP Report 52 - Wayfinding and Signing Guidelines for Airport Terminals and Landside – Latest Edition
- Americans with Disabilities Act – 2010 ADA Standards for Accessible Design – Latest Revisions and Edition

The following are the specific evaluation criteria used for analyzing the existing DFW wayfinding program:

Wayfinding Signage Philosophy

- Establish an integrated Framework that would produce ONE comprehensive signage system that can be easily understood, followed and identified

In order to obtain the desired results from a sign system, a logical method of thinking must be employed by all parties involved in the process from the designers to the airport authority. Airport personnel, being familiar with the facilities will often forget that the traveling public is a captive audience in an unfamiliar environment. In addition, many designers will attempt to create unique sign systems by incorporating unique symbols, colors or decorative letter styles that reduce overall legibility of the message. Signage elements that compound the traveler’s confusion will eventually lead to mistrust and disregard for the entire signage system.

This programming would stem from establishing one cohesive overall signage philosophy that encompass all areas of graphic communication (roadways, parking, curbsides, ground transportation, terminals, concourses etc.).

Standard Terminology

- Experiencing the same terms and use of signs from one airport to the next will assist the general public in their comprehension and functioning within various airport facilities

Message content must be in layman’s language, understandable by the frequent and infrequent travelers.

The following terminology guidelines are consistent with typical standard primary messaging and terminology used at airports around the world:

- Airport Trailblazer and Airport Entrance(s)
  - Airport name (with its logo/or letter code)
- Airport Roadways
  - Terminal(s)
  - Departures
  - Arrivals
  - Ticketing/Check-In
  - Bag Claim
  - Parking
  - Rental Cars; Rental Car Return
  - Airport Exit
  - Return To Terminal(s)

- Terminal Building
  - Terminal
  - International Terminal
  - Domestic Terminal
  - Ticketing/Check-In
  - Bag Claim
  - Ground Transportation
  - Parking
  - Concourse(s)
  - Gate(s)
  - Toilets

In addition to the above listed terms, public service and regulatory terminology must also be standardized.

Message Hierarchy

- Clear and concise information presented by “primary” and “secondary” signage system greatly improves the efficient passenger flow, both on the roadways and within terminal facilities

A uniform hierarchy of messages and information needs to be established throughout the terminal and related facilities. Messages may be categorized into three levels: primary, secondary and tertiary.

- Primary – Directional and Identification
  - Terminal
  - Ticketing/Check-In
  - Security Checkpoints
  - Bag Claim
  - Parking
  - Ground Transportation
  - Toilets
  - Gates
- Secondary - Auxiliary services and support functions
  - Types of ground transportation
  - Flight Information Display Systems (FIDS)
  - Corporate identity (lounges, offices, and baggage services)
- Tertiary - Third level information
  - Tenant names
  - Advertising
  - Regulatory / Safety and hazard related signs (emergency exits)

Color Coding

- Many studies have been done regarding colors and their effect on human behavior; therefore, careful study should be done when considering a multi-colored sign system

It can clearly be recognized that many airports rely on basic brown, black or royal blue backgrounds with white lettering for both interior and exterior signing. While a few use the basic “highway” or Department of Transportation (DOT) green signs with white lettering, at other airports, there seems to be a need to explain the complexity of the facility by the use of a multi-colored sign system.

Many problems occur with multicolored sign systems, particularly with complex facilities and garage structures. Approximately 12 percent of the population is color blind, and these people cannot distinguish between mixed shades of red and orange, yellow or brown, black and blue. For this reason, if multiple colors are used it may be necessary to spell out the name of the color on the sign to make it clear to many of these individuals. It should also be noted that light affects color systems, and many colors fade and tend to blend in certain regions of the country due to weather conditions; therefore the use of color should be partially evaluated based on the geographic location of the airport.

Finally, it is also important to note that many studies have been done regarding colors and their effects on human behavior. These documents go into great detail and supply a host of alternatives. Therefore, it would be important that careful study be done when considering a multicolored sign system.

Symbols

- The use of short verbal messages along with symbols is more effective than the use of messages or symbols alone
- The orientation and directional information that arrow symbols intend to convey is of equal importance to the consistent use of the recommended single style arrow

The American Institute of Graphic Arts (AIGA), under contract to the US Department of Transportation, have developed a series of universal symbols in an effort to provide the public with recognizable characters. Today there are a multitude of recognizable symbols available and additional symbols are being developed from time to time. The following are a few guidelines in the use of symbols at airports:

- Mixing messages and symbols for relatively minor or secondary terminal functions, activities or tenants with essential public messages and main directional information, weakens the overall communications of the entire system
- Too many symbols or arrows at any one location can be counterproductive to the information being provided

The arrow orientation to convey “straight ahead” is of particular interest. Once a method has been selected for the “straight ahead” arrow orientation, consistent application should be continued throughout the signage system.

Scale of Copy

- In a fast paced, often congested environment such as an airport, use a more conservative viewing distance such as 25 feet of viewing distance to each inch of cap letter height
- Airport roadway systems typically do not provide the lead time and distance between signs to comply with DOT guideline; therefore, a careful evaluation of what works, based on logical messages and reasonable copy heights, is very important

Various studies by multiple agencies, authorities and universities have been done with regards to copy size and legibility. Through those studies, practical viewing distances (for a one-inch capital letter) have ranged from 16 to 50 feet, however, the most accepted viewing distance in the industry is 50 feet for a one-inch cap height, under optimal conditions by someone with 20/20 vision.

The relationship between capital letter height and lowercase letter height should be from 1:0.67 to 1:0.75 in order to allow lowercase to be read when smaller cap heights are used. Upper and lower case letters with medium stroke width are recommended for better legibility, since words composed of all capitals are much harder to read.

Many airport departments insist that the standard state and federal guidelines for roadway signage be followed. Although this is logical, in many situations, it is sometimes impossible to achieve.

Placement

- Placement of signs at key decision points and/or in the direct line of sight of the traveling public reduces decision times

Proper location of signs can dramatically alter the effectiveness of a signage system. This keeps pedestrian and vehicular traffic constantly moving, which is the objective of a comprehensive and effective system.

Sign placement should occur at all decision points and at those places where people become disoriented by the architectural configuration. In addition to directional signs being placed at every decision point, they should also be placed at reassuring intervals within a captive corridor. The architecture or competing pedestrian traffic flow may imply a change in direction; therefore signs may be required to reinforce the intended direction. A reasonable range of 75 to 125 feet between major directional overhead signs is acceptable and meets the general intent of ADA (Americans With Disabilities Act guidelines) and Texas Accessibility Standards.

A general rule for selecting sign placement is for the designer to put himself in the position of a departing or arriving passenger, visitor, or accompanying passengers throughout the terminal. These guidelines are general in context and some disorienting conditions that may require additional signing are:

- Complex architecture
- Competing pedestrian traffic
- Visual distractions
- Congested corridors

Conversely, favorable conditions that may reduce repetitive signage are:

- Efficient architecture
- Single direction traffic flow
- Minimal pedestrian usage
- Wall or floor treatments reinforcing single-direction traffic flow
- Lighting treatments emphasizing concourse hallways or other destinations

WARNING:

1.1 INTRODUCTION

1.1.3 WAYFINDING EVALUATION CRITERIA



1.1.4 GENERAL PLACEMENT GUIDELINES

Airports typically have several elements and systems that compete with pedestrian wayfinding signage. These include (but may not be limited to) art, advertising and amenity related signage. Consistent and sensible location of wayfinding signage in relation to each of these elements will ensure an effective and positive wayfinding experience. This section provides general guidelines and recommendations for effective placement of wayfinding signage in relation to these other nearby elements.

DFW “Wayfinding Signage Philosophies” place a priority on ease of wayfinding throughout all of its facilities. As a result, the DFW wayfinding system will typically take visibility and placement priority over other nearby systems such as art, advertising and amenity elements. However, it must also maintain general harmony with regards to visibility and general placement in relation to these other nearby systems. The following general guidelines have been established and should be used by all designers specifying wayfinding signage within DFW airport facilities.

Placement of wayfinding signage in relation to art, advertising and amenity elements shall always be done so in a manner that maximizes the visibility of each without obstructing important wayfinding information. As such, a simple grid system should be used by designers to maximize the placement of each element. This grid system is based on a simple X/Y/Z axis system (i.e. X = horizontal axis; Y = vertical axis; Z = third-dimension axis, or “forward/backward” in relation to the viewer’s position).

The following are general guidelines to be used as a reference for placing wayfinding signage in relation to art, advertising and amenity elements (see Figure 1.1.4):

- Typical Vertical Placement:
  - Vertical placement of wayfinding signage and nearby elements will use an established set of three-dimensional spatial zones along the Y-axis plane and extend forward/backward along the Z-axis plane
- Typical Horizontal Placement:
  - Horizontal placement of wayfinding signage and nearby elements will use an established set of three-dimensional spatial zones along the X-axis plane and extend forward/backward along the Z-axis plane

Signage Zones

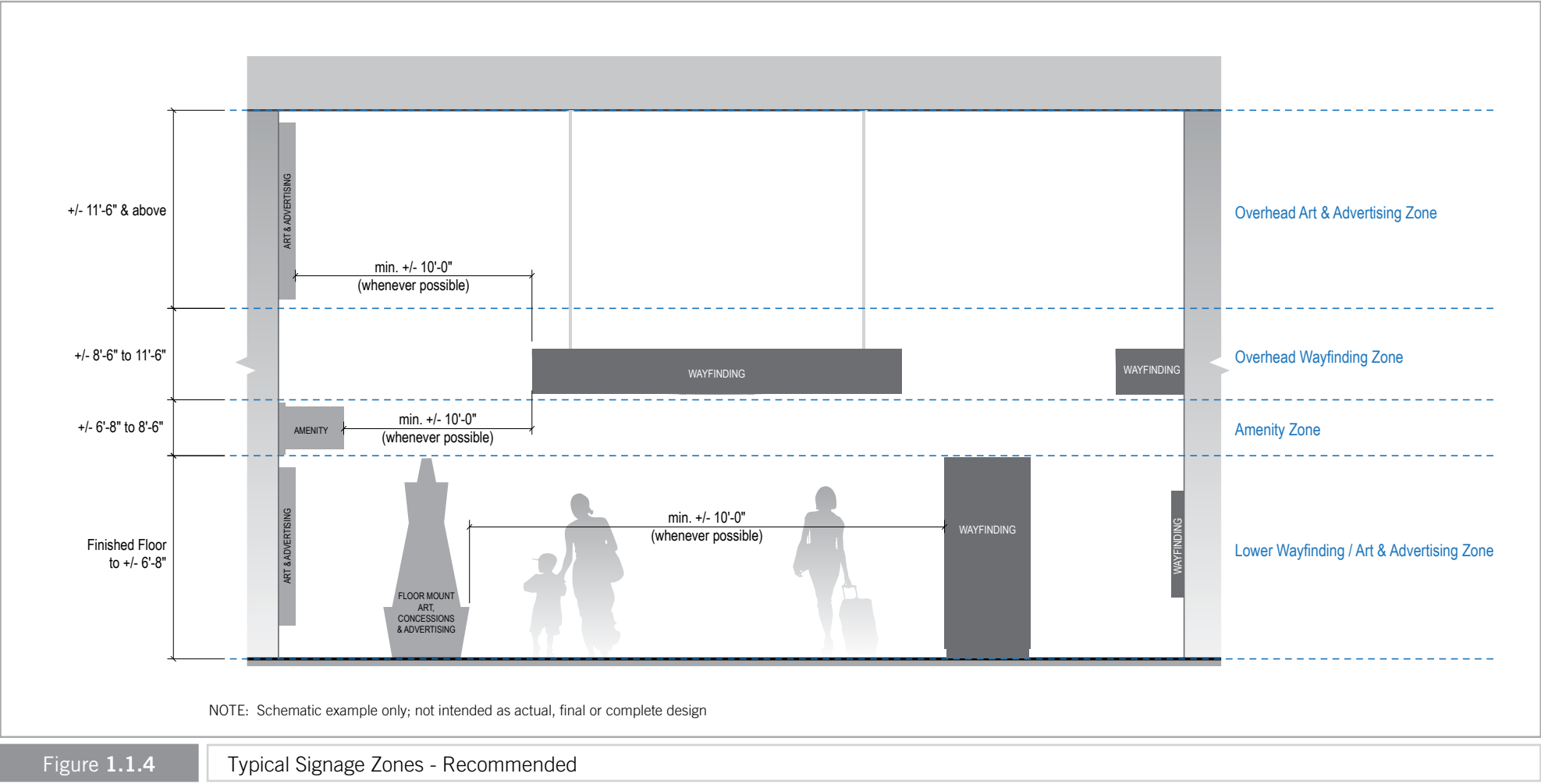
Basic placement zones have been provided here for locating DFW wayfinding signage in relation to art, advertising and amenity related elements (see Figure 1.1.4). The following general guidelines should be utilized when locating wayfinding signage near these elements (Note: A.F.F. = “above finished floor”):

- Overhead Wayfinding Zone: is a +/- 3’-0” high three-dimensional spatial plane dedicated to placement of overhead pedestrian wayfinding signage
  - Typical vertical zone size = +/- 8’-6” A.F.F. to 11’-6” A.F.F.
    - Note that the zone may also extend above or below these dimensions if deemed appropriate for a given location’s conditions and requirements

- The line-of-sight for this zone should always maintain an unobstructed view of 50’-0” minimum on the Z-axis plane approach
- Amenity Zone: is a +/- 2’-6” high three-dimensional spatial plane that applies to placement of signage and/or elements for amenities (i.e. restaurants, taverns, retail shops, concessions, etc.)
  - Typical vertical zone size = +/- 6’-8” A.F.F. to 8’-6” A.F.F.
  - Placement of amenity elements within this zone are dependent upon established DFW amenity signage design standards and per individual terminal facility conditions; wayfinding signage should typically maintain a +/- 10’-0” min. horizontal perimeter away from amenity signage/elements whenever possible
- Lower Wayfinding/Art & Advertising Zone: is a +/- 6’-8” high three-dimensional spatial plane that applies to placement of lower wayfinding signage (i.e., floor mounted and lower wall mounted sign types), as well as concessions, art and advertising elements typically scaled for more personal interaction/viewing
  - Typical vertical zone size = Finished Floor to +/- 6’-8” A.F.F.
  - Art, advertising and freestanding concession elements in this area

- should typically maintain a horizontal perimeter of +/- 10’-0” min. from wayfinding elements whenever possible
- Overhead Art & Advertising Zone: Note that overhead art & advertising requires flexibility in sizing and spacing and is preferred to occur above the Overhead Wayfinding Zone whenever possible (typically above 11’-6” A.F.F. or as deemed appropriate for a given location’s conditions or sizing requirements, and is dependent on individual terminal facility conditions)

NOTE: Dimensions shown here are to be used as a general guideline only; some overlap of zones is to be expected and may occur depending on unique terminal environment conditions and sizing of wayfinding signage and existing/planned art, advertising and amenity elements; designers are required to review all wayfinding signage in relation to art, advertising and amenity elements as location conditions require, and adjust placements as necessary.



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1.1.5 WAYFINDING APPLICATION

GENERAL WAYFINDING FACTORS AND PLANNING

The ability to orient and navigate one’s way through the varying environments as found within DFW airport facilities is of fundamental importance. Wayfinding planning using graphic diagrams establishes the analysis of spatial relationships and traffic circulation. All designers should utilize similar planning processes as shown here when designing signage for use at DFW.

Wayfinding Planning: Circulation Analysis

During design development, incoming and outgoing circulation for major user groups (i.e., pedestrians, vehicular, etc.) should be analyzed and documented by the designer. Points of origin and destination should be referenced as the basis for identifying critical decision points and message/information/signage requirements.

Primary user circulation routes should be depicted as solid-lines with end arrows, pointing in the direction of the individual traffic flow. Dotted lines with end-arrows depict possible alternate circulation routes occurring at direction changes (see Figure 1.1.5a).

Wayfinding Planning: Identification of Decision Points

Decision points along user circulation routes should be located at required direction changes, and points where the user encounters alternative choices. Decision point locations should be shown as larger yellow dotted-line circles at primary traffic-change intersections; in addition, areas where reinforcement is needed (i.e., longer corridors without a change in traffic direction) should be indicated by smaller yellow dotted-line circles (see Figure 1.1.5a). These areas are the most optimal location for placing directional signs that inform the user of the nearest existing and alternative wayfinding pathways for consideration.

Determining Required Information at Decision Points

Upon review of an area’s wayfinding conditions, the required messaging/ information and signage needed for a given decision point should be determined by the designer using logical thinking and the established standards in this document. The selection of messages identifying wayfinding destinations, as well as the selection of proper sign types should be determined by using the established DFW wayfinding message hierarchy, arrows, universal symbols and wayfinding sign types as listed in this document. In the event that custom wayfinding messaging or signage conditions occur, the designer should document/coordinate the recommendations with DFW for review and approval.

Identification of Sign Locations - Recommended

Plans, cross sections and elevation views of related project facility/site spaces should be analyzed by the designer to make determinations of sign locations. Following review of the architectural/environmental/site conditions, scaled plans should be generated with sign location “bars” (i.e., plan/top view representational boxes indicating the sign’s basic size/shape that are scaled to match the floor plan, and are oriented/rotated as the sign would be in “real world” conditions). Differing and/or multiple sides of each sign should be indicated with a unique alpha designation (such as A, B, etc.) per sign location, and should coincide precisely with the specific sign type and related sign message schedule. Note that all signs should be given a unique sign location

annotation box, and will always be accompanied with a leader line extending from each annotation box to its associated sign location bar.

Also note that all overhead sign locations should be coordinated with architectural reflected ceiling plans (RCP) to ensure that no interferences occur with established and/or new architectural/environmental elements. Sign locations should be located in sensible areas nearest to its associated decision point, and in conjunction with existing or planned facility/site structural support elements whenever possible.

Sign Location Annotation - Recommended

The DFW sign location annotation system recommended in this document should be used to identify sign locations on all DFW wayfinding signage related documentation. Within terminal facility related areas (i.e., terminals, concourses, CBP areas, curbside/ground transportation areas and parking garages), each sign should be given a designation of location as shown on the following page in Figure 1.1.5b. Within airport property roadway areas (i.e., roads within the “Terminal Loop” zone near terminal facilities and perimeter roadways circulating around the airport’s property), each sign should be given a designation of location as recommended on the following page in Figure 1.1.5c.

Message Schedules

All DFW Airport wayfinding signage related projects should include a message schedule, preferably in a graphic format showing examples of actual scaled sign face artwork. Message schedules should always coincide with, and precisely match, their corresponding sign location plan(s), and should account for every sign that is a part of the associated signage project. It should always include (at a minimum) the following elements/information:

- Unique Sign Location Number (i.e., “TA.L2-001,” etc.)
- Sign Type Identification Number (i.e., “1.ID-35,” etc.)
- General description of the sign type (i.e., “Wall Mount Overhead Restroom Entry ID,” etc.)
- Side listings (i.e., “Side A,” “Side B,” etc.)
- Messages shown per side (i.e., graphic depiction of the actual sign face artwork, per each individual sign face side)
- Remarks/Notes (if needed for description of special circumstances, etc.)

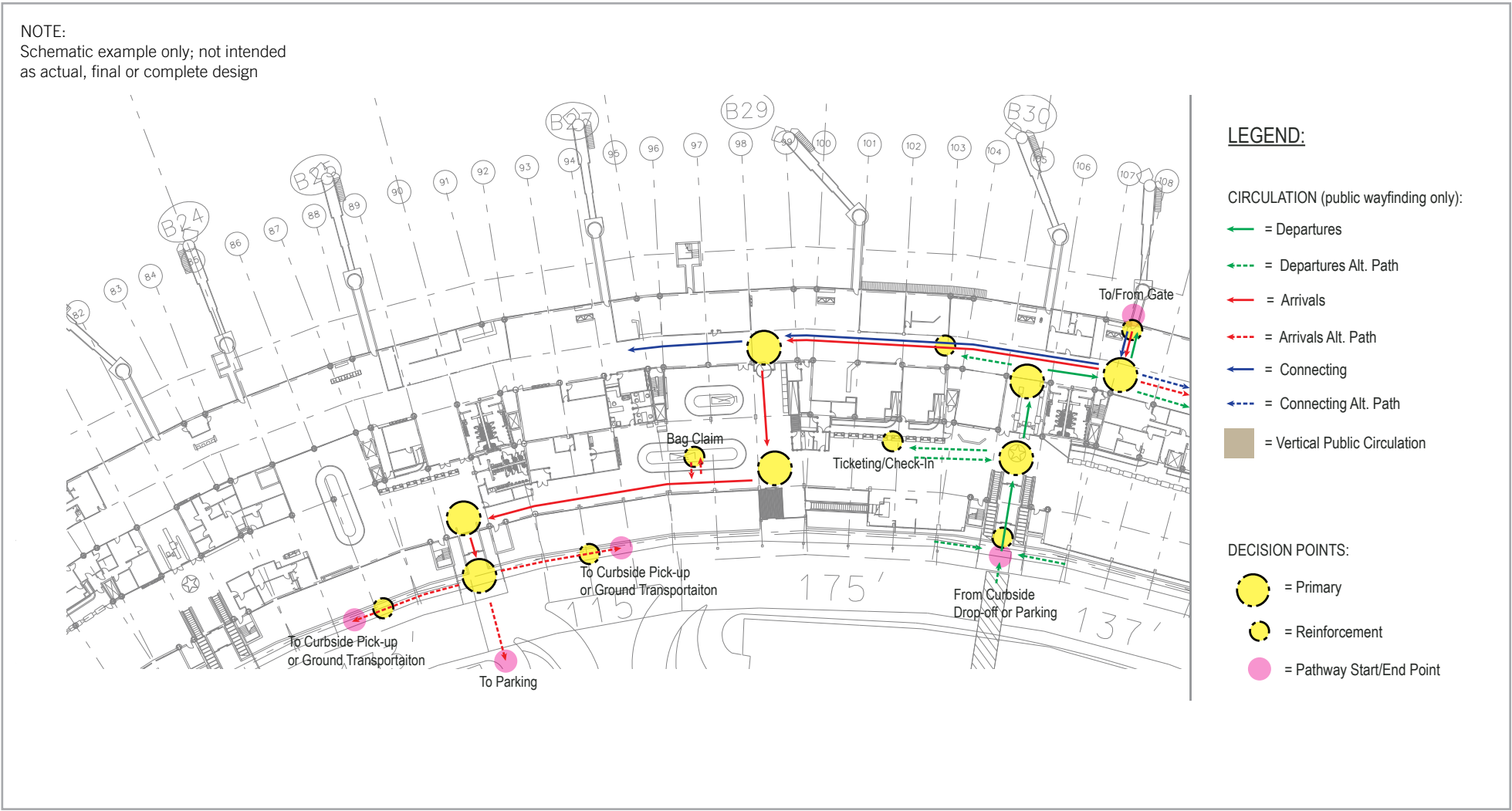


Figure 1.1.5a

Typical Wayfinding Plan Example

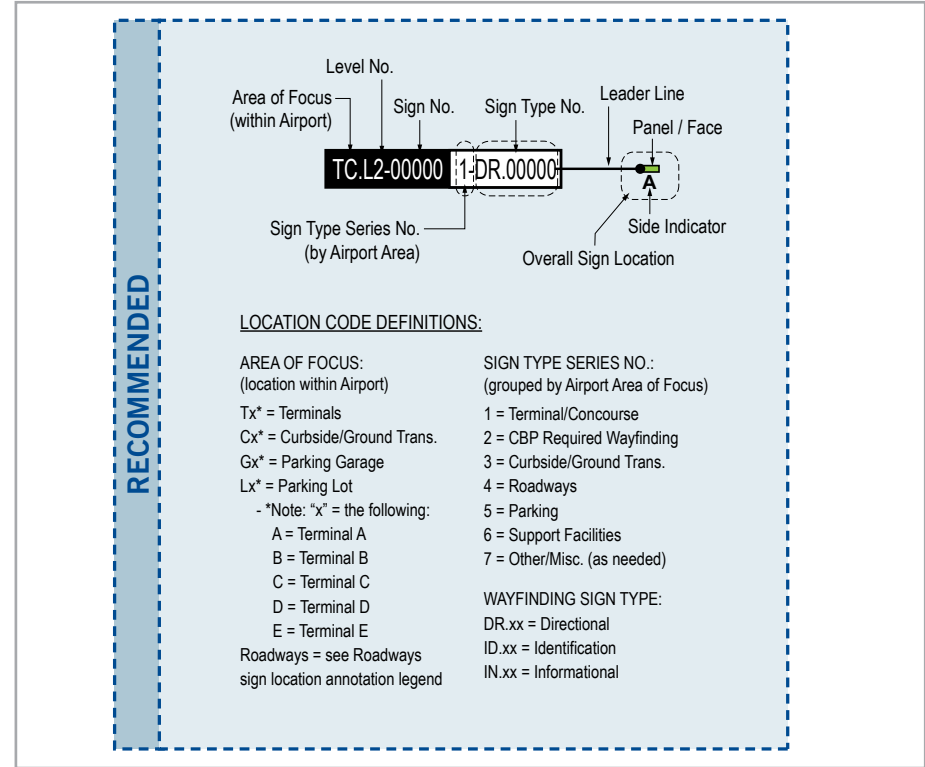


Figure 1.1.5b

Sign Location Annotation - Terminal Facility Areas

## GENERAL SIGN PLACEMENT

Viewer circulation patterns and natural lines of vision are the basis for determining the location of all wayfinding signs. Signs should be located to precede decision points whenever possible. This will ensure sufficient time for users to react to each sign's set of messaging/information.

### Sign Placement Considerations - Pedestrian Signage

A general rule for placing wayfinding signage is that a designer visualize themselves as an average departing or arriving passenger within a given airport environment, while thinking logically about decision points and the required messaging expected at a specific location. This guideline is very general in context, however, the requirements of the given sign location will be very specific regarding messaging, sign type and usage.

Note that disorienting conditions may occur, which in turn may require placement of additional or supplemental signage. These typically include:

- Complex architecture/interior environments
- Competing pedestrian wayfinding traffic
- Visual environmental distractions
- Congested architectural spaces/corridors

Favorable conditions which typically reduce need for repetitive signage are:

- Efficient architecture/interior environments
- Single direction wayfinding traffic flow
- Wall or floor treatments reinforcing single-direction traffic flow
- Lighting treatments emphasizing architectural passageways

### Sign Placement by Sign Type - Pedestrian Signage

- Directional signs - placement will be perpendicular to wayfinding traffic, and will occur at all decision points and areas where people become disoriented by architectural or environmental conditions. Directional signs will also be placed at reassuring intervals within a captive corridor to reinforce directional messaging to wayfinding traffic. Note that architectural/interior conditions or competing pedestrian traffic flow may also inadvertently imply a change of direction. In these situations, additional directional signs will be used to reinforce the intended direction as needed
- Identification signs - placement will typically occur at or near all priority destinations and entrances. Identification signs, such as gate ID signs or corridor/building entrances, will also typically be placed perpendicular to wayfinding traffic
- Informational signs - placement will typically be located nearest major decision points. Directories will typically be located to the side of a major decision point and will be parallel/in-line with wayfinding traffic. FIDS and other dynamic informational systems should also be typically located parallel/in-line with wayfinding traffic unless otherwise deemed beneficial to be perpendicular in a given situation

### Typical Pedestrian Sign Placement Intervals - Best Practices

Placement of signs at key decision points and/or in the direct line of sight of the traveling public reduces decision times. A reasonable range of 75 to 125 feet between major directional overhead signs is typical and meets the general intent of ADA guidelines. Using signs at regular intervals in longer captive corridors reinforces wayfinding information and improves traffic flow.

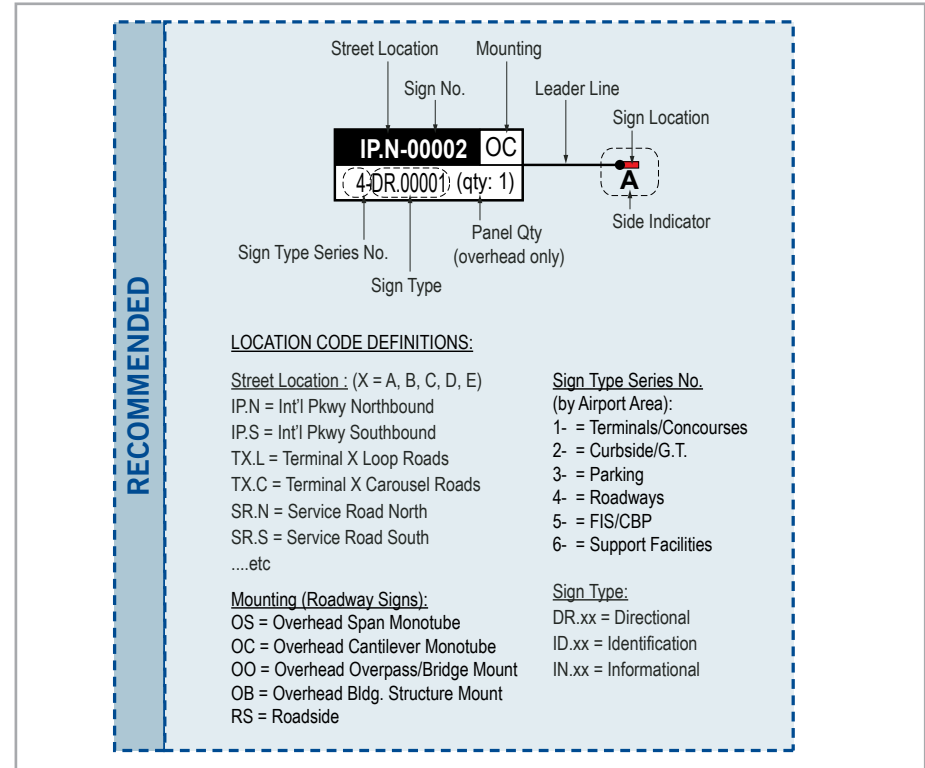


Figure 1.1.5c

Sign Location Annotation - Roadway Areas



1.1.6 WAYFINDING SIGN SYSTEM OVERVIEW

The wayfinding sign system shown in this document represents a generally holistic system being implemented throughout all DFW facilities. The DFW wayfinding sign system should always be consistent in appearance and application throughout the entire airport area in which it is being applied. Doing so consistently will establish a public perception that DFW is a professional and forward-thinking organization, which will always be apparent within any of its amenities or facilities.

Design Description – DFW Wayfinding Signage System

The DFW wayfinding signage system should continue to be developed to make all airport wayfinding signage an extension of DFW’s world-class branding and philosophies. It should meet the established principles of DFW’s general mission and vision for wayfinding. The following should be universally adopted at all DFW facilities:

- Provides safe, efficient and appealing wayfinding at all DFW Airport facilities
- Reinforces DFW as an airport standard of excellence within the United States, as well as the world
- Unifies signage as one holistic wayfinding system, both interior and exterior
- Shares a consistent, positive “tone-of-voice” at all DFW areas and facilities
- Creates a consistent and shared “sense of arrival” and a “sense of place” at each Airport area and facility

These same principles will always be used for all wayfinding signage implemented within any of DFW’s modernization programs.

Sign System Objective: Pedestrian Signage

The general objective of the Pedestrian related wayfinding sign system should be to direct the flow of pedestrian traveler traffic at curbside/ground transportation areas, in and out of the public terminal entrances, between appropriate designated terminal areas, in/out of the concourse/gate holdroom or CBP passenger processing areas, and within pedestrian related areas of parking garage facilities. This is achieved by using a hierarchy of signage that relates specifically to pedestrian traffic, and should be designed with appropriately sized graphics, visual queuing elements, orientation and placement for such traffic.

Special Areas

Some areas of the DFW airport properties do not necessarily fall within a specific category, and as such are identified as special areas. A special area should be specifically designed for and reviewed/approved by DFW on a case by case basis as needs require. Examples of special areas may include (but are not limited to) public art, advertising and concession related signage.

Interim (Temporary) Signage

Sign types developed for temporary/interim conditions shall also use the standards and guidelines for permanent wayfinding signage as shown in this document as a baseline for matching the rest of the wayfinding system.

Exceptions

To be successful, a signage program must allow for flexibility. Exceptions to any of the general signage standards and guidelines listed within this document

should be reviewed on a case-by-case basis, and enforced by DFW as deemed necessary and appropriate.

SIGN TYPES – GENERAL OVERVIEW

There are several elements that make up a clear and recognizable sign. Even though the message and its copy size/clarity are of great importance, so too is the actual sign entity that it is placed on. Having consistent and distinct sign types enhances a sign system by being more recognizable to its users within unfamiliar environments. Many travelers can decipher the type of information that will be given based on the size, shape, mounting location or color of the sign. This shortens the decision-making process, creating smoother traffic flow and increased trust in the overall wayfinding system.

Sign types will typically be used based on their message priority and basic function:

- Primary Signs Types: Signs used for priority destinations/functions of the airport are considered “Primary” signage, and should be the most visible and visually dominate to other wayfinding signage
- Secondary Sign Types: Secondary messaging (such as Telephones, ATM, etc.) should typically be reserved for sign types pre-determined as “Secondary” in nature, and should appear visually subordinate to the Primary signage
- Tertiary Sign Types: Tertiary messaging (such as regulatory, safety related information, etc.) should also be placed on sign types pre-determined for “Tertiary” use, and should appear visually subordinate to both Primary and Secondary signage

Wayfinding Sign Family

DFW’s wayfinding system should use a comprehensive sign typing system that is based on categories of a sign’s function. In some regards it has been developed into a holistic family of signs with each member having their own specific use and purpose, while also utilizing a “kit-of-parts” design philosophy. It should be designed as manageable, and allow for being seamlessly integrated within all DFW facilities, while being updated on a continuing basis as needs arise.

Wayfinding sign types at DFW airport facilities should be classified as directional, identification, informational, regulatory, life-safety/egress and interim (temporary). Major sign type classifications (as categorized by function) and general descriptions of each should include:

- Directional: Signs that display standardized directional messaging to assist in finding one’s way through a defined area or environment (i.e., an overhead sign at a decision point with arrow/symbol/destination messages listed)
- Identification: Signs used as unique markers to identify specific locations within a defined area or environment (i.e. a gate identification sign).
- Informational: Signs or graphic systems that display specific and very detailed information to assist in orientation within a complex or unfamiliar environment (i.e. a directory map or FIDS)
- Regulatory: Signs that display regulatory information (i.e. “No Parking” or “Loading Zone Only” signs)

- Note: not included as part of this document
- Life-Safety/Egress: Signs that display life-safety and vertical circulation/egress related information as required by local and national codes (i.e. fire escape stairway core level identification signs)
  - Note: not included as part of this document
- Interim (Temporary): Signs that can be directional, identification, informational and regulatory, but are made of temporary materials and mounting methods
  - Note: not included as part of this document

*Note: All sign types shown in this document are intended as general design intent only; Sizes shown are typical only; terminal conditions vary and may require adjustment for final design of sign type sizing/proportions/etc.; additional sign types not shown in this document may be required as determined during design processes of individual DFW improvement programs.*

Scale and Sizing

Scale and sizing for all DFW wayfinding signage will be consistent and designed to the appropriate required viewing distances for a given condition or environment, as well as to the minimum ADA requirements.

*Note: Sign types shown are for typical conditions only and are designed to accommodate minimum ADA requirements (i.e., minimum 3” capital height letters on pedestrian overhead signs at approximately +/- 8’-0” above finished floor to bottom of sign). Adjustments to the scale and size of certain sign types may be necessary to maximize visibility and aesthetic harmony within a given wayfinding condition or environment during design development. As such, all designers specifying wayfinding signage for use at DFW will review all individual spatial and environmental conditions per each modernization program, and make recommendations for scale/size adjustment as deemed appropriate.*



SIGN TYPE IDENTIFICATION SYSTEM - RECOMMENDED

The vast amount of differing architectural and site conditions at DFW airport facilities, combined with the fact that a standardized sign type identification system doesn't currently exist, creates a need for a comprehensive and holistic sign identification system. This ID system should always maintain standardization, flexibility and ease-of-understanding for the majority of individuals specifying and programming updated and new wayfinding signage at DFW. It is recommended that all DFW wayfinding signage be grouped into the following categories:

- Pedestrian Signs (\*NOTE: Certain vehicular signs also fall within these Series numbers)
  - Series 1: Terminals / Concourses: Includes: All public-accessible Terminal and Concourse related areas
  - Series 2: CBP Required Signage: Includes: Areas as controlled by the U.S. Customs and Border Protection
  - \*Series 3: Curbside / Ground Transportation: Includes: All Curbside and Ground Transportation related areas
  - \*Series 5: Parking: Includes all on-property public-accessible garages and surface lots
- Vehicular Signs
  - Series 4: Roadways: Includes all on-property public-accessible roads
- Other Areas
  - Series 6: Support Facility Areas
  - Series 7 (and above): Are to be assigned as needed and based on unique requirements of individual projects. Note that all expanded series numbering and categorization must be coordinated with DFW for final approval

Variant/Option Designator

When a sign type requires a variant or option (due to sizing variations, directional end-facing, etc.), a unique designator using a lowercase letter at the end of the sign number should be used. For example, a wall mount directional sign type “1-DR.23” is designed for a left-justified directional layout/accent trim. However, when a right-justified layout is required, the accent trim must appear on the right side. In this instance, “1-DR.23b” would be used to designate the right-facing variant.

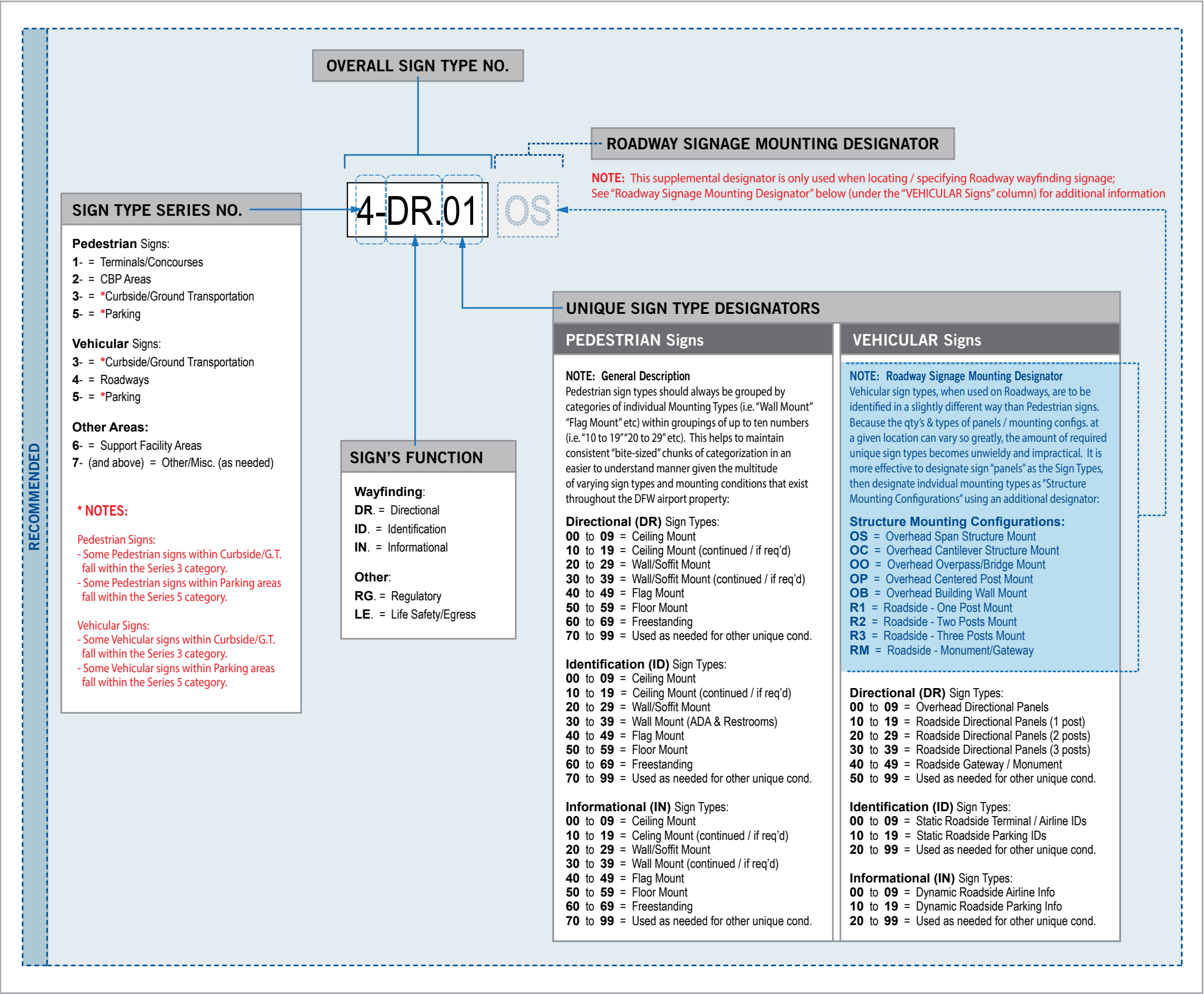


Figure 1.1.6

DFW Wayfinding Sign Type Identification System - Recommended

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1.1 INTRODUCTION

1.1.6 WAYFINDING SIGN SYSTEM OVERVIEW

1.1.7 GENERAL GRAPHIC STANDARDS

INTRODUCTION

It is important to maintain and use a consistent, universally applied set of graphic standards and guidelines when implementing a wayfinding system. As such, general graphic standards and guidelines for the DFW wayfinding signage system are provided within this section.

General graphic design standards identified herein are to serve as the foundational basis for all DFW digital wayfinding signage. As individual project specifics dictate, these standards are subject to modification and expansion in order to accommodate various design requirements throughout DFW. However, in all cases the modification of design standards must be based in the same sound wayfinding principles established within this document. Designers will adhere to the general graphic standards established herein in regards to elements such as:

- Messages
- Typography
- Symbols
- Arrows
- Colors
- Art, Advertising and Amenities

GENERAL DESIGN CONSIDERATIONS

In addition to specific graphic standards found within this section, the following list of general design considerations should be used by designers when implementing new and/or updated DFW wayfinding signage:

- Consistency and Standards-Based: Consistent visual/graphic presentation across the entire wayfinding system to include:
  - Graphics/Colors/Typefaces/Arrows/Symbols
  - Shapes/Proportions/Sign Types
  - Placement/Orientation & Rotation Philosophy/Decision Points
- Subscribe to established design standards and requirements:
  - Accessibility (ADA)
  - Sustainability (LEED) whenever possible
- Sign Types
  - Configuration, sizing & placement relative to message priority/function
  - Primary destinations = priority overhead
  - Secondary destinations = secondary overhead or wall mount
  - Tertiary destinations = tertiary wall mount
  - Simplicity, de-clutter, less is better
- Color Coding and Application
  - Sign Background = DFW Wayfinding Blue (PMS 662C)
  - Minimizes confusion with branded Terminal ID and Skylink colors
  - Creates neutral backdrop for messaging and symbols
  - Least visual impact to other existing airport signage during phases of updating
- Multi-Color Discipline
  - Branded colors used as Terminal and train-system related identification accents only;
    - Helps to highlight and differentiate terminals and associated parking facilities, as well as inter-terminal people-mover (trams/shuttles) systems
    - Limited to a small number of priority areas/functions
  - No other colors may be used for DFW wayfinding signage unless otherwise noted and approved by DFW
- Typefaces
  - “Clearview” font family
    - Established as effective for pedestrian and vehicular use
    - Variety of styles that apply to vehicular and pedestrian traffic
    - Sized / kerned appropriately for predicted viewing distances
- Arrows
  - Use only approved DFW wayfinding system arrows and symbols
    - Always scale as locked proportional artwork, no stretching, disproportioning allowed
    - Always maintain consistent alignments and rotation angles
- Use of modern AIGA and DOT Universal Symbol Systems

- Reinforces destination text
- Assists international travelers
- New/custom symbols only allowed upon DFW review and approval
- Message Hierarchy
  - Primary – priority destinations (largest, most visible)
  - Secondary – secondary destinations (may be swapped with primary destinations depending on location in airport; supplemental)
  - Tertiary – auxiliary/support destinations and functions
- Message Functions
  - Directional – direct to destination point(s)
  - Identification – identify destination point(s)
  - Informational – convey detailed information
  - Regulatory – describe regulations, warnings & requirements
  - Life-Safety/Egress – describe safety and egress related information
  - Interim (aka Temporary) – may be any of the above, but used during interim conditions

MESSAGE FUNCTIONS

This section defines the four basic functions of a “message” as it pertains to the DFW wayfinding system. It is to be utilized by anyone designing or specifying new or updated wayfinding signage to be implemented at DFW airport properties.

Directional Messages

Directional messages are the main source of information enabling wayfinding traffic to choose the proper route to a specific destination point. This process involves selecting the correct destination point, and then determining at which point a change of direction will be required. Properly placed directional signage at decision points in adequate quantities is necessary for rapid movement of passengers, employees and vehicles.

Identification Messages

Identification messages mark specific locations/destinations within a defined area or environment (i.e., Restroom identification, gate identification, bag claim identification, etc.). In addition to these locations, identification messages provide proper public exposure to leased tenant spaces and other spaces as governed by Airport Management.

Informational Messages

Informational messages typically provide specific, detailed and supplementary wayfinding information to assist in orientation within an unfamiliar and/or complex environment. In addition, informational messaging that is graphic in nature (i.e. directory maps or interactive kiosks) help with providing precise locations for the user in context to the overall facility and its destinations/amenities/etc.

Regulatory / Safety Messages

Regulatory/Safety messages relate to DPS, FAA, TSA and CBP requirements, as well as other federal, state, and local city codes/regulations. In general, these messages provide travelers with important regulatory information, such as travel advice, warnings and restrictions.

Temporary Messages

Temporary messages generally fall into a separate category of messages, and are typically established during the course of fluctuating interim wayfinding conditions due to construction related processes. Temporary signs shall only be used on an interim basis while permanent signs are in the process of fabrication, repair and/or maintenance. Temporary signs are also an excellent way to test new wayfinding elements and locations prior to final fabrication. Note that all temporary messages shall be reviewed and approved by DFW Planning Department and Airport Management prior to implementation.

MESSAGE HIERARCHY

This section defines standards for a complete and uniform hierarchy of DFW wayfinding system messages and terminology. These standards shall be utilized for all new and updated wayfinding signage implemented at DFW airport facilities.

The need for visual continuity among all messages and information of the same hierarchy will help eliminate elements which may interrupt the functional wayfinding process or add confusion. Clear and concise information presented by Primary and Secondary signs/messaging systems ensure efficient passenger circulation. Tertiary signs/messaging must be coordinated with primary and secondary signs/messaging, as well as interior design features and elements. This tertiary category of signs should also be visually distinguished from other wayfinding signs.

Messages will be organized and maintained within three distinct and functionally tiered categories: Primary, Secondary and Tertiary (see Figure 1.1.7a for full message hierarchy lists).

Primary Messages

This information shall be the largest and the most visible information on each sign. Primary information includes, but may not be limited to:

- Exterior direction to and identification of Terminal(s)
- Exterior direction to major vehicular arteries (i.e. nearby access roads)
- Interior direction to and identification of multiple Terminals if applicable (i.e. A, B, C, D, E, F) and inter-terminal transit (i.e. Skylink and Terminal Link)
- Interior direction to and identification of Gates
- Interior direction to and identification of Bag Claim and Ticketing/Check-In

Secondary Messages

This information supplements and reinforces information already conveyed by the primary messages and signs listed above. It usually indicates the auxiliary services and support functions of the facility. Secondary information includes, but may not be limited to:

- Exterior direction to and identification of Ticketing/Check-In, Bag Claim, and specific Parking Facilities/Areas
- Exterior identification of Rental Car Return, Airport Exit, etc.
- Interior direction to and identification of Elevators and Restrooms
- Interior direction to Parking and Ground Transportation

Tertiary Messages

Tertiary sign information supplements both the primary and secondary messages, and typically informs visitors of regulations and warnings. All regulatory/safety signs are generally considered to be tertiary within the DFW wayfinding system. Tertiary information includes, but may not limited to:

- Exterior and Interior TSA related notification messages
- Interior CBP related notification messages
- Exterior “No Parking” messages
- FAA required warnings, notifications and information

Other messages required by code.

MESSAGE TERMINOLOGY

Basic Requirements

Terminology, or nomenclature as it applies to airport signage and wayfinding systems, is a standardized set of words, syntax, grammar, spelling, and symbols used to communicate information to the user of the airport. Terminology systems ensure that information is presented in a consistent way, and that the content of this information is always clear and concise. When a term is shown with a corresponding symbol, that term will always appear with its symbol as indicated in *Section 1.1.7 Universal Symbols*, unless otherwise noted.

Change Procedures for Terminology

Consistent use of terminology for established messaging within the DFW wayfinding system is always required. All changes to or additions of new terminology shall require coordination, review and approval by DFW Planning Department.

FOREIGN LANGUAGE: APPLICATION & USE

Universal Symbols

Using universal symbols will assist international and non-English speaking travelers with locating airport destinations in a universal manner, while also eliminating the possibility of unintended bias for individual groups and languages. See *Section 1.1.7 Universal Symbols*.

Informational Wayfinding Signage and Supplemental Materials

Accommodating multiple languages on informational wayfinding signage (i.e. directories and information centers), as well as supplemental materials (such as hand-outs and maps) is the recommended and preferred method of providing detailed wayfinding information to the most diverse groups of non-English speaking airport users. Standards and guidelines for this type of information is not covered within this document and is to be coordinated with DFW as applicable and required.

Foreign Language Translations

All foreign language translations that are used within the DFW wayfinding system are to be provided by professional translators and will be coordinated with DFW staff for final approval prior to final fabrication and installation. All foreign language translations will use the most common and universal dialect for each individual foreign language as deemed appropriate by professional translators.

Digital Signage Dynamic Messaging (see Figure 1.1.8b)

One main benefit of using digital signage is the the ability to rotate messages.

*Directional Messages* - Directional message are placed at the point of transit in the space. The main purpose of directional signage is to get people to where they want to go. In order to include a rotation of messages along with the wayfinding information you must rotate messages relatively quickly. That is ok because people are in motion and their average attention span is very short. You have a few seconds (2-4 seconds) to get a pedestrian to read it. We recommend that the directional information is displayed for longer periods of time than the other messages.

Directional Message - 15 seconds  
Airport Message - 8 seconds



If there are a series of directional signs in a major pedestrian pathway, alternate the wayfinding and airport messaging on the respective signs so that a wayfinding message is always visible to the pedestrian in transit.

Airport message can include, but are not limited to: Passenger messages or instructions, messages from the City or State, Welcome messages, directions to retail zones with logos, emergency messages, weather, etc...

No branded advertising paid for by an outside organization is to be displayed in the message rotations.

Because the viewing time is short, airport messaging must be simple and short. No text animation or video should be used. Text height, color, contrasts and fonts must follow the graphic standards described in this document.

Write messaging in phrases when possible and keep images simple and clean. Clutter will reduce the ability of the viewer to read it.

All airport message content layouts must include a 4” minimum clear space for text around the outside of the message area. The message areas vary and sample layouts are illustrated in this document.

*Point of Wait Messages* - ID Signage that is located at a point of wait, like a gate sign, has the advantage of a longer viewing time. Some point of wait signs have separate areas for airport messages. These messages can be rotated at 8 to 15 seconds each. One message can have a series of screens that are rotated at 4 seconds each to accommodate average time it takes a person to read a short, simple message.

No animations or videos are to be used.

TYPOGRAPHY

Clearview Text Medium and Clearview Text Bold (Pedestrian signage) and Clearview Highway (Vehicular/Roadway signage) typeface shall be the only typefaces used for all airport wayfinding signage at DFW (except for TXDOT, general DOT and regulatory signs). All sign text shall be set in approved Clearview family typefaces, unless otherwise specified.

Other weights and styles of the Clearview typeface family may be appropriate in unusual circumstances. Recommendations to use alternate type weights must be submitted for approval by the DFW Planning Department. Justification of such proposals shall demonstrate the advantage offered by the non-standard type and the relationship of the non-standard sign to the other signing in the area of the proposed use.

**Pedestrian Typeface** (see Figure 1.1.7c):

- ClearviewText font family will be the standard font used for all pedestrian/interior and garage signs
- ClearviewText Medium is the basic letter proportion used for directional and wayfinding signs (i.e. overhead, wall-mounted, etc.)
- ClearviewText Medium will be used for wall-mounted room ID signs

- ClearviewText Medium will be used for regulatory signs, with ClearviewText Bold used where emphasis is required
- ClearviewText Book may be used on informational signs (i.e. information boards, guidelines, etc.)
- ClearviewText Bold will be used for gate identification signs

CAPITALIZATION

Aside from special decorative uses and certain regulatory signs, all sign word messages shall be in initial uppercase followed by lowercase (aka “Title Case”). Examples of exceptions:

- EXIT
- DO NOT ENTER
- KEEP LEFT; KEEP RIGHT
- NEXT LEFT; NEXT RIGHT
- ATM

Additionally:

- As required by the American with Disabilities Act, all tactile messages should be all uppercase
- For better legibility, lower case letters should have a lowercase “x” height that should be two-thirds the height of the uppercase letter
- All words should be first letter capitalized except for articles, prepositions, and conjunctions
- A consistent capital letter height will be maintained when signs are used in sequence

TYPOGRAPHIC RESTRICTIONS

Typefaces or weights not described above should not be used, unless deemed acceptable by the DFW Planning Department. Modification of letter shapes is prohibited. Condensed, extended, slanted, outlined or otherwise distorted type should not be used. Language to this effect should be included in the specifications for all additional airport sign projects and any variances must be approved by the DFW Planning Department.

LETTER SPACING

Unless otherwise indicated, all sign messages shall follow the vendor’s normal or “kerned” letter spacing standards. Messages set according to the type vendor’s letter spacing standards will not normally require adjustment. In some circumstances, modification of spacing between individual letter pairs may improve the appearance and legibility of a sign message. Designers are required to review sample messages for all sign projects and shall recommend spacing modifications where they can be shown to be advantageous. In these instances hand-kerning will be required to adjust spacing. Also, hand-kerning may be required on internally illuminated signs to prevent “halation” of the letters. Reducing normal letter or word spacing (e.g. to fit lengthy message within a restrictive layout area) should be avoided. Punctuation marks, which relate to two letters, should be spaced equally from both letters.

WORD SPACING (see Figure 1.1.7e)

Word spacing between related words is typically 3/4 (.75) times the cap letter height, unless otherwise noted. (For example, a message using 4” cap letters will have 3” between words).

LINE SPACING (see Figure 1.1.7f)

Line spacing is typically 1/2 (.50) times the cap letter height for words of a related message line, unless otherwise noted. Spacing between unrelated messages is typically one times the cap height, unless otherwise noted.

TYPE SIZES

The following are the standard typical type sizes for most sign messages at DFW, and should be used only as a general guideline when developing new sign types. Also, larger type sizes may be used in special decorative instances. All variations from these standards must be approved by the DFW Planning Department. See the DFW Signage Standards and Guidelines for listings and layouts of individual type sizes per approved wayfinding sign type.

Interior

- Interior Directional Signs
  - Overhead Directionals:
    - All messages = 3.5” to 4” typical; 3” minimum
- Interior Identification Signs
  - All messages = Varies (see individual sign type layouts)
- Interior Informational Signs
  - Directory messages = Varies (see individual sign type layouts)
- Interior Regulatory and Safety Signs
  - Refer to latest edition of the ADA and all other current local, state & national codes

OVERVIEW

In order to maintain a visually unified system of signs throughout all DFW facilities, the presentation of color must be consistent on all elements throughout the entirety of the wayfinding system. This section will provide an overview of the adopted color system as it should be used for all new and updated wayfinding signage at DFW.

COLOR DESIGN CONSIDERATIONS

The following general design considerations and guidelines should be utilized when specifying the DFW wayfinding color system:

Simple, Supplemental and Consistent

Colors, as they pertain to branding specific elements within a wayfinding environment, should always be simple, supplemental, limited in number and applied consistently and without exception. When too many colors are introduced, it will typically create an additional layer of information to decipher, which in turn may cause increased confusion, pause and distrust of the wayfinding system.

Consideration of Colorblind Individuals

As of this document's publishing, approximately 12% of the population is colorblind and cannot distinguish between mixed shades of red or orange, yellow or brown and black or blue. For this reason, if multiple colors are to be used as a primary means of identifying wayfinding elements (i.e. “The Orange Line,” “The Green Room,” etc.), then it would be necessary to spell out the name of the color in order to make the intended color usage clear to colorblind individuals, while also meeting related ADA requirements.

Color-Coding

Color-coding, when applied thoughtfully, sparingly and consistently, is a useful supplement to a good linguistic format. Color-coding should not typically be the absolute or primary means of distinguishing parts of a facility, and instead be used in a manner that supplements the primary graphic wayfinding information being presented. For example, applying a unique color to each individual level or area of a parking garage is a common practice among parking facility designers. However, the color use of such a system must be considered within the larger context of the surrounding/nearby facilities and how it will effect their color coding systems. When too many varied colors and/or color systems are used, color becomes yet one more layer to decipher in an already complex hierarchy of wayfinding information.

Recognition, Contrast, Reproduction and Environmental Considerations

Colors should always be chosen for their wide recognition, contrast/legibility, ease of manufacture/reproduction, as well as complementary to the established wayfinding system or surrounding environment. The long-term “survivability” of colors will also be dependent on surrounding weather and environmental conditions (i.e., direct sunlight and ambient light gradually affects color systems over time, typically fading and usually accelerated due to unique or typical local weather conditions). As such, the choice and use of color should always be evaluated to some degree based on the geographic location of the wayfinding environment.

COLOR APPLICATION GUIDELINES

DFW Wayfinding Color System: General Description

The DFW wayfinding system’s color palette should always use a supplemental wayfinding specific color-coding system that accents and enhances the messaging, while also limiting the use of other branded and/or non-wayfinding related colors. In addition, all colors should be consistently and easily manufactured on signage, maintain good contrast with each other, and appear as a distinctive wayfinding specific color palette that is easily recognized by the majority of wayfinding system users, regardless of location within the airport property.

General Color Application Guidelines and Standards

The following are general color guidelines and standards for use within the DFW wayfinding signage system:

- Sign Graphics - All DFW Wayfinding Signage:
  - The primary sign face background and text colors for all wayfinding signage (vehicular and pedestrian) are White text/symbols on an DFW Wayfinding Blue (PMS 662C) background. These colors were chosen for their widely adopted implementation system-wide at DFW, their high contrast when incorporated within the multitude of DFW’s varied wayfinding environments (both interior and exterior areas)
- Sign Graphics - Pedestrian Wayfinding Areas (i.e., terminals, curbsides, pedestrian-related parking areas):
  - The use of White text/symbols on a DFW Wayfinding Blue sign face background avoids competition with color schemes of other competing entities (concessions, airlines, etc..) and integrates well with the varying structural and architectural features found at DFW
- Branded Terminal Identification:
  - In order to identify the terminals as unique/separate facilities at DFW, the terminals will be branded with symbols unique from the other standard wayfinding symbols by utilizing the following colors:
    - Symbol field background = DFW Wayfinding Blue (PMS 662C)
    - Terminal ID letters = White
    - Symbol borders = Gold (PMS 130C)
- Inter-Terminal Transit Systems:
  - The Inter-Terminal transit systems (i.e., Skylink = secured area access/ elevated tram system; Terminal Link = non-secured area access using curbside shuttles) at DFW will utilize the following colors:
    - Symbol field background = Orange (PMS 166C)
    - Symbol artwork = White

Other Color Considerations

- Consistent and Holistic Application:
  - To remain effective, the DFW wayfinding color system must always be applied to all wayfinding system elements in a consistent and holistic manner airport-wide (roadways, parking, curbsides, ground transportation areas, terminals, etc.) and at all DFW facilities

- Supplemental Colors:
  - The addition of any/all supplemental colors must always be carefully considered during design of new airport areas and their respective signage design programs in order to determine how they will mesh with the overall established DFW color-coding and wayfinding systems
  - All supplemental colors must be coordinated with/approved by DFW
  - All supplemental colors must always maintain all legibility and compatibility criteria as mentioned in this section, as well as any applicable ADA/Texas ADA and MUTCD/TXDOT requirements regarding color-use on signage
- Additional Use of Color:
  - Certain signs within the airport complex may employ the corporate colors of airlines, rental car agencies, concessionaires and other airport tenants as dictated and/or deemed appropriate by DFW
  - No other colors are to be used for DFW wayfinding signage or sign hardware used within DFW unless otherwise approved by DFW

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1.1 INTRODUCTION

1.1.7 GENERAL GRAPHIC STANDARDS

Terminal Areas:

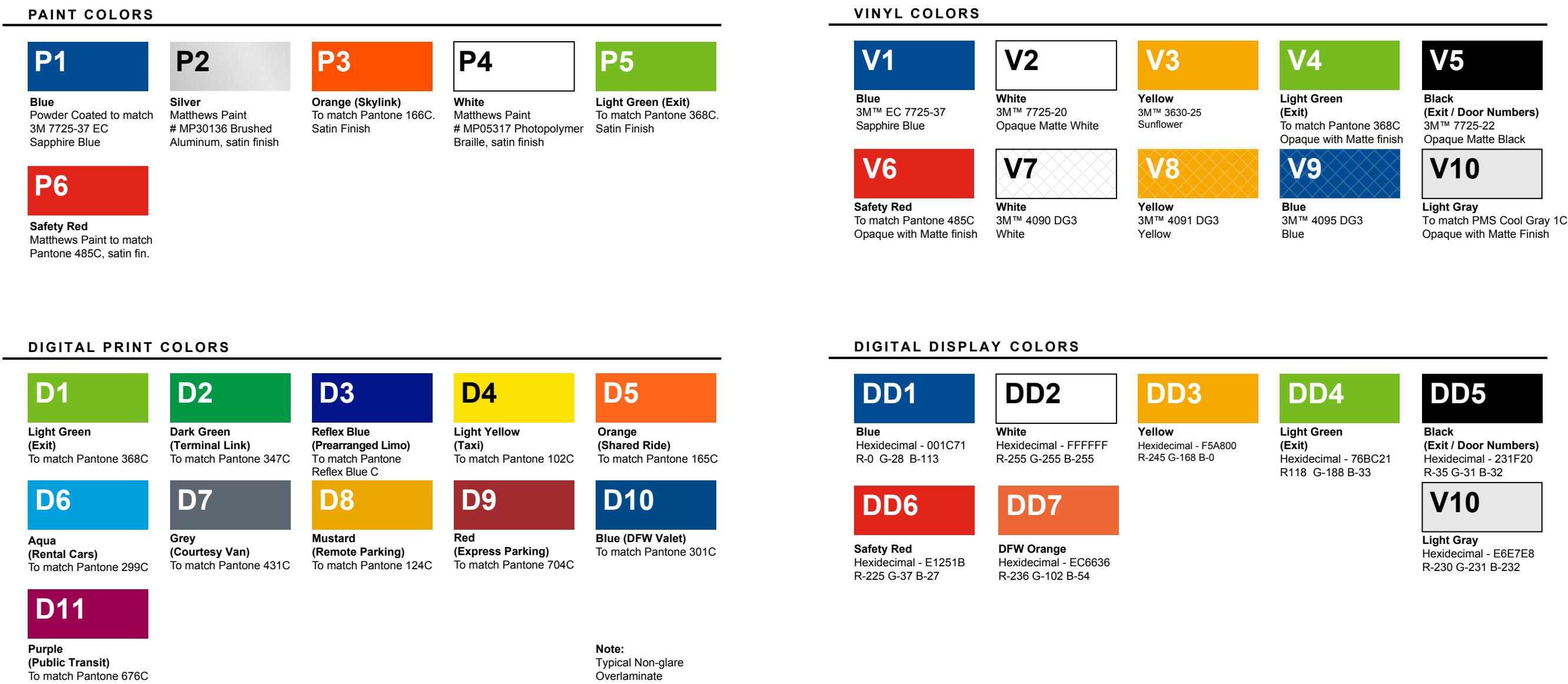


Figure 1.1.7p

DFW Wayfinding Color System

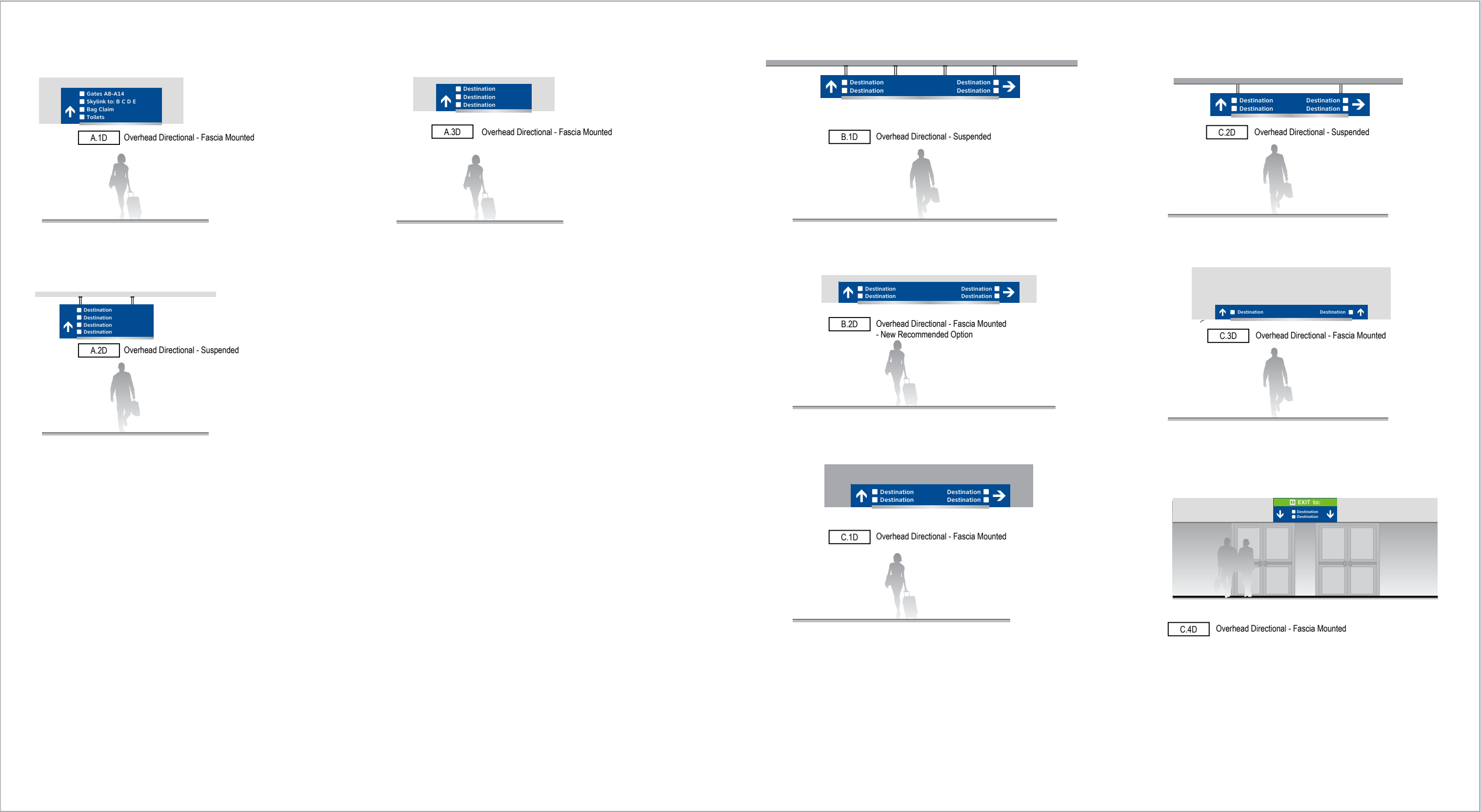


Figure 1.1.8a DFW Digital Wayfinding Sign Family: Terminals/Gate Areas

**WARNING:**

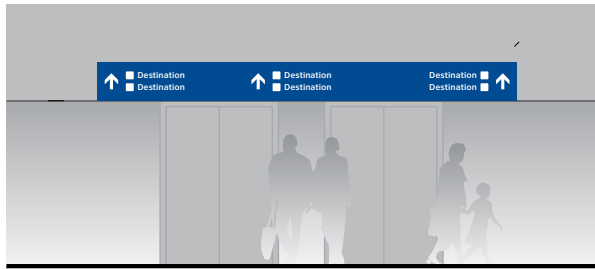
This record contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons with a "need to know," as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.



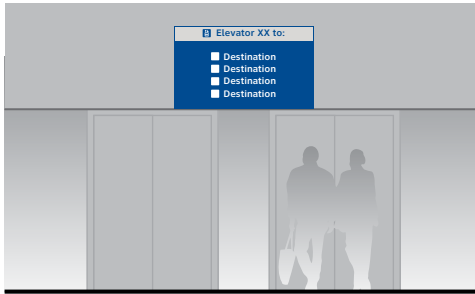
H.1D Interior Vestibule Directional - Fascia Mounted



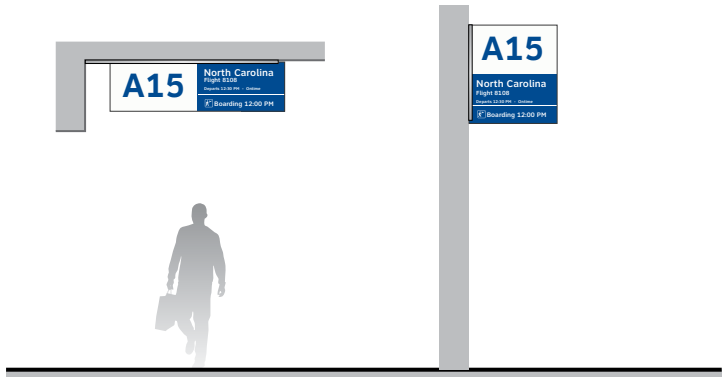
H.2D Interior Vestibule Directional - Fascia Mounted



H.3D Interior Vestibule Directional - Fascia Mounted



H.4D Interior Vestibule Directional - Fascia Mounted



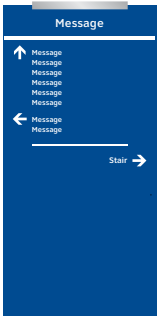
G.2D Bag Claim ID w/ Existing Layout (44" w x 27.5" h)



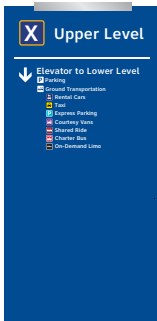
D.1D Gate ID Pylon - Freestanding



F.4D Gate Door ID - Fascia Mounted  
- New Recommended Option



I.1D Elevator Directory - Wall Mounted



I.1Db Elevator Directory - Wall Mounted  
- New Recommended Option

Figure 1.1.8a (cont.)

DFW Digital Wayfinding Sign Family: **Terminals/Gate Areas (cont.)**

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Digital Animation Options



Directional Message - 15 sec



Concession Message - 8 sec



Airport Message – 8 sec

Figure 1.1.8b

DFW Digital Wayfinding Sign Family: **Terminals/Gate Areas (cont.)**

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1.1.9 GOVERNING BODIES, CODES & REGULATIONS

Governing bodies, codes, city ordinances and standards affecting the DFW wayfinding and signage system are outlined in this section. The accompanying lists have been compiled from various entities and codes affecting DFW, however, it is not to be considered a complete or final list of requirements. These lists have been initially established by DFW, and changes will be coordinated with and approved by DFW as required on an individual case-by-case basis. If there is a conflict between a requirement listed here and another authoritative code or standard, the more stringent one shall be applied.

NOTE: This section is for general reference only. It is the responsibility of the designer/fabricator/installer to always design/fabricate/engineer/install all signage to meet or exceed all current applicable local, state and national codes and regulations.

General Requirements

- An eggshell or satin finish (11 to 19 degree gloss on 60 degree gloss meter) on sign faces and elements is to be used in order to eliminate distracting levels of sheen.
- Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10.
- Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read unless otherwise noted. The minimum height is measured using a capital letter height, and is shown as an “X” for the basis of measurement reference.
- For all tactile signs, the physical sign surface, background finish, contrast, materials, mounting heights/locations, letters/numbers and Braille shall be sized, spaced and applied to the meet the most recent Federal ADA standards for Accessible Design, Texas Accessibility Standards and/or other local requirements.
- Elements and spaces of accessible facilities which shall be identified by the “International Symbol of Accessibility” are:
  - Parking spaces designated as reserved for individuals with disabilities
  - Accessible passenger loading zones
  - Accessible entrances when not all are accessible (inaccessible entrances shall have directional signs indicating the route to the nearest accessible entrance)
  - When older facilities contain non-accessible elevators and/or restrooms, the accessible elevators and restrooms must be identified as such
  - All other requirements as dictated by local, state and national standards/building codes and regulations

Governing Bodies & Authoritative Organizations

The following list includes (but may not be limited to) the governing bodies and authoritative organizations as applicable to design and engineering at DFW:

- AAAE: American Association of Airport Executives
- AASHTO: American Association of State Highway & Transportation Officials
- ACC: Airport Consultants Council
- ACRP: Airport Cooperative Research Program: Report 52
- AIGA: American Institute of Graphic Arts
- ANSI: American National Standards Institute
- ASTM: American Society for Testing and Materials
- ATA: Air Transport Association of America
- AWI: Architectural Woodwork Institute
- CAA: Civil Aeronautics Administration
- CABO: Council of American Building Officials
- CSI: Construction Specification Institute
- FAA: Federal Aviation Administration
- FHA: Federal Highway Administration
- IATA: International Air Transport Association
- NEMA: National Electric Manufacturers Association
- NFPA: National Fire Protection Association
- TXDOT: Texas Department of Transportation
- Other governing bodies and authoritative organizations as deemed necessary by DFW

Codes & Regulations

The following list includes (but may not be limited to) the governing bodies and authoritative organizations as applicable to design and engineering at DFW:

- ADA: Americans with Disabilities Act
- ANSI: American National Standards Institute
- IBC: International Building Code
- LSC: Life Safety Code (written by the NFPA)
- NEC: No Exposure Certification
- SPC: Standard Plumbing Code (written by the NFPA)
- SBCCI: Standard Building Code
- TDLR: Texas Department of Licensing and Regulation
- UBC: Uniform Building Code
- Other codes and regulations as deemed necessary by DFW

DESIGN INTENT: DEFINITION & LIMITATIONS OF THIS DOCUMENT

Labozan Associates, Inc. (LAI) creates design intent documentation/specifications for the purposes of illustrating new wayfinding signage system design intent only, as it relates to the applicable wayfinding project and its predefined area of scope. LAI is not responsible or liable in any regard for final engineering, material selection, fabrication, installation or performance specification of any kind. The included design intent documentation and specifications are based on the most recent information and drawings as provided to LAI by DFW and the Project Team at the time of publication. Any included drawings, specifications or information within LAI’s design intent documentation is to only be used as a general guideline. No information contained within LAI’s design intent documentation or specifications should be construed as engineered elements or used for the purposes of final sign fabrication, specification or installation. The Fabricator/Contractor/Installer is responsible for all final design, engineering, fabrication and material specifications with regard to all structural, electrical, mechanical, foundation, installation and material selection/processes, and must be approved by DFW prior to final fabrication/install. In addition:

- All final design, engineering and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, welds and attachment methods shall be performed and approved by an engineer licensed in the State of Texas to meet or exceed all applicable local, state and national codes, standards and regulations. Where a conflict occurs between LAI’s design intent documentation/specifications, the more stringent requirements per all codes apply
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer, and the Contractor/Fabricator/Installer must ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications are to be provided by the Contractor/Fabricator/Installer within their final fabrication-ready shop drawings and must be approved by DFW prior to final fabrication and installation
- Wherever dissimilar metals or possibly corrosive installation surfaces are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic, moisture related and all other types of corrosion
- Final fabrication methods, materials, quality and fit/finish to be reviewed and approved by DFW through prototype reviews and testing prior to final fabrication production run/installation processes
- Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic screen displays. Refer to color system swatches and/or final finish samples for accurate reference
- All messages shown in this document must be reviewed by the Contractor/Fabricator/Installer prior to final fabrication and installation (see message schedules for actual messaging by individual location and sign type). Any discrepancies will be identified, documented, corrected and coordinated with DFW during the C.A. process and prior to final fabrication and installation

- Sign locations/orientations and plans shown are approximations based on the most current plan drawings as provided to LAI at the time of the document’s completion. Sign locations are for general design intent and wayfinding planning purposes only. They should not be construed or deemed as absolute or final locations. Field verification, marking and documentation of every final location is to be performed by the Contractor/ Fabricator/Installer and coordinated with DFW for final approval
- All final install locations must be marked and verified in the field for proper structural integrity, adequate line of sight, utilities/property-line/other existing or future interferences, and must be in complete compliance with all local, state and national codes prior to fabrication or installation
- Adjustments to sign locations shown must be documented by the Contractor/Fabricator/Installer and provided to DFW for final approval
- Demolition plans of existing wayfinding signage is not in scope nor included; survey, removal and/or relocation of existing signage is to be coordinated by the Contractor/Fabricator/Installer with DFW



1.1.10 CHANGE PROCEDURES/SIGN REPLACEMENT

Sign Replacement/Ordering Procedures

To ensure that the guidelines shown in this document are adhered to and signage is holistically maintained at all times, designers and individuals specifying signage for use within the DFW Airport complex will be required to use the sign replacement/ordering procedures as established by DFW.

All proposals for new construction or alteration of signs shall be required to follow one of the two established review procedure packages as follows:

- 1. Large Scale: New Construction, which includes:
  - New large scale design/construction projects/programs
  - New large scale interim/temporary sign projects/programs
- 2. Small Scale: Sign Additions and Corrections, which includes:
  - General sign maintenance
  - Arrival of new airlines
  - Airline Relocation
  - Addition of a sign
  - Deletion of a sign
  - Implementation of a temporary sign/banners
  - Miscellaneous sign issues

Management and Control

- Permanent and temporary signage programs shall fall under the same management process relative to review, approval and implementation. The program shall also be controlled through the DFW Planning Department and should include code compliance review where applicable
- A single point of contact shall be established (i.e. the Signage Project Manager)
- This strict process is required to control what is displayed, and how long it is displayed in/around the project area
- New signage shall be evaluated to establish any conflicts with existing permanent signage, wayfinding, concessions, advertising, art and/or other programs
- The construction process and schedule shall be monitored to ensure new wayfinding paths are properly addressed
- The process shall be flexible enough to address and deliver last minute changes and requirements to meet the operational and functional requirements of the project environment

Fabrication and Maintenance

This document is intended to illustrate design intent, and should only be used as a general guideline. No information contained here should be construed as engineered elements. The sign designer/fabricator/contractor shall be responsible for all engineering and specifications with regard to structural, electrical, mechanical, foundation and installation. Detailing and information contained on these pages shall not be reproduced, copied or utilized in any way without previous written authorization from the DFW Planning Department.

As-Built Documentation

As part of any sign related design and installation, complete documentation of the final built condition shall be provided to the owner at the completion of a project. As part of this submission the following drawings shall be included at a minimum:

- Sign location plans that illustrate the accurate placement of each sign. Each individual sign on the drawings shall be given a unique reference sign number
- Sign elevation drawings that illustrate the mounting height of all the sign types. Any variances from the typical mounting heights shall be noted
- Sign fabrication detail drawings that illustrate all of the internal and external components of the signs as well as any means of assembly
- Detailed sign attachment shop drawings that illustrate how the sign is attached to the building or site
- Copies of as-built drawings shall be reviewed and approved by the DFW Planning Department and code compliance prior to submittal and final versions
- Where applicable, the DFW Planning Department shall review as-built drawings for code compliance
- In addition to the As-Built Drawings, a consistent written database of every sign for record and use with the maintenance program should be created. This database should include the following items at a minimum:
  - Sign number (unique and identifiable)
  - Description of sign location (plan, using nearest architectural column-line if applicable)
  - List of physical properties (length, width, height, depth and weight)
  - List of electrical properties: electrical service (V), and amps required (A)
  - Complete parts list with supplier information.
  - Digital photo or artwork for each sign message
  - Maintenance log for the sign including scheduled maintenance tasks

Governance

Governance Process/Policy: The process suggested here reflects only the bare basics of a wayfinding and signage policy for all DFW departments, tenants, concessions, advertising and other on-going programs which could impact the passenger information orientation and decision-making requirements. Control must be from a central point and one department (i.e. DFW Planning Department). Applications for “signage” shall be necessary to begin the process.

- Design shall be submitted to the DFW Planning Department Signage Project Manager
- Design options, when applicable (i.e. illumination options), will be submitted to the Planning Department Signage Project Manager for review, selection, and approval
- Shop drawings shall be submitted to the DFW Planning Department Signage Project Manager prior to fabrication for review and approval
- Prototype signs shall be produced for each sign family type and submitted to the DFW Planning Department Signage Project Manager for review and approval
- DFW Planning Department Signage Project Manager to conduct site visits

and inspections on all signs during associated implementation phase of construction and other DFW signage projects

Reference Materials

The following information can be used as a helpful reference and can be provided by DFW upon approved request:

- Sign Replacement Program for Terminals A, B, C, E TA NO. A04-077B Delivery Order No. Issue for Bid July 30, 2004
- Sign Replacement Program For Terminals A, B, C, E TA NO. A04-077B Delivery Order No. Issue for Bid Sept 13, 2004
- Sign Replacement Program For Terminals A, B, C, E TA NO. A04-077B Delivery Order No. Issue for Bid Sept 13, 2004 Construction Contract # 850195001 TA # A04-077B-007Curbside Reallocation Terminal A,B,C,&E (future approved plans)
- Terminal Carousel Roads Guide Signs TA No. A01-090B-003 100% Submittal (Issue for Construction) April 28, 2003
- Curbside Reallocation Terminal A, B, C, &E (future approved plans)
  - Sign Design Requirements Peer Review Workshop:
    - DFW Airport Wayfinding Signs & Graphic Standards
    - SDR Lessons Learned
    - Signage Issues & Requests
    - Term D Advertising Observations and Recommendations
    - ACRP 07-08 Wayfinding & Signage Guidelines
- DFW Curbside Signage Contract NO. 9500273 (Existing signage)
- Roadway Sign Design Manual
- Terminal D Wayfinding Graphic Criteria Manual

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1.2 WAYFINDING ANALYSIS AND APPLICATION

1.2.1 OVERVIEW

Prior to developing updated wayfinding signage design standards, it is fundamental to understand the existing wayfinding signage at DFW. In order to establish a clear direction in which to move forward with the updated wayfinding signage program, LAI analyzed all relevant existing materials by site visits, capturing photographic examples, and reviewing existing and/or planned sign program documentation at each terminal.

Evaluation Criteria

It is important for wayfinding signs to adhere to a basic guideline of copy styles/sizes, maintain consistent terminology, use recognizable and universally accepted symbols, incorporate uniform colors systems, and utilize consistent recognizable sign types. This section covers key elements that impact the effectiveness of a wayfinding signage system, as well as overall wayfinding processes at airports. LAI used these key elements as the criteria by which the existing signage system was evaluated, and will continue to use for implementing new wayfinding signage within DFW construction programs. Note that industry standard wayfinding and signage factors are covered in additional detail within the following documents:

- ACRP Report 52 - Wayfinding and Signing Guidelines for Airport Terminals and Landside – 2011 (<http://www.trb.org/Publications/Blurbs/165910.aspx>)
- Americans with Disabilities Act – 2010 ADA Standards for Accessible Design – Latest Revisions ([https://www.ada.gov/2010ADAstandards\\_index.htm](https://www.ada.gov/2010ADAstandards_index.htm))

The following are general descriptions of the evaluation criteria used for analyzing the DFW wayfinding program:

- Signage Philosophy: Establish an integrated framework that would produce ONE comprehensive, holistic and visually attractive signage system that can be easily understood, followed and identified
- Standard Terminology: Experience the same terms and sign types from one terminal, facility or area to the next, which will assist in rapid public comprehension of various airport functions/destinations. Message content must be in layman’s language, equally understandable by first-time and frequent travelers
- Message Hierarchy: Clear and concise information presented by “primary,” “secondary” and “tertiary” sets of messages greatly improves efficient passenger flow
- Color Coding: Colors have great effect on human behavior and deciphering wayfinding information. Thoughtful consideration and consistent implementation should always be utilized when using multiple colors within a wayfinding sign system
- Symbols: The use of short verbal messages in conjunction with symbols is more effective than the use of messages or symbols alone. The use of consistent graphic representations and sizing of symbols and arrows maintains system cohesion and more rapid information deciphering. Limiting the number of arrows at a given decision point also greatly improves information deciphering and passenger flow

- Scale of Copy: In a fast paced, often congested environment such as an airport, a conservative pedestrian viewing distance of 25 feet of viewing distance to each inch of capital letter height should be used.
- Sign Placement: Placement of signs at key decision points and/or in the direct line of sight of the traveling public reduces decision times. A reasonable range of 75 to 125 feet between major directional overhead signs is acceptable and meets the general intent of ADA guidelines. Using signs at regular intervals within longer contained corridors reinforces wayfinding information and improves traffic flow

Conceptual Wayfinding Plans

Identify conceptual wayfinding pathways, decision points and sign locations for wayfinding signage to be implemented within all DFW construction programs. They will be used only as a general starting point/guideline for initial conceptual sign location reference within each applicable improvement program. More finalized and exact locations will be implemented during design development processes, and coordinated with DFW.

Interim (Temporary) Wayfinding

In addition to the established DFW wayfinding signage system, a transitional sign system should also be developed and employed during interim wayfinding conditions. A conceptual transitional wayfinding sign family should be considered and developed by designers during design phases as needed.

The following are recommendations for an effective transitional wayfinding signage system:

- A stand-alone or supplemental graphic/wayfinding “roll-out” campaign
- Emphasis on highly visible transitional signage that matches the general design/graphic intent of the final permanent signage
- Fabrication, installation and revision time should be very fast/expedited
- Easy on-site and “on-the-fly” revisions and sign adjustments
- Educates users with the new wayfinding program’s graphics, shapes, terminology, etc.
- Allows time to properly study, evaluate and address the most effective permanent wayfinding signage locations and solutions, while not compromising passenger circulation efficiency
- Timeframe on how long transitional wayfinding systems are in place should be established by phasing plans
- Fabrication considerations:
  - Constructed of low-cost materials to last the duration of the transitional period
  - Light-weight inexpensive sign face/background materials
    - Gatorfoam, Sintra, MDO plywood, etc.
    - Graphics = first surface applied digitally cut vinyl, or full-bleed (edge-to-edge) graphics printed on surface applied vinyl
  - Temporary printed sign face cover-wraps to cover permanent signage with transitional messaging/graphics
    - Banner materials
    - Over-the-face (wrap) configurations

- Temporary surface applied vinyl “super-graphics”
  - Draw additional attention to important vertical and/or horizontal travel areas and destinations; to be seen from greater distances for earlier queuing
- Freestanding moveable sign base systems
  - Gatorfoam with aluminum clamp bases
  - Pre-fabricated (off-the-shelf) units with slide-in graphic panel areas
- Implementation phasing based on DFW modernization program scheduling (TBD by others and coordinated with DFW)

Final Wayfinding Plans and Signage Design Intent

The wayfinding plans shown in this document are conceptual only and are based on the most recent architectural files as provided to LAI by the Project Team at time of this document’s publication. The sign family shown in this document is also considered in development and may require further refinement and/or additional sign types as deemed necessary during future design development processes. Final wayfinding plans, sign location plans and signage design intent drawings will all be further developed and refined during the course of DFW construction programs.

1.3 DESIGN CRITERIA

1.3.1 OVERVIEW

The general design criteria for DFW Airport’s wayfinding sign program is organized into sections which outline the procedures and requirements for development of a holistic DFW wayfinding system. This criteria will help guide designers, fabricators and installers when implementing wayfinding signage at DFW Airport. Note that this section shall be used as the general basis for, and in supplement to, Chapter 2.0 Wayfinding Graphic Standards & Guidelines

The following list of design requirements/criteria shall be applied to all wayfinding sign types:

- Methodology
- Nomenclature
- Message Hierarchy
- Graphic Standards
- Sign Types

Methodology

To establish a comprehensive means of understanding DFW Airport’s existing wayfinding sign system, an in-depth analysis of the facilities and circulation was conducted and published within the DFW Wayfinding Observations and Recommendations. All public-use landside Airport facilities and areas were reviewed and analyzed in a summarized format in order to understand and document existing wayfinding conditions, as well as provide analysis. The following were reviewed and analyzed:

- All applicable DFW Airport facilities plans (floor plans and elevations)
- Space functions
- Circulation paths
- Peak load circulation
- Nomenclature
- Message Hierarchy
- Vertical and horizontal circulation
- Primary destinations
- Possible areas that may prohibit efficient passenger circulation

Nomenclature

The first issue addressed was the establishment of Airport nomenclature. Nomenclature issues were addressed by identifying areas with inconsistent terminology use, and/or terminology that was not common practice in the airport industry. In coordination with DFW, terminology identifying DFW Airport functions and space were established and standardized.

Message Hierarchy

Upon establishment of standardized DFW Airport nomenclature, a message hierarchy was established. Hierarchy of messages were created for primary, secondary, and tertiary messaging. Ranking is based on routing of destination priorities and site or space specific direction(s). See Section 2.1 Messages for more detailed information regarding acceptable message hierarchy use at DFW Airport.

Nomenclature and message hierarchy shall be specifically tailored for the following wayfinding sign types categories:

- Directional: signs that display standardized directional messaging to assist in finding one’s way through a defined area or environment (i.e. an overhead sign at a decision point with arrow/symbol/destination messages listed)
- Identification: signs used as unique markers to identify specific locations within a defined area or environment (i.e. a gate identification sign)
- Informational: signs or graphic systems that display specific and very detailed information to assist in orientation within a complex or unfamiliar environment (i.e. a directory map or FIDS)
- Regulatory: signs that display regulatory, safety or local code information (i.e., “No Parking” or ”Loading Zone Only” signs)

Graphic Standards

Once DFW Airport’s wayfinding methodology and system were determined, graphic standards were developed and established (see Chapter 2.0 Wayfinding Graphic Standards & Guidelines). Included within these graphic standards are:

- Typography, including Type Spacing and Legibility (See 2.2 Typography)
- Symbols (See 2.3 Symbols)
- Arrows, including application (See 2.4 Arrows)
- Colors (See 2.5 Colors)
- General material considerations

Sign Types

DFW Airport’s wayfinding system uses a comprehensive set of sign types. It has been developed into a holistic family of signs with each member having their own specific use and purpose, while also utilizing a “kit-of-parts” design philosophy. It is designed to be manageable, integrated in a seamless manner with DFW Airport’s Terminals/Gates areas, and can be updated on a continuing basis as needs arise.

Note that the wayfinding sign family at DFW Airport will always be categorized as directional, identification, informational and regulatory sign types. These sign types are listed as a catalog within Chapter 4.0 - Sign Types. It is a tool to assist designers in programming wayfinding signage, and establishes an effective design process when creating signage for inclusion within DFW’s wayfinding system.

Note the following considerations used during the development of DFW’s wayfinding sign family:

- Consideration of synchronicity with architecture and/or built environments. Analysis of architectural/environmental/site/location palettes, finishes, textures and shapes to allow wayfinding signage that complements its surroundings
- Multiple size and placement options developed for all sign types. Conditions Airport-wide were addressed with signage applications established for all facilities (i.e. directional signs may require applications for various configurations, including overhead, wall mount, blade mount, etc)
- Research of materials, finishes, textures, and colors appropriate for architectural/environmental/site/location requirements
- Documented specifications for signage materials, as well as fabrication and installation1-23 techniques. By providing details and in-depth sign specifications, highly competitive and accurate bid solicitation is possible

# 2.0

## **2.0 WAYFINDING GRAPHIC STANDARDS & GUIDELINES**

- 2.1 Messages
- 2.2 Typography
- 2.3 Symbols
- 2.4 Arrows
- 2.5 Colors
- 2.6 Art, Advertising and Amenities
- 2.7 Wayfinding Sign System Overview
- 2.8 Digital Display Hardware



2.1 MESSAGES

2.1.1 OVERVIEW AND FUNCTIONS

This section defines the four basic functions of a “message” as it pertains to the DFW wayfinding system. It is to be utilized by anyone designing or specifying new or updated wayfinding signage to be implemented at DFW.

- Directional Messages
- Identification Messages
- Infomational Messages
- Regulatory Messages
- Life-Safety/Egress Messages
- Temporary Messages

Directional Messages

The main source of information enabling wayfinding traffic to choose the proper route to a specific destination point. This process involves selecting the correct destination point, and then determining at which point a change of direction will be required. Properly placed directional signage at decision points in adequate quantities is necessary for rapid movement of passengers, employees and vehicles.

Identification Messages

Mark specific locations/destinations within a defined area or environment. In addition to these locations, identification messages provide proper public exposure to leased tenant spaces and other spaces as governed by Airport Management.

Informational Messages

Provide specific, detailed and supplementary wayfinding information to assist in orientation within an unfamiliar and/or complex environment. In addition, informational messaging that is graphic in nature (i.e. directory maps) help with providing precise locations for the user in context to the overall facility and its destinations/amenities/etc.

Regulatory

Relate to DPS, FAA, TSA and CBP requirements, as well as other federal, state, and local city codes/regulations. In general, these messages provide travelers with important regulatory information, such as travel advice, warnings and restrictions.

Life-Safety/Egress

Signs that display life-safety and vertical circulation/ egress related information as required by local and national codes (i.e. fire escape stairway core level identification signs).

Temporary Messages

Temporary Messages generally fall into a separate category of messages, and are typically established during the course of fluctuating interim wayfinding conditions due to construction related processes. Temporary signs shall only be used on an interim basis while permanent signs are in the process of fabrication, repair and/or maintenance. Temporary signs are also an excellent way to test new wayfinding elements and locations prior to final fabrication. Note that all temporary messages shall be reviewed and approved by the DFW Planning Department prior to implementation.

2.1.2 MESSAGE HIERARCHY

This section defines standards for a complete and uniform hierarchy of DFW wayfinding system messages and terminology. These standards shall be utilized for all new and updated wayfinding signage implemented at DFW Airport.

The need for visual continuity among all messages and information of the same hierarchy will help eliminate elements which may interrupt the functional wayfinding process or add confusion. Clear and concise information presented by primary and secondary signs/messaging systems ensure efficient passenger circulation. Tertiary signs/messaging must always be coordinated with primary and secondary signs/messaging, as well as interior design features and elements. This tertiary category of signs should also always be visually distinguished from other wayfinding signs.

Messages will always be organized and maintained within three distinct and functionally tiered categories: Primary, secondary and tertiary (see Figure 2.1.1 for full message hierarchy lists categorized by airport area usage).

Primary Messages

This information shall be the largest and the most visible information on each sign. Primary information includes, but may not be limited to:

- Exterior direction to and identification of Terminal(s)
- Exterior direction to major vehicular arteries (i.e. nearby access roads).
- Interior direction to and identification of multiple Terminals if applicable (i.e. A, B, C, D, E) and inter-terminal transit (i.e. Skylink and Terminal Link)
- Interior direction to and identification of Gates
- Interior direction to and identification of Bag Claim and Ticketing/Check-In

Secondary Messages

This information supplements and reinforces information already conveyed by the primary messages and signs listed above. It usually indicates the auxiliary services and support functions of the facility. Secondary information includes, but may not be limited to:

- Exterior direction to and identification of Ticketing/Check-In, Bag Claim, and specific Parking Facilities/Areas
- Exterior identification of Rental Car Return, Airport Exit, etc.
- Interior direction to and identification of Elevators and Restrooms
- Interior direction to Parking and Ground Transportation

Tertiary Messages

Tertiary sign information supplements both the primary and secondary messages, and typically informs visitors of regulations and warnings. All regulatory/safety signs are generally considered to be tertiary within the DFW wayfinding system. Tertiary information includes, but may not limited to:

- Exterior and Interior TSA related notification messages.
- Interior CBP related notification messages
- Exterior “No Parking” messages
- FAA required warnings, notifications and information
- Other messages required by code

2.1.3 MESSAGE TERMINOLOGY

Basic Requirements

Terminology, or nomenclature as it applies to airport signage and wayfinding systems, is a standardized set of words, syntax, grammar, spelling, and symbols used to communicate information to the user of the airport. Terminology systems ensure that information is presented in a consistent way, and that the content of this information is always clear and concise. When a term is shown with a corresponding symbol, that term will always appear with its symbol as indicated in *Section 2.3 Symbols*, unless otherwise noted.

Change Procedures for Terminology

Consistent use of terminology for established messaging within the DFW wayfinding system is always required. All changes to or additions of new terminology shall require coordination, review and approval by the DFW Planning Department.

FOREIGN LANGUAGE: APPLICATION & USE

Universal Symbols

Using universal symbols will assist international and non-English speaking travelers with locating airport destinations in a universal manner, while also eliminating the possibility of unintended bias for individual groups and languages. See *Section 2.3 Symbols*.

Informational Wayfinding Signage and Supplemental Materials

Accommodating multiple languages on informational wayfinding signage (i.e. directories and information centers), as well as supplemental materials (such as hand-outs and maps) is the recommended and preferred method of providing detailed wayfinding information to the most diverse groups of non-English speaking airport users. Standards and guidelines for this type of information are not covered within this document and is to be coordinated with the DFW Planning Department as applicable and required.

Foreign Language Translations

All foreign language translations, if/when used within the DFW wayfinding system, are to be provided by professional translators and will be coordinated with DFW staff for final approval prior to final fabrication and installation. All foreign language translations will use the most common and universal dialect for each individual foreign language as deemed appropriate by professional translators.

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		MESSAGE PRIORITY		
		PRIMARY	SECONDARY	TERTIARY
SIGN USE / FUNCTION	Directional	Terminal X (X = A, B, C, D, E) Ticketing/Check-In All Gates Security Checkpoint Bag Claim Bag Claim X#-X# (X = A, B, C, D, E) Ground Transportation International Arrivals	Gates X#-X# (X = A, B, C, D, E) Airline names Passenger Pick-Up Individual ground transportation names: - Terminal Link, Taxi, Pre-Arranged Limo, Shared Ride, Rental Cars, Public Transit, Express (for parking shuttles), Courtesy Vans, DART Bus/Rail, Texrail, Ride App (such as Uber, Lyft, etc), Charter Bus, etc X Parking (X = A, B, C, D, E) Hourly/Daily Parking; Economy Parking Toilets	Pet Relief Area Tenant/concession/amenity names Telephones Lockers First Aid AED Police
	Identification	Terminal X (X = A, B, C, D, E) Ticketing/Check-In Bag claim carousel no.'s (alpha-numeric) Ground Transportation	Airline names Individual ground transportation names: - Terminal Link; Taxi; Pre-Arranged Limo; Shared Ride; Rental Cars; Public Transit; Express (for parking shuttles); Courtesy Vans; DART Bus/Rail Elevator (or Elevator to:) Escalator (or Escalator to:) Toilets Men; Women; Family Baggage Information Baggage Services	Entry numbers (aka "Door" numbers) Pet Relief Area Telephones First Aid ATM; Currency Exchange Room numbers; room names Employee information Non-public spaces Advertising All tenant/concession/amenity names (i.e. ACO, USO, Traveler's Aid, Credit Union, Chapel, Vending, etc)
	Information	All directories (static and dynamic) FIDS / BIDS / GIDS	Visual paging systems	Safety related information Hazards/warnings
	Regulatory/ Safety	Exit / Emergency Exit Only No Smoking / Smoking Area	All FAA, TSA notices Authorized Personnel Only AED Fire Extinguisher	Yield to Pedestrians No Stopping, Standing, Parking

TERMINALS - LANDSIDE (Ticketing/Bag Claim/Curbside Areas)

		MESSAGE PRIORITY		
		PRIMARY	SECONDARY	TERTIARY
SIGN USE / FUNCTION	Directional	Gates X#-X# (X = A, B, C, D, E) Bag Claim (do not include carousel alpha-numeric ranges on airside signs) Bag Claim/Exit Skylink to: XXXX (X = A, B, C, D, E)	Toilets Men; Women; Family Airline club names Elevator (or "Elevator to:") Escalator (or "Escalator to:")	Amenities (USO, etc) Grand Hyatt Hyatt Regency
	Identification	Gate numbers (number only, don't use the word "Gate" on IDs)  Skylink	Elevator Toilets Information Flight Information Connecting Information	Room numbers; room names Employee information Non-public spaces Advertising All tenant/concession/amenity names (i.e. ACO, USO, Traveler's Aid, Credit Union, Chapel, Vending, etc)
	Information	Airport directories (static and dynamic) FIDS / CGIDS	Visual paging systems	All required TSA/CBP notices Safety related Hazards/warnings
	Regulatory/ Safety	Exit / Emergency Exit Only No Smoking	All FAA, TSA notices Authorized Personnel Only Do Not Enter	AED Fire Extinguisher

TERMINALS - AIRSIDE (Concourses/Holdrooms/Gate Areas)

NOTE: Wording does not represent actual signage

Figure 2.1.1

DFW Digital Wayfinding Message Hierarchy Lists

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2.1.4 MESSAGE APPLICATION

Wayfinding messages at DFW Airport will always be applied in a holistic and consistent manner. This includes the order of how wayfinding messages are listed, as well as the allowable number/quantity of wayfinding messages that are allowed on DFW wayfinding signage.

Listing Order

The majority of the international population read and decipher information in a prioritized “top-to-bottom” organizational format (see Figure 2.1.2). As a result, wayfinding destinations are typically prioritized/listed as:

- The most important destinations or closest in proximity are listed first.
  - i.e. the highest priority and/or closest proximity at the top
- Subsequent messages are listed in descending order downward.
  - i.e. the next most important and/or next in order of closest proximity

Number/Quantity of Messages

Directional messaging, for both pedestrian and vehicular traffic, tends to be overwhelming when more than three messages are used for a single direction on directional signage. Limiting the number/quantity of messages in a single direction is important for rapid deciphering of messaging while maintaining smooth wayfinding circulation flows.

Note that directional messaging should typically be limited to two messages for a single direction whenever possible, and a maximum of no more than three messages for a single direction. Four messages, although sometimes necessary and will depend on unique wayfinding circumstances, is not preferred and should be limited whenever possible. If four messages are deemed necessary, they should typically be limited to secondary or tertiary messaging/sign types (see Figure 2.1.2).

2.1.5 MESSAGE FUNCTION AND HIERARCHY RELATIONSHIPS

Along with prioritizing wayfinding messages, a hierarchy format (i.e. Primary vs. Secondary vs. Tertiary messages) will also typically have functional properties associated with them (i.e. general vs. specific). This will typically determine the categorization of sign type priority (i.e. Primary, Secondary and Tertiary sign types).

Message Priority Categorization and Function

It is important to understand that the same message may fall under a different priority category depending on its use and location within the overall wayfinding system. For example, traffic on a roadway approaching a terminal may find the term “Parking” as a primary message. However, the same term found in the terminal may be considered secondary when compared to other destinations in the terminal facility.

A message’s function will also typically change from the more general (i.e. “Terminal” or “Ground Transportation”) to the more specific (i.e. “Terminal A” or “Taxi, Shuttles, etc.”) as wayfinding traffic moves through an area/facility and approaches their destinations. Consistently maintaining this same functional use for messages throughout the entire wayfinding system is essential to smooth wayfinding traffic flow, and establishes solid visual continuity among messages/information and the sign system itself.

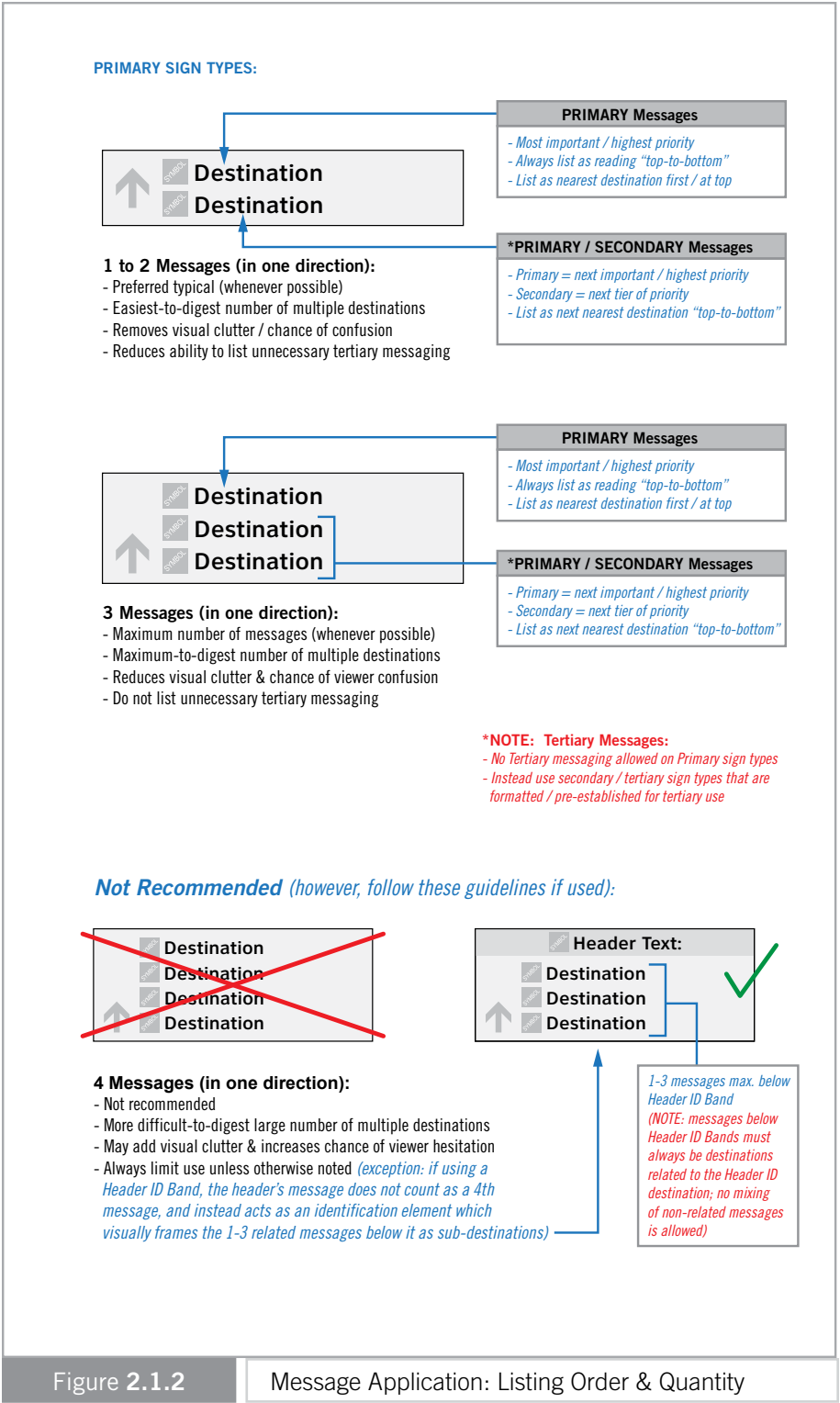
Message Priority and Sign Type Priority

The relationship between message function and message hierarchy also creates a basic foundation for the classification and determination of sign types. Message hierarchy (i.e. Primary, Secondary and Tertiary messaging) is used to group messages for their general use on directional, identification and informational sign types, each with their own specific application and usage priorities (i.e. Primary, Secondary and Tertiary sign type classifications).

Message Grouping by Priority

Emphasis should be placed on the reduction of signs and the amount of messaging wherever possible. However, it is typically a given that airport wayfinding sign systems are complicated with large quantities of varying sign types and associated messaging. As such, grouping messages by priority is necessary, and will result in fewer unique sign and message types.

For example, primary messages should typically be grouped with other primary messages whenever possible. If there is need for secondary messaging on the same sign, its importance will always be secondary to all primary messages. Ultimately, secondary messages may be better used on secondary sign types (if deemed appropriate for a given circumstance/condition or environment).



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2.2    TYPOGRAPHY

2.2.1   OVERVIEW

Acceptable Type Styles

ClearviewText Medium and ClearviewText Bold (Pedestrian signage) typeface shall be the only typefaces used for all wayfinding signs at DFW. All sign text shall be set in approved Clearview family typefaces, unless otherwise specified and approved by the DFW Planning Department.

Other weights and styles of the Clearview typeface family may be appropriate in unusual circumstances. Recommendations to use alternate type weights must be submitted for approval by the DFW Planning Department. Justification of such proposals shall demonstrate the advantage offered by the non-standard type to the other signage in the area of the proposed use.

Pedestrian Typeface (see Figure 2.2.1a):

- ClearviewText font family will be the standard font used for all pedestrian/interior signs
- ClearviewText Medium is the basic letter proportion used for directional and wayfinding signs (i.e. overhead, wall-mounted, etc)
- ClearviewText Medium will be used for wall-mounted room ID signs.
- ClearviewText Medium will be used for regulatory signs, with ClearviewText Bold used where emphasis is required
- ClearviewText Bold may be used on informational signs (i.e. information boards, guidelines, etc)
- ClearviewText Bold will be used for gate identification signs

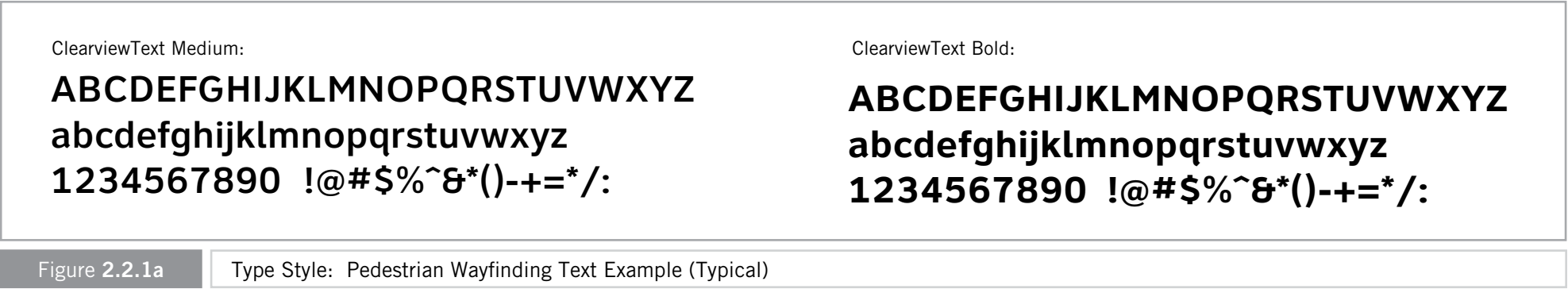
Capitalization

Aside from special decorative uses where all-caps is desirable and/or used on specific regulatory related messaging, all word messages shall be in “Title Case.” Title Case is defined as the initial “alpha” letter shown in upper case followed by lower case letters for each individual word in a given message. Examples of exceptions include (but are not limited to):

- EXIT; EXIT ONLY
- DO NOT ENTER
- ATM
- KEEP LEFT; KEEP RIGHT
- NEXT LEFT; NEXT RIGHT

Other notables regarding message capitalization:

- As required by the Americans with Disabilities Act, all tactile messages shall be in all upper case
- Upper case letters shall have an upper case “X” height as determined by using a capital letter “I” when determining a layout’s text height dimension
- Lower case letters should have a lower case ”x” height that is approximately two-thirds the height of the upper case letters
- Each word in a message shall be capitalized, with the exception of articles, prepositions and conjunctions (i.e. to, from, via, etc.)



- A consistent capital letter height shall always be maintained when wayfinding signs are used in sequence unless otherwise noted
- Condensed, extended, skewed, stretched, outlined or otherwise distorted type shall not be used

Typographic Restrictions

Typefaces or weights not described here shall not be used at DFW, unless otherwise noted and approved by DFW. The following additional typographic restrictions shall always apply and be strictly adhered to when designing or specifying signage for DFW:

- Use only the type styles as specified for a specific traffic type as shown in this document (i.e. Pedestrian):
  - Use only Pedestrian type styles on Pedestrian wayfinding signage
- Modification of letter shapes is prohibited unless otherwise specified and approved by DFW

Language to this effect will always be included in the specifications for all related DFW wayfinding projects, and variances must be reviewed/approved by DFW.

Type styles specialized for a particular sign face or graphic layout shall be used exactly as specified in wayfinding signage design documents. Deviations from the sign type’s application provided in layouts are strictly prohibited. Refer to individual sign types for exact specifications and text sizing/layout details.

2.2.2 TYPE SPACING

Letter Spacing (Kerning and Tracking)

Kerning is typically defined as the process of adjusting the spacing between characters in a proportional font, usually to achieve a visually pleasing result within a set of readable text. Also note that while kerning adjusts the individual spacing between individual letter forms, tracking instead adjusts the spacing uniformly over an overall set/range of characters in a word or set of words. Tracking adjustments are not usually as ideal for readability on wayfinding signage as they tend to make individual words and groups of words more difficult to read, whereas kerning helps to maintain the visual harmony of words.

Unless otherwise indicated, all sign messages shall use the Clearview font family’s default letter spacing with regards to kerning and tracking. Messages set according to the typeface maker’s letter spacing standards will not normally require adjustment (see Figures 2.2.2a and 2.2.2b). In some circumstances, modification of the spacing between individual letters or letter-sets may improve the appearance and legibility of a sign message. Examples of typical needs for kerning adjustments include (but may not be limited to) improved visibility at increased viewing distances, as well as the elimination of unacceptable levels of “halation” (aka visual blurring together of letter strokes/graphic elements) due to internal or external illumination of the sign face.

Designers are required to review sample messages for all sign projects, and shall recommend spacing modifications where they can be shown to be advantageous or necessary. In these instances, hand-kerning will be required to adjust spacing and shall be noted as such within the sign’s specific layout using a +/- pica unit of measurement as used within professional graphic design software. Other letter spacing restrictions include: reducing normal letter or word spacing (i.e. to fit a lengthy message within a restrictive size layout area) is not acceptable and shall always be avoided; punctuation marks, which relate to two letters, should be spaced equally from both letters.

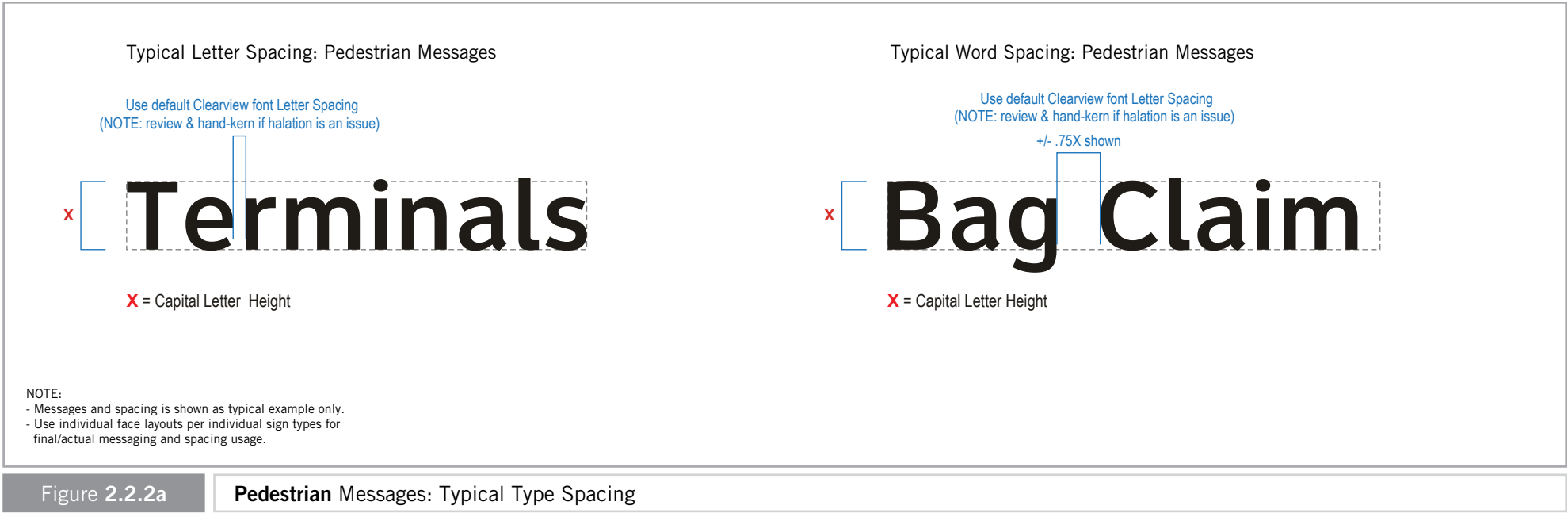
Word Spacing

Unless otherwise indicated, spacing between words in a message is typically ¾ (.75) times the capital letter height (adjust by appropriate percentage if hand-kerning). For example, a message using 4” cap letters will have approximately 3” between words (see Figures 2.2.2a and 2.2.2b).

Line Spacing (Leading)

Leading is typically defined as the distance between the baselines of successive lines of type. Typically the \*spacing between *related* lines of message text (i.e. a message in a layout that must continue to the next line down due to not enough available width on the first line) will typically be approximately ½ (.50) times the capital letter height (unless otherwise noted). And typically the \*spacing between *unrelated* message text lines (i.e. two completely separate ideas/destinations/messages) will typically be approximately 1 times the capital letter height (unless otherwise noted).

*\*NOTE: Always refer to actual DFW wayfinding signage face layouts for all final definitive line spacing requirements per each individual sign type as shown in current DFW wayfinding signage design intent/construction documents.*



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2.2.3 LEGIBILITY

Legibility is typically defined as the recognition of various elements that make a message or symbol understandable without the aid of additional wording or pre-conditioning. Additional factors may effect legibility including:

- Placement
- Lighting
- Contrast
- Viewing angles and distances

These factors must always be taken into account by designers when developing new or updated wayfinding signage to be implemented at DFW.

Pedestrian Legibility

It is necessary to have consistent placement and presentation of messaging on all wayfinding signage that are viewable to pedestrian traffic. This includes the sign’s height above finished floor, and the overall size of the sign (including it’s support structure). This will minimize unintentional misinterpretation of the pathways and uses of the facility when viewing the nearby wayfinding signage.

A pedestrian sign’s location will often dictate the range of acceptable visibility to the viewer in order for them to quickly and effectively interpret the information. If the viewer is given an appropriate distance to comprehend the messaging, hesitation will be reduced and informed decisions will be made regarding changing direction or continuing on the same pathway. In a fast paced (often congested) environment such as an airport, a conservative pedestrian viewing distance of approximately 25 feet to each inch of capital letter height should be used when specifying wayfinding signage (see Figure 2.2.3). However, all text on pedestrian wayfinding signage must always follow all sizing and legibility requirements as established by the latest editions of the ADA and Federal, State and Local Accessibility and Code Standards.

Testing Legibility

It is also highly recommended that field testing of 1:1 actual-size prototypes be utilized to determine the maximum effectiveness of a conceptual wayfinding sign’s legibility per its individual location and line-of-sight conditions within a given area/project. All prototype development and field testing must be coordinated with and approved by DFW.

Consistency in Legibility

Consistent sizing of wayfinding message text and symbols from sign-to-sign throughout an airport also adds to the overall effectiveness of the wayfinding system. It establishes a consistent and professional looking display of information, which in turn will allow for much more rapid comprehension of the wayfinding information and general orientation with in an airport’s varied and complex environments.

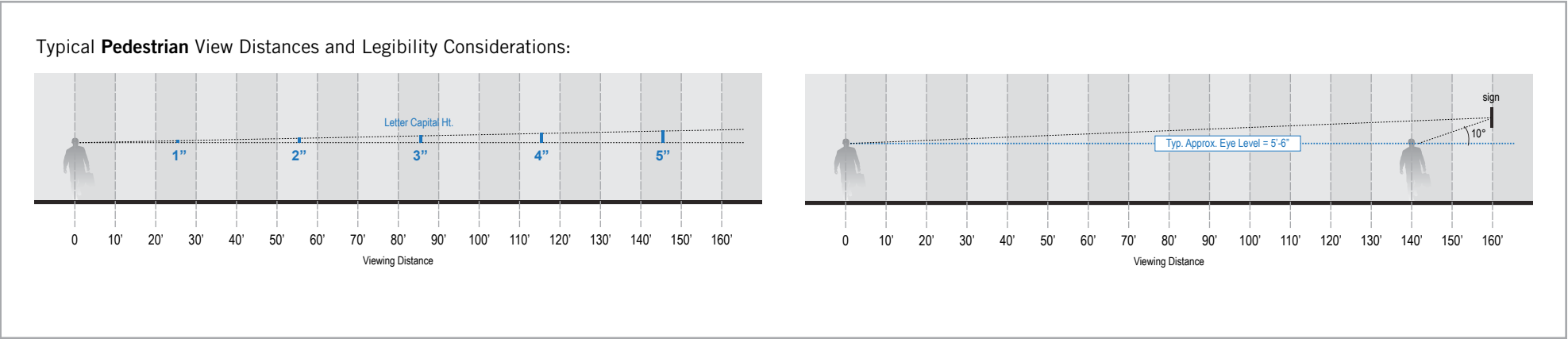


Figure 2.2.3 Typical Wayfinding Industry Accepted Legibility Design Guidelines

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2.3 SYMBOLS

2.3.1 OVERVIEW

A cohesive and easily identifiable set of universal symbols is an absolutely critical part of a successful wayfinding system. To be most effective, these universal symbols must work in harmony with the wayfinding nomenclature/terminology, and must always be applied with consistency. Universal symbols should also always be used for reinforcement and visual confirmation of wayfinding message text, especially at the pedestrian level.

Note the following philosophies and guidelines that were used in the development the DFW wayfinding system’s universal symbol set:

Symbols Supplementing Messaging

The use of universal symbols, in tandem with short verbal messages, is more effective than the use of symbols or messages by themselves. However, note that universal symbols should act as a **supplement** to the messaging, rather than serving as the primary graphic or messaging element.

Limit Use to Priority Messaging

Mixing universal symbols (and their related message text) for relatively minor or tertiary airport functions/activities/tenants with essential public wayfinding information weakens the overall communication of the wayfinding system. By limiting their use to priority airport messaging and destinations, universal symbols help to supplement and graphically highlight the importance of the priority messaging.

Less is More

Too many universal symbols, messages or arrows at any one location can be counter-productive to the wayfinding information being provided. An over-abundance of symbol use and messaging in a given direction or at a decision point can result in information overload, which in turn will cause hesitation, confusion and general distrust of the wayfinding system.

Symbol Categorization

Universal symbols have been divided into specific categories based on their function as they are to be used within specific areas of DFW airport areas. These categories include:

- Pedestrian wayfinding signage:
  - Travel Symbols
  - Public Service Symbols
  - Concessions Symbols
  - Curbside/Ground Transportation Symbols
  - Terminals/Gates Symbols
  - Inter-Terminal Transit Symbols
  - Regulatory Symbols
- Vehicular wayfinding signage:
  - Only certain/select Travel Symbols (such as Parking)
  - Terminal ID Symbols
  - Highway ID Symbols

Regulatory Symbols

Symbol shape, placement and color on all regulatory signs shall conform to the latest editions of the ADA Standard for Accessible Design, local/national building codes, TXDOT Traffic Manual and the Federal Manual on Uniform Traffic Control Devices (MUTCD).

Change Procedures and Restrictions for Symbols

To be most effective, a symbol system must allow for the fluctuating nature of a modern and continually changing airport related terminology. Development of new universal symbol artwork is allowed when deemed necessary and appropriate for a given situation/condition; consistent use of DFW universal symbol artwork standards for established messaging is always required. All changes to existing and/or additions of new universal symbols shall require coordination, review and approval by DFW. Universal symbols not approved by DFW as described in this section and/or not illustrated in this document shall not be used.

DFW Logo Usage

Use of the DFW logo and/or literal/verbatim applications of the logo’s elements within the wayfinding system is not allowed. When the DFW logo is applied in inconsistent, haphazard or inappropriate ways, it weakens the strength of the DFW brand itself, and may result in negative associations with the DFW brand, regardless of original intent. It should also be noted that using literal representations of the DFW logo for the purposes of decoration and/or graphic filler on wayfinding signage will create an additional layer of visual clutter that must also be digested within the process of deciphering of wayfinding messaging and information.

DFW Universal Symbols

An effective set of universal symbols will always supplement and enhance the messaging rather than graphically overpower it. Universal symbols usage within DFW shall always be applied consistently and holistically across the entire airport, and will always be applied with their associated messaging unless otherwise noted. Application of DFW universal symbols with no accompanying message text is not allowed unless otherwise noted.

Additionally, a basic graphic element description of DFW universal symbol artwork is provided in Figure 2.3.1. For a complete listing of DFW universal symbols and their associated messaging, see Figure 2.3.2.

Ground Transportation ID Symbols - Special Usage

Ground transportation symbols, when used for identification purposes, are the only exceptions to standard universal symbol color/graphic applications unless otherwise noted (see Figure 2.3.1). Also note that this special usage color should be reserved only for application on ground transportation identification signage, otherwise standard white/blue symbols is to be used on all other wayfinding signage. Application of DFW universal symbols with no accompanying message text is not allowed unless otherwise noted.

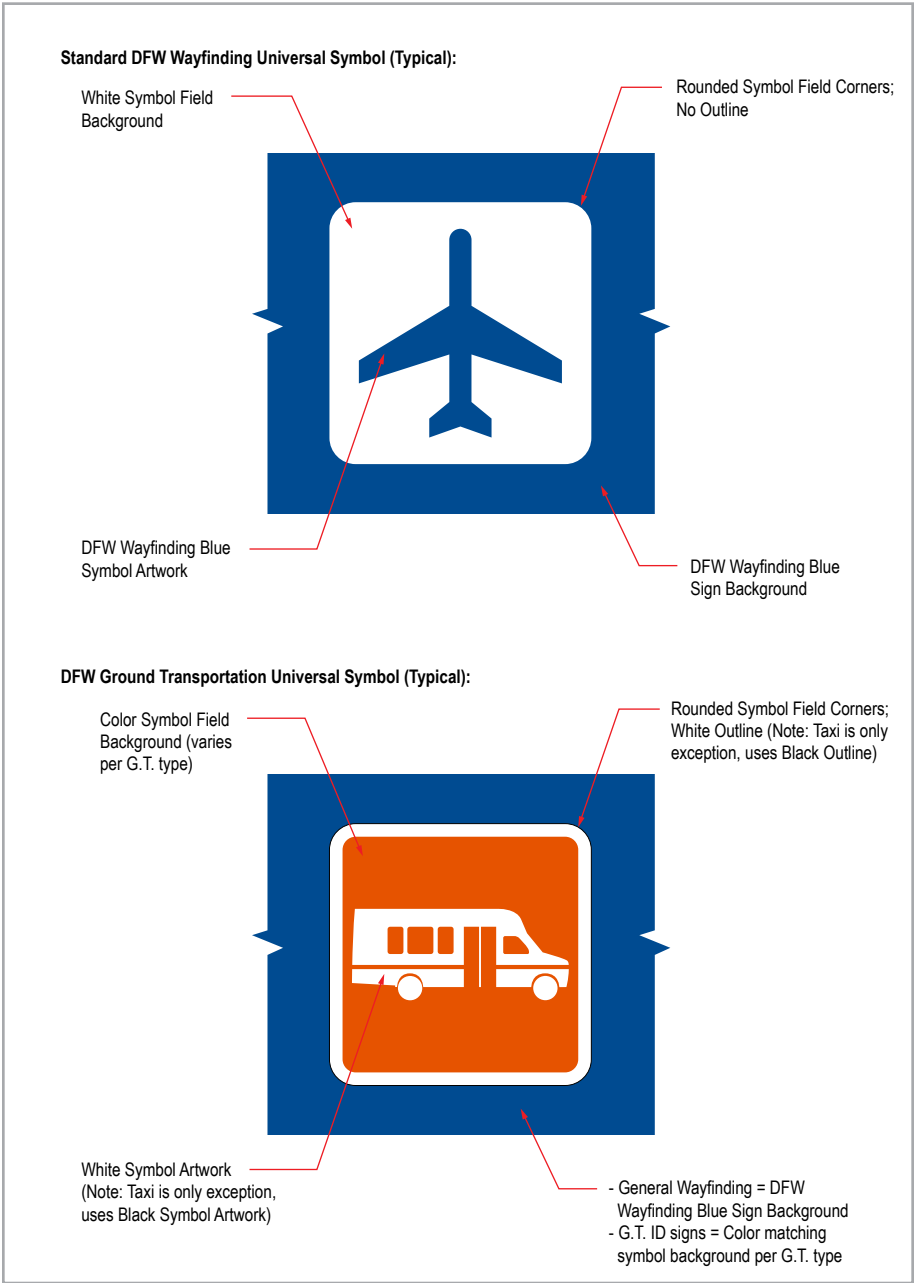


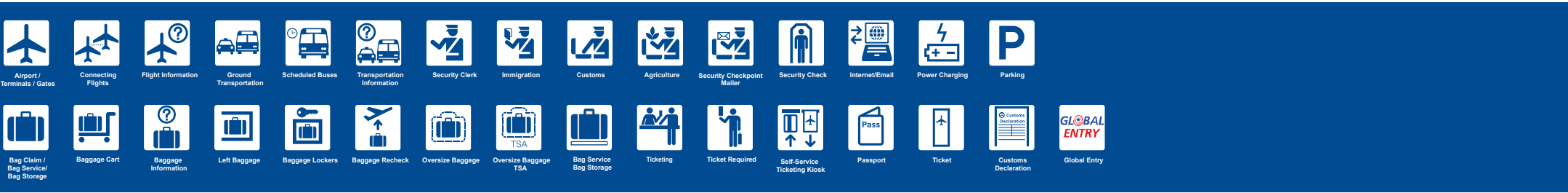
Figure 2.3.1

Universal Symbols: Graphic Element Description

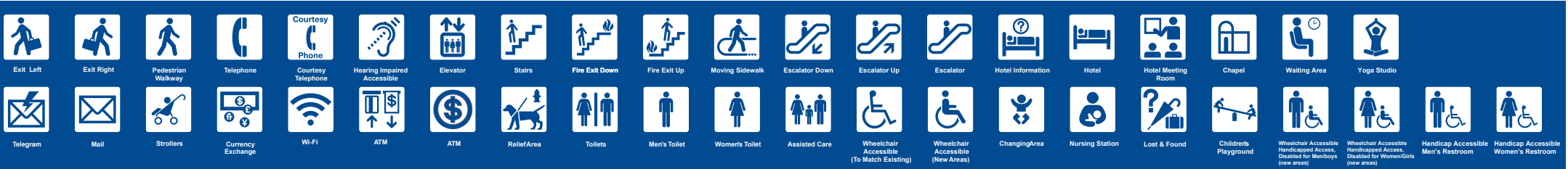
**WARNING:**

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TRAVEL SYMBOL - WAY FINDING (Blue background)



PUBLIC SERVICE SYMBOLS - WAY FINDING (Blue background)



CONCESSIONS (Blue background)



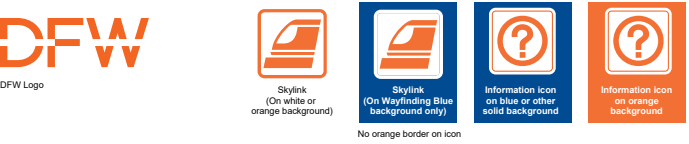
GROUND TRANSPORTATION (Blue or other solid background)



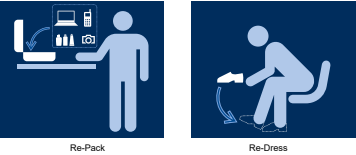
TERMINALS (All solid backgrounds)



DFW BRAND LOGOS



SECURITY CHECKPOINT GRAPHICS



ARROWS



REGULATORY (Blue or other solid background)



SWATCH COLORS



Note: See Wayfinding and Signage Observations and Recommendations for Iconography Study

Figure 2.3.2

DFW Wayfinding Universal Symbols Lists

2.4 ARROWS

2.4.1 OVERVIEW

Arrows used as directional elements are more flexible and require less sign layout space than messages. Arrow graphic proportions and artwork should be standardized, and should always be applied in a consistent manner across the entire wayfinding signage sytem. Note that careful design and review of sign layouts must be done in order to produce proper proportioning between arrows, messages and symbols dimensions.

2.4.2 ARROW APPLICATION GUIDELINES

The angle of rotation and directional information that arrows convey is of equal importance to the consistent use of an arrow’s graphic style. The arrow rotation which may be used to convey a message of ”straight ahead” is of particular interest. Either ”up arrow” or the ”down arrow” can be used to convey the same message, but it’s application and surrounding enviornmental context is what drives the differentiation. For example, an arrow pointing ”down” near a downward stairway entrance will mean ”straight ahead; down these stairs.” However, an arrow pointing ”down” over the entrance to a queuing lane will conversely mean ”straight ahead; use this lane.”

Note that once the general context of the directional message to be conveyed has been evaluated and selected, consistent application should always be continued throughout the entire signage system. The following are guidelines when using arrows within DFW’s wayfinding system:

Arrow Sign Face Positioning/Sizing Relationship (see Figure 2.4.1a to 2.4.1c)

- The placement of arrows on sign faces should conform to the standards and guidelines provided. Arrows should not be positioned in any other location on the sign face. Arrows should not be stretched or re-proportioned outside of the standard locked-up wayfinding arrow artwork as shown (see Figure 2.4.1b). See the DFW Signage Standards and Guidelines for specific sign type arrow/graphic face layouts
- Arrows should not point into text:
  - Left-facing arrows should be located on the left side of signs (corresponding message text should be left justified)
  - Right-facing arrows should be located on the right side of signs (corresponding message text should be right justified)
  - Upward-facing arrows are normally located closest to the flow of traffic (corresponding message text should be justified based on arrow location on sign face).

Arrow Rotation Angles (see Figure 2.4.1f)

- When used for standardized wayfinding, the standard arrow can be rendered in eight (8) different standard rotation angles.
- No alternate angles are acceptable, unless approved by DFW.

Arrow Applications

- Pedestrian Signs (see Figure 2.4.2a):
  - Arrow rotation angles and applications for pedestrian specific traffic should follow the guidelines provided in this section (see Figure 3.2.7a).
  - Straight-ahead pedestrian movement should be indicated by upward-facing arrows, unless a downward-facing arrow can be shown to be clearly advantageous in a specific circumstance (i.e. queuing lane identification/purposing, etc)
  - Straight downward-facing arrows are normally reserved to indicate movement to a lower level for pedestrian traffic.

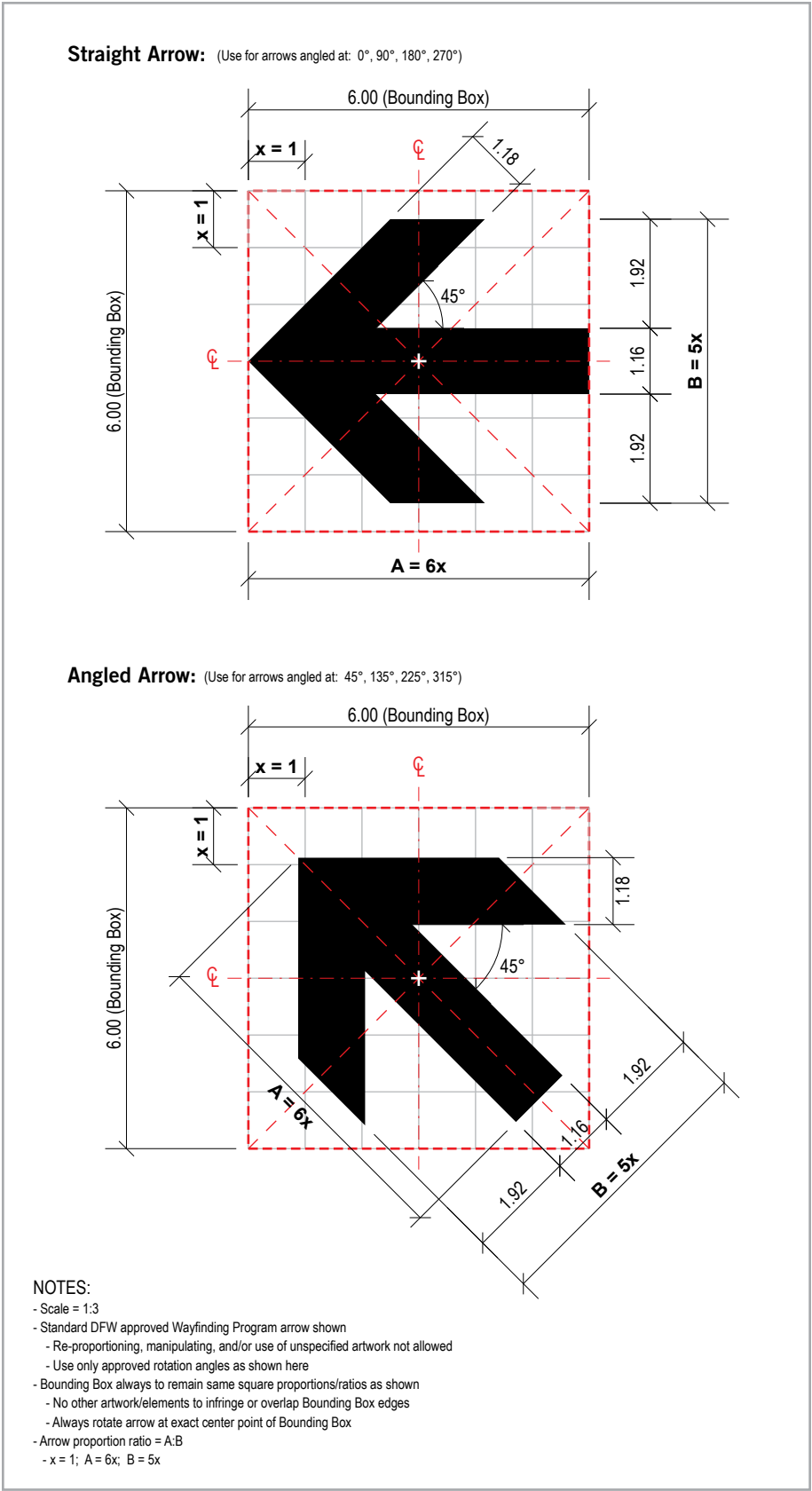


Figure 2.4.1b

Wayfinding Arrows: **Pedestrian - Proportions**

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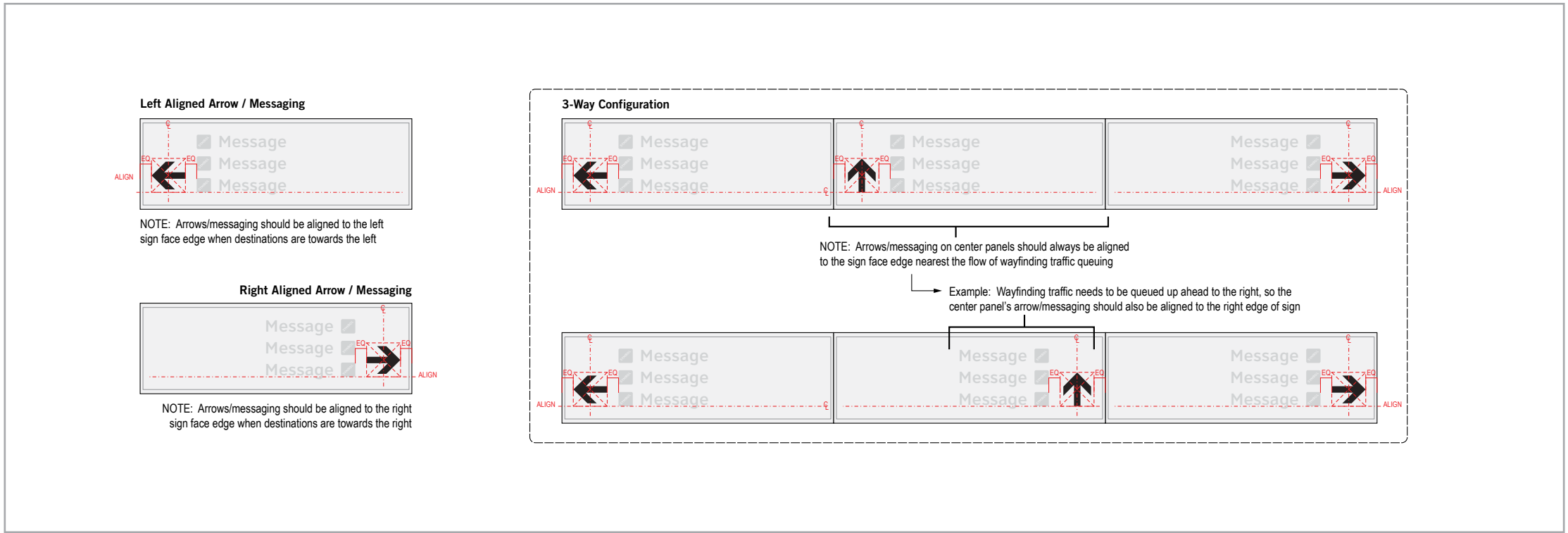


Figure 2.4.1c

Wayfinding Arrows: **Typical Alignment - Pedestrian Terminal/Garage Areas**

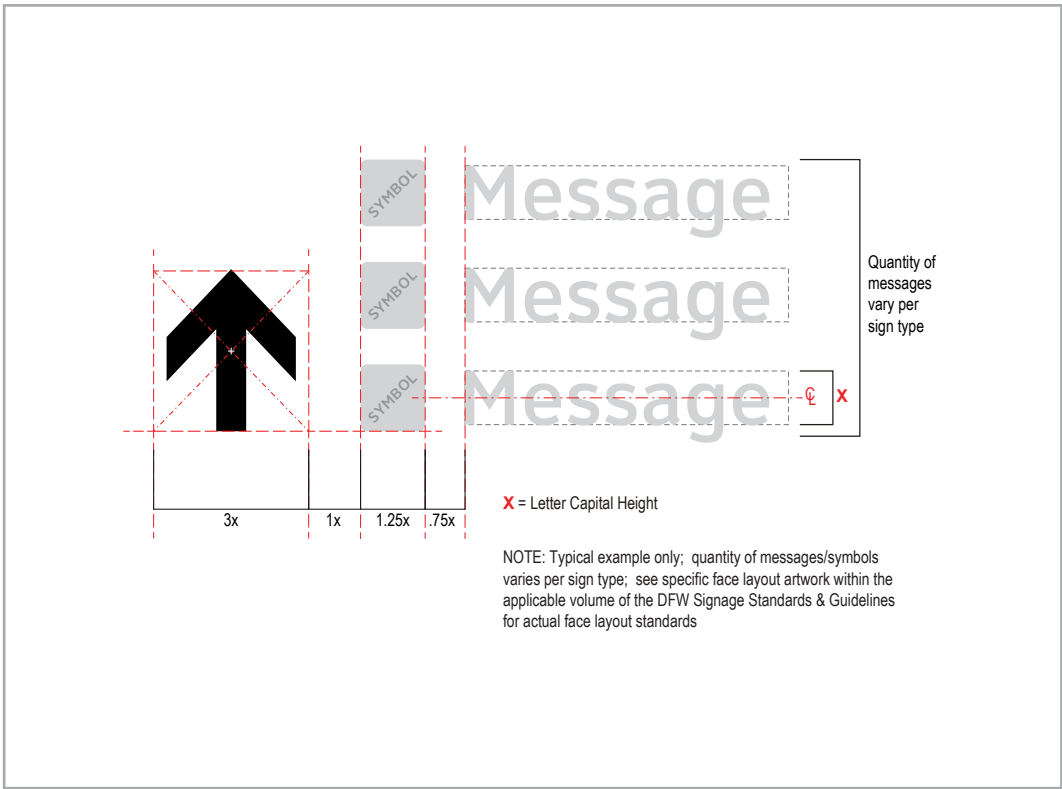


Figure 2.4.1d

Wayfinding Arrows: **Size Relationships - Pedestrian**

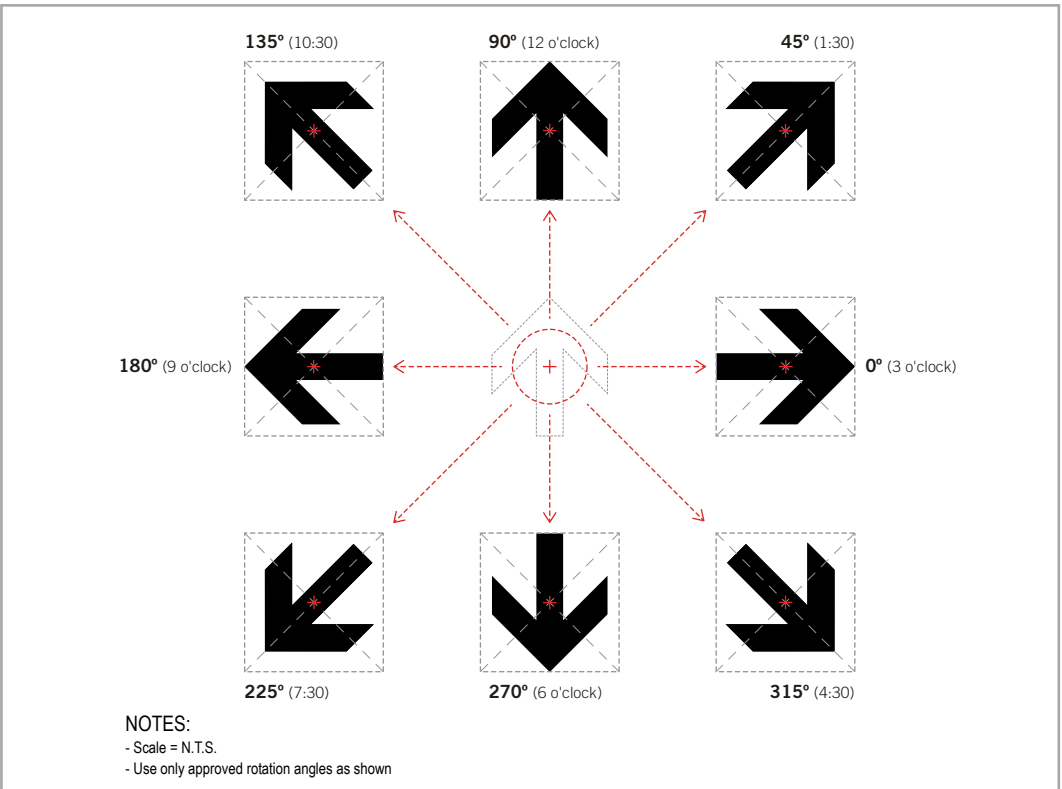

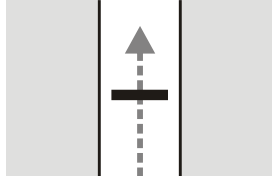

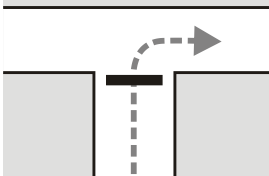

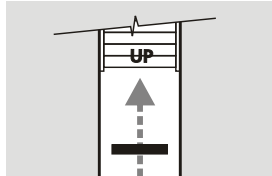

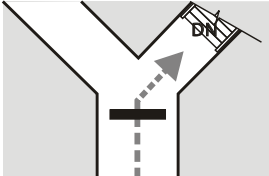

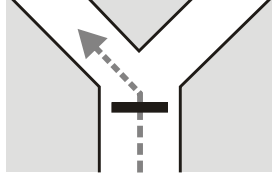

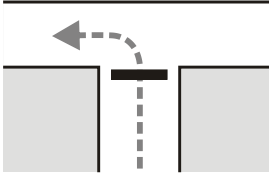

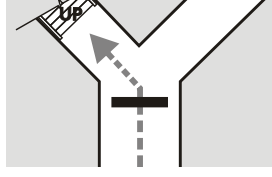

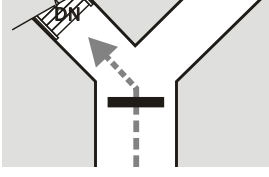

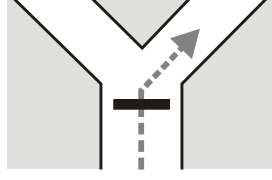

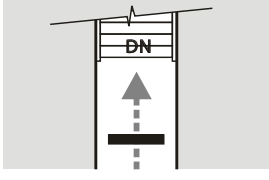

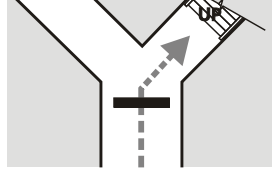

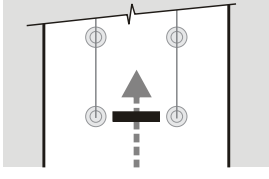


Figure 2.4.1f

Wayfinding Arrows: **Rotation Angles**

ALL Directionals											
ARROW ROTATION		LOCATION PLAN EXAMPLE		MESSAGE CONVEYED		ARROW ROTATION		LOCATION PLAN EXAMPLE		MESSAGE CONVEYED	
<div> 90° (12 o'clock)</div>				Straight Ahead		<div> 0° (3 o'clock)</div>				Right	
<div> 90° (12 o'clock)</div>				Up		<div> 315° (4:30)</div>				Down on the Right	
<div> 135° (10:30)</div>				Ahead on the Left		<div> 180° (9 o'clock)</div>				Left	
<div> 135° (10:30)</div>				Up on the Left		<div> 225° (7:30)</div>				Down on the Left	
<div> 45° (1:30)</div>				Ahead on the Right		<div> 270° (6 o'clock)</div>				Down	
<div> 45° (1:30)</div>				Up on the Right		<div> 270° (6 o'clock)</div>				Use this lane / row / aisle / line	

NOTES:

- Reference Wayfinding and Signage Standards and Guidelines, Section 1.1.7 General Graphic Standards, Page 1-20

- Source: Guidelines for Airport Signage & Graphics - Latest Ed.

- Schematic representations only; drawings not to scale

Figure 2.4.2a

Wayfinding Arrows: Applications - Pedestrian Terminal/Garage Areas

2.5 COLORS

2.5.1 OVERVIEW

In order to maintain a visually unified system of signs throughout all DFW facilities, the presentation of color must be consistent on all elements throughout the entirety of the wayfinding system. This section will provide an overview of the adopted color system as it should be used for all new and updated wayfinding signage at DFW.

2.5.2 COLOR DESIGN CONSIDERATIONS

The following general design considerations and guidelines should be utilized when specifying the DFW wayfinding color system:

Simple, Supplemental and Consistent:

- Colors, as they pertain to branding specific elements within a wayfinding environment, should always be simple, supplemental, limited in number and applied consistently and without exception. When too many colors are introduced, it will typically create an additional layer of information to decipher, which in turn may cause increased confusion, pause and distrust of the wayfinding system

Consideration of Colorblind Individuals:

- As of this document’s publishing, approximately 12% of the population is colorblind and cannot distinguish between mixed shades of red or orange, yellow or brown and black or blue. For this reason, if multiple colors are to be used as a primary means of identifying wayfinding elements (i.e. “The Orange Line,” “The Green Room,” etc.), then it would be necessary to spell out the name of the color in order to make the intended color usage clear to colorblind individuals, while also meeting related ADA requirements

Color-Coding:

- Color-coding, when applied thoughtfully, sparingly and consistently, is a useful supplement to a good linguistic format. Color-coding should not typically be the absolute or primary means of distinguishing parts of a facility, and instead be used in a manner that supplements the primary graphic wayfinding information being presented. For example, applying a unique color to each individual level or area of a parking garage is a common practice among parking facility designers. However, the color use of such a color system must be considered within the larger context of the surrounding/nearby facilities and how it will effect their color coding systems. When too many varied colors and/or color systems are used, color becomes yet one more layer to decipher in an already complex hierarchy of wayfinding information

Recognition, Contrast, Reproduction and Environmental Considerations:

- Colors should always be chosen for their wide recognition, contrast/legibility, ease of manufacture/reproduction, as well as complementary to the established wayfinding system or surrounding environment. The long-term

“survivability” of colors will also be dependent on surrounding weather and environmental conditions (i.e. direct sunlight and ambient light gradually affects color systems over time, typically fading and usually accelerated due to unique or typical local weather conditions). As such, the choice and use of color should always be evaluated to some degree based on the geographic location of the wayfinding environment

2.5.3 COLOR APPLICATION GUIDELINES

DFW Wayfinding Color System: General Description

The DFW wayfinding system’s color palette should always use a *supplemental* wayfinding specific color-coding system that accents and enhances the messaging, while also limiting the use of other branded and/or non-wayfinding related colors. In addition, all colors should be consistently and easily manufactured on signage, maintain good contrast with each other, and appear as a distinctive wayfinding-specific color palette that is easily recognized by the majority of wayfinding system users, regardless of location within the airport property.

General Color Application Guidelines and Standards

The following are general color guidelines and standards for use within the DFW wayfinding signage system (see Figure 2.5.1):

- Sign Graphics - All DFW Wayfinding Signage:
  - The primary sign face background and text colors for all wayfinding signage (vehicular and pedestrian) are White text/symbols on an DFW Wayfinding Blue (PMS 662C) background. These colors were chosen for their widely adopted implementation system-wide at DFW, their high contrast when incorporated within the multitude of DFW’s varied wayfinding environments (both interior and exterior areas)
- Sign Graphics - Pedestrian Wayfinding Areas (i.e. terminals, curbsides, pedestrian-related parking areas):
  - The use of White text/symbols on a DFW Wayfinding Blue sign face background avoids competition with color schemes of other competing entities (concessions, airlines, etc..) and integrates well with the varying structural and architectural features found at DFW
- Branded Terminal Identification:
  - In order to identify the terminals as unique/separate facilities at DFW, the terminals will be branded with symbols unique from the other standard wayfinding symbols by utilizing the following colors:
    - Symbol field background = DFW Wayfinding Blue (PMS 662C)
    - Terminal ID letters = White
    - Symbol borders = DFW Gold (PMS 130C)
- Ground Transportation Identification (at curb areas):
  - Multi-color system as developed by Jacobs (see Figure 2.5.1)
- Inter-Terminal Transit Systems:
  - The Inter-Terminal transit systems (i.e. Skylink = secured area access/ elevated tram system; Terminal Link = non-secured area access using curbside shuttles) at DFW will utilize the following colors:
    - Symbol field background = Orange (PMS 166C)
    - Symbol artwork = White

- Parking Garages Level Identification:
  - All parking garage levels will use the same level color-coding as adopted at Terminal A garage:
    - Level 1 = Red (PMS 186C)
    - Level 2 = Purple (PMS 2587C)
    - Level 3 = Yellow (PMS 108C)
    - Level 4 = Orange (PMS 158C)
    - Level 5 = Med. Blue (PMS 2727C)

Other Color Considerations

- Consistent and Holistic Application:
  - To remain effective, the DFW wayfinding color system must always be applied to all wayfinding system elements in a consistent and holistic manner airport-wide (roadways, parking, curbsides, ground transportation areas, terminals, etc.) and at all DFW facilities
- Supplemental Colors:
  - The addition of any/all supplemental colors must always be carefully considered during design of new airport areas and their respective signage design programs in order to determine how they will mesh with the overall established DFW color-coding and wayfinding systems.
  - All supplemental colors must be coordinated with/approved by DFW
  - All supplemental colors must always maintain all legibility and compatibility criteria as mentioned in this section, as well as any applicable ADA/Federal, State, Local Accessibility and Code Standards, and MUTCD/TXDOT requirements regarding color-use on signage
- Additional Use of Color:
  - Certain signs within the airport complex may employ the corporate colors of airlines, rental car agencies, concessionaires and other airport tenants as dictated and/or deemed appropriate by DFW
  - No other colors are to be used for DFW wayfinding signage or sign hardware used within DFW unless otherwise approved by DFW

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2.6 ART, ADVERTISING AND AMENITIES

2.6.1 OVERVIEW

NOTE: Design standards for art, advertising and amenity signage is not covered within this document; see the most recent editions of DFW art, advertising and amenity design standard documentation for all applicable requirements.

Airports typically have several elements and systems that compete with pedestrian wayfinding signage. These include (but may not be limited to) art, advertising and amenity related signage. Consistent and sensible location of wayfinding signage in relation to each of these elements will ensure an effective and positive wayfinding experience. This section provides general guidelines and recommendations for effective placement of wayfinding signage in relation to these other nearby elements.

General Placement Guidelines

DFW “Wayfinding Signage Philosophies” place a priority on ease of wayfinding throughout all of its facilities. As a result, the DFW wayfinding system will typically take visibility and placement priority over other nearby systems such as art, advertising and amenity elements. However, it must also maintain general harmony with regards to visibility and general placement in relation to these other nearby systems. The following general guidelines have been established and should be used by all designers specifying wayfinding signage within DFW airport facilities.

Placement of wayfinding signage in relation to art, advertising and amenity elements shall always be done so in a manner that maximizes the visibility of each without obstructing important wayfinding information. As such, a simple grid system should be used by designers to maximize the placement of each element. This grid system is based on a simple X/Y/Z axis system (i.e. X = horizontal axis; Y = vertical axis; Z = third-dimension axis, or “forward/backward” in relation to the viewer’s position).

The following are general guidelines to be used as a reference for placing wayfinding signage in relation to art, advertising and amenity elements (see Figure 2.6.1):

- Typical Vertical Placement:
  - Vertical placement of wayfinding signage and nearby elements will use an established set of three-dimensional spatial zones along the Y-axis plane and extend forward/backward along the Z-axis plane
- Typical Horizontal Placement:
  - Horizontal placement of wayfinding signage and nearby elements will use an established set of three-dimensional spatial zones along the X-axis plane and extend forward/backward along the Z-axis plane

Signage Zones

Basic placement zones have been provided here for locating DFW wayfinding signage in relation to art, advertising and amenity related elements (see Figure 2.6.1). The following general guidelines should be utilized when locating wayfinding signage near these elements (Note: A.F.F. = “above finished floor”):

- Overhead Wayfinding Zone: is a +/- 3’-0” high three-dimensional spatial

plane dedicated to placement of overhead pedestrian wayfinding signage

- Typical vertical zone size = +/- 8’-6” A.F.F. to 11’-6” A.F.F.
  - Note that the zone may also extend above or below these dimensions if deemed appropriate for a given location’s conditions and requirements
- The line-of-sight for this zone should always maintain an unobstructed view of 50’-0” minimum on the Z-axis plane approach.

- Amenity Zone: is a +/- 2’-6” high three-dimensional spatial plane that applies to placement of signage and/or elements for amenities (i.e. restaurants, taverns, retail shops, concessions, etc.)
  - Typical vertical zone size = +/- 6’-8” A.F.F. to 8’-6” A.F.F.
  - Placement of amenity elements within this zone are dependent upon established DFW amenity signage design standards and per individual terminal facility conditions; wayfinding signage should typically maintain a +/- 10’-0” min. horizontal perimeter away from amenity signage/elements whenever possible
- Lower Wayfinding/Art & Advertising Zone: is a +/- 6’-8” high three-dimensional spatial plane that applies to placement of lower wayfinding signage (i.e., floor mounted and lower wall mounted sign types), as well as

concessions, art and advertising elements typically scaled for more personal interaction/viewing

- Typical vertical zone size = Finished Floor to +/- 6’-8” A.F.F.
- Art, advertising and freestanding concession elements in this area should typically maintain a horizontal perimeter of +/- 10’-0” min. from wayfinding elements whenever possible
- Overhead Art & Advertising Zone: Note that overhead art & advertising requires flexibility in sizing and spacing and is preferred to occur above the Overhead Wayfinding Zone whenever possible (typically above 11’-6” A.F.F. or as deemed appropriate for a given location’s conditions or sizing requirements, and is dependent on individual terminal facility conditions)

NOTE: Dimensions shown here are to be used as a general guideline only; some overlap of zones is to be expected and may occur depending on unique terminal environment conditions and sizing of wayfinding signage and existing/planned art, advertising and amenity elements; no art, advertising or amenity elements will be placed within limits of wayfinding signage or attached to wayfinding structure; designers are required to review all wayfinding signage in relation to art, advertising and amenity elements as location conditions require, and adjust placements as necessary.

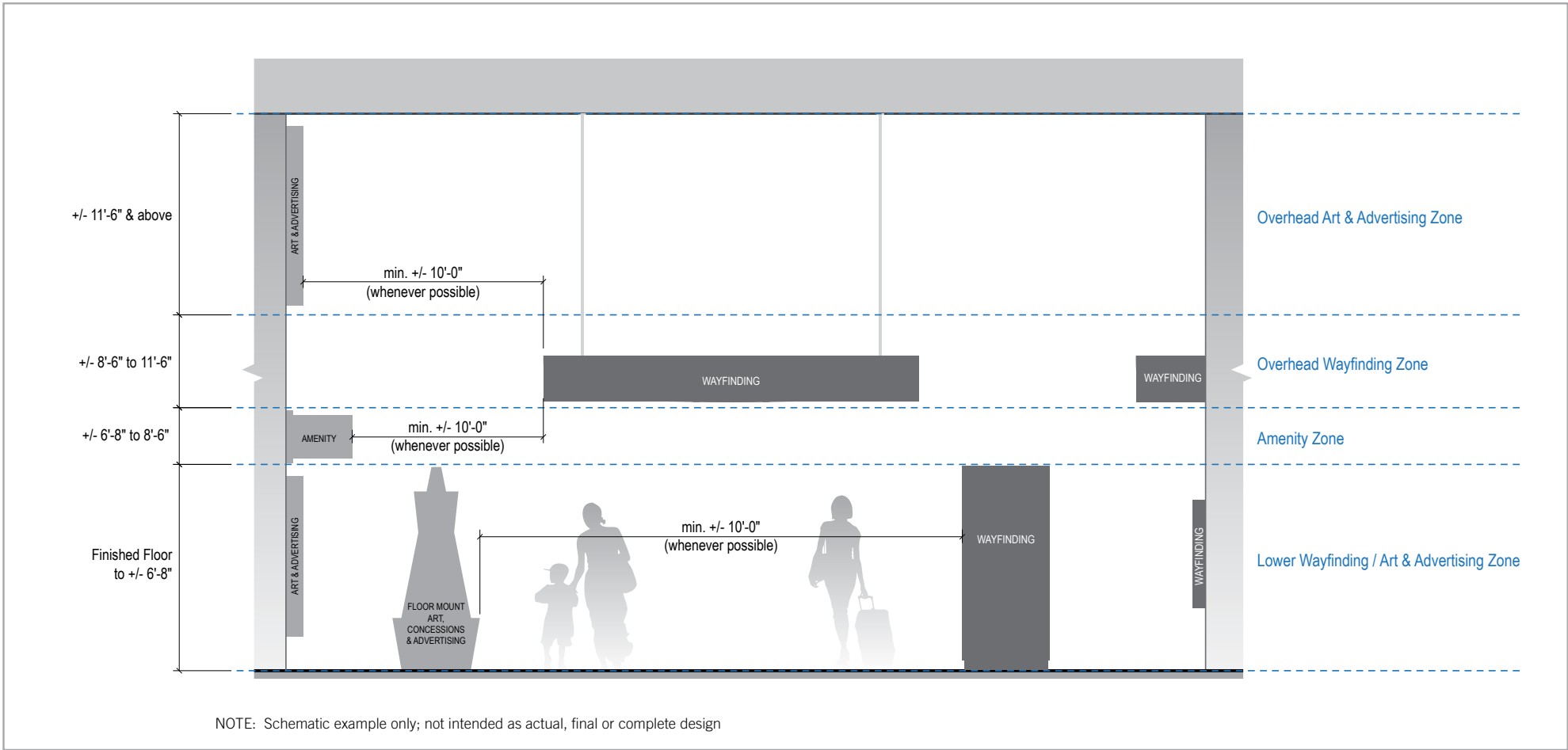


Figure 2.6.1 Typical Signage Zones

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2.7 WAYFINDING SIGN SYSTEM OVERVIEW

2.7.1 OVERVIEW

The wayfinding sign system shown in this document represents a generally holistic system being implemented throughout all DFW facilities. The DFW wayfinding sign system should always be consistent in appearance and application throughout the entire airport area in which it is being applied. Doing so consistently will establish a public perception that DFW is a professional and forward-thinking organization, which will always be apparent within any of its amenities or facilities.

Design Description – DFW Wayfinding Signage System

The DFW wayfinding signage system should continue to be developed to make all airport wayfinding signage an extension of DFW’s world-class branding and philosophies. It should meet the established principles of DFW’s general mission and vision for wayfinding. The following should be universally adopted at all DFW facilities:

- Provides safe, efficient and appealing wayfinding at all DFW Airport facilities
- Reinforces DFW as an airport standard of excellence within the United States, as well as the world
- Unifies signage as one holistic wayfinding system, both interior and exterior
- Shares a consistent, positive “tone-of-voice” at all DFW areas and facilities
- Creates a consistent and shared “sense of arrival” and a “sense of place” at each Airport area and facility

These same principles will always be used for all wayfinding signage implemented within any of DFW’s modernization programs.

Sign System Objective: Pedestrian Signage

The general objective of the Pedestrian related wayfinding sign system should be to direct the flow of pedestrian traveler traffic at curbside/ground transportation areas, in and out of the public terminal entrances, between appropriate designated terminal areas, in/out of the concourse/gate holdroom or CBP passenger processing areas, and within pedestrian related areas of parking garage facilities. This is achieved by using a hierarchy of signage that relates specifically to pedestrian traffic, and should be designed with appropriately sized graphics, visual queuing elements, orientation and placement for such traffic.

Sign System Objective: Vehicular Signage

The general objective of the Vehicular wayfinding sign system should be to direct the flow of vehicular traffic in and out of DFW, as well as throughout its various public-use facilities (i.e. to/from parking facilities, terminal curbs, service areas, etc.). This is achieved by using a hierarchy of signage that relates specifically to vehicular traffic, and should be designed with appropriately sized graphics, visual elements/features, orientation and placement for such traffic.

Special Areas

Some areas of the DFW do not necessarily fall within a specific category, and as such are identified as special areas. A special area should be specifically designed for and reviewed/approved by DFW Planning on a case by case basis as needs require. Examples of special areas may include (but are not limited to) public art, advertising and concession related signage.

Interim (Temporary) Signage

Sign types developed for temporary/interim conditions shall also use the standards and guidelines for permanent wayfinding signage as shown in this document as a baseline for matching the rest of the wayfinding system.

Exceptions

To be successful, a signage program must allow for flexibility. Exceptions to any of the general signage standards and guidelines listed within this document should be reviewed on a case-by-case basis, and enforced by DFW as deemed necessary and appropriate.

2.7.2 SIGN TYPES – GENERAL OVERVIEW

There are several elements that make up a clear and recognizable sign. Even though the message and its copy size/clarity are of great importance, so too is the actual sign entity that it is placed on. Having consistent and distinct sign types enhances a sign system by being more recognizable to its users within unfamiliar environments. Many travelers can decipher the type of information that will be given based on the size, shape, mounting location or color of the sign. This shortens the decision-making process, creating smoother traffic flow and increased trust in the overall wayfinding system.

Sign types will typically be used based on their message priority and basic function:

- Primary Signs Types: signs used for priority destinations/functions of the airport are considered “Primary” signage, and should be the most visible and visually dominate to other wayfinding signage
- Secondary Sign Types: secondary messaging (such as Telephones, ATM, etc.) should typically be reserved for sign types pre-determined as “Secondary” in nature, and should appear visually subordinate to the Primary signage
- Tertiary Sign Types: tertiary messaging (such as regulatory, safety related information, etc.) should also be placed on sign types pre-determined for “Tertiary” use, and should appear visually subordinate to both Primary and Secondary signage

Wayfinding Sign Family

DFW’s wayfinding system should use a comprehensive sign typing system that is based on categories of a sign’s function. In some regards it has been developed into a holistic family of signs with each member having their own specific use and purpose, while also utilizing a “kit-of-parts” design philosophy. It should be designed as manageable, and allow for being seamlessly integrated within all DFW facilities, while being updated on a continuing basis as needs arise.

Wayfinding sign types at DFW should be categorized as directional, identity, informational, regulatory/warning, room labels and tags. Major sign type classifications (as categorized by function) and general descriptions of each should include:

- Directional: signs that display standardized directional messaging to assist in finding one’s way through a defined area or environment (i.e. an overhead sign at a decision point with arrow/symbol/destination messages listed)

- Identification: signs used as unique markers to identify specific locations within a defined area or environment (i.e. a gate identification sign)
- Informational: signs or graphic systems that display specific and very detailed information to assist in orientation within a complex or unfamiliar environment (i.e. a directory map or FIDS)
- Regulatory: signs that display regulatory information (i.e. “No Parking” or ”Loading Zone Only” signs)
  - Note: not included as part of this document
- Life-Safety/Egress: signs that display life-safety and vertical circulation/ egress related information as required by local and national codes (i.e. fire escape stairway core level identification signs)
  - Note: not included as part of this document
- Interim (Temporary): signs that can be directional, identification, informational and regulatory, but are made of temporary materials and mounting methods
  - Note: not included as part of this document

The following wayfinding sign families are included within this document:

- Terminals/Gate Areas (see Chapter 3.0)
- Curbside/Ground Transportation Areas (see Chapter 4.0)
- Roadway Areas (see Chapter 5.0)
- Garages/Parking Areas (see Chapter 6.0)

*Note: All sign types shown in this document are intended as general design intent only; Sizes shown are typical only; terminal/garage/roadway conditions vary and may require adjustment for final design of sign type sizing/proportions/ etc.; additional sign types not shown in this document may be required as determined during design processes of individual DFW improvement programs.*

Scale and Sizing

Scale and sizing for all DFW wayfinding signage will be consistent and designed to the appropriate required viewing distances for a given condition or environment, as well as to the minimum ADA and/or MUTCD/TXDOT requirements, as well as all code requirements.

*Note that the sign types shown are for typical conditions only and are designed to accommodate minimum ADA and MUTCD/TXDOT requirements (i.e., minimum 3” capital height letters on pedestrian overhead signs at approximately +/- 8’-0” above finished floor to bottom of sign). Adjustments to the scale and size of certain sign types may be necessary to maximize visibility and aesthetic harmony within a given wayfinding condition or environment during design development. As such, all designers specifying wayfinding signage for use at DFW will review all individual spatial and environmental conditions per each area of scope, and make recommendations for scale/size adjustment as deemed appropriate.*

2.8 DIGITAL DISPLAY HARDWARE

2.8.1 QUICK REFERENCE OPTIMAL VIEWING DISTANCE

The section serves as a quick reference guide for recommended optimal viewing distance. These summary tables are intended to provide easier reference for general recommended viewing distances based on either pixel pitch size or screen size. However, these are generalized distances and are not content or text size specific.

Table 2.8.1a is sorted by approximate pixel pitch size. Table 2.8.1a only considers the pixel pitch size and display size. It does not consider the content being displayed, the size of the text, or the angle at which the display is being viewed. Table 2.8.1a is only intended as a quick reference guide for recommended optimal viewing distance. Refer to the later sections of the chapter for more detailed guidelines.

Pixel Size mm	Display Type	Display Size (16:9) Diagonal (Inches)	Display Size Length (Inches)	Display Resolution Quarter, Full, 4K	Recommended Range Minimum (Ft)	Recommended Range Maximum (Ft)
0.35	LCD	27	23	FHD	1.6	15
0.35	LCD	55	48	4K	1.6	27
0.4	LCD	32	28	FHD	1.8	17
0.4	LCD	70	61	4K	1.8	25
0.5	LCD	40	35	FHD	2.1	11
0.5	LCD	90	78	4K	2.1	31
0.7	LCD	55	48	FHD	3	25
0.7	LCD	120	104	4K	3	44
0.9	LED	40	35	qHD	4	15
0.9	LCD	70	61	FHD	4	25
0.9	LED	70	61	FHD	4	25
0.9	LED	144	125	4K	4	51
1.2	LED	55	48	qHD	6	25
1.2	LCD	90	78	FHD	6	31
1.2	LED	90	78	FHD	6	31
1.2	LED	180	157	4K	6	66
1.5	LED	70	61	qHD	7	25
1.5	LED	120	104	FHD	7	44
1.5	LED	280	244	4K	7	103
1.9	LED	90	78	qHD	9	31
1.9	LED	144	125	FHD	9	51
2.5	LED	120	104	qHD	12	44
2.5	LED	180	157	FHD	12	66
2.5	LED	420	365	4K	12	154
4	LED	280	244	FHD	18	103
6	LED	420	365	FHD	28	154

Table 2.8.1a Quick Reference Optimal Viewing Distance – Pixel Size

Table 2.8.1b represents the recommended optimal viewing distance based on screen size. Table 2.8.1b only considers the pixel pitch size and display size. It does not consider the content being displayed, the size of the text, or the angle at which the display is being viewed. Table 2.8.1b is only intended as a quick reference guide for recommended optimal viewing distance. Refer to the later sections of the chapter for more detailed guidelines.

- Table 2.8.1b includes the following factors:
- Display size: 32-in (diagonal), 55-in (diagonal), etc. followed by display length in inches
  - Display resolution:
    - Quarter High Definition (qHD) – 960 x 540
    - Full High Definition (FHD) – 1920 x 1080
    - 4K – 3840 x 2160
  - Display pixel pitch: .9-mm, 1.5-mm, 4-mm, etc.
  - Recommended Display type: LED or LCD
  - Range Minimum: this is a generalized recommended minimum viewing range (in feet) based on pixel pitch.

- Recommended Range Maximum: this is a generalized recommended maximum viewing range (in feet) based on screen size.

Display Size (16:9) Diagonal (Inches)	Display Size Length (Inches)	Display Resolution Quarter, Full, 4K	Pixel Size mm	Display Type	Recommended Range Minimum (Ft)	Recommended Range Maximum (Ft)
27	23	FHD	0.35	LCD	1.6	15
32	28	FHD	0.4	LCD	1.8	17
40	35	qHD	0.9	LED	4	15
40	35	FHD	0.5	LCD	2.1	15
55	48	qHD	1.2	LED	6	25
55	48	FHD	0.7	LCD	3	25
55	48	4K	0.35	LCD	1.6	25
70	61	qHD	1.5	LED	7	26
70	61	FHD	0.9	LCD	4	25
70	61	FHD	0.9	LED	4	25
70	61	4K	0.4	LCD	1.8	26
90	78	qHD	1.9	LED	9	31
90	78	FHD	1.2	LCD	6	31
90	78	FHD	1.2	LED	6	31
90	78	4K	0.5	LCD	2.1	31
120	104	qHD	2.5	LED	12	44
120	104	FHD	1.5	LED	7	44
120	104	4K	0.7	LCD	3	44
144	125	FHD	1.9	LED	9	51
144	125	4K	0.9	LED	4	51
180	157	FHD	2.5	LED	12	66
180	157	4K	1.2	LED	6	66
280	244	FHD	4	LED	18	103
280	244	4K	1.5	LED	7	103
420	365	FHD	6	LED	28	154
420	365	4K	2.5	LED	12	154

Table 2.8.1b Quick Reference Optimal Viewing Distance – Screen Size

2.8.2 OPTIMUM VIEWING ANGLE GUIDE

This section addresses the minimum viewing distance based on the human eye focus angles. The angle being referenced is from the viewer's eye to the left and right side of a landscaped display. Three separate angles are reviewed. A 120-degree viewing angle is based on peripheral vision limits. The 30-degree viewing angle is based on the limits of focused vision on a specific object or item. The 60-degree viewing angle is an intermediate viewing angle and represents the preferred viewing angle with limited eye strain.

Table 2.8.2 shows the minimum distance from the display based on the viewing angle (refer to Figure 2.8.2 for an illustration). Table 2.8.2 includes the following elements:

- Display Size: the display is assumed to be in landscape and the size listed is the display diagonal in inches
- Minimum 120-degree Eye: this is the minimum distance you can be from the display based on your peripheral vision; moving any closer to the display than this and the viewer's vision will be fully immersed in the display
- Preferred 60-degree Eye: this would typically be the recommended minimum viewing distance of a display
- Focused 30-degree Eye: this distance is for displays that include content that must be viewed holistically and therefore required the viewer to view content in one glance; because of this the viewer must be set back further from the content, with this table providing the minimum distance

Display Size Inches (Diagonal)	Minimum 120 Degree Eye	Preferred 60 Degree Eye	Focused 30 Degree Eye
27	0.6	1.8	3.9
32	0.7	2.1	4.5
40	0.9	2.6	5.6
55	1.2	3.6	7.8
70	1.5	4.5	10
90	2	6	13
120	2.6	8	17
144	3	9	19
180	4	12	26
280	6	18	39
420	9	27	58

Table 2.8.2 Eye Viewing Angle – Minimum Distance by Screen Size

Figure 2.8.2 illustrates a 70-in display at 120, 60, and 30 degree viewing angles based on the findings in Table 2.8.2. For a typical dynamic display, the viewing angle of 60-degrees would be the preferred minimum. For this example of a 70-in landscape display, 1'6" is the recommended minimum, while 4'6" would be the preferred minimum viewing distance, and 10' would be the minimum if the display must be read holistically (e.g., bathroom symbol with an arrow).

Minimum Screen Distance  
– Eye Angle

(Recommended Minimum Viewing Distance)

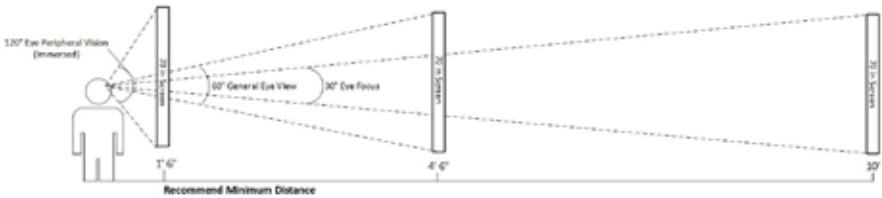


Figure 2.8.2 Eye Viewing Diagram

2.8.3 PIXILATION CONSIDERATIONS

Pixilation is when you can begin to see the individual pixels in a dynamic display. Typically, with LCD displays this is a limited issue, especially with the migration to 4K resolutions. However, with LED displays, pixilation is a greater concern due to the larger pixel sizes normally associated with LEDs (e.g., pixel pitch of 6-mm or ¼-in). Refer to Figure 2.8.3 for an illustration of pixilation based on various distances and viewers.

Table 2.8.3 goes into the minimum viewing distances of displays with varying pixel quality. For this analysis, the pixel pitch determines how close the viewer can be to the display and still view content without excessive pixilation. Table 2.8.3 goes through a full range of pixel pitch sizes from .35-mm through 6-mm. Note that .9-mm would typically be the smallest size for consideration with LED technology (below .9-mm would use LCD technology).



- Table 2.8.3 includes the following elements:
- Approximate LED Pixel Pitch: this is the size of the individual pixels in the display; typically, the smaller the pixel the better quality the image, but the greater the display cost
  - Full HD Display Approximated Equivalent Size: the full HD display equivalent is only given as a reference to better compare what a specific LED Pixel Pitch is equivalent to in comparison to an LCD screen size/resolution
  - 70” LCD Approximate Equivalent: again, the 70-in LCD equivalent is only given as a reference; the resolution indicated is what the pixel pitch would give if applied to a 70-in LCD
  - Min. Viewing (8 and 6 Arc Minute): these columns indicate the closest acceptable point to review a display, though would not typically be recommended as some level of pixilation will be evident; however, were cost is a major concern or for other cases these limits could be considered
  - Min. Good Viewing (2.5 Arc Minute): this indicates the recommended minimum viewing distance based on pixilation concerns; 2.5 arc minutes of vision equates to roughly the smallest point a person with 20/40 vision can discriminate; in other words, a person with 20/40 vision would not be capable of distinguishing separate pixels due to the limitations of their vision
  - Better and Excellent Viewing (1 and .4 Arc Minutes): this indicates seamless viewing distance (no pixilation visible) for a person with 20/20 vision (1 arc minute) and a person with perfect vision (.4 arc minutes).

Approximate LED Pixel Pitch	Full HD Display Approximate Equivalent Size	70" LCD Approximate Equivalent		Min. Viewing (Ft) - Low Detail Content		Min. Viewing (Ft) - High Detail Content		Better Viewing (Ft) (20/20 Min Resolve)		Excellent Viewing (Ft)	
		H Pixel	V Pixel	8 Arc Minute	6 Arc Minute	2.5 Arc Minute	1 Arc Minute	1 Arc Minute	.4 Arc Minute		
.35 mm	27" FHD ( or 55" 4K)	4800	2700	0.5	0.7	1.6	4	4	10		
.4 mm	32" Full HD LCD TV	4200	2363	0.6	0.8	1.8	4.6	4.6	12		
.5 mm	40" Full HD LCD TV	3360	1890	0.7	1	2.3	5.7	5.7	14		
.7 mm	55" Full HD LCD TV	2444	1375	1	1.3	3	8	8	20		
.9 mm	70" Full HD LCD TV	1920	1080	1.3	1.7	4	10	10	25		
1.2 mm	90" Full HD LCD TV	1493	840	1.8	2.3	6	14	14	35		
1.5 mm	120" Full HD LCD TV	1120	630	2.1	3	7	17	17	43		
1.9 mm	12" Full HD Display	960	540	3	4	9	22	22	55		
2.5 mm	15" Full HD Display	747	420	4	5	12	29	29	73		
4 mm	24" Full HD Display	480	270	6	8	18	46	46	115		
6 mm	35" Full HD Display	320	180	9	12	28	69	69	173		

\* At 20-feet, 1 Arc Minute is 1.75 mm in height

Table 2.8.3 Pixel Pitch Compared to Viewing Distance

Figure 2.8.3 is provided to further clarify the information indicated in Table 2.8.3.

Figure 2.8.3 uses a .9mm LED Pixel Pitch and indicates these at three different distances. The pixilation varies at each distance depending on the persons vision who is viewing the screen. The distances shown are for the last three columns of Table 2.8.3 as follows:

- Min. Good Viewing – this equates to 20/40 vision (2.5 arc minute angle) [this is the recommended minimum viewing distance for most dynamic signage applications]
- Better Viewing – this equates to 20/20 vision (1 arc minute angle)
- Excellent Viewing – this equates to 20/10 vision (.4 arc minute angle)

## LED Pixelation Distances

(Recommended Minimum LED Viewing Distance - .9mm LED)

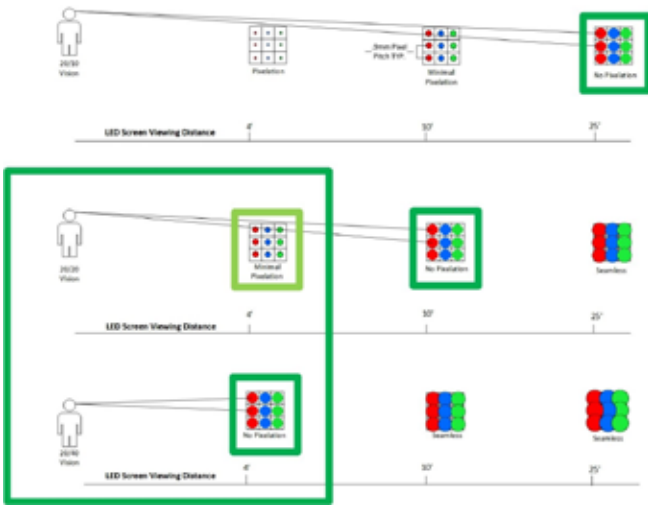


Figure 2.8.3 Pixel Pitch Compared to Viewing Distance

For example, for a .9-mm pixel pitch at the recommended minimum viewing distance of 4-ft, a person with 20/20 vision will see minimal pixilation and a person with 20/40 vision will see no pixilation.

### 2.8.4 DISPLAY CONTENT VIEWING DISTANCE

This section looks at recommended maximum viewing distance based on the display size and display content. Table 2.8.4 provides the preferred maximum viewing distance from a given display based on size and the content being displayed. Table 2.8.4 breaks down content into three categories:

- The first category is complex information, which consists of smaller text sizes and multiple lines of information
- The second is Motion Video, for example, advertisements
- Lastly is General Info, which consists of larger symbols and text size (e.g., wayfinding information)

Typically, the less complex the information, the further the content can be viewed from. For example, a static display of a directional arrow pointing to the restroom can be viewed further than a list of flight numbers and their given departure times. To see this illustrated refer to Figure 2.8.4.

Note, for Table 2.8.4, distances for viewing based on text size are indicated in separate analysis further on in this chapter.

Display Size Inches	Complex Info (e.g. EVIDS) Preferred Max	Motion Video Preferred Max	General Info (Wayfinding) Preferred Max	Large Text Maximum Refer to Max Text Distances
	Feet	Feet	Feet	
27	6	10	25	n/a
32	7	12	29	n/a
40	9	15	37	n/a
55	13	20	50	n/a
70	16	26	64	n/a
90	21	33	83	n/a
120	28	44	110	n/a
144	33	53	132	n/a
180	41	66	165	n/a
280	64	103	257	n/a
420	96	154	385	n/a

Table 2.8.4 Content Type Compared to Viewing Distance

### Content Type Compared to Viewing Distance

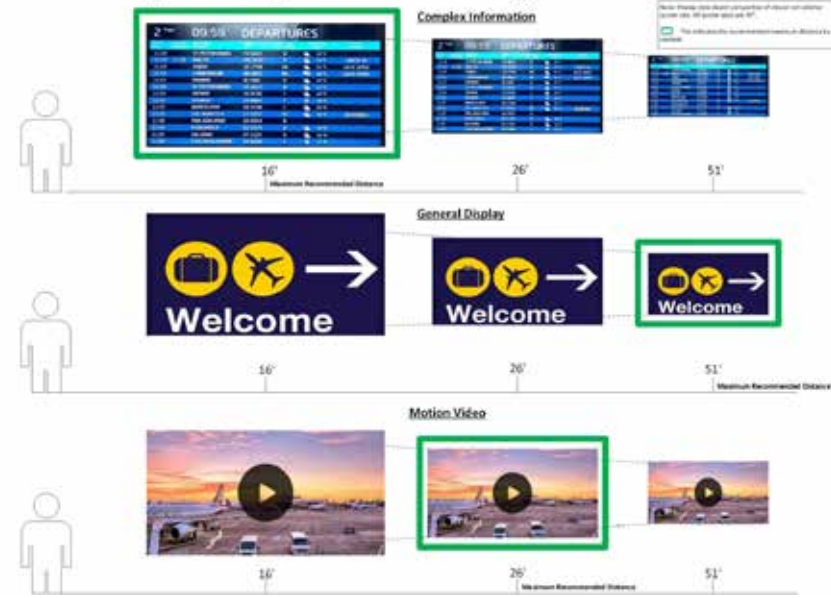


Figure 2.8.4 Content Type Compared to Viewing Distance

In Figure 2.8.4, the green box indicates the recommended maximum viewing distance for each content type based on a 70-in display size.

### 2.8.5 TEXT SIZE AND VIEWING DISTANCE

This section addresses determination of text sizing based on viewing distance and takes into consideration screen sizes. Table 2.8.5a shows the maximum recommended viewing distances, in feet, of various sizes of text sizes, in inches. These findings are based on a suboptimal vision of 20/40, which equates to a character height that measures 10 arc minutes to the viewer. Refer to Figure 2.8.5a for an illustration of text size and distance based on 10 arc minutes of view. When distance from text exceeds these viewing distance, the text will become increasingly difficult to read. For example, a 6-in text character height can be read from a maximum of 170-ft for a viewer with 20/40 vision under perfect conditions. With vision of 20/20 and 20/10 the character can be read from further, however, for normal circumstances it is recommended not to exceed the distances indicated in Table 2.8.5a.

#### WARNING:

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	Distance (Feet)
Text Height (inches)	10 Arc Min
0.5	14.2
1	28.4
1.75	49.7
2.5	71.0
4	113.5
6	170.3
10	283.8
16	454.1
24	681.2
34	965.1
46	1305.7
60	1703.1

Table 2.8.5a

Text Size Viewing Distance

Text Size Compared to Viewing Distance

(Recommended Maximum Distance)



Figure 2.8.5a

Text Size Viewing Diagram

In addition to text size maximum recommended viewing distance, the analysis reviewed recommended text size ranges based on the display size (assume landscape orientation). While Table 2.8.5a indicated text viewing distances, Table 2.8.5b combines those findings with dynamic display screen sizes. For each screen size, a recommended minimum (smallest text) and maximum (largest text) size is indicated. These maximums and minimums are not absolutes, however, text sizes outside of these ranges for a given display size become less practical. For example, a 420-in diagonal display (35-ft diagonal) cannot easily accommodate a 1-in text size as the information would be quickly lost within the overall display. Likewise, a 40-in display cannot practically accommodate a 24-in text height as it would only allow for one, short word to be displayed. Table 2.8.5b also indicates the maximum viewing distance based on 20/40 vision (10 arc minute text size) that was indicated in Table 2.8.5a.

Display Size Inches	Smallest Text Recommended Max Viewing	Largest Text Recommended Max Viewing
27	.5-in at 14-ft	2.5-in at 71-ft
32	.5-in at 14-ft	2.5-in at 71-ft
40	.5-in at 14-ft	4-in at 114-ft
55	.5-in at 14-ft	4-in at 114-ft
70	1-in at 28-ft	6-in at 170-ft
90	1.75-in at 50-ft	10-in at 284-ft
120	2.5-in at 71-ft	16-in at 454-ft
144	2.5-in at 71-ft	24-in at 681-ft
180	4-in at 114-ft	34-in at 965-ft
280	4-in at 114-ft	46-in at 1306-ft
420	6-in at 170-ft	60-in at 1703-ft

Table 2.8.5b

Recommend Text Sizes as compared to Screen Size

An example of this is illustrated in Figure 2.8.5b. Figure 2.8.5b presents various text sizes on two options of screen sizes, 70-in and 420-in. This diagram serves to give a relative idea of how different text sizes appear on a large and small display.

Text Size Compared to Screen Size

(Recommended Text Size Range)

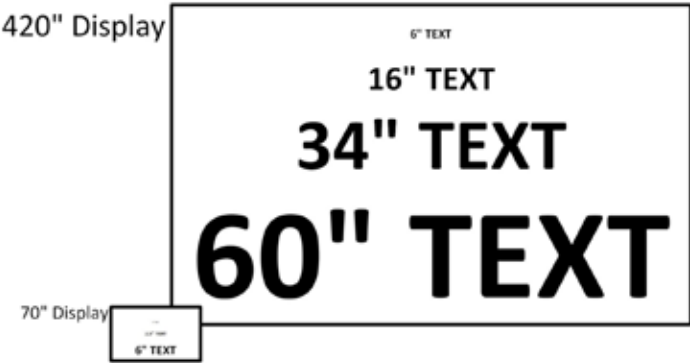


Figure 2.8.5b

Text Size to Screen Size Diagram

2.8.6 ACTIVE ROADWAY DYNAMIC SIGNS

This section reviews dynamic sign requirements for main roadways with moving vehicles. There are a significant number of factors for consideration in the analysis including vehicle speed, display content, required viewing time, limiting rubbernecking, and complexity of roadway. As a starting place, Table 2.8.6a looks at increasing vehicle speeds and increasing viewing times of roadway signs. This results in an estimate of the distance the sign must be readable. As the speed of a vehicle increases, so must the distance that a sign is first readable from to achieve an adequate viewing time. Likewise, as required viewing time increases, so does the initial distance the sign can be read.

From Table 2.8.6a, here are several examples:

- At 20 MPH, if it is desired to have a 10 second viewing time the size must be readable from 413-ft
- At 20 MPH, if it is desired to have a 20 second viewing time the size must be readable from 707-ft
- At 50 MPH, if it is desired to have a 10 second viewing time the size must be readable from 853-ft
- At 50 MPH, if it is desired to have a 10 second viewing time the size must be readable from 1587-ft

Distance Traveled (Feet) Table				
Travel Speed (MPH)	Viewing Time (Seconds)			
	5	10	15	20
10	193	267	340	413
20	267	413	560	707
30	340	560	780	1000
40	413	707	1000	1293
50	487	853	1220	1587
60	560	1000	1440	1880

Table 2.8.6a

Roadway Signage Viewing Distances

Note, that these distances include an addition 120-ft. For the analysis, it is assumed that for the final 120-ft as the driver approaches the sign, that it becomes increasing unsafe to be viewed due to the driver needing to move their focus from the roadway ahead. Figure 2.8.6a illustrates this with the 15-degree viewing point. The 15-degrees is based off the total 30-degree eye focus angle, which equates to 15-degrees in each direction from the center of vision (i.e., the roadway). The 120-ft is an estimated distance point; this distance will vary depending on the signs offset from the roadway.

The next part of the roadway sign analysis considers text height and its related viewing distance. Table 2.8.6b reviews three different minimum viewing distances:

- 20/20 vision limit (text character takes up 5 arc minutes)
- 20/30 vision limit (text character takes up 7.5 arc minutes)
- 20/40 vision (text character takes up 10 arc minutes)

Each of these vision levels indicate the required text character height, in inches, based on the viewing distance. The further the sign is visible from, the larger the text will be needed to maintain readability. For example:

- Under good viewing conditions, at 100-ft a viewer with 20/40 visions would require text that was 3.5-in in height (this would equate to approximately 2.8-in in character width)
- Under good viewing conditions, at 1000-ft a viewer with 20/30 visions would require text that was 26-in in height (this would equate to approximately 21-in in character width)
- Under good viewing conditions, at 2000-ft a viewer with 20/20 visions would require text that was 35-in in height (this would equate to approximately 28-in in width)



Distance (Feet)	Text Height* (Inches)	Text Width (Inches)	Text Height* (Inches)	Text Width (Inches)	Text Height* (Inches)	Text Width (Inches)
	5 Arc Min	5 Arc Min	7.5 Arc Min	7.5 Arc Min	10 Arc Min	10 Arc Min
100	1.7	1.4	2.6	2.1	3.5	2.8
200	3.5	2.8	5.3	4.2	7.0	5.6
300	5.2	4.2	7.9	6.3	10.6	8.5
400	7.0	5.6	10.5	8.4	14.1	11.3
500	8.7	7.0	13.2	10.5	17.6	14.1
600	10.5	8.4	15.8	12.6	21.1	16.9
700	12.2	9.8	18.4	14.7	24.7	19.7
800	14.0	11.2	21.1	16.8	28.2	22.5
900	15.7	12.6	23.7	18.9	31.7	25.4
1000	17.5	14.0	26.3	21.1	35.2	28.2
1100	19.2	15.4	28.9	23.2	38.8	31.0
1200	21.0	16.8	31.6	25.3	42.3	33.8
1300	22.7	18.2	34.2	27.4	45.8	36.6
1400	24.5	19.6	36.8	29.5	49.3	39.5
1500	26.2	21.0	39.5	31.6	52.8	42.3
1600	28.0	22.4	42.1	33.7	56.4	45.1
1700	29.7	23.8	44.7	35.8	59.9	47.9
1800	31.5	25.2	47.4	37.9	63.4	50.7
1900	33.2	26.6	50.0	40.0	66.9	53.6
2000	35.0	28.0	52.6	42.1	70.5	56.4

Table 2.8.6b

Roadway Signage Text Size

For the specific DFW use case, a vehicle travelling at 50 mph is utilized based on a straight road. For initial view of the sign, it is assumed that the sign should be at least seen for 20 seconds (though preferably readable). Based on this, using Table 2.8.6a, it is required to see the sign from 1587-ft (approximately 1600-ft) to give the 20 seconds of view time.

The next step is to determine the required text size based on the 1600-ft. The text size will depend on person’s vision and driving conditions. For this 20 sec viewing point, it is assumed that the sign will only be readable by drivers with 20/20 vision and under good conditions (e.g., no rain). However, this will still allow for 20/40 vision or adverse conditions (e.g., rain) to identify the sign (though not read it). Based on these various factors, Table 2.8.6b indicates that the text height will need to be 28-in.

From this we can determine the distance and amount of time that the 20/40 vision driver will have to read the sign and acquired the needed information. As such, from Table 2.8.6b it can be determined that the 20/40 vision driver can start reading the 28-in text from 800-ft away. Based on Table 2.8.6a this gives slightly less than 10 seconds to read (i.e., 9 seconds).

Figure 2.8.6a illustrates the above use case and shows the driver in three separate locations:

- 1600-ft from the sign: 20/20 Vision maximum reading distance
- 800-ft from the sign: 20/40 vision maximum reading distance
- 120-ft from the sign: point that reading the sign starts to become increasingly unsafe; if feasible, a visual barrier is recommended at this limit to reduce rubbernecking.

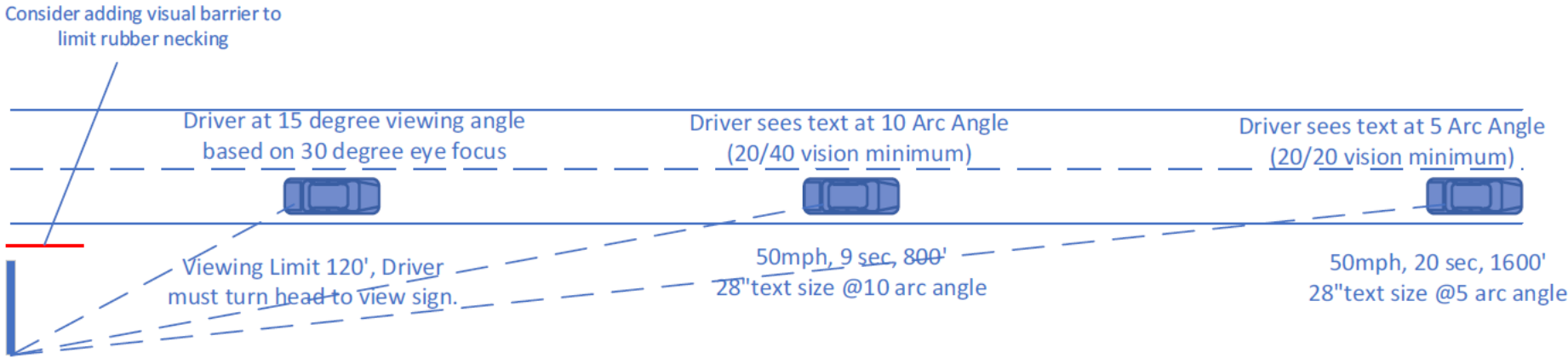


Figure 2.8.6a

Roadway Sign Viewing Diagram

As a final step in the use case, the actual size dimensions need to be determined. Figure 2.8.6b aims to illustrate possible sign dimensions based on a 28-in text size (22.4-in text width). Several options are reviewed as follows:

- Option A looks at a sign with 24 lines of text shown vertically and 16 characters horizontally
- Option B looks at a sign with 24 lines of text shown vertically and 24 characters horizontally
- Option C looks at a sign with 16 lines of text shown vertically and 24 characters horizontally
- Option D looks at a sign with 16 lines of text shown vertically and 16 characters horizontally

There are various factors that will impact final roadway sign sizing, but these provide several reference points. One factor that can help with the roadway signs is utilizing larger header fonts (vs the content fonts) so that travelers can identify sign purpose and general content earlier. This in turn will provide quicker content consumption once the driver is in reading range of the sign.

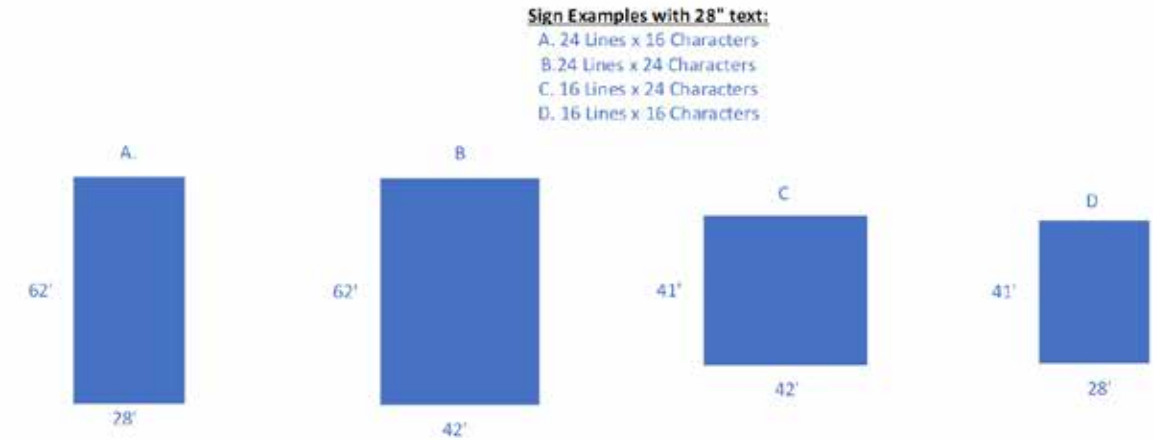


Figure 2.8.6b

Roadway Sign Size Examples

2.8.7 LCD VS LED COMPARED TO PIXEL PITCH

This Section provides a guide to which technology (LED or LCD) can be considered based on resolution and display size needs. Table 2.8.7 provides this summary. For example, if a 70-in full high definition display content is desired, then either a 70-in FHD LCD display can be used or alternatively a 70-in equivalent .9-mm pixel pitch LED display can be utilized.

Display Size (In.)	Display Type	.35 mm	.4 mm	.5 mm	.7 mm	.9 mm	1.2 mm	1.5 mm	1.9 mm	2.5 mm	4 mm	6 mm
27 FHD	FHD LCD	LCD										
32 FHD	FHD LCD		LCD									
40 qHD	.9 mm LED					LED						
40 FHD	FHD LCD			LCD								
55 qHD	1.2 mm LED						LED					
55 FHD	FHD LCD				LCD							
55 4K	4K LCD	LCD										
70 qHD	1.5 mm LED							LED				
70 FHD	FHD LCD or .9 mm LED					LCD/LED						
70 4K	4K LCD		LCD									
90 qHD	1.9 mm LED								LED			
90 FHD	FHD LCD or 1.2 mm LED						LCD/LED					
90 4k	4K LCD			LCD								
120 qHD	2.5 mm LED									LED		
120 FHD	1.5 mm LED						LED					
120 4k	4K LCD				LCD							
144 FHD	1.9 mm LED								LED			
144 4K	.9 mm LED					LED						
180 FHD	2.5 mm LED									LED		
180 4K	1.2 mm LED						LED					
280 FHD	4 mm LED										LED	
280 4K	1.5 mm LED							LED				
420 FHD	6 mm LED											LED
420 4K	2.5 mm LED									LED		

Table 2.8.7

Display Types

Display Size Inches (Diagonal)	Display Size Length (Inches)	Display Resolution Quarter, Full, 4K	Pixel Size mm	Display Type	Min Distance 120 Degree Eye (Feet)	Min Distance 60 Degree Eye (Feet)	Minimum Distance Low Detail Content Pixelation Limit (Feet)	Minimum Distance High Detail Content Pixelation Limit (Feet)	Minimum Good Viewing Distance Pixelation Limit (Feet)	Better Viewing Distance(20/20 Min Resolve) Pixelation Limit (Feet)	Preferred Max Distance - Complex EVID5 (Feet)	Preferred Max Distance - Motion Video (Feet)	Preferred Max Distance - General Wayfinding (Feet)	Max Distance - Largest Text 20/40 Vision (Font In.) (Feet)
27	23	FHD	0.35	LCD	0.6	1.8	0.5	0.7	1.6	4	6	10	25	2.5-in at 71-ft
32	28	FHD	0.4	LCD	0.7	2.1	0.6	0.8	1.8	4.6	7	12	29	2.5-in at 71-ft
40	35	qHD	0.9	LED	0.9	2.6	1.3	1.7	4	10	9	15	37	4-in at 114-ft
40	35	FHD	0.5	LCD	0.9	2.6	0.7	1	2.3	5.7	9	15	37	4-in at 114-ft
55	48	qHD	1.2	LED	1.2	3.6	1.8	2.3	6	14	13	20	50	4-in at 114-ft
55	48	FHD	0.7	LCD	1.2	3.6	1	1.3	3	8	13	20	50	4-in at 114-ft
55	48	4K	0.35	LCD	1.2	3.6	0.5	0.7	1.6	4	13	20	50	4-in at 114-ft
70	61	qHD	1.5	LED	1.5	4.5	2.1	3	7	17	16	26	64	6-in at 170-ft
70	61	FHD	0.9	LCD	1.5	4.5	1.3	1.7	4	10	16	26	64	6-in at 170-ft
70	61	FHD	0.9	LED	1.5	4.5	1.3	1.7	4	10	16	26	64	6-in at 170-ft
70	61	4K	0.4	LCD	1.5	4.5	0.6	0.8	1.8	4.6	16	26	64	6-in at 170-ft
90	78	qHD	1.9	LED	2	6	3	4	9	22	21	33	83	10-in at 284-ft
90	78	FHD	1.2	LCD	2	6	1.8	2.3	6	14	21	33	83	10-in at 284-ft
90	78	FHD	1.2	LED	2	6	1.8	2.3	6	14	21	33	83	10-in at 284-ft
90	78	4K	0.5	LCD	2	6	0.7	1	2.3	5.7	21	33	83	10-in at 284-ft
120	104	qHD	2.5	LED	2.6	8	4	5	12	29	28	44	110	16-in at 434-ft
120	104	FHD	1.5	LED	2.6	8	2.1	3	7	17	28	44	110	16-in at 434-ft
120	104	4K	0.7	LCD	2.6	8	1	1.3	3	8	28	44	110	16-in at 434-ft
144	125	FHD	1.9	LED	3	9	3	4	9	22	33	53	132	24-in at 681-ft
144	125	4K	0.9	LED	3	9	1.3	1.7	4	10	33	53	132	24-in at 681-ft
180	157	FHD	2.5	LED	4	12	4	5	12	29	41	66	165	34-in at 963-ft
180	157	4K	1.2	LED	4	12	1.8	2.3	6	14	41	66	165	34-in at 963-ft
280	244	FHD	4	LED	6	18	6	8	18	46	64	103	257	46-in at 1306-ft
280	244	4K	1.5	LED	6	18	2.1	3	7	17	64	103	257	46-in at 1306-ft
420	365	FHD	6	LED	9	27	9	12	28	69	96	154	385	60-in at 1703-ft
420	365	4K	2.5	LED	9	27	4	5	12	29	96	154	385	60-in at 1703-ft

Table 2.8.8

Quick Reference Optimal Viewing Distance – Detailed

2.8.8 DETAILED OPTIMAL VIEWING DISTANCE GUIDE

To wrap up the visual analysis, this section provides a more detailed quick reference for optimal viewing distances of various display sizes, pixel pitch sizes, and content being displayed. However, this section still serves as a summary and the previous sections and analysis of this document should be referenced for more detailed analysis and basis for viewing distances.

Refer to Table 2.8.8 for more detail quick reference guide. Note that it is sorted by screen size, then secondarily by screen resolution.

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# 3.0

## **3.0 SIGN TYPES - TERMINALS/GATE AREAS**

- 3.1 Sign Type Index
- 3.2 Sign Types

3.1 SIGN TYPE INDEX - TERMINALS/GATE AREAS

3.1.1 Overview

This chapter provides specific information regarding the wayfinding sign types applicable for use in the Terminals/Gate areas of DFW Airport. It contains a general sign family overview of the specific sign types (i.e., the Sign Type Index section), as well as more specific design/layouts/notes/etc for each individual sign type (i.e., the Sign Types section).

Sign Types - Design Intent Drawings

Section 3.2 - Sign Types contains design intent drawings of each specific wayfinding sign type used within the Terminals/Gate areas of DFW Airport. Each sheet displays scaled drawings of individual sign types and their basic views (i.e., elevations, plan views, end view, etc), sizing/dimensions, face layouts and general design intent related notes.

NOTE: these documents are intended to illustrate design intent, and should only be used as a general guideline. No information contained here should be construed as engineered elements. The designer/fabricator/contractor shall be responsible for all engineering and specifications with regard to structural, electrical, mechanical, foundation and installation. Details and information contained in this document shall not be reproduced, copied or utilized in any way except for the specific project for which they were created without previous written authorization from DFW Planning Department.

Mounting Requirements

Sign mountings shall support signs for optimum visibility, facilitate illumination where required, be fabricated from commonly available materials, be easily maintained, be engineered to established DFW wayfinding system and engineering requirements, and not obstruct or pose any hazard to pedestrians, vehicles or any other entity. Signs are required to have an enclosure that prevents visibly of wiring and the back of the display.

Basic Mounting Types

The basic mounting types used within DFW's Terminals/Gate areas are as follows:

- Ceiling Mount:
  - Suspended: Overhead signs located in high ceiling areas mounted with a suspension system mechanically attached to the sign’s top most element and at the top of the suspension system, with the overall suspension system/sign attached to an above-ceiling structural support system
  - Flush Top: Overhead signs mounted in lower ceiling areas with the sign’s top most element flush to the ceiling using a mechanical fastening system attached to an above-ceiling structural support system
- Wall/Soffit/Fascia Mount: Signs that are located on a vertical architectural fascia (overhead) or wall (overhead or pedestrian eye-level), and mechanically attached to the fascia/wall’s internal vertical structure
- Wall Mount - ADA/tactile plaques: Signs with tactile features that are mounted to walls, doors or other required elements to meet local/ADA

accessibility requirements and codes for accessible design and use

- Flag (Blade) Mount: Overhead signs mechanically attached on one vertical edge to internal structural elements of vertical architectural surfaces (i.e., walls, columns, etc) in a “flag-like” configuration
- Floor/Ground Mount: Non-moveable signs mechanically attached directly to structural elements of an architectural floor or in-ground structural mounting methods
- Freestanding (Moveable): Signs that utilize freestanding, non-attached base configurations, typically with wide and weighted footer features (to eliminate accidental tipping over); allow for flexibility in moving a sign as changing location conditions require

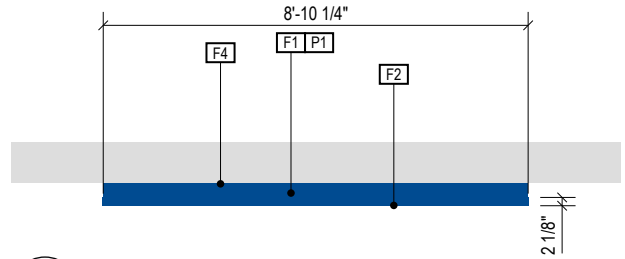
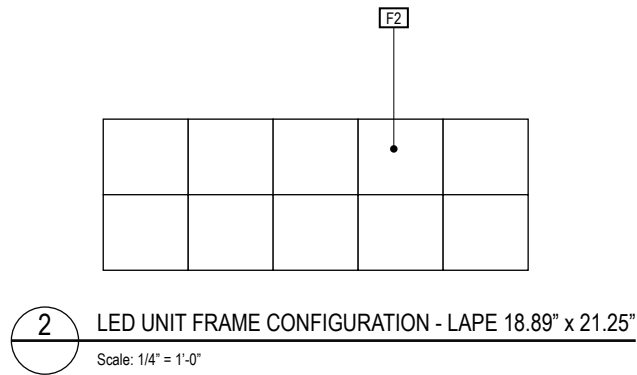
General Mounting Requirements/Restrictions - Pedestrian Signs

- All overhead pedestrian signs shall be mounted at a minimum of 8’-0” to a typical maximum of 9’-0” above finished floor to the bottom of the lowest element of the sign, unless otherwise indicated
- ADA accessibility and code required signage shall be mounted in accordance with all applicable code requirements using the most recent edition of the codes and regulations
- Whenever there is a conflict between a requirement listed in this document and another authoritative code or standard, the more stringent one shall be applied

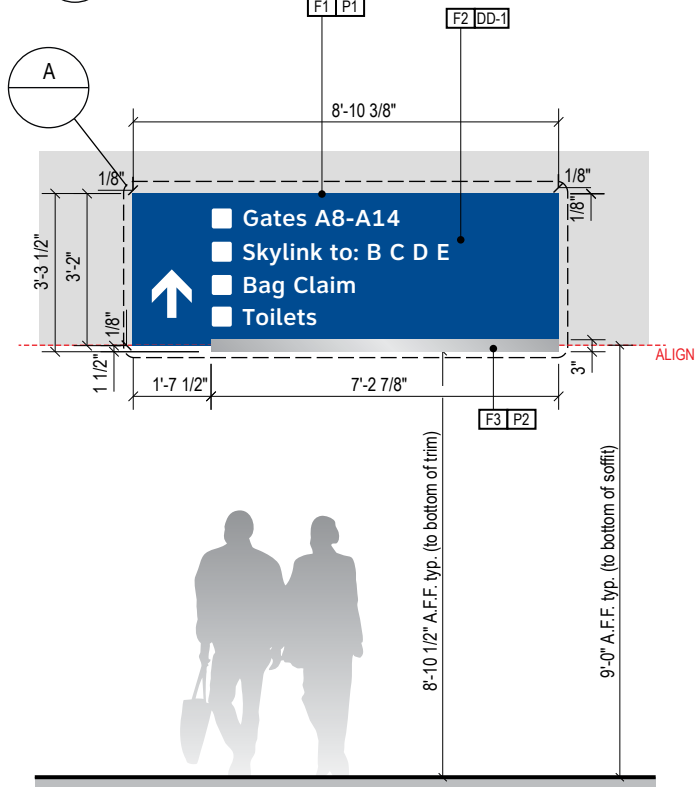
WARNING:



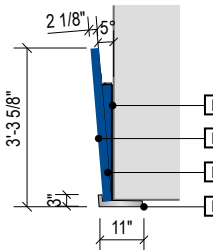
ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	A.1D	DIRECTIONAL	FASCIA MOUNT	Overhead Directional



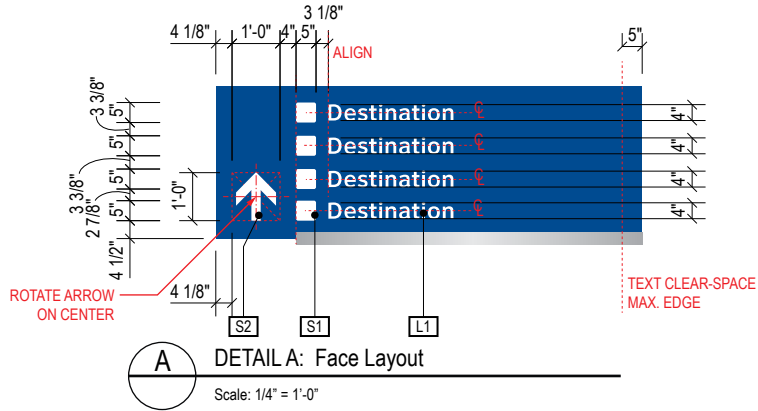
1 PLAN VIEW  
Scale: 1/4" = 1'-0"



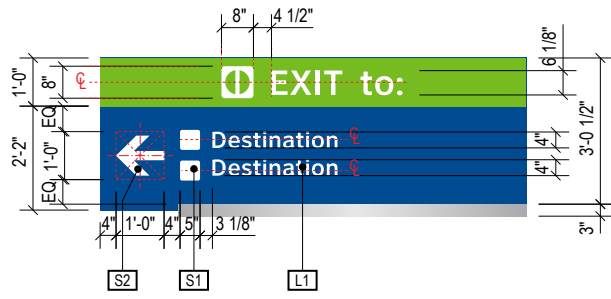
3 ELEVATION  
Scale: 1/4" = 1'-0"



4 END VIEW  
Scale: 1/4" = 1'-0"



A DETAIL A: Face Layout  
Scale: 1/4" = 1'-0"



A DETAIL B: Alternate Face Layout  
Scale: 1/4" = 1'-0"



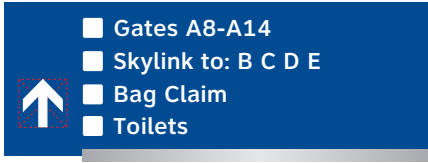
Sample City Message Layout

**ATTENTION:**  
All flights have been grounded for approximately 2 hours due to high wind warnings.

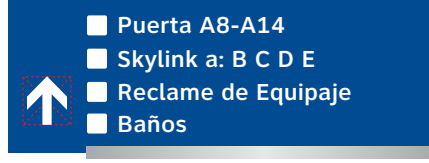
Sample Passenger Message



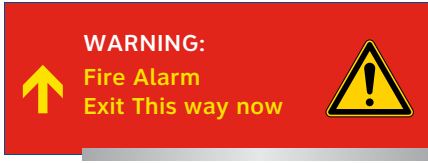
Sample Retail Directional



Sample Destination Layout



Sample Destination Translation Layout



Sample Emergency Layout

4 SAMPLE LAYOUTS  
Scale: 1/4" = 1'-0"

## GENERAL NOTES

- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
- Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

## FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch - 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

## GRAPHICS / COLORS / DECORATION NOTES

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW Airport wayfinding arrow artwork
- VINYL (FILM):**
  - V1** Blue: 3M EC 7725-37 Sapphire Blue
  - V2** White: 3M 7725-20 Opaque Matte White
  - V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

## PAINT:

- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

## DIGITAL DISPLAY:

- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

Project/Document Title:



DALLAS  
FORT WORTH  
INTERNATIONAL  
AIRPORT

## DIGITAL SIGNAGE STANDARDS AND GUIDELINES

Prepared by:



**LOCHNER**  
12001 N. Central Expressway  
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Dallas, TX 75243

Issue Date: 10.02.2019

- REV.
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## 3.2 SIGN TYPES

### 3.2.1 DIRECTIONALS

PAGE

3-2

**Figure 10: Dimensions for Exit Sign**

The figure illustrates the dimensions for two types of exit signs: a standard exit sign (left) and a directional exit sign (right).

**Standard Exit Sign (Left):**

- Sign dimensions: 3' 3/8" high by 4' 1/8" wide.
- Arrow dimensions: 3' 3/8" high by 4' 1/8" wide.
- Destination labels: Four labels, each 4' 1/8" wide and 3' 3/8" high.
- Mounting dimensions: 1'-0" between sign and labels, 4' 1/8" between labels, and 3' 3/8" between sign and labels.
- Clearance: 5' clear-space max. edge.

**Directional Exit Sign (Right):**

- Sign dimensions: 3' 3/8" high by 4' 1/8" wide.
- Green section dimensions: 1'-0" high by 4' 1/8" wide.
- Blue section dimensions: 2'-2" high by 4' 1/8" wide.
- Arrow dimensions: 1'-0" high by 4' 1/8" wide.
- Destination labels: Two labels, each 4' 1/8" wide and 3' 3/8" high.
- Mounting dimensions: 1'-0" between sign and labels, 4' 1/8" between labels, and 3' 3/8" between sign and labels.
- Clearance: 5' clear-space max. edge.

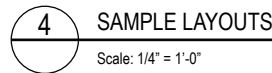
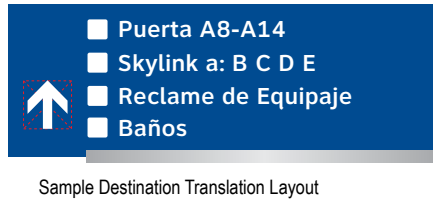
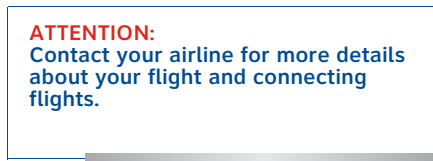
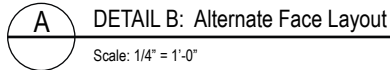
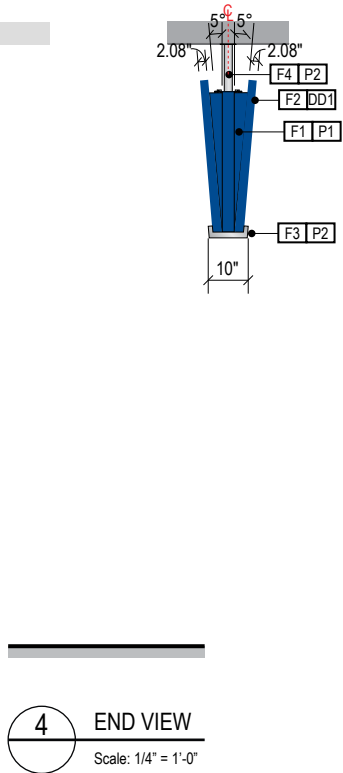
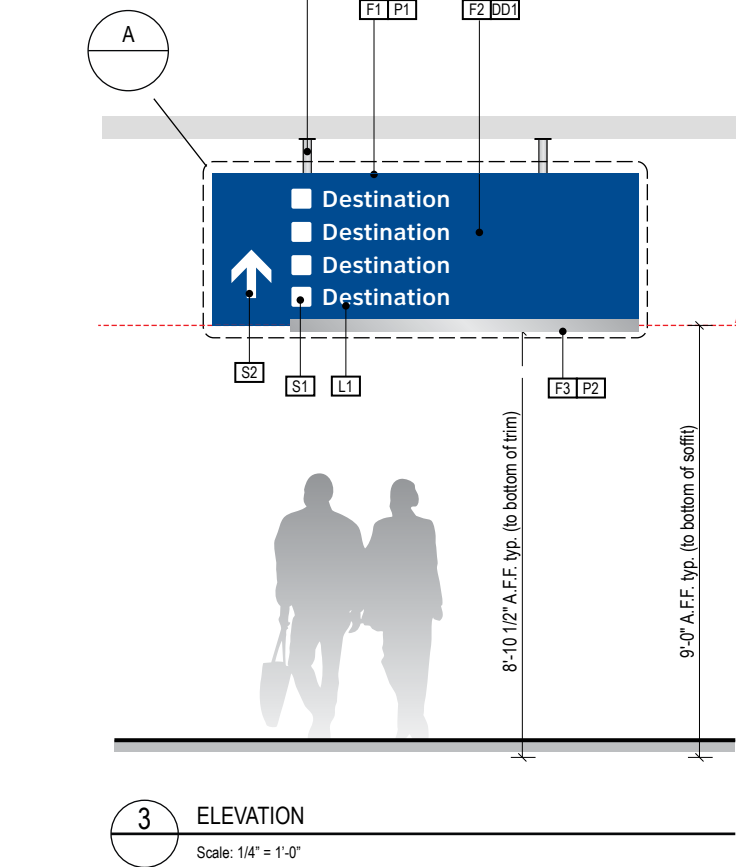
## FABRICATION INTENT NOTES

F1	<p>SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal exit; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated aluminum sign mounting frame with tapered side end cover panels, attached with aluminum pin and clip system; power feed/inputs hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish</p>
F2	<p>DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 70nit and 100nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.</p>
F3	<p>TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish</p>
F4	<p>MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners</p>

<b>L1</b>	Typeface: font = ClearviewText Medium
<b>S1</b>	Universal Symbols: AIGA style symbol artwork
<b>S2</b>	Arrow(s): use only official DFW Airport wayfinding arrow artwork VINYL (FILM):
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<b>V2</b>	White: 3M 7725-20 Opaque Matte White
<b>V3</b>	Skylink Yellow: 3M 7725-114 Enamel Receptive

PAINT:  
Blue: Powder coated to match 3M EC 7725-37, satin finish  
Silver: MAP paint # MP30136, satin finish

DIGITAL DISPLAY:  
Blue: Hexidecimal - 001C71; R-0 G-28 B-113



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ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	A.3D	DIRECTIONAL	FASCIA MOUNT	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
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  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

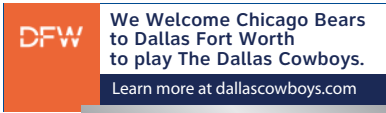
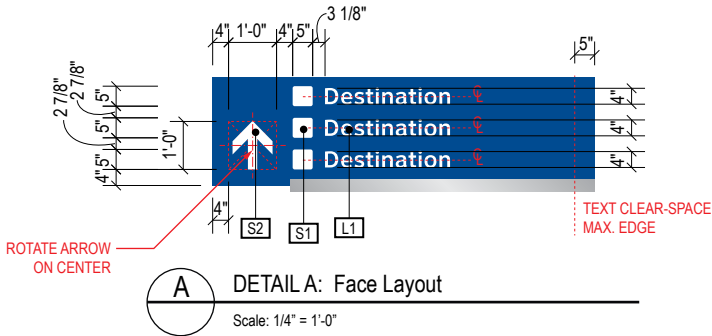
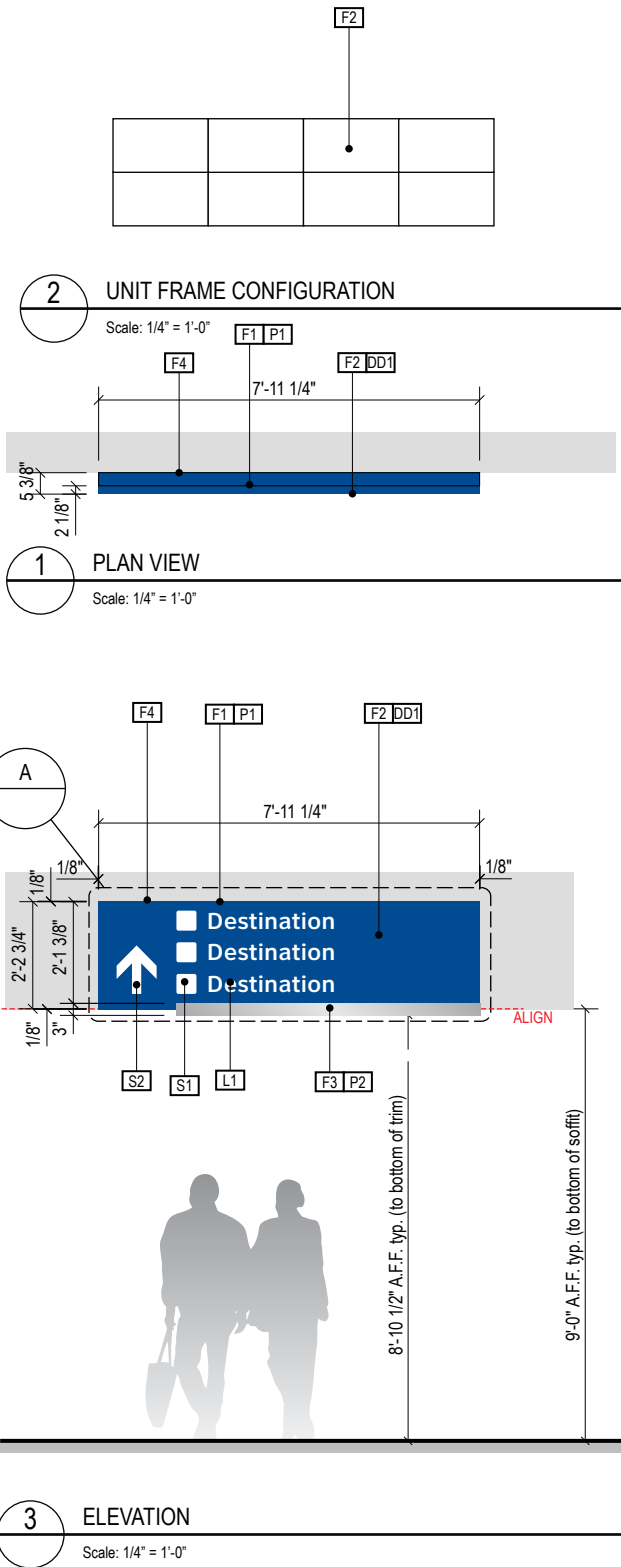
- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAS 23.81" X 13.39"; Dot pitch – 1.56mm; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAS unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

**GRAPHICS / COLORS / DECORATION NOTES**

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW Airport wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

**PAINT:**

- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113



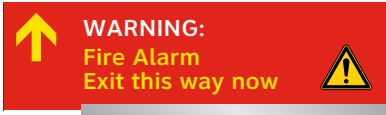
Sample City Message Layout

**ATTENTION:**  
All flights have been grounded for approximately 2 hours due to high wind warnings.

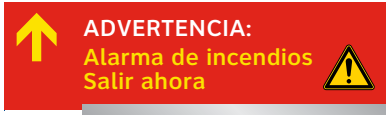
Sample Passenger Message



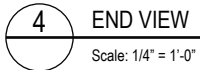
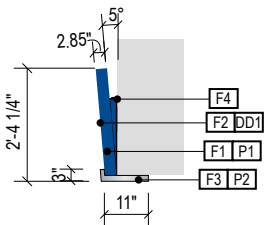
Sample Retail Directional



Sample Emergency Layout



Sample Emergency Spanish Layout



Project/Document Title:



DALLAS  
FORT WORTH  
INTERNATIONAL  
AIRPORT

**DIGITAL SIGNAGE  
STANDARDS AND GUIDELINES**

Prepared by:



**LOCHNER**  
12001 N. Central Expressway  
Suite 1050  
Dallas, TX 75243

Issue Date: 10.02.2019

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**3.2 SIGN TYPES**  
**3.2.1 DIRECTIONALS**

PAGE

3-4

ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
INTERNAL	B.1D	DIRECTIONAL	SUSPENDED	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, materials, types and finishes, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar materials are in contact, always separate contact surfaces prior to assembly for installation with the necessary protective coatings to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning, Department of Wayfinding Architecture Design Consultants prior to type review, prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and color calibration. RGB color displays refer to color system used to describe final finish samples for accurate reference.
  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

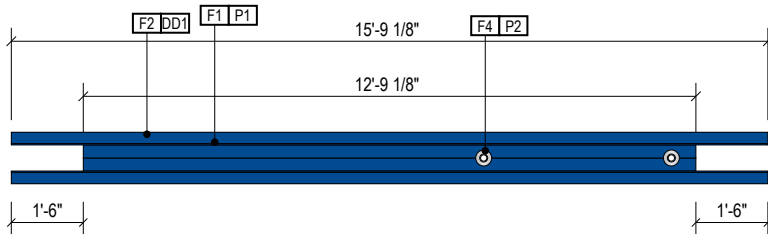
- F1** SIGN CABINET/FRAME: modular fabricated internal illuminated edge-lit sign module cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; removable sign face and light modules; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels, attached with aluminum pin and clip system; power feed/units hidden behind
- F2** mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** SIGN FACE: fabricated sign face assembly module constructed of extruded aluminum frame and concealed
- F3** internal welds; faces are 3/16" white acrylic with 1st surface applied V1 vinyl film, graphics reversed out of blue (white is exposed white acrylic cut-thru blue film); faces illuminated
- F4** with light panel assembly using LED edge-lit clear inscribed acrylic diffuser and self-contained technology (including electronics, extruded frame and diffuser)
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point; paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

**GRAPHICS / COLORS / DECORATION NOTES**

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive
- PAINT:**
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

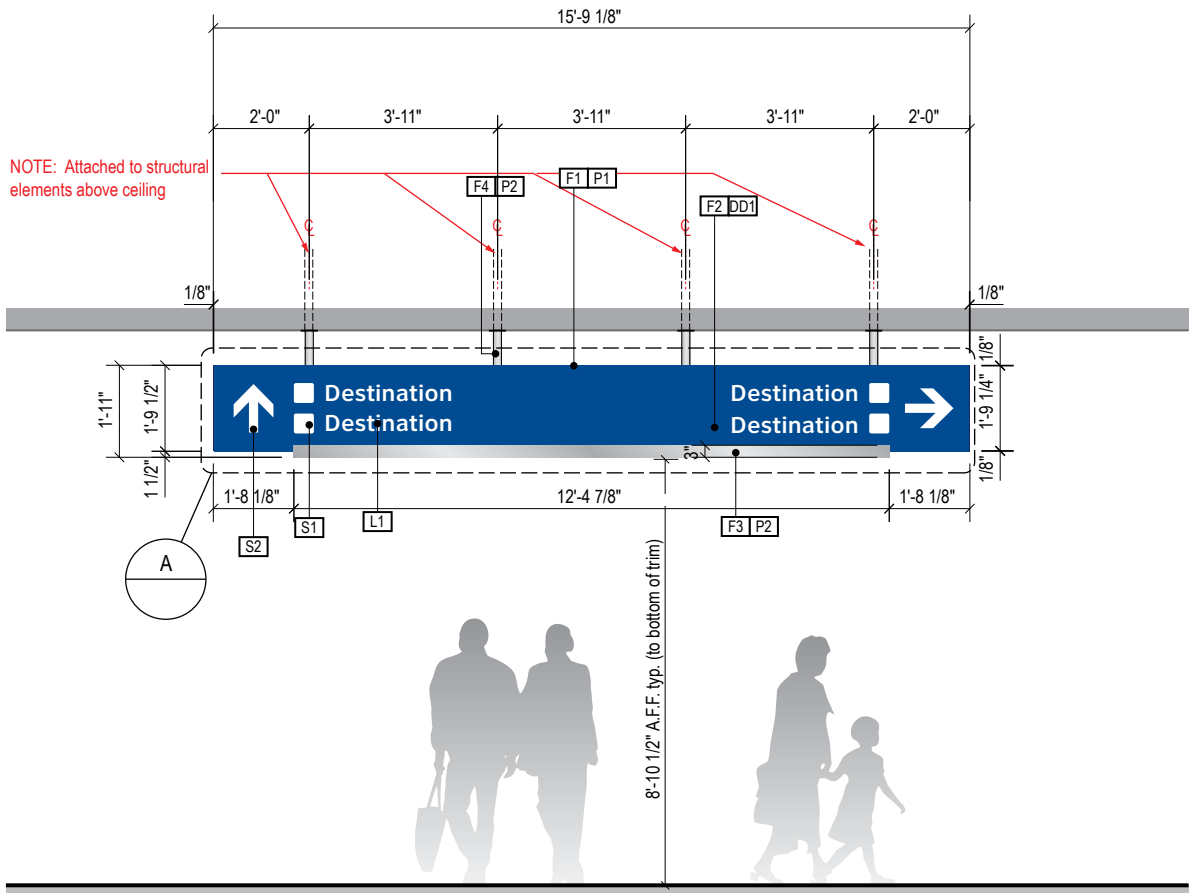
**2 UNIT FRAME CONFIGURATION**

Scale: 1/4" = 1'-0"



**1 PLAN VIEW**

Scale: 1/4" = 1'-0"

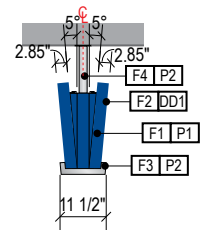


**2 ELEVATION BOTH SIDES**

Scale: 1/4" = 1'-0"

**3 END VIEW**

Scale: 1/4" = 1'-0"



**4 SAMPLE LAYOUTS**

Scale: 1/4" = 1'-0"



Sample DFW Message Layout



Sample Retail Directional

**ATTENTION:**  
All flights have been grounded for approximately 2 hours due to high wind warnings.

Sample Passenger Message



Sample Emergency Layout with Spanish

Project/Document Title:



**DIGITAL SIGNAGE  
STANDARDS AND GUIDELINES**

Prepared by:



**LOCHNER**  
12001 N. Central Expressway  
Suite 1050  
Dallas, TX 75243

Issue Date: 10.02.2019

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**3.2 SIGN TYPES**

**3.2.1 DIRECTIONALS**

PAGE

**3-5**



ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	B.2D	DIRECTIONAL	FASCIA MOUNT	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural/sign support elements, materials, types, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the fabricator. The fabricator shall ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar materials are in contact, always separate contact surfaces prior to assembly by installation with the necessary protective coatings to prevent galvanic corrosion.
  - Final fabrication methods, quality and finish to be reviewed and approved by DFW Airport Planning, Design and wayfinding architecture Design Consultants. The project type reviews prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and/or electronic RGB color displays. Refer to color system swatches and/or final finish samples for accurate reference.
  - Messages shown here are general placeholder only. See graphic message schedule for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

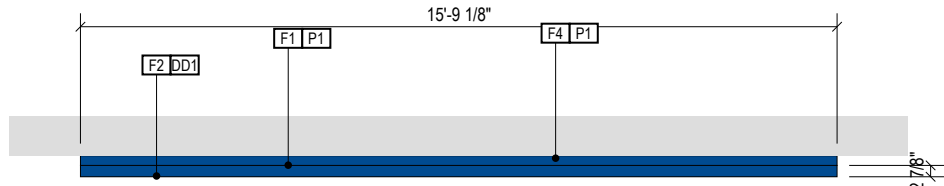
- F1** SIGN CABINET: The main structure is composed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal extrusion. Extruded aluminum is 6063-T6 and cast aluminum is 356-T6. Concealed internal welds are ground to a smooth finish. The sign cabinet is fabricated from extruded aluminum support frame with welded fluted corners and slotted mounting holes to accept sign frame with process holes to back for wall mounting. Concealed exposed surfaces of sign cabinet support frame mounting frame to match frame with tapered side end cover panels, attached with aluminum pin and clip system; power feed/units hidden behind as per the unit frame attachment method requirements.
- F2** MOUNTING: mount to wall structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); paint all exposed surfaces to match P2, satin finish.
- F3** CONSTRUCTION: extruded aluminum frame and concealed internal welds; faces use of 1/8" white acrylic with cast surface applied P1 vinyl film, graphics reversed out of blue (white is exposed white acrylic cut-thru blue film); faces illuminated with LED lighting, mounted to wall structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); paint all exposed surfaces to match P2, satin finish.
- F4** MOUNTING: mount to wall structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); paint all exposed surfaces to match P2, satin finish.

**GRAPHICS / COLORS / DECORATION NOTES**

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive
- PAINT:**
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

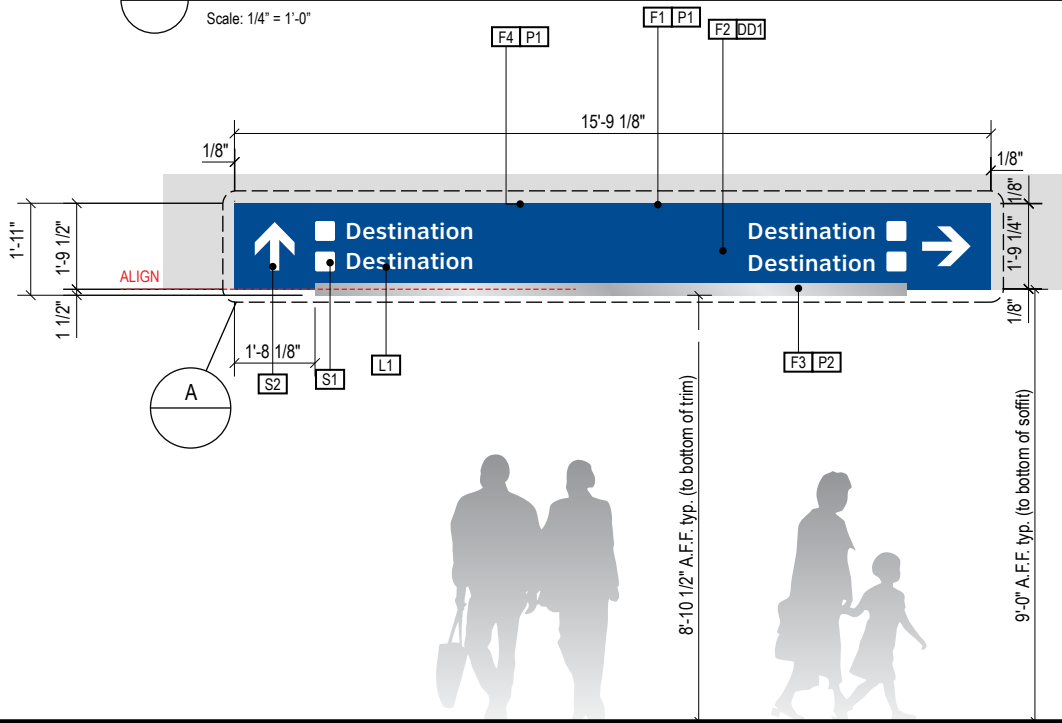
**2 UNIT FRAME CONFIGURATION**

Scale: 1/4" = 1'-0"



**1 PLAN VIEW**

Scale: 1/4" = 1'-0"

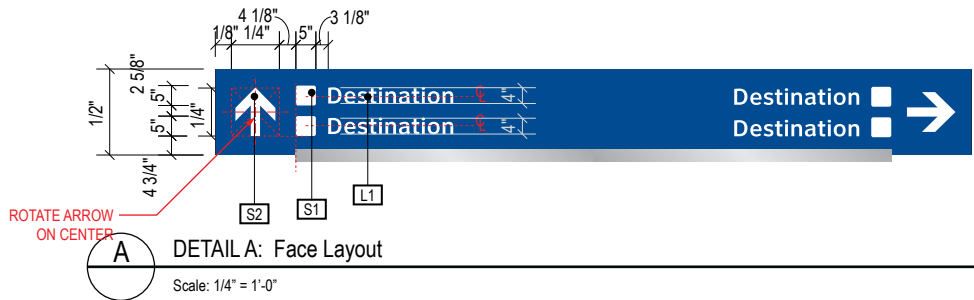


**2 ELEVATION**

Scale: 1/4" = 1'-0"

**3 END VIEW**

Scale: 1/4" = 1'-0"



Sample City Message Layout



Sample Passenger Message



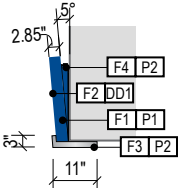
Sample Retail Directional



Sample Emergency Layout with Spanish

**4 SAMPLE LAYOUTS**

Scale: 1/4" = 1'-0"



**WARNING:**

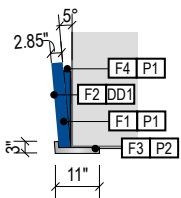
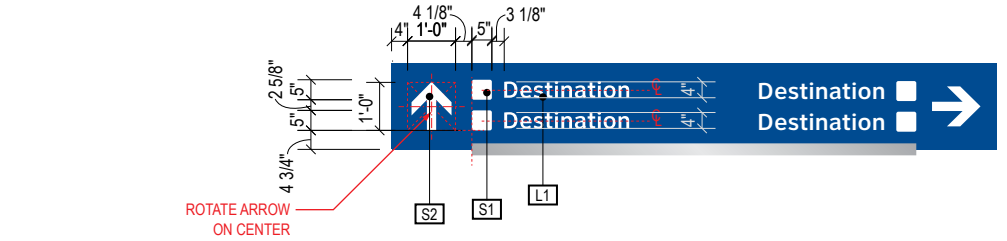
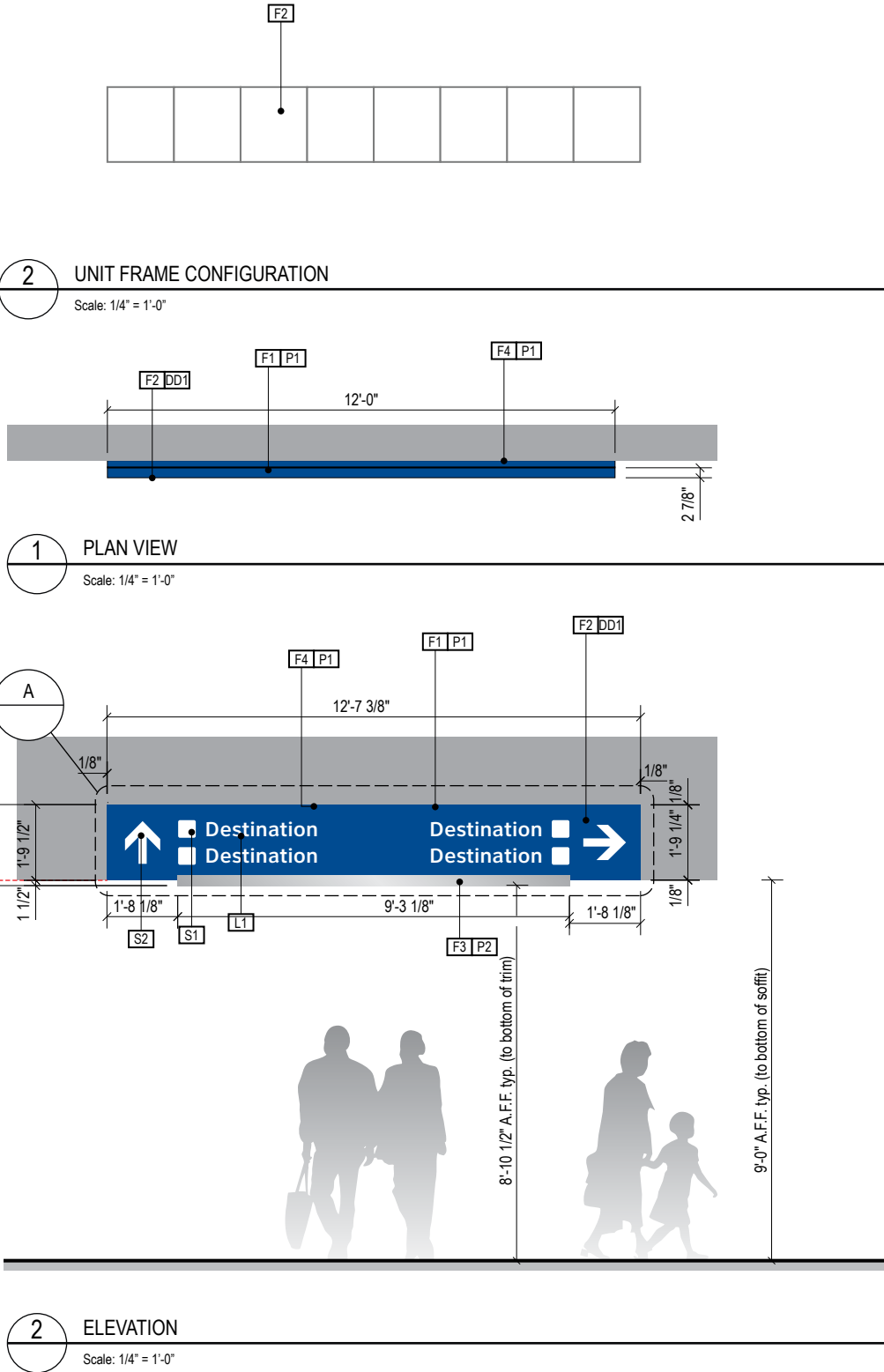
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ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	C.1D	DIRECTIONAL	FASCIA MOUNT	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

- FABRICATION INTENT NOTES**
- [F1]** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- [F2]** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- [F3]** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- [F4]** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

- GRAPHICS / COLORS / DECORATION NOTES**
- [L1]** Typeface: font = ClearviewText Medium
- [S1]** Universal Symbols: AIGA style symbol artwork
- [S2]** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- [V1]** Blue: 3M EC 7725-37 Sapphire Blue
- [V2]** White: 3M 7725-20 Opaque Matte White
- [V3]** Skylink Yellow: 3M 7725-114 Enamel Receptive
- PAINT:**
- [P1]** Blue: Powder coated to match 3M EC 7725-37, satin finish
- [P2]** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- [DD1]** Blue: Hexidecimal - 001C71; R-0 G-28 B-113



**3 END VIEW**  
Scale: 1/4" = 1'-0"



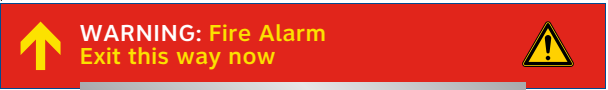
Sample City Message Layout



Sample Retail Message Layout



Sample Passenger Message



Sample Emergency Layout with Spanish

**4 SAMPLE LAYOUTS**  
Scale: 1/4" = 1'-0"

ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	C.2D	DIRECTIONAL	SUSPENDED	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

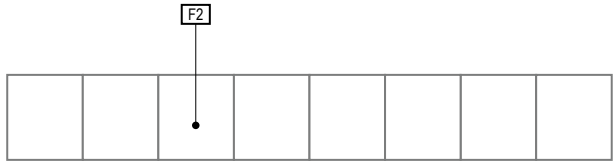
- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal xtd; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels, attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

**GRAPHICS / COLORS / DECORATION NOTES**

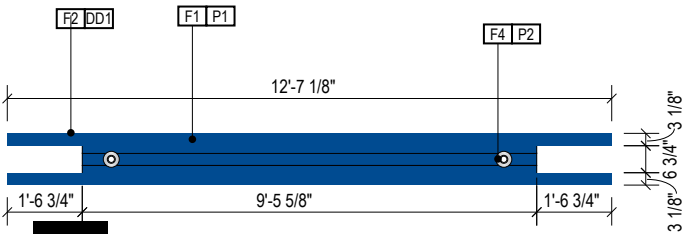
- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

- PAINT:**
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

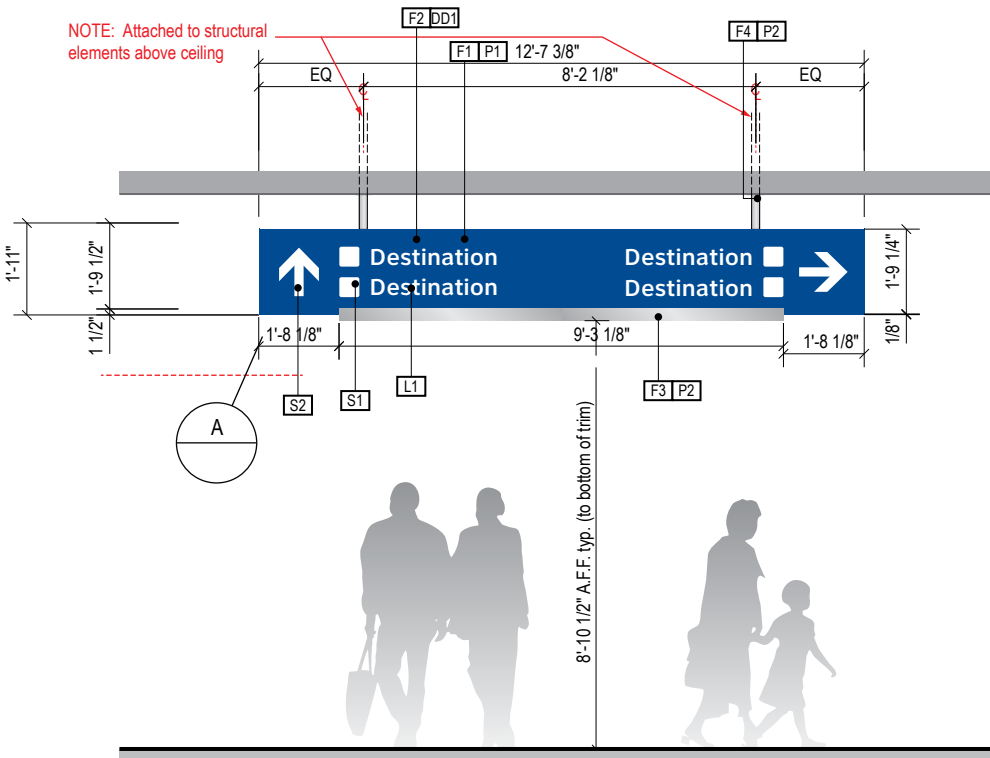
- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113



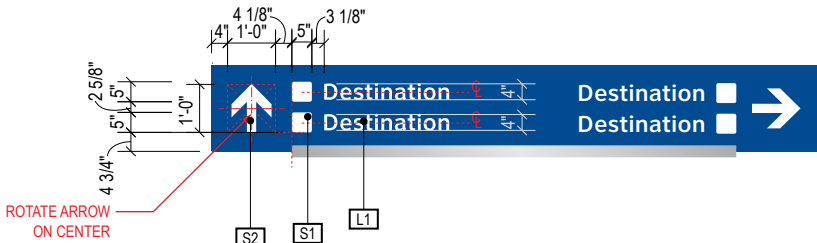
**2 UNIT FRAME CONFIGURATION**  
Scale: 1/4" = 1'-0"



**1 PLAN VIEW**  
Scale: 1/4" = 1'-0"



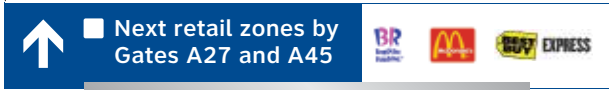
**2 ELEVATION BOTH SIDES**  
Scale: 1/4" = 1'-0"



**A DETAIL A: Face Layout**  
Scale: 1/4" = 1'-0"



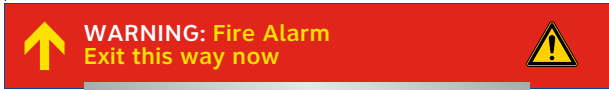
Sample City Message Layout



Sample Retail Message Layout



Sample Passenger Message



Sample Emergency Layout with Spanish

**4 SAMPLE LAYOUTS**  
Scale: 1/4" = 1'-0"

**3 END VIEW**  
Scale: 1/4" = 1'-0"

Project/Document Title:



DALLAS  
FORT WORTH  
INTERNATIONAL  
AIRPORT

**DIGITAL SIGNAGE  
STANDARDS AND GUIDELINES**

Prepared by:



**LOCHNER**  
12001 N. Central Expressway  
Suite 1050  
Dallas, TX 75243

Issue Date: 10.02.2019

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**3.2 SIGN TYPES**  
**3.2.1 DIRECTIONALS**

PAGE

3-8

ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
INTERNAL	C.3D	DIRECTIONAL	FASCIA MOUNT	Overhead Directional

- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

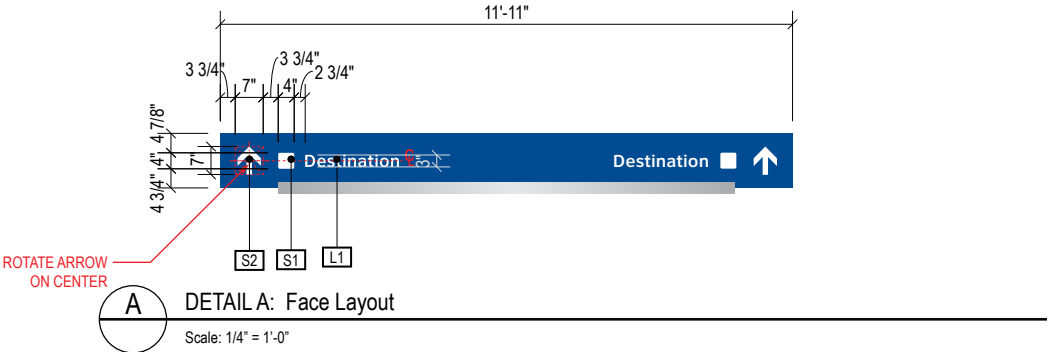
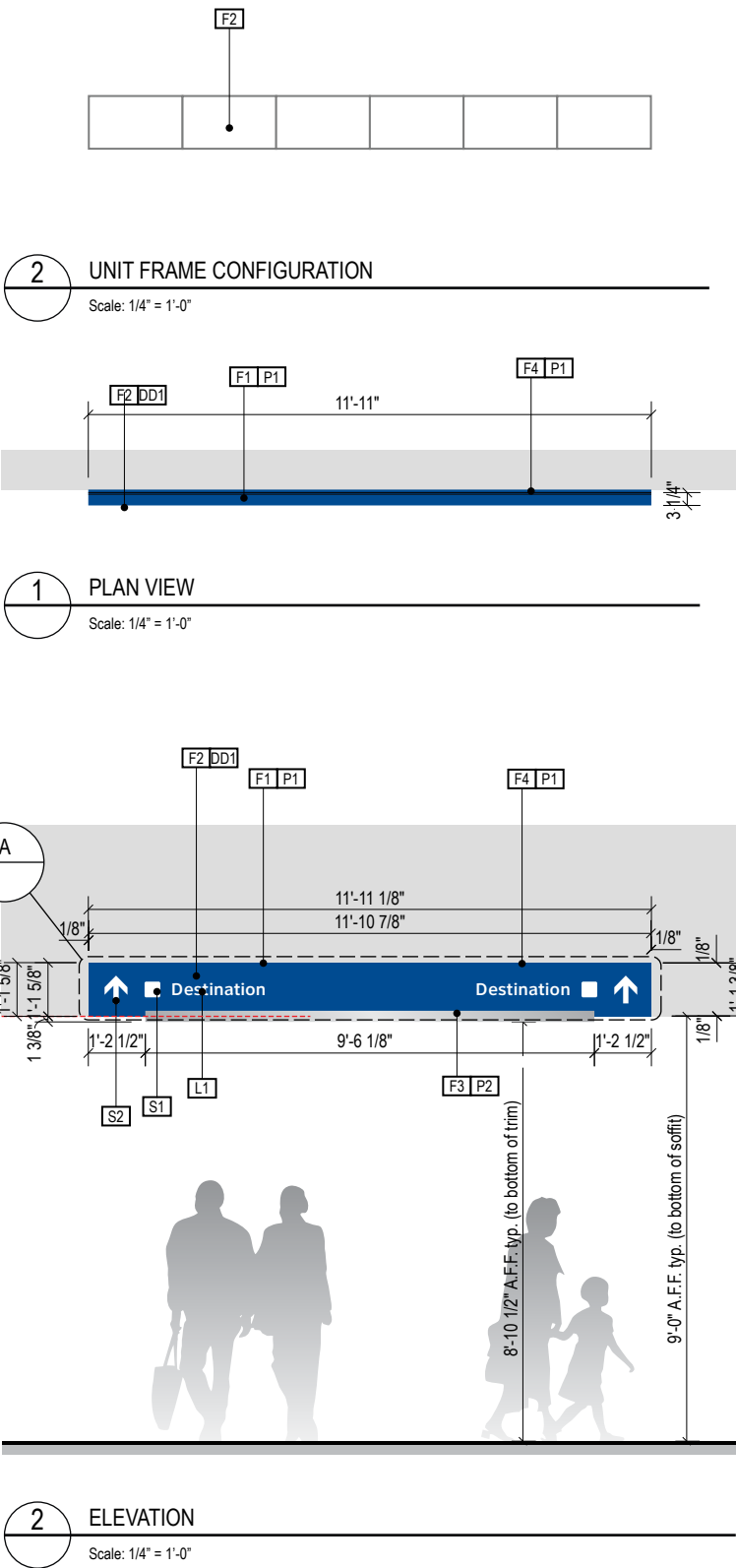
- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAS 23.81" X 13.39"; Dot pitch – 1.56mm; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAS unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

**GRAPHICS / COLORS / DECORATION NOTES**

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW Airport wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

**PAINT:**

- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

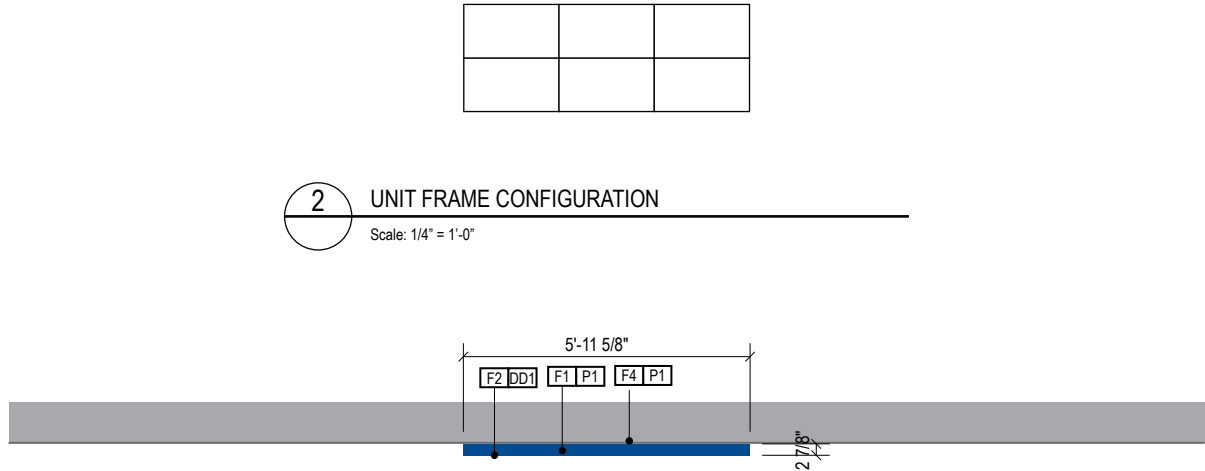


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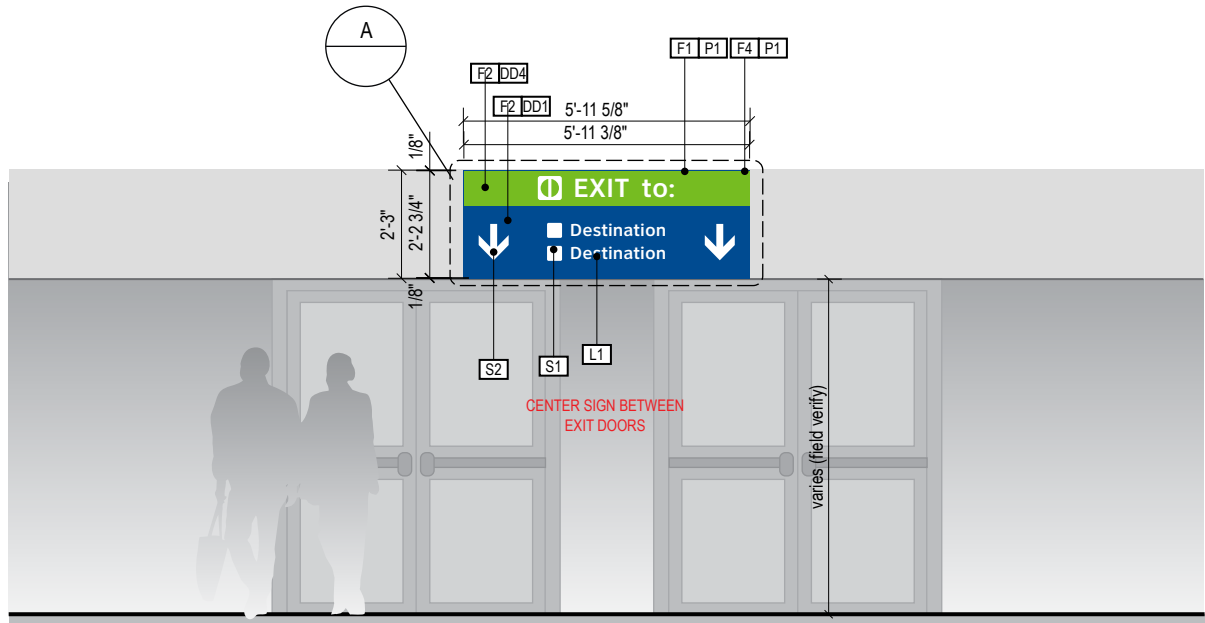


ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	C.4D	DIRECTIONAL	FASCIA MOUNT	Exit Vestibule Directional - Fascia Mounted



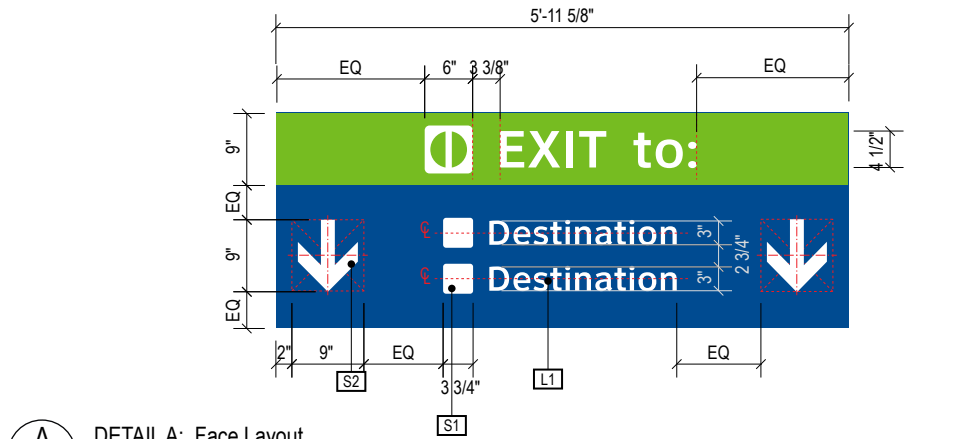
2 UNIT FRAME CONFIGURATION  
Scale: 1/4" = 1'-0"

1 PLAN VIEW  
Scale: 1/4" = 1'-0"



NOTE: Architectural conditions vary per install location; field verify

2 ELEVATION  
Scale: 1/4" = 1'-0"

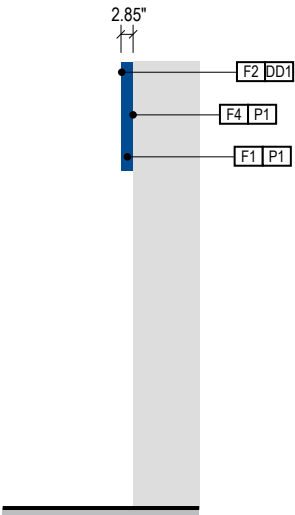


A DETAIL A: Face Layout  
Scale: 1/4" = 1'-0"



Sample Emergency Layout

A SAMPLE LAYOUT  
Scale: 1/4" = 1'-0"



3 END VIEW  
Scale: 1/4" = 1'-0"

## GENERAL NOTES

- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
- Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

## FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAS 23.81" X 13.39"; Dot pitch ~ 1.56mm; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAS unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

## GRAPHICS / COLORS / DECORATION NOTES

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW Airport wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

### PAINT:

- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

### DIGITAL DISPLAY:

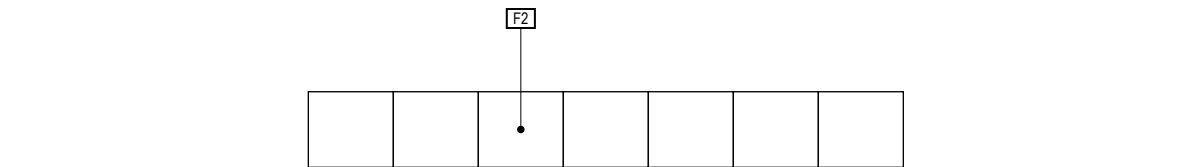
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113
- DD4** Light Green: Hexidecimal - 76BC21; R118 G-188 B-33

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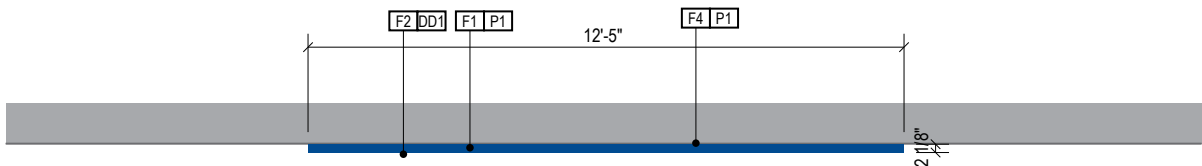
ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	H.2D	DIRECTIONAL	FASCIA MOUNT	Interior Vestibule Directional - Fascia Mounted



LG LAPE - 21.25 x18.89

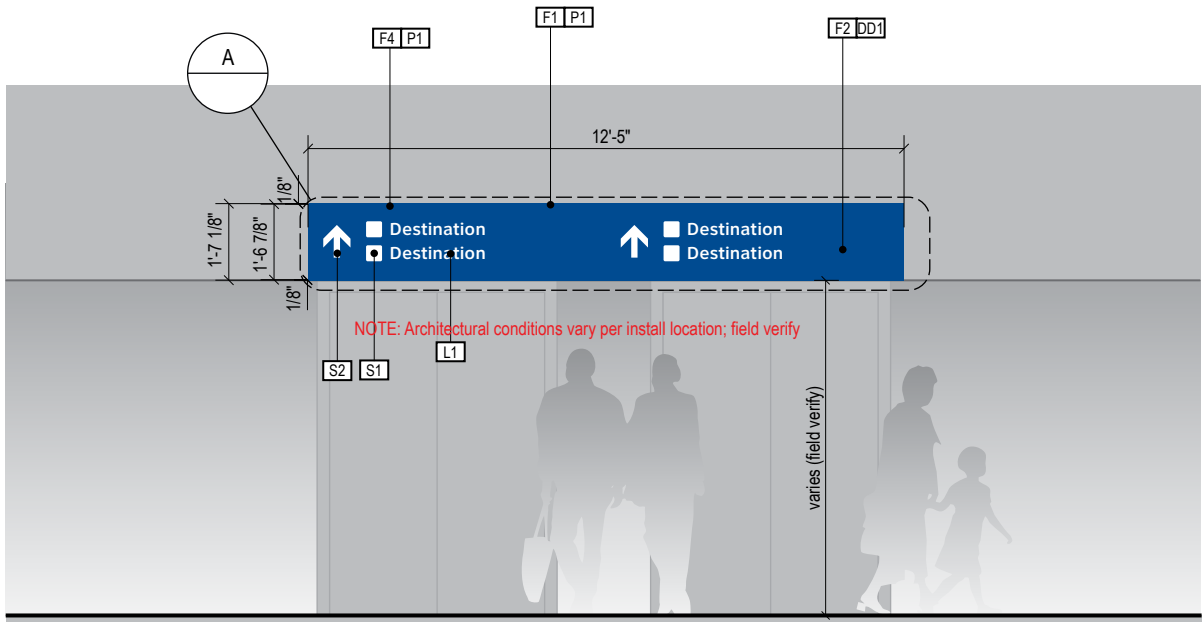
## 2 UNIT FRAME CONFIGURATION

Scale: 1/4" = 1'-0"



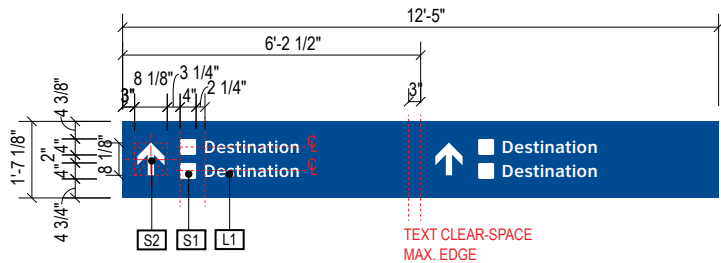
## 1 PLAN VIEW

Scale: 1/4" = 1'-0"



## 2 ELEVATION

Scale: 1/4" = 1'-0"



## A DETAIL A: Face Layout

Scale: 1/4" = 1'-0"



Sample City Message Layout



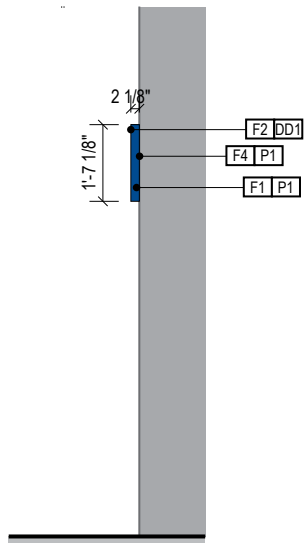
Sample Emergency Layout



Sample Passenger Message

## 4 SAMPLE LAYOUTS

Scale: 1/4" = 1'-0"



## 3 END VIEW

Scale: 1/4" = 1'-0"

### GENERAL NOTES

- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
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- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

### FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

### GRAPHICS / COLORS / DECORATION NOTES

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

- PAINT:**
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

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ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	H.3D	DIRECTIONAL	FASCIA MOUNT	Interior Vestibule Directional - Fascia Mounted

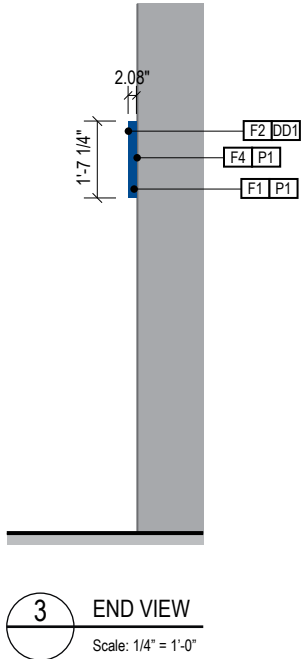
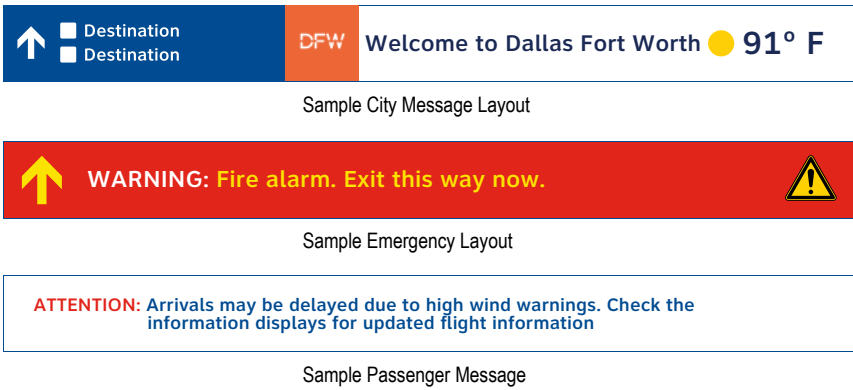
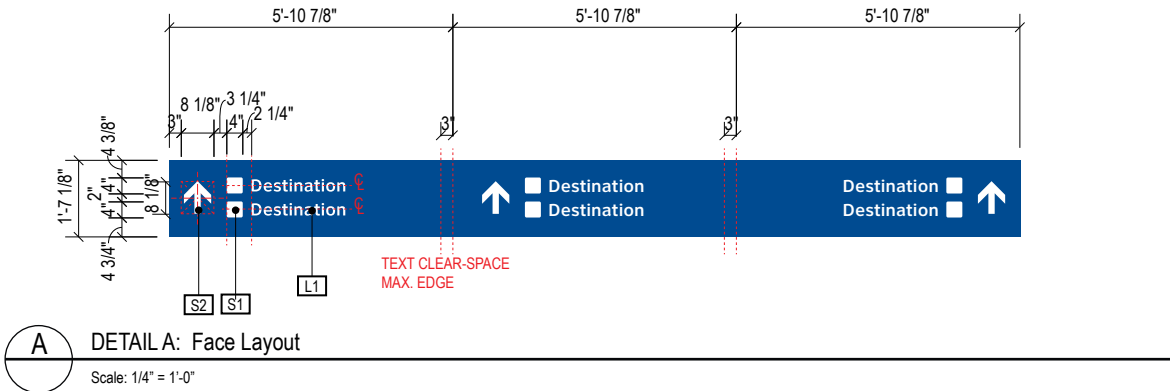
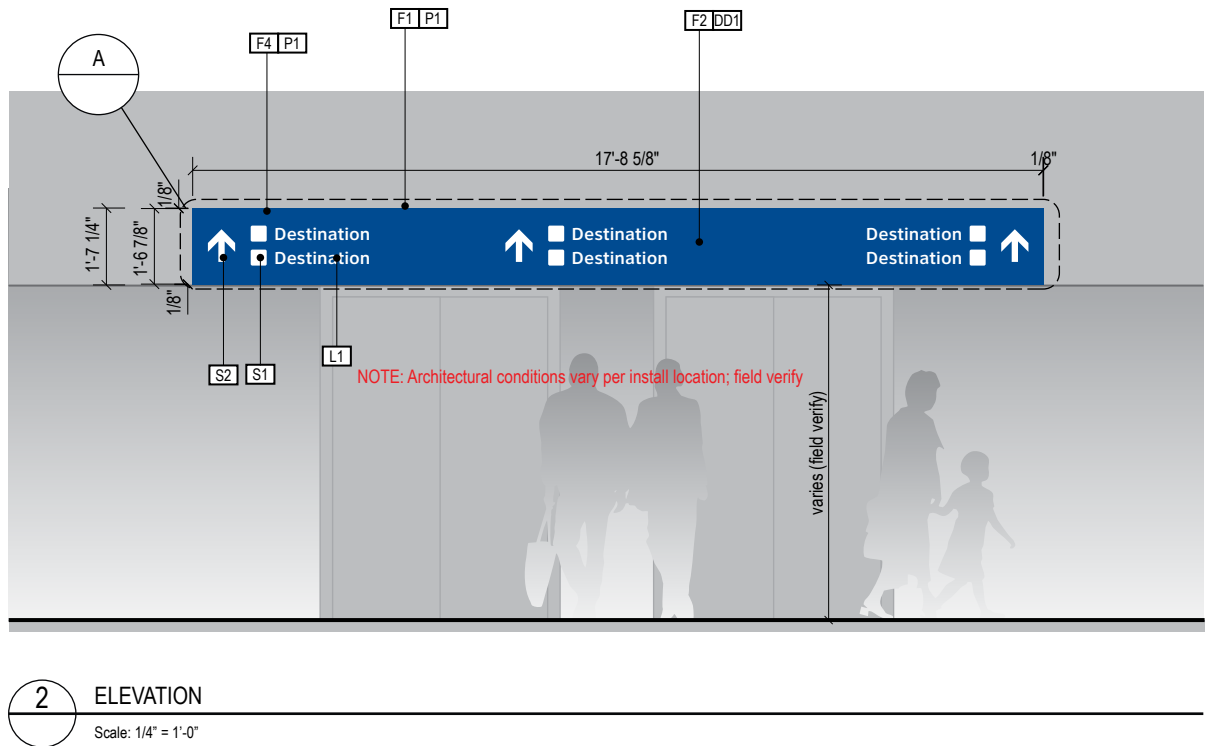
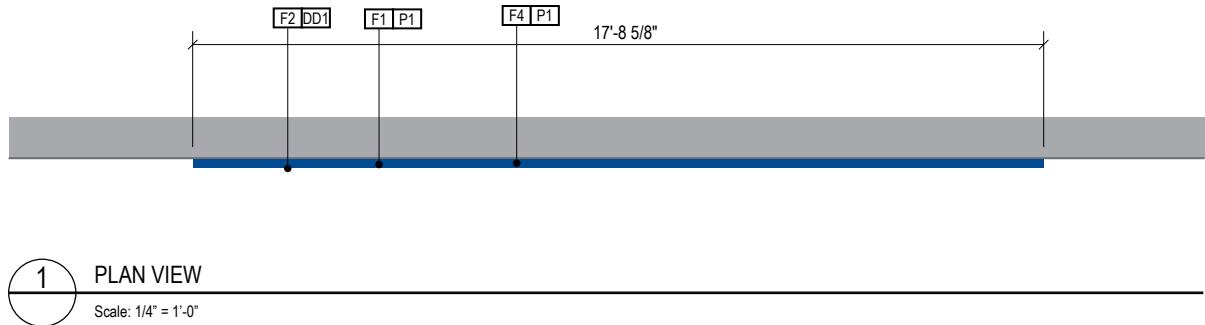
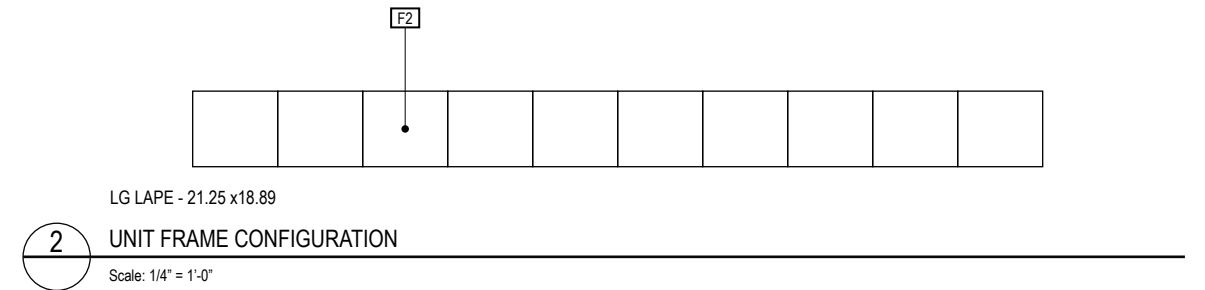
- GENERAL NOTES**
- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
  - Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

**FABRICATION INTENT NOTES**

- [F1]** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- [F2]** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- [F3]** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- [F4]** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

**GRAPHICS / COLORS / DECORATION NOTES**

- [L1]** Typeface: font = ClearviewText Medium
- [S1]** Universal Symbols: AIGA style symbol artwork
- [S2]** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- [V1]** Blue: 3M EC 7725-37 Sapphire Blue
- [V2]** White: 3M 7725-20 Opaque Matte White
- [V3]** Skylink Yellow: 3M 7725-114 Enamel Receptive
- PAINT:**
- [P1]** Blue: Powder coated to match 3M EC 7725-37, satin finish
- [P2]** Silver: MAP paint # MP30136, satin finish
- DIGITAL DISPLAY:**
- [DD1]** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

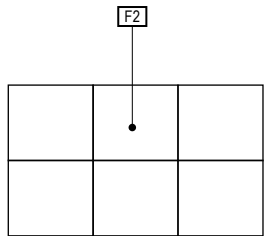


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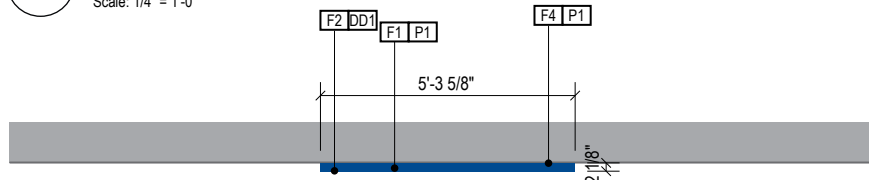


ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	H.4D	DIRECTIONAL	FASCIA MOUNT	Elevator Directional - Fascia Mounted



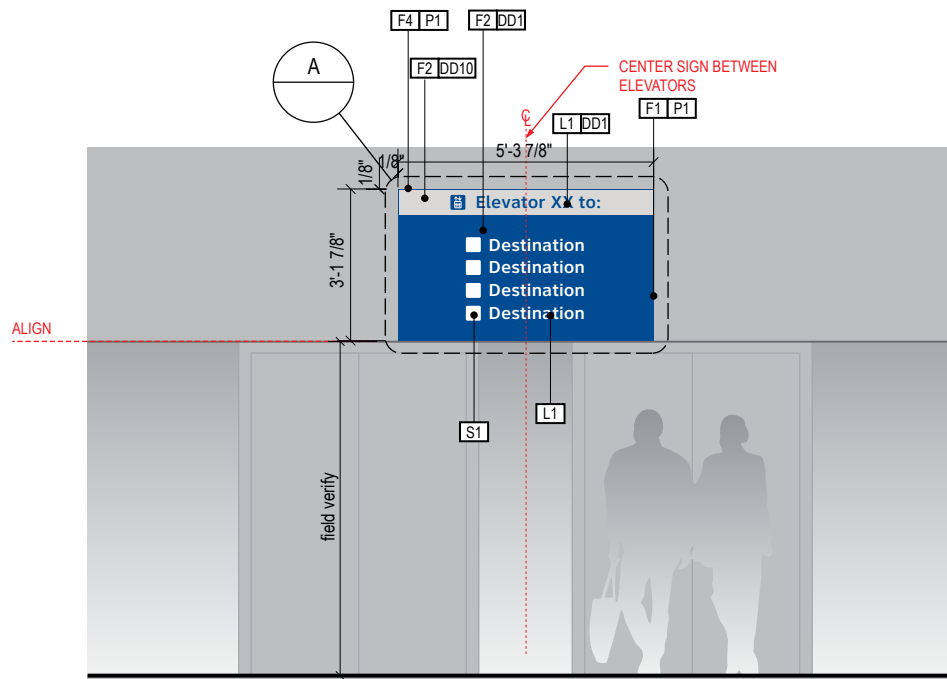
## 2 UNIT FRAME CONFIGURATION

Scale: 1/4" = 1'-0"



1 PLAN VIEW

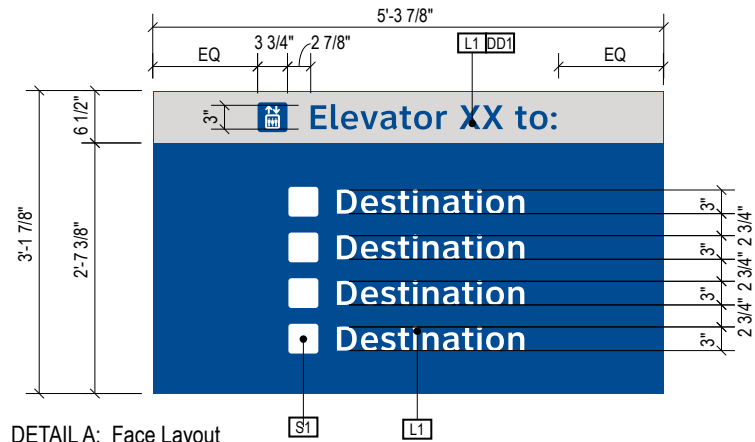
Scale: 1/4" = 1'-0"



NOTE: Architectural conditions vary per install location; field verify

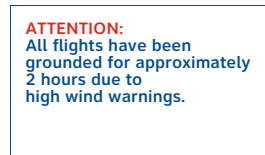
## 2 ELEVATION - DUAL ELEVATOR CONDITION

Scale: 1/4" = 1'-0"



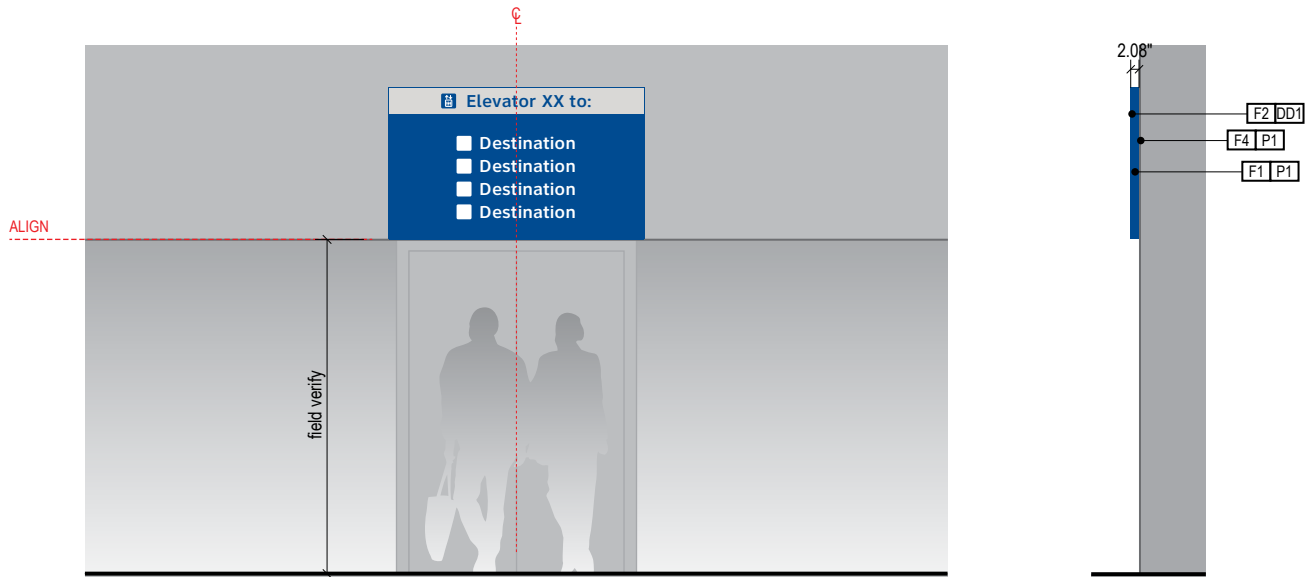
**A** DETAIL A: Face Layout

Scale: 1/4" = 1'-0"



**A** DETAIL A: Face Layout

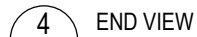
Scale: 1/4" = 1'-0"



NOTE: Architectural conditions vary per install location; field verify

### 3 ELEVATION - SINGLE ELEVATOR CONDITION

Scale:  $1/4" = 1'-0"$



Scale: 1/4" = 1'-0"

## GENERAL NOTES

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## FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch - 1.5; Brightness set to work with environment/lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attached to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

GRAPHICS / COLORS / DECORATION NOTES

- |                  |  |
|------------------|--|
| L1               | Typeface: font = ClearviewText Medium                    |
| S1               | Universal Symbols: AIGA style symbol artwork             |
| S2               | Arrow(s): use only official DFW wayfinding arrow artwork |
| VINYL (FILM):    |  |
| V1               | Blue: 3M EC 7725-37 Sapphire Blue                        |
| V2               | White: 3M 7725-20 Opaque Matte White                     |
| V3               | Skylink Yellow: 3M 7725-114 Enamel Receptive             |
| PAINT:           |  |
| P1               | Blue: Powder coated to match 3M EC 7725-37, satin finish |
| P2               | Silver: MAP paint # MP30136, satin finish                |
| DIGITAL DISPLAY: |  |
| DD1              | Blue: Hexidecimal - 001C71; R-0 G-28 B-113               |
| DD10             | Light Gray - Hexidecimal - E6E7E8; R-230 G-231 B-232     |

[illegible]

## FABRICATION INTENT NOTES

- |    |  |
|----|--|
| F1 | <b>SIGN CABINET/FRAME:</b> Fabricated sign cabinet/consolidated of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated aluminum sign mounting frame with tapered side end cover panels, attached with aluminum pin and clip system; power feed/lines hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish |
| F2 | <b>DIGITAL DISPLAY:</b> LG LAPE 18.89" X 21.25"; Dot pitch - 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.   |
| F3 | <b>TRIM:</b> .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish  |
| F4 | <b>MOUNTING:</b> mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 316" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners   |

## GRAPHICS / COLORS / DECORATION NOTES

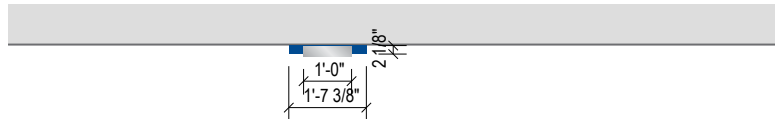
- |                      |  |
|----------------------|--|
| <b>L1</b>            | Typeface: font = ClearviewText Medium                    |
| <b>S1</b>            | Universal Symbols: AIGA style symbol artwork             |
| <b>S2</b>            | Arrow(s): use only official DFW wayfinding arrow artwork |
| <b>VINYL (FILM):</b> |  |
| <b>V1</b>            | Blue: 3M EC 7725-37 Sapphire Blue                        |
| <b>V2</b>            | White: 3M 7725-20 Opaque Matte White                     |
| <b>V3</b>            | Skylink Yellow: 3M 7725-114 Enamel Receptive             |

**PAINT:**

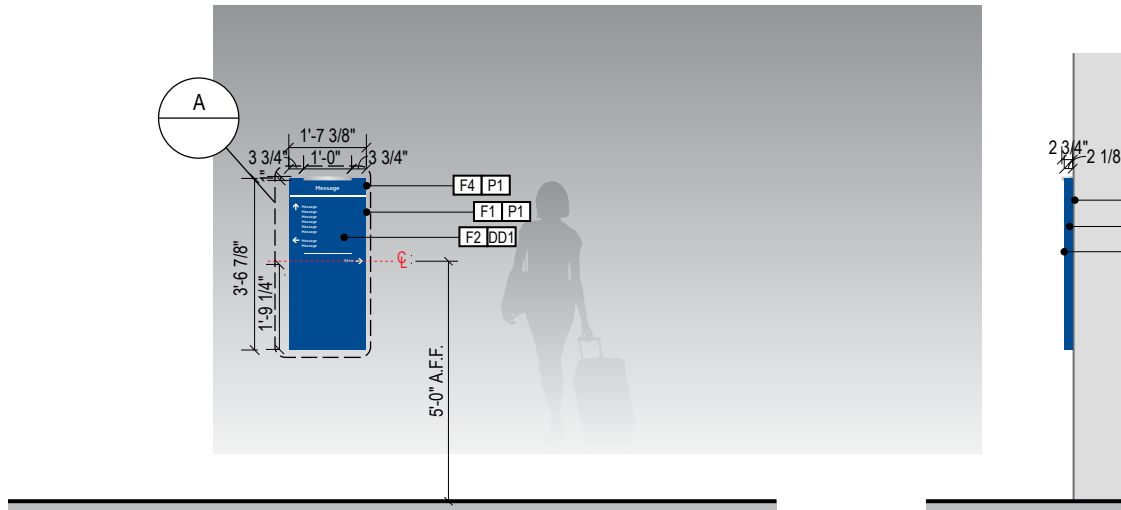
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

### DIGITAL DISPLAY

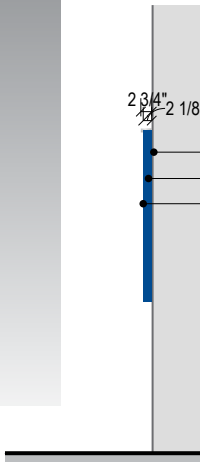
- DD10** Light Gray - Hexidecimal - E6E7E8; R-230 G-231 B-232



1 PLAN VIEW  
Scale:  $1/4" = 1'-0"$



2 ELEVATION  
Scale: 1/4" = 1'-0"



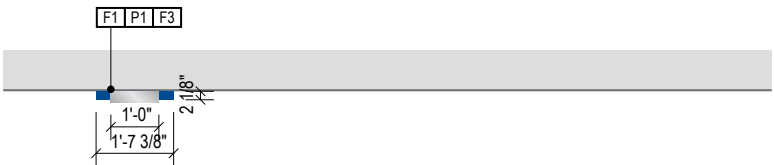
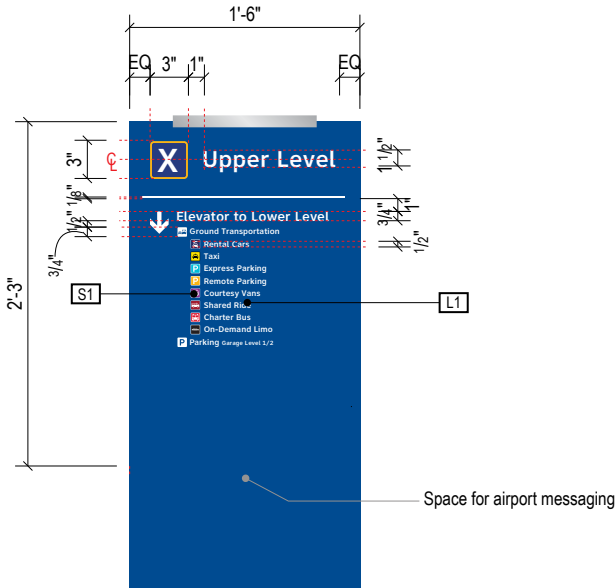
3 END VIEW  
Scale:  $\frac{1}{4}" = 1'-0"$

**DETAIL A: Face Layout**  
Scale: 3/4" = 1'-0"



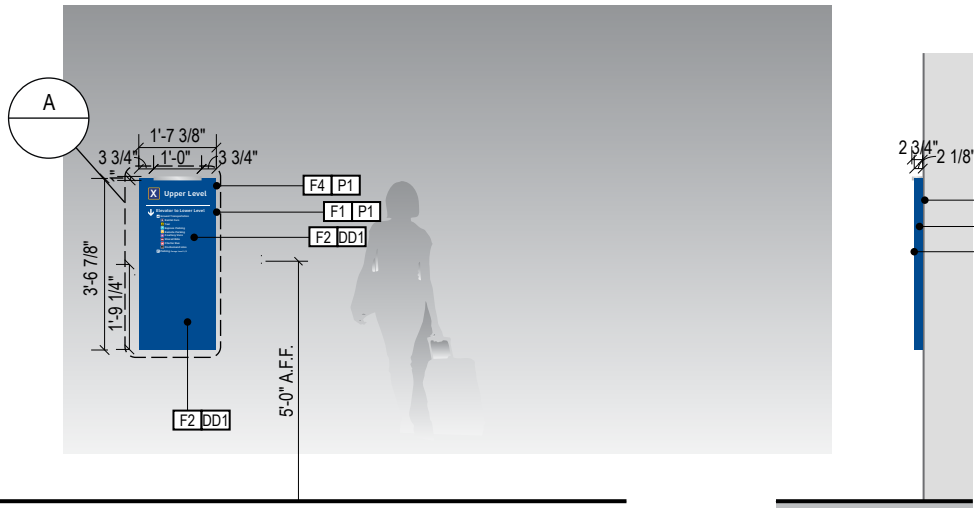
4 SAMPLE LAYOUTS

ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
DIGITAL	I.1bD	INFORMATIONAL	WALL MOUNT	Elevator Directory - Wall Mounted



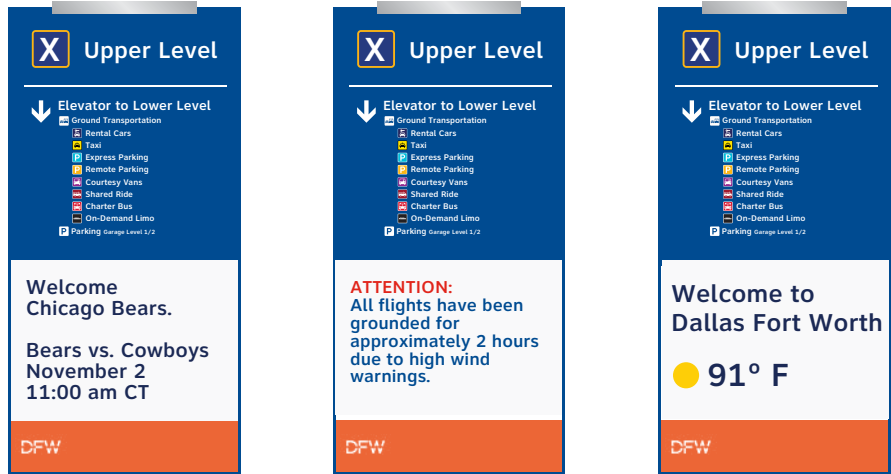
1 PLAN VIEW  
Scale: 1/4" = 1'-0"

A DETAIL A: Face Layout  
Scale: 3/4" = 1'-0"



2 ELEVATION  
Scale: 1/4" = 1'-0"

3 END VIEW  
Scale: 1/4" = 1'-0"



4 SAMPLE LAYOUTS  
Scale: 1/4" = 1'-0"

## GENERAL NOTES

- All final design, engineering, and amount/sizing of structural sign support elements, material types/thicknesses, dimensions, and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials, and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Fabricator within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit/finish to be reviewed and approved by DFW Airport Planning Department and wayfinding/architecture Design Consultants thru prototype reviews prior to final production run/installation processes (see Performance Specifications for details).
- Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

## FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch - 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

## GRAPHICS / COLORS / DECORATION NOTES

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
- V1** Blue: 3M EC 7725-37 Sapphire Blue
- V2** White: 3M 7725-20 Opaque Matte White
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

- PAINT:**
- P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
- P2** Silver: MAP paint # MP30136, satin finish

- DIGITAL DISPLAY:**
- DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113
- DD10** Light Gray - Hexidecimal - E6E7E8; R-230 G-231 B-232

Project/Document Title:



## DIGITAL SIGNAGE STANDARDS AND GUIDELINES

Prepared by:



**LOCHNER**  
12001 N. Central Expressway  
Suite 1050  
Dallas, TX 75243

Issue Date: 10.02.2019

REV. :  
REV. :  
REV. :  
REV.

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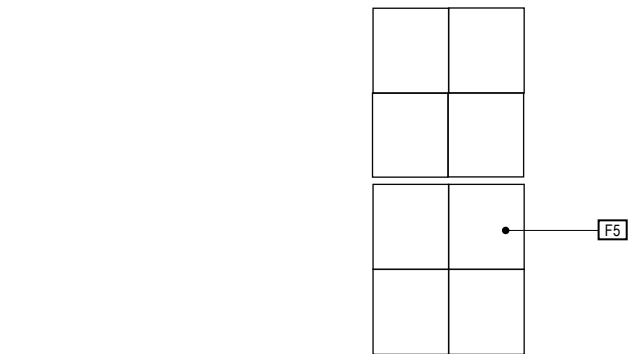
## 3.2 SIGN TYPES

### 3.2.1 DIRECTIONALS

PAGE

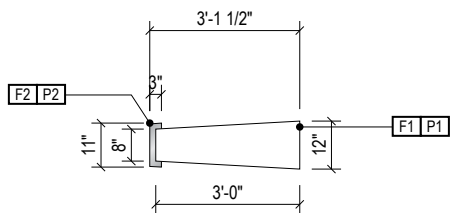
3-16

ILLUMINATION	SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION and USE
DIGITAL	D.1D	IDENTIFICATION	FREESTANDING	Gate ID Pylon - Freestanding



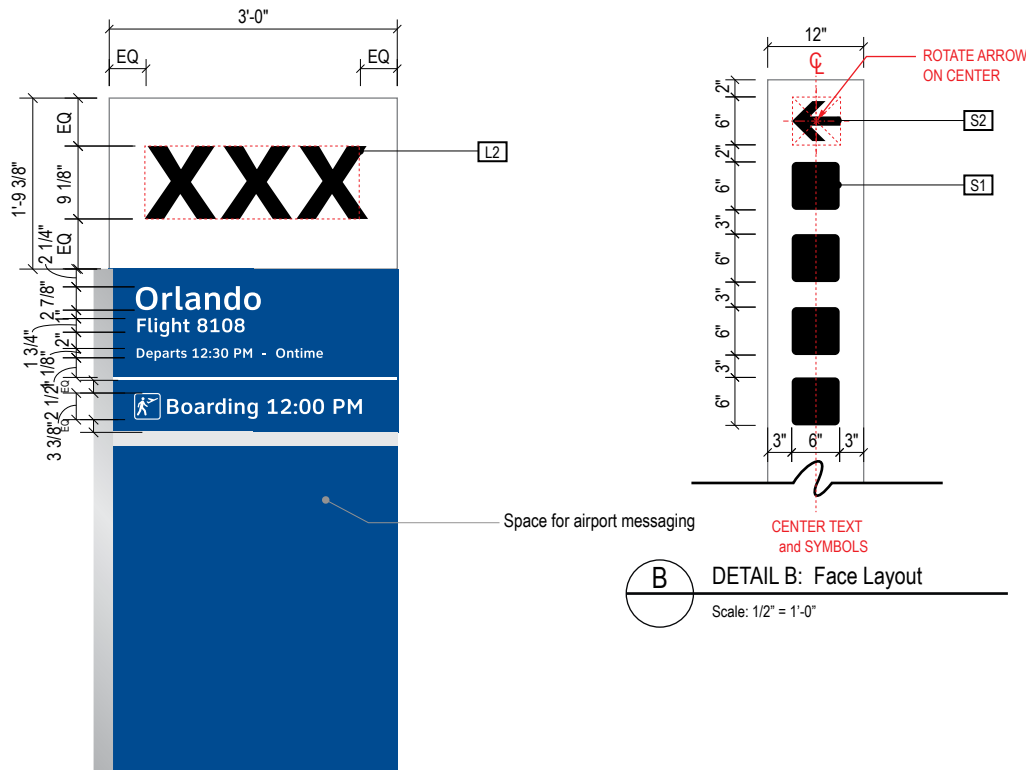
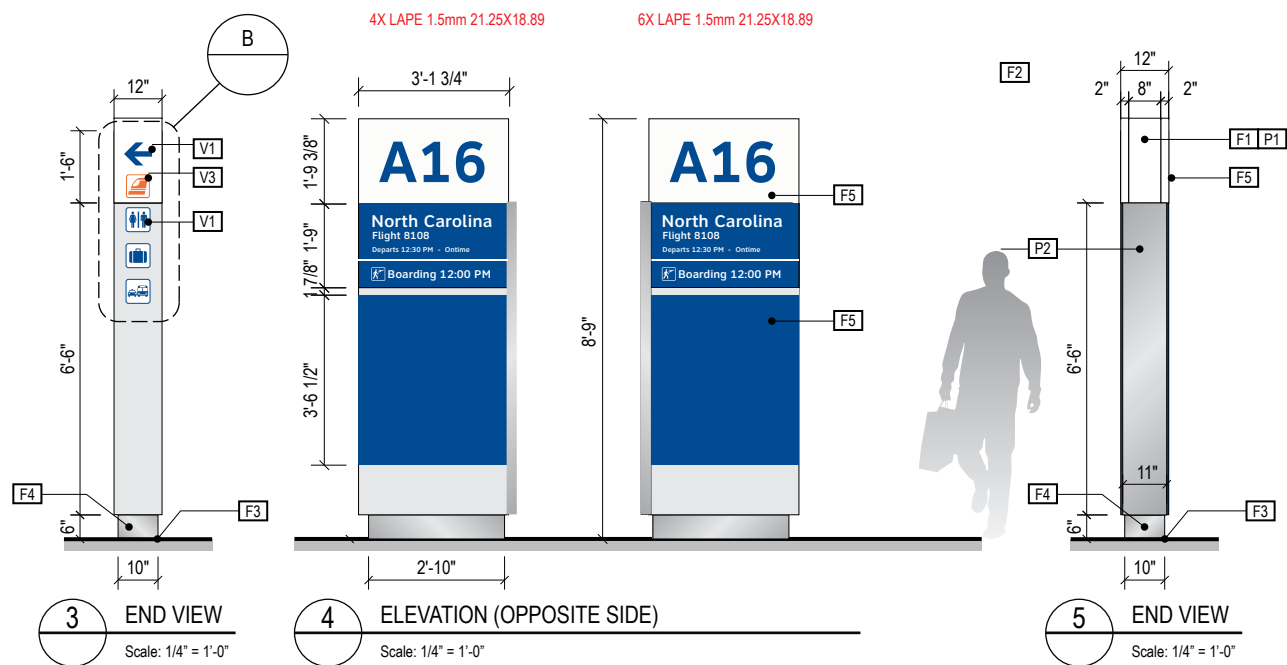
## 2 UNIT FRAME CONFIGURATION

Scale: 1/4" = 1'-0"



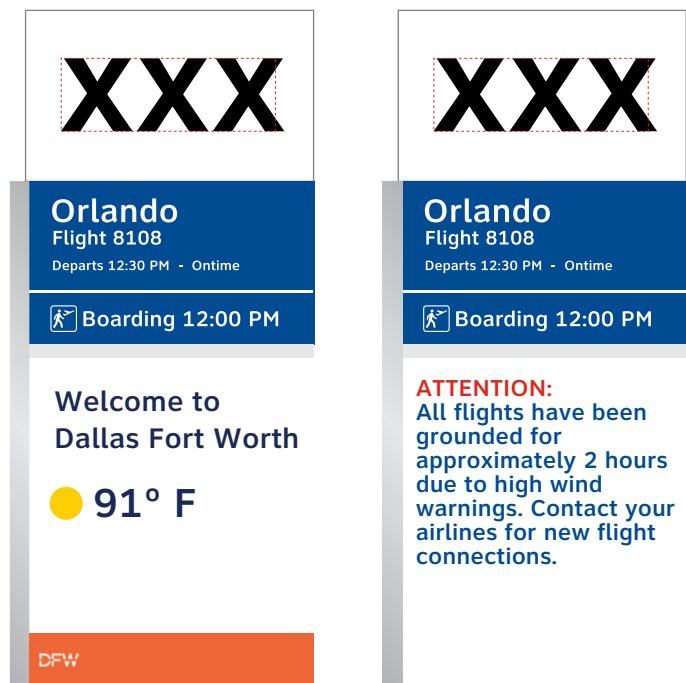
1 PLAN VIEW

Scale: 1/4" = 1'-0"



**A** DETAIL A: Face Layout

Scale: 1/2" = 1'-0"



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- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

## FABRICATION INTENT NOTES

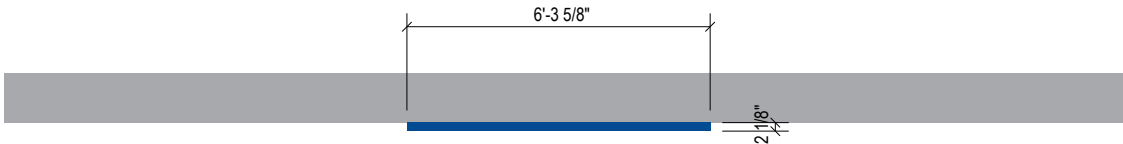
- |           |  |
|-----------|--|
| <b>F1</b> | <b>SIGN CABINET/FRAME:</b> freestanding, fabricated aluminum sign cabinet with digital display sign face, exposed surfaces of sign cabinet to match super white (matte). Top is painted, not coated.   |
| <b>F2</b> | <b>TRIM:</b> 0.125 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, clear coated finish (non-gloss)    |
| <b>F3</b> | <b>MOUNTING:</b> anchor to floor with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor) |
| <b>F4</b> | <b>INSET KICK:</b> Stainless steel inset with #4 horizontal brushed finish.  |
| <b>F5</b> | <b>DIGITAL DISPLAY:</b> LG LAPE 18.89" X 21.25"; Dot pitch ~ 1.5; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.                    |

GRAPHICS/COLORS/DECORATION NOTES

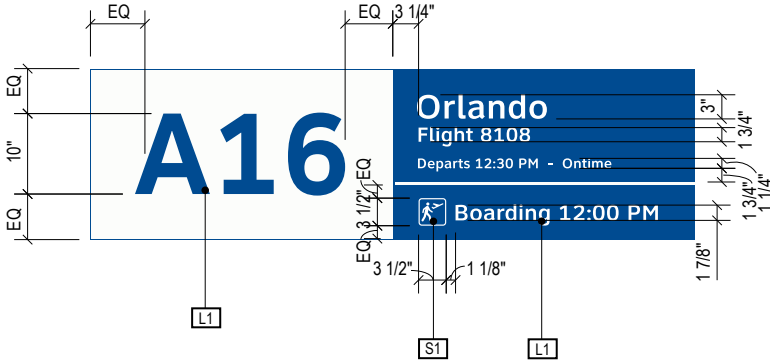
- L2** Typeface: font = Neue Haas Bold
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW Airport wayfinding arrow artwork V1
- V1** Blue Vinyl (FILM): 3M Sapphire blue, 3MEC7725-37
- V2** Orange text and stripe: 3M #44 Orange Vinyl
- V3** Skylink Yellow: 3M 7725-114 Enamel Receptive
- PAINT:**
- P1** White: Matthews Super White, matte finish
- P2** Silver: MAP paint # MP30136, clear coated finish (non-gloss)
- P3** Light Gray: Cool Gray 1c, MAP paint #MP07273, matte finish
- P4** Medium Gray: Matthews formulated paint color to match  
PMS Cool Gray 4c, matte finish
- P5** Orange: Ellis paint. Hy-Lux Extreme High Gloss Enamel 340 to  
match Pantone 166c, matte finish



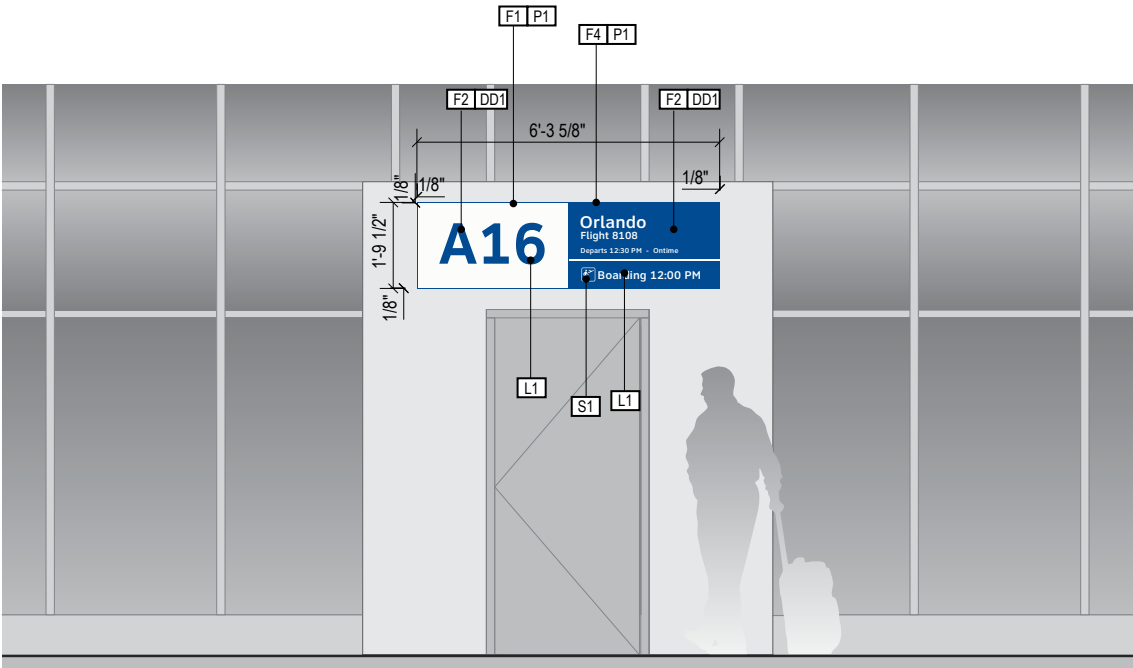
SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
F.4D	IDENTIFICATION	FASCIA MOUNT	Digital Gate Door ID - Fascia Mounted



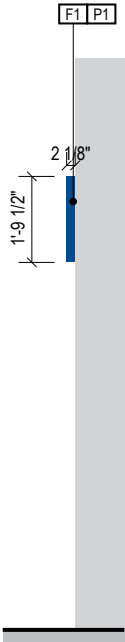
1 PLAN VIEW  
Scale: 1/4" = 1'-0"



A DETAIL A: Face Layout  
Scale: 1/2" = 1'-0"



2 ELEVATION  
Scale: 1/4" = 1'-0"



3 END VIEW  
Scale: 1/4" = 1'-0"

GENERAL NOTES

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- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

FABRICATION INTENT NOTES

- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
- F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch – 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
- F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
- F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

GRAPHICS / COLORS / DECORATION NOTES

- L1** Typeface: font = ClearviewText Medium
- S1** Universal Symbols: AIGA style symbol artwork
- S2** Arrow(s): use only official DFW wayfinding arrow artwork
- VINYL (FILM):**
  - V1** Blue: 3M EC 7725-37 Sapphire Blue
  - V2** White: 3M 7725-20 Opaque Matte White
  - V3** Skylink Yellow: 3M 7725-114 Enamel Receptive

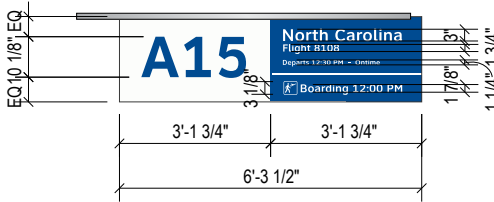
- PAINT:**
  - P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
  - P2** Silver: MAP paint # MP30136, satin finish

- DIGITAL DISPLAY:**
  - DD1** Blue: Hexadecimal - 001C71; R-0 G-28 B-113

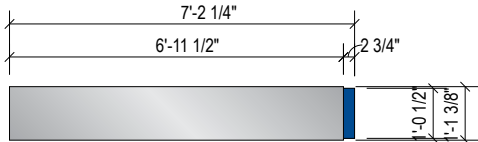
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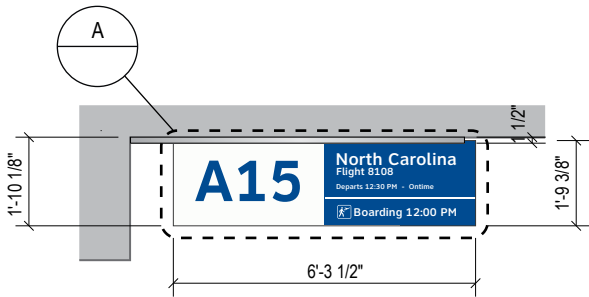
SIGN TYPE	SIGN FUNCTION	MOUNTING METHOD	GENERAL DESCRIPTION & USE
G.2D and G.2Db	IDENTIFICATION	CEILING MOUNT/FLAG MOUNT	Gate ID



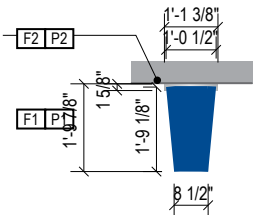
**A** DETAIL A: Face Layout  
Scale: 1/4" = 1'-0"



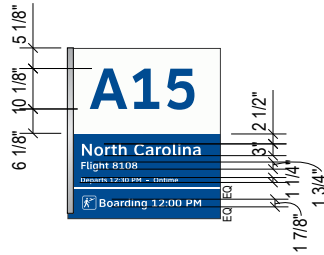
**1** PLAN VIEW  
Scale: 1/4" = 1'-0"



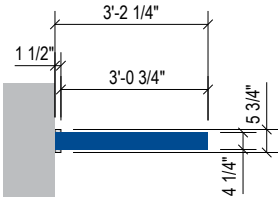
**4** ELEVATION G.2D Ceiling Mounted Gate Sign  
Scale: 1/4" = 1'-0"



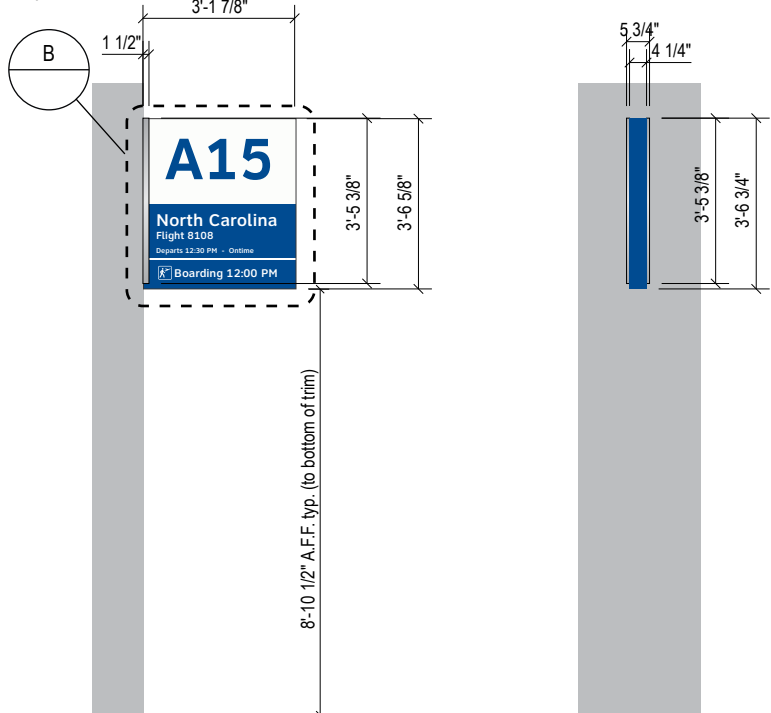
**3** END VIEW  
Scale: 1/4" = 1'-0"



**B** DETAIL A: Face Layout  
Scale: 1/4" = 1'-0"



**1** PLAN VIEW  
Scale: 1/4" = 1'-0"



**4** ELEVATION G.2Db Flag Mounted Gate Sign  
Scale: 1/4" = 1'-0"

**4** END VIEW  
Scale: 1/4" = 1'-0"

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  - Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location and sign type.

- FABRICATION INTENT NOTES**
- F1** SIGN CABINET/FRAME: Fabricated sign cabinet constructed of extruded aluminum and cast aluminum components with concealed internal welds; all sides fabricated to hide digital display unit frame with minimal ext; fabricated aluminum support frame with welded mitered corners and slotted mounting holes to accept sign mounting brackets; fabricated alum. sign mounting frame with tapered side end cover panels; attached with aluminum pin and clip system; power feed/units hidden behind mounting frame with access holes in back for wall mounting; powdercoat all exposed surfaces of sign cabinet/support frame/mounting frame to match P1 satin finish
  - F2** DIGITAL DISPLAY: LG LAPE 18.89" X 21.25"; Dot pitch - 1.5; Brightness set to work with environment lighting. Should be set between 700nit and 1000nit. The light varies in different locations. When the sun goes down at night the brightness should be adjusted to a dimmer setting to work with the environment; mounted LAPE unit frame. Attach to sign cabinet from behind as per the unit frame attachment method requirements.
  - F3** TRIM: .080 fabricated alum. trim piece with closed ends; detachable and mounted with keyholes/studs and set screws; paint all exposed surfaces to match P2, satin finish
  - F4** MOUNTING: mount to hidden above-ceiling structural elements with connection system as installation location conditions require (Fabricator to coordinate connection location/type of structural elements with General Contractor); 2" diameter aluminum suspension tube supports with 4" diameter 3/16" aluminum escutcheon cover plate at ceiling connection point, paint all exposed surfaces to match P2, satin finish; attached to sign support frame with weld applied flanges and mechanical fasteners

- GRAPHICS / COLORS / DECORATION NOTES**
- L1** Typeface: font = ClearviewText Medium
  - S1** Universal Symbols: AIGA style symbol artwork
  - S2** Arrow(s): use only official DFW wayfinding arrow artwork
  - VINYL (FILM):**
    - V1** Blue: 3M EC 7725-37 Sapphire Blue
    - V2** White: 3M 7725-20 Opaque Matte White
    - V3** Skylink Yellow: 3M 7725-114 Enamel Receptive
  - PAINT:**
    - P1** Blue: Powder coated to match 3M EC 7725-37, satin finish
    - P2** Silver: MAP paint # MP30136, satin finish
  - DIGITAL DISPLAY:**
    - DD1** Blue: Hexidecimal - 001C71; R-0 G-28 B-113

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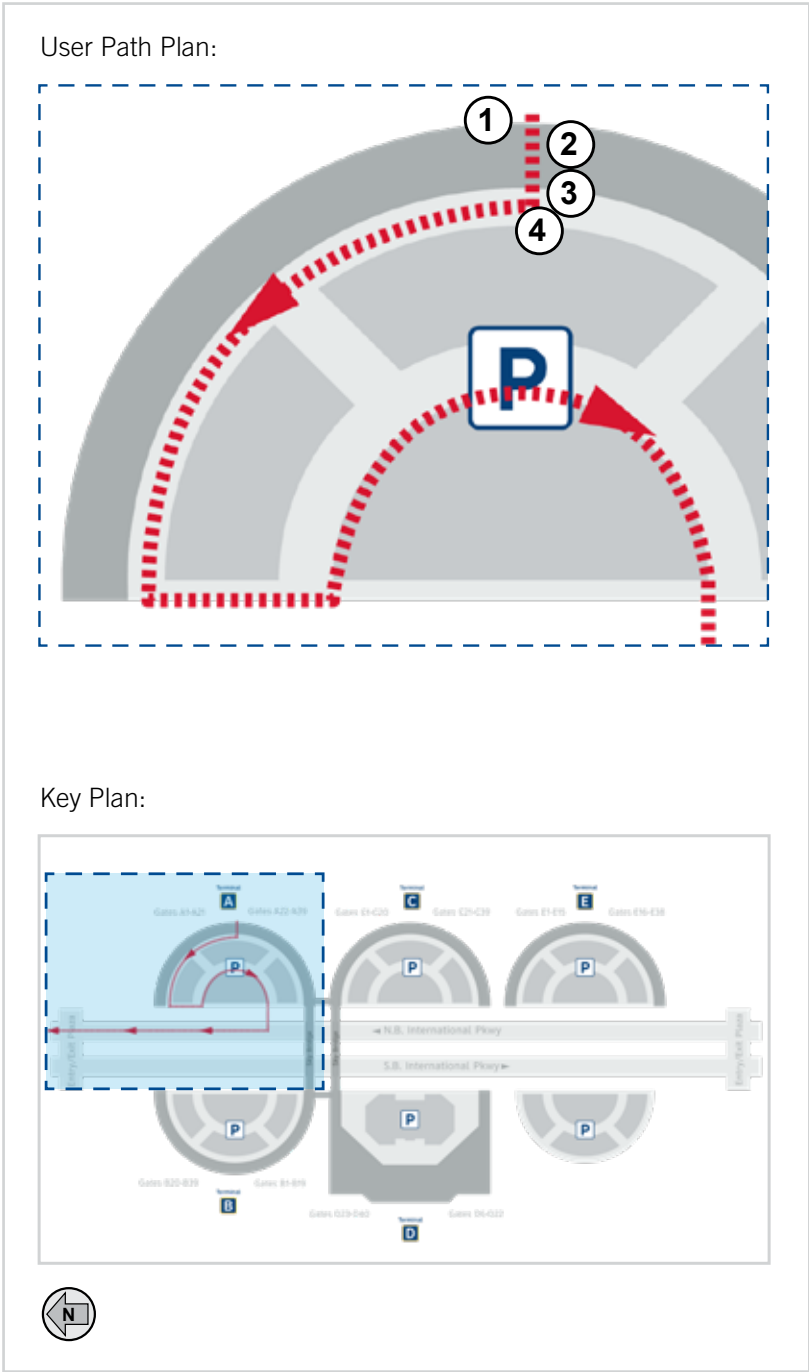
# 4.0

## **4.0 WAYFINDING PLAN**

- 4.1 Terminal A
- 4.2 Terminal B
- 4.3 Terminal C
- 4.4 Terminal D
- 4.5 Terminal E

ARRIVING PASSENGER USER PATH - Gate A22 to North Exit

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

**PHOTO 1:**

DIGITAL SIGN OPPORTUNITY:

- Sign type D.1D
- Digital freestanding gate signs will allow the airport to display updated flight information and timely passenger information. It will also allow the airport to express their friendly customer focused messaging and personality with clever messaging campaigns.

**PHOTO 2:**

DIGITAL SIGN OPPORTUNITY:

- Sign type D.1D
- Digital freestanding gate signs will allow the airport to display updated flight information and timely passenger information. It will also allow the airport to express their friendly customer focused messaging and personality with clever messaging campaigns.

**PHOTO 3:**

DIGITAL SIGN OPPORTUNITY:

- Sign type A.2D
- Overhead direction digital signage can show friendly airport messaging, visitor information, city information, emergency information, directions to retail zones, etc. The messaging can be delivered to the visitor when and where they need it, and thus it would be more relevant to that audience.

**PHOTO 4:**

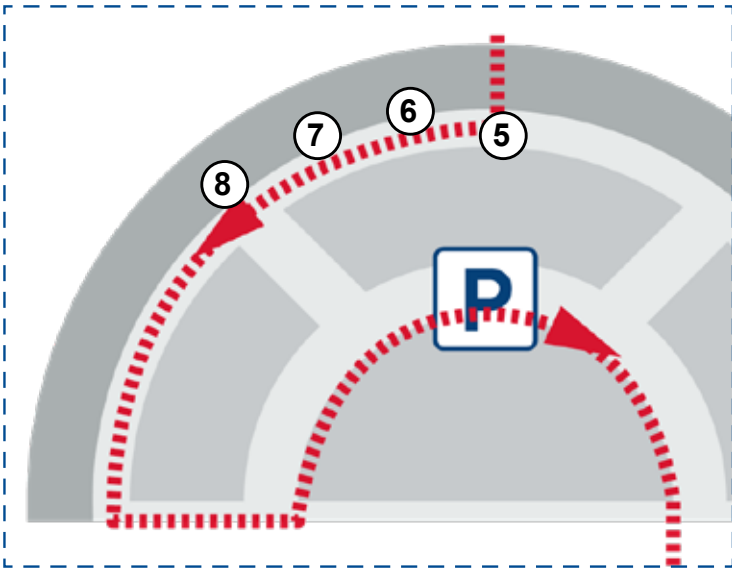
- Shown for wayfinding pathway reference only.



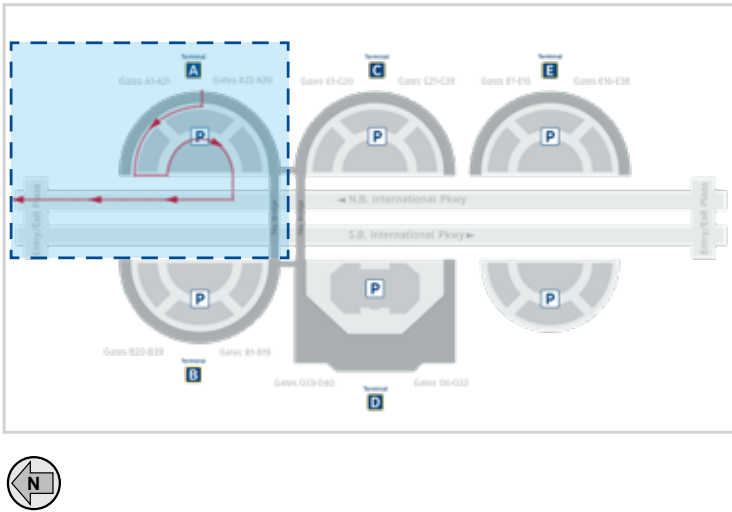
ARRIVING PASSENGER USER PATH - Gate A22 to North Exit

USER PATH:

User Path Plan:



Key Plan:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

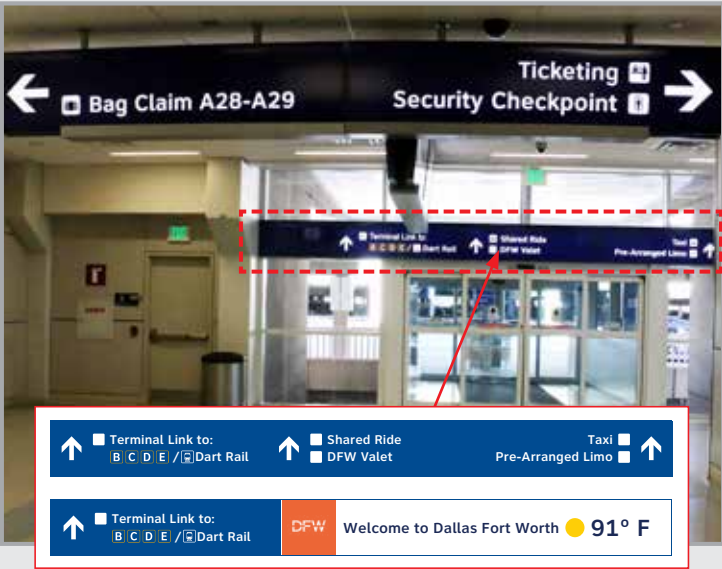


PHOTO 5:

DIGITAL SIGN OPPORTUNITY:

- Sign type H.1D
- The overhead digital signage at exits can deliver a friendly message that is useful or fun for the visitor. This last touchpoint could be an important positive brand experience for the visitor. The messaging could also help direct visitors to safety in the event of an emergency.



PHOTO 6:

- Shown for wayfinding pathway reference only.



PHOTO 7:

- Shown for wayfinding pathway reference only.

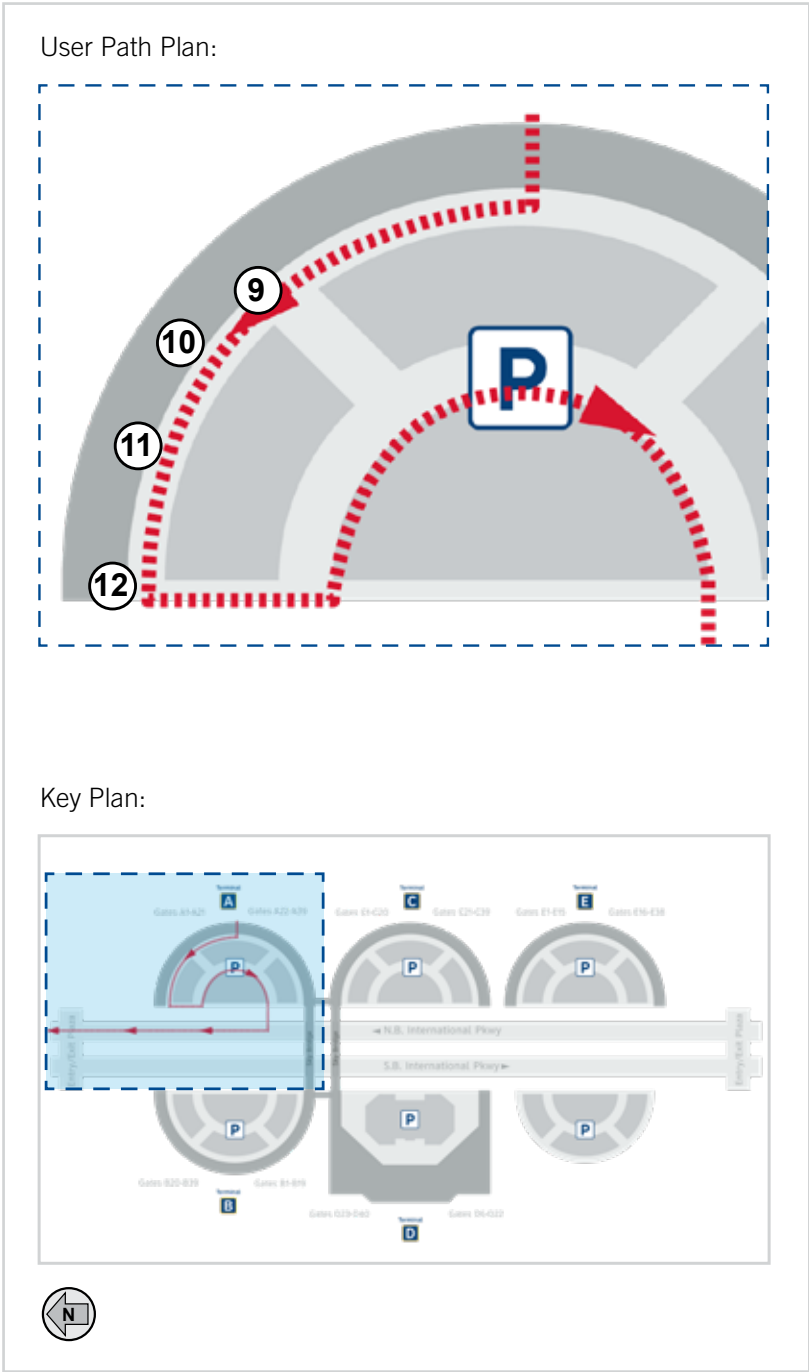


PHOTO 8:

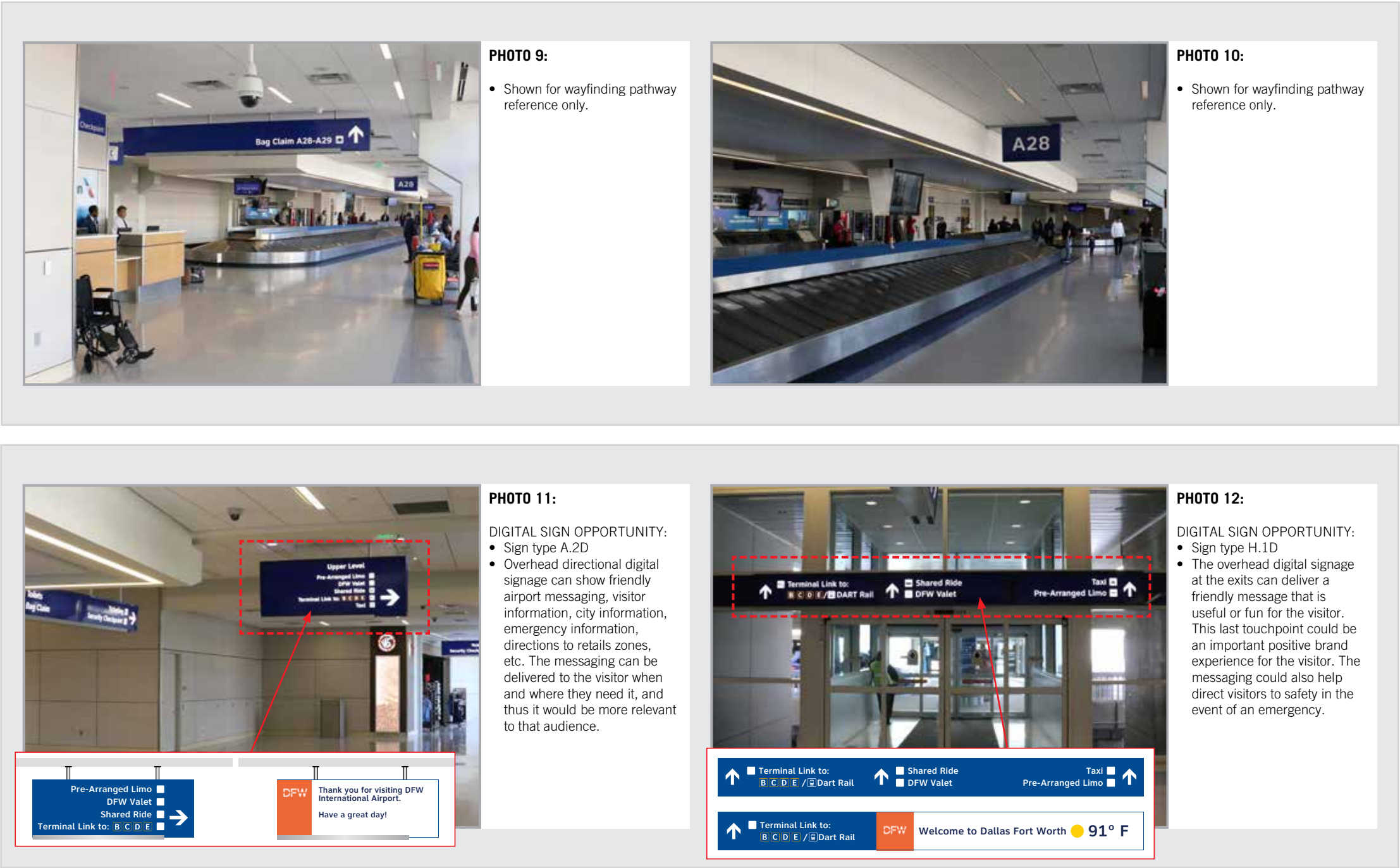
- Shown for wayfinding pathway reference only.

ARRIVING PASSENGER USER PATH - Gate A22 to North Exit

USER PATH:



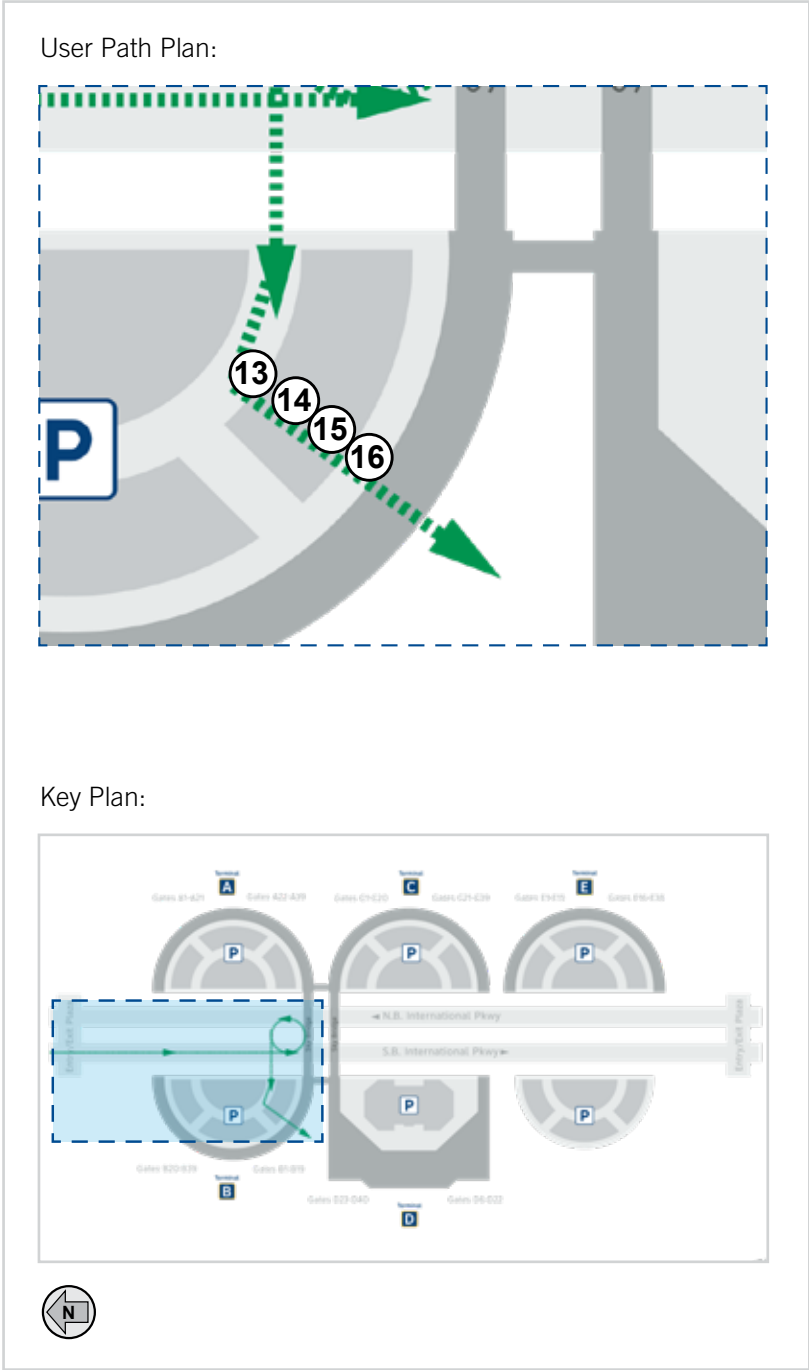
USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:





DEPARTING PASSENGER USER PATH - North Entry to Gate B9

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



PHOTO 13:

- Shown for wayfinding pathway reference only.



PHOTO 14:

- Shown for wayfinding pathway reference only.



PHOTO 15:

- Shown for wayfinding pathway reference only.



PHOTO 16:

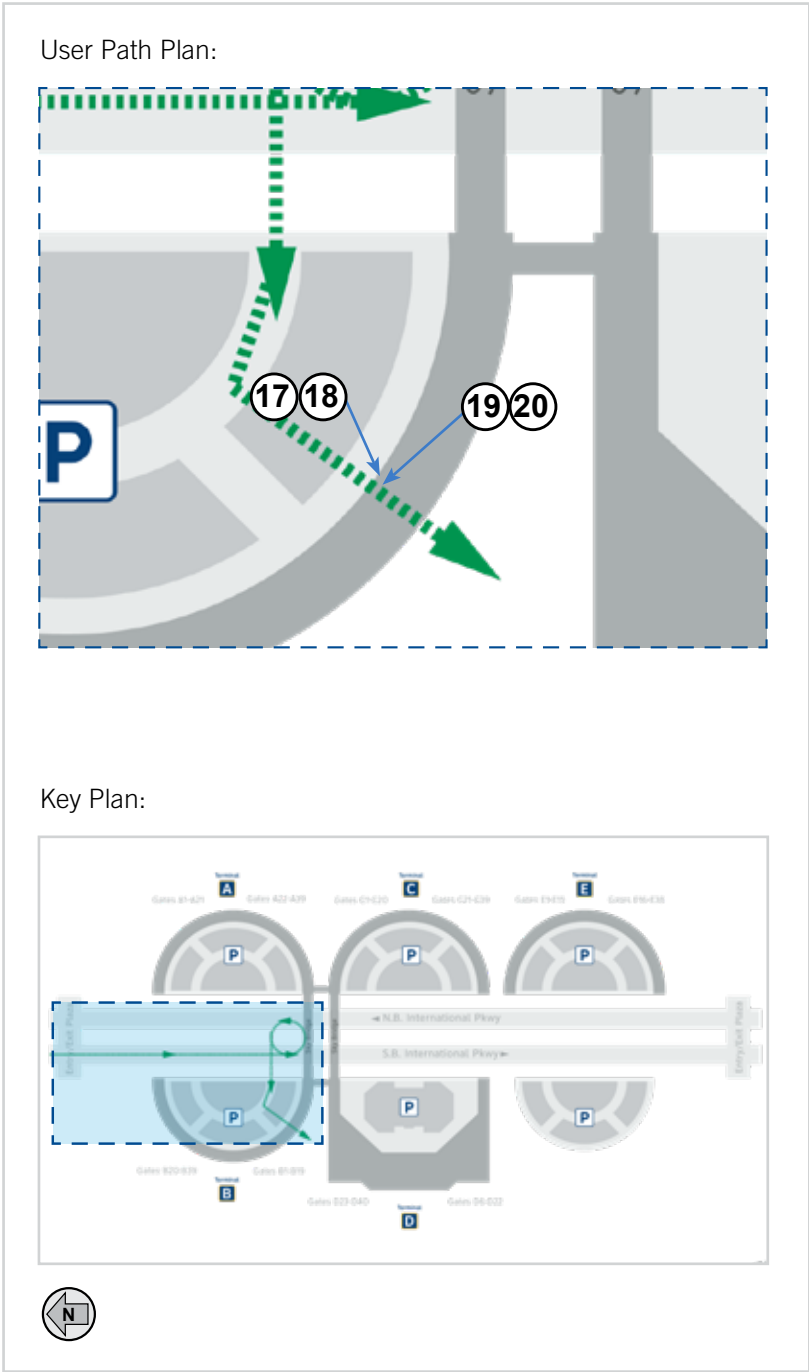
- Shown for wayfinding pathway reference only.

WARNING:

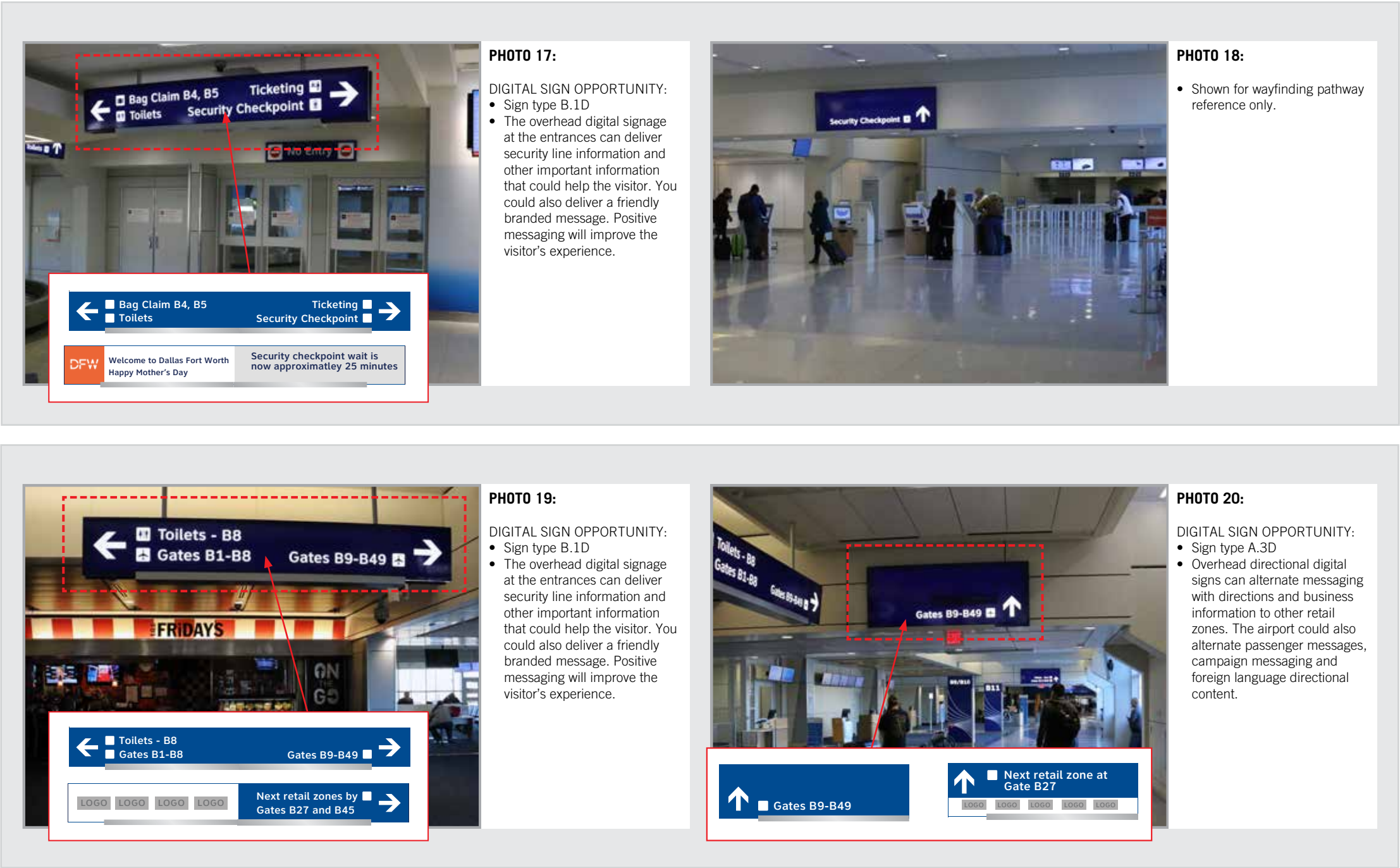
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DEPARTING PASSENGER USER PATH - North Entry to Gate B9

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



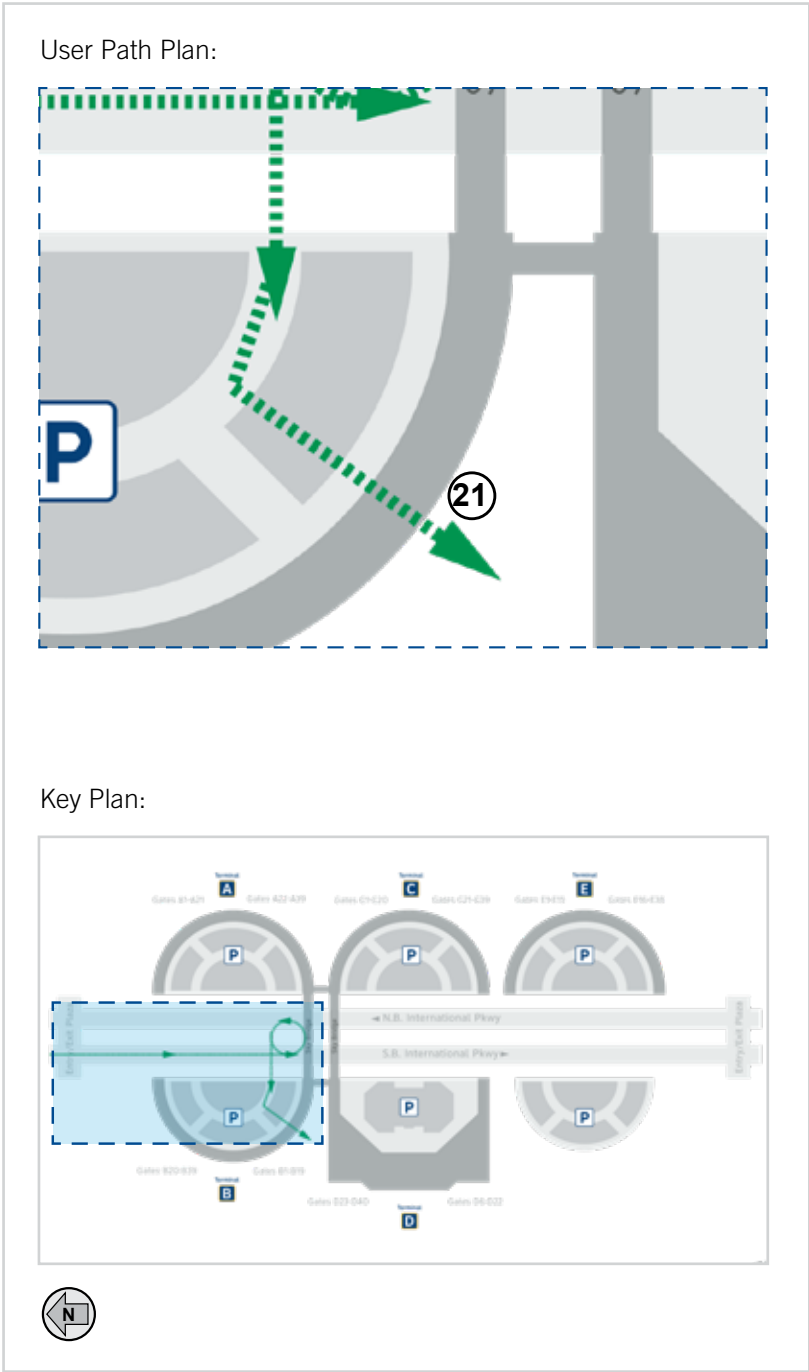
WARNING:

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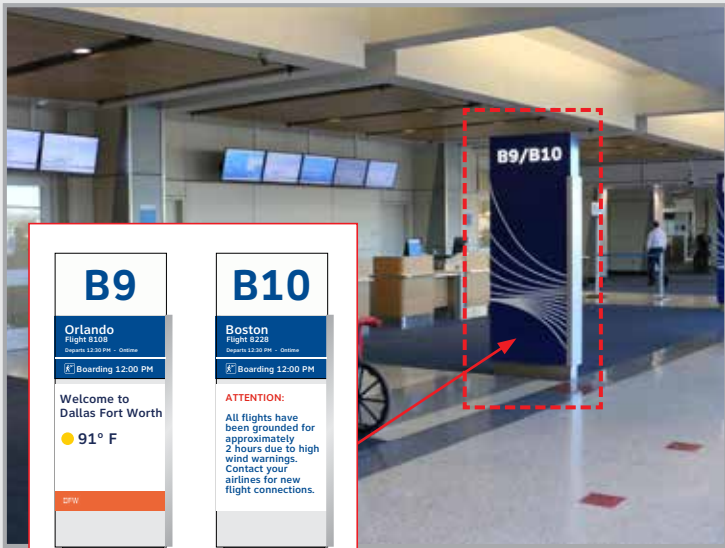


DEPARTING PASSENGER USER PATH - North Entry to Gate B9

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



**PHOTO 21:**

DIGITAL SIGN OPPORTUNITY:

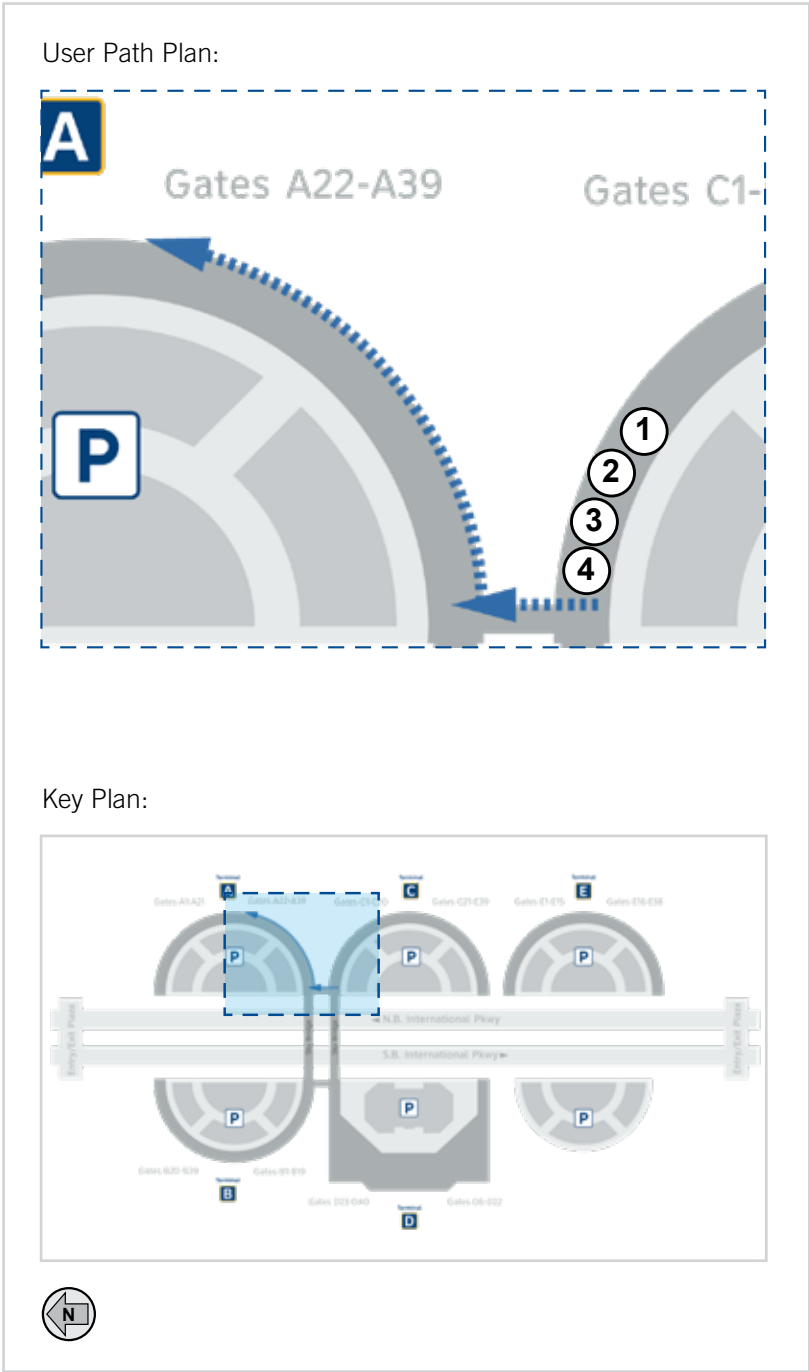
- Sign type D.1D
- Digital freestanding gate signs will allow the airport to display updated flight information and timely passenger information. It will also allow the airport to express their friendly customer focused messaging and personality with clever messaging campaigns.

WARNING:

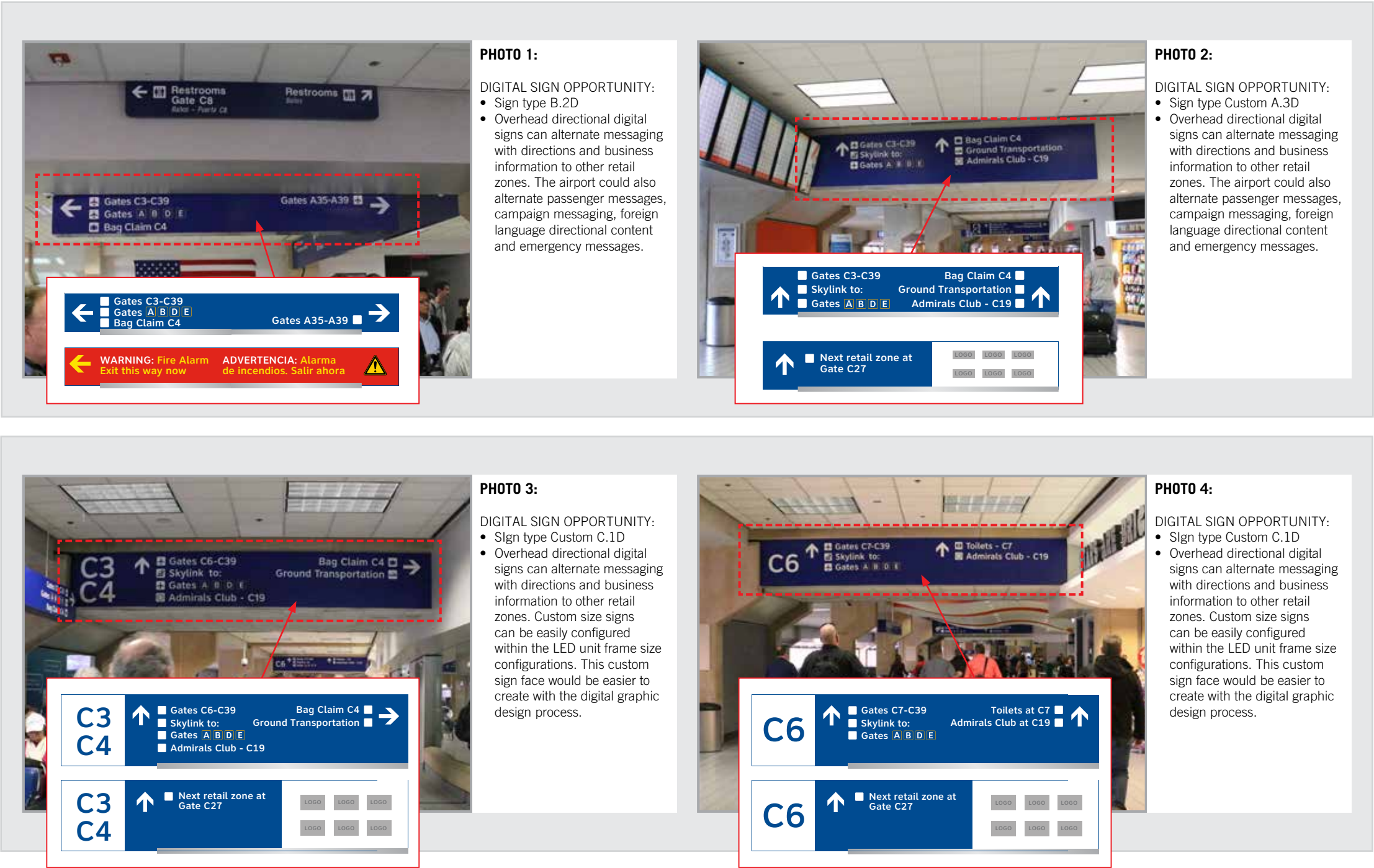
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CONNECTING PASSENGER USER PATH - Gate C2 to Gate A29

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

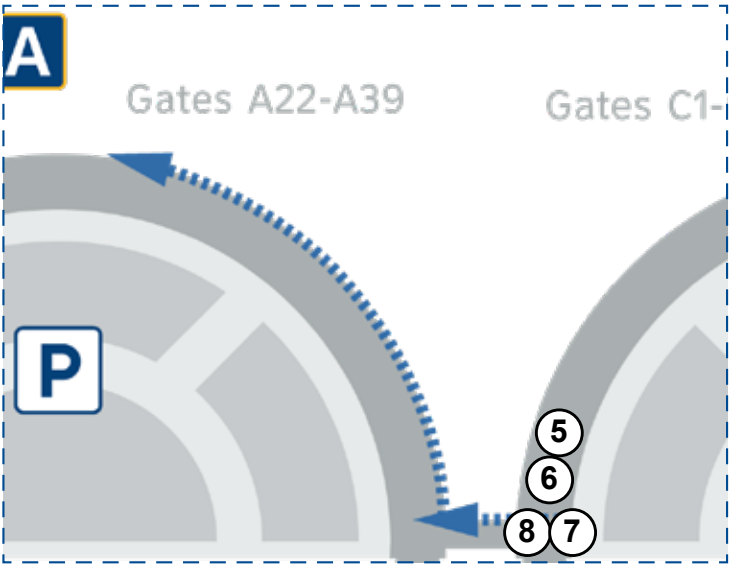




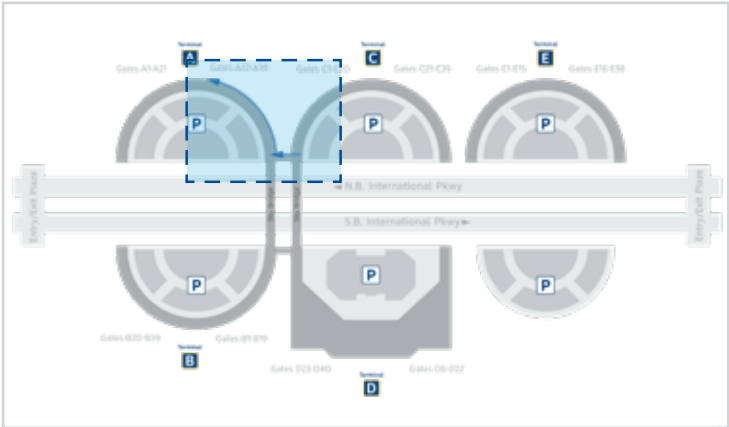
CONNECTING PASSENGER USER PATH - Gate C2 to Gate A29

USER PATH:

User Path Plan:



Key Plan:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



PHOTO 5:

DIGITAL SIGN OPPORTUNITY:

- Sign type Custom C.1D
- Overhead directional digital signs can alternate messaging with directions and business information to other retail zones. Custom size signs can be easily configured within the LED unit frame size configurations. This custom sign face would be easier to create with the digital graphic design process.



PHOTO 6:

DIGITAL SIGN OPPORTUNITY:

- Sign type Custom C.2D
- Overhead directional digital signs can alternate messaging with directions and business information to other retail zones. Custom size signs can be easily configured within the LED unit frame size configurations. This custom sign face would be easier to create with the digital graphic design process.



PHOTO 7:

• Shown for wayfinding pathway reference only.



PHOTO 8:

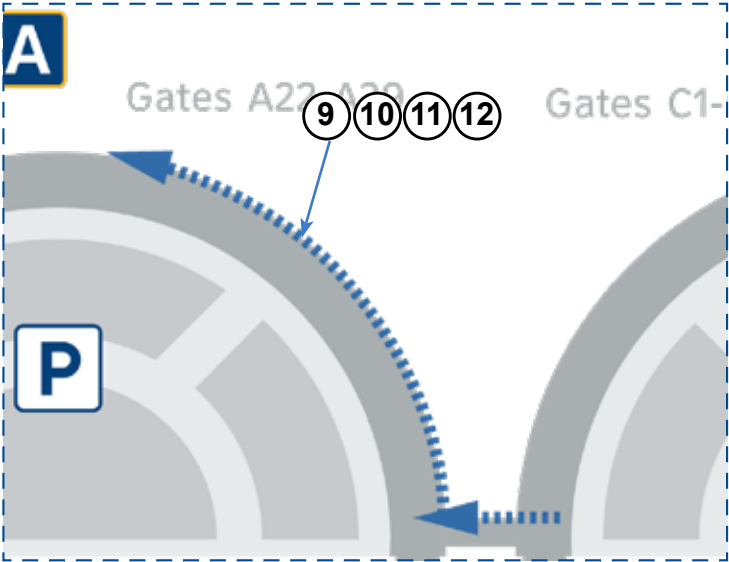
DIGITAL SIGN OPPORTUNITY:

- Sign type Custom C.2D
- Overhead directional digital signs can alternate directional messaging with short passenger messages, languages, and campaign messages.

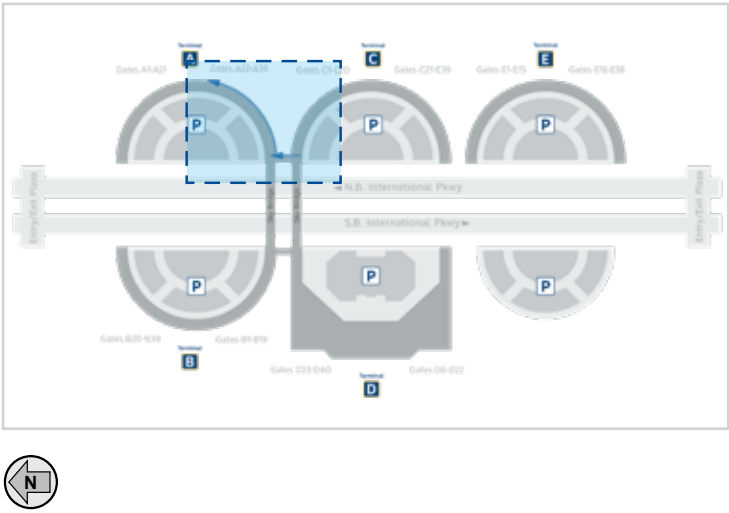
CONNECTING PASSENGER USER PATH - Gate C2 to Gate A29

USER PATH:


User Path Plan:



Key Plan:




USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:




**PHOTO 9:**

- Shown for wayfinding pathway reference only.



**PHOTO 10:**


- Shown for wayfinding pathway reference only.



**PHOTO 11:**

DIGITAL SIGN OPPORTUNITY:

- Sign type Custom C.2D
- Overhead directional digital signs can alternate messaging with directions and business information to other retail zones. Custom size signs can be easily configured within the LED unit frame size configurations. This custom sign face would be easier to create with the digital graphic design process..



**PHOTO 12:**

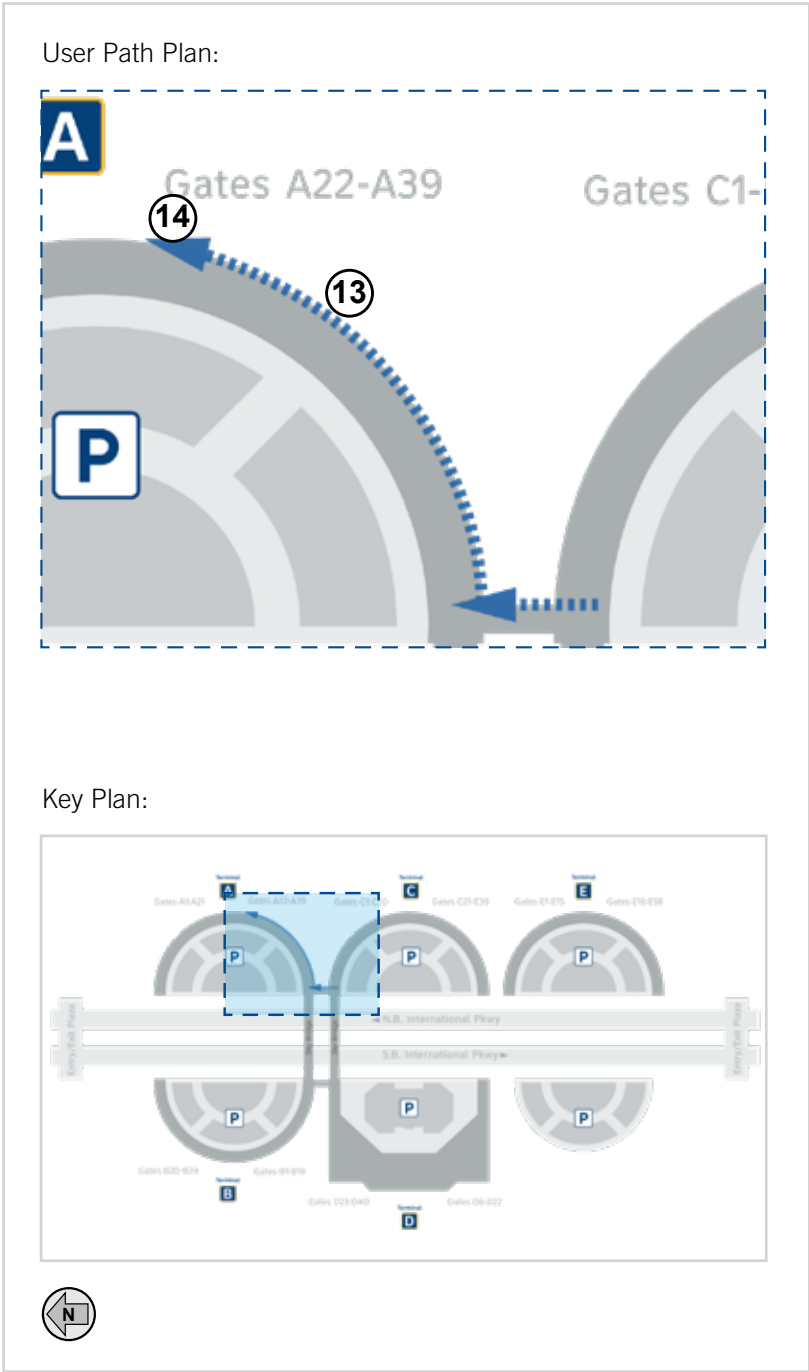
DIGITAL SIGN OPPORTUNITY:

- Sign type Custom C.2D
- Overhead directional digital signs can alternate messaging with directions and business information to other retail zones. Custom size signs can be easily configured within the LED unit frame size configurations. This custom sign face would be easier to create with the digital graphic design process.

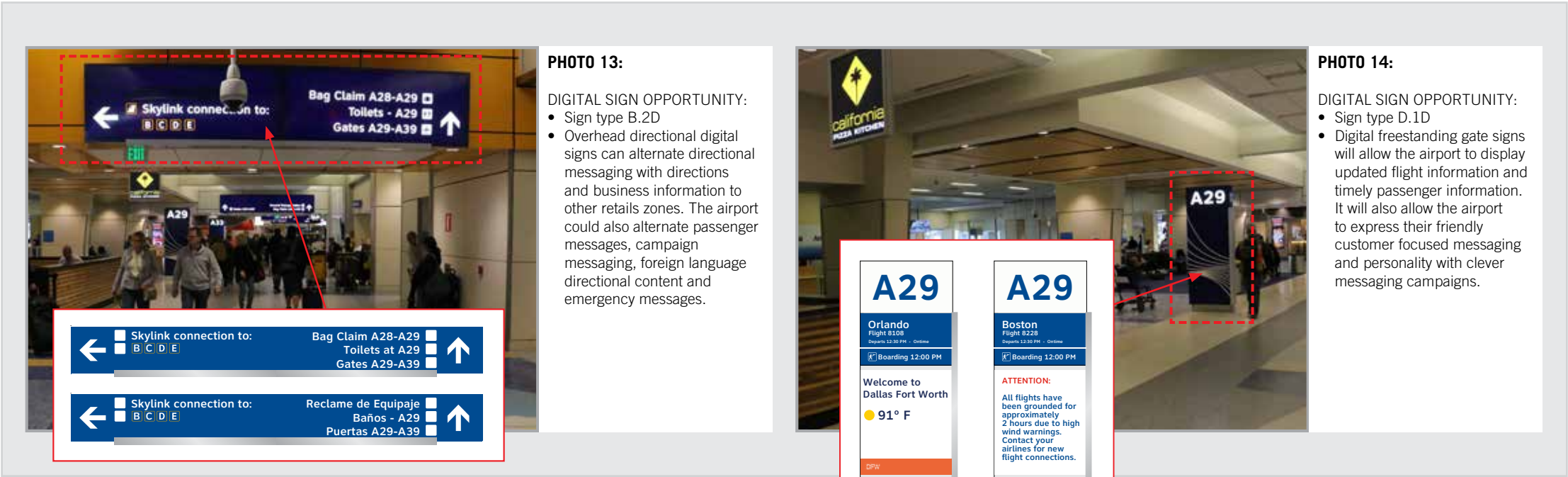


CONNECTING PASSENGER USER PATH - Gate C2 to Gate A29

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

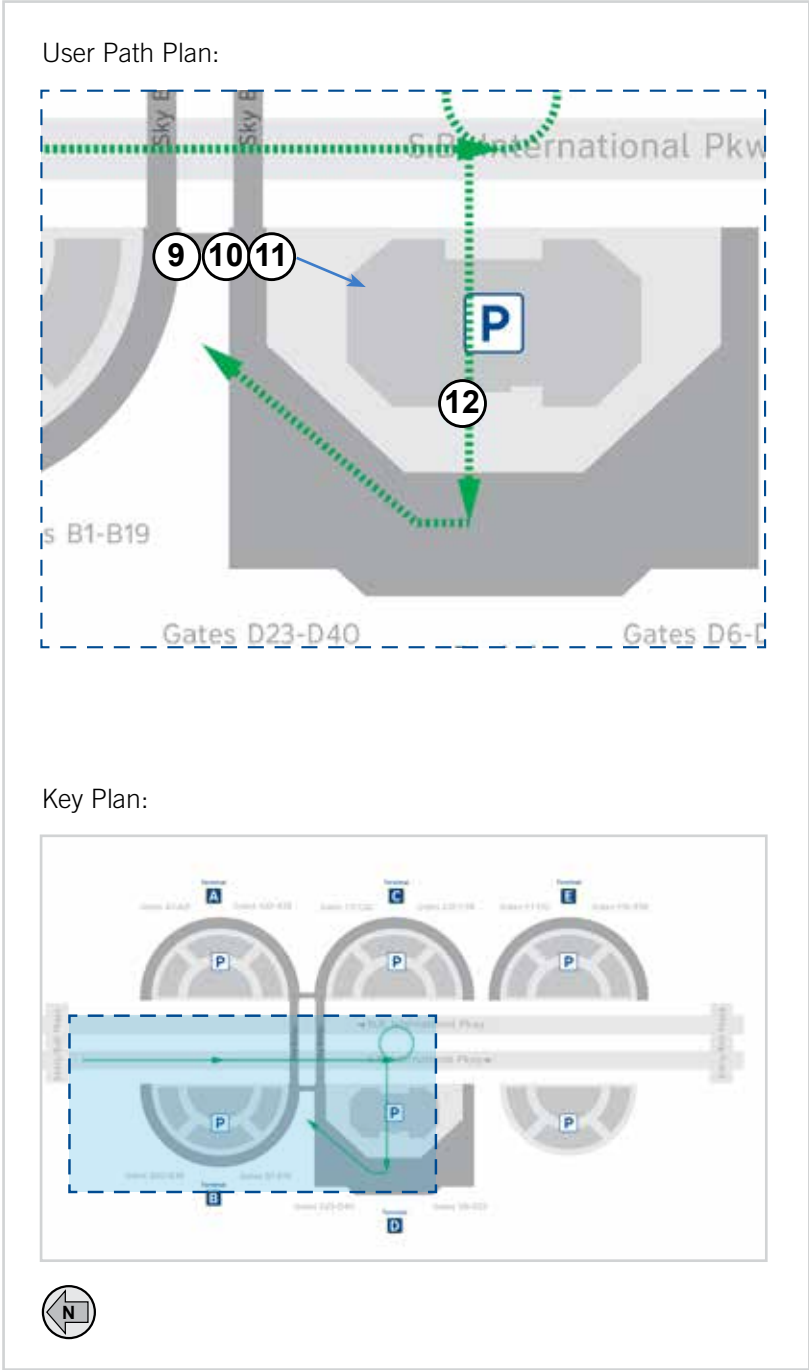


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DEPARTING PASSENGER USER PATH - North Entry to Gate D37

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



PHOTO 9:

- Shown for wayfinding pathway reference only.



PHOTO 10:

- Shown for wayfinding pathway reference only.



PHOTO 11:

- Shown for wayfinding pathway reference only.



PHOTO 12:

- Shown for wayfinding pathway reference only.

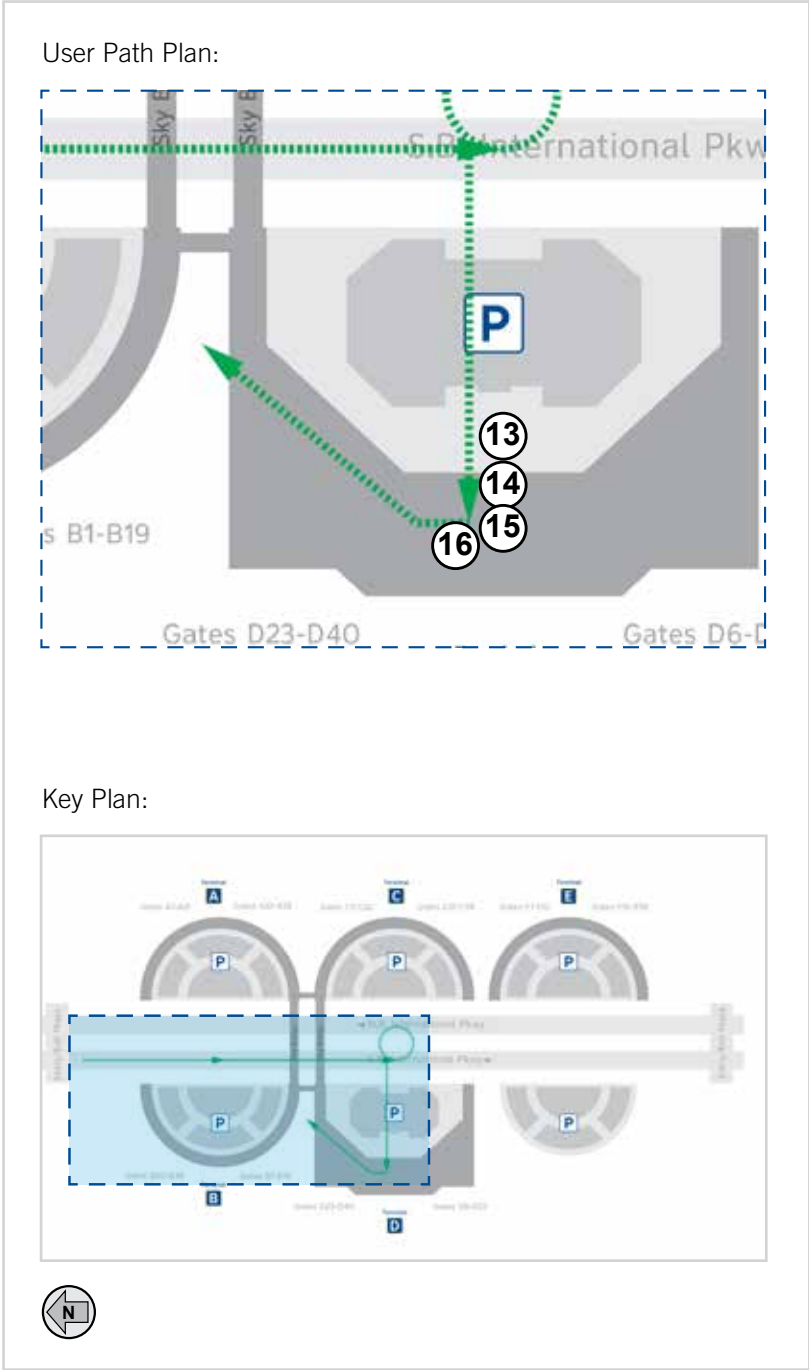
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DEPARTING PASSENGER USER PATH - North Entry to Gate D37

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

**PHOTO 13:**

- Shown for wayfinding pathway reference only.

**PHOTO 14:**

- Shown for wayfinding pathway reference only.

**PHOTO 15:**

DIGITAL SIGN OPPORTUNITY:

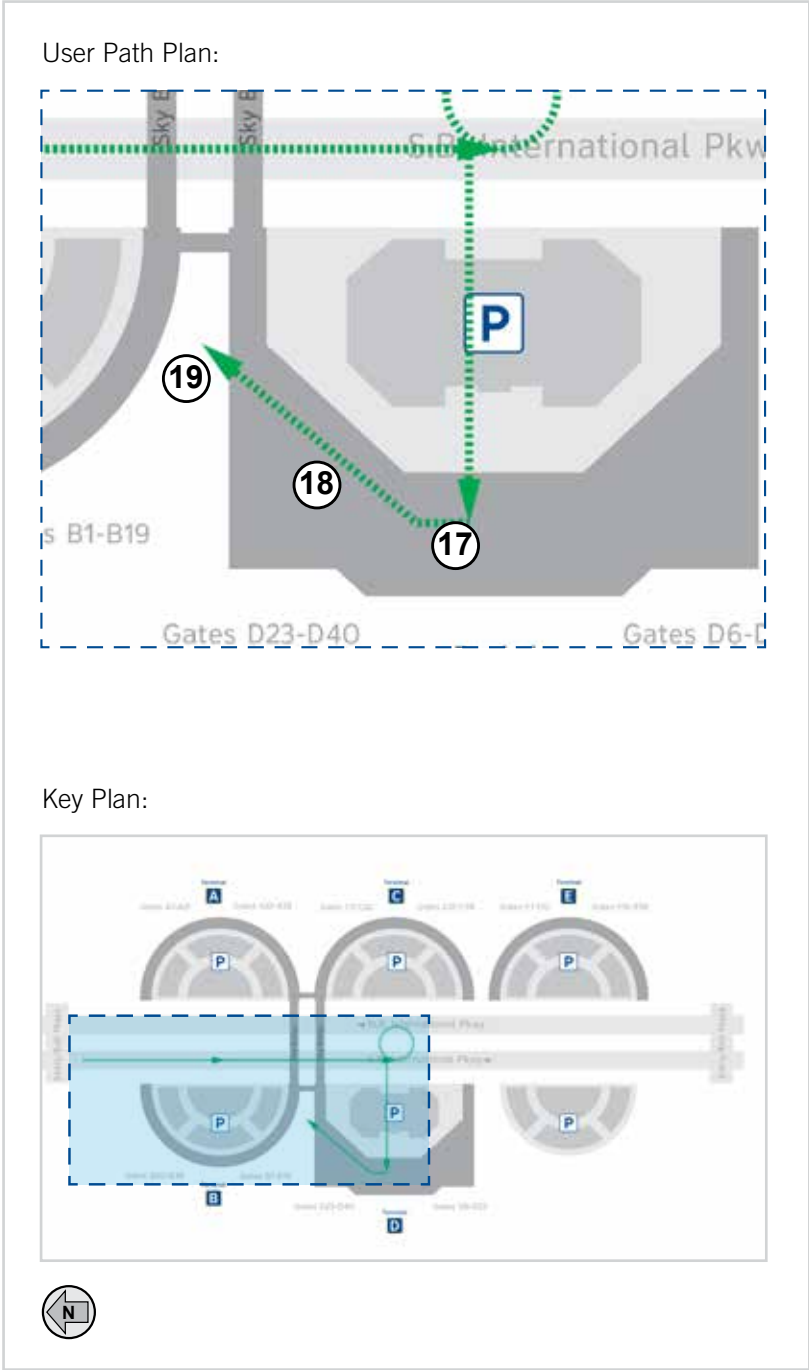
- Sign type A.2D
- Overhead directional digital signage can show friendly airport messaging, visitor information, city information, emergency information, directions to retail zones, etc. The messaging can be delivered to the visitor when and where they need it, and thus it would be more relevant to that audience.

**PHOTO 16:**

- Shown for wayfinding pathway reference only.

DEPARTING PASSENGER USER PATH - North Entry to Gate D37

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



PHOTO 17:

- Shown for wayfinding pathway reference only.



PHOTO 18:

DIGITAL SIGN OPPORTUNITY:

- Sign type Custom A.3D
- Overhead directional digital signs can alternate messaging with directions and business information to other retail zones. The airport could also alternate passenger messages, campaign messaging, foreign language directional content and emergency messages.

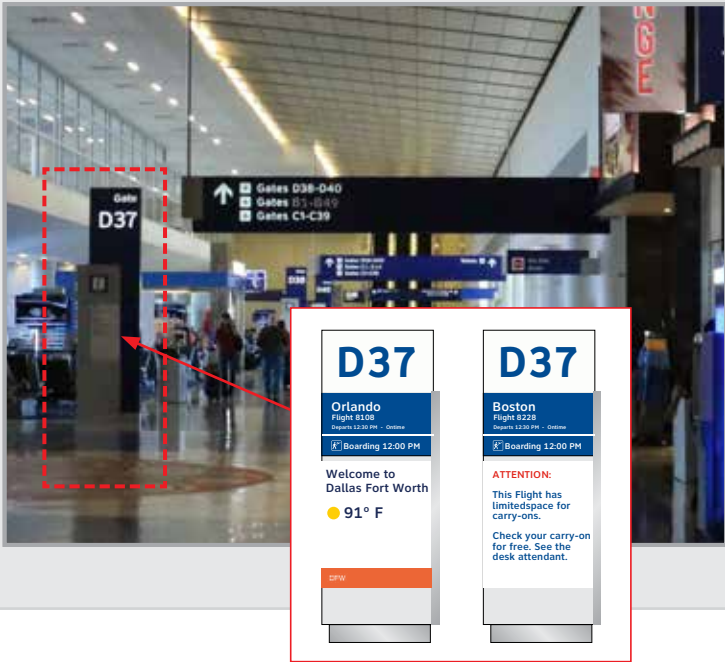


PHOTO 19:

DIGITAL SIGN OPPORTUNITY:

- Sign type D.1D
- Digital freestanding gate signs will allow the airport to display updated flight information and timely passenger information. It will also allow the airport to express their friendly customer focused messaging and personality with clever messaging campaigns.

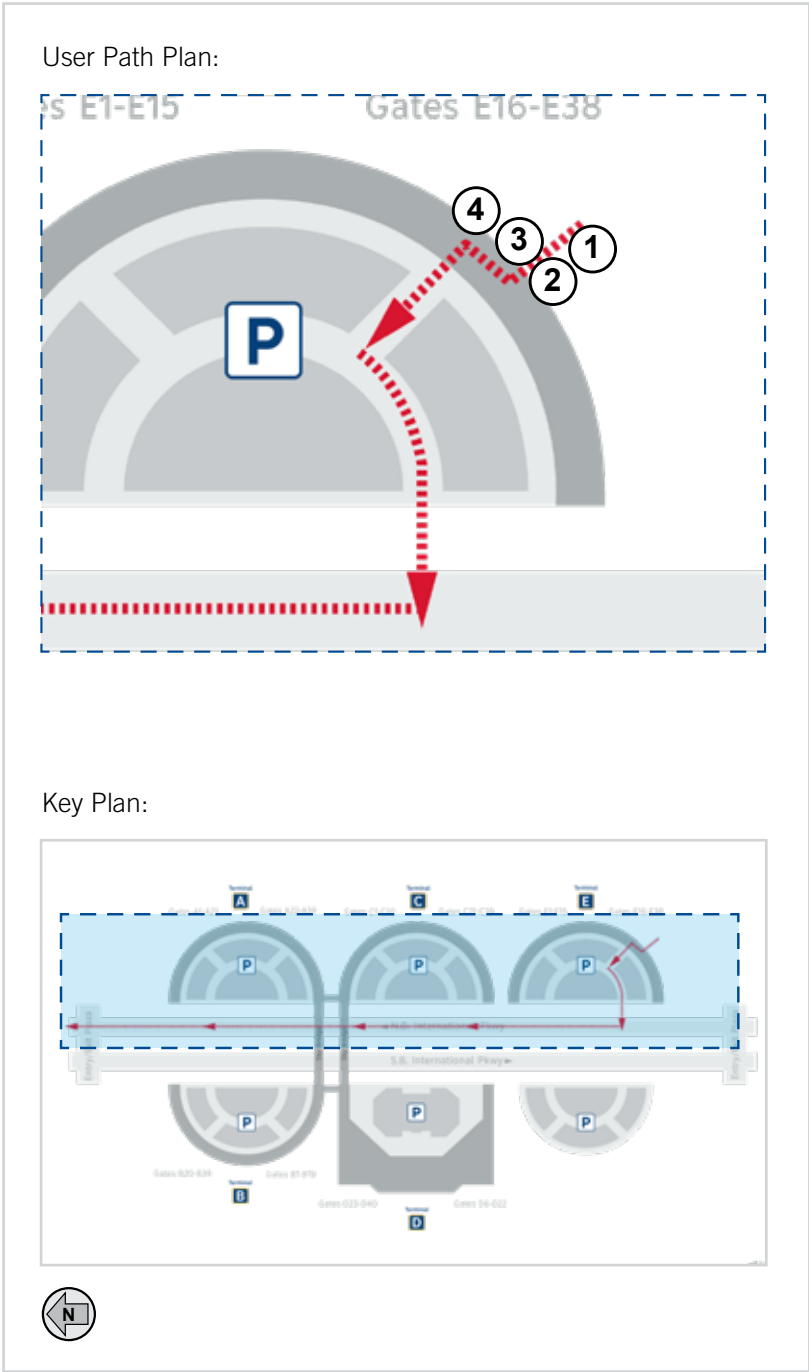
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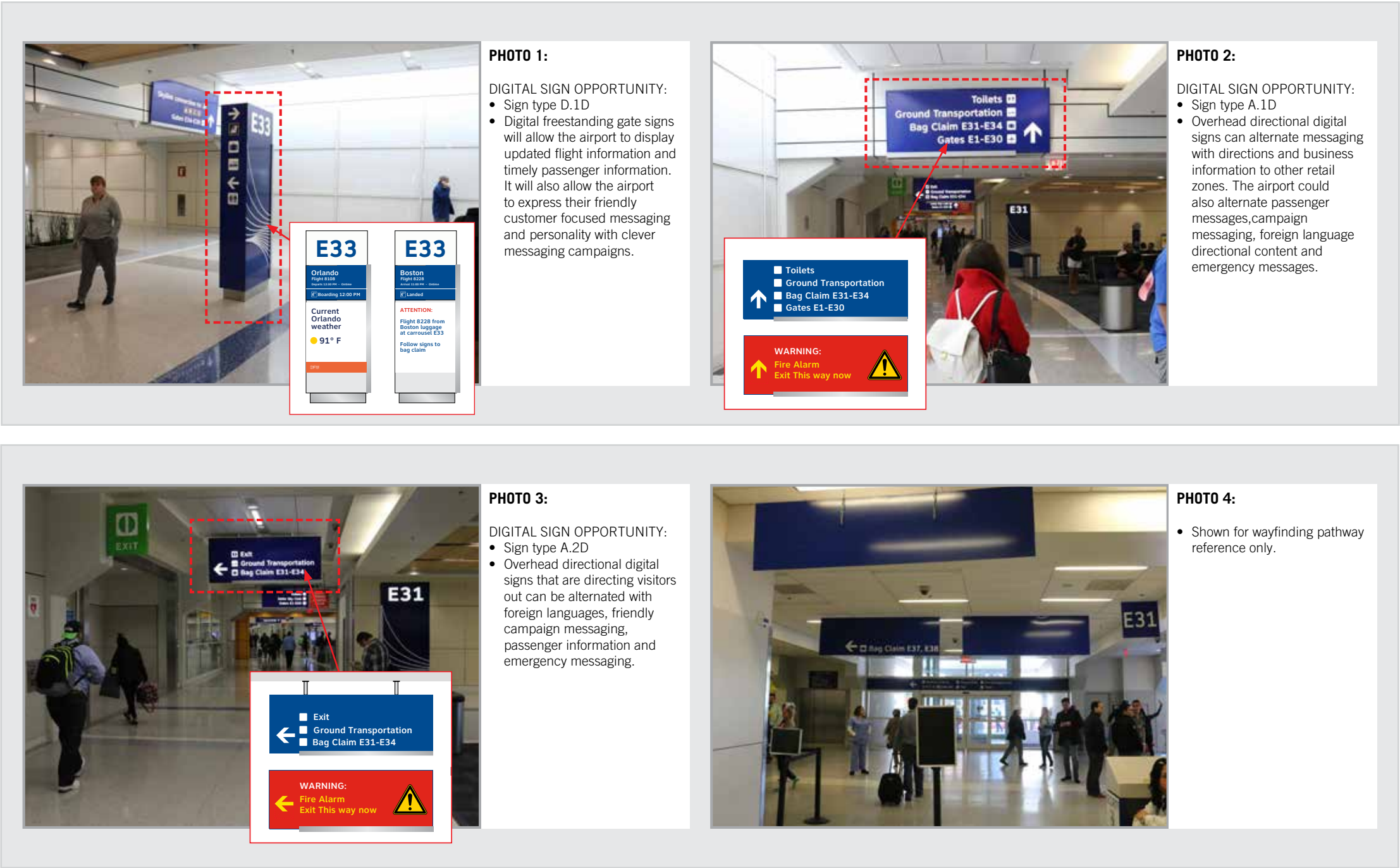


ARRIVING PASSENGER USER PATH - Gate E33 to Rental Car Center

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:

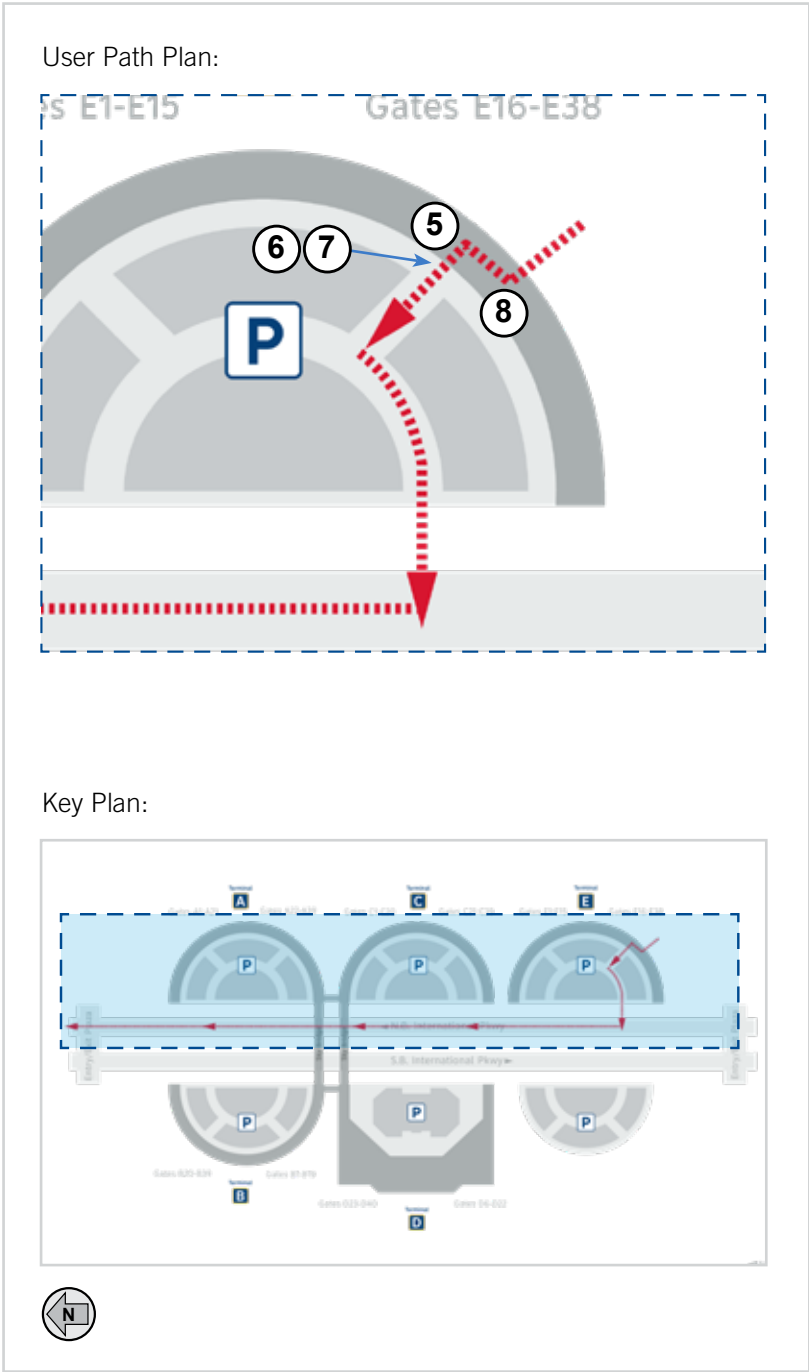


WARNING:

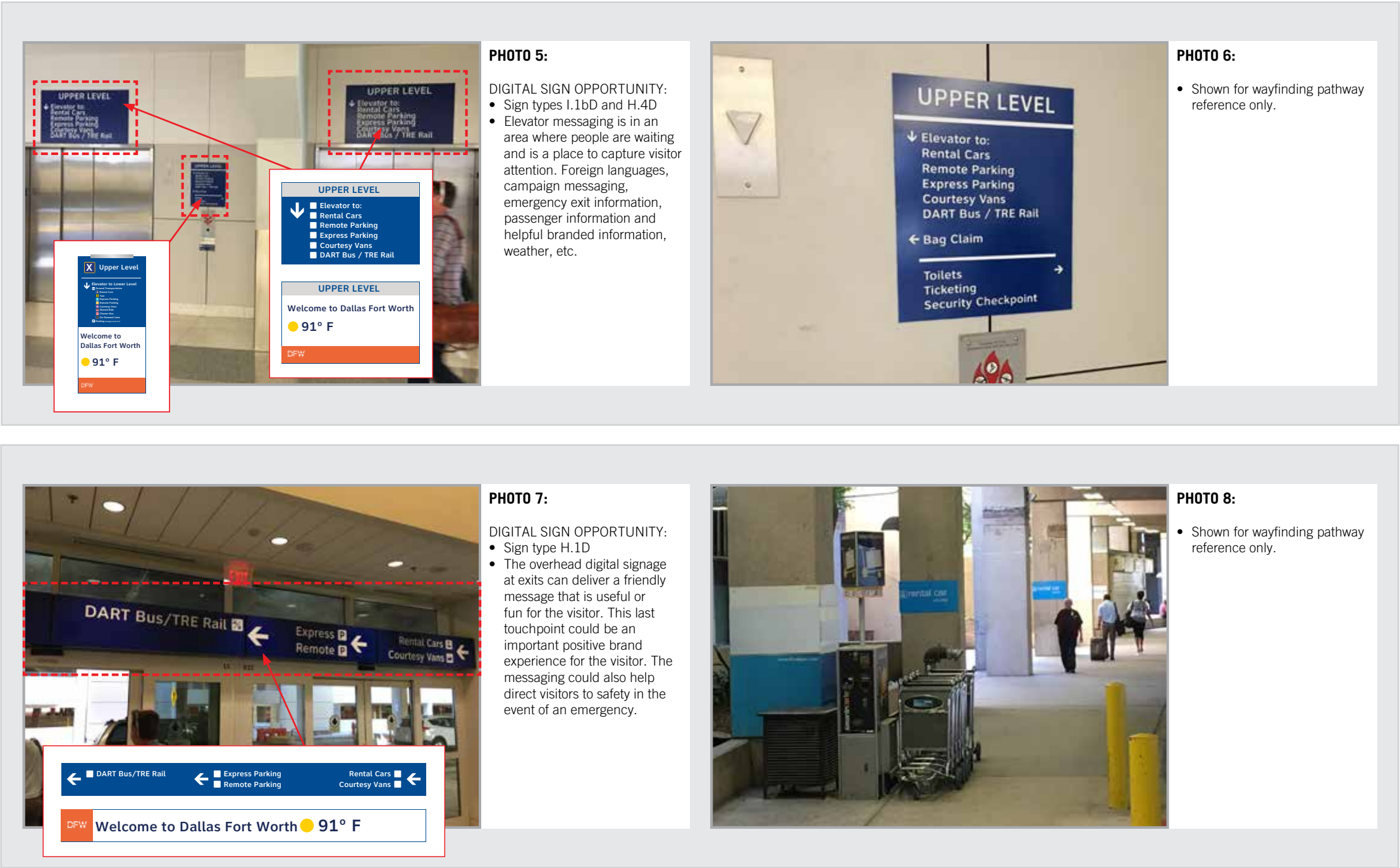
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ARRIVING PASSENGER USER PATH - Gate E33 to Rental Car Center

USER PATH:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:





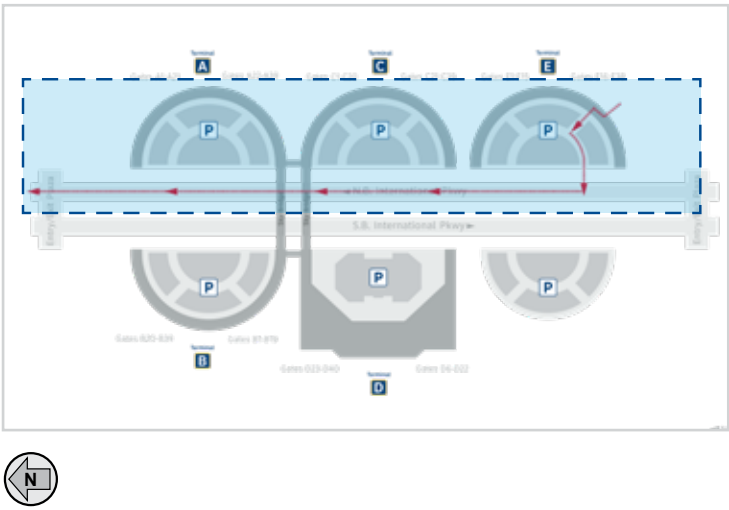
ARRIVING PASSENGER USER PATH - Gate E33 to Rental Car Center

USER PATH:

User Path Plan:



Key Plan:



USER PATH REFERENCE PHOTOS AND DIGITAL SIGNAGE OPPORTUNITIES:



PHOTO 9:

- Shown for wayfinding pathway reference only.



PHOTO 10:

- Shown for wayfinding pathway reference only.



PHOTO 11:

- Shown for wayfinding pathway reference only.



PHOTO 12:

- Shown for wayfinding pathway reference only.

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