

# Design Manual

## DCA VOL. 1 2010



METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

Ronald Reagan Washington National Airport  
Airport Design Standards and Signing Guidelines



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## **PREFACE**

### **THE *DESIGN MANUAL***

As part of the ongoing design and construction programs at Ronald Reagan Washington National Airport and Washington Dulles International Airport, the Metropolitan Washington Airports Authority (the Authority), Office of Engineering, has developed and adopted a series of documents that describe the codes, standards, details, products, and practices to be followed by Architect/Engineers (A/E)s. These documents apply to all design of construction at all facilities on property owned by the Authority. Facilities constructed or modified on the site occupied by the National Air and Space Museum located at Washington Dulles International Airport are exempt from the requirements of the Authority *Design Manual*.

The *Design Manual* has been developed to assist Architects/Engineers (A/E)s in understanding the practices and policies that must be incorporated into each project. The *Design Manual* contains a number of specific requirements that must be followed on all projects, as described above. These can be either Authority contracted projects, Authority direct-constructed projects, and tenant contracted projects.

### **APPLICABILITY OF THE *DESIGN MANUAL***

The requirements for design and construction incorporated into the *Design Manual* and Supporting Volumes are regulations approved by the Metropolitan Washington Airports Authority Board of Directors and shall be considered contract requirements for all A/E)s who are performing services under contract to the Authority. Although A/E)s who are under contract to tenants of the Authority may not be working under contract provisions that make compliance with these requirements mandatory, the Authority reserves the right, as Owner of all airport facilities, and land on which tenant buildings are constructed, to reject any design or work that does not comply with the requirements of the *Design Manual* and its supporting volumes. It is, therefore, required that all A/E)s performing work that will be constructed on airport property shall perform services consistent with the Authority policies, standards, procedures, and construction requirements contained in the *Design Manual* and its supporting volumes. The *Design Manual* should be considered equivalent to the building codes. The *Design Manual* in effect at the 30% Submittal will remain the *Design Manual* of record up to the 100% Final Submittal.

### **ORGANIZATION OF THE *DESIGN MANUAL***

The *Design Manual* is made up of seven volumes.

Basic policies, procedures and standards for both Airports:

- *Design Manual*

Requirements for Ronald Reagan Washington National Airport:

- DCA Vol.1 - Airport Design Standards and Signing Guidelines **[THIS DOCUMENT]**
- DCA Vol.2 - Tenant Design Standards

Requirements for Washington Dulles International Airport:

- IAD Vol.1 - Airport Design Standards and Signing Guidelines



- IAD Vol.2 - Main Terminal/Concourse Z Tenant Design Standards
- IAD Vol.3 - Concourse B Tenant Design Standards

Requirements for All Projects:

- CADD - CADD Design Standards

The seven volumes are intended to supplement each other and must be used together, as appropriate for each airport, to achieve the desired goals of the Authority.

An electronic version of the *Design Manual* and Supporting Volumes is available on CD-ROM, which may be obtained by contacting the Authority Office of Engineering. It is also available on the Authority website at [www.mwaa.com](http://www.mwaa.com) under "Publications".

## **OTHER DOCUMENTS**

In addition to the *Design Manual*, the Authority also requires compliance for design and construction with additional policies, procedures, and standards that are published by other departments. These documents include:

- Construction Safety Manual
- Owner Controlled Wrap-Up Insurance Program Manual
- Building Codes Manual
- Contractors Safety and Security Information (Washington Dulles International Airport)
- Safety Policy, Procedures, and Practices by the Risk Management Department
- MASTERSPEC© Specifications Sections specifically edited for Authority projects (primarily Division 01, but including specific technical specification sections)
- Ronald Reagan Washington National Airport and Washington Dulles International Airport Survey Control Data "To-Reach" Descriptions (two separate volumes) Note that the "To-Reach" documents for Washington Dulles International Airport are no longer provided on the CD-ROM version of the *Design Manual*. These documents are available through the Authority. The CD-ROM contains information directing the A/Es to the proper group within the Authority to obtain this document.

## **ACCEPTABLE STANDARDS**

The standards established by the above referenced documents, together with Federal Aviation Administration (FAA), National Fire Protection Agency (NFPA), Virginia Uniform Statewide Building Code (USBC), Construction Specifications Institute (CSI), and other referenced materials establish the minimum level of quality and detail required of all Authority projects. These standards in many instances may exceed those used in non-Authority design and construction projects and are often above those established as "Code Minimums", "Standards of the Industry", or "generally accepted practices."

## **DESIGN MANUAL REVISIONS**

This edition of the *Design Manual* incorporates the modifications and additions that were developed during the Authority annual review of the previous year's *Design Manual*. This review includes an analysis of the existing standards and an evaluation of the suggested revisions.

If you feel that a standard or procedure stipulated in this edition of the *Design Manual* should be revised, we would like to know. To facilitate this, we have included a *Design Manual* review form that will place your idea in the appropriate hands. All suggestions received will be reviewed and researched and a written response will be provided.

**DESIGN MANUAL REVISION FORM**

**SUGGESTED REVISION TO THE *DESIGN MANUAL***

**Date:** \_\_\_\_\_ **Log Number:** **11**

**To:** Ms. Diane R. Hirsch, PE  
Manager of Design  
Metropolitan Washington Airports Authority  
Ronald Reagan Washington National Airport  
Washington, DC 20001

**From:** \_\_\_\_\_  
\_\_\_\_\_

*Design Manual* **Volume & Section:** \_\_\_\_\_

*Design Manual* **Paragraph:** \_\_\_\_\_

*Design Manual* **Page:** \_\_\_\_\_

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**2010 Design Manual Text:**

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**Proposed 2011 Design Manual Text:**

[Use RED text, normal font not bold, to indicate added language. Use “strikethrough” to indicate deleted language. Do not use “track changes”.]

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## INTRODUCTION

### GUIDE TO THIS VOLUME OF THE *DESIGN MANUAL*

**Ronald Reagan Washington National Airport** consists of the following volumes:

- DCA Vol.1 - Airport Design Standards and Signing Guidelines **[THIS VOLUME]**
- DCA Vol.2 - Tenant Design Standards

This volume consists of design standards, design criteria, procedures, and products for Ronald Reagan Washington National Airport and relates to the Tenant Design Standards.

This volume consists of two sections:

#### **Section I                      Airport Design Standards**

Chapter 1:	Historic Preservation Design Standards Introduction
Chapter 2:	South Airport Development Area
Chapter 3:	Site Development Standards
Chapter 4:	Authority Standards
Chapter 5:	Tenant Spaces and Facilities
Chapter 6:	Parking Facilities

#### **Section II                     Signing Guidelines**

Chapter 1:	Introduction
Chapter 2:	Typography
Chapter 3:	Public Signing Guidelines
Chapter 4:	Commercial Signing Guidelines
Chapter 5:	Supplemental Information



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## SECTION I: Airport Design Standards

### CHAPTER 1 Historic Preservation Design Standards Introduction

The purpose of this standard is to familiarize the A/E and the Contractors with historic preservation coordination requirements that may affect maintenance and repair/rehabilitation operations conducted in the existing Ronald Reagan Washington National Airport Terminal A. The standard provides a short background review of the legal and technical requirements for Historic Preservation protection of the Terminal A and an outline of required coordination procedures.

#### 1.1 Historic Preservation Background

**1.1.1 General:** When the operation of Ronald Reagan Washington National Airport was transferred from the Federal Aviation Administration (FAA), the Metropolitan Washington Airports Authority (Authority) assumed legal responsibility to identify, evaluate and protect significant historic resources contained on airport properties. This responsibility was formally outlined in a 1987 Programmatic Memorandum of Agreement (PMOA) between the FAA, the Virginia State Historic Preservation Officer (VASHPO) and the Federal Advisory Council on Historic Preservation (ACHP). Ronald Reagan Washington National Airport has been determined to contain a significant complex of historic structures that are eligible for the National Register of Historic Places. This complex consists of the historic Terminal A (the current South Terminal) and South Hangar Line. At the center of this complex of aviation-related historic properties is the existing Terminal A. The original 1941 portion of the Terminal A has been identified as being the most significant portion of that terminal; however, certain later additions (1948 and 1956) also have been determined to have historic and/or architectural value. Federal and state preservation laws, and the terms of the Authority PMOA, require that plans for projects that may affect significant elements of National Register-eligible historic properties must be coordinated with the VASHPO and ACHP. The purpose of this coordination is to allow

projects to proceed, while potential adverse effects (demolition, relocation, inappropriate repair/replacement or alteration) to the historic properties are avoided, minimized or mitigated. Since the construction of the Terminal B/C and Related Facilities and other construction activities have effects on the Terminal A, the Authority has negotiated several formal Memorandums of Agreement to identify, evaluate and mitigate any resulting adverse effects. As an important part of these agreements, the Authority will be required to protect and maintain the original historic fabric of the Terminal A. Successful negotiation and execution of these agreements is a mandatory step in the historic and environmental review processes required for federal approval of construction involving the Terminal A.

#### 1.2 Historic Preservation Coordination Procedures

**1.2.1 General:** The Authority has developed a coordinated historic property protection program. This program establishes coordination procedures for the successful implementation of primary, supplemental and long-term preservation goals. As outlined below, the primary/supplemental coordination procedures are currently active. The planned long-term procedures will be developed in consultation with the Engineering and Maintenance Department, and will be initiated in the future. Engineering briefs will be issued to provide information and procedures for the preservation program.

**1.2.2 Primary Coordination Procedures:** The Authority has made formal preservation commitments to the federal and state historic agencies, such as the Virginia State Historic Preservation Offices and the Advisory Council on Historic Preservation. Removal or inappropriate repair/replacement of any portion of the Terminal A historic structure would have serious consequences and endanger the successful completion of the future historic program. As a result, the following primary historic preservation coordination procedure is recommended for implementation:

**1.2.2.1 Maintenance, Repair, or Rehabilitation:** Any maintenance or repair/rehabilitation activity which will require the removal/replacement/significant alteration of any existing Terminal A architectural fixtures (handrails, lighting equipment, bathroom fixtures, signage, heating grates/vents, window/door hardware, etc.) or removal/replacement/significant alteration to any existing structural elements/surfaces (walls/portions, floors, columns, stairs, counters, etc.) in public or non-public portions of the Terminal A will require prior coordination with the Design Department.

**A.** As soon as the need for such activity is identified, the staff of the Engineering and Maintenance Department is requested to submit a written description of the required activity and impacted Terminal A elements to the Design Department. A prompt analysis of the required activity will be coordinated and a written response outlining any preservation requirements and/or recommendations for alternative procedures will be supplied to the Engineering and Maintenance Department. Strict compliance with the recommended preservation treatment is critical in order to avoid destruction or damage to the protected portions of the Terminal A.

**1.2.2.2 Primary Coordination Procedure:** The primary coordination procedure outlined above is a general plan that provides for the protection of the Terminal A. Through discussions with Engineering and Maintenance staff, this protection plan will be refined into a more effective preservation coordination system. Supplemental coordination procedures are outlined below:

**1.2.3 Supplemental Coordination Procedures:** Through the completed historic preservation planning process, the Authority has compiled a comprehensive Protect and Maintain List that provides detailed identification of those architectural elements which have been determined to be significant and which require protection. This detailed list, found in **Section I**, provides the foundation for an efficient and effective preservation program. The protection and maintenance of the listed historic building elements is

required by the terms of the Memorandum of Agreement. This list will assist Engineering and Maintenance personnel in identifying those building elements that require special treatment. However, careful coordination with Design Department staff will still be needed. To this end, during any design and construction process it is suggested that regularly scheduled preservation coordination meetings be held so that potential preservation problems can be identified as early as possible and appropriate solutions can be found. As the development of required preservation procedures may require the input of outside review agencies, personnel are urged to anticipate the need for future work and start the coordination process as early as possible.

**1.2.4 Planned Long-Term Coordination Process:** It is suggested that the primary and supplemental coordination procedures outlined above will eventually be replaced by a permanent long-term system based on the development of a Historic Property Protection and Maintenance Manual and the establishment of a personnel-training system. In order to provide a comprehensive, permanent historic preservation program, it is recommended that the Design Department and Engineering and Maintenance Department work together to develop a Historic Property Protection and Maintenance Manual. Based on the detailed listing contained in the Protect and Maintain List, this Manual would provide specific preservation information on all identified significant historic building elements. Structured in a format similar to the current Operations and Maintenance - Quick Reference Manuals, the document would provide information on the location and identification of historic elements and the required level of preservation treatment. Specifications for cleaning, preventive maintenance, repair/rehabilitation procedures and the availability of replacement parts would be provided. In order for this manual-based preservation plan to be effective, Engineering and Maintenance Department Managers/Supervisors will need to be directly involved in manual development and a staff orientation/training process should be a critical part of the implementation plan.

### 1.3 Contributing Features of Terminal A to be protected and Maintained

**1.3.1 General:** The evaluation of historically significant features to be protected and maintained at the Terminal A at Ronald Reagan Washington National Airport focused on the original 1941 Terminal, and on contributing additions to it. The character-defining features listed below can be found, therefore, in the 1941, 1948, and 1956 portions of the Terminal in those spaces determined significant. The protection and maintenance of these building spaces and features will be assured during the rehabilitation of the South Terminal and in the course of future repair work. The items listed below will form the basis for a general protection plan and will later be incorporated into the Protection and Maintenance Manual, which will include instructions for the sensitive cleaning and repair of the below-listed features. If features are in irreparable condition, items may be replaced in kind, after coordination with the appropriate Design Department personnel. Restoration and renovation projects have now been completed in a number of historically significant original spaces in the Terminal A. These have been the subject of consultation with the historic review agencies and have been completed according to the Secretary of the Interiors Standards for the Treatment of Historic Properties and according to legal agreements between the Authority and historic review agencies. All future work in the spaces should respect these agreements. This includes changes to original historic materials, reconstructed missing historic features, and approved historically compatible new features, as well as new penetrations for signage, etc. These spaces include the restored/renovated original Dining Room (Airline Club and Authority exhibit space) and the former Presidential Suite and Post Office (Airport Operations), as well as major repairs to the Mirador and South Canopy, and other work completed in association with the New Terminal A and Related Facilities project. Preservation requirements for these spaces can be clarified by consulting the Design Department.

#### 1.3.2 Exterior Inventory

**1.3.2.1 Shape and Massing:** The shape and massing of the 1941 Terminal:

- A.** Arc-shaped, hierarchically composed, featuring both squared edges and circular terminuses at the south and north ends respectively.
- B.** The central portico, with cap less, square columns, integral lighting on the east side of the columns, concrete mosaic floor and ceiling, aluminum/glass doors with white bronze reeded handles, and decorative concrete sconces above these doors.
- C.** Horizontally scored, cast-in-place concrete, and structural steel construction.
- D.** Steel-sash casement windows throughout and banded windows on the upper story at the southern end.
- E.** Three sidewalk canopies, two that curve to the northwest and southwest, and one that stretches north. As part of the Pedestrian Tunnel project, a portion of the southwest canopy will be replaced using original material wherever possible.
- F.** Incised lettering on both the landside and airside "Ronald Reagan Washington National Airport" and "Elevation 16".
- G.** Decorative, concrete emblems on the building façade, the Presidential Seal and the Civil Aeronautics Administration logo.
- H.** The cornerstone, located on the building west elevation within the portico.
- I.** The original metal flagpole base, still located at its original site.
- J.** The airside Waiting Room steel-sash curtain window.

**K.** The round, steel and concrete columns on the airside at the Waiting Room level.

**L.** The observation decks and aluminum railings on multiple levels on the airside.

**M.** Any exterior light fixtures which remain on the east wall in the area of the observation decks.

**N.** All original ground-level airside openings, including the curved walls of the former loading vestibules.

**O.** The Mirador, or original weather station, at the roof level. Due to concrete deterioration, the Mirador will be reconstructed using salvaged original fixtures and wall tiling wherever possible.

### 1.3.3 Interior Inventory

#### 1.3.3.1 Ground Floor:

##### A. Trucking Concourses

1) All extant, glazed, gold-colored "clay wall unit" tiles.

2) Original interior concrete wall curbing.

##### B. Baggage Makeup Room

1) Original baggage chute.

**C.** Passenger Loading Vestibules: The following elements are in place at vestibule number 2, the most intact of the four vestibules (located at the north stair of the South Passenger Concourse). Any of these elements at any of the other three original vestibules should also be protected and maintained:

1) Curved, horizontally scored cast-in-place concrete walls.

2) Terrazzo flooring and baseboard.

3) Metal restroom doors.

4) Metal twin telephone stalls. The actual booths are not original, but their location and arrangement, with the shelf between them, is original.

5) Metal ventilation grilles in wall.

6) Peacock blue-green terra-cotta tiles.

##### D. Loading Vestibule Restrooms

1) Any remaining marble partitions.

2) Mottled green unglazed porcelain tile flooring.

3) Soldier-course wall tiles.

##### E. Presidential Suite

1) Walnut, wood-grained, plastic-laminate wall surface and doors.

2) Terrazzo flooring with inlaid zinc design.

3) Anodized and cast-aluminum cornice and other decorative aluminum features.

4) Steel-sash windows.

5) Original lavatory tile and marble partitions.

6) Aluminum radiator grilles.

7) Window blinds.

8) Lighting sources and ceiling fixture.

9) Leather sofa and armchair.

##### F. Post Office and Elevator Lobby

- 1) Exposed aggregate precast concrete wall panels and other newly selected finishes.
- 2) Terrazzo flooring with inlaid white-bronze design.
- 3) Cast-aluminum grillwork and new mechanical grills.
- 4) Original vault.
- 5) Service windows.
- 6) Built-in writing desks, bulletin display cases.
- 7) Replacement doors.
- 8) Elevator doors.

#### 1.3.3.2 First Floor:

##### A. Waiting Room

- 1) The metal "grand staircase" which originally led to the Dining Room, with its original cast-aluminum sheaf-of-wheat newel posts. The glass plates and aluminum handrails currently in place are replicas of the original handrails.
- 2) The extruded aluminum cornice which defines the wall/ceiling juncture.
- 3) Glass and metal doors leading to North and South Passenger Concourses.
- 4) Any remaining portion of the original terrazzo Verde flooring.
- 5) The aluminum radiator system at the curtain wall.
- 6) All aluminum ventilation grilles.

- 7) The steel-sash curtain-wall window.
- 8) The gray-buff, exposed aggregate concrete panels.
- 9) Two sets of triple aluminum/glass doors leading to the observation deck.
- 10) The etchings in the glass over the doors to the observatory deck.
- 11) The decorative metal work, stylized disks, stars, and lightning bolts, at the caps of the piers and above the observatory deck doors.
- 12) The directory, located on the south wall of the waiting room.
- 13) The construction credit panels, located on both the south and north walls.
- 14) The plastic and metal globe-with-wings panels above the doors to the passenger concourses.
- 15) The aluminum fascia at the ticket counter.
- 16) The acoustical plaster soffit below the balcony.
- 17) Aluminum/glass doors at the south end which lead to the mezzanine stairwell.
- 18) Numbers and clock hands of the two clocks above the concourse openings.
- 19) Two-cut, green-glass lettered signs ("To Gates...") located above the openings between the Waiting Room and the North and South Concourse.

##### B. South Passenger Concourse

- 1) Peacock blue-green terra-cotta tiles.

2) Terrazzo Verde flooring.

3) Slender interior columns.

4) Original metal doors on west wall.

5) The stairs leading down to the loading vestibules, including stair rail and safety rail.

6) Original, steel-sash windows.

7) Cut, green-glass lettered sign ("To Waiting Room") located above the opening between the concourse and the waiting room.

#### C. North Passenger Concourse

1) Slender interior metal columns.

2) The remaining section of original terrazzo flooring.

3) Cut, green-glass lettered sign ("To Waiting Room") located above the opening between the concourse and the waiting room.

#### D. Original Baggage Room

1) Wall coverings, both precast and terra-cotta tiles, or flooring, terrazzo that may exist under newer materials.

#### E. South Corridor

1) Gray-buff exposed aggregate concrete panels.

2) Terrazzo Verde flooring.

3) Metal doors.

4) Interior metal-clad boxy columns, original columns reclad during the 1948 renovation.

5) Coved ceiling in 1948 portion.

#### F. Soda Fountain

1) Any original materials which may be uncovered during selective demolition, including precast walls, and Kitty Hawk mural.

#### G. Telephone Alcove

1) Although no original fabric is apparent, the configuration of this space as a telephone alcove is original and any original wood-grained plastic laminate should be retained.

#### H. Mezzanine

1) The aluminum/glass panel balcony original, etched plate-glass panels are no longer extant.

2) The aluminum wheat-sheaf motif over the door openings at either end of the mezzanine.

3) All metal doors which lead to offices and room number signage hardware is not original.

#### I. The South Mezzanine Stair

1) The staircase at the southern end of the mezzanine that leads up from the Waiting Room, including its aluminum handrail. Aluminum suspended light fixtures at landing.

### 1.3.3.3 Second Floor:

#### A. Dining Room

1) Glass entrance wall with stylized aluminum lintel.

2) Steel-sash windows.

3) Glass and metal doors.

- 4) Decorative plaster ceiling medallion.
  - 5) Cove lighting at the perimeter of the room.
  - 6) Terrazzo floor with inlaid white bronze design.
  - 7) Aluminum cornice.
  - 8) Steel columns.
  - 9) Oak veneer walls.
  - 10) Outdoor dining terrace, including railing and replacement flooring.
  - 11) New design features, including temporary wall partitions, service space wall openings, service bar, elevators and ramps, etc.
  - 12) Lavatories, telephone booths, and hall leading to the Mezzanine.
- 5) All original wall surfaces in public spaces, including exposed aggregate concrete panels and terra-cotta tiles.
  - 6) All original doors of which there were eight standard types.
  - 7) All other original aluminum elements, whether decorative trim or functional features.
  - 8) The cove ceiling in the 1948 corridor.
  - 9) All original, circular lighting fixtures.

**B. South Corridor and Offices**

- 1) All original fenestration and hardware.
- 2) Any original corridor doors and office number signage.
- 3) Any original flooring, the date of the extant linoleum has not been determined.

**C. Throughout the Terminal A (1941-56 Portions)**

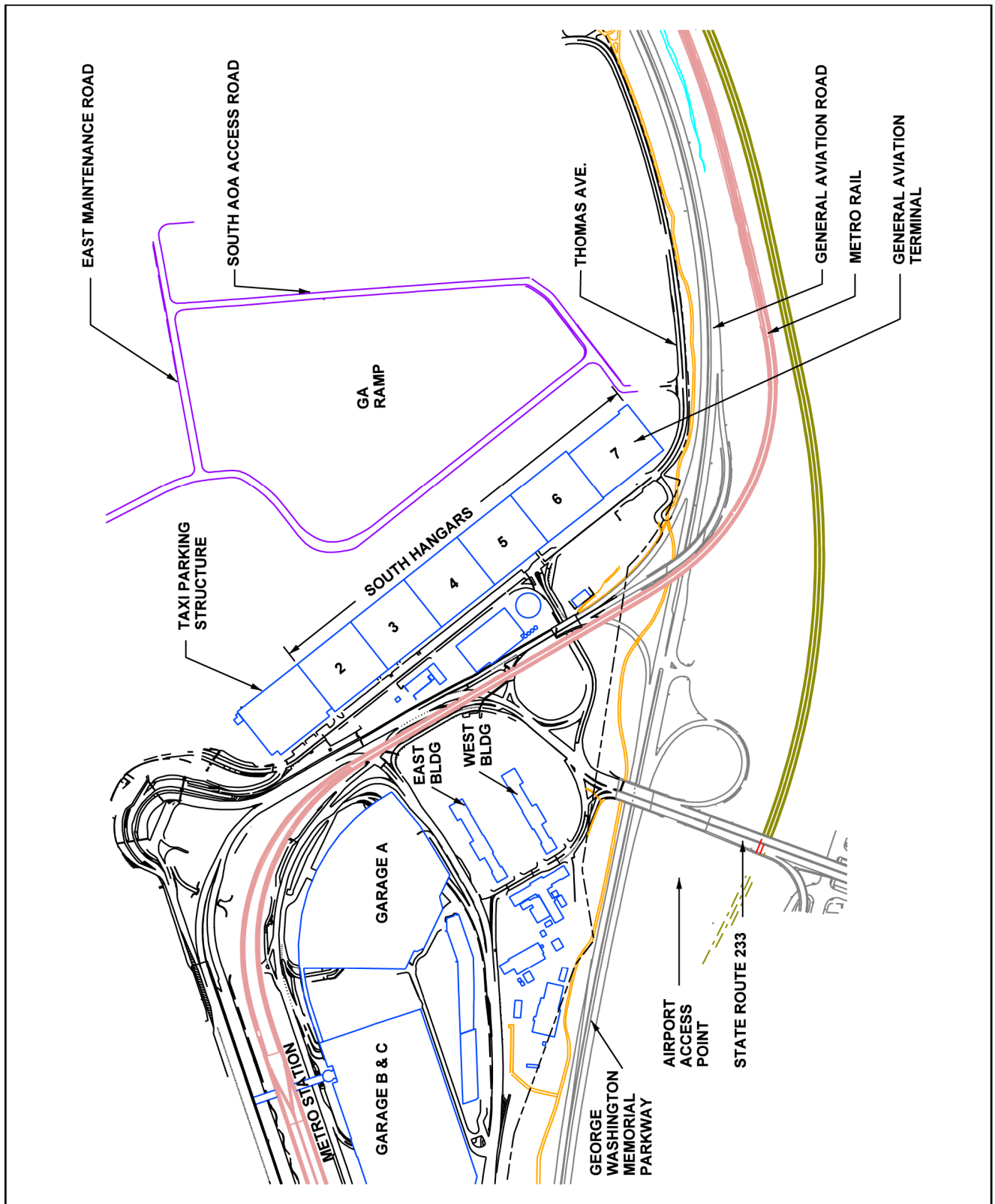
- 1) All original stair elements: aluminum handrails and brackets, terrazzo steps, terra-cotta tiling, etc.
- 2) All original hardware for doors or windows.
- 3) All aluminum ventilation grilles.
- 4) All original terrazzo flooring.

**1.4 South Hangar Line (SHL)**

**1.4.1 General:** The existing structures of the South Hangar Line have been determined to be part of the protected National Register property. Renovations and alterations to these structures must remain compatible with the architectural character of the existing structures. Particular care should be taken in the replacement, rehabilitation or alteration of structural elements that will significantly change the façades (i.e. doors, windows etc). Whenever possible repair, rehabilitation or replacement in-kind should be attempted. Guidelines for these efforts can be found through consultation with the Authority Design Department, the State Historic Preservation Office, and the Advisory Council of Historic Preservation. All changes should be made in accordance with the Secretary of the Interior Standards for the Treatment Historic Properties. The SHL at Ronald Reagan Washington National Airport consists of six attached hangars (No. 2 - 7) located approximately 500 feet southwest of the Terminal A. The hangars run northeast by southwest and lie between Thomas Avenue on the west and the Airport apron on the east. The hangars are located adjacent and parallel to Thomas Avenue. Five hangars (No. 2 - 6) of the SHL are designed to appear as one continuous rectangular structure. The rectangular structure is three levels adjacent to Thomas Avenue, with an adjoining three level high-bay hangar rising immediately behind. The center hangar (No. 4) is taller than the others, providing the visual center.

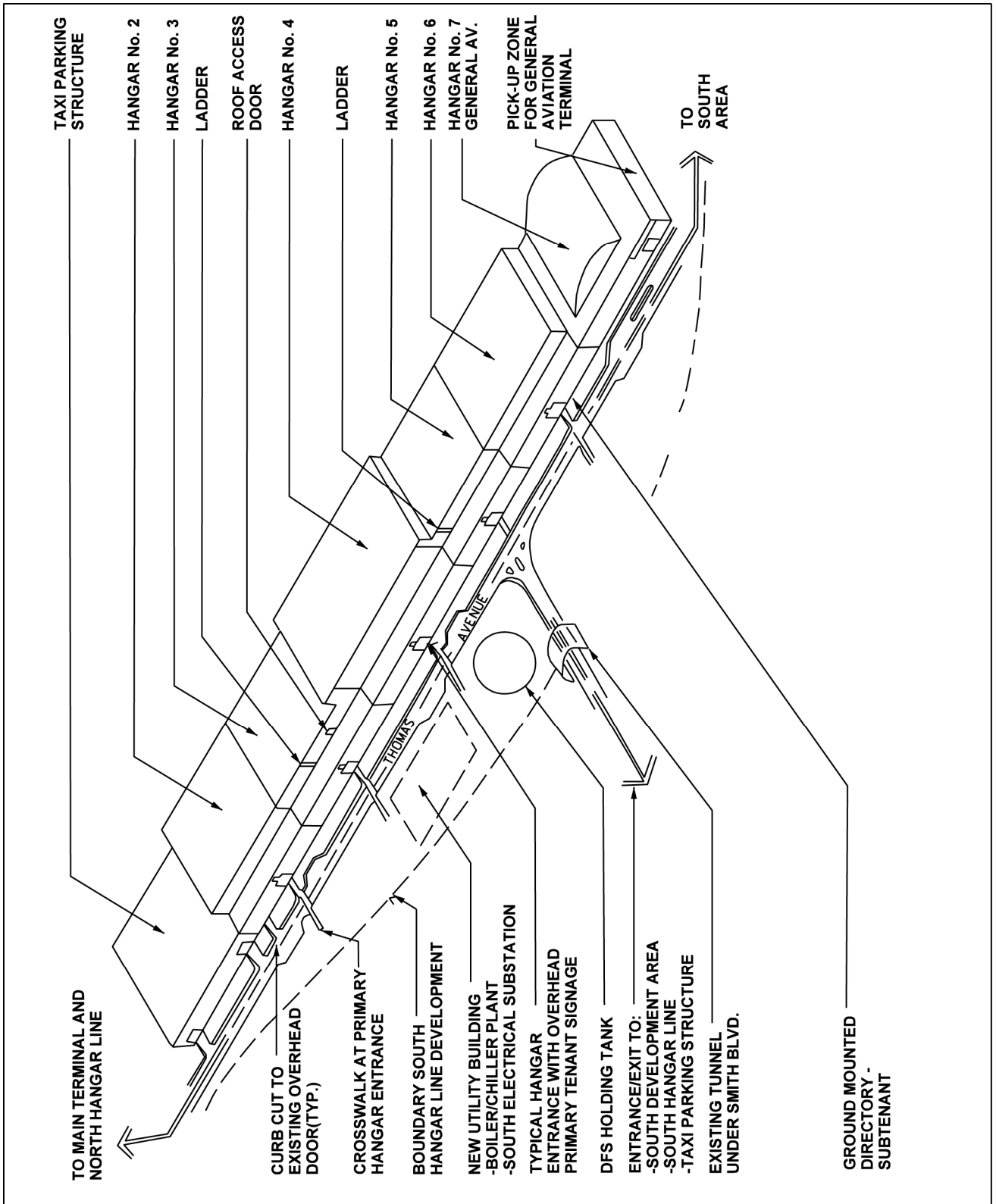


Construction material includes structural steel and reinforced concrete. The exterior wall(s) are a continuous flat plane of concrete, formed with visible horizontal joint lines. Hangar No. 7 has an arched roof of steel box beams with long span steel; Hangar Nos. 2 - 6 is constructed with Warren trusses. Horizontal steel sash windows provide natural lighting to interior spaces. A clerestory is provided in the three level hangar space and horizontal windows in the three level office/workshop spaces. The SHL provide lease space for the following uses: airplane hangars, workshops and offices. These uses are located throughout the six structures comprising the SHL. The individual SHL primary entrances are centrally located and recessed. The entrance system consists of three metal-framed glass doors with steel fluted handles flanked by wide geometric concrete piers supporting a concrete canopy. Three floodlights recessed into the concrete canopy above illuminate the entrance. Three service door openings are evenly spaced between each primary entrance. Original service doors consist of three accordion hinged metal panels with fixed light windows in the upper half. Airside, the individual hangars are clearly delineated by large hangar doors centered on each hangar. These hangar doors, when fully opened, are stored in pockets, leaving the entire width of the hangar available for aircraft access. Airside pedestrian access is accommodated by the use of pilot door located in a leaf of the hangar door system. Refer to **Exhibits I-1-1 through I-1-6.**



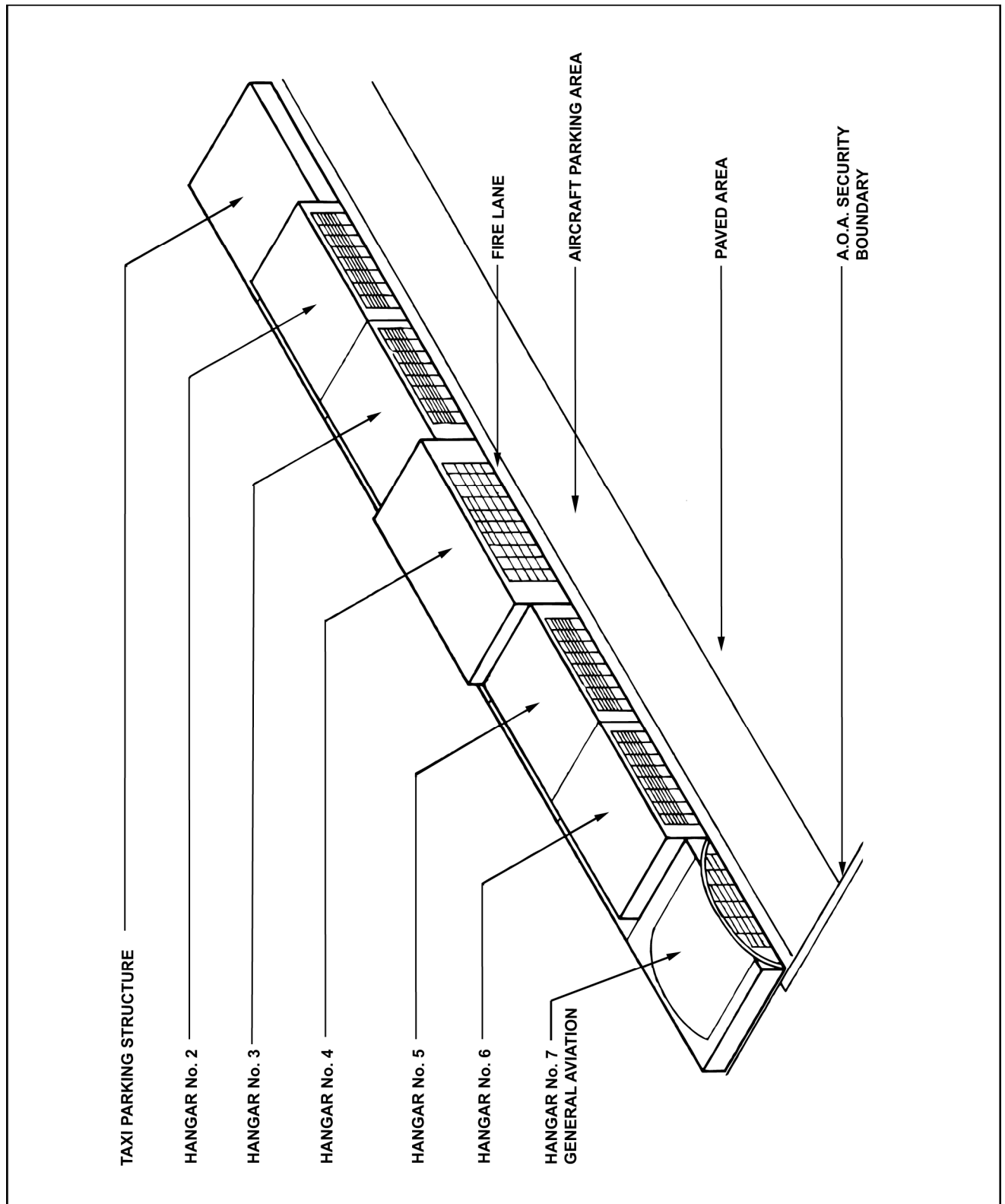
South Hangar Line Development

Exhibit I-1-1



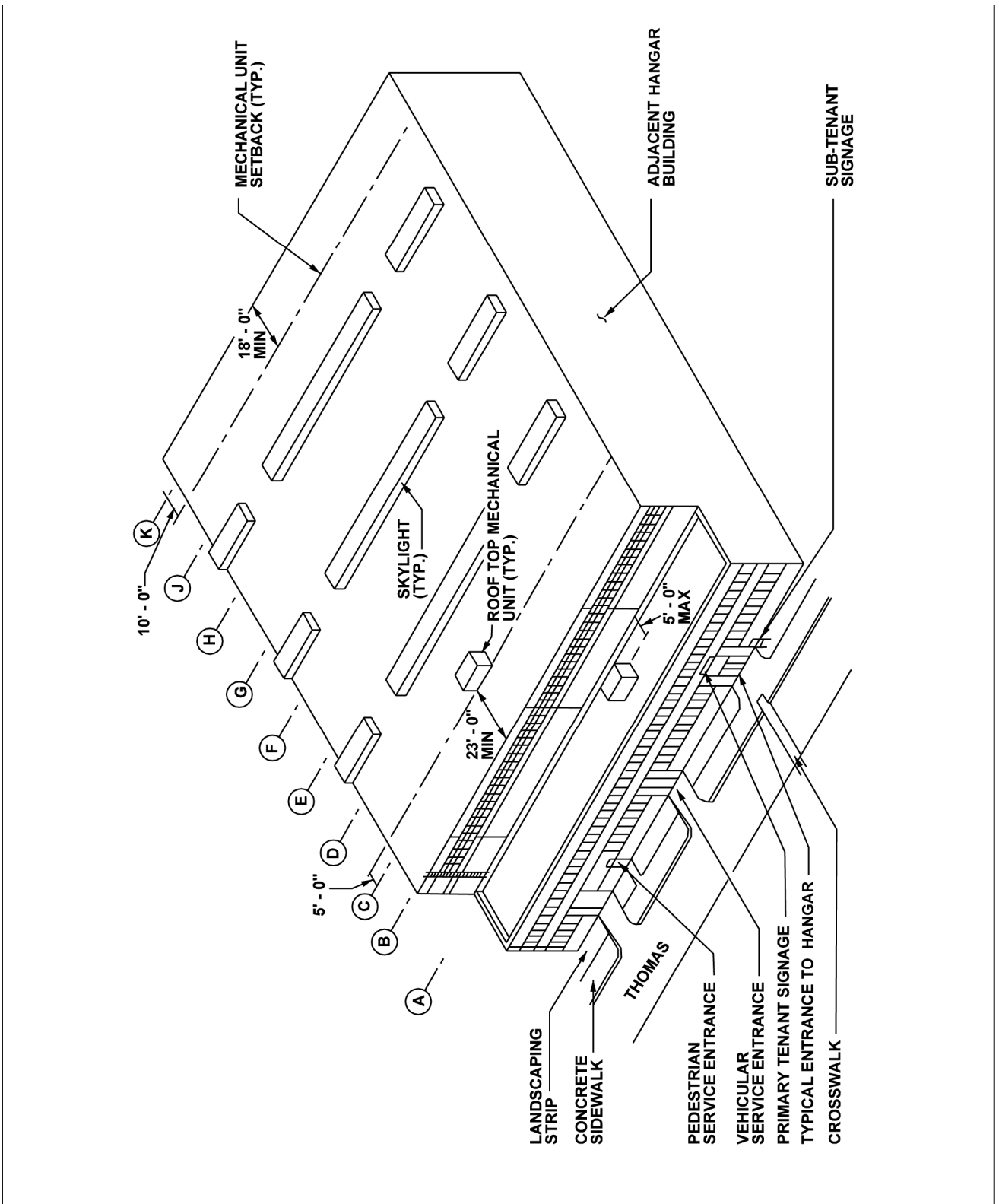
Existing South Hangar Line, Axonometric Landside

Exhibit I-1-2



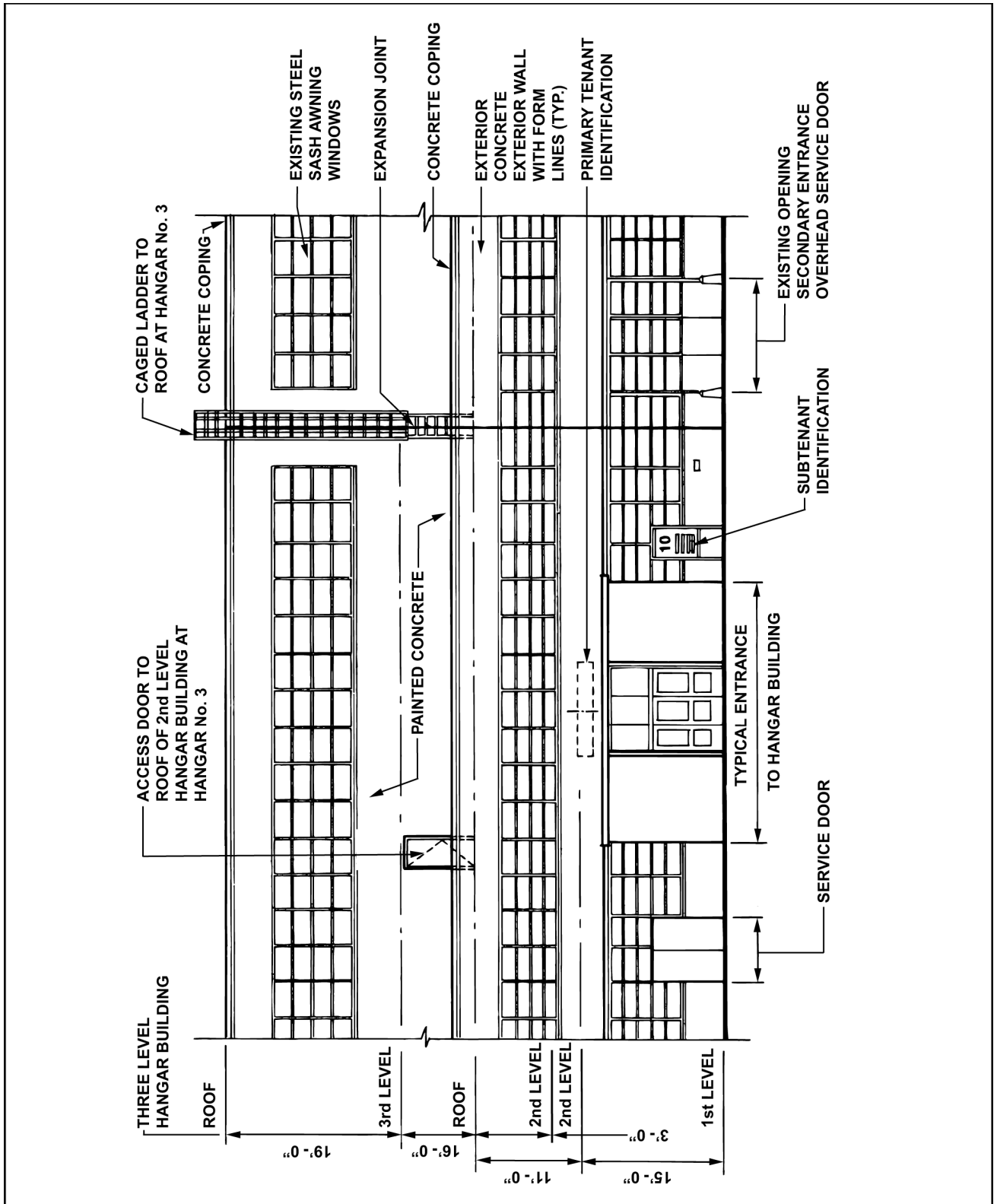
Existing South Hangar Line, Axonometric Airside

Exhibit I-1-3



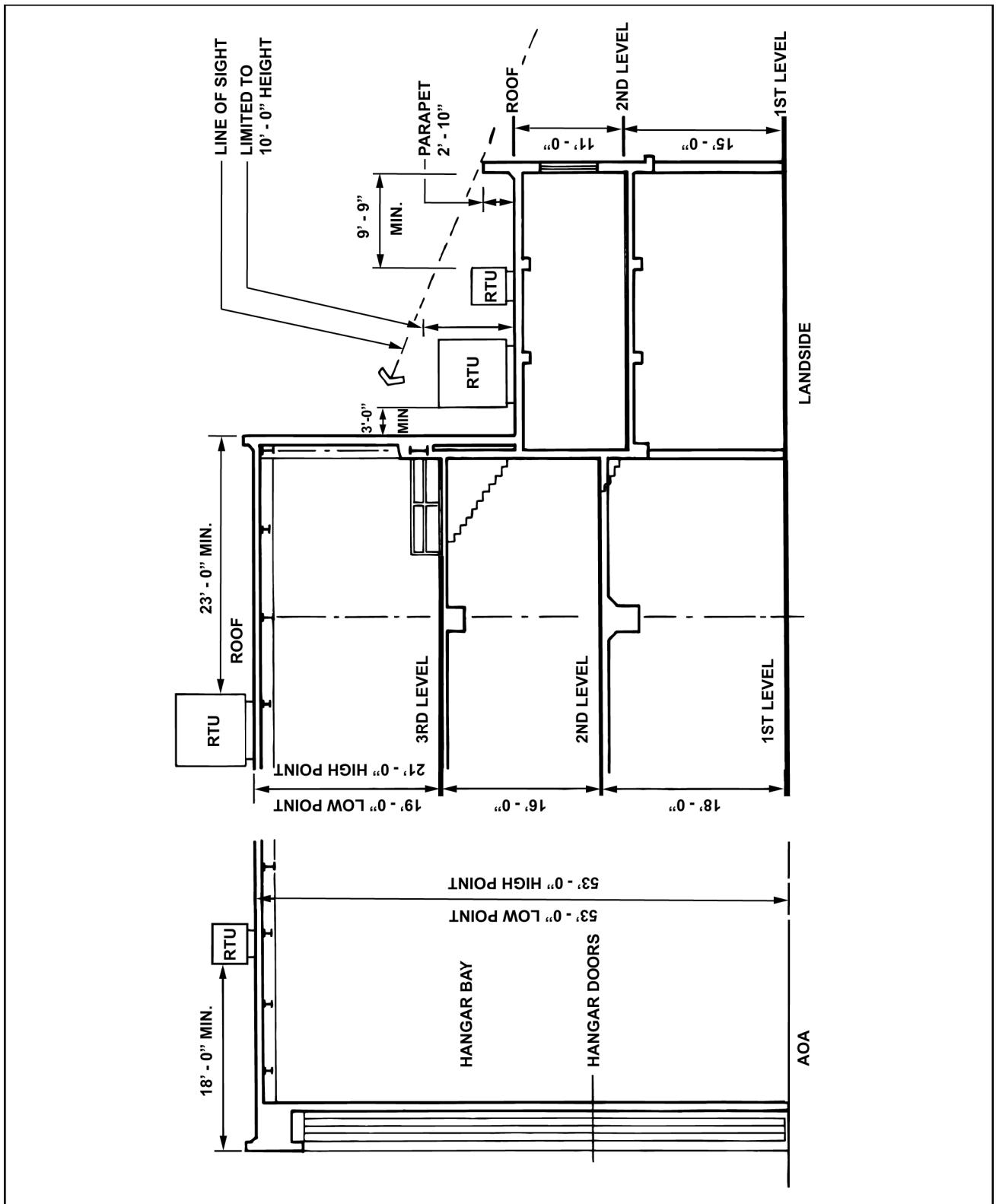
Typical Hangar Building, Partial Axonometric

Exhibit I-1-4



Existing South Hangar Line, Partial Elevation

Exhibit I-1-5



Section Through South Hangar Line

Exhibit I-1-6

## CHAPTER 2 South Airport Development Area

The objective of the South Airport Development Area Architectural Standards is to provide a set of planning standards, guidelines and design criteria to be used for all South Area facilities at Ronald Reagan Washington National Airport. This appendix is a reference for those designing and implementing the Airport Capital Construction Program (CCP), Capital Maintenance and Investment Program, and Tenant Construction programs in this area of the Airport. This document includes detailed information about urban design guidelines, exterior and paved area details, building component details and project specific details. Specific design of the buildings is not described, but rather how the overall visual design must work and criteria by which proposed construction can be evaluated. It is the designer's obligation to respect and comply with the design guidelines described herein when developing solutions for proposed and improvements to existing South Airport Development Area facilities.

### 2.1 South Airport Development Area Location

**2.1.1 Development Procedure:** The Metropolitan Washington Airports Authority (the Authority) will develop the southern parcel of land bounded by Four-Mile Run, George Washington Memorial Parkway, and Taxiway A. This area, formally known as the South Airport Development Area, is currently used for industrial buildings and on-site parking. The new development activity calls for an industrial area with greater use density, improved visual appearances, and improved safety. Projects in this area include pavement projects, roadways, and maintenance facilities, on-site parking improvements, in-flight kitchens facilities, fuel farm, cargo facility and functionally related/subordinate facilities for any of the foregoing categories. Authority goals for the South Airport Development Area are stated within the following design standards that will be delivered to all tenants as part of their lease agreements. These guidelines may be augmented by additional site restrictions imposed by the Authority. Final approval of the building design and exterior building materials rests with the Authority.

**2.1.2 Existing Facilities:** The South Airport Development Area includes numerous single-level prefabricated metal buildings constructed in the past 20 years. The buildings are constructed either as slab-on-grade or with a raised concrete base. The present configuration of these buildings represents an inefficient use of space and does not allow for future growth of services. Existing facilities include cargo buildings; maintenance buildings with open-site storage areas; on-site parking for airport employees, airline crew and airport patrons; fuel farm; and an industrial waste treatment plant.

**2.1.3 Jet Engine Test Cell:** The South Airport Development Area contains one historic property, the Jet Engine Test Cell (current Ogden/Allied Vehicle Maintenance Facility), which has been determined to be eligible for the National Register of Historic Places. In accordance with the terms of the Authority Programmatic Memorandum of Agreement, projects with the potential to adversely affect this property must be coordinated with the staff of the Virginia State Historic Preservation Office and the Advisory Council on Historic Preservation. As a result, any project plan which would result in the demolition, relocation or significant alternation of this property must:

- 1) demonstrate that such an adverse effect is unavoidable,
- 2) provide project information which allows the Authority to initiate consultation with the preservation agencies and 3)
- provide sufficient program/schedule flexibility to allow for the required negotiation and execution of an agency Memorandum of Agreement.

**2.1.4 Open-Site Areas:** Landscaping in the South Airport Development Area is located along the southern boundary - Four Mile Run, and the western boundary National Park Service property/George Washington Memorial Parkway. The internal land mass is paved and currently offers little landscaping. Consolidated open site area is allocated to on-site parking. The South Airport Development Area is accessible primarily by vehicles; pedestrian paths are not provided. Vehicular traffic is confined to a single two-lane roadway. The roadway provides no passing lanes or shoulder stops for shuttle bus services.



**2.1.5 Utilities:** Underground utilities (gas, water, telephone, and sanitary sewer) are routed at various angles across the site. The Authority maintains all underground utilities except telephone and gas lines.

**2.1.6 Master Plan:** The Master Plan for the South Airport Development Area is based on the following criteria:

**2.1.6.1 Thomas Avenue:** Thomas Avenue should be realigned adjacent to Four Mile Run and George Washington Memorial Parkway to allow for consolidated development of total land mass.

**2.1.6.2 Sight Lines:** Broad sight-lines along the streets are necessary for safety and aesthetics.

**2.1.6.3 Parking Lots:** Consolidate parking lots adjacent to Thomas Avenue and other major vehicular roadway.

**2.1.6.4 Visual Appearance:** A cohesive visual appearance is desirable, using consistent materials and construction techniques.

**2.1.6.5 Lease Areas:** Each "lease area" should have specific setbacks and design constraints that respect total South Airport Development Area.

**2.1.6.6 Roadways:** Roadways should separate service vehicles from passenger vehicles. Roadways should provide a grid for alignment of buildings.

**2.1.7 Traffic Control/Site Development:** The following design decisions allow for maximum site development, minimum traffic congestion, and improved sight-lines:

**2.1.7.1 On-Site Parking Lots:** Parking lots on-site are centralized.

**2.1.7.2 Roadways:** All roadways shall allow for two-way vehicular traffic with shoulders and shuttle bus pull-offs where possible.

**2.1.7.3 Intersections:** All "T" intersections have turn lanes to allow for constant traffic flow.

**2.1.7.4 Crosswalks and Accessible Curb Ramps:**

Provide crosswalks and accessible curb ramps at all curb cuts and intersections designated as pedestrian crossings.

**2.1.7.5 Stop Signs:** Stop signs shall be provided at crossings with high volume pedestrian traffic. Each crossing will be studied to determine the type of pedestrian control device required.

**2.1.7.6 Sidewalks:** Sidewalks shall be kept at the greatest achievable distances from roadways allowing minimum interference with vehicles.

**2.1.7.7 Vehicular and Pedestrian Conflict:** To minimize vehicular and pedestrian conflict, limitations on driveway curb cuts have been specified:

**A.** Minimum width of 24 linear feet.

**B.** Maximum width of 72 linear feet-12 linear feet at each loading dock plus 12' - 0" for passenger car access.

**C.** Minimum 40' – 0" setback from intersection, measured from the centerline of the intersection or 10 feet from the intersection end of radius, which ever is greater.

**2.1.7.8 Thomas Avenue Sight Lines:** Along Thomas Avenue, sight lines are encouraged by means of vegetation, trees, and shrubs which together will create a visual separation between roadway, buildings, and parking. At the turn along Four Mile Run, visual ties to the water should be encouraged. Along West Post Office Road, sight-lines should be toward the water (looking south) and to the apron areas (looking north), allowing for strong directional cues. Air Cargo and West Post Office roadway should accommodate use by passenger and commercial vehicles and tractor-trailers. At all other intersections, sight-lines shall be established to provide an unobstructed view to

drivers in all directions. Exterior building and street lighting shall occur at equal intervals and mounting height, and provide the minimum lighting levels as indicated by Authority Design Standards. Easements for underground utility connections to each site have been identified and provide unrestricted access to services to all sites.

## 2.2 Exterior Massing

**2.2.1 Building Height:** Building height may not exceed 42' – 0" above grade, exclusive of vents and ventilators. Rooftop mechanical equipment and vents shall be located within the roof setback and oriented away from the main access roads. The design of single-story buildings of widths less than 120 feet should consider sloped roofs. All other buildings shall have flat roofs. Freestanding buildings should be sensitive to adjacent buildings by considering existing height and design features that promote cohesive aesthetics and design of the overall complex. The design of adjoining/contiguous buildings with different individual tenant spaces shall be sensitive to the height and design features of the adjacent buildings. Each individual tenant space shall conform to a cohesive design approach of placing architectural elements - signage, entrance and service areas - as defined by the Authority. Facilities/building types with loading docks shall have finish floor at 48" above finish grade. The loading dock height can be adjusted by the use of dock levelers. Exterior ramps or depressed ramps are not allowed at loading docks. Secondary entrances and service loading docks requiring access to airside should be located in a non-public/secure area to maximize control of personnel and vehicles.

**2.2.2 Architectural Enclosure:** First level exterior building enclosure shall be concrete at areas of high impact and abuse. Insulated metal panels should be used at areas with low impact and abuse. Second level exterior building enclosure shall be insulated metal panels except where masonry is desirable for purposes of sound insulation. Provide natural light into main entry and administrative support areas. Natural lighting should be provided using means other than entry doors, sidelights and glass are encouraged. Provide a canopy over the primary building

entrance and loading dock(s). The loading dock canopy, cable supported, shall project a maximum of 10' – 0", have a minimum width of the bay door(s), and access stair. The entrance canopy, free standing or steel pipe support, shall be a minimum 4' – 0" projection, and minimum width of the entry glass area.

## 2.3 Exterior Requirements

**2.3.1 Signage:** Tenant primary exterior signage shall be placed at locations described in **Appendix 1, Volume II** of Design Standards for Ronald Reagan Washington National Airport. Mounting heights, typeface, and configuration of all signage shall be approved by the Authority prior to fabrication and erection.

**2.3.2 Landscaping:** The intent of the Landscaping Master Plan at Ronald Reagan Washington National Airport is to create an orderly, easy to maintain environment using native planting materials and species. Exotic or introduced species shall be minimized and used only for special effects (color, shape, texture) at focal points in the landscaping. The Landscaping Master Plan and the planting selection criteria and species will be provided to the designer by the Authority Design Department.

### 2.3.3 Building Guidelines

**2.3.3.1 Accessible Parking Spaces:** Shall be located near the primary entrance and have pylon signs for identification.

**2.3.3.2 Parking Spaces:** Shall have wheel stops or curbs to prevent vehicle projection into streets or walkways

**2.3.3.3 Tenant-Leased Areas Adjacent to Street Curb:** Shall have landscaping as outlined in the *Design Manual* and Landscaping Master Plan. Landscaping accents, such as planter boxes or shrubs, should be provided to emphasize major entrances to buildings.

**2.3.3.4 Requests for Repair of Vehicles on Tenant-Leased Areas:** Vehicle repair requests shall be submitted

to the Authority for review and written approval. If approved, vehicle repair area shall be located within the tenant building restriction line and shall not be visible from adjacent property(s) or main street(s). The tenant shall provide a narrative of the repair based activities including the reason for the repair, duration, location and adequate environmental protection to prevent vehicle fluids from entering the storm or sanitary sewer systems.

**2.3.3.5 Site Drainage:** Shall be controlled and discharged in accordance with the Virginia Storm Water Management Regulations. Additional storm water protection devices may be required based on the type of activity performed within the leased area.

**2.3.3.6 Above Ground Storage Tanks:** Provide above ground storage tanks in an area protected by a compartmentalized dike and covered to provide for storage of used oils, antifreeze, transmission fluids, and brake fluids.

**2.3.3.7 Dumpsters:** Dumpsters shall be placed within the tenants' lease area and shall have screen walls to block sight lines from adjacent streets and tenant lease area.

**2.3.3.8 Screen Walls:** Screen walls, if used, should be constructed of masonry. The masonry should be visually compatible with masonry used on the tenants' building.

**2.3.3.9 Wall Sections and Window Glass:** Building wall sections and window glass shall be designed considering sound control in offices and other habitable areas and to minimize sound transmission.

**2.3.3.10 HVAC:** Heating, ventilation, and air-conditioning systems (HVAC) shall be designed considering the environment of the South Airport Development Area, and

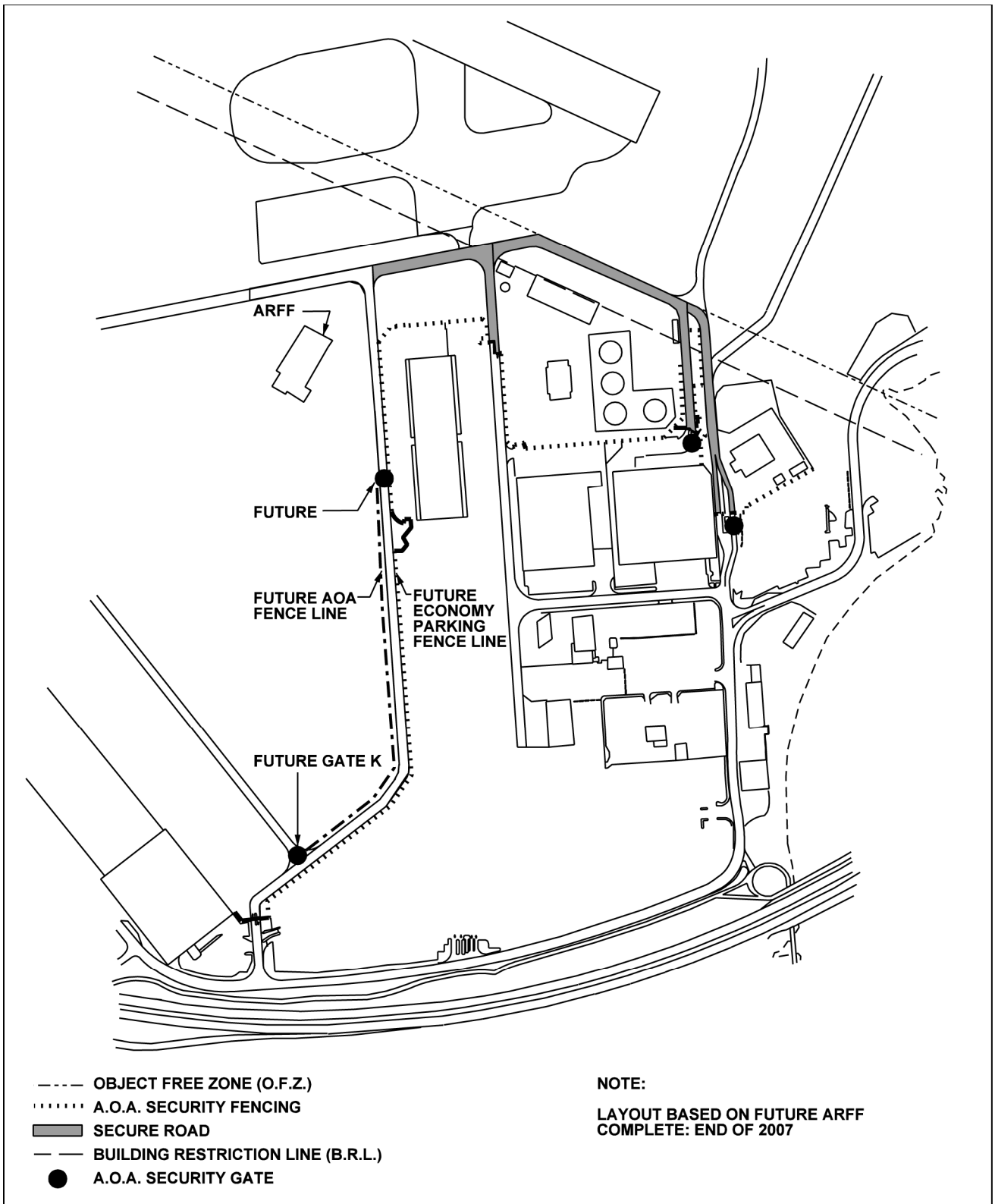
the closeness of the airfield and the Industrial Waste Treatment Plant.

**2.3.3.11 Vehicle Washing:** Vehicle washing shall be completed in an enclosed facility and contain a 100% wash water recycle system. No wash water shall be permitted to enter the storm water or sanitary sewer system. All vehicle washing or vehicle washing facilities shall be reviewed and approved by the Authority.

## **2.4 Site Development**

**2.4.1 Description:** The South Airport Development Area provides for improved and increased pedestrian and vehicular use while minimizing potential conflicts.

**Exhibit I-2-1** shows the detailed concept for pedestrian and vehicular improvements in the South Airport Development Area.



Airside Landside Boundary Exhibit I-2-1

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## CHAPTER 3 Site Development Standards

These details address those aspects of the site that are beyond civil engineering work and largely focus on improvements to transportation systems, parking areas and freestanding site features.

### Exhibit I-3-1 Bollard and Set Hole

### Exhibit I-3-2 Bus Shelter – Site Plan

### Exhibit I-3-3 Bus Shelter - Section

### Exhibit I-3-4 Directional Enforcer, Non-Motorized

To be used at vehicular entry/exit to parking and tenant lease areas as required by the tenant or the Authority.

### Exhibit I-3-5 Guardrail – Vehicle Protection

To be used to provide continuous protection of ancillary structures from motorized vehicles. Box beam guardrail type should be used in the terminal area. Guardrail for all other areas of the airport shall be W-beam guardrail and shall conform to VDOT Road and Bridge Standard, Details GR-HDW, GR-2 and 2A, GR-6 (detail Drawings 501.01, 501.02, 501.04, 501.05, 501.08) and other related details.

### Exhibit I-3-6 Light Fixtures Roadway

To be used adjacent roadways for general lighting. Spacing shall be 60' – 0" on center or as recommended by the A/E and approved by the Authority.

### Exhibit I-3-7 Light Fixture Parking Structures – Top Deck

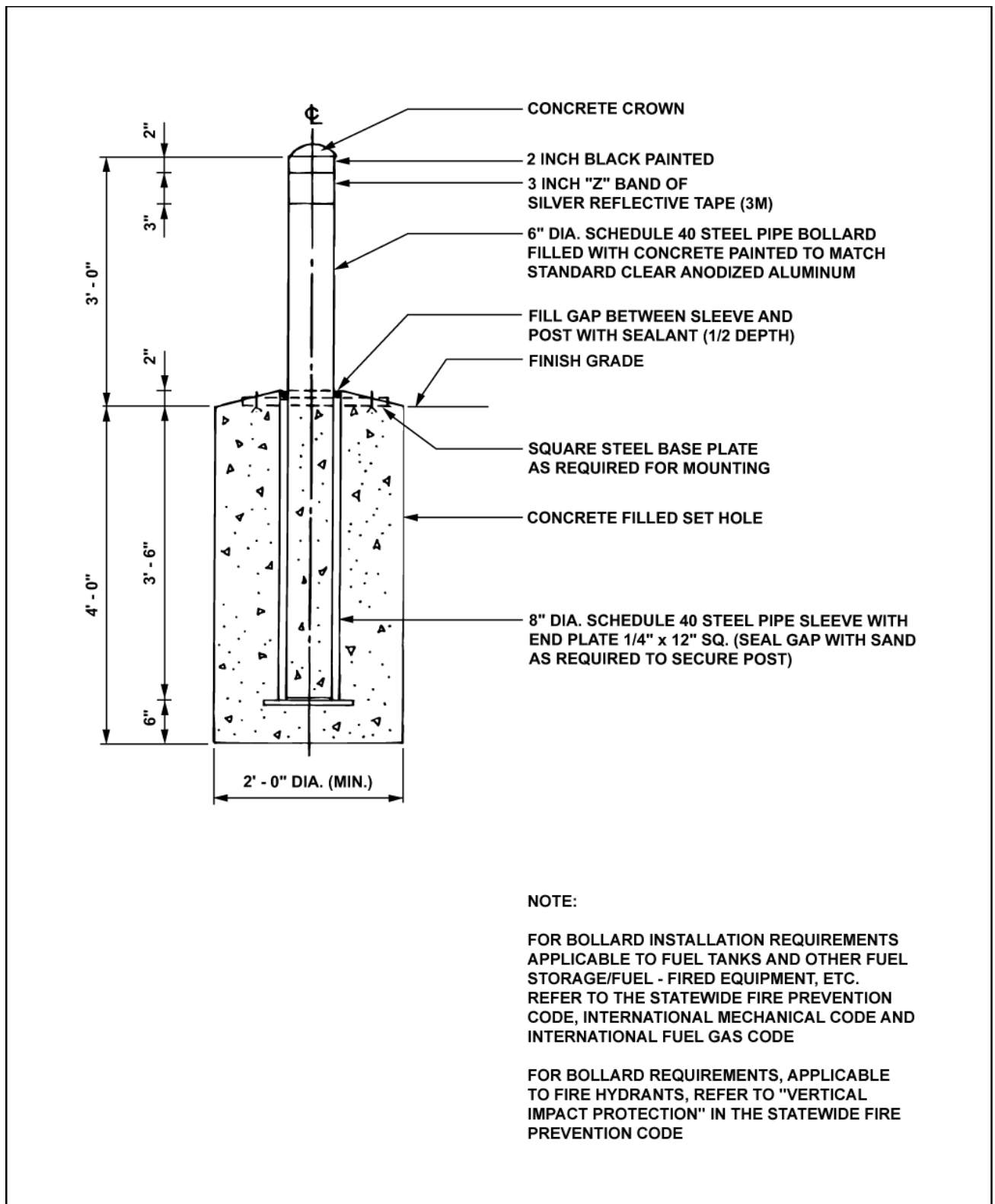
To be used in surface parking areas or the top level of open parking facilities.

### Exhibit I-3-8 Light Fixtures Parking Structures

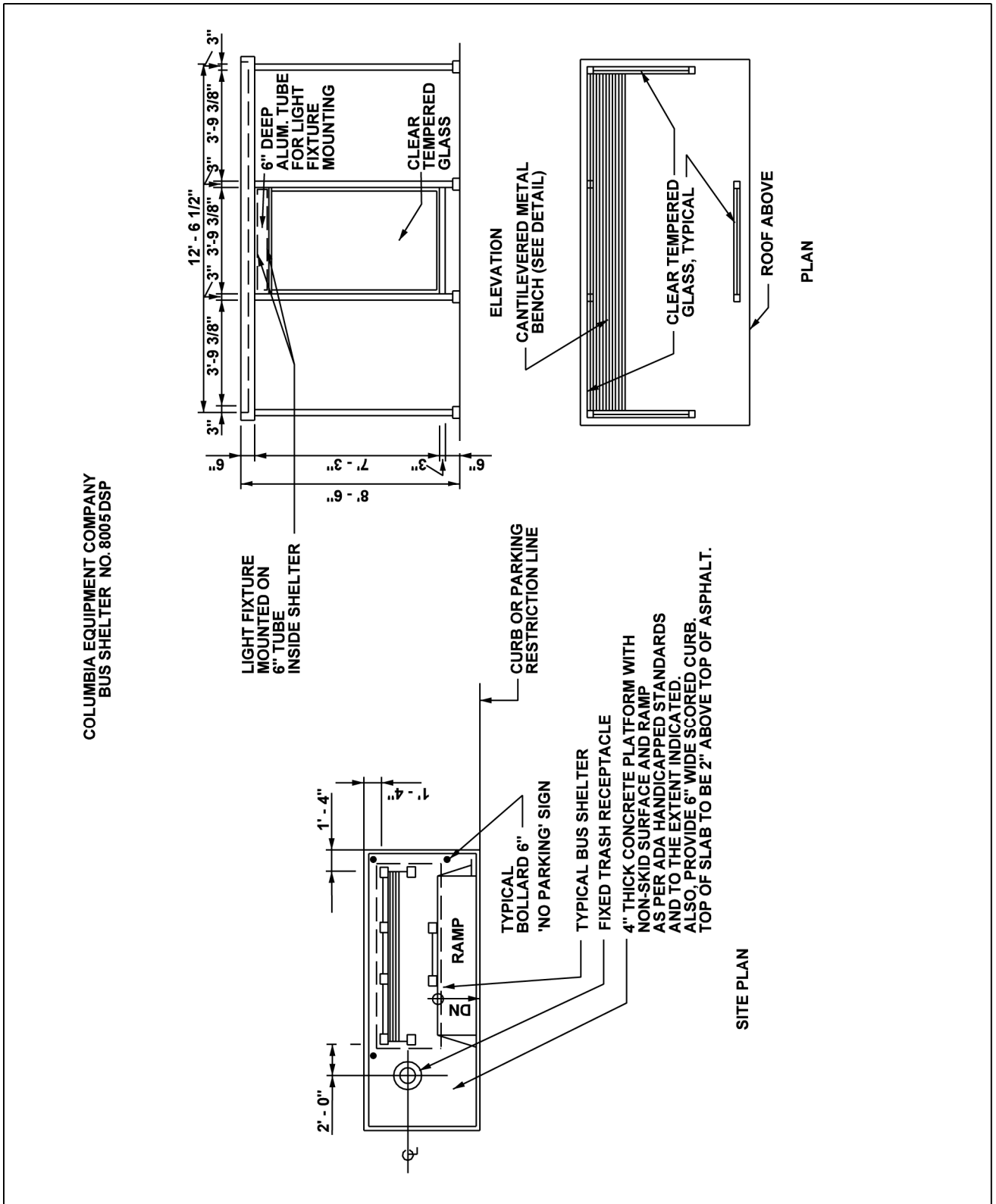
Round light fixtures shall be used to provide roadway lighting and lighting for open parking structures.

### Exhibit I-3-9 Trash Receptacle

To be used in public areas as directed by the Authority.

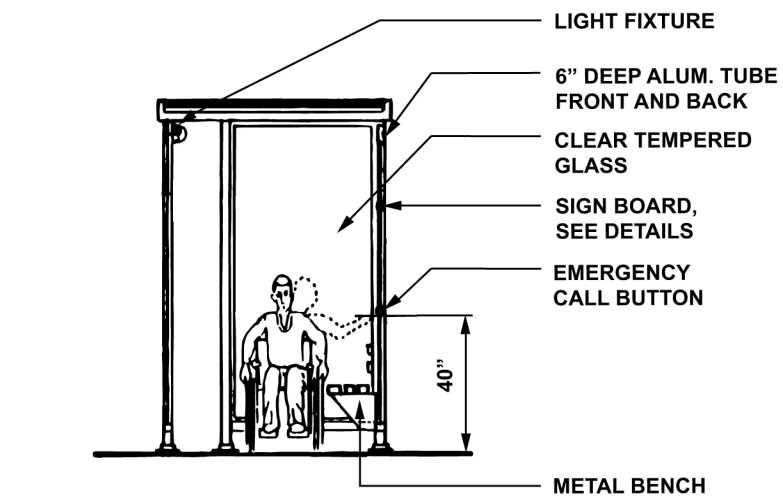


Bollard and Set Hole Exhibit I-3-1

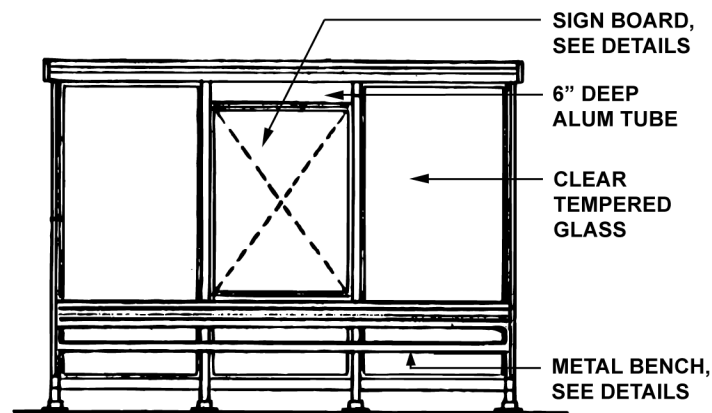


Bus Shelter - Site Plan Exhibit I-3-2





SECTION

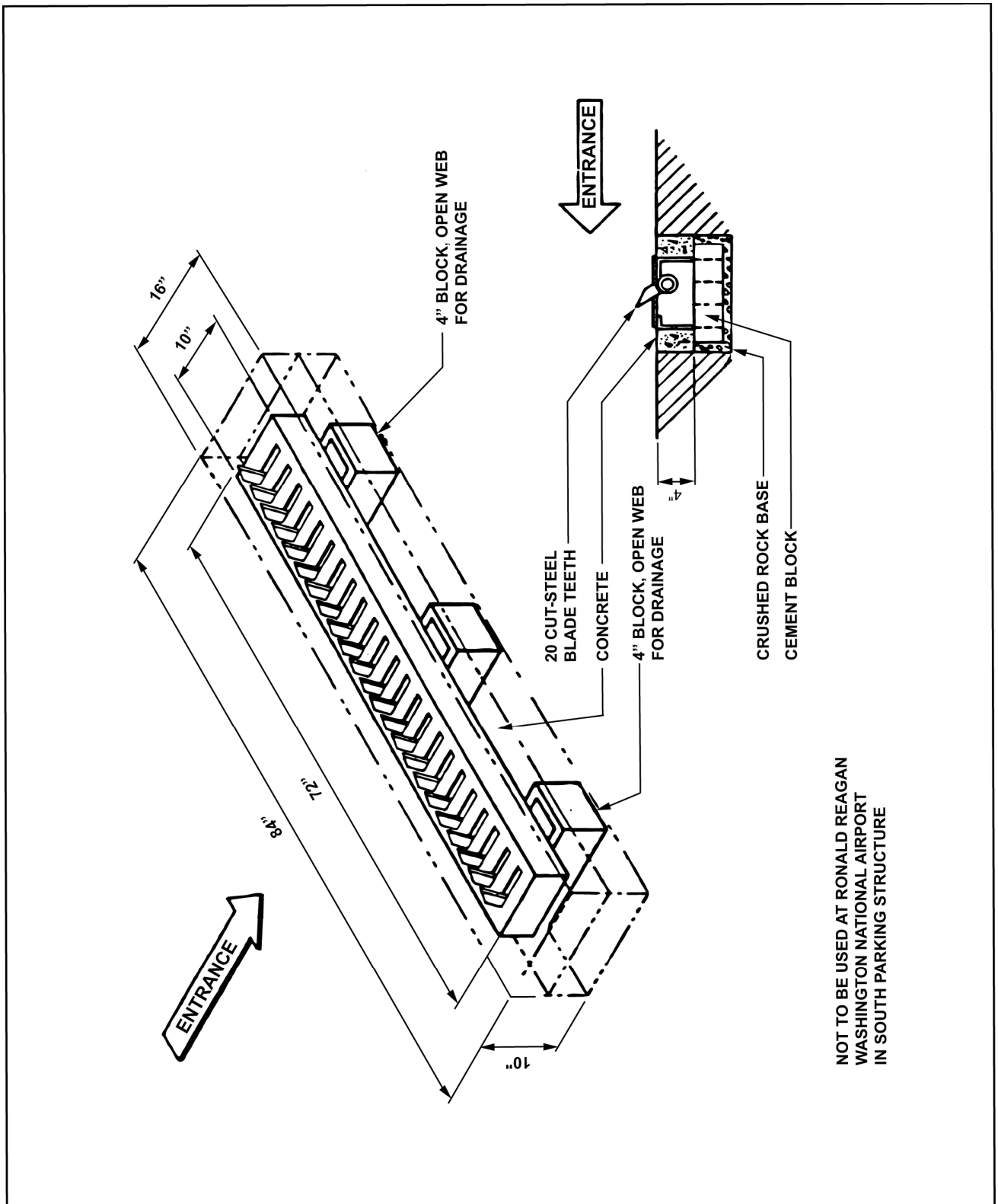


SECTION

COLUMBIA EQUIPMENT COMPANY  
BUS SHELTER #8005DSP

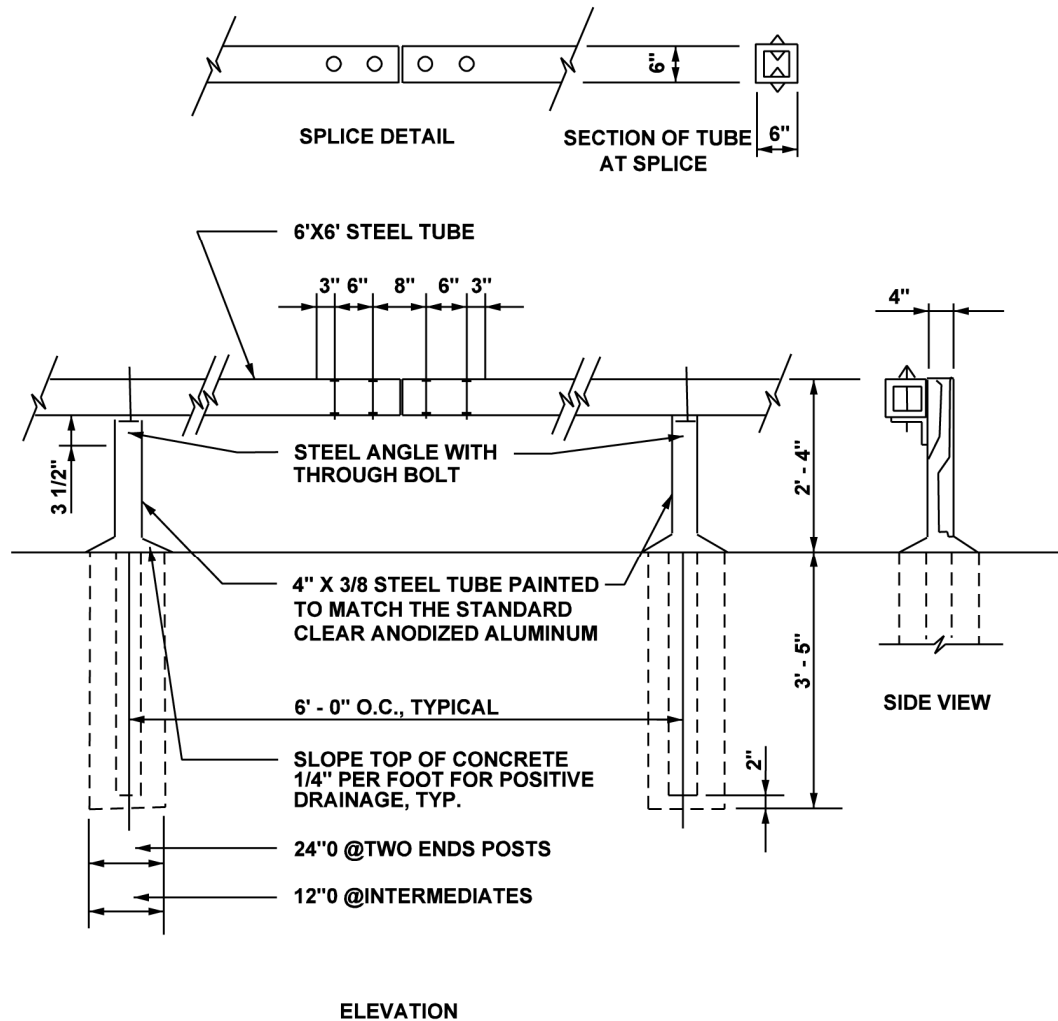
NOTE:  
NO VERBIAGE OR IMAGES TO BE PLACED ON BUS  
SHELTER WITH THE EXCEPTION OF THOSE INDICATED  
IN THE DESIGN SIGNAGE GUIDELINES APPENDIX 5.

Bus Shelter - Section Exhibit I-3-3



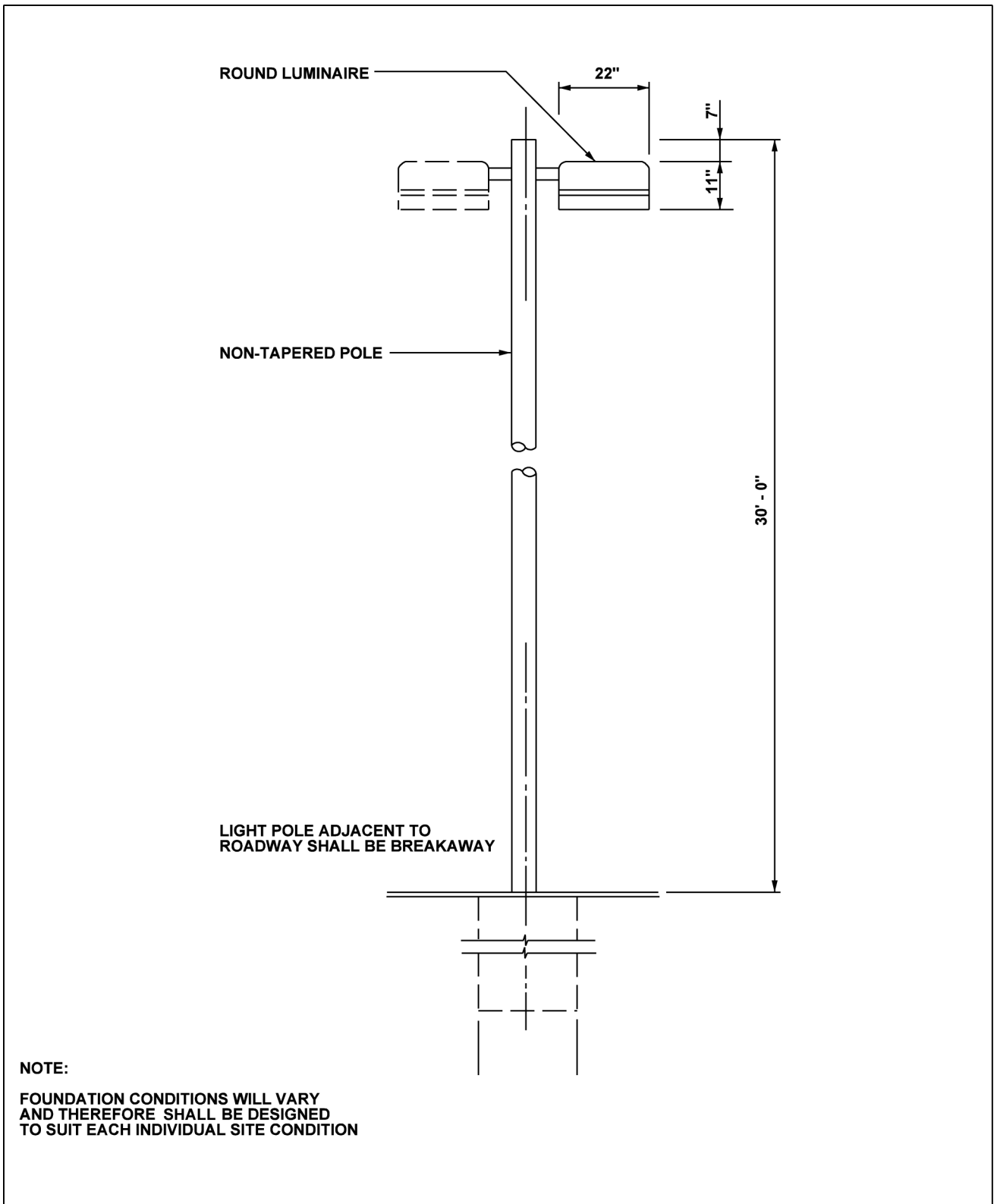
Directional Enforcer, Non-Motorized

Exhibit I-3-4



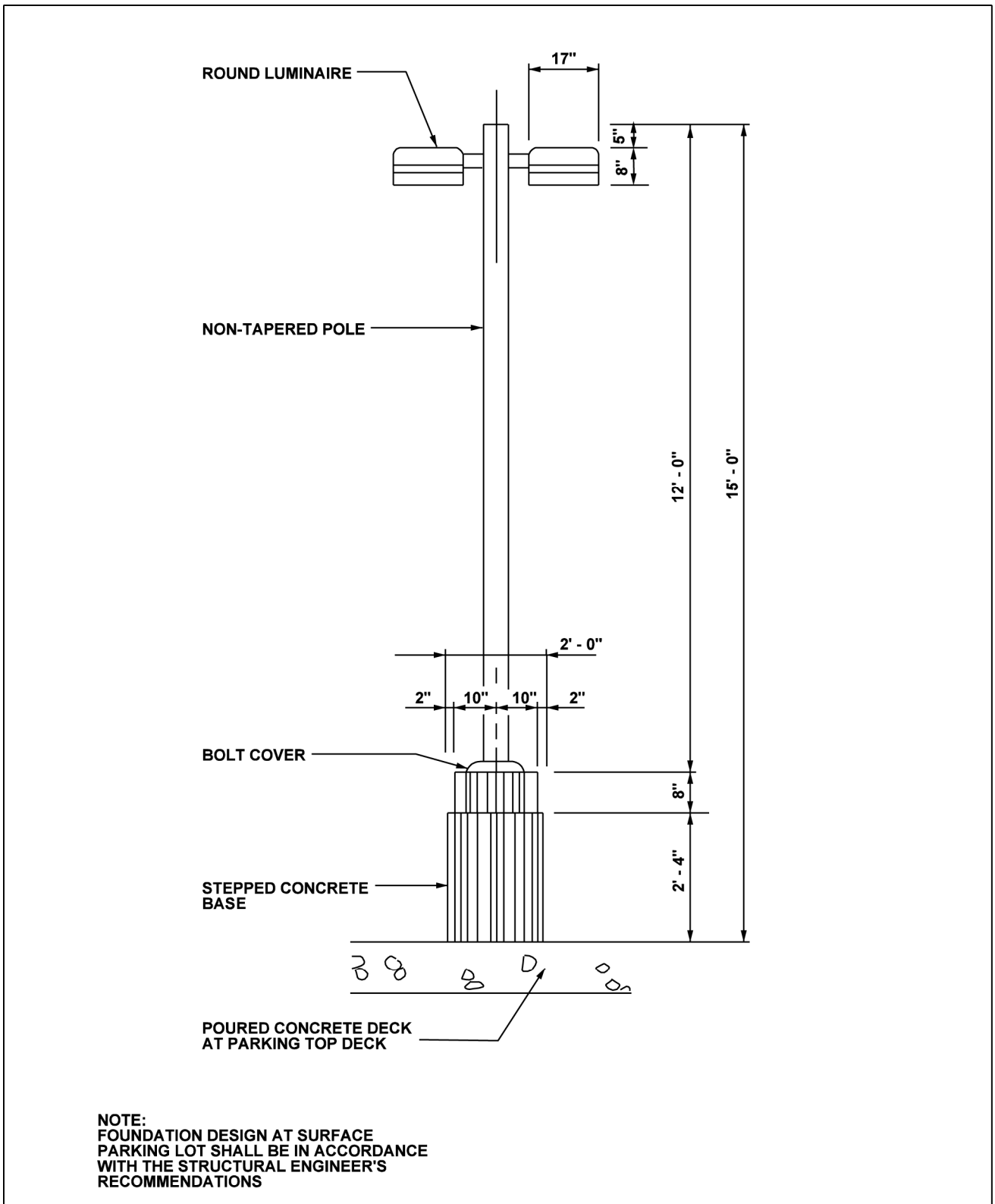
**NOTES:**

HIGHWAY SAFETY STANDARDS ARE TO BE MET WITH THE DETAILED GUARDRAIL  
THREE DIMENSIONAL RAIL DESIGN CHOSEN TO BE MORE COMPATABLE WITH THE  
OVERALL DESIGN STANDARDS THAN THE TYPICAL HIGHWAY RAIL.  
BOX BEAM GUARD RAIL SHALL BE USED IN THE TERMINAL AREA ONLY



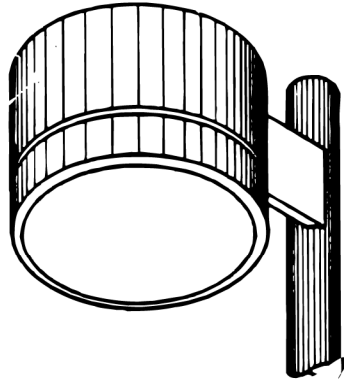
Light Fixtures Roadway

Exhibit I-3-6



Light Fixtures Parking Structure - Top Deck

Exhibit I-3-7



**EXTERIOR LIGHT POLE ASSEMBLY  
LIGHT FIXTURE - ROUND LUMINAIRE**

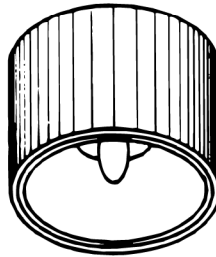
**NOTE:**

ROUNDED FORM OF THE LUMINAIRE CHOSEN TO DIFFERENTIATE LIGHTING FROM THE BUILDING ELEMENTS AND TO UNIFY THE LIGHT POLE ASSEMBLY, SIGNAGE AND BASE

ROUND LUMINAIRE WITH HID LAMPS

CYLINDRICAL ALUMINUM ARM AND HOUSING ASSEMBLY

NATURAL ALUMINUM FINISH



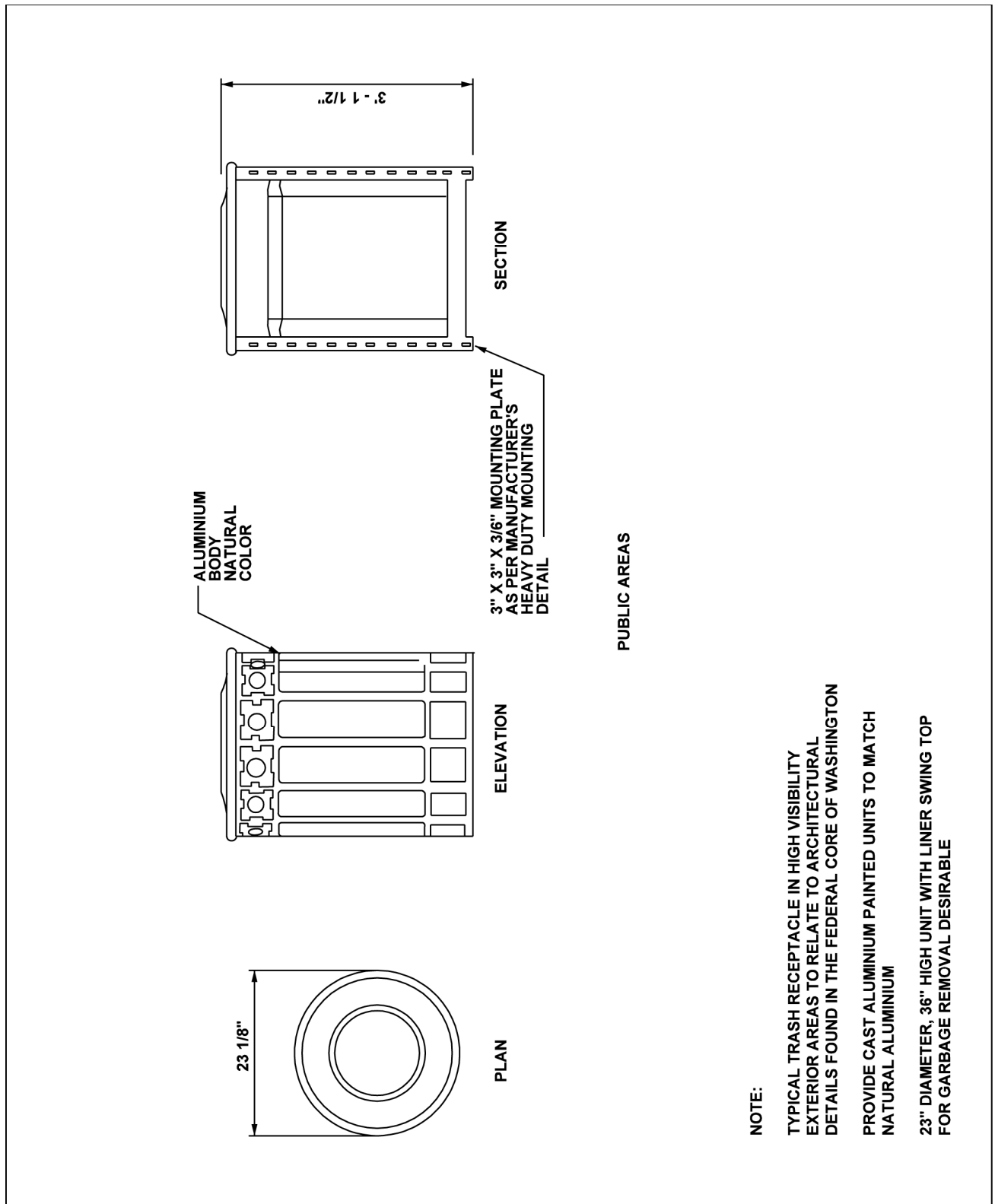
**INTERIOR PARKING STRUCTURE  
TYPICAL FIXTURE AT INTERIOR LEVELS**

**NOTE:**

TYPICAL FIXTURE IN PARKING STRUCTURES

ROUND STAINLESS STEEL HOUSING WITH #4 FINISH

COLOR CORRECTED HIGH PRESSURE SODIUM LAMP/QUARTZ DUAL LAMP AS REQUIRED



Trash Receptacle

Exhibit I-3-9

## CHAPTER 4 Authority Standards

### 4.1 Applicability

**4.1.1 Description:** The Terminal B/C and immediate surrounding environs have been designed and executed with an overall architectural character and theme. The architecture, interiors, free-standing casework elements and interior and exterior furnishings, fixtures and equipment design and selection are intended to provide a cohesive appearance. The intent of this chapter is to provide standards that can be referenced today and in the future as the Authority modifies the terminal to meet the needs of the ever changing transportation industry, the traveling public, and the Authority administrative functions. These standards apply to the following areas or elements in the terminal or immediate area. Brief descriptions and exhibits are included as appropriate.

#### 4.1.2 MUFIDS/BIDS/FIDS

**4.1.2.1 Flight and Baggage Information:** A component system has been developed to provide flight and baggage information to passenger and visitors in public areas of the terminal. The system consists of the following items that are shown in **Exhibit I-4-1**.

- A. Enclosure boxes.
- B. Freestanding Racks.
- C. Ceiling Mounted Racks.
- D. Yokes.
- E. Hanger Clips.

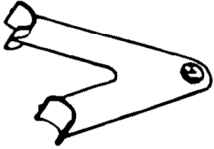
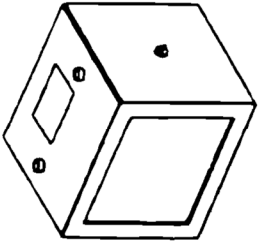
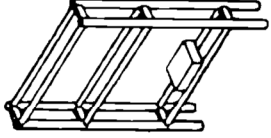
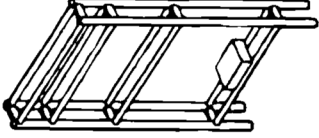
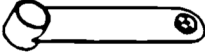
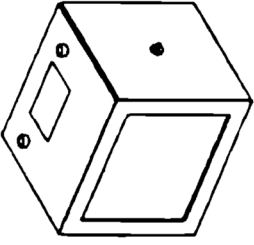
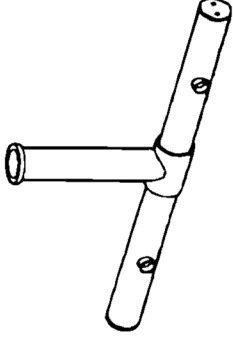
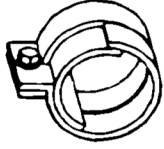
**4.1.2.2 MUFIDS Types:** A series of MUFIDS types have been established depending on the number of monitors required to provide the necessary or desired amount of flight departure and arrival information. The number of monitors varies by location in the terminal. Depending on

the number of monitors required and the type of flight information displayed, freestanding or ceiling mounted racks support the enclosure using hanger clips and yokes. The assembly of the components and the materials used to develop the components varies by location. MUFIDS have been located to provide information at points in Terminal B/C, at the Metro Bridges or at the curb where passengers are most likely to seek this information. They have also been positioned so as not to impede passenger movement throughout the terminal. If additional MUFIDS are required, they will be developed in this component system. Existing MUFIDS types shall be used to the maximum extent possible. If the number of monitors required cannot be accommodated in an existing assembly type, then the component system shall be used to develop an additional type. For guidance in providing these items, refer to the Casework Construction Package drawings and updates available through the Airport Facilities Engineering Division. Location of additional units shall comply with **DCA Vol. 2**.

**4.1.3 Information Counters:** Freestanding information counters occur in two locations along the North/South Concourse. The counters are staffed and have three work stations. The casework accommodates a CRT and keyboard for use by the attendants, has storage compartments and has designated areas for the display of various kinds of information of interest to the passengers and visitors. The light mast, associated clocks and counter casework are intended to be of sufficient size and design so as to serve as an icon and provide a readily identifiable element and/or meeting place within the terminal. Counter top displays, other than display of hours of operation or Authority desk bar signs, are prohibited. Hours of operation and desk bar signs shall comply with these Standards. Counter attendants shall comply with these standards while staffing counter locations. **Exhibit I-4-2** describes the Information Counter.

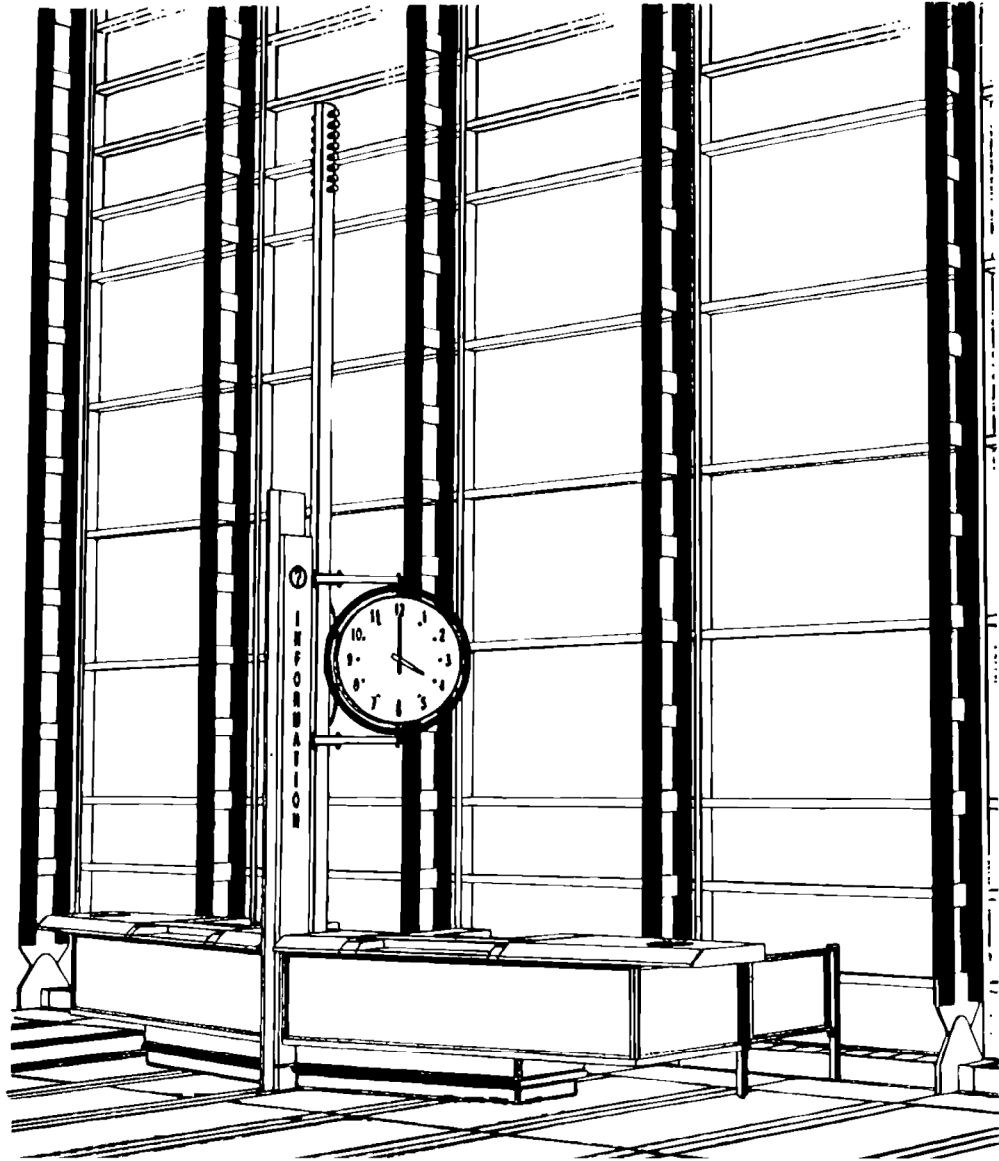
**4.1.3.1 Prohibitions:** No temporary or permanent signs, banners or displays may be mounted to or hung from any portion of the information counter, mast or clocks.



HANGER YOKE TYPES 1 & 2		MUFID ENCLOSURE TYPES 1 & 2		FLOOR RACK NO SIGN BAND		FLOOR RACK WITH SIGN BAND	
HANGER YOKE TYPES 3 & 4		MUFID ENCLOSURE TYPES 3 & 4		CLG. HANGER RACK TYPES 1 & 2		HANGER CLIP TYPES 1 & 2	

MUFIDS, BIDS, FIDS

Exhibit I-4-1



Information Counters

Exhibit I-4-2

**4.1.4 Building Directories:** Illuminated building directories will be provided by the Authority to assist the traveling public in wayfinding in the Terminal A/B/C complex as described in **Exhibit I-4-3**. Building directories consist of an electronic visual paging display light emitting diodes system (LED), liquid crystal diode master clock (LCD), courtesy phone (in-house page/answer), brochure racks and an internally illuminated sign cabinet with 100 interchangeable inserts for business names and room numbers that key to floor plans of areas of the terminal which are immediately adjacent to the directory. Other maps in sign cabinets may provide diagrammatic explanations of terminal levels/complex and site plan directions to parking. Building directory inserts will be periodically reviewed to ensure that information is current and accurate. Changes to the directory will be executed by the Authority. Additional building directories, if desired by the Authority, will be located so as not to disrupt passenger movements. Building directory casework shall be procured to match the design vocabulary established in the Casework Construction Package. Proposed additional locations or modifications to the casework standard, that may be required to allow incorporation into an existing space, shall comply with **DCA Vol. 2**.

**4.1.5 Travelers Aid:** Travelers Aid services are provided at the Baggage Claim Level of Terminal B/C. The area is totally finished and includes a small office and public area with counter and adjacent waiting/seating area located off of the public circulation area. A storefront with associated building service blade sign and an overhead rolling grille to secure the area during non-attended hours is also provided. This counter area will be staffed. Electrical, telecommunications and paging provisions have been provided to meet the operational needs of this passenger convenience area. Travelers Aid shall be maintained as shown on **Exhibits I-4-4 and I-4-5**. Travelers Aid attendants shall comply with these standards while staffing counter locations.

#### **4.1.6 Telephones**

**4.1.6.1 Telephone Service:** Telephone service is provided as described in **Chapter 1**. Telephones in Terminal B/C consist of the following:

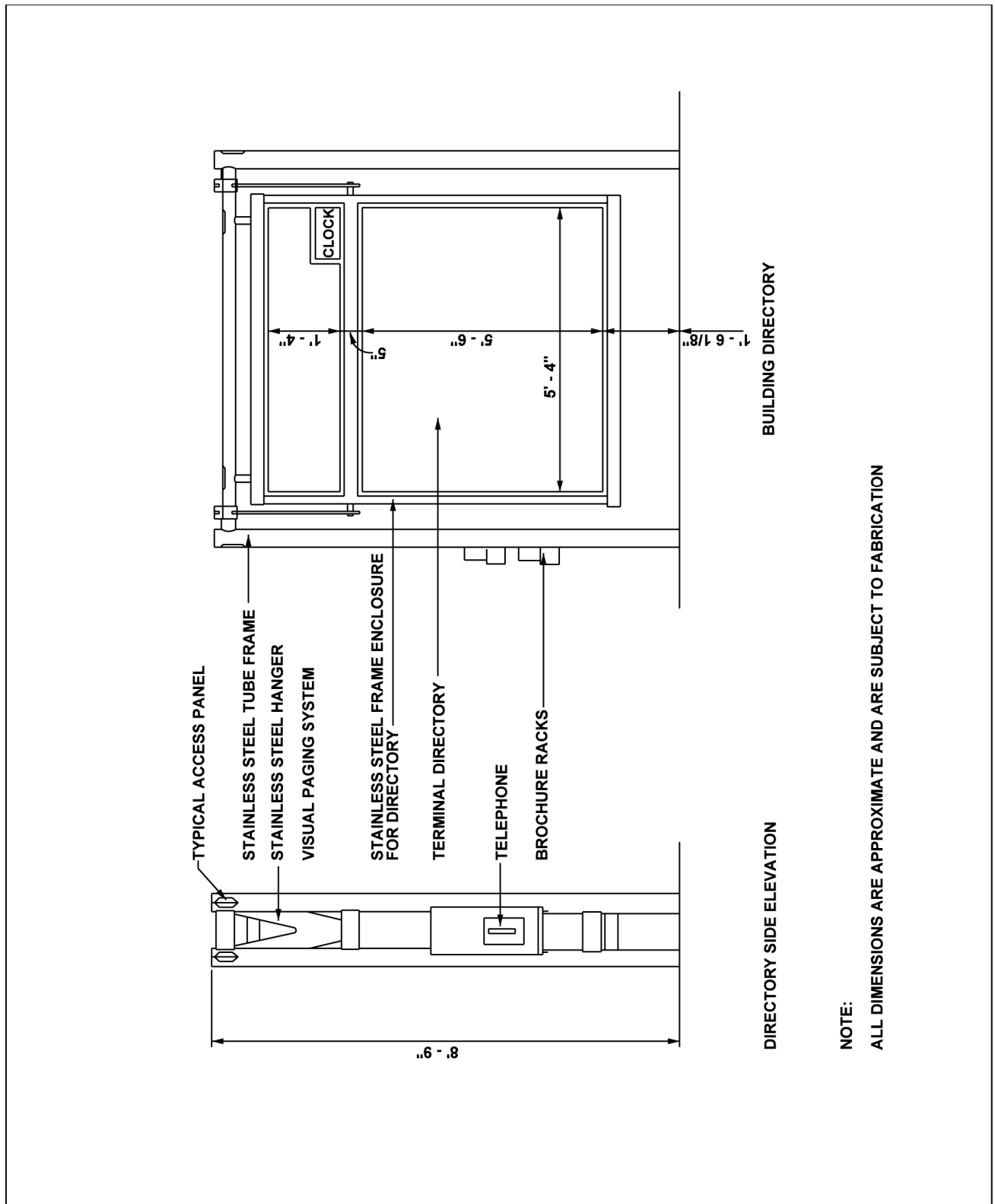
- A.** Approved wall mounted phones as manufactured by: to be determined.
- B.** Approved customized seated phones units are as manufactured by: to be determined.
- C.** Approved exterior phone units are Types 540 B/C as manufactured by King Products.

**4.1.6.2 Pedestal Telephone Units:** No pedestal telephone units are permitted in hold rooms or other interior locations.

**4.1.7 Art Display Cabinet:** Art display cabinets will be provided by the Authority adjacent the center escalators at the Baggage Claim Level to display a changing exhibition of art. Refer to **Exhibit I-4-6** for a typical cabinet. Name of artist, contributing organization, title and other associated text shall be as shown in **Exhibit I-4-7**.

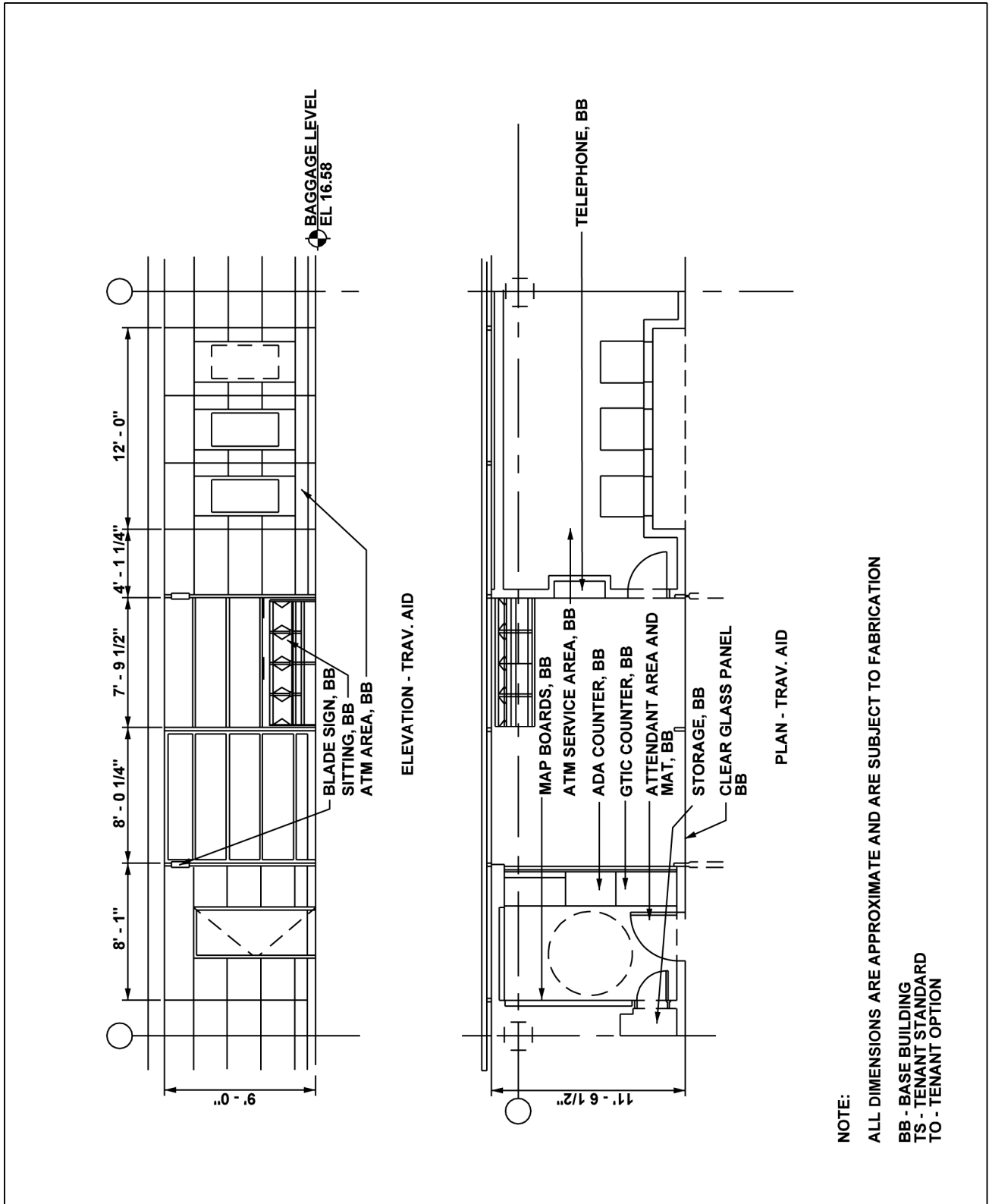
#### **4.1.8 Public Furniture/Fixture Summary - Interior**

**4.1.8.1 Furniture:** The Authority will locate and procure furniture for the following interiors locations.



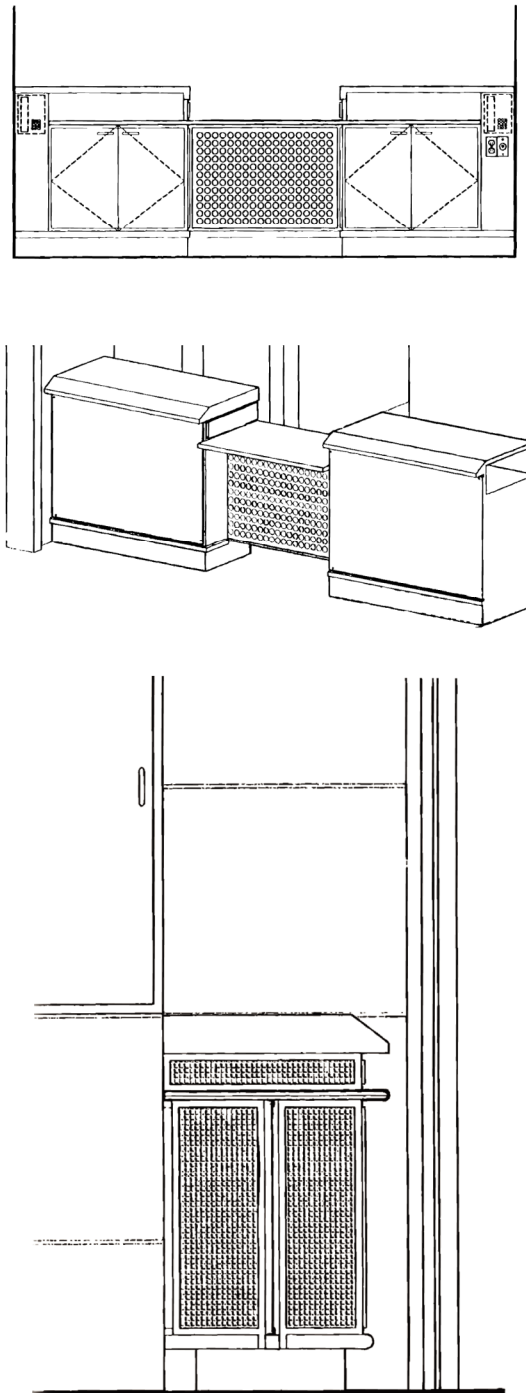
Building Directories

Exhibit I-4-3



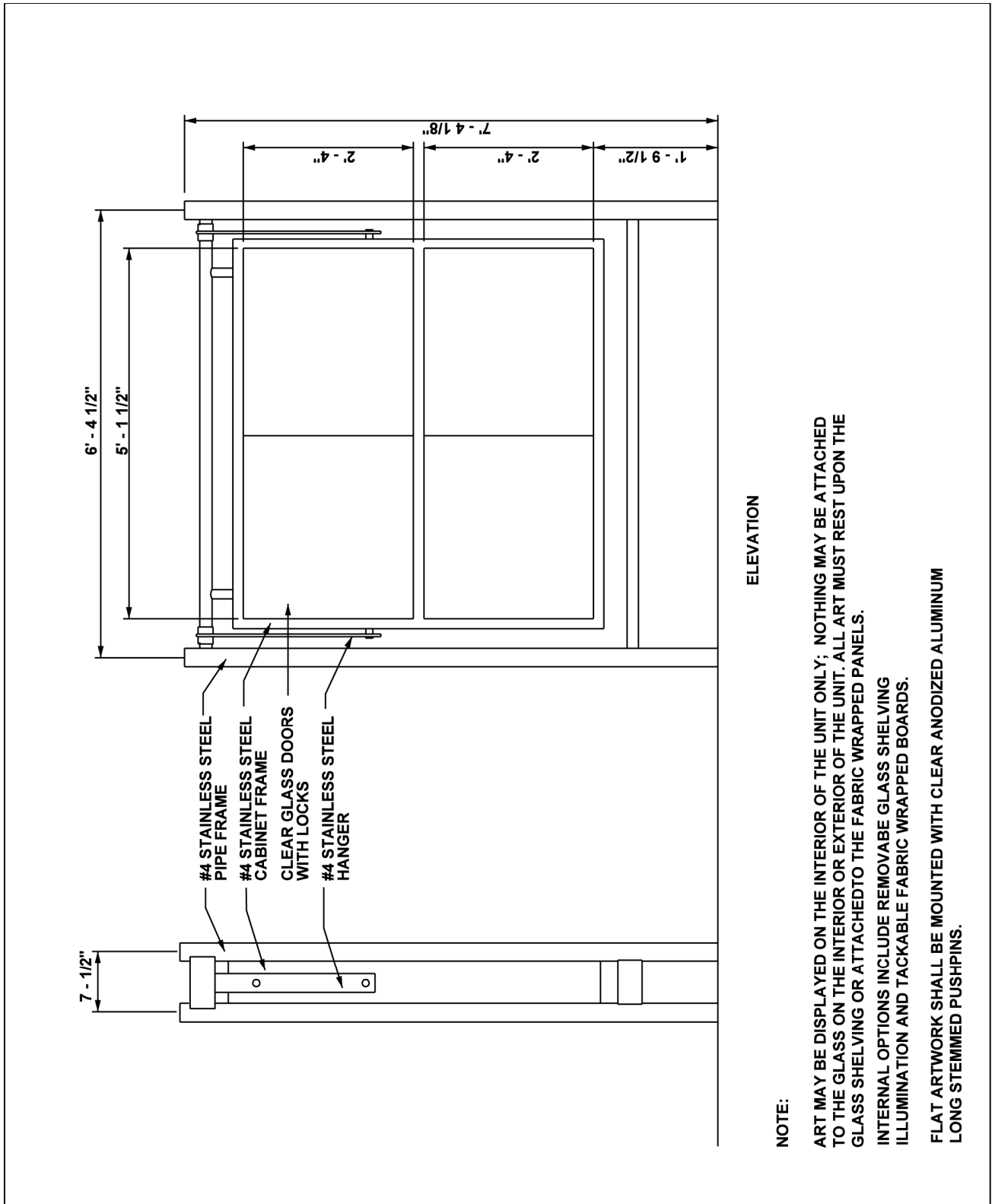
Travelers Aid - Plan and Elevation

Exhibit I-4-4



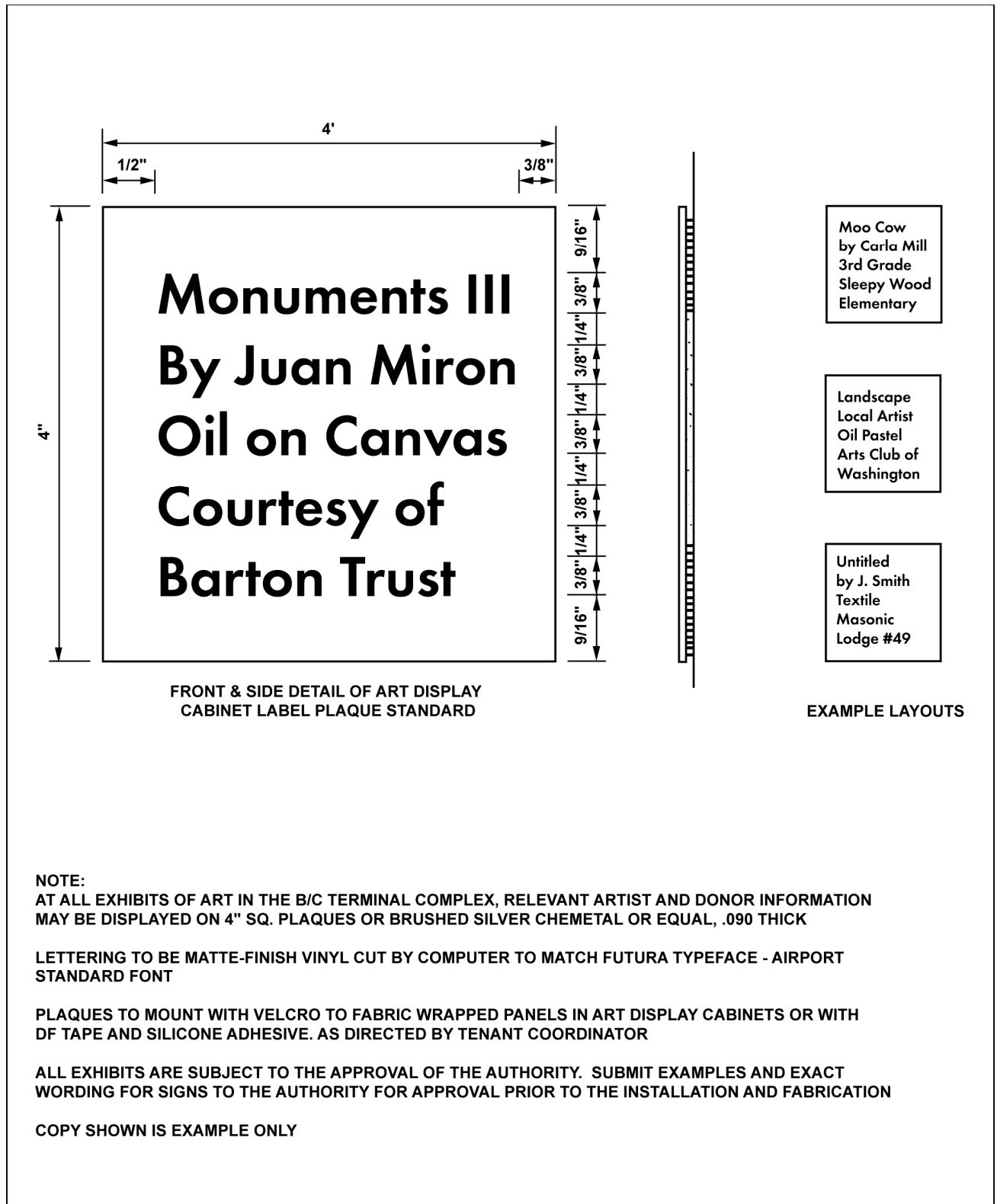
Travelers Aid Counter

Exhibit I-4-5



Art Display Case

Exhibit I-4-6



Art Display Cabinet

Exhibit I-4-7



LEVEL/LOCATION		TYPE
Bag Claim:	Landside Curtainwall	Eames Tandem Seating, trash receptacles "Equa" Stools
Bag Claim:	Staffed Locations	
Concourse:	Airside Curtainwall	Eames Tandem Seating, trash receptacles
Concourse:	Public Square Kiosks	Johnson Tables, "Handkerchief" chairs, tray carts and trash receptacles
Concourse:	Information Counter	"Equa" Stools
Concourse:	Security Check-Points	"Equa" Stools
Concourse:	Piers Hold rooms	Eames Tandem Seating, trash receptacles
Concourse:	Connector Hold rooms	Eames Tandem Seating, trash receptacles
Concourse:	Piers at Ends	Window Counters
Concourse:	Piers at Ends	Johnson Tables, "Handkerchief" chairs, counters, tray carts, recycling, trash receptacles
Ticketing:	Along balustrade	Eames Tandem Seating, trash receptacles
Ticketing:	Ticket Level Café	"Variations ICF" Tables, "Bertoia" chairs, "Bertoia" bar stools

**4.1.8.2 Furniture Material and Color Submittals:** Refer to the Furniture Material and Color Submittals for specifics related to furniture and fixtures in these areas.

#### **4.1.9 Public Furniture/Fixture/Hardscape Summary – Exterior**

**4.1.9.1 Procurement and location:** The Authority will locate and procure furniture and fixtures for the following exterior locations:

LEVEL/LOCATION		TYPE
Bag Claim:	Private Vehicle Curb	Wind Screen
Bag Claim:	Private Vehicle Curb	Seating, trash receptacles
Bag Claim:	Public Vehicle	Seating, trash receptacles
Ticketing:	Ext. Plazas (Area 1/7)	Planter/benches, trash receptacles
Ticketing:	Curb	Trash receptacles

**4.1.9.2 Technical Specifications:** Refer to the Terminal B/C and Related Facilities Project Construction Documents and Divisions 2 and 12 of the Technical Specifications for specifics related to furniture, fixtures and hardscape in these areas.

**4.1.10 Loading Docks/Service Circulation:** Service corridor directional signs will be provided by the Authority sign shop in response to typed requests and subject to review and approval by the "Sign Committee". Sign type "S7," as described in the Terminal Construction Package, will allow 16-18 letters per sign, per business, at a maximum. Locations of proposed additional units, exact wording and arrow directions should be indicated on plans submitted for approval prior to manufacture and installation. Vending machines are prohibited at the loading dock. Dumpsters for trash or recyclable materials will be contained in designated interior and exterior locations only.

## **4.2 General Criteria/Prohibitions**

**4.2.1 General Criteria:** The Authority will comply with the general design standards contained in **Chapters 1 and 4** of this document. In addition the following specific criteria shall apply.

**4.2.2 Building Modifications/Alterations/Additions:** No division of the Authority will independently undertake projects that will permanently or temporarily alter controlled materials or base building elements without prior approval of the Engineering Division of the Authority. This includes, but is not limited to, columns within any area, structural elements, floors, interior or exterior walls or ceiling/soffit surfaces.

**4.2.2.1 Compliance with Existing Design Intent:** All proposed modifications to existing areas will be reviewed by the Engineering Division to ensure that modifications, alterations and additions are designed and executed in accordance with the design intent contained in the Construction Documents. Designs may have been updated; verify with the Airport Facilities Engineering Division. All modifications, as required to meet changes in operations or

other program requirements, shall be strictly controlled. Such alterations, if approved, shall be executed to maintain the design intent set forth in the above referenced sub-sections. Modifications to the exterior include additions or alterations to the buildings, including, but not limited to, openings of any kind, exterior exit stair enclosures, loading bridges, trellises, covered walkways, crosswalks, retaining walls, parking areas, bollards, and free standing storage buildings. Interior modifications include, but are not limited to, allocation of lease space, changes to finish materials or color, modifications to casework or millwork, the addition or removal of signage, the addition of any free standing casework, including, but not limited to, interactive video units and automatic teller or ticket machines and replacement of or changes to lighting, furnishings or fixtures. In general, the vertical and horizontal modules established shall be maintained. Demising walls between tenants shall occur on the building module and alterations to interior and exterior elevations shall maintain the established modules.

### **4.2.2.2 Line of Sight:**

All building modifications that affect the three dimensional volume of the Terminal shall be reviewed relative to maintaining clear line of sight for the Air Traffic Control Tower.

**4.2.3 ADA Compliance:** All modifications to Terminal B/C shall be reviewed relative to maintaining ADA compliance. The Authority will periodically review accommodations to ensure that accessibility is maintained as specifically required. Areas to be reviewed include:

#### **4.2.3.1 Parking**

**4.2.3.2 Circulation:** Landside exterior circulation, including arrival and departure curbs, plazas, and Metro access.

**4.2.3.3 Entries and Exits:** Terminal entries and exits.

**4.2.3.4 Circulation:** Interior circulation, including elevators, stairs, door, and boarding areas.

**4.2.3.5 Public Service Areas:** Public service areas and services, including visual paging, alarms, and raised print.

**4.2.3.6 Other Public Areas:** Restrooms, toilets and water fountains.

**4.2.3.7 Telephone:** Telephone access and TDD accommodations.

**4.2.3.8 Signing:** Signing for accessible services as required.

**4.2.4 Storage:** Storage of supplies, merchandise, equipment or furnishings associated with maintenance, administrative or other Authority business functions will occur in areas provided: either in store rooms or casework. Staffed areas that front on public circulation within the Terminal shall maintain an uncluttered appearance. Display of personal mementos in areas that can be viewed by the public is prohibited. Such areas include, but are not limited to, the Information Counters and Travelers Aid.

**4.2.5 Signing/Graphics in Public Areas:** Any and all sign revisions or additions will be reviewed and approved by the Engineering Division of the Authority and the "Sign Committee" and shall comply with **Section II of the DCA Volumes of the Design Manual**.

**4.2.5.1 Dynamic Signs:** Dynamic signs will be employed to satisfy Visual Paging requirements. Each building directory will feature a 1' x 4' Light Emitting Diodes (LED) at the top to communicate messages to the hearing impaired. Similar LEDs will be installed in signs at the exits from each Pier and the Connector. These units will display messages from the Authority to the general public, such as, "Welcome to Washington." Dynamic signs are controlled by an Authority switchboard operator from a remote location.

**4.2.5.2 Temporary Signs:** Temporary promotional, seasonal or holiday banners are prohibited. Paper signs and any "taped-up" temporary notices are prohibited and will be removed.

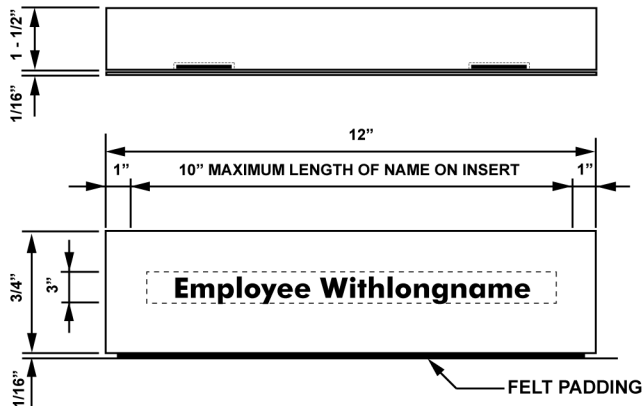
**4.2.5.3 Maintenance Temporary Signs:** Standard freestanding sign units with changeable messages are available for use throughout the terminal. Such signs will be used by the Authority with appropriate message(s) during routine cleaning and general maintenance or repair conditions at elevators, escalators, moving walkways, toilet rooms, etc. Substitute signs or temporary paper signs are prohibited and will be removed.

**4.2.5.4 Hours of Operation:** Hours of operation signs shall comply with the criteria set forth by the Airport Operations Office.

**4.2.5.5 Desk Bar Signs:** Desk bar signs used to identify attendants or to present hours of operation at any building service area (Information, Travelers Aid, etc.) will comply with the criteria provided in **Exhibit I-4-8**.

**4.2.5.6 Room Numbering Signs:** No signs, other than terminal standard room number and labeling signs, will be permitted at any Authority staffed location within the public view.

**4.2.6 Furnishings/Fixtures/Equipment:** The Architectural Color and Finish Submittal Volumes 1 and 2 and the Furniture Material and Color Submittals describe the application of color throughout the building architecture, finishes, furniture, casework, and fixtures. The Authority will maintain this palette in all modification and additions. Additions to or replacement of furnishing shall be in accordance with these documents. The Authority will periodically inventory Authority furnishings, fixtures and equipment. The Authority will replace or repair worn, damaged, frayed, shabby or broken items in kind.



**ELEVATION AND PLAN VIEW  
OF DESK BAR STANDARD**

**CLOSED Next Station Please**

**We'll be back soon.**

**Please Sign In. Thanks.**

**6:00 am - 10:00 pm Daily**

**Thank You. Come Again.**

**DETAILS OF DESK BAR MESSAGE OPTIONS**

**NOTE:**

DISPLAY OF EMPLOYEE NAMES AND TEMPORARY MESSAGES THROUGHOUT THE TERMINALS WILL BE LIMITED TO THE USE OF DCA DESK BARS, AS SHOWN

3" x 12" x 1 - 1/2" ALUMINUM BAR STOCK, MIRROR POLISHED ON TOP, SIDES AND BACK WITH BLACK LEFT PADDING ON BOTTOM SURFACE AND RECESSED MAGNETIC SHIM STOCK PERMANENTLY ADHERED FLUSH IN FACE PANEL SURFACE

DESK BAR SIGNS SHALL BE 1/16" THICK BRUSHED STEEL NAME PLATES WITH EASED EDGES AND CORNERS TO FIT AS SHOWN. BLACK SILK SCREENED LETTERING WILL BE APPLIED IN EPOXY BASED INK. TYPEFACE: FUTURA DEMI-BOLD, UPPER AND LOWER CASE TO MATCH AIRPORT STANDARD

SUBMIT DESIRED MESSAGES TO THE SIGN COMMITTEE FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION

COPY SHOWN HERE IS EXAMPLE ONLY

**4.2.7 Brochure Displays:** Should any division or representative of the Authority wish to offer or display brochures or other literature/materials at any location for which provisions have not otherwise been included in the design of Authority provided casework, the Authority will procure clear acrylic easels or holders. Maximum overall dimensions shall be 8½" x 11". Such fixtures may not be affixed to any casework or building surface either on a permanent or semi-permanent basis. Catalog cuts or sample displays will be reviewed by the Engineering Division of the Authority prior to procurement and distribution and use within the Terminal B/C complex.

**4.2.8 Music/Television:** In keeping with a professional and service oriented terminal environment, personal portable televisions, radios, tape or compact disk players are discouraged at miscellaneous commercial locations, including, but not limited to the Ground Transportation Information Center, the Washington Flyer Podiums, the shoeshine stands, or other sales or service counters.

**4.2.9 Prohibitions:** Installation of individual free-standing racks, stanchions, equipment, or other fixtures, including, but not limited to fire extinguishers, security devices, lock boxes, clocks, cameras, floor or walk-off mats, and mirrors in public areas or areas visible from public spaces are prohibited without prior review and approval by the Engineering Division.

## **CHAPTER 5 Tenant Spaces and Facilities**

These standards consist of typical details and items that are used consistently through out the Airport. These elements and finishes are established to provide a consistent level of architectural furnishing to common Airport areas.

### **Exhibit I-5-1 Internal Door Signage**

To be used at interior single and double doors.

### **Exhibit I-5-2 Directory Board - Wall Mounted**

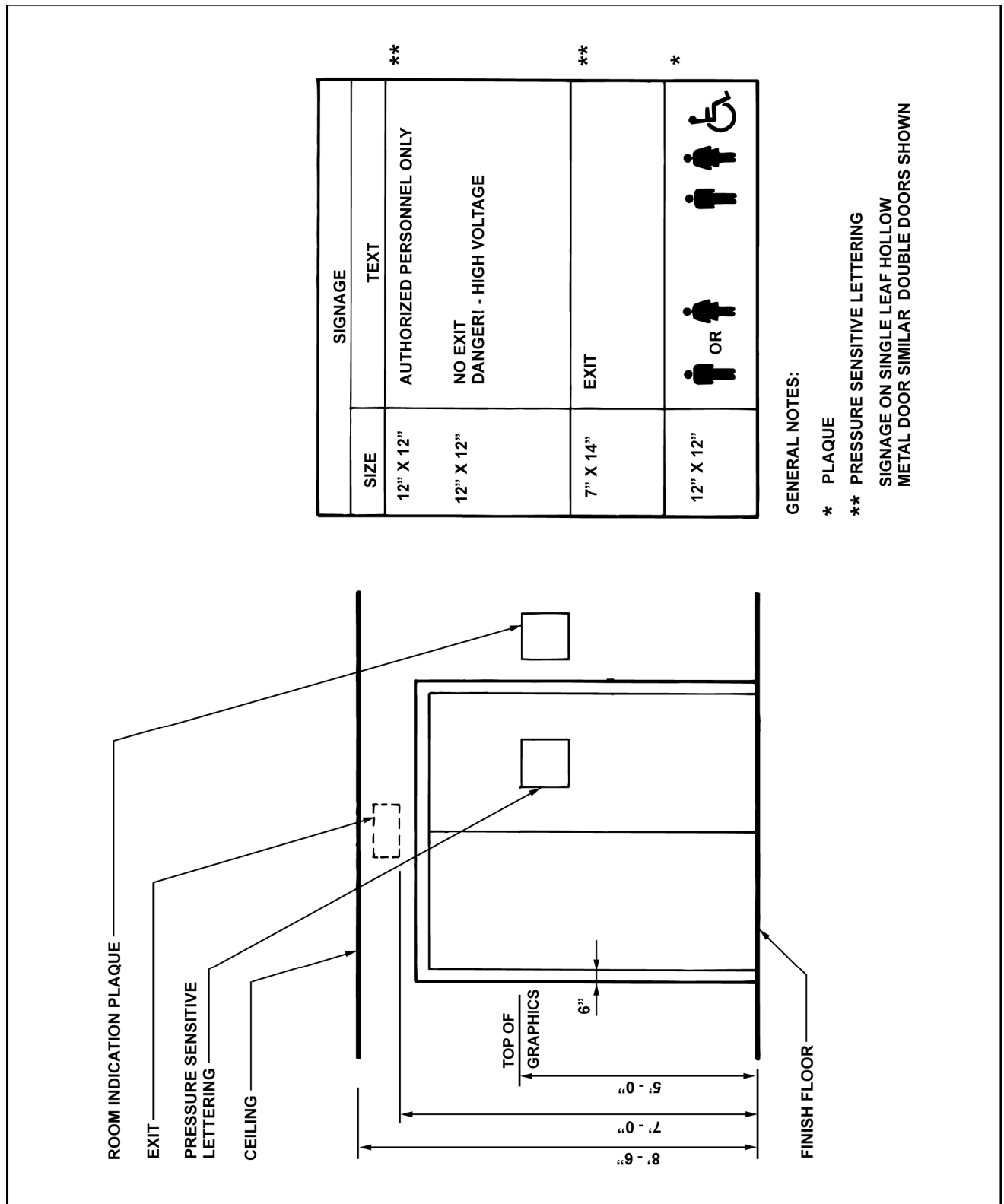
To be used at entrances and lobbies to provide orientation to the public and Airport personnel.

### **Exhibit I-5-3 Telephone - Hearing Impaired**

To be located adjacent to typical wall mounted telephones to provide telephone service for the hearing impaired.

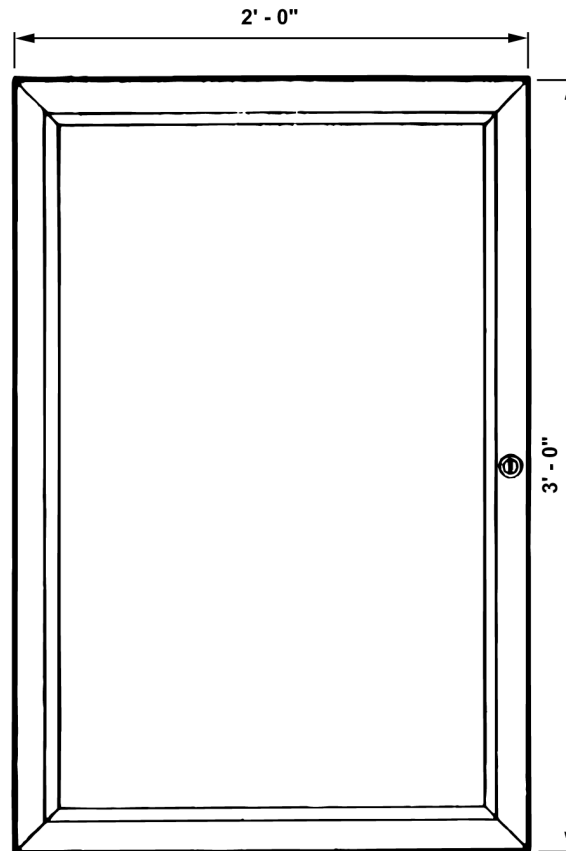
### **Exhibit I-5-4 Toilet Accessory Hand Dryer**

Recommended Mounting Heights.



Internal Door Signage

Exhibit I-5-1

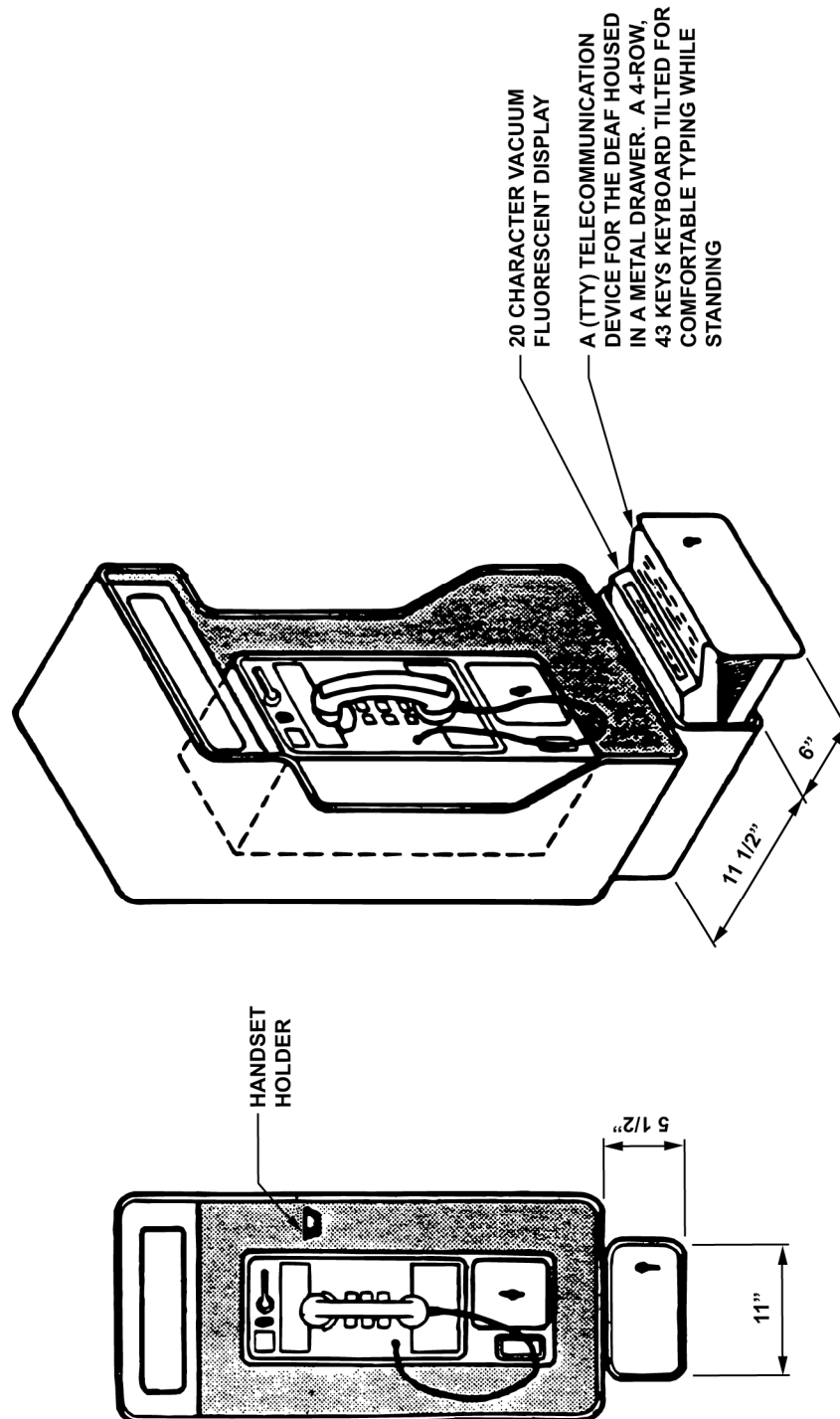


**NOTE:**  
HIGH IMPACT BLACK PRECISION GROOVE BOARDS FOR CHANGEABLE LETTER MESSAGES.  
SATIN FINISH ALUMINUM FRAME, CLEAR ACRYLIC FRONT LOCKING DOOR ON FULL-LENGTH PIANO HINGE.  
PROVIDE STANDARD WHITE CHARACTERS: LETTERS, NUMBERS, SYMBOLS  
TYPE FACE: HELVETICA

Directory Board - Wall Mounted

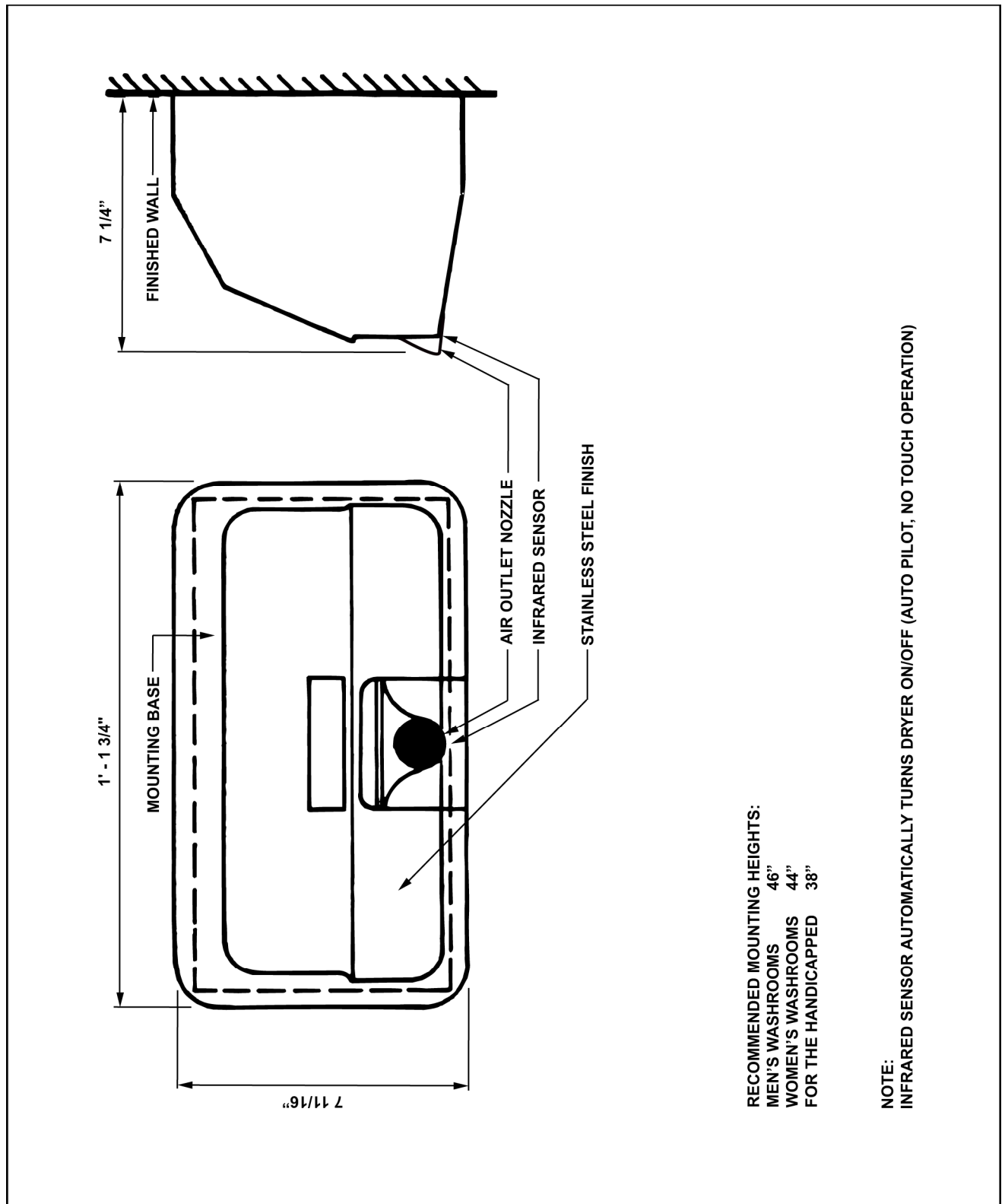
Exhibit I-5-2





Telephone - Hearing Impaired

Exhibit I-5-3



Toilet Accessory Hand Dryer

Exhibit I-5-4

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**CHAPTER 6 Parking Facilities:** The following standards address facilities that provide parking for Airport patrons and employees. Parking areas are standardized in order to maintain a consistent image and level of service at the airport.

**Exhibit I-6-1      Entry Lane - Camera**

To be used at entry/exit lanes to monitor license plate numbers of vehicles; provide bollard(s) for protection of equipment.

**Exhibit I-6-2      Entry and Exit Lane - Automatic Gate Arm**

For use at entry/exit lanes to control vehicular traffic flow.

**Exhibit I-6-3      Entry Lane Ticket Printer**

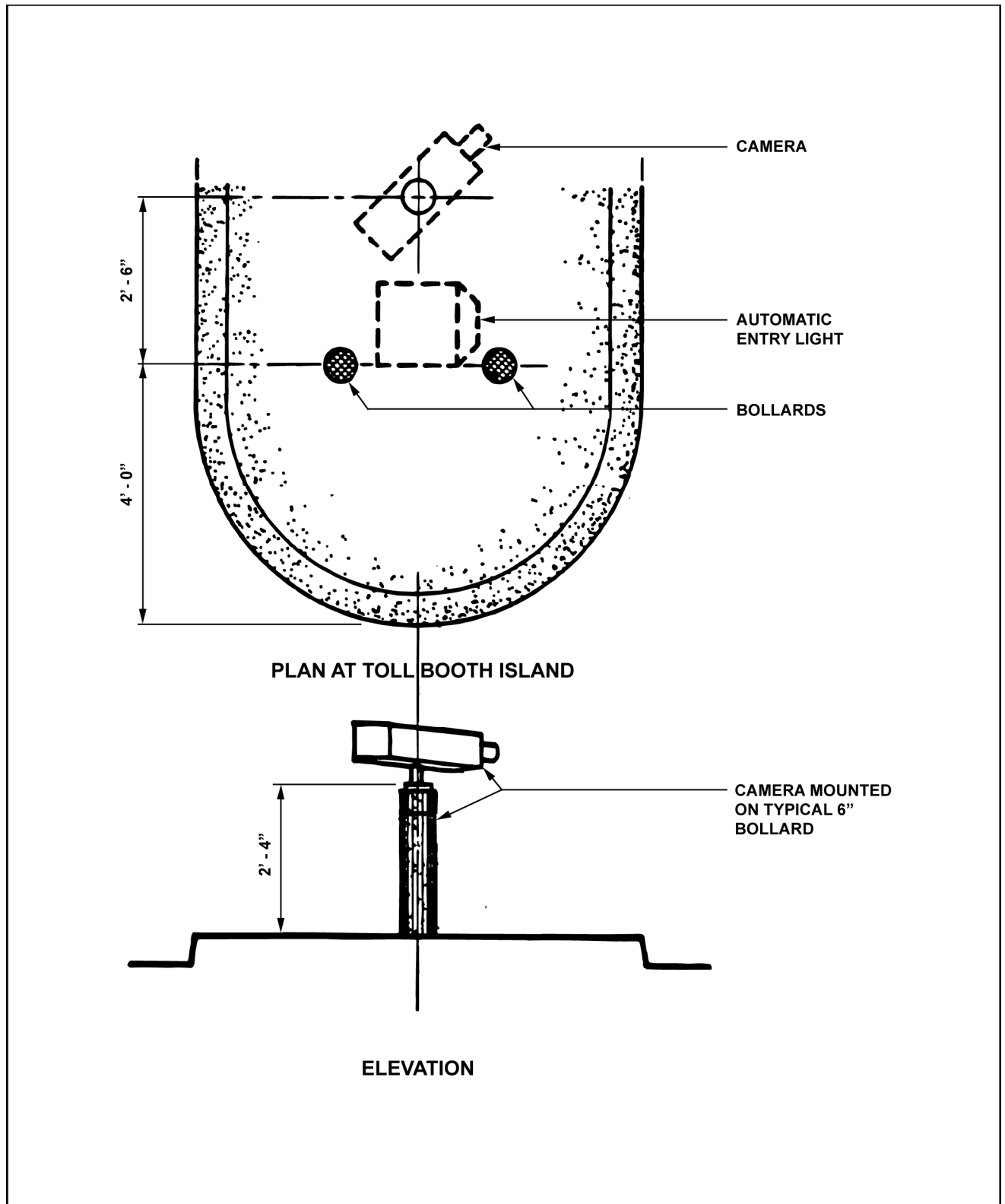
To be used at the entry island to all parking facilities, both surface parking areas and parking structures.

**Exhibit I-6-4      Cashier Booth Parking Structure**

To be used at all exit lanes of parking structures.

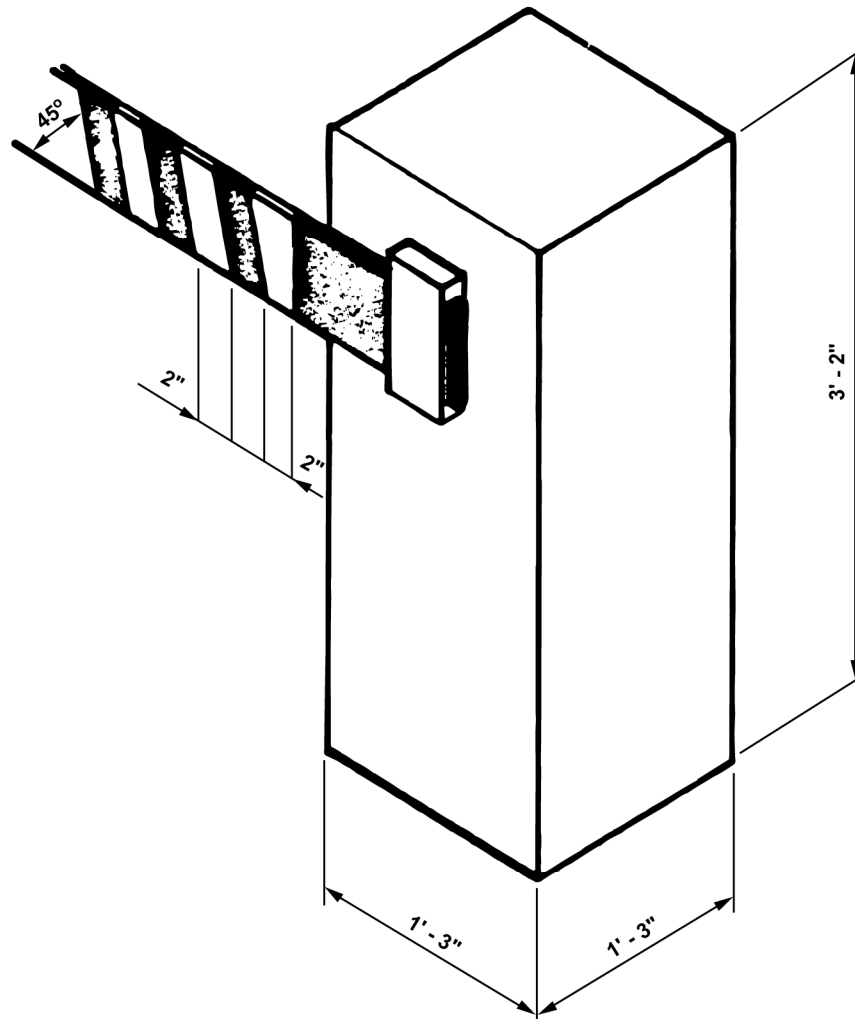
**Exhibit I-6-5      Regulatory Signage**

Regulatory and miscellaneous signs shall be designed in accordance with the Manual of Uniform Traffic Control Devices.



Entry Lane - Camera

Exhibit I-6-1

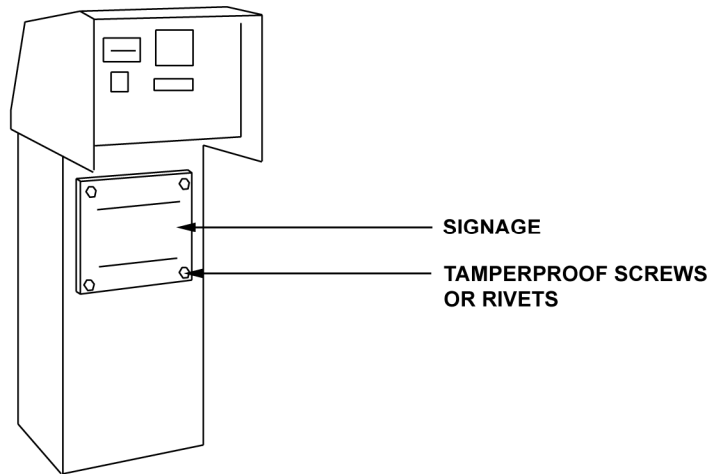


**NOTE:**  
FOR USE IN PARKING STRUCTURES AND SURFACE PARKING LOTS

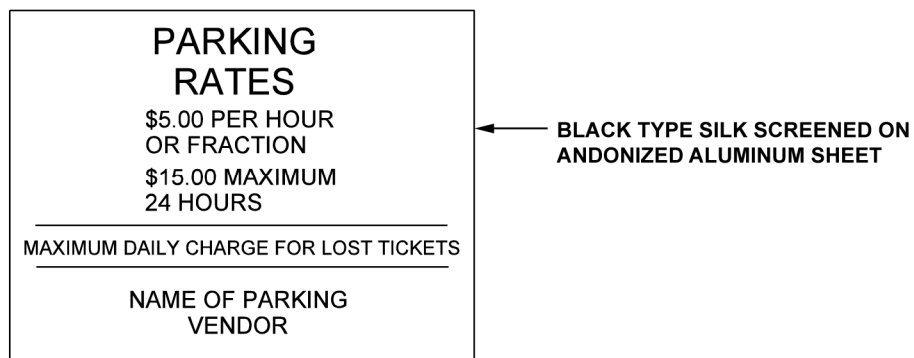
GATE ARM TO BE PAINTED WHITE AND RED IN 2", 45° STRIPES HOUSING TO BE PAINTED TO MATCH A NATURAL ALUMINUM FINISH

NO SIGNAGE TO BE PLACED ON THIS DEVICE

Entry and Exit - Automatic Gate Arm      Exhibit I-6-2



**TICKET PRINTER**



**SIGNAGE**

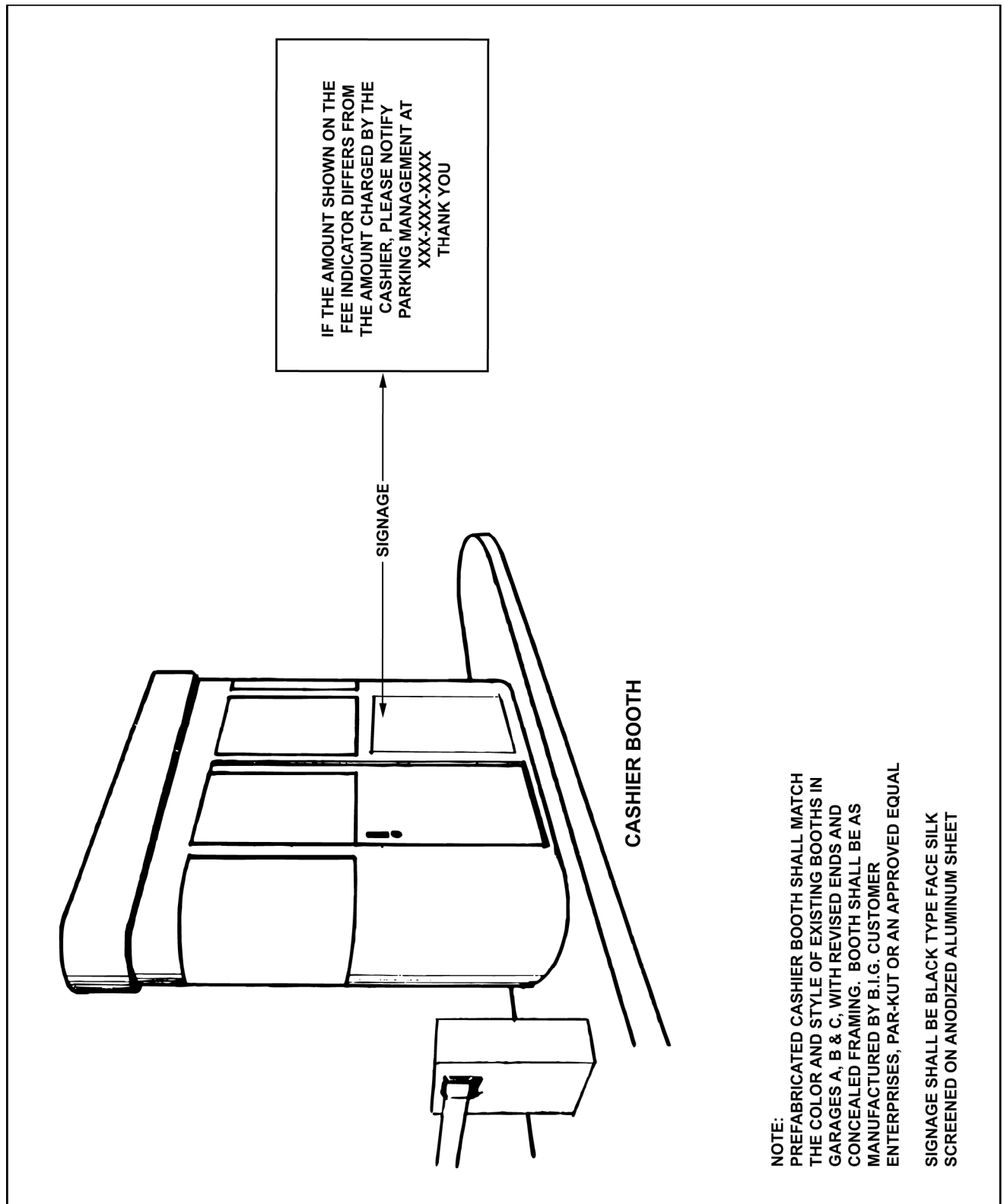
**NOTE:  
FOR USE IN PARKING AREAS**

**STEEL BODY TO BE PAINTED TO MATCH A NATURAL ALUMINUM FINISH**

**NO SIGNAGE TO BE PLACED ON THIS DEVICE**

**Entry Lane Ticket Printer**

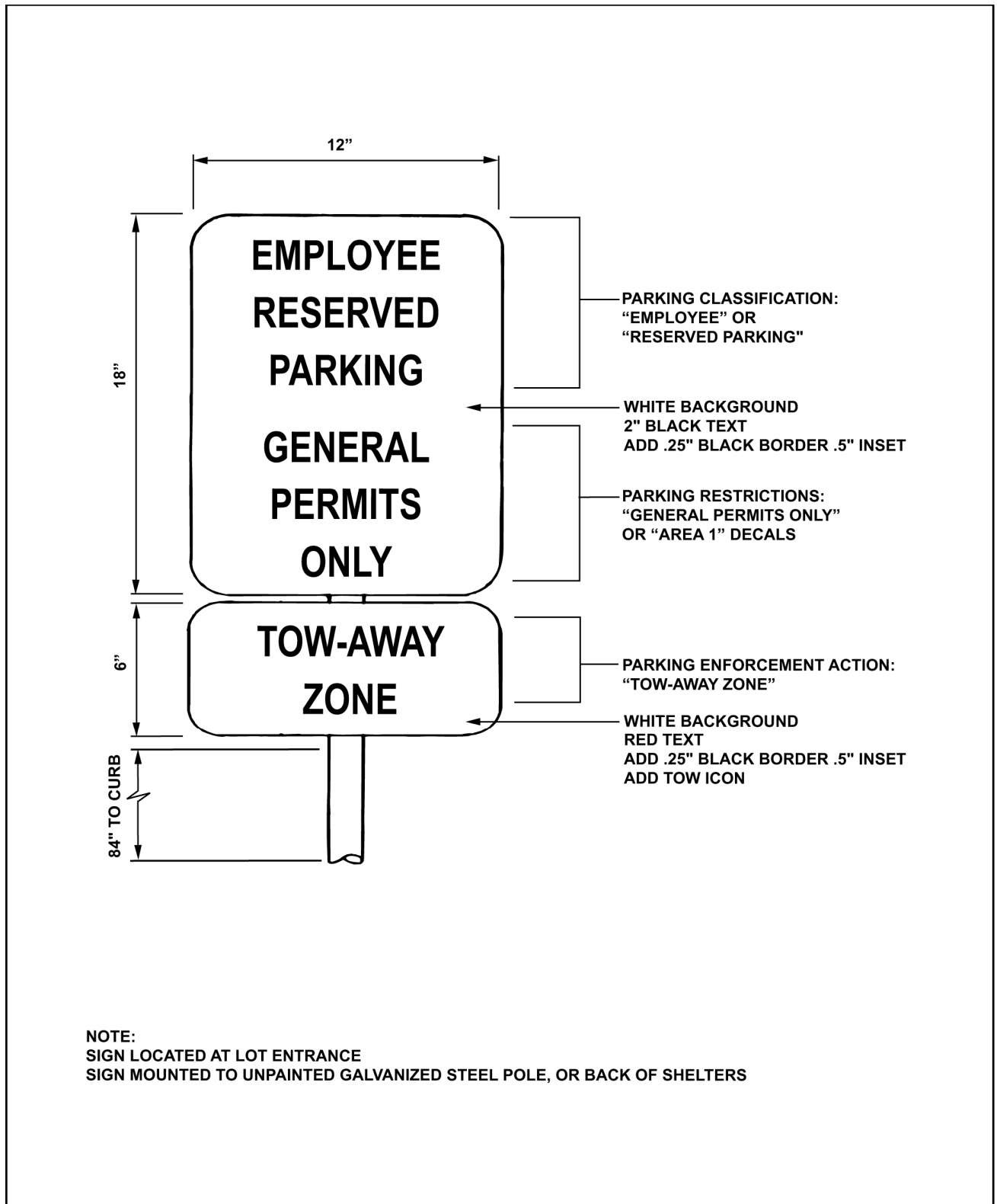
**Exhibit I-6-3**



Cashier Booth Parking Structure

Exhibit I-6-4





Regulatory Signage

Exhibit I-6-5

## SECTION II: Signing Design Guidelines

### CHAPTER 1 Introduction

#### 1.1 Overview Of Signing Design Guidelines

**1.1.1 Objectives:** The objective of these guidelines is to provide a set of planning standards, requirements and design criteria to be used for all interior and exterior signing applications at Ronald Reagan Washington National Airport. This volume is a primary reference for those designing and implementing the Airport Capital Construction Program, continuing maintenance program and tenant construction programs. These guidelines describe the aesthetic, functional and technical design standards established by the Metropolitan Washington Airports Authority for Ronald Reagan Washington National Airport. However, the guidelines are not so restrictive as to preclude competitive review and analysis of other products. It is the designer's challenge to respect and comply with the design standards described herein when developing solutions for airports signing problems. This document is the primary design guideline for all signing at Ronald Reagan Washington National Airport. It describes a comprehensive signing system unique to Ronald Reagan Washington National Airport. The standards reflect the quality and character required of signing at Ronald Reagan Washington National Airport and promotes consistency in signing installations.

#### 1.2 Referenced Standards

**1.2.1 Use of Standards:** The designer must use the appropriate standards for roadway sign designs and layouts, colors, overall sign shapes, dimensions, illumination/reflectorization, symbol designs, materials, finishes, supports, and clearances from roadways. The standards and requirements include those of the Federal Department of Transportation (DOT), the Virginia Department of Transportation (VDOT), and the American Association of State Highway and Transportation Officials (AASHTO). The following key documents have been referenced throughout these guidelines:

**1.2.2 VDOT:** Road and Bridge Specifications.

**1.2.3 DOT:** Manual On Uniform Traffic Control Devices (MUTCD) and the Virginia Supplement to the same.

**1.2.4 DOT:** Standard Highway Signs manual.

**1.2.5 DOT:** Standard Alphabets for Highway Signs Booklet (HTO-20).

**1.2.6 AASHTO:** A Policy on Geometric Design of Highways and Streets.

**1.2.7 AASHTO:** Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

**1.2.8 ADAAG:** ADA Accessibility Guidelines.

**1.2.9 AIGA:** American Institute of Graphic Arts.

**1.2.10 AAAS:** American Institute of Airport Executives.

**1.2.11 Designers must** consult the above standards as appropriate for final design.

#### 1.3 ADA Guidelines

**1.3.1 Definition:** The design for all projects, accomplished by the Authority and tenants, shall conform, as a minimum, to the Americans with Disabilities Act (ADA) enacted July 6, 1990 and the federal guidelines developed there from.

#### 1.4 Master Planning Program For Signing

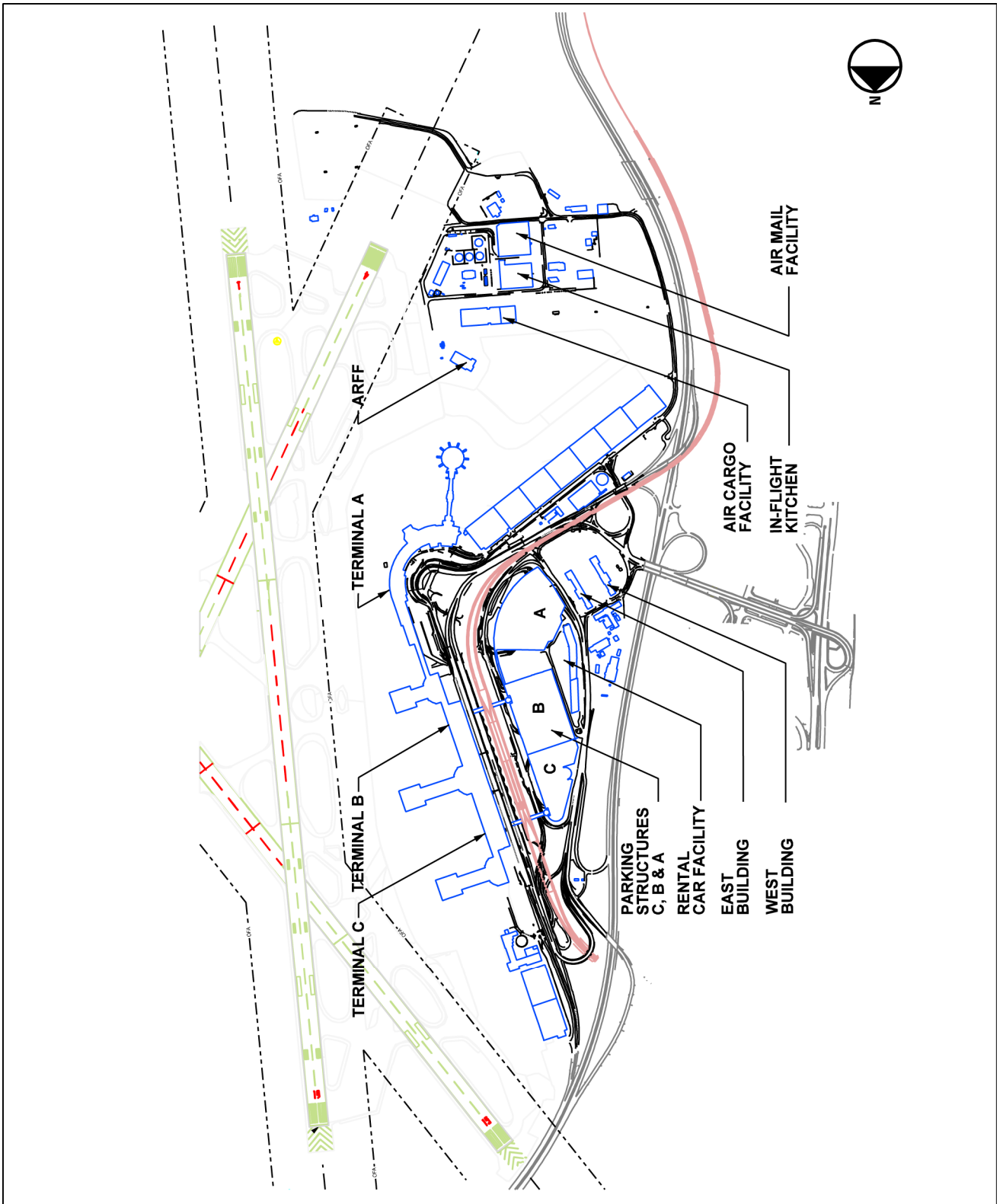
**1.4.1 Capital Construction Program:** The Capital Construction Program for Ronald Reagan Washington National Airport includes major changes at every level of operations: new roadway system; Terminal B/C; renovation of the Terminal A; new parking facilities; relocation of Air Cargo and General Aviation facilities; and realignment of some airfield taxiway and aircraft parking sites. (A site plan reflecting these improvements is shown in **Exhibit II-1-1**).

Recognizing the complexity of this multi-phase development plan, the Metropolitan Washington Airports Authority commissioned a collaborative programming effort to establish a planning framework for a new airport signing system. The analysis, concepts and conclusions developed through this process are published in the Master Planning Program for Signing. This document includes detailed information about the signing environment at Ronald Reagan Washington National Airport. The programming process, and the Master Plan that resulted from it, provide the basis for signing design at Ronald Reagan Washington National Airport. They describe not the design itself -but rather how the design must work. The Master Planning Program for Signing provides both a reference and the benchmark for all designers to help them understand and respond to the needs of the Airport and the objectives of the program. It defines problems, guidelines and premises - in addition to offering criteria by which proposed solutions can be evaluated. The rationale behind the addressing scheme for the terminals, gates and parking structures is one of the primary products of the programming process. (Refer to **Exhibit II-1-2**). This overall addressing scheme is one of the fundamental premises of these signing guidelines. This document begins the work of developing site-specific designs that answer the signing needs of the Airport. It is the primary working tool for designers, and it outlines the complete and current set of signing standards enforced at Ronald Reagan Washington National Airport.

attachments. Note that cross-referencing is necessary regardless of scope of the design project. Designers are advised to review chapter 2 to understand the common design elements before proceeding to chapter 3 or 4, which explain requirements and applications in greater detail. To simplify the task of cross-referencing, chapter 3 and 4 are organized with parallel headings, identifying the areas of airport signing. Where appropriate certain subheadings in chapter 2 also parallel those of chapter 3 and 4.

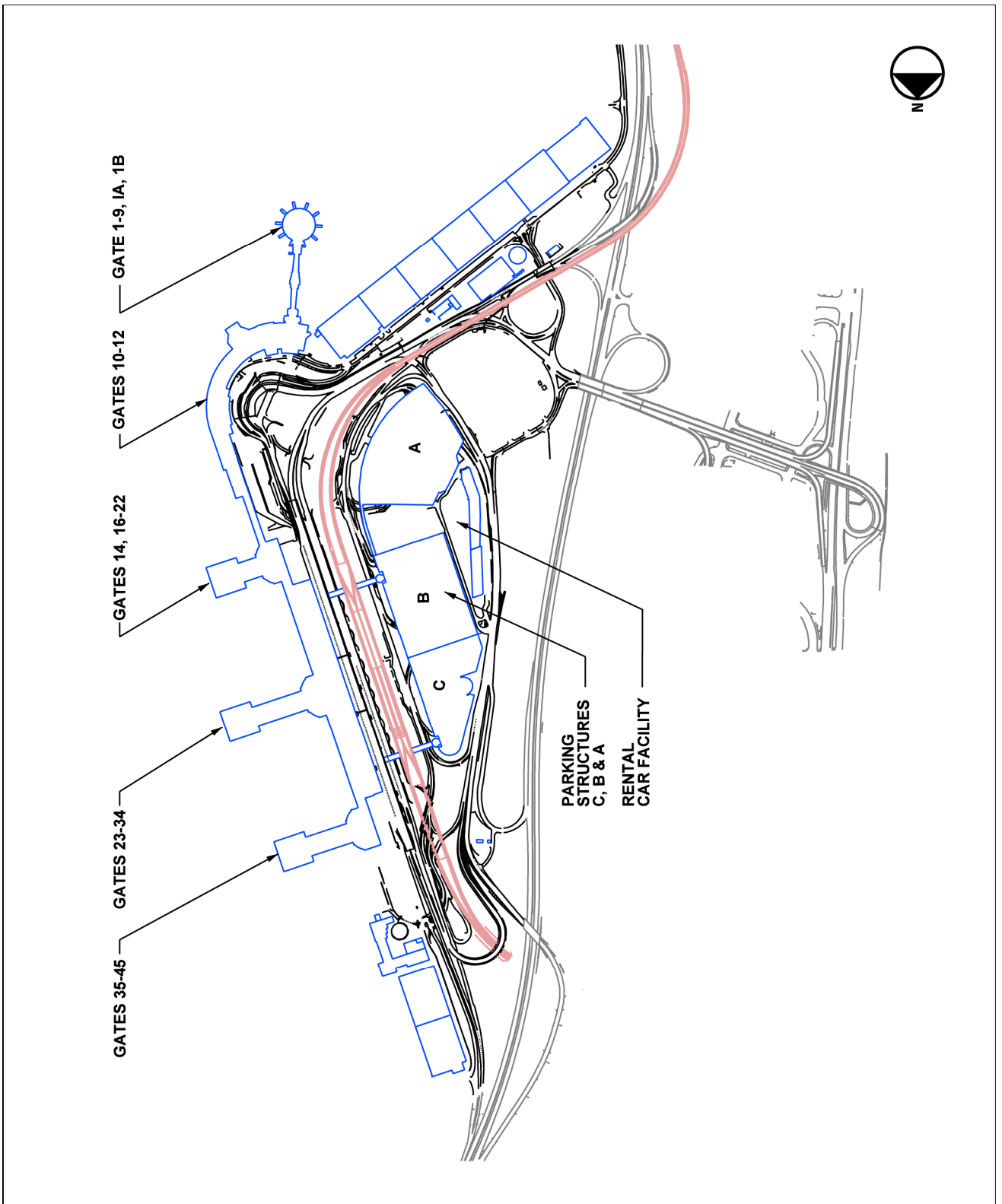
## **1.5 Application of Signing Design Guidelines**

**1.5.1 Organization of Signing Design Guidelines:** The Signing Design Guidelines are organized in five chapters. Following this introduction, chapter 2 presents the typography of the signing system—including materials, methods and graphic formats. Chapter 3 provides detailed guidance on public signing in each area of the Airport. Chapter 4 is parallel to chapter 3, outlining standards and restrictions for commercial signing. Chapter 5 contains supplementary information related to various sections of the manual. Designers should familiarize themselves with the full contents of the Authority *Design Manual* as well as its



Airport Site and Development Plan

Exhibit II-1-1



Terminal Gates and Parking Structures

Exhibit II-1-2

## CHAPTER 2 Typography

### 2.1 Selected Typeface

**2.1.1 Futura:** Futura has been selected as the typeface for all interior and exterior signage at Ronald Reagan Washington National Airport. Futura is available in multiple weights, provides good legibility, and relates to the design standards established for Ronald Reagan Washington National Airport. Futura is the only typeface approved for use on signs at Ronald Reagan Washington National Airport (except for certain regulatory signs).

#### 2.1.2 Approved Sources for Lettering

**2.1.2.1 Sign Text:** Sign text shall normally be created on electronic composition systems using digitized typefaces. Digital typefaces created by URW Company and Gerber Scientific Products are both approved for use at the Ronald Reagan Washington National Airport. Substitution of other versions of Futura requires prior written approval by the Authority.

**2.1.2.2 URW Typefaces:** URW typefaces are available on sign composition systems offered by URW and by other vendors who have licensed URW fonts. Note that licensees may market URW type under somewhat different type names or item numbers.

**2.1.2.3 Vendors of Lettering:** Vendors of lettering must identify the equipment and software to be used and must submit a full alphabet and sample messages showing letterforms and representative letter spacing.

#### 2.1.3 Standard Typefaces

**2.1.3.1 Sign Text:** Sign text shall be set in Futura Heavy, unless otherwise specified. Refer to **Exhibit II-2-1**. Acceptable versions of this typeface are identified in the URW catalogue as Futura Crafting #FOI1007 and in the Gerber catalogue as Futura Demi-Bold.

**2.1.3.2 Sign Messages:** Certain sign messages shall be set in Futura Medium. Refer to **Exhibit II-2-2**.

Acceptable versions of this typeface are identified in the URW catalogue as Futura Halbfett #FO11004 and in the Gerber catalogue as Futura Medium. Refer to **Chapter 3, Public Signing** and **Chapter 4, Commercial Signing** of this Section for guidelines on the use of Futura Medium.

**2.1.3.3 Futura Line Weights:** Other weights of Futura may be appropriate in unusual circumstances. Recommendations to use alternate type weights must be submitted for approval in writing by the Authority. Justification of such proposals should demonstrate the advantages offered by the non-standard type and the relationship of the non-standard sign to other signage in the area of the proposed use.

**2.1.3.4 Decorative Uses of Futura Letters:** Decorative uses of Futura letters, particularly all capital with broad letter-spacing, are recommended for consideration by designers. Possible applications include retail identifications, area or concourse designations, etc. These applications should employ the lighter type weights (Futura Medium, Book and Light), which provide desirable letterforms. For example, the tips of the capital M, N and W terminate in sharp points in the lighter Futura versions but are flattened in bolder weights.

**2.1.3.5 Text on Dynamic Signs:** Text on dynamic signs shall be treated as standard text, conforming to the guidelines provided for the sign on which it appears. When this requirement proves incompatible with sign technology (as may be the case with split-flap, disk matrix, video monitors, or electronic signs), designers shall employ a typeface or format suitable to the specific technology. This type of dynamic signage shall require approval by the Authority on a case-by-case basis, and designers shall describe the selection process that led to the recommended technology and type format.

**A B C D E F G H I J K**  
**L M N O P Q R S T U**  
**V W X Y Z**  
**a b c d e f g h i j k l m**  
**n o p q r s t u v w x y z**  
**1 2 3 4 5 6 7 8 9 0**  
**\$ & \* ( ) \_ + = [ ] : ; ' " , . ? /**

Futura Heavy Exhibit II-2-1

ABCDEFGHIJK  
LMNOPQRSTU  
VWXYZ  
abcdefghijklm  
nopqrstuvwxyz  
1234567890  
\$&\*()\_+=[]:;'"',. ? /

Futura Medium Exhibit II-2-2



**2.1.3.6 Incised Letters:** Matching or relating to those on the façades of the Terminal A, may be considered for use at Ronald Reagan Washington National Airport. Proposals for use of incised, non-Futura letters shall require approval by the Authority.

**2.1.3.7 In All Cases:** The selected typeface is to meet the requirements for “width to height ratio” as stipulated in the Americans with Disabilities Act (ADA) and its supporting regulations and guidelines.

## **2.1.4 Letter and Word Spacing**

**2.1.4.1 Digital Versions:** Digital versions of Futura are provided with pre-specified kerning tables that control letter spacing. Unless otherwise indicated, all sign messages shall follow the tenant’s normal or “kerned” letter spacing standards. (Note that URW fonts are also usually supplied with spacing tables for mono-spacing and touching formats; these should not be used for normal sign type.)

**2.1.4.2 Letter Spacing:** Messages set according to the type tenant’s letter spacing standards will not normally require adjustment. In some circumstances, modification of spacing between individual letter pairs may improve the appearance 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. **Refer to Exhibit II-2-3.**

**2.1.4.3 Type Format:** Letter spaced type formats as indicated in chapters 3 and 4 shall be normally composed by increasing the normal letter-spacing by approximately 200%. Since standard letter spacing varies depending upon the composition system in use, full-size samples of letter-spaced text shall be reviewed to confirm appropriate spacing that is consistent with the samples shown herein.

**2.1.4.4 Reducing Normal Letter or Word Spacing:** Reducing normal letter or word spacing (such as, to fit a lengthy message within a restricted area) shall normally be prohibited. When spacing problems arise, contractors shall refer the problem to the supervising designer for resolution.

Decisions to modify letter spacing will be permissible only upon review and approval by the Authority.

## **2.1.5 Typographic Restrictions**

### **2.1.5.1 Modification of Letter Shapes is Prohibited:**

Modification of letter shapes is prohibited. Condensed, extended, slanted, outlined or otherwise distorted type will not be acceptable under any circumstances. Language to this effect shall be included in the specifications for all airport sign projects.

**2.1.5.2 Typefaces or Type Weights:** Typefaces or type weights not described above may not be used at Ronald Reagan Washington National Airport.

## **2.2 Arrows**

### **2.2.1 Standard Arrow Form**

**2.2.1.1 The Approved Arrow Shape:** The approved arrow shape for all airport signs is the DOT/AIGA arrow. Refer to **Exhibit II-2-4.**

**2.2.2 Arrow Locations:** The placement of arrows on sign faces shall conform to the guidelines provided in **Chapter 3 Public Signing**. Arrows may not be positioned in any other location on the sign face.

**2.2.2.1 Arrows May Not Point into Text:** Arrows may not point into text. Left-facing arrows shall be located on the left side of signs, and right-facing arrows shall be located on the right side of signs. Upward-facing arrows shall normally be located closest to the flow of traffic.

**2.2.2.2 Roadway Overhead Signs:** Arrows shall be held within a designated area along the lower edge of the message area, as defined in **Chapter 3**. Arrows shall normally be positioned flush with the bottom edge of the designated arrow area. Refer to **Exhibit II-2-4.**

**\$7.50 Per Day  
Remote Parking  
General Aviation  
Rental Car Return**

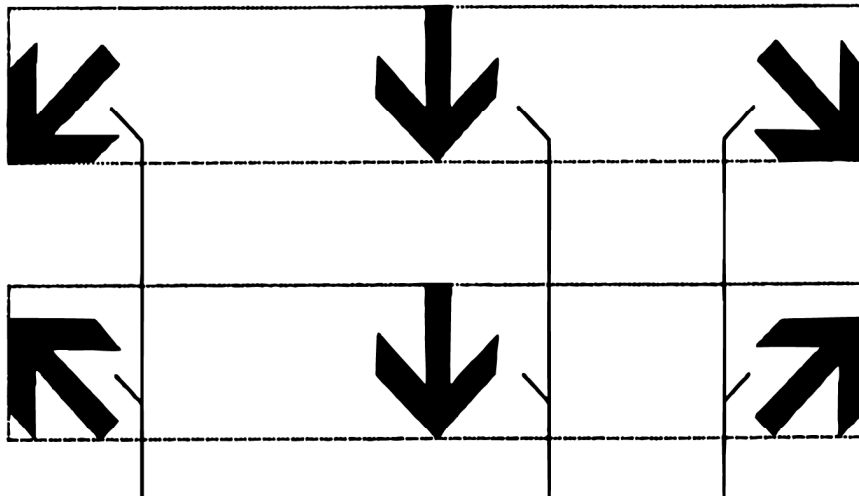
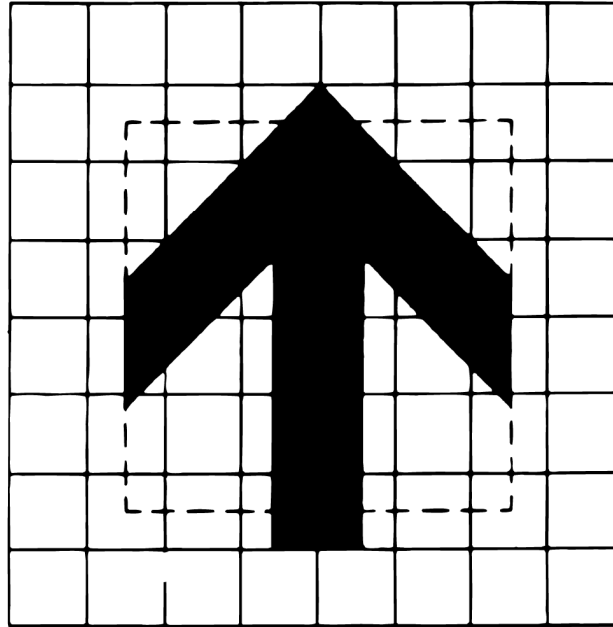
LETTER AND WORD SPACING, FUTURA MEDIUM

**\$7.50 Per Day  
Remote Parking  
General Aviation  
Rental Car Return**

LETTER AND WORD SPACING, FUTURA HEAVY

Letter and Word Spacing, Futura Medium and Heavy

Exhibit II-2-3



LOCATE LEFT-FACING  
ARROWS AT THE LEFT  
END OF ARROW BAND,  
FLUSH TO BOTTOM OF  
ARROW AREA

LOCATE DOWN-FACING  
ARROWS ACROSS WIDTH  
OF ARROW BAND, FLUSH  
TO BOTTOM OF ARROW  
AREA

LOCATE RIGHT-FACING  
ARROWS AT THE RIGHT  
END OF ARROW BAND,  
FLUSH TO BOTTOM OF  
ARROW AREA

Arrow Form and Placement Exhibit II-2-4

**2.2.2.3 Roadway Ground-Mount Signs:** Arrows shall be held within a designated vertical column along the left or right side of the message area, as defined in **Chapter 3**.

**2.2.2.4 Interior Signs:** Arrows shall be held within a designated vertical column along the left or right side of the message area, as defined in **Chapter 3**.

### **2.2.3 Arrow Orientations**

**2.2.3.1 The DOT Arrow:** The DOT arrow can be rendered in nine different orientations, refer to **Exhibit II-2-5**. No alternate orientations are acceptable.

**2.2.3.2 Roadway Signs:** Arrow orientation shall follow the guidelines provided in the *Manual of Uniform Traffic Control Devices (MUTCD)*. Arrow position on overhead signs shall relate to the traffic lanes.

**2.2.3.3 Interior Signs:** Arrow orientation shall conform to the following guidelines:

- A.** Straight-ahead pedestrian movement shall be indicated by upward-facing arrows, unless a downward-facing arrow can be shown to be clearly advantageous in a specific circumstance.
- B.** Straight downward-facing arrows shall be reserved to indicate movement down to a lower level.
- C.** Arrows angled up at a 45° angle in either direction have an ambiguous meaning however; the preferred meaning shall be to indicate movement up to a higher level. Depending upon circumstances, the same angled arrow may indicate forward motion and then right or left, depending upon the inclination of the arrow. This is less preferred, but is acceptable in specific circumstances.

## **2.3 Symbols**

**2.3.1 Standards:** Standards for the use of symbols at Ronald Reagan Washington National Airport have been

evolved after consideration of demographic, aesthetic, and practical needs. Based on these considerations, a group of symbols (selected from the DOT set) has been approved for use. Graphic symbols are used to reinforce text messages on signs. They are not used as primary message elements.

### **2.3.2 Terminal and Parking Symbols**

**2.3.2.1 Terminal and Corresponding Parking Structure Symbols:** The symbol for each airport terminal and its corresponding parking structure shall be composed of a solid, square color field with a white capital letter centered within it. Refer to **Exhibit II-2-9**.

**2.3.2.2 Square Fields:** The square field for Terminal A and Parking Garage A shall be green, Terminal B and Parking Garage B shall be red, and Terminal C and Parking Garage C shall be blue. Refer to **Paragraph 2.4.3**.

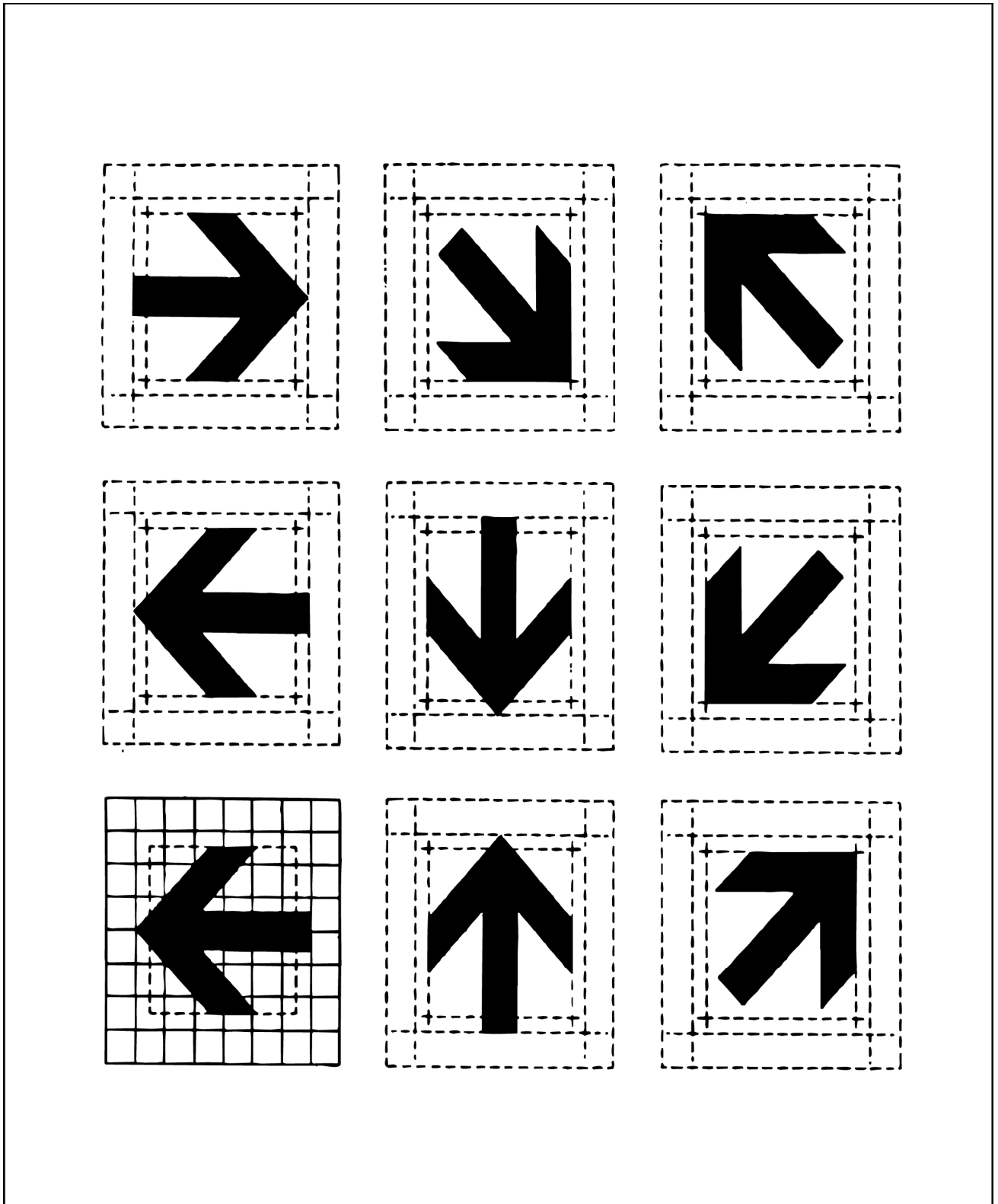
**2.3.2.3 Terminal and Parking Symbol Colors:** Terminal and parking symbol colors require exact color matches refer to **Paragraph 2.4.4** for specifications.

**2.3.3 Exterior Sign Symbol Set:** Symbols on exterior signs shall be restricted to standard highway trailblazer shields. Exterior signs shall not employ other graphic symbols, except as described in Terminal and Parking Symbols and Regulatory Sign Symbols.

### **2.3.4 Interior and Curbside Sign Symbol Set**

**2.3.4.1 Interior Signs:** Interior signs shall employ graphic symbols selected from the set developed for the U.S. Department of Transportation by the American Institute of Graphic Arts. Certain symbols included in the DOT set will not be used at Ronald Reagan Washington National Airport.

**2.3.4.2 The Standard Symbol Set:** The standard symbol set for interior signs is illustrated in **Exhibits II-2-6 through II-2-8**.



Arrow Orientations Exhibit II-2-5



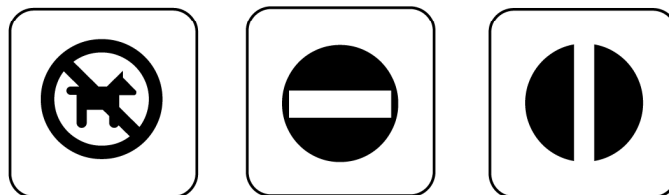
Interior Sign Symbol Set, Public Services Exhibit II-2-6



CONCESSIONS



ACTIVITIES



REGULATIONS

Interior Sign Symbol Set, Concessions, Act, Reg.

Exhibit II-2-7



Interior and Curbside Sign Symbol Set, Misc. Exhibit II-2-8



**2.3.4.3 Graphic Symbols:** Graphic symbols used on interior signs shall always be used together with text messages. There are limited exceptions to this rule, as specified in **Chapter 3**.

**2.3.5 Graphic Symbols:** Graphic symbols shall be rendered in the same color as sign text, except as specified below:

- A. No Entry symbols: Red.
- B. First Aid symbols: Red.
- C. Exit symbols: Green.
- D. Prohibition symbols: Red circle and slash mark.
- E. Accessible Symbols: Blue.

**2.3.5.2 The Relationship of Symbols:** The relationship of symbols to text on interior signs is to be resolved when interior sign standards are developed.

**2.3.5.3 Regulatory Sign Symbols:** Symbol shape, placement, and color on regulatory signs shall conform to the Manual of Uniform Traffic Control Devices (MUTCD) and applicable state and local standards.

### **2.3.6 Symbol Restrictions**

**2.3.6.1 Symbols:** Symbols shall always be used with related text messages or text reinforcement, unless otherwise specified elsewhere in these Guidelines.

**2.3.6.2 Symbols not described in this section shall not be used.**

**2.3.6.3 New or Customized Symbols:** New or customized symbols shall not be developed.

## **2.4 Color**

**2.4.1 Color Selection Goal:** The primary goal in selecting colors for sign fields, graphics and structures has been to create effective signing that relates to its context-including architecture, landscape and street furnishings. The intention has been to specify colors that are distinctive but muted and to avoid aggressive, primary tones. All roadway guide signs have a common color scheme; white text and graphics on a dark gray field. Three different colors are used as secondary identifiers for the terminals and related parking structures. These terminal-specific identifier colors are rendered as square color blocks with white lettering.

### **2.4.2 Field Colors**

**2.4.2.1 The Standard Exterior Field Color:** The standard field color for exterior airport signs shall be a dark, warm gray. Dark Gray (match Authority approved sample or Rohm and Haas opaque acrylic color #2563) is Pantone Professional Color System #18-1306 "Iron".

**2.4.2.2 The Standard Interior Field Color Terminals B and C:** The standard field color for signs inside Terminals B and C shall be burgundy. Burgundy is Munsell 7.5R-3/2.

**2.4.2.3 The Standard Inside Field Color for Terminal A:** The standard field color for signs inside Terminal A shall be a dark, warm gray. Dark Gray (match Authority approved sample or Rohm and Haas opaque acrylic color #2563) is Pantone Professional Color System #18-1306 "Iron"

**2.4.2.4 Alternate Field Colors:** Certain airport signs are specified with alternate field colors or natural metal finishes. Specifications are as follows:

- A. Silver (match Pantone Professional Color System #14-5002)
- B. Black (match Pantone Professional Color System #19-0303)
- C. Clear-anodized aluminum (satin finish)

D. Stainless steel (satin finish)

E. Refer to **Chapter 3** and **Chapter 4** of this Section for guidelines on the use of these field colors.

**2.4.2.5 The Back and Edges of All Signs:** The back and edges of all signs shall be painted to match the field color used on the message side.

**2.4.2.6 Other Colors:** No other color may be used for sign fields except as required by the Manual on Uniform Traffic Control Devices for regulatory signs.

### **2.4.3 Text, Graphics, and Border Colors**

**2.4.3.1 Standard Color:** The standard color for sign text, graphics, and borders shall be bright white. White (match color of 3M-brand white vinyl).

**2.4.3.2 Alternate Colors:** Certain airport signs are specified with alternate text colors. Refer to **Exhibit II-2-9**. Specifications are as follows:

A. Reflective white (3M-brand reflective vinyl or approved equal).

B. Black (match Pantone Professional Color System #19-0303).

C. Silver (match Pantone Professional Color System #14-5002).

D. Refer to **Chapter 3** and **Chapter 4** of this Section for guidelines on the use of these text and graphics colors.

**2.4.3.3 Other Colors:** No other color may be used for sign text, graphics or borders.

### **2.4.4 Terminal and Parking Identifier Colors**

**2.4.4.1 Symbol Colors:** Symbol colors specific to each terminal and parking structure are as follows:

#### **A. Green**

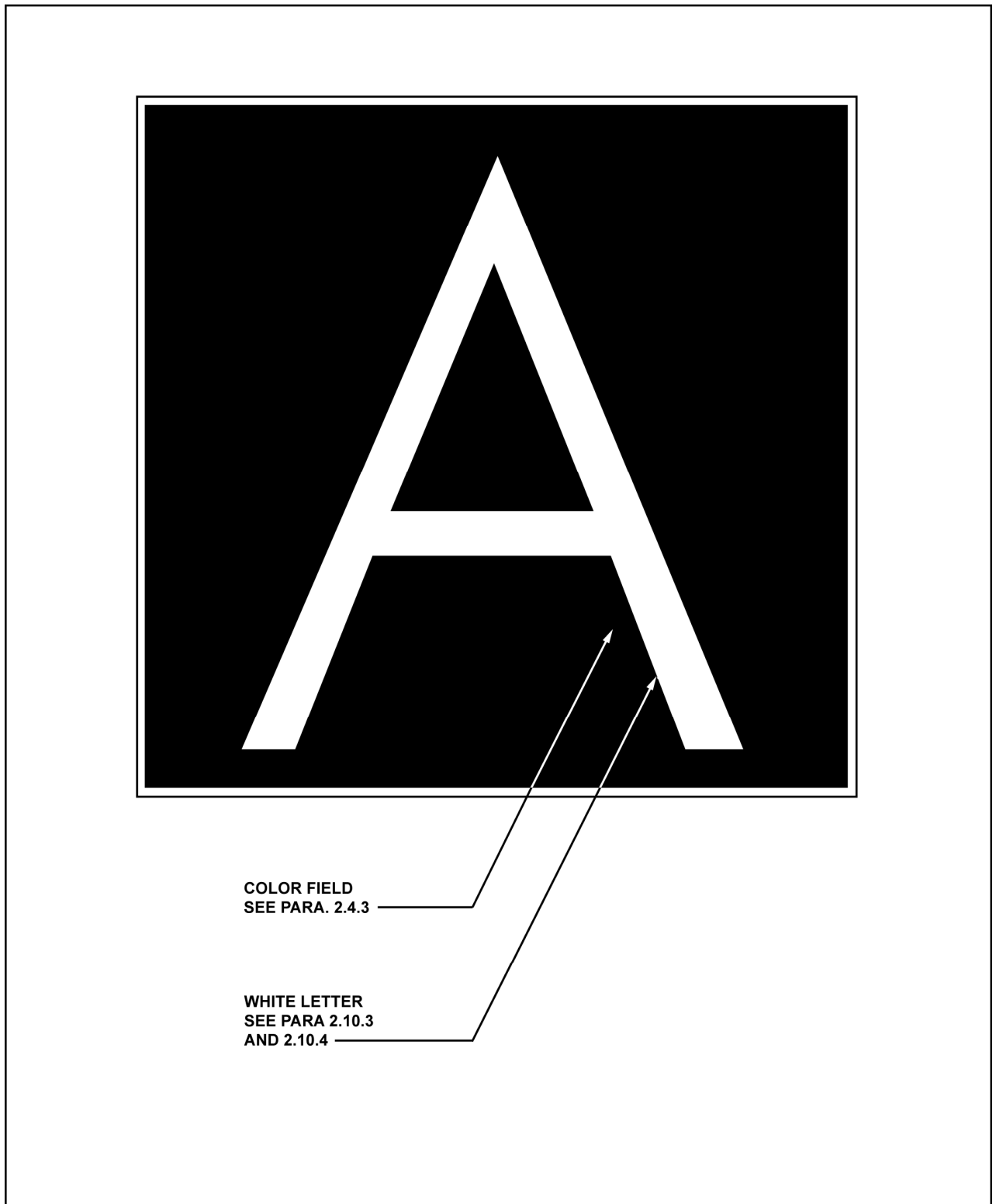
1) Match Munsell 5G-4/8 or Pantone Matching System (PMS) color number 336C for opaque, front-illuminated color surfaces.

2) Match 3M/Gerber 280-77 reflective Green vinyl film for retro-reflective, front-illuminated color surfaces, such as roadway signs.

3) Match 3M Scotchcal GS230 Image Graphics Translucent Film Holly Green #23076 for trans-illuminated color surfaces.

#### **B. Red**

1) Match Munsell 7.5R-3/10 or Pantone Matching System (PMS) color number 187C for opaque, front-illuminated color surfaces.



Terminal and Parking Structure Designator Signs Exhibit II-2-9

2) Match 3M/Gerber 280-82 reflective Red vinyl film for retro-reflective, front-illuminated color surfaces, such as roadway signs.

3) Match 3M Scotchcal GS230 Image Graphics Translucent Film Cardinal Red #23053 for trans-illuminated color surfaces.

**C. Blue**

1) Match Munsell 5B-3/8 or Pantone Matching System (PMS) color number 293C for opaque, front-illuminated color surfaces.

2) Match 3M/Gerber 280-76 reflective Blue vinyl film for retro-reflective, front-illuminated color surfaces, such as roadway signs.

3) Match 3M Scotchcal GS230 Image Graphics Translucent Film Bright Blue #23167 for trans-illuminated color surfaces.

**2.4.4.2 Terminal/Parking Identifier Colors:** The terminal/parking identifier colors are exclusively used for square symbol blocks as per guidelines provided in **Chapter 3**. Use of these colors for sign fields, text or any other format is prohibited.

**2.4.5 Post and Truss Colors**

**2.4.5.1 Hardware:** Signposts, mounts, hardware and trusses shall normally be unpainted, galvanized steel. If paint coating is required for a specific application, sign hardware and supports shall be painted metallic silver.

**A.** Silver match Pantone Professional Color System #14-5002.

**2.4.5.2 Alternate Post or Truss Colors:** Certain airport signs are specified with alternate post or truss colors. Specifications are as follows:

**A.** Dark Gray match Authority approved sample or Rohm and Haas opaque acrylic color #2563.

**B.** Black match Pantone Professional Color System #19-0303.

**C.** Clear-anodized aluminum satin finish.

**D.** Stainless steel satin finish.

**2.4.5.3 Use of Other Post Colors:** Refer to **Chapter 3** and **Chapter 4** of this section for guidelines on the use of these post colors.

**2.4.6 Regulatory and Cautionary Colors:**

**2.4.6.1** In addition to the above-listed colors, some caution, hazard and regulatory signage shall employ the following colors (unless binding codes specify otherwise):

**A.** Red - Match Pantone Professional Color System #18-1662.

**B.** Reflective red - 3M-brand reflective sheeting #72, or as acceptable to the Authority.

**C.** Green - Match Pantone Professional Color System #18-5642.

**D.** Reflective green - 3M-brand reflective sheeting #77, or as acceptable to the Authority.

**E.** Yellow - Match Pantone Professional Color System #15-1054.

**F.** Reflective yellow - 3M-brand reflective sheeting #71 or as acceptable to the Authority.

**G.** Blue - Match Pantone Professional Color System #19-4044.

**H.** Reflective blue - 3M-brand reflective sheeting #75 or as acceptable to the Authority.

I. No other colors may be used on caution, hazard and regulatory signs.

**2.4.7 Other Use of Color:** Certain signs may employ the corporate colors of airlines, car rental agencies, concessionaires, WMATA/Metro, and other airport tenants. Refer to **Chapter 4** for guidelines. No other colors may be used on signs or sign hardware at Ronald Reagan Washington National Airport.

## 2.5 Graphic Formats

**2.5.1 Unified Environment:** Despite its diverse activities and site conditions, the Airport should be understood as a coherent, unified environment. Sign graphics play a major role in establishing visual and informational-consistency. The common elements described in this section are the foundation of the graphic system for airport signing. They provide a set of consistent elements shared by all signs-and they offer a consistent attitude toward sign formats that must be applied to every signing problem. This Section described the layout concepts and graphic elements used for major categories of Airport signs. Detailed information about application of these concepts and elements can be found in **Chapter 3** Public Signing Guidelines and **Chapter 4** Commercial Signing Guidelines.

### 2.5.2 Common Graphic Elements

**2.5.2.1 Common Elements:** Typefaces, arrows, symbols and colors are common to all Airport signage, as described in the relevant parts of this Section.

**2.5.2.2 Sign Layouts:** Sign layouts are planned to group graphic elements-and to provide consistent locations for graphic elements. Arrows are always located in "arrow bands" reserved for those terminal/parking symbols are located in a consistent area common to every sign etc.

**2.5.2.3 Borders:** White borders appear on every roadway sign (with the exception of some regulatory signs). Borders may be used to define message fields, as needed (allowing designers to create multiple message fields on a single sign

face). Borders also provide a finishing graphic element that both defines the sign face and creates a consistent visual element on all airport signage.

**2.5.2.4 Message Bands:** Black message bands may used to render "parent" or "link" messages on certain signs. Examples of such messages are "Airport Exit" or "Return to Airport", both of which "Parent" messages are on sign panels directing traffic to specific destinations. A single black message bands may span one or more message fields-thereby avoiding repetition of parent messages and helping to organize a potentially complex sign installation. Message bands should be used every time such a message is rendered.

**2.5.2.5 Exceptions:** Exceptions to "common element" formats must be avoided whenever possible. When unusual circumstances cannot be accommodated within the standard guidelines, every effort must be made to develop a suitable solution that relates as closely as possible to the graphic system described herein. Any such deviations from these standards, and from those in **Chapter 3** and **Chapter 4** of this section, must be clearly identified and submitted for review and approval by the Authority.

**2.5.3 Overhead Roadway Sign Formats:** All primary directional signs on main Airport roadways will be mounted overhead on full-span bridges or cantilever structures.

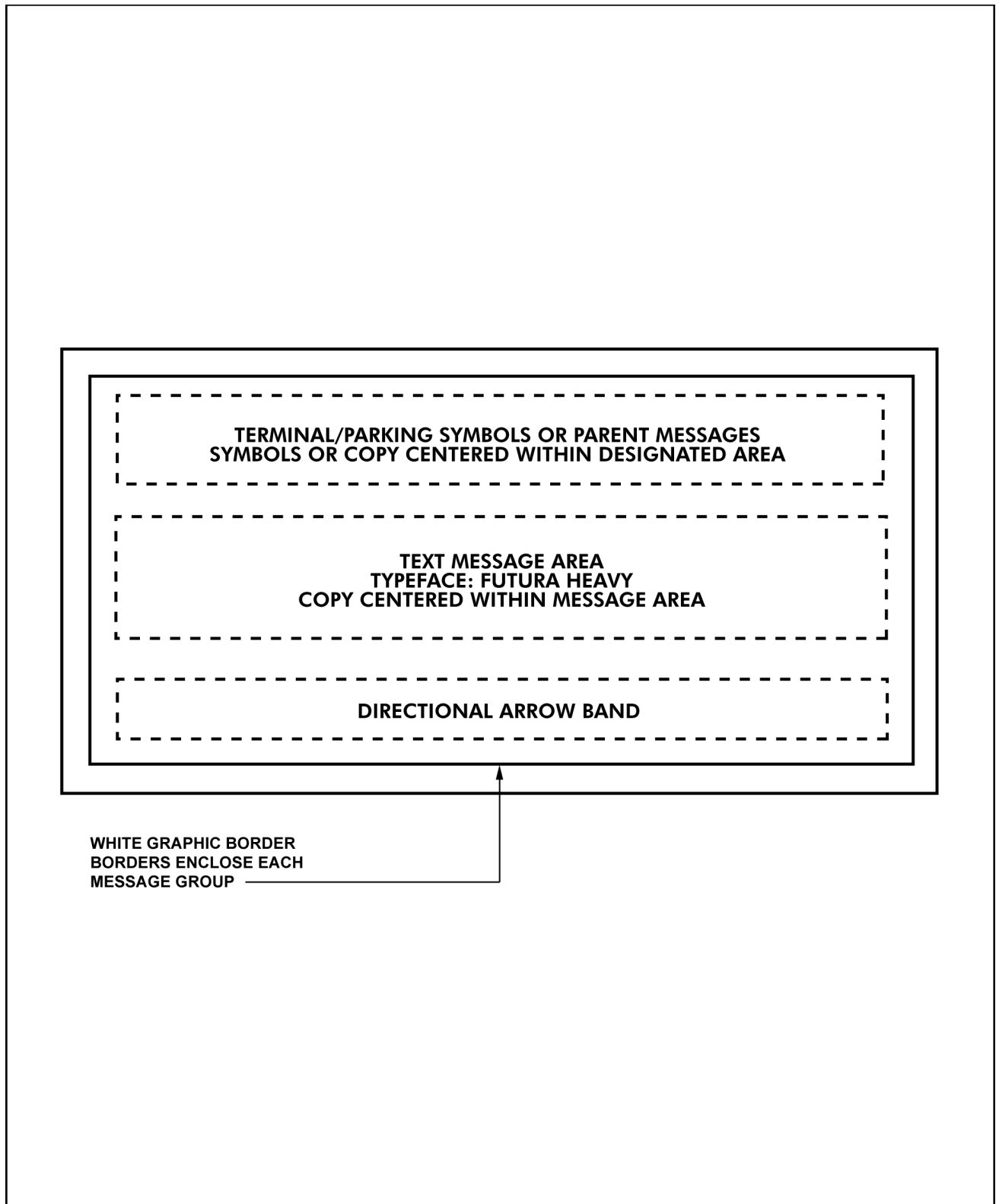
**2.5.3.1 Layout Concept:** Graphics are organized into three horizontal areas, each reserved for a specific use: 1) a "parent message" area, used for terminal symbols or link messages, 2) a text message area and, 3) an arrow band, refer to **Exhibit II-2-10**. When graphics normally appearing in areas 1 or 3 are not required on a specific sign, the text area is extended to occupy the unused space.

**2.5.3.2 Panel Widths:** Overhead signs are composed of 12' – 0" width modules corresponding to typical roadway lane widths, typical installations will be 12' – 0", 24' – 0", or 36' – 0" wide. An 18' – 0" wide panel, referring to two drive lanes and centered over them may be employed along road segments with 4 or more lanes.

**2.5.3.3 Panel Heights:** Overhead signs are minimum 8 feet high. Height may be increased in 1 foot increments, depending on message requirements. Typical installations will be 8' – 0", 9' – 0", or 10' – 0" high. Note that all sign panels mounted together on a sign bridge must be the same height.

**2.5.3.4 Borders/Message Fields:** A narrow, rectangular border appears on every roadway sign. These borders define the message area. When sign messages refer to multiple traffic lanes, a single border may enclose a double or triple-width message area.

**2.5.3.5 Text Messages:** Text Messages and most other graphic elements are rendered in centered formats on overhead signs. Elements are normally centered over the traffic lane(s) to which they refer.



Overhead Sign Faces Exhibit II-2-10

**2.5.3.6 Design Coordination:** Overhead signing is closely integrated with road spanning truss structures. All signs on a single truss must be identical in height, and the truss mounting must match the height of signs affixed to it. No exceptions to this guideline will be permitted. All signs required on a single truss must be developed together to ensure compatible layouts on adjacent signs.

**2.5.3.7 Site Coordination:** Overhead signs and sign message fields/borders are required to align with roadway lanes. Sign designers must closely coordinate their work with roadway designers, truss designers and related trades, to guarantee this sign-to-lane correspondence.

## **2.5.4 Ground-Mount Roadway Sign Formats**

**2.5.4.1 Ground-Mount Roadway Signs:** Ground-mount roadway signs may be employed for the following purposes:

- A. Primary directional signing along low-speed, single-lane airport roads.
- B. Message reinforcement signing along multi-lane roadways.

**2.5.4.2 Layout Concept:** Graphics are organized into three vertical areas, each reserved for a specific use:

- A. An arrow column located on the left side of the sign for left-facing arrows and on the right side of the sign for right-facing arrows.
- B. A terminal symbol column.
- C. A text message column. Refer to **Exhibit II-2-11**.
- D. When terminal symbols are not required on a specific sign, the text column is extended to occupy the unused symbol column.

**2.5.4.3 Panel Widths:** Ground-mount signs are created in 6" width increments, depending on message requirements, typical installations will be 4' – 0" to 6' – 0" wide.

**2.5.4.4 Panel Heights:** Ground-mount signs are minimum 3 feet high. Height may be increased in 1 foot increments, depending on message requirements. Typical installations will be 3' – 0", 4' – 0" or 5' – 0" high.

**2.5.4.5 Borders/Message Fields:** A narrow, rectangular border encloses all text and graphics on ground-mount signs. When a sign panel includes both left and right facing arrows, sign graphics shall be treated as two messages fields each defined by a border. No sign border may enclose both left and right facing arrows.

**2.5.4.6 Text Messages:** Text messages and most other graphic elements on ground-mount signs are rendered flush left when associated with left-facing arrows or flush right when associated with right facing arrows.

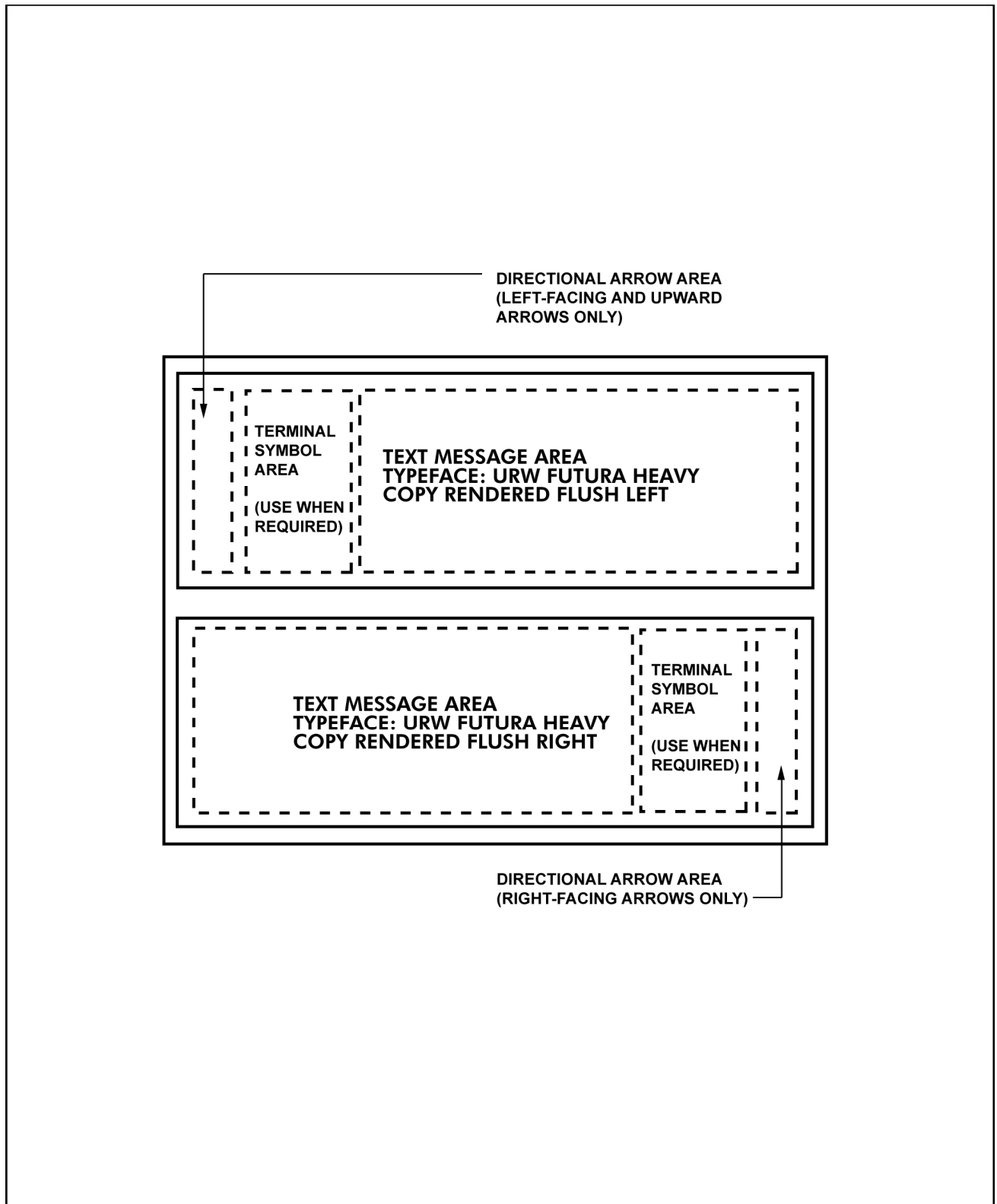
**2.5.4.7 Design and Site Coordination:** Ground-mount signing must be closely integrated with roads, landscaping, architecture and street furnishings. All signs required in a single area must be developed together to maximize clarity, minimize sign proliferation, and ensure compatible sizes and layouts on adjacent signs.

**2.5.5 Interior Sign Formats:** (Section for future use)

## **2.6 Materials And Finishes**

**2.6.1 Materials for Signing:** Materials for signing shall be aesthetically and architecturally compatible, readily available, easily fabricated, appropriately finished consistent with text application methods, cost effective, and resistant to environmental conditions. Exterior sign materials should generally be painted metals and applied adhesive vinyl letters. In the case of internally illuminated signs, panels may be fiber-reinforced polyester or acrylic. Interior sign materials shall relate to the materials and design theme of the building and include appropriate decorative elements, at the discretion of the interior designers of the Terminal B/C Building.





Ground-Mount Sign Faces L and R Facing Arrows

Exhibit II-2-11

## 2.6.2 Roadway

**2.6.2.1 Overhead Signing:** Sign panels shall be fabricated from a 0.063" aluminum face-sheet and 0.040" aluminum back-sheet laminated to 2½" thick honeycomb core, edged with extruded aluminum channels. Alternatively, overhead sign panels may be fabricated aluminum boxes with internal structural supports in lieu of a honeycomb core. Fabricated boxes shall be equal to the honeycomb-core panels in appearance, performance and durability.

- A.** Panel finish shall be a spray-applied, matte-finish high performance paint.
- B.** Lettering and graphics shall be adhesive vinyl. Non-reflective vinyl shall be used on illuminated signs reflective vinyl shall be used on non-illuminated roadway signs.
- C.** Sign support structures shall normally be unpainted galvanized steel.

**2.6.2.2 Ground-Mounted Signing:** Sign panels shall be fabricated from a 0.063 inch aluminum face-sheet and 0.040 inch aluminum back-sheet laminated to 2½" thick honeycomb core, edged with extruded aluminum channels. Regulatory signs are an exception to this guideline, and shall be fabricated from 0.125 inch aluminum sheet.

- A.** Panel finish shall be a spray-applied, matte-finish high performance paint.
- B.** Lettering and graphics shall be reflective adhesive vinyl or high performance paint.
- C.** Signposts shall be 2½" by 2½" by 3/16" galvanized steel, normally supplied unpainted.

## 2.6.3 Terminals

**2.6.3.1 Exterior Signs:** (Section for future use)

**2.6.3.2 Canopy Signs:** (Section for future use)

**2.6.3.3 Interior Signs:** (Section for future use)

**2.6.3.4 Bridge/Tunnel Signs:** (Section for future use)

## 2.6.4 Parking Structures

**2.6.4.1 Sign Materials:** Sign panels shall be fabricated from .080" sheet aluminum with a concealed internal aluminum frame.

**2.6.4.2 Panel Finish:** Panel finish shall be matte-finish high-performance paint.

**2.6.4.3 Sign Support Members:** Sign support members shall be painted aluminum tubes or aluminum posts.

**2.6.4.4 Lettering and Graphics:** Lettering and graphics shall be high performance, reflective adhesive vinyl.

**2.6.5 Surface Parking Lots:** Row identification sign collars, mounted to light posts, shall match the Airport design standard, refer to **Chapter 3, sign Type L-1**. All other signing shall match roadway- signing materials.

**2.6.6 Taxi Parking Structure:** Interior signing shall match existing interior signing materials. Exterior signing shall match roadway-signing materials.

## 2.6.7 Hangar Buildings

**2.6.7.1 Hangar Identification and Minor Hangar Tenant Identification:** Refer to **Paragraphs 3.6 and 4.6**.

Guidelines for ground-mounted roadway signing apply at hangars, except adhesive vinyl graphics shall always be non-reflective.

**2.6.7.2 Major Hangar Tenant Identification:** Tenant name shall be rendered with internally illuminated individual letters, 6" deep, using the tenant's corporate typeface. Letter frames shall be clear anodized, satin-finish aluminum, with appropriate coatings to protect against

pitting and powdering. Letter faces shall be translucent acrylic sheet, matching Airport standard, dark bronze color in daylight white when internally illuminated.

**2.6.7.3 General Aviation Terminal:** Terminal identification shall be rendered with stainless steel dimensional letters, matching existing Airport standard. Terminal operator name shall be rendered with individual internally illuminated letters with red-color acrylic letter faces and brushed aluminum frames to match letters on canopy of Terminal A.

## **2.6.8 South Service**

**2.6.8.1 Dock and Tenant Identification:** Provide internally illuminated modular signs recessed into the canopy face. Signs shall consist of a metal housing with fiber-reinforced polyester or acrylic sign face. The sign field shall be opaque, and sign graphics shall be translucent.

### **2.6.8.2 Other South Area Signs:**

Other South Area signs shall follow standards for roadway signing.

## **2.7 Mounting**

**2.7.1 Requirements:** Sign mountings shall support signs for good visibility, facilitate illumination where required, complement buildings and landscaping, be fabricated from commonly available materials, be easily maintained, and not obstruct or pose any hazard to vehicular or pedestrian traffic. Mountings shall reflect the character of the Airport through form, materials, and finishes.

**2.7.2 Roadway:** Basic mounting types used on Airport roadways are as follows: full-span overhead cantilever, overhead double-post ground mount, and single-post ground mount.

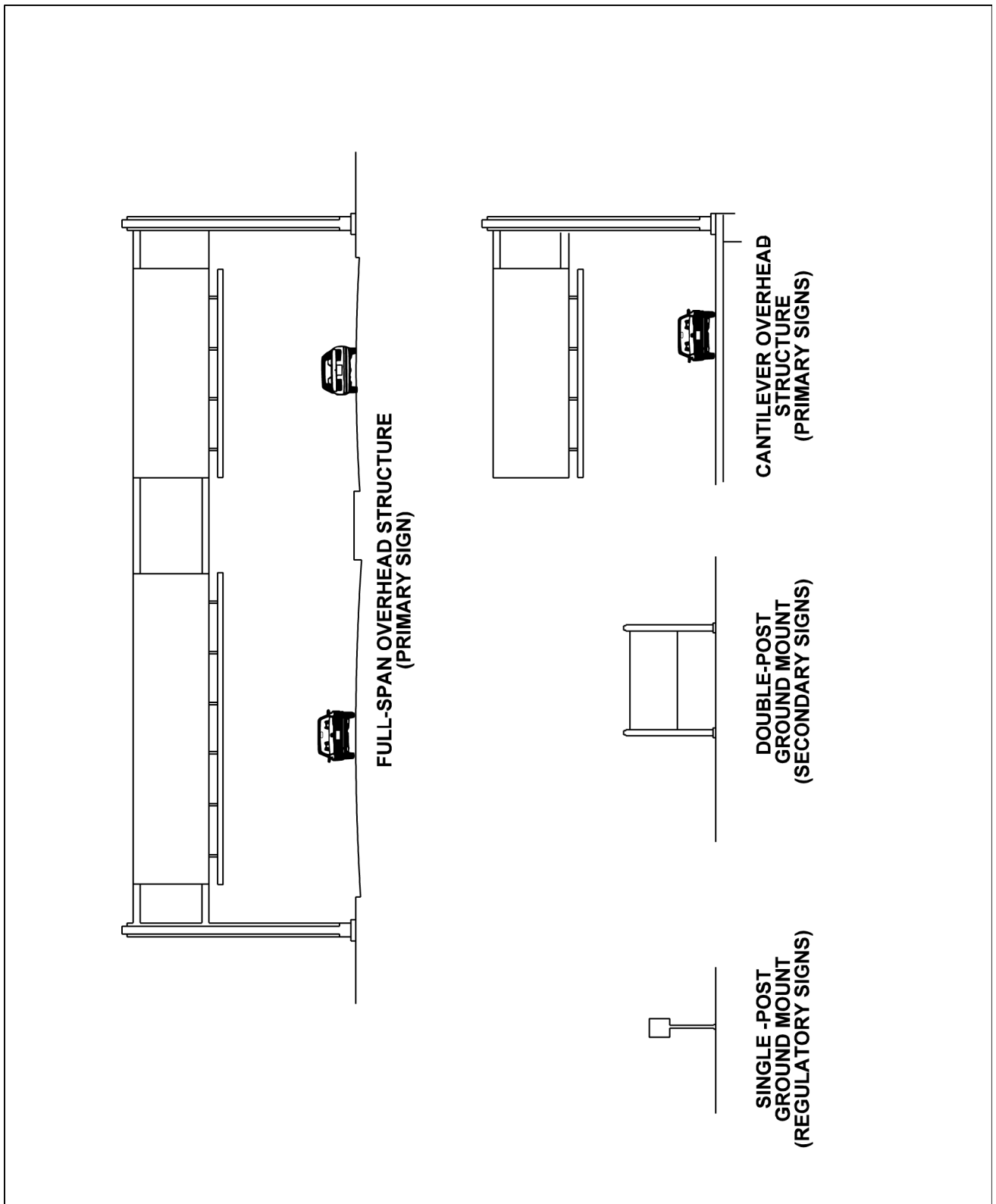
**2.7.2.1 Mounting Selection:** Use full-span or cantilever overhead structures for primary signs that sort traffic at key decision points on orientation, terminal and parking roadways. Use double-post ground mounts for secondary signs. Use single-post ground mounts for regulatory and warning signs. Refer to **Exhibits II-2-12 through II-2-18.**

### **A. Minimum vertical clearances**

- 1) Overhead structure: 14' – 6" from roadway to bottom of structure.
- 2) Double-post ground mount: 5' – 0", from roadway to bottom of sign.
- 3) Single-post ground mount: 7' – 0" from roadway to bottom of sign.

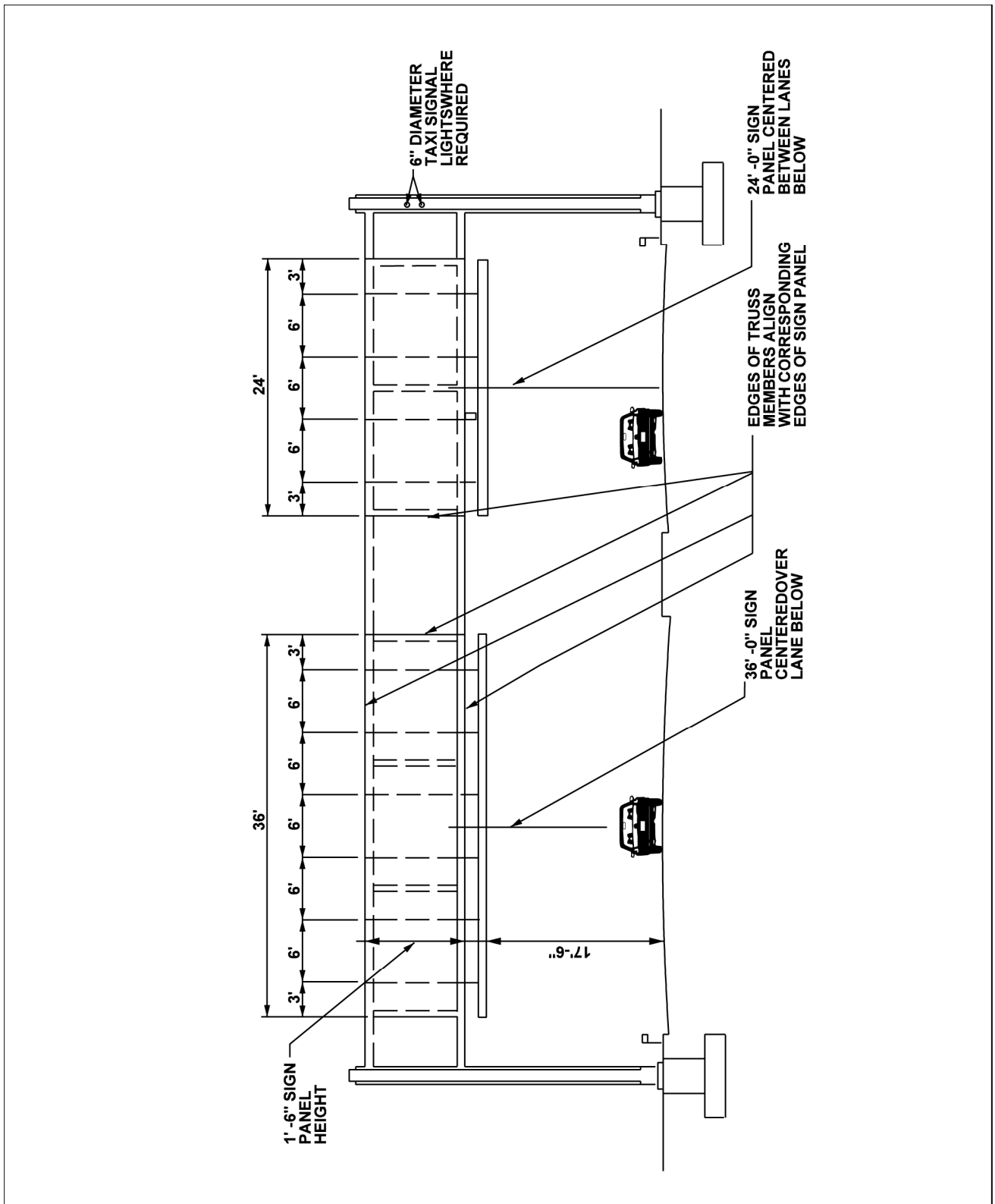
### **B. Minimum setbacks from guardrail and curbs**

- 1) Overhead structure: 3' – 0" minimum from face of box-beam guard-rail to column.
- 2) Double-post ground mount: 3' – 0" minimum from face of curb to post.
- 3) Single-post ground mount: 2' – 0" minimum from face of curb to edge of sign.



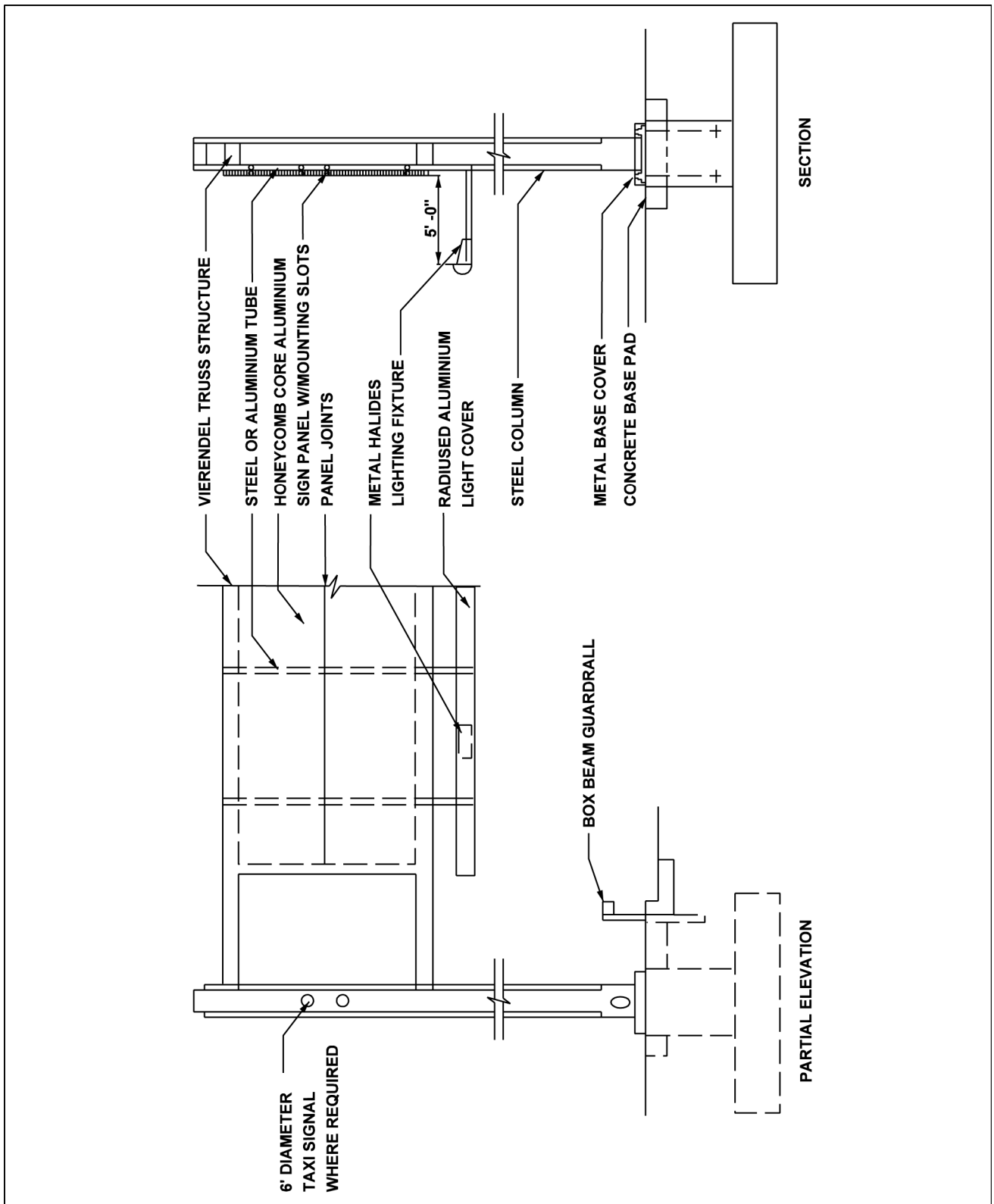
Roadway Sign Mounting Types

Exhibit II-2-12



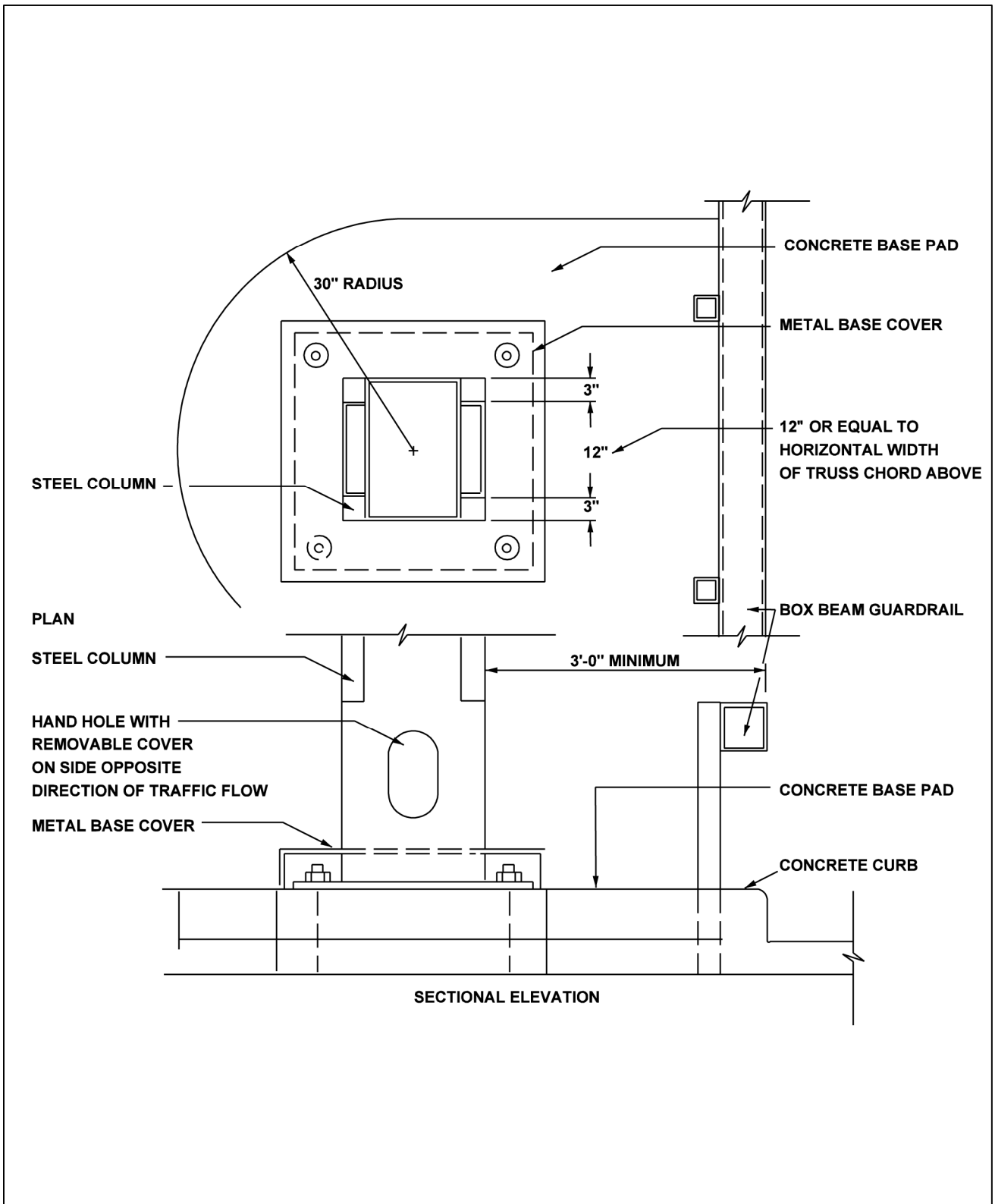
Full-Span Overhead Structure

Exhibit II-2-13



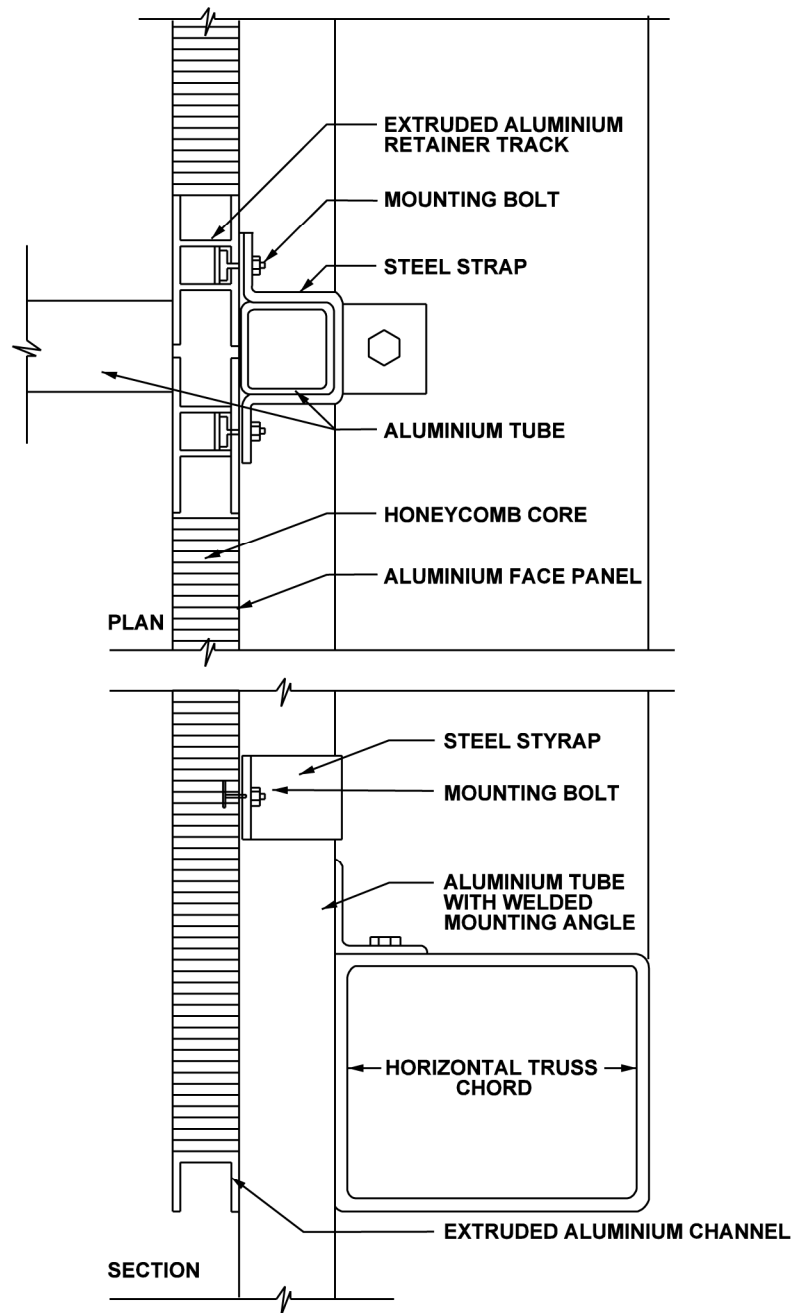
Overhead Sign Structure Elevation and Section

Exhibit II-2-14



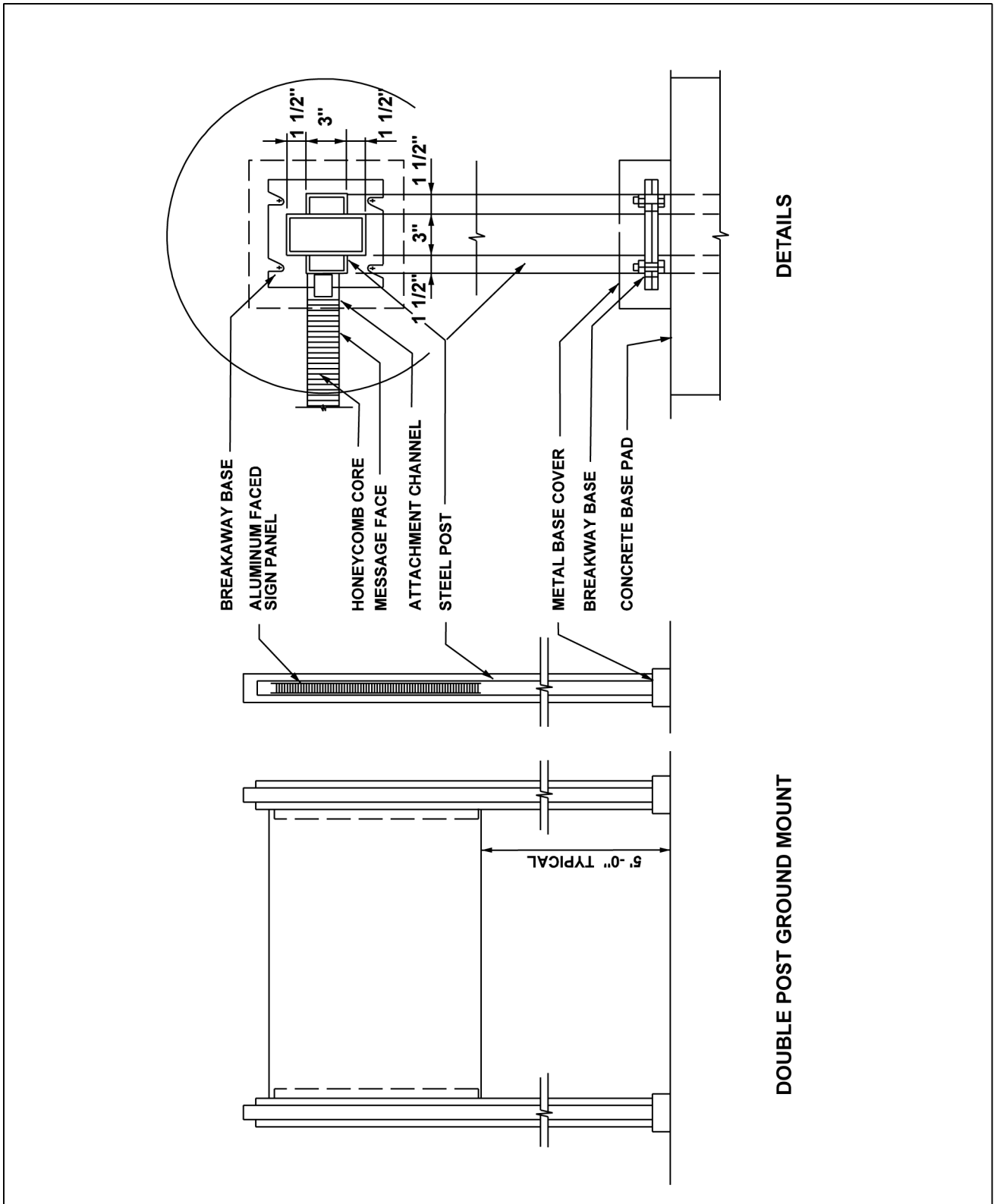
Overhead Sign Structure Column Base Detail

Exhibit II-2-15



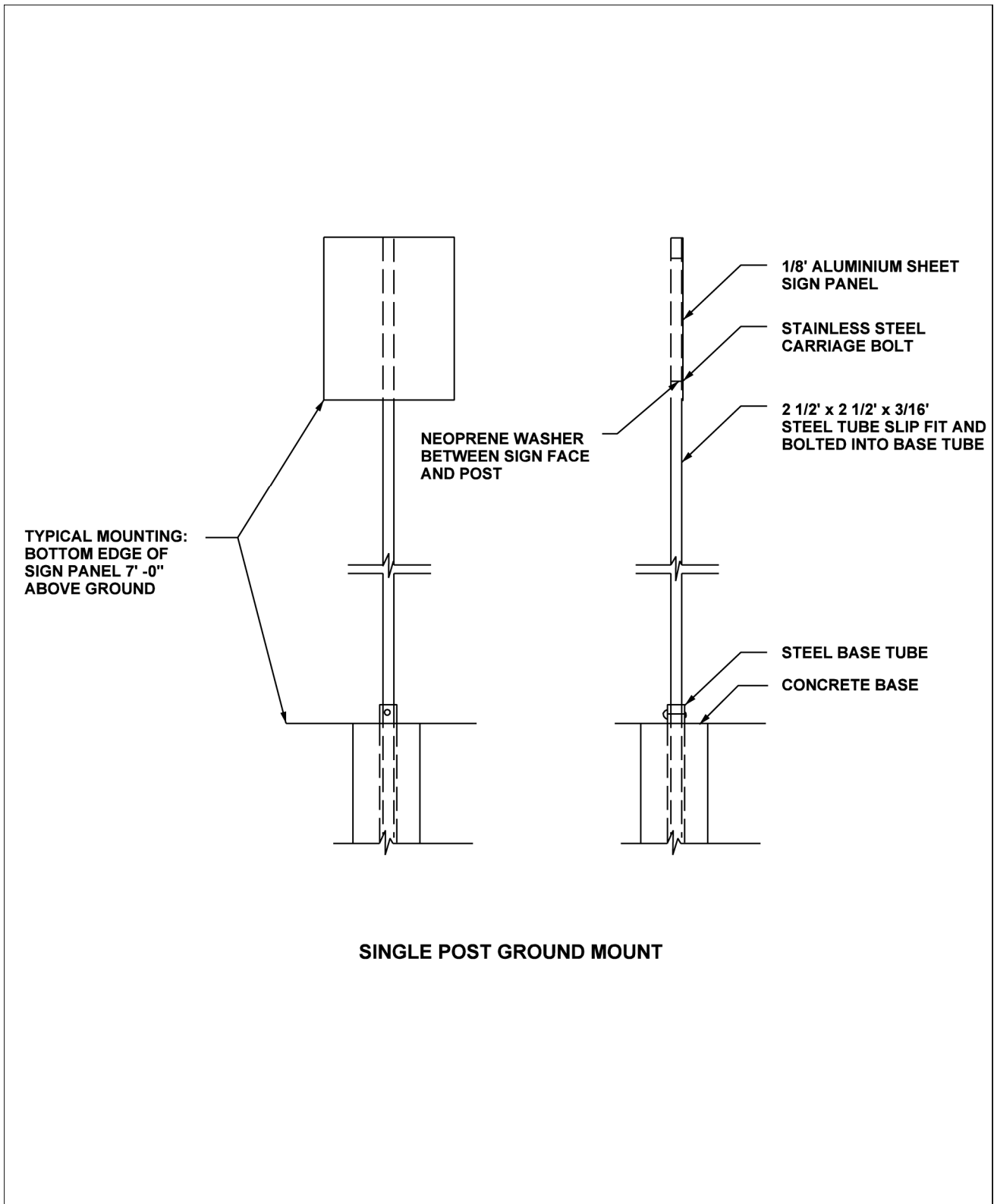
Overhead Sign Structure, Panel Attach Detail Exhibit II-2-16





Double-Post Ground - Mount Sign

Exhibit II-2-17



Single-Post Ground - Mount Sign

Exhibit II-2-18

**C. Minimum mounting separations**

- 1) Overhead signs: 400'.
- 2) Primary ground mounts: 400'.
- 3) Secondary ground mounts: 200'.
- 4) Overhead sign separations of 300' – 0" are acceptable on the Route 233 viaduct, due to the slower speed of vehicles and limited mounting locations.

**D. Viaduct signs**

- 1) Designs for signs on the Route 233 viaduct shall be subject to the approval of Virginia Department of Transportation (VDOT). Plans, structural calculations and details shall comply with Section 105.2 of VDOT Road and Bridge Specifications. Sign posts shall be mounted by anchor bolts to a steel reinforced, thickened concrete rail and steel bracket assembly this assembly shall be supported by the existing steel bridge beam, stiffened as required, refer to **Exhibit II-2-19** for schematic details.
- 2) Structural sign supports shall be custom designed and dimensioned for each sign face.
- 3) Breakaway post details are required for signs not protected by guardrails.
- 4) No exposed electrical conduit shall be used on signs, to the maximum extent possible.
- 5) Concrete base pads, top flush with surrounding grade, shall be specified to prevent grass from growing next to sign and to facilitate mowing.
- 6) Overhead sign faces shall align with lanes below, refer to **Exhibit II-2-10** for schematic details.

**2.7.3 Terminals**

**2.7.3.1 Recommended Minimum Mounting Clearances to Finished Floor**

- A. Primary and secondary overhead: 9' – 0"
- B. Primary and secondary wall mount: 8' – 0"
- C. Tertiary wall mount: 5' – 0"
- D. Tertiary counter mount: 3' – 6"

**2.7.3.2 Exterior signs:** (Section for future use)

**2.7.3.3 Canopy signs:** (Section for future use)

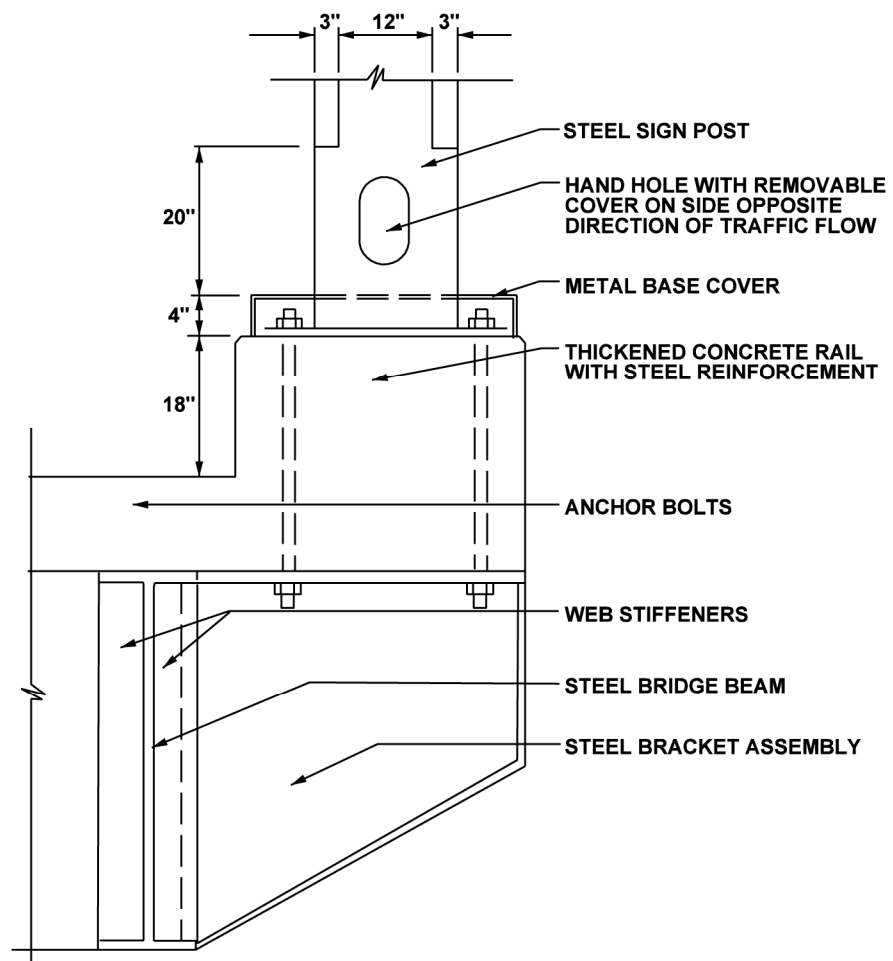
**2.7.3.4 Interior signs:** (Section for future use)

**2.7.3.5 Bridge/Tunnel signs:** (Section for future use)

**2.7.3.6 Parking Structures:** Basic mounting types in the parking structures are: overhead suspended freestanding post surface painted and column/post mounted.

**2.7.3.7 Mounting Selection:** Use suspended overhead mounting for directional and regulatory signing inside the parking structures. Use freestanding post mounts for vehicular signing on the uppermost level of the parking structures. Use surface-painted sign bands for row identification on columns except on columns at pedestrian walkways, which receive aluminum sign collars. Use post mounts for pedestrian signing on the uppermost, uncovered rooftop, level of the parking structures.

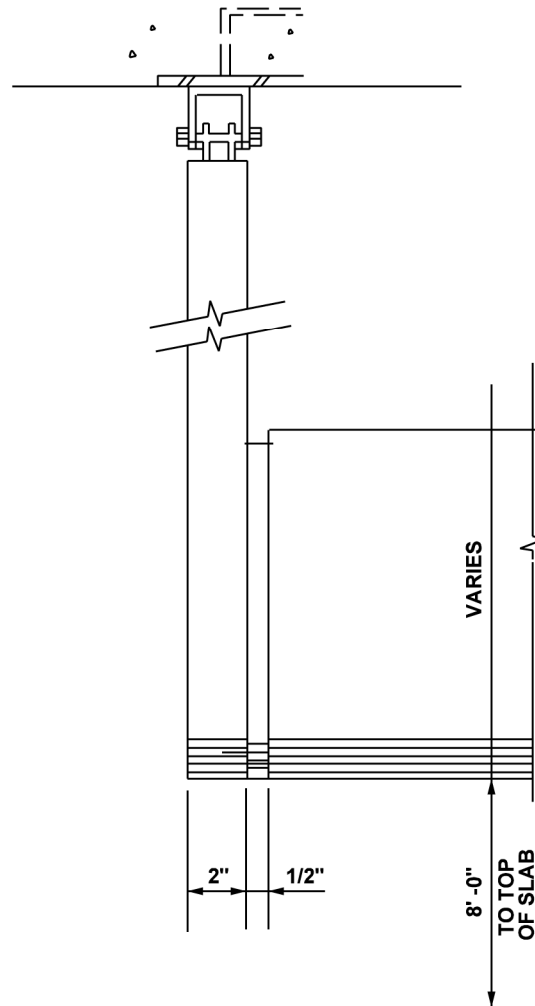
**2.7.3.8 Mounting Details:** Mounting details for each parking structure mount type shall follow the Airport Design standards already implemented in the South Economy lot and South Parking Structure. Typical mounting details are illustrated in **Exhibits II-2-20 through II-2-22**.



DETAIL

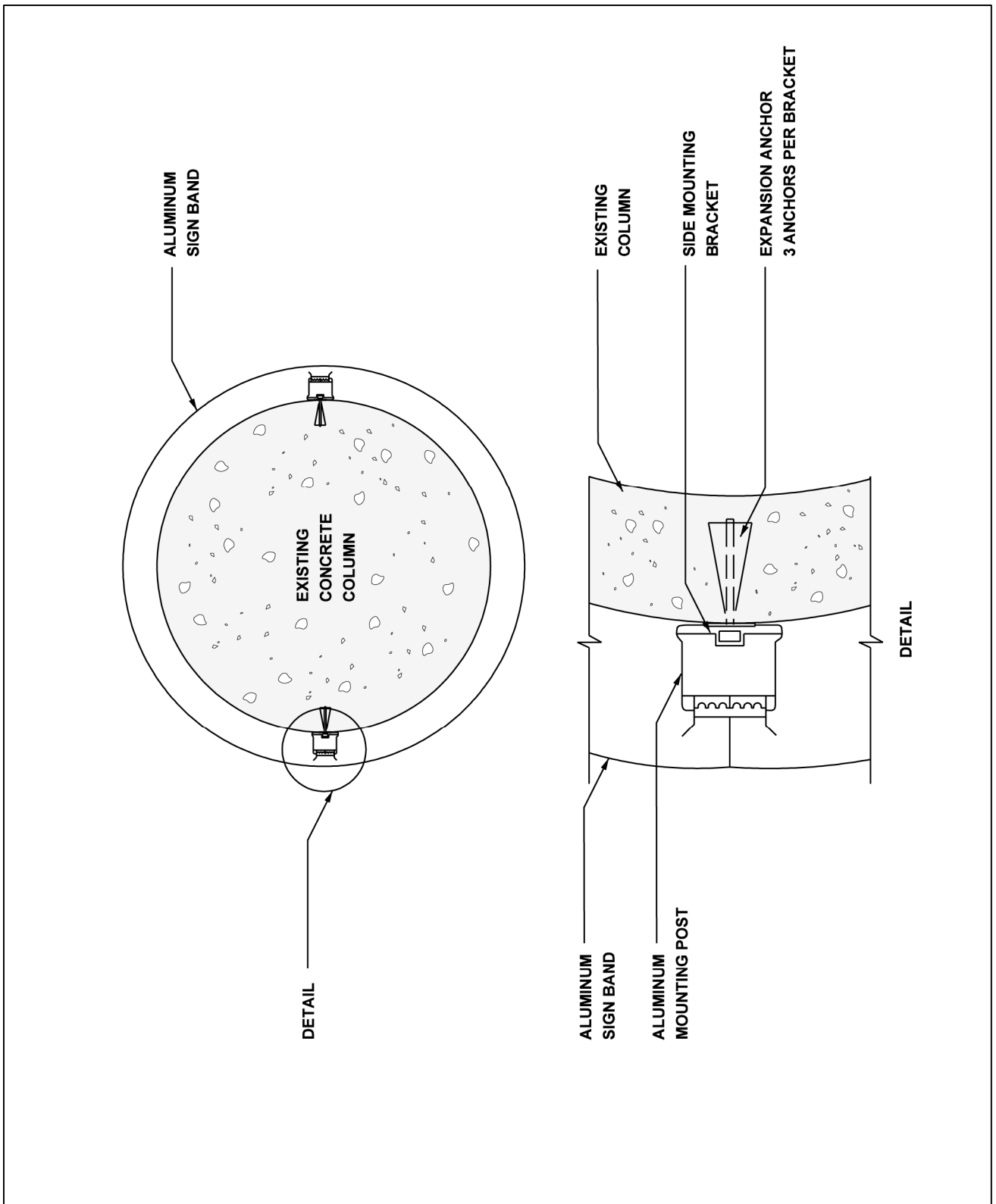
Viaduct Cantilever Sign, Column Base Detail

Exhibit II-2-19



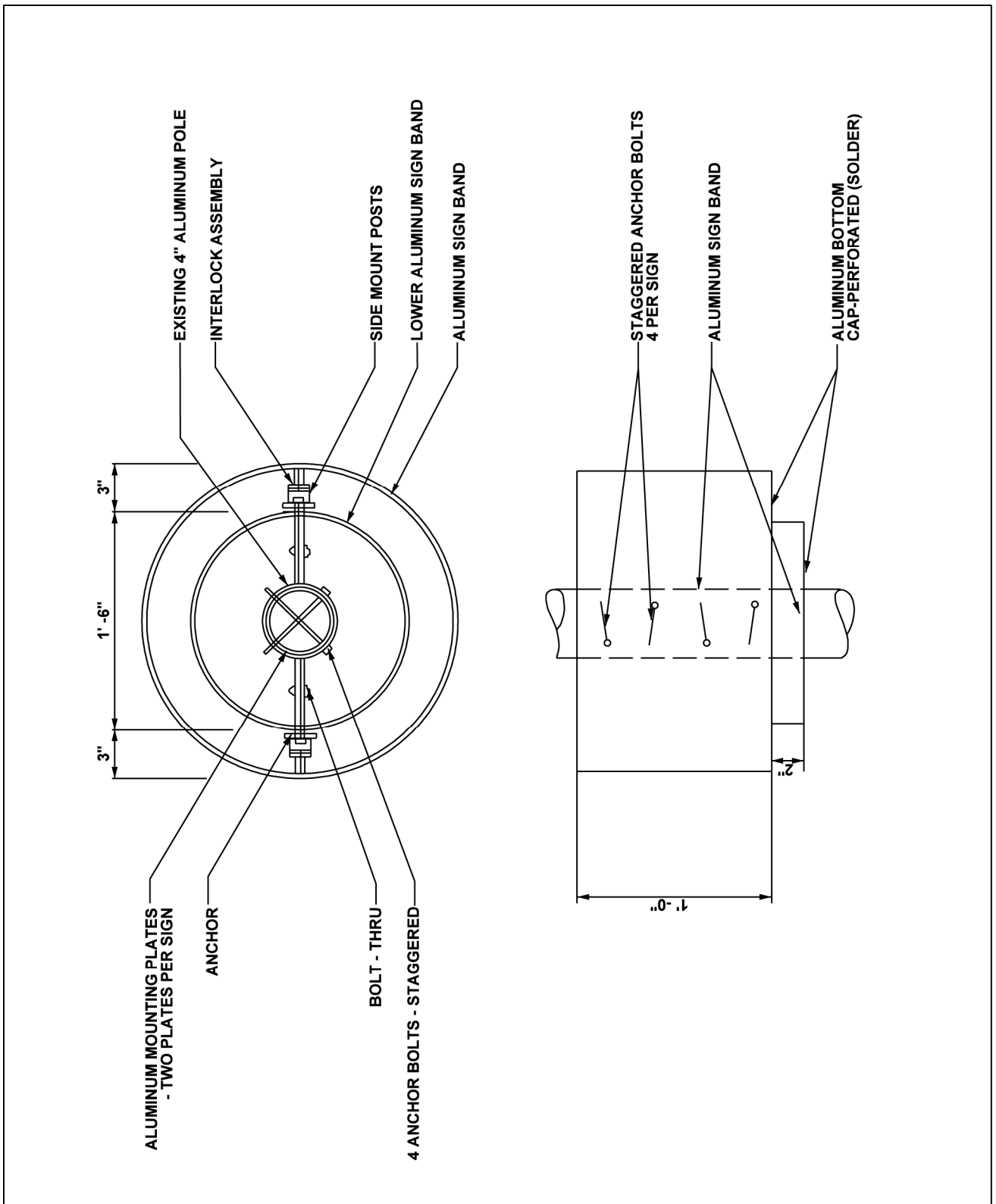
Parking Structure Overhead Suspended Sign

Exhibit II-2-20



Parking Structure Column - Mounted Sign Band

Exhibit II-2-21



Parking Structure Pole - Mounted Sign Band

Exhibit II-2-22

**2.7.4 Surface Parking Lots:** Row identification signs shall be mounted to light poles, in accordance with the Airport Design standards. Other signing shall match roadway signing mounting.

**2.7.5 Taxi Parking Structure:** Interior signing shall match existing interior signing mounting. Exterior signing shall match roadway signing mounting.

## **2.7.6 Hangar Buildings**

**2.7.6.1 Hangar Identification:** In general, follow guidelines for mounting roadway ground-mount signs as per **Paragraph 2.7.1**. Breakaway base detail may be omitted. Refer to **Paragraph 3.6** for schematic drawing and mounting height.

**2.7.6.2 Major Hangar Tenant Identification:** Mount individual letters to façade of hangar with blind studs, refer to **Paragraph 4.6**. All conduit, wiring, transformers and hardware shall be concealed.

**2.7.6.3 Minor Hangar Tenant Identification:** Tenants are listed on hangar identification sign.

**2.7.6.4 General Aviation Terminal:** Mount individual letters to façade of hangar and to hangar canopy with blind studs. All conduit, wiring, transformers and hardware shall be concealed.

## **2.7.7 South Service Area**

**2.7.7.1 Dock and Tenant Identification:** Modular signs shall be recess-mounted in front edge of canopy, refer to **Paragraph 4.7** for schematic details.

## **2.8 Illumination**

**2.8.1 Sign Illumination:** Illumination of signs plays an important role in establishing the wayfinding system. The color, intensity and character of light are tools that can enhance sign legibility and affect the perception of signs on the Airport site. Primary roadway signing will be externally

illuminated by metal-halide fixtures providing a bright, cool-white light that contrasts with the warm, sodium-vapor lights that illuminate the roadways. Most other Airport signing, including secondary roadway signs, building signs, and interior signs, will not be illuminated.

## **2.8.2 Roadway**

**2.8.2.1 Overhead Signing:** Provide metal-halide lamps mounted to the sign structure and concealed in custom housings, refer to details in **Paragraph 2.6**.

**2.8.2.2 Ground-Mount Signing:** Ground-mount signs will not normally be illuminated. Review site conditions to ensure that adequate illumination will be provided by ambient light from high-pressure sodium roadway lighting and/or vehicle headlights.

## **2.8.3 Terminals**

**2.8.3.1 Canopy Signs:** Provide ambient lighting of at least 25 footcandles at the sign face, with appropriate color characteristics.

**2.8.3.2 Interior Signs:** Signs will not normally be illuminated. Designers of building lighting shall provide ambient lighting of at least 25 footcandles, with appropriate color characteristics, in signing areas.

**2.8.3.3 Bridge/Tunnel Signs:** Signs will not normally be illuminated. Designers of building lighting shall provide ambient lighting of at least 25 footcandles, with appropriate color characteristics, in signing areas.

**2.8.4 Parking Structures:** Parking structure signs will not normally be illuminated. Review site conditions to ensure that adequate illumination will be provided by ambient light from ceiling-mount high-pressure sodium fixtures and/or vehicle headlights.

**2.8.5 Surface Parking Lots:** Surface parking lot signs will not normally be illuminated. Review site conditions to ensure that adequate illumination at sign faces will be



provided by ambient light from high-pressure sodium roadway and lot lighting and/or vehicle headlights.

**2.8.6 Taxi Parking Structure:** Taxi parking structure signs will not normally be illuminated. Review site conditions to ensure that adequate illumination will be provided by ambient light from ceiling-mount high-pressure sodium fixtures and/or vehicle headlights.

## **2.8.7 Hangar Buildings**

### **2.8.7.1 Hangar and Minor Tenant Identification**

**(Ground-mounted):** Signs will not normally be illuminated. Review site conditions to ensure that adequate illumination will be provided by ambient light.

### **2.8.7.2 Major Tenant Identification (Façade-mounted):**

Signs will be provided with concealed neon tubing (or other acceptable light source) in acrylic-faced dimensional letters.

### **2.8.7.3 General Aviation Terminal:**

Terminal identification letters are externally illuminated by floodlights. Terminal operator name dimensional letters are internally illuminated by concealed neon tubing or other acceptable light source.

## **2.8.8 South Service Area**

**2.8.8.1 Dock and Tenant Identification Signs:** Provide internal fluorescent lamps with outdoor ballasts and housings.

**2.8.8.2 Miscellaneous Signing:** Signs will not normally be illuminated. Review site conditions to ensure that adequate illumination will be provided by ambient light.

## **2.9 Dynamic and Changeable Signing**

**2.9.1 Dynamic Signing:** Dynamic signing shall convey messages that change on an hourly, daily or weekly basis, such as parking availability, flight, gate, and baggage claim information. Dynamic signing shall, to the extent possible, match fixed-sign typefaces, formats, colors, materials and

mounting details. In any case, dynamic signing elements shall be low maintenance, highly legible and aesthetically coordinated with static signing components and other architectural elements. The specific type of dynamic signing device utilized shall be the one determined to be most appropriate for the specific application in question. Currently approved dynamic signing systems include mechanical rotating drums, Fiber Optic, and LED devices. In all cases the dynamic signing equipment shall be capable of remote operation and be fully weatherproof. Additionally, the sign field and text shall match as closely as practical the adjacent static sign field and text. Changeable signing is appropriate for names and locations of airlines, tenants, services and other messages that change over a period of months or years. Changeable sign elements shall be aesthetically and functionally compatible with fixed sign elements and shall allow sign messages to be changed easily, preferably by a single laborer. Refer to Ronald Reagan Washington National Airport, *Master Planning Program for Signing*, for information and planning guidelines about the use of dynamic signing. This document provides background and information that is essential to planning dynamic sign panels and messages.

## **2.9.2 Exterior**

**2.9.2.1 Parking Availability Signs:** Use appropriate dynamic signage system, capable of providing adequate messages, which can be controlled as a part of the parking revenue control system.

**2.9.2.2 Airline Directory Roadway Signs:** Use changeable aluminum message strips, finished to match fixed sign face. Changeable strips shall have pre-drilled holes to allow the strip to be easily and accurately mounted to threaded studs projecting from fixed sign face. Painted cap nuts secure the strip to fixed sign, and should be replaced each time sign strips are replaced.

## **2.9.3 Interior**

**2.9.3.1 Flight Information Display System (FIDS):**

Locate in parking structure lobbies, terminal lobbies, at security checkpoints and at gates.

**2.9.3.2 Baggage Information Display System (BIDS):**

Locate at gates (where appropriate) and in baggage claim lobbies.

**2.9.3.3 Ticket Counter Position Information:** (Section for future use)

**2.10 Terminology**

**2.10.1 Terminology and Editorial Guidelines:** Standard terminology and editorial guidelines apply to all sign messages in use at Ronald Reagan Washington National Airport. Use of these standard terms promotes consistency and provides the public with a coherent sequence of messages. Refer to Ronald Reagan Washington National Airport *Master Planning Program for Signing* for information and planning guidelines about addressing and terminology. This document provides background and information that may assist in sign and message planning.

**2.10.2 Standard Terminology:** All airport signage shall employ common, approved terminology. Deviations from these standard terms will not be permitted. The following standard terms shall be employed for all sign messages at Ronald Reagan Washington National Airport:

**2.10.2.1 Terminal A**

**2.10.2.2 Terminal B**

**2.10.2.3 Terminal C**

**2.10.2.4 Parking A**

**2.10.2.5 Parking B**

**2.10.2.6 Parking C**

**2.10.2.7 General Aviation**

**2.10.2.8 Baggage Claim:** Baggage Claim, when necessary, may be rendered "Bag Claim", Ticketing/Check-In

**2.10.2.9 Rental Cars**

**2.10.2.10 Rental Car Return**

**2.10.2.11 Hourly Parking**

**2.10.2.12 Daily Parking**

**2.10.2.13 Economy Parking**

**2.10.2.14 Air Cargo**

**2.10.2.15 Airport Exit**

**2.10.2.16 Return to Airport**

**2.10.2.17 Toilet Rooms:**

A. Men (not Men's Room, Restroom, etc.)

B. Women (not Women's Room, etc.)

**2.10.2.18 Approved terms:** Refer to **Sections 2.10.2** through **2.10.8** for approved terms that are specific to airport areas or functions.

**2.10.3 Roadway Messages**

**2.10.3.1 Exits:** Exits shall be described as follows:

A. Northbound: I-395 (shield), GW Parkway North, Washington

B. Southbound: GW Parkway South, Alexandria

C. Westbound: US-1 (shield), US-66 (shield), Crystal City

**2.10.3.2 Roadway Exit Routes:** In all cases, roadway exit routes shall be described under the message “Airport Exit,” in addition to specific route or destination messages. Air carriers shall be listed on roadway signs with the simplest possible identifications. Words, such as “Airline,” “Shuttle,” “Connection,” “Express,” etc. shall not appear on public signs. Subsidiaries, divisions and affiliates of major air carriers will not be identified on public signs unless such listings are essential for public wayfinding.

## **2.10.4 Terminal Messages**

**2.10.4.1 Terminals:** Terminals shall be identified as Terminal A, Terminal B, Terminal C and General Aviation. As per Section 2.3.1 and Section 3, the terminal letters are normally rendered as symbol blocks.

**2.10.4.2 Curbsides:** Curbsides shall be identified as follows:

- A.** Terminal A: Ticketing/Check-In (and/or) Baggage Claim
- B.** Terminal B/C Upper Level: Ticketing/Check-In
- C.** Terminal B/C Lower Level: Baggage Claim

**2.10.4.3 Gates:** Gates shall be identified with sequential, numeric designations, beginning at the south end of Terminal A, such as, Gate 1, Gate 2, etc.

**2.10.4.4 Bag Claim Devices:** Bag claim devices shall be identified with sequential, alphanumeric carousel designations, beginning at the south end of each terminal.

- A.** Terminal A: A1 through Ax
- B.** Terminal B: B1 through Bx
- C.** Terminal C: C1 through Cx

## **2.10.5 Parking Structure Messages**

**2.10.5.1 Parking Structures:** Parking structures shall be identified as A, B and C corresponding to the terminals they are designed to serve. When appropriate, interior signs may employ the terms Parking A, Parking B, and Parking C. As per Paragraph 2.3.1 and Chapter 3, terminal/parking letters are normally rendered as color-specific symbol blocks.

**2.10.5.2 Parking Categories:** Parking categories shall be identified as Hourly Parking and Daily Parking.

**2.10.5.3 Car Rental Areas:** Car rental areas shall be identified as Rental Car Return for vehicular traffic or Rental Cars for passenger traffic.

**2.10.5.4 Floor Level Identifications:** Floor level identifications shall be common in all parking structures so that all levels with a common elevation have the same name. Levels shall be identified as follows:

- A.** Elevation 18: Level “G” (no elevation 18 exists in south parking structure)
- B.** Elevation 29: Level 1
- C.** Elevation 40: Level 2
- D.** Elevation 51: Level 3
- E.** Elevation 62: Level 4

**2.10.5.5 Common Floor Designations:** To preserve common floor designations between buildings, Parking Structure A has no level “G”.

**2.10.5.6 Parking Structure Areas:** Parking structure areas shall be identified with three-character alphanumeric codes, composed as follows:

- A.** 1st element: Parking Structure Letter (capital A, B or C)

**B. 2nd element:** Level Number (G, 1, 2, 3, or 4), add a bullet between second and third elements. Note: Hyphens are not acceptable.

**C. 3rd element:** Area Number (evens: 2, 4, 6 etc; odds: 1, 3, 5 etc.), Example: A4.10 (Parking Structure A, 4th Level, area 10)

**2.10.6 Surface Parking Lot Messages:** Parking lot areas shall be identified with a single capital alphabet character for each double-banked line of striped spaces. Note that letter sequences will vary somewhat depending on lot configuration. Area identifications must always be sequential, beginning with "A" in a logical location. Refer to **Exhibit II-2-23**.

**2.10.7 Taxi Parking Structure Message:** Follow standards established by existing installation.

**2.10.8 Hangar Building Messages:** Administrative, tenant and service areas will be identified in accordance with the guidelines in **Chapter 4**. Airline and/or tenant names shall conform to the editorial standards provided for roadway signs in **Paragraph 2.10.2**.

**2.10.9 South Service Area Messages:** The main functions in the south area shall be identified as Economy Parking, General Aviation and Air Cargo. Commercial tenants and services will be identified in accordance with the guidelines in **Chapter 4** of this Section. Commercial tenants and services shall be identified by service type, such as, Air Cargo, and not by company name, on airport directional signs. Exceptions to this guideline will not be considered unless public wayfinding will be compromised by the absence of trade or company names.

**2.10.10 Message Hierarchy and Development:** The sign standards and layout grids supplied in **Section 3**, Public Signing reflect a hierarchy of sign messages. Primary public signs carry primary messages secondary signs carry secondary messages and may reinforce primary messages, etc.

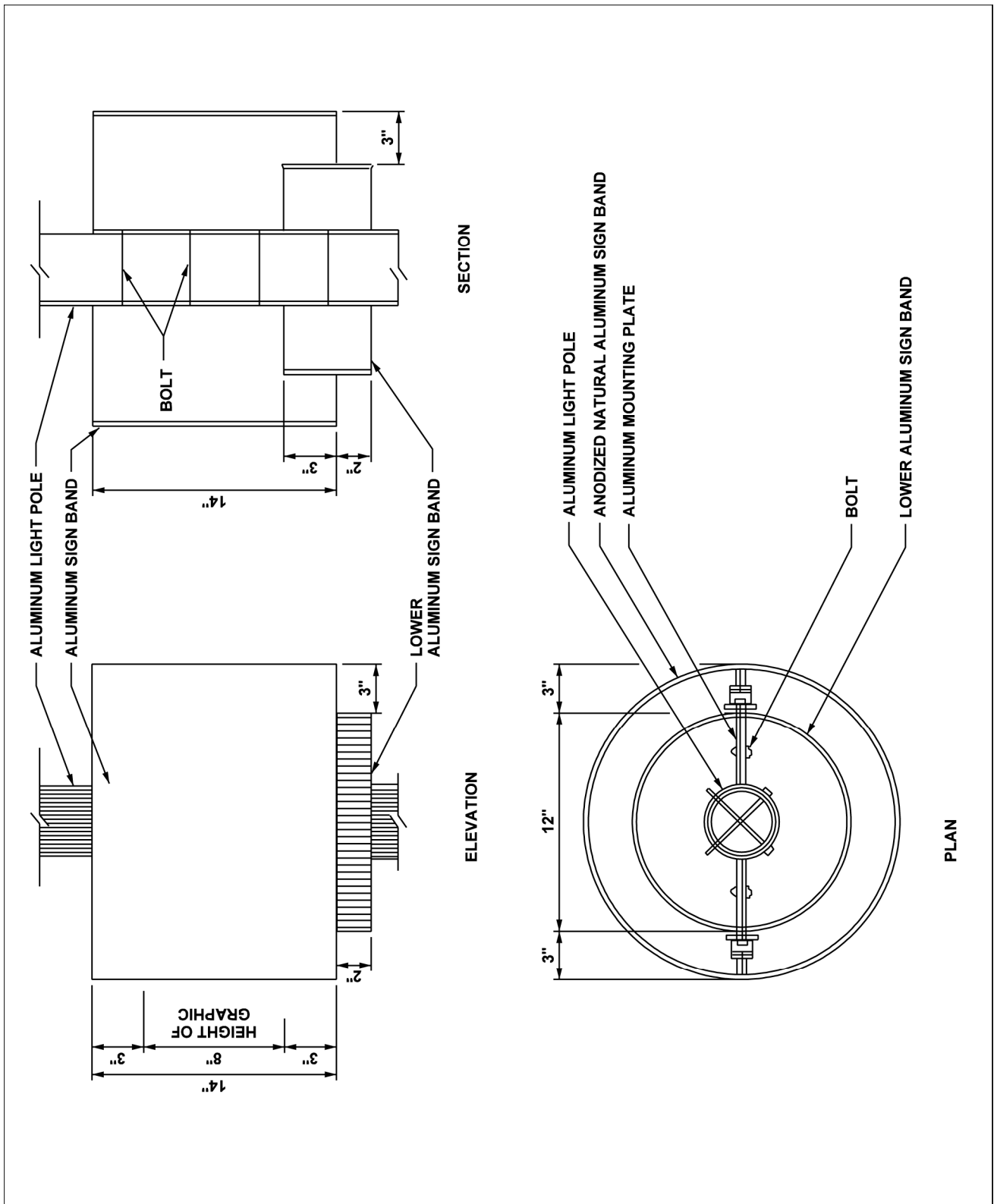
**2.10.10.1 New Sign Formats:** New sign formats, devised to accommodate circumstances not already covered by these guidelines, must reflect the same message hierarchy as outlined below.

**A. Primary sign messages should normally include:**

- 1) Directional information to major destinations.
- 2) Terminal identification.
- 3) Airline directories.
- 4) Parking structure/parking lot/rental car identification Ticketing/check-in and baggage claim.
- 5) Ground transportation.
- 6) Restrooms and telephones where appropriate.

**B. Secondary sign messages should normally include:**

- 1) Identification of services.
- 2) Concession identification.
- 3) Ground transport information and vendor identification.



Surface Parking Lots Row ID Band

Exhibit II-2-23

- 4) Parking area identification and information.
- 5) Security and regulatory information.
- 6) Restrooms, telephones, lockers, etc.

C. Tertiary sign messages should normally include:

- 1) Building directories.
- 2) Room numbers.
- 3) Tenant/occupant names.
- 4) Non-public area information and identification.
- 5) Equipment labeling.
- 6) Employee information.
- 7) Safety/hazard information unless conditions demand greater prominence.

**2.10.11 Editorial Guidelines:** Road signs should be edited to a maximum of 15-20 total words rendered on a maximum of 4 message lines. Line breaks shall be specified to provide logical message layouts and to minimize splitting message of units across multiple lines. Designers shall review shop drawings to ensure that line breaks and messages are appropriately rendered.

**2.10.12 Abbreviations:** A/E's that specify signs shall make every possible effort to avoid abbreviations in sign messages, unless abbreviations are commonly accepted by the public as a company name such as JAL. Abbreviations in sign messages shall normally be rendered without punctuation (periods, apostrophes, or ellipsis marks),

unless such punctuation clearly improves the clarity of the message. The following messages will usually require abbreviation, and shall always be rendered as follows:

**2.10.12.1 GW Parkway:** GW Parkway, not George Washington Memorial Parkway

**2.10.12.2 Washington:** Washington, not Washington, DC, or District of Columbia

**2.10.13 Capitalization:** Messages shall be rendered in upper and lower case formats using initial capitals followed by lower-case letters unless otherwise specified. Minor words such as, prepositions and conjunctions shall normally be rendered entirely in lower-case letters, unless it is clearly advantageous to do otherwise. Certain messages shall be rendered entirely in capital letters such as, messages set into black-band fields. This format shall be used only as specified in Chapter 3. Air carrier or other commercial names shall be rendered in upper and lower case formats using initial capitals followed by lower-case letters. Non-standard capitalization of company names such as, USAirways may be used when such formats can be shown to aid public wayfinding. Regardless of company internal practice, unabbreviated company names shall never be rendered entirely in capital or lower-case letters.

**2.10.14 Editorial Restrictions:** The terminal identifier colors shall never be described or rendered in text such as, Red Terminal. Numbers, such as gate or floor numbers, shall never be rendered in words such as, seven or twelve.

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## CHAPTER 3 Public Signing Guidelines

### 3.1 Roadways

**3.1.1 Roadway Signage:** Roadway signage is classified by its location along the airport road system. Although all roadway signs share many design characteristics, certain formats are specific to certain road segments. All primary directional signs on the main airport roadway will be mounted overhead on full-span trusses or cantilever structures. Ground-mount signs provide primary directional information along single-lane airport roads and provide message reinforcement along multi-lane roadways. Overhead signing is closely integrated with road-spanning truss structures and roadway lane geometry. Refer to **Paragraphs 2.5.2 and 2.5.3** for coordination information that is essential to every roadway signing task. Refer to other parts of **Chapter 2** for airport-wide standards for typefaces, arrows, symbols, colors, materials, mounting, illumination, dynamic/ changeable messages, and terminology. Refer to **Exhibit II-3-1**.

**3.1.2 Main Orientation Road:** The Master Plan for Ronald Reagan Washington National Airport creates two orientation roads: the west entrance road from the George Washington Parkway, and the Route 233 viaduct from Crystal City. Both roads feed into the terminal approach and parking roads.

**3.1.2.1 Signing Tasks:** There are two main signing tasks along the main orientation road:

- A. Provide letter addresses for air carriers (A, B, or C).
- B. Prepare drivers for the split between the terminal approach road and the parking/south area roads.

**3.1.2.2 Signage Control:** It is critically important that the orientation road remains clear and uncluttered signage must be strictly controlled. Primary signing along this road segment is limited to five major overhead signs:

A. One for each of three terminals/parking structures listing the airlines operating in each location.

B. One sign provided in advance of the split between parking/south area and terminals.

C. One sign at the split between parking/south area and terminals.

**3.1.2.3 Overhead Bridge Structures:** Note that the location of overhead bridge structures along this road segment must be coordinated with signing along the parallel recirculation roadway. The narrow median between these roads cannot accommodate sign posts or columns all overhead structures will span both roadways and their median. Bridges must be positioned to serve the signing needs of both roadways.

**3.1.3 Viaduct Orientation Road:** Signing tasks and guidelines for the main orientation road generally apply to the viaduct orientation road. Provide a cantilevered “welcome” sign in the first signing position on the viaduct to establish a point of arrival for drivers in an area that is otherwise lacking in boundaries or landmarks. Airline-list signage on the viaduct will be provided on cantilever structures. Locations and design details for these bridge-mounted cantilevers must be coordinated with the Virginia Department of Transportation.

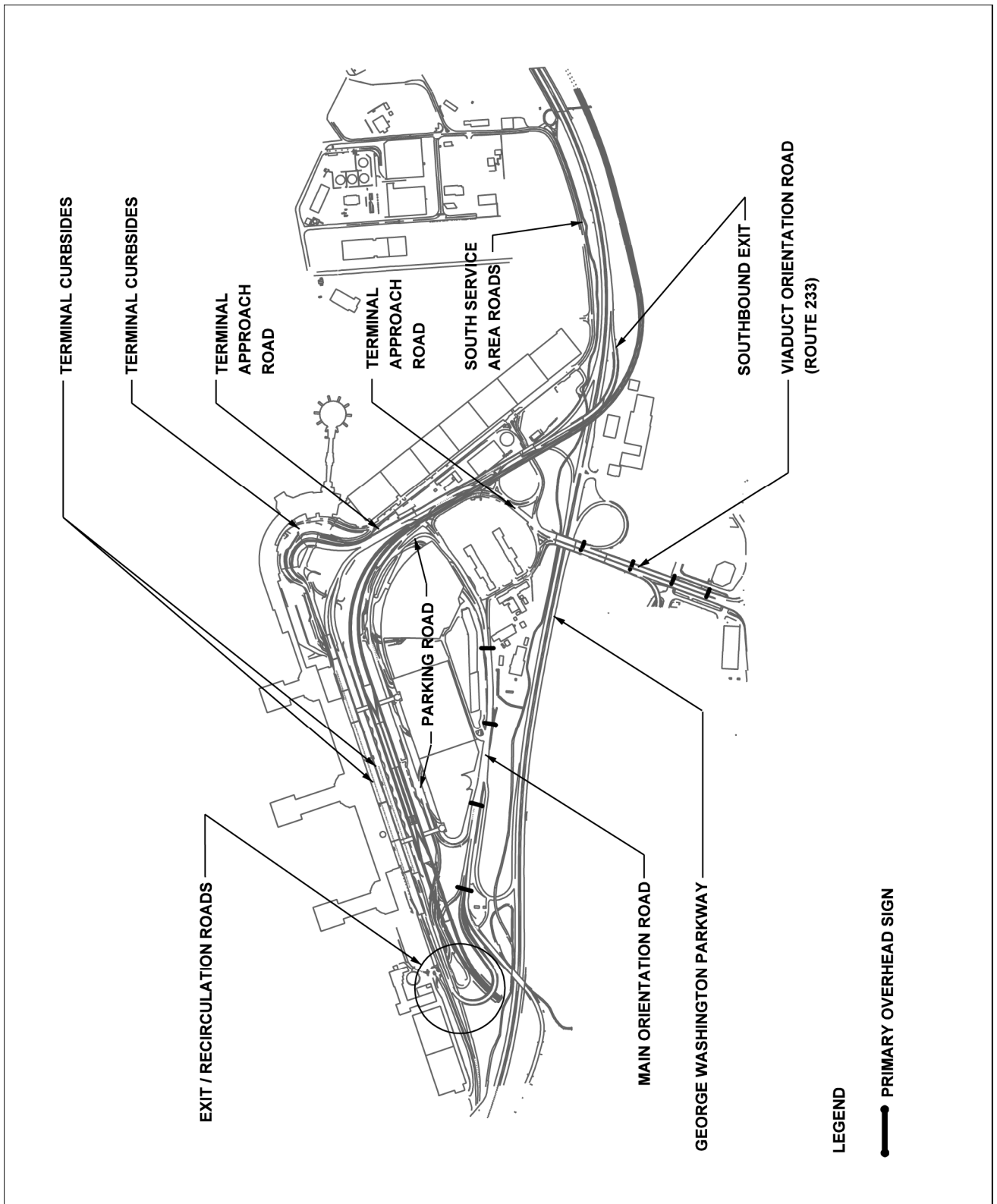
**3.1.4 Terminal Approach Road:** There are four main signing tasks along the Terminal approach road:

**3.1.4.1 Airline Letter Address:** Reinforce airline letter addresses on ground-mount signs.

**3.1.4.2 Traffic Sorting and Exiting:** Manage the sorting/exiting of traffic bound for Terminal A.

**3.1.4.3 Upper and Lower Traffic Sorting:** Manage the sorting of traffic between the upper and lower roadways at terminal B/C.





Major Road Segments and Approx Sign Locations

Exhibit II-3-1

**3.1.4.4 Assistance:** Aid drivers in locating B and C areas along the Terminal.

**3.1.5 Terminal Curbsides:** There are three main signing tasks along the Terminal approach road:

**3.1.5.1 Driver Sorting:** Sort drivers to curb areas by letter (A, B and C) and by airline name.

**3.1.5.2 Direct Traffic:** Direct through-traffic to left lanes.

**3.1.5.3 Driver Preparation:** Prepare drivers for the Airport exit/recirculation traffic split at the end of Terminal C.

**3.1.6 Terminal Curbside Signing:** Terminal curbside signing shall be designed to integrate with the Terminal canopies, pedestrian bridges, and elevated roadway structure.

**3.1.7 Exit/Recirculation Roads:** There are two major signing tasks along the exit road:

**3.1.7.1 Split Traffic:** Split traffic between the Airport exit and recirculation ("Return to Airport") road segments, calling out both off-Airport destinations and return to Terminals, parking and rental cars.

**3.1.7.2 Manage and Direct Traffic:** Manage and direct traffic to the north-end exit to the GW Parkway north, the south-end exits to the GW north, GW south, and Route 233 viaduct, the Terminal approach road, and the parking road.

**3.1.7.3 Location of Overhead Bridge Structure:** Note that the location of overhead bridge structures along this road segment must be coordinated with signing along the parallel orientation roadway. The narrow median between these roads cannot accommodate sign posts or columns all overhead structures will span both roadways and their median. Bridges must be positioned to serve the signing needs of both roadways.

**3.1.8 Parking Road:** There are six main signing tasks along the parking road:

**3.1.8.1 Airline Letter Addresses:** Reinforce airline letter addresses on ground-mount signs.

**3.1.8.2 Parking Rates:** Provide hourly, daily, and economy parking rates.

**3.1.8.3 Traffic:** Sort traffic to parking structures by letter identification (A, B and C).

**3.1.8.4 Traffic:** Sort traffic to hourly parking, daily parking and rental car return in each of three parking structures.

**3.1.8.5 Dynamic Panels:** Provide dynamic panels to announce lot-full conditions for daily and hourly parking and to redirect drivers to "next best" alternate parking sites.

**3.1.8.6 Driver Preparation:** Prepare drivers for the Airport exit/recirculation traffic split at the end of the parking road including "Economy Parking" in list of destinations.

#### **3.1.8.7 South Service Area Roads**

**A.** There are two main signing tasks along the south service area roads:

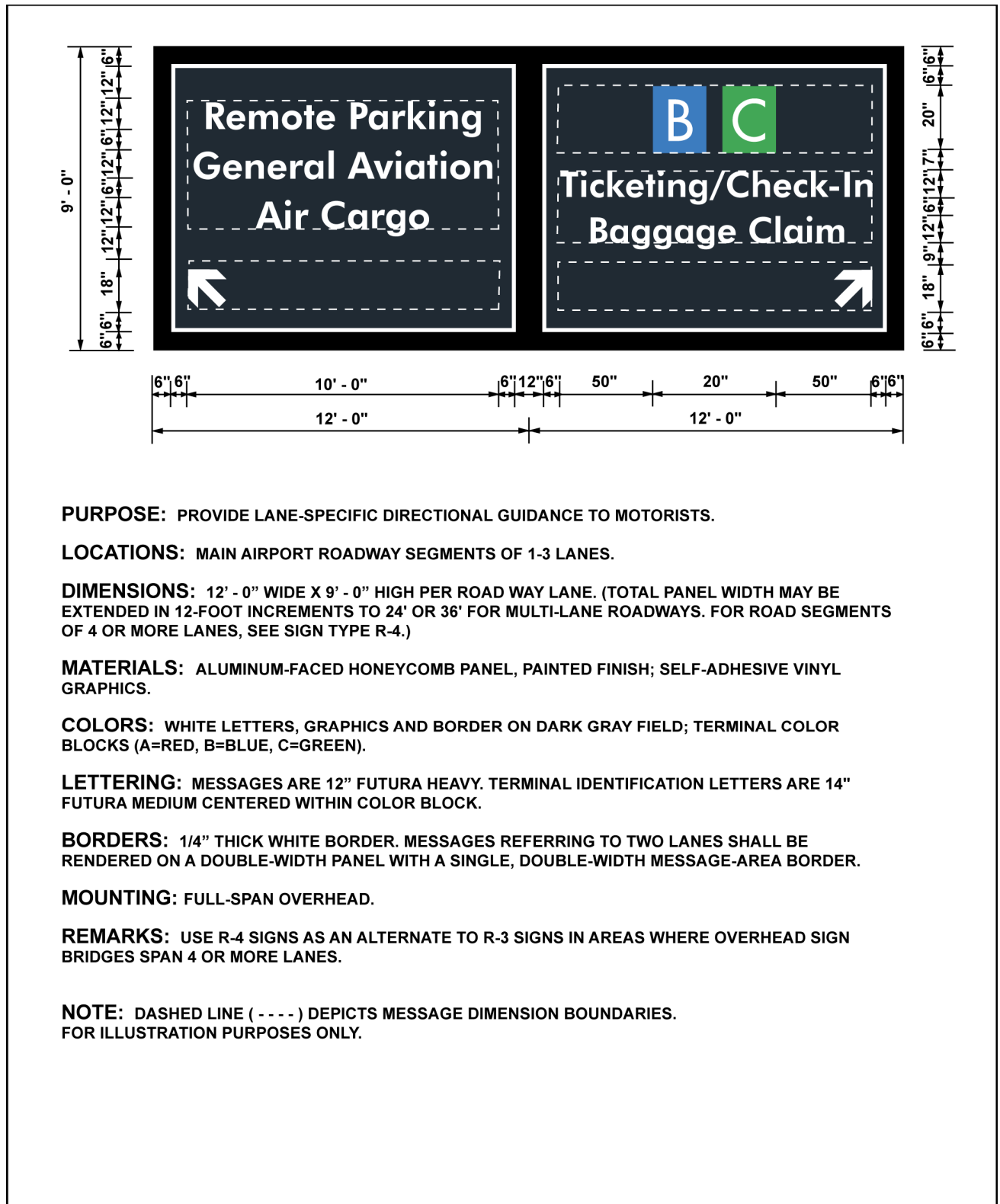
**B.** Guide public traffic to and from economy parking lots.

**C.** Guide public and commercial traffic to and from south area services (air cargo, hangars, etc.).

**3.1.9 Schematic Drawings:** Refer to **Exhibits II-3-2 through II-3-7** that describes the six basic sign types for roadway signing.

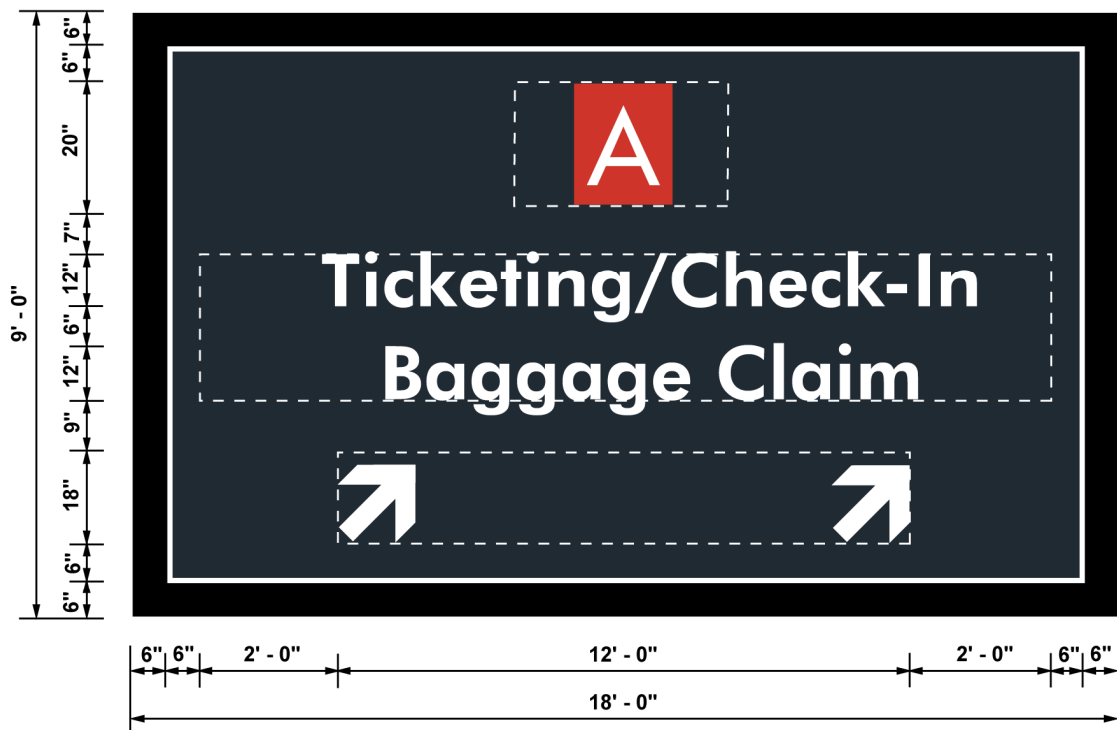
## **3.2 Terminals**

**3.2.1 Signage Goals:** The primary goals of signing in the Airport terminals are to satisfy public wayfinding needs and to enhance the architectural design theme of the buildings. Interior and exterior signing must be an integral part of the design of buildings, canopies, bridges and curbsides. This requirement applies equally to all terminal buildings.



Sign Type R-3 - Overhead Directional Signs

Exhibit II-3-2



**PURPOSE:** PROVIDE LANE-SPECIFIC DIRECTIONAL GUIDANCE TO MOTORISTS.

**LOCATIONS:** MAIN AIRPORT ROADWAY SEGMENTS OF 4 OR MORE LANES. 18' SIGN REFERS TO TWO, 12' TRAFFIC LANES AND IS CENTERED OVER THEM.

**PANEL DIMENSIONS:** 18' - 0" WIDE X 9' - 0" HIGH.

**MATERIALS:** ALUMINUM-FACED HONEYCOMB PANEL, PAINTED FINISH; SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** WHITE LETTERS, GRAPHICS AND BORDER ON DARK GREY FIELD, TERMINAL-SPECIFIC COLOR BLOCK.

**LETTERING:** MESSAGES ARE 12" FUTURA HEAVY CENTERED WITHIN RESERVED AREA; TERMINAL IDENTIFICATION LETTERS ARE 14" FUTURA MEDIUM CENTERED WITHIN COLOR BLOCK.

**BORDERS:** 1/4" THICK WHITE BORDER.

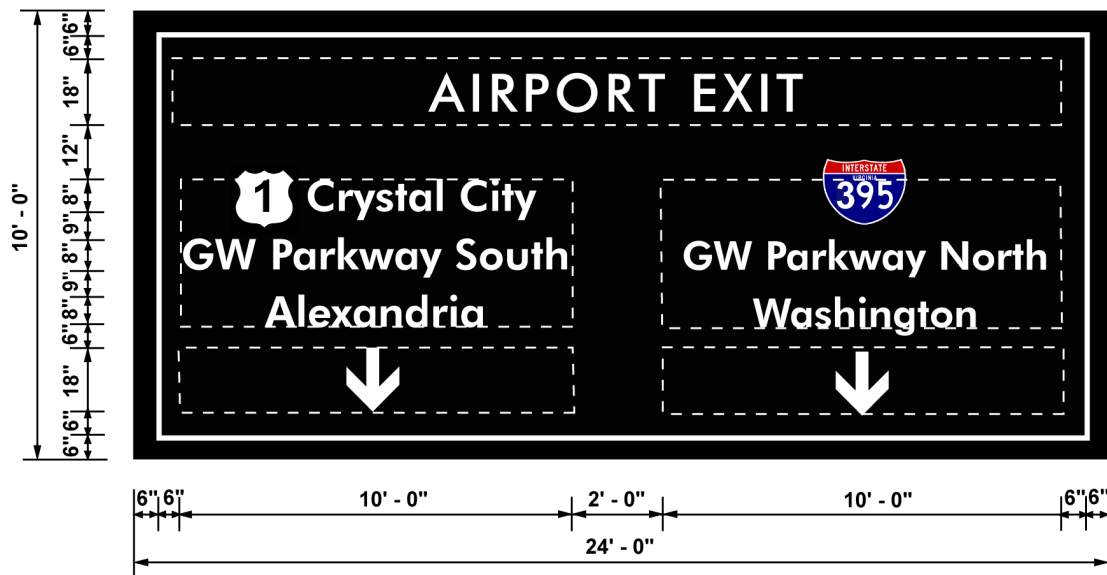
**MOUNTING:** FULL-SPAN OVERHEARD.

**REMARKS:** USE R-4 SIGNS AS AN ALTERNATE TO R-3 SIGNS IN AREAS WITH 4 OR MORE LANES; SMALLER PANEL WIDTH PROVIDES A GAP BETWEEN SIGNS (REDUCING VISUAL "BARRIER" EFFECT, WIND LOADS, AND COSTS). ARROWS ARE DOT/AIGA STANDARD. CENTER OVER ROADWAY LANES IN AREA RESERVED FOR ARROWS.

**NOTE:** DASHED LINE ( - - - ) DEPICTS MESSAGE DIMENSION BOUNDARIES. FOR ILLUSTRATION PURPOSES ONLY.

Sign Type R-4 - Overhead Directional Signs

Exhibit II-3-3



**PURPOSE:** PROVIDE LANE-SPECIFIC DIRECTIONAL GUIDANCE IN CIRCUMSTANCES REQUIRING A "LINK-TYPE" MESSAGE (E.G. AIRPORT EXIT, RETURN TO, ETC.).

**LOCATIONS:** MAIN AIRPORT ROADWAYS.

**PANEL DIMENSIONS:** 12'-0" WIDE X 10'-0" HIGH (WIDTH MAY EXPAND IN 12'0" INCREMENTS TO ACCOMMODATE MESSAGES THAT REFER TO MORE THAN ONE LANE).

**MATERIALS:** ALUMINUM-FACED HONEYCOMB PANEL, PAINTED FINISH.

**COLORS:** WHITE LETTERS, GRAPHICS AND BORDER ON DARK GREY FIELD, BLACK TOP BAND.

**LETTERING:** MAIN MESSAGES ARE 8" FUTURA HEAVY, UPPER AND LOWER CASE WITH A 3-LINE MAX. BLACK BAND MESSAGE ARE 10" FUTURA MEDIUM, ALL CAPITAL LETTERS. ALL TEXT TO BE CENTERED WITHIN RESERVED AREA.

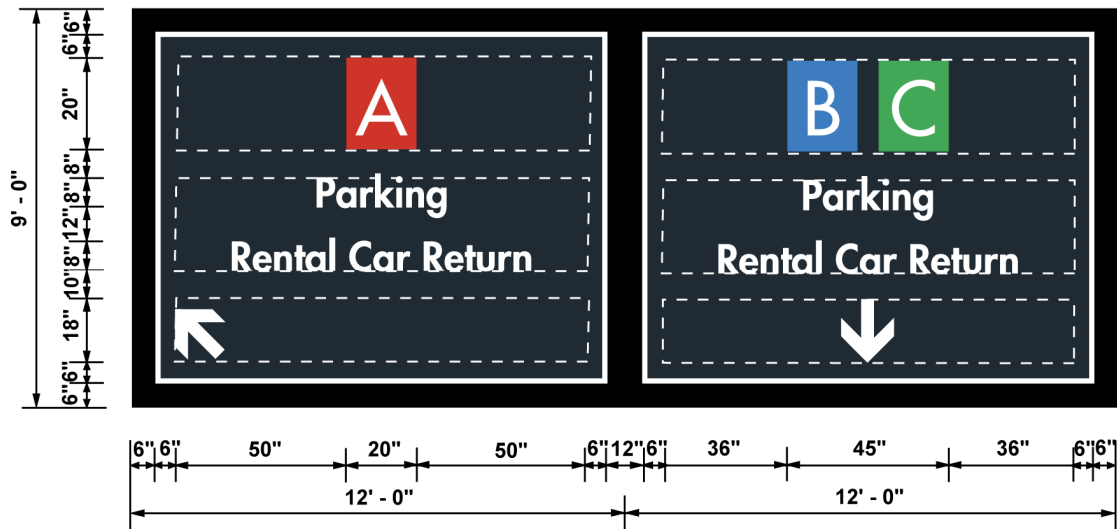
**BORDERS:** 1/4"-THICK WHITE BORDER ENCLOSSES EACH MESSAGE UNIT; MESSAGE REFERRING TO TWO LANES SPAN A DOUBLE-WIDTH PANEL AND ARE ENCLOSED BY A DOUBLE-WIDTH BORDER.

**MOUNTING:** FULL-SPAN OVERHEAD STRUCTURE.

**REMARKS:** USE BLACK-BAND FORMAT TO RENDER "PARENT" MESSAGES (E.G. "AIRPORT EXIT," OR "RETURN TO AIRPORT." SPECIFIC DESTINATIONS AND DIRECTIONS ARE RENDERED IN THE AIRPORT-STANDARD MESSAGE FORMAT. ARROWS ARE DOT/AIGA STANDARD. POSITION ARROWS FLUSH LEFT, FLUSH RIGHT OR CENTERED IN AREA RESERVED FOR ARROWS. HIGHWAY TRAILBLAZER SHIELD IS SIZED SO NUMBER HEIGHT MATCHES ADJACENT TEXT HEIGHT.

**NOTE:** DASHED LINE ( - - - ) DEPICTS MESSAGE DIMENSION BOUNDARIES. FOR ILLUSTRATION PURPOSES ONLY.

Sign Type R-5 - Overhead Exit Directional Signs Exhibit II-3-4



**PURPOSE:** PROVIDE LANE-SPECIFIC DIRECTIONAL GUIDANCE TO MOTORISTS WITH OPTION FOR DRUM-TYPE DYNAMIC MESSAGE PANELS.

**LOCATIONS:** PARKING ROADWAY.

**DIMENSIONS:** 12' - 0" WIDE X 9' - 0" HIGH. (TOTAL PANEL WIDTH MAY BE EXTENDED IN 12-FOOT INCREMENTS TO 24' OR 36' FOR MULTI-LANE SITUATIONS.)

**MATERIALS:** ALUMINUM-FACED HONEYCOMB PANEL WITH DRUM-TYPE DYNAMIC PANELS, PAINTED FINISH; SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** WHITE LETTERS, GRAPHICS AND BORDER ON DARK GREY FIELD, GARAGE SYMBOL BLOCKS (A=RED, B=BLUE, C=GREEN).

**LETTERING:** MESSAGES ARE 8" FUTURA DEMI BOLD, UPPER AND LOWER CASE CENTERED WITHIN RESERVED AREA, 2-LINE MAX. TERMINAL IDENTIFICATION LETTERS ARE 14" FUTURA MEDIUM CAPITALS CENTERED WITHIN COLOR BLOCK.

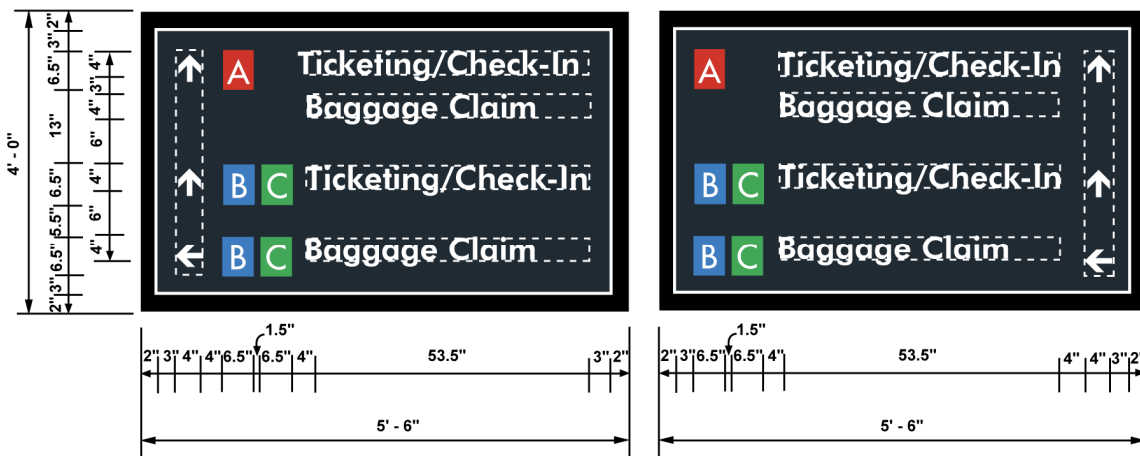
**BORDERS:** 1/4" THICK WHITE BORDER ENCLOSSES EACH MESSAGE UNIT.  
**MOUNTING:** FULL-SPAN OVERHEAD STRUCTURE.

**REMARKS:** SINGLE-LINE MESSAGES, DOUBLE-LINE MESSAGES ARE/OR ARROWS SHOULD BE RENDERED ON DYNAMIC PANELS WHERE NEEDED TO MANAGE LOT-FULL CONDITIONS IN THE PARKING STRUCTURES. (NOTE THAT RENTAL CAR RETURN WILL BE ASSUMED ALWAYS AVAILABLE.). ARROWS ARE DOT/AIGA STANDARD. CENTER OVER ROADWAY LANES IN AREA RESERVED FOR ARROWS.

**NOTE:** DASHED LINE ( - - - - ) DEPICTS MESSAGE DIMENSION BOUNDARIES.  
FOR ILLUSTRATION PURPOSES ONLY.

Sign Type R-6 - Parking Roadway Overhead Signs

Exhibit II-3-5



**PURPOSE:** PROVIDE DIRECTIONAL GUIDANCE TO MOTORISTS ALONG SECONDARY AIRPORT ROADWAYS (PRIMARILY IN THE SOUTH AREA).

**LOCATIONS:** MINOR AIRPORT ROADWAYS (E.G. THOMAS AVENUE AND SOUTH AREA). MAY ALSO BE USED TO PROVIDE SECONDARY OR REINFORCEMENT MESSAGES ALONG MAIN AIRPORT ROADWAYS.

**TYPICAL DIMENSIONS:** 7' - 6" WIDE X 4' - 0" HIGH. (HEIGHT MAY INCREASE/DECREASE IN 1-FOOT INCREMENTS AS NECESSARY TO ACCOMMODATE MESSAGES. WIDTH MAY INCREASE/DECREASE IN 6- INCH INCREMENTS AS NECESSARY TO ACCOMMODATE MESSAGES.)

**MATERIALS:** ALUMINUM-FACED HONEYCOMB PANEL, PAINTED FINISH.

**COLORS:** WHITE LETTERS, GRAPHICS AND BORDER ON DARK GREY FIELD; TERMINAL COLOR BLOCKS (A=RED, B=BLUE, C=GREEN).

**LETTERING:** MESSAGES ARE 4" FUTURA HEAVY UPPER AND LOWER CASE, FLUSH LEFT; TERMINAL IDENTIFICATION LETTERS ARE 4" FUTURA MEDIUM CAPITALS CENTERED WITHIN COLOR BLOCK.

**BORDERS:** 1/8" THICK WHITE BORDER.

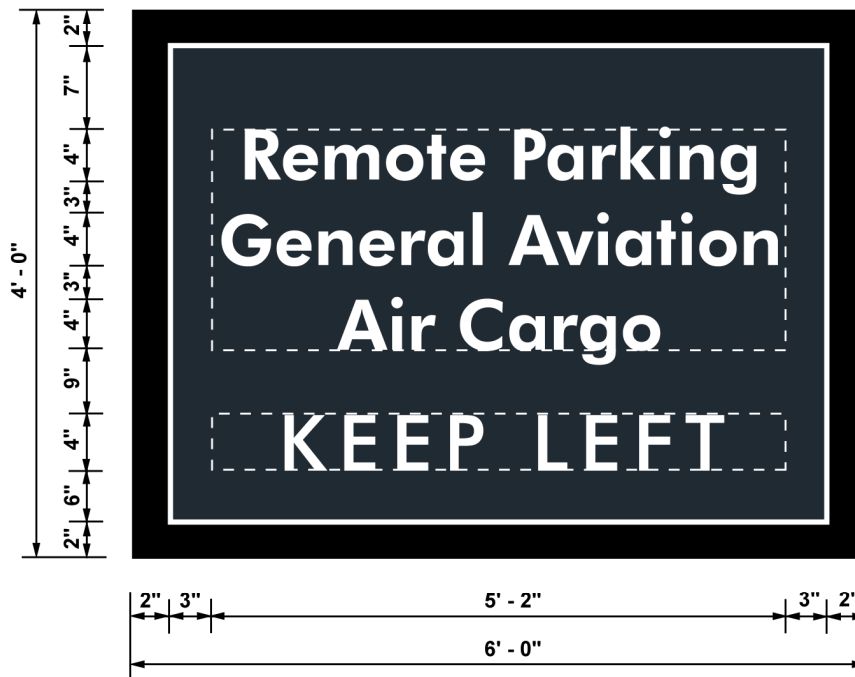
**MOUNTING:** DOUBLE-POST MOUNT.

**REMARKS:** ARROW COLUMN APPEARS ON LEFT SIDE OF SIGN (WITH LEFT-JUSTIFIED TEXT) FOR ARROWS WHEN LEFT-FACING ARROWS ARE USED. ARROW COLUMN APPEARS ON RIGHT SIDE OF SIGN (WITH RIGHT-JUSTIFIED TEXT) FOR ARROWS WHEN RIGHT-FACING ARROWS ARE USED. WHEN LEFT- AND RIGHT-FACING ARROWS ARE REQUIRED ON A SINGLE SIGN PANEL, CREATE TWO MESSAGE-FIELD BORDERS (ONE FOR LEFT DIRECTIONAL MESSAGES, ONE FOR RIGHT). ARROWS ARE DOT/AIGA STANDARD.

**NOTE:** DASHED LINE ( - - - ) DEPICTS MESSAGE DIMENSION BOUNDARIES. FOR ILLUSTRATION PURPOSES ONLY.

Sign Type R-7 - Ground Mount Directional Signs

Exhibit II-3-6



**PURPOSE:** PROVIDE DIRECTIONS AND OR INFORMATION IN CIRCUMSTANCES NOT REQUIRING A DIRECTIONAL ARROW.

**LOCATIONS:** PRIMARY AND SECONDARY AIRPORT ROADWAYS.

**TYPICAL DIMENSIONS:** 6' - 0" WIDE X 4' - 0" HIGH. (HEIGHT AND WIDTH MAY INCREASE/DECREASE IN 1-FOOT INCREMENTS AS NECESSARY TO ACCOMMODATE MESSAGES).

**MATERIALS:** ALUMINUM-FACED HONEYCOMB PANEL, PAINTED FINISH; SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** WHITE LETTERS, GRAPHICS AND BORDER ON DARK GREY FIELD, TERMINAL COLOR BLOCKS (WHERE NEEDED, A=RED, B=BLUE, C=GREEN).

**LETTERING:** MESSAGES ARE 4" FUTURA HEAVY, UPPER AND LOWER CASE, CENTERED WITHIN RESERVED AREA. TERMINAL IDENTIFICATION LETTERS ARE 4" FUTURA MEDIUM CAPITALS CENTERED WITHIN COLOR BLOCK. DIRECTIONAL MESSAGES (E.G. KEEP LEFT) ARE 4" FUTURA MEDIUM CAPITALS, CENTERED WITHIN RESERVED AREA.

**BORDERS:** 1/4" THICK WHITE BORDER.

**MOUNTING:** DOUBLE-POST GROUND MOUNT.

**REMARKS:** ALL CAPS FORMAT RESERVED FOR DIRECTIONAL MESSAGES (TO IMPROVE VISUAL DISTINCTION BETWEEN DESTINATIONS/INFORMATION AND DIRECTIONS TO MOTORISTS).

**NOTE:** DASHED LINE ( - - - ) DEPICTS MESSAGE DIMENSION BOUNDARIES. FOR ILLUSTRATION PURPOSES ONLY.

Sign Type R-8 - Ground-Mount Info & Directional Signs

Exhibit II-3-7



**3.2.2 Exteriors:** All terminal buildings must be identified by name (such as, A, B and C) on exterior signage.

**3.2.3 Canopies and Curbsides:** Canopy signs must:

**3.2.3.1 Assist:** Assist in sorting drivers and pedestrians to A, B or C curbside areas.

**3.2.3.2 Identify:** Identify the locations of air carriers along the curbside.

**3.2.3.3 Zone:** Zone the curbside for various uses and identify the locations of different services.

**3.2.4 Interiors:** Interior signs must:

**3.2.4.1 Direct:** Direct users within terminals to major destinations within the terminals (concourses, gates, services, facilities, etc.).

**3.2.4.2 Direct:** Direct users to major destinations outside the terminals (parking A/B/C, rental car areas A/B/C, curbside areas, etc.).

**3.2.4.3 Direct:** Direct users to other terminals.

**3.2.5 Pedestrian Bridges and Tunnels:** Bridge and tunnel signs must:

**3.2.5.1 Sort:** Sort users to the various building levels, establish major and minor routes.

**3.2.5.2 Direct:** Direct terminal-bound users to major destinations within the terminals (concourses, gates, services, facilities, etc.).

**3.2.5.3 Direct:** Direct users to major destinations outside the terminals (parking A/B/C, rental car areas A/B/C, curbside areas, etc.).

**3.2.5.4 Direct:** Direct users to other terminals.

**3.2.6 Airside Exteriors:** Airside gate-number signage is required to enable pilots and ground service personnel to identify gates. Signs shall be appropriately illuminated for nighttime visibility.

**3.2.7 Schematic Drawings:** (Section for future use)

### 3.3 Parking Structures

**3.3.1 Signing:** Signing for Airport parking structures must provide diverse kinds of information in a complex, multi-level facility: directional guidance for drivers, traffic control, orientation information and directional guidance for pedestrians. Signing in the parking structures links the vehicular traffic system on roadways and in parking areas with the pedestrian circulation systems throughout the parking structures, bridges/tunnel and terminals. Identification of parking levels and areas is a particularly critical task. Signing must address the wayfinding needs of users moving to and from parking areas along a diverse set of possible paths.

**3.3.2 Entry/Identification Signs:** Primary entry-area signing tasks are to:

**3.3.2.1 Identify:** Identify parking structures by letter, always tagging parking types with the Signs appropriate letter symbols such as, Hourly Parking A.

**3.3.2.2 Sort:** Sort traffic between hourly parking, daily parking and rental car return.

**3.3.2.3 Dynamic Panels:** Provide dynamic panels to manage lot-full conditions and to route drivers to alternate parking sites.

**3.3.2.4 Parking Rates:** Reinforce parking rate information.

**3.3.2.5 Clearance Heights:** Provide clearance heights to warn oversize vehicles of building clearances.

**3.3.3 Vehicular Signs:** Primary vehicular signing tasks are to:

**3.3.3.1 Control and Maintain Traffic:** Control vehicular traffic and maintain safety for drivers and pedestrians.

**3.3.3.2 Parking Areas and Exits:** Direct drivers to parking areas and exits.

**3.3.3.3 Special Purpose Areas:** Delineate reserved and special purpose areas such as, accessible parking.

**3.3.4 Pedestrian Signs:** Primary pedestrian signing tasks are to:

**3.3.4.1 Parking Areas:** Identify parking areas.

**3.3.4.2 Parking Areas and Terminals:** Direct drivers to and from parking areas and terminals, establishing primary paths and discouraging alternative paths.

**3.3.4.3 Pedestrian Information:** Offer information, guidance and assistance to pedestrians.

### **3.3.5 Toll-Area Signs**

#### **3.3.5.1 Primary Signing Tasks:**

- A. Control/direct traffic at toll areas and exits.
- B. Describe parking rates and regulations.
- C. Provide dynamic display of toll.

**3.3.5.2 Airport Design Standards:** Refer to Airport design standards.

**3.3.6 Schematic Drawings:** Refer to **Exhibits II-3-2 through II-3-7** for sign type “R”, **Exhibits II-3-8 through II-3-19** for signs type “G”, and **Exhibits II-3-20 and II-3-21** for sign type “L” schematic design and details.

### **3.4 Surface Parking Lots**

**3.4.1 South Area Parking:** Surface parking lots, including public economy parking and employee parking, are located in the south area of the Airport.

**3.4.2 Entry/Identification Signs:** Double-post ground-mount signs at the entrances of surface parking lots identify public and employee lots. Refer to **Exhibit II-3-22**. The identification signs for public parking lots shall show parking rates and shall include a dynamic panel for “lot full” conditions.

**3.4.3 Vehicular Signs:** Vehicular signs consist of regulatory signs and shall comply with **Section 3.8**.

**3.4.4 Pedestrian Signs:** Provide row identification sign bands mounted to light poles in the parking lots. Parking lots are subdivided into areas identified with a single alphabetical character for each row.

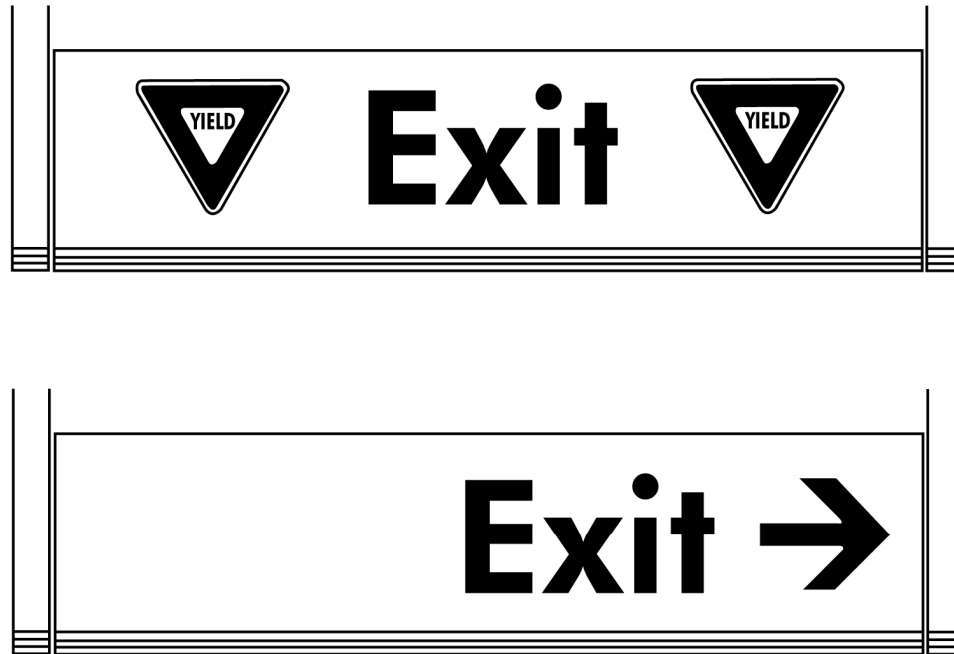
**3.4.5 Shuttle - Bus Stops:** Shuttle-bus stops are identified by sequential numbers beginning with the first shuttle-bus stop and continuing in sequential order along the bus route.

**3.4.6 Toll-Area Signing:** Toll-area signing shall include complete parking rate information, the name and administrative office of the lot operator, and dynamic display of the toll.

**3.4.7 Schematic Drawings:** Entry/identification and vehicular signs shall follow roadway Signing Design Guidelines. Pedestrian, shuttle bus and toll area signing shall follow Airport design standards.

### **3.5 Taxi Parking Structure**

**3.5.1 Roadway Taxi Signals:** A system of signal lights along main airport midways shall alert taxi drivers when the taxi parking structure is full. Signal lights shall be mounted in selected overhead roadway sign columns along the entrance roadway and at airport exit/return decision points.



**PURPOSE:** PROVIDE DIRECTIONAL AND TRAFFIC-CONTROL INFORMATION TO DRIVERS IN THE PARKING STRUCTURES.

**LOCATIONS:** PARKING STRUCTURES; LOCATE ABOVE DRIVE AISLES WITH MESSAGES PERPENDICULAR TO DRIVERS.

**DIMENSIONS:** 4' - 0" OR 8' - 0" WIDE X 1' - 0" HIGH X 2" DEEP.

**MATERIALS:** ALUMINUM PANEL WITH INTERNAL ALUMINUM FRAME, PAINTED FINISH; SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** WHITE LETTERS AND GRAPHICS ON DARK GREY FIELD (EXCEPT WHERE SYMBOLS ARE RENDERED IN MUTCD-REQUIRED COLORS) MOUNTING MEMBERS ARE PAINTED SILVER.

**LETTERING AND GRAPHICS:** 6" FUTURA HEAVY LETTERS, 9" SYMBOLS, 5-1/2" ARROWS.

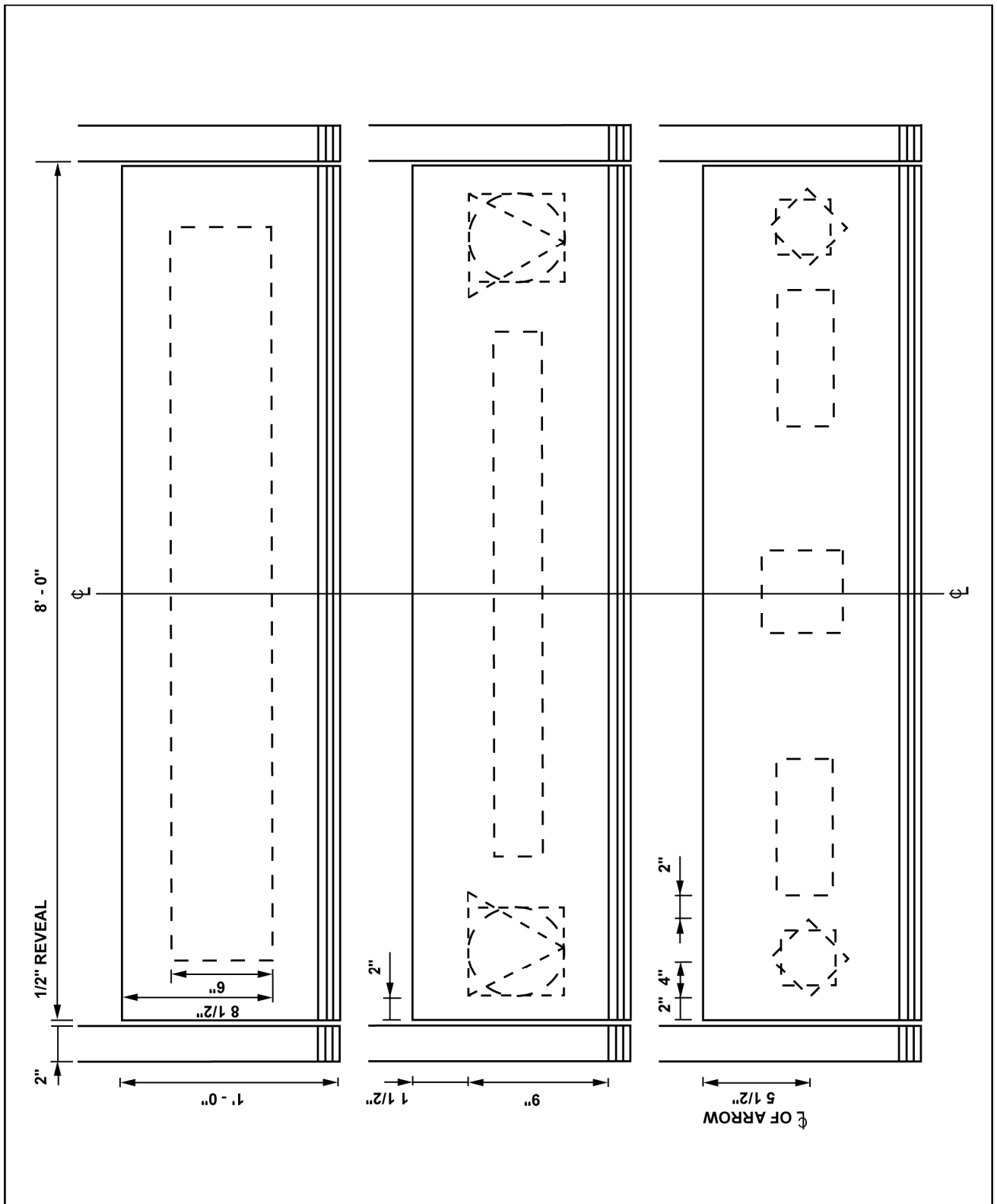
**BORDERS:** NONE.

**MOUNTING:** SUSPENDED CEILING MOUNT USING 2" X 2" STEEL POSTS; USE STEEL MOUNTING PLATES WHERE NECESSARY.

**REMARKS:** ALL VEHICULAR SIGNS IN THE GARAGES (EXCEPT THOSE ON ROOF LEVELS) ARE TO BE MOUNTED OVERHEAD.

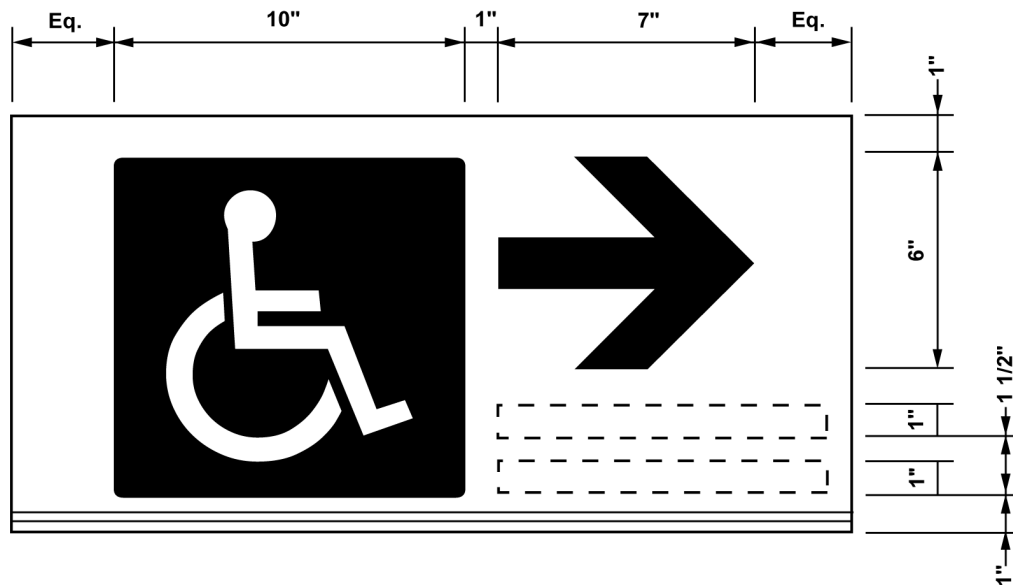
Sign Type G-1 - Overhead Vehicular Directional Signs

Exhibit II-3-8



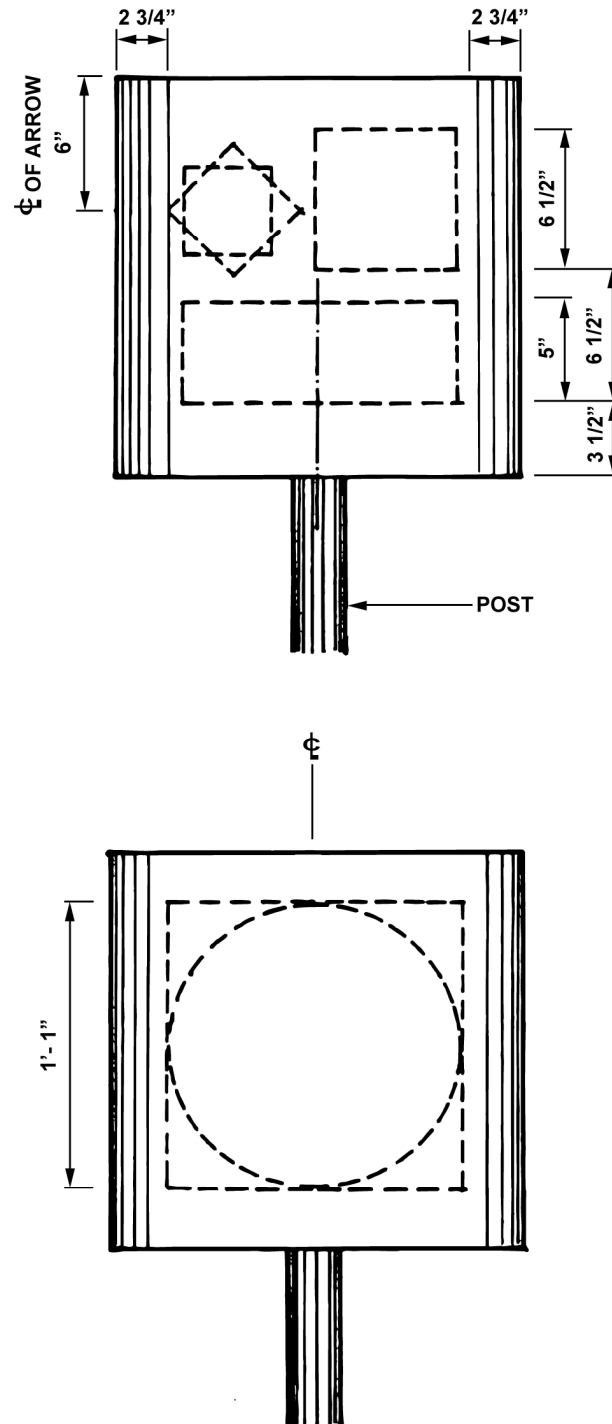
Sign Type G-1 - Layout Grid

Exhibit II-3-9



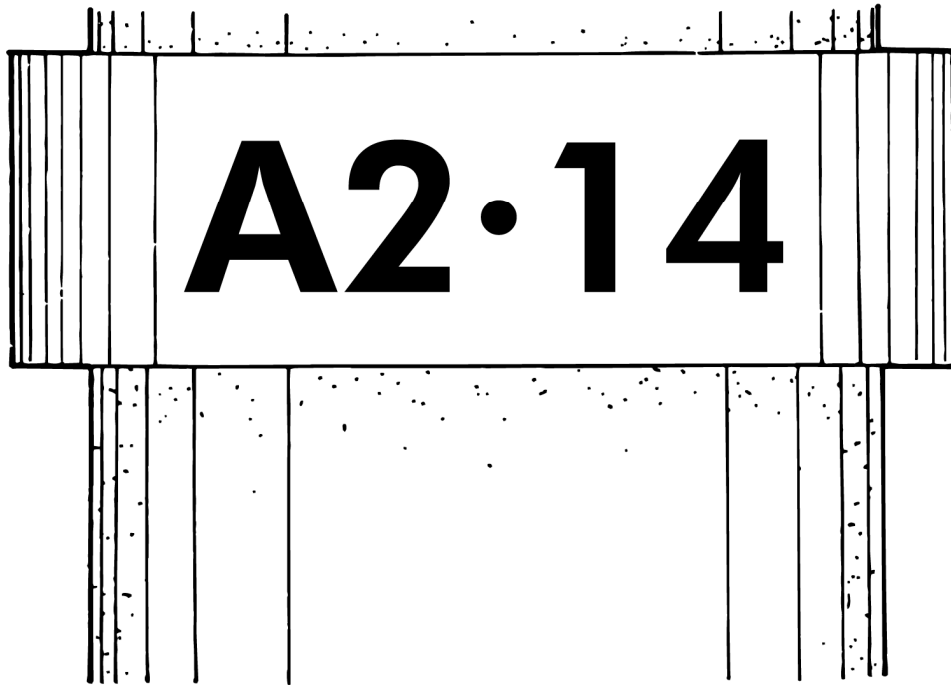
Sign Type G-2 - Ground-Mount Vehicular Directional

Exhibit II-3-10



Sign Type G-2 - Layout Grid

Exhibit II-3-11



**PURPOSE:** IDENTIFY PARKING AREAS (ALLOWING USERS TO IDENTIFY THEIR PARKING LOCATION AND LOCATE THEIR VEHICLE UPON RETURN).

**LOCATIONS:** PARKING STRUCTURES; LOCATE ON COLUMNS ALONG PEDESTRIAN WALKWAYS.

**DIMENSIONS:** PAINTED SIGN BANDS ARE 1' - 0" HIGH X WIDTH OF COLUMN; METAL SIGN BANDS ARE 3' - 0" WIDE X 1' - 0" HIGH.

**MATERIALS:** PAINTED SIGNS ARE APPLIED DIRECTLY TO CONCRETE COLUMNS. METAL SIGN BANDS ARE ALUMINUM WITH PAINTED FINISH AND SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** BOTH PAINTED AND METAL BANDS USE BLACK LETTERS ON SILVER FIELD.

**LETTERING AND GRAPHICS:** 6" FUTURA HEAVY LETTERS.

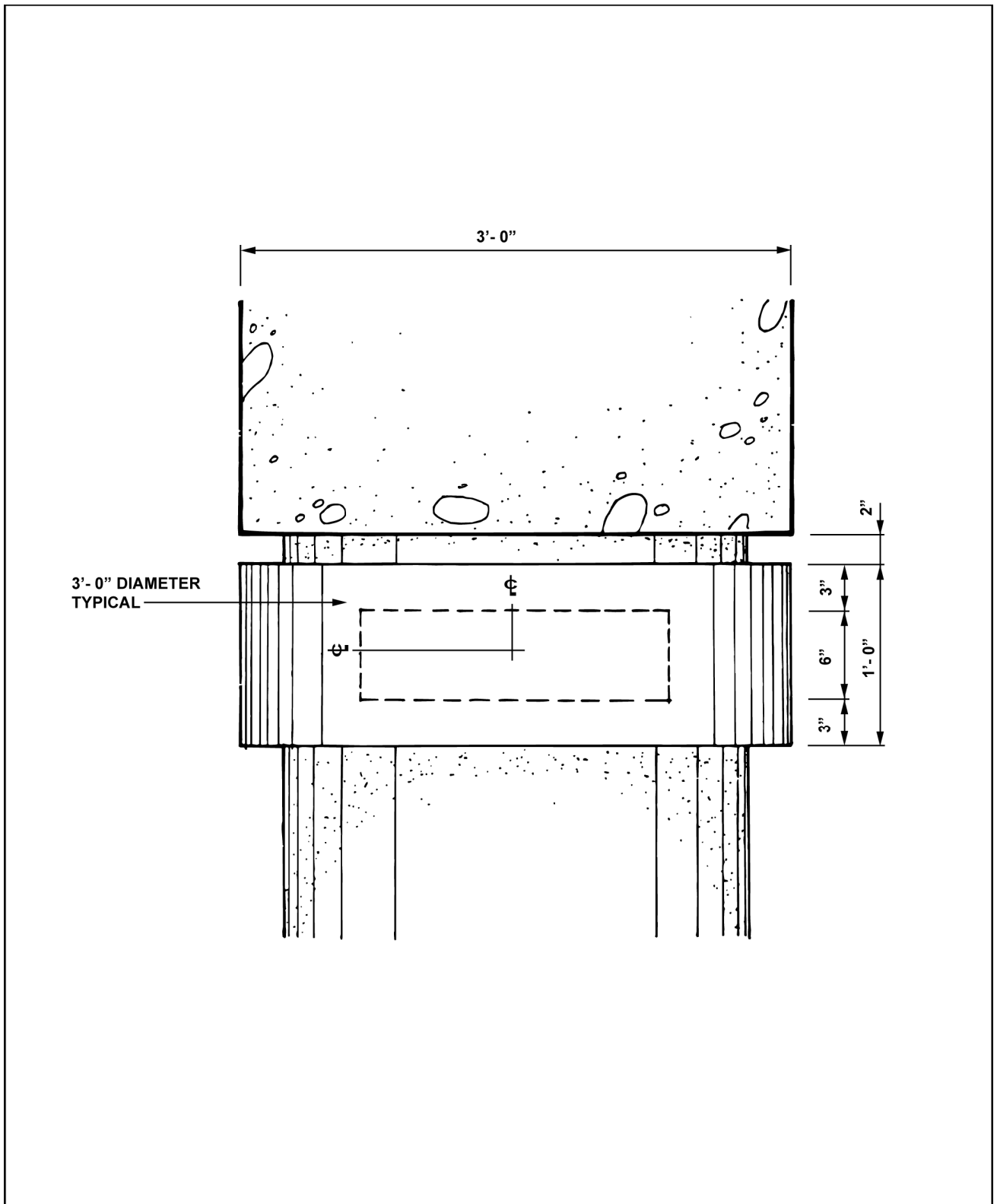
**BORDERS:** NONE.

**MOUNTING:** ALONG PEDESTRIAN WALKWAY, USE METAL SIGN BANDS, HELD 3" AWAY FROM COLUMN AT ALL POINTS WITH CONCEALED MOUNTING ASSEMBLY. ELSEWHERE, APPLY PAINTED GRAPHICS DIRECTLY ON COLUMNS.

**REMARKS:** DIMENSIONAL SIGN BANDS AT WALKWAYS USE UPGRADED MATERIALS TO ENHANCE THE IDENTITY OF THE WALKWAYS AS MAJOR PEDESTRIAN ROUTES.

Sign Type G-4 - Column-Mount Parking Area Identification

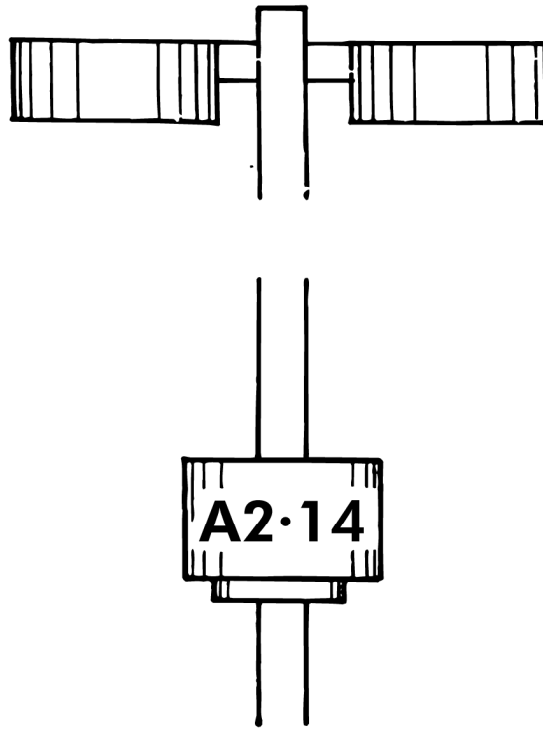
Exhibit II-3-12



Sign Type G-4 - Layout Grid

Exhibit II-3-13





**PURPOSE:** IDENTIFY PARKING AREAS ON ROOF GARAGE LEVELS (ALLOWING USERS TO NOTE LOCATION AND RETURN TO PARKING SPOT).

**LOCATIONS:** PARKING STRUCTURES; LOCATE ON LIGHT POLES ON PARKING DECK.

**DIMENSIONS:** 1' - 6" DIAMETER X 1' - 0" HIGH.

**MATERIALS:** ALUMINUM WITH PAINTED FINISH AND SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** BLACK LETTERS ON SILVER FIELD.

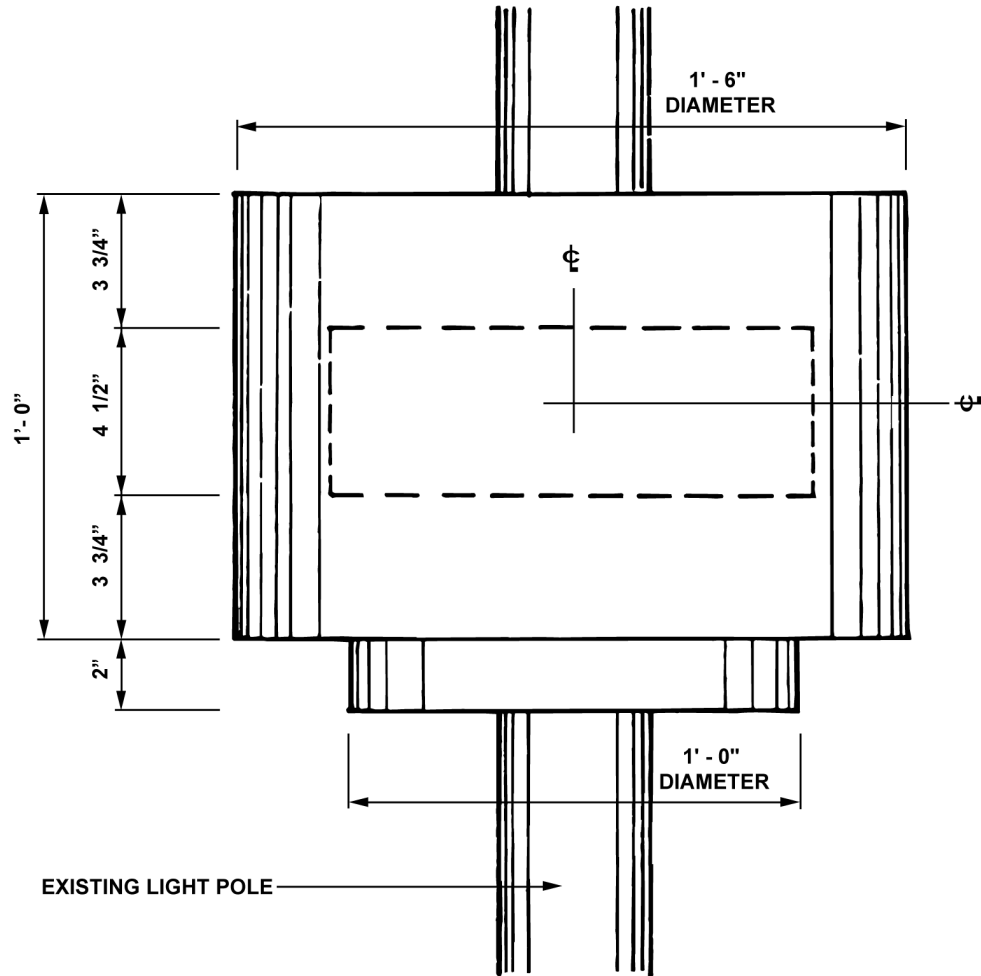
**LETTERING AND GRAPHICS:** 4 1/2" FUTURA HEAVY LETTERS

**BORDERS:** NONE

**MOUNTING:** SIGNS ARE MOUNTED ON LIGHT POLES WITH CONCEALED FASTENERS, 9'-0" ABOVE PAVEMENT.

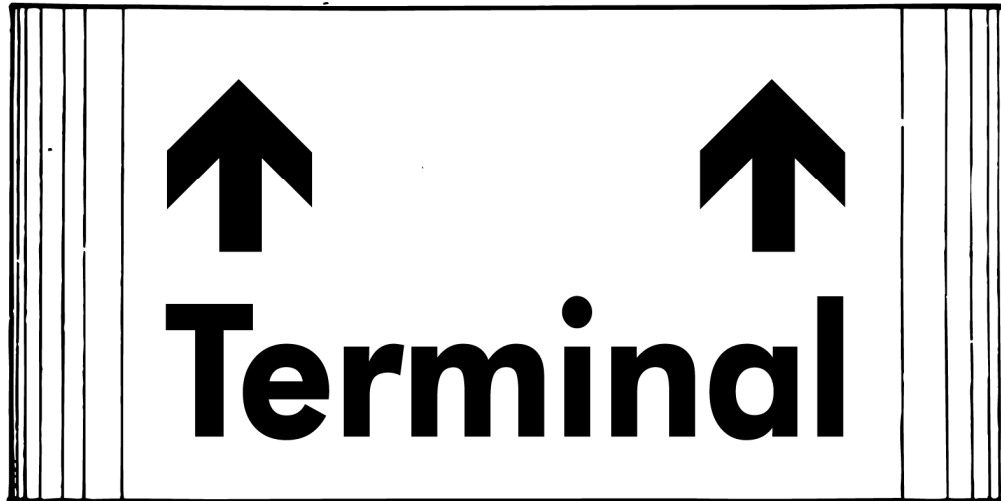
**REMARKS:** NOTE THAT A "BULLET" CHARACTER (NOT A HYPHEN) IS USED TO SEPARATE THE TWO ELEMENTS OF PARKING LOCATION CODES.

Sign Type G-5 - Pole-Mount Parking Area Identification Exhibit II-3-14



Sign Type G-5 - Layout Grid

Exhibit II-3-15



**PURPOSE:** PROVIDE DIRECTIONAL AND ORIENTATION INFORMATION ON ROOFTOP PARKING LEVELS.

**LOCATIONS:** PARKING STRUCTURES; UNCOVERED, ROOFTOP PARKING DECK.

**DIMENSIONS:** 2' - 0" WIDE X 1' - 0" HIGH.

**MATERIALS:** ALUMINUM WITH PAINTED FINISH AND SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** BLACK LETTERS ON SILVER FIELD (SYMBOLS RENDERED IN REGULATORY COLORS, WHERE NECESSARY).

**LETTERING AND GRAPHICS:** 3" FUTURA HEAVY LETTERS, UPPER AND LOWER CASE; 4" ARROWS.

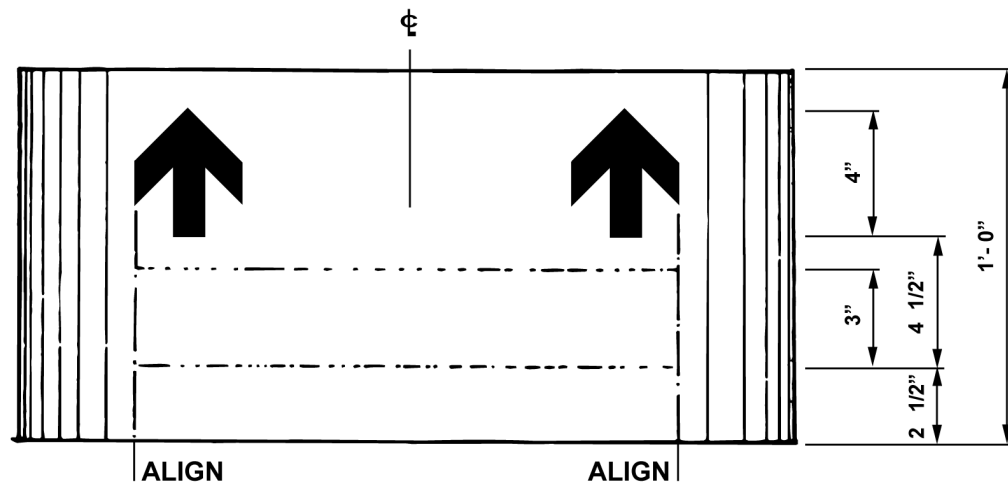
**BORDERS:** NONE

**MOUNTING:** SIGNS ARE MOUNTED ON LIGHT POLES WITH CONCEALED FASTENERS.

**REMARKS:** POLE-MOUNT SIGNS TO BE USED ONLY ON ROOFTOP PARKING LEVELS.

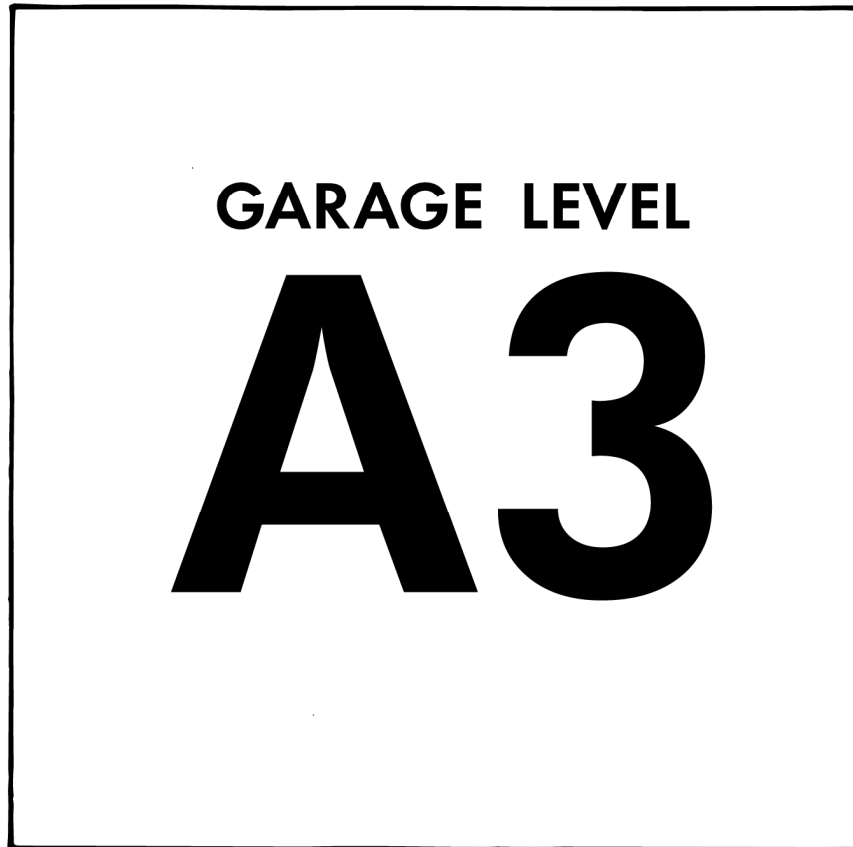
Sign Type G-6 - Overhead Pedestrian Directional Sign

Exhibit II-3-16



Sign Type G-6 - Layout Grid

Exhibit II-3-17



**LOCATIONS:** PARKING STRUCTURES; LOCATE AT ELEVATOR LOBBY ON EVERY GARAGE LEVEL.

**DIMENSIONS:** 1' - 3 7/8" WIDE X 1' - 3 7/8" HIGH.

**MATERIALS:** SATIN-FINISH STAINLESS-STEEL PANEL; GRAPHICS ETCHED AND FILLED WITH ENAMEL.

**COLORS:** BLACK LETTERS ON SATIN-FINISH STAINLESS STEEL FIELD.

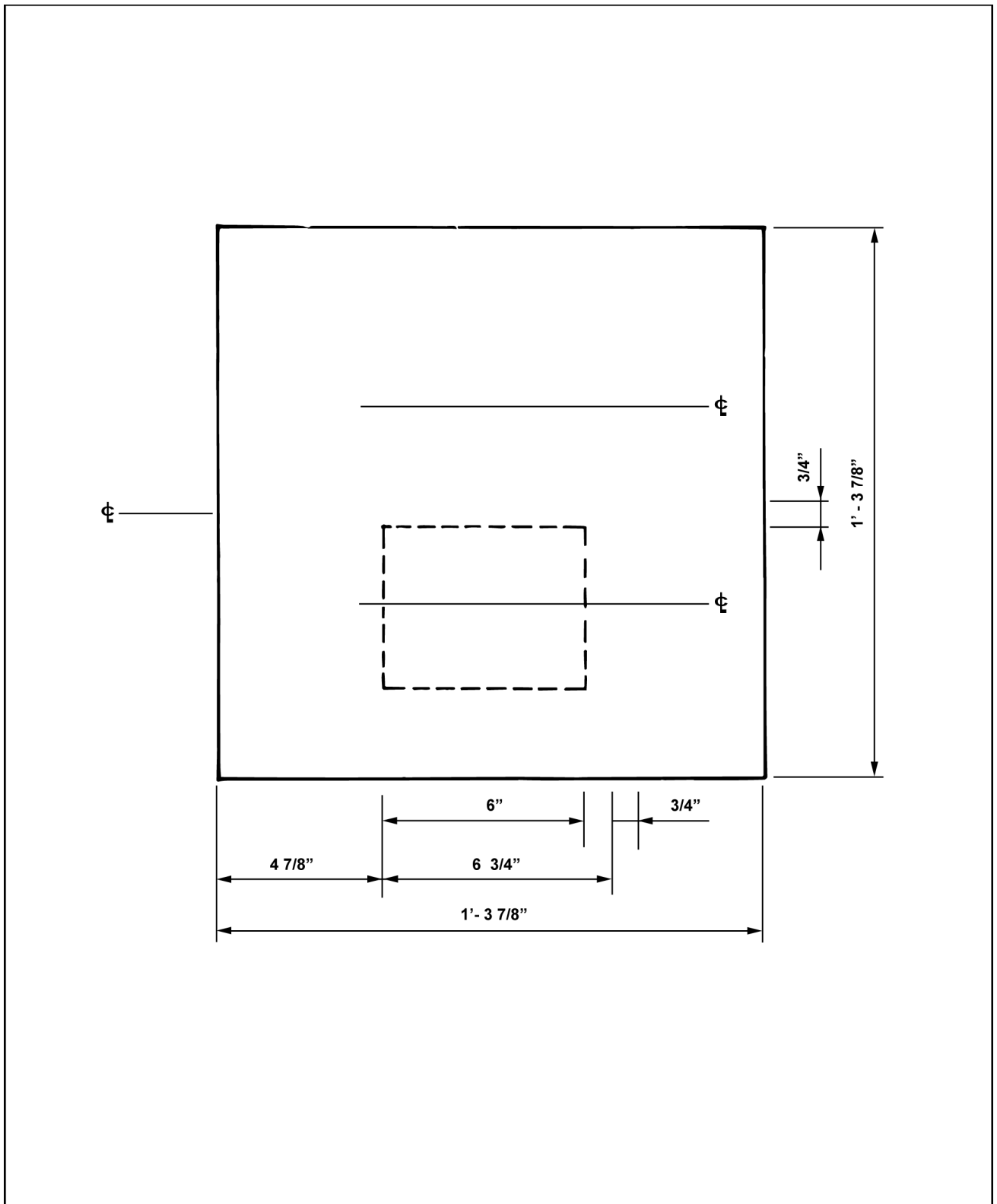
**LETTERING AND GRAPHICS:** MESSAGES RENDERED IN CAPITAL LETTERS. 6" FUTURA HEAVY AND 3/4" FUTURA MEDIUM LETTERS.

**BORDERS:** NONE

**MOUNTING:** SURFACE MOUNT WITH CONCEALED FASTENERS.

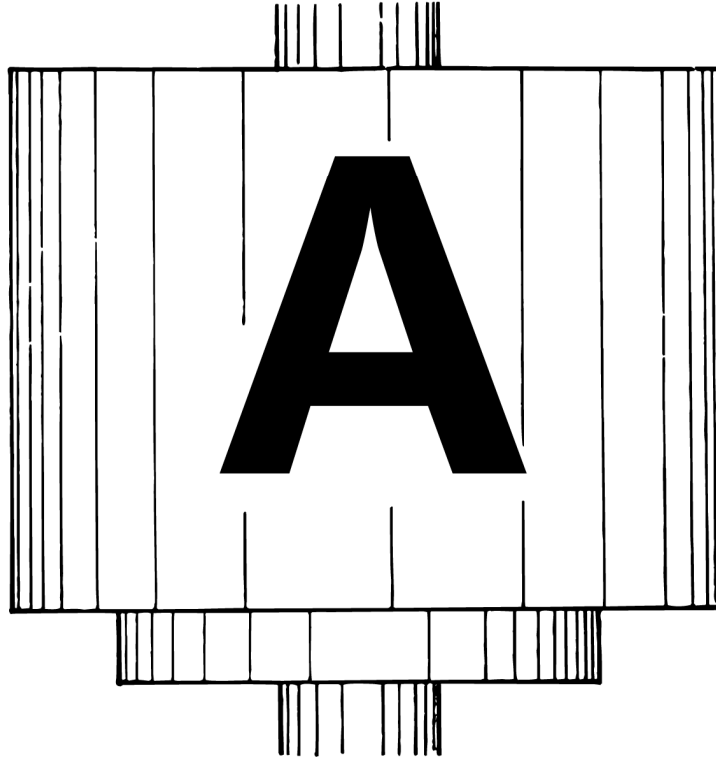
Sign Type G-7 - Garage Level Identification

Exhibit II-3-18



Sign Type G-7 - Layout Grid

Exhibit II-3-19



**PURPOSE:** IDENTIFY PARKING LOT AREAS.

**LOCATIONS:** SURFACE PARKING LOTS.

**DIMENSIONS:** 1' - 6" DIAMETER X 1' - 4" HIGH

**MATERIALS:** PAINTED ALUMINUM; SELF-ADHESIVE VINYL GRAPHICS.

**COLORS:** BLACK LETTERS ON SILVER FIELD.

**LETTERING AND GRAPHICS:** 8" FUTURA HEAVY CAPITAL LETTERS.

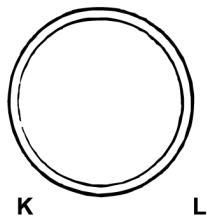
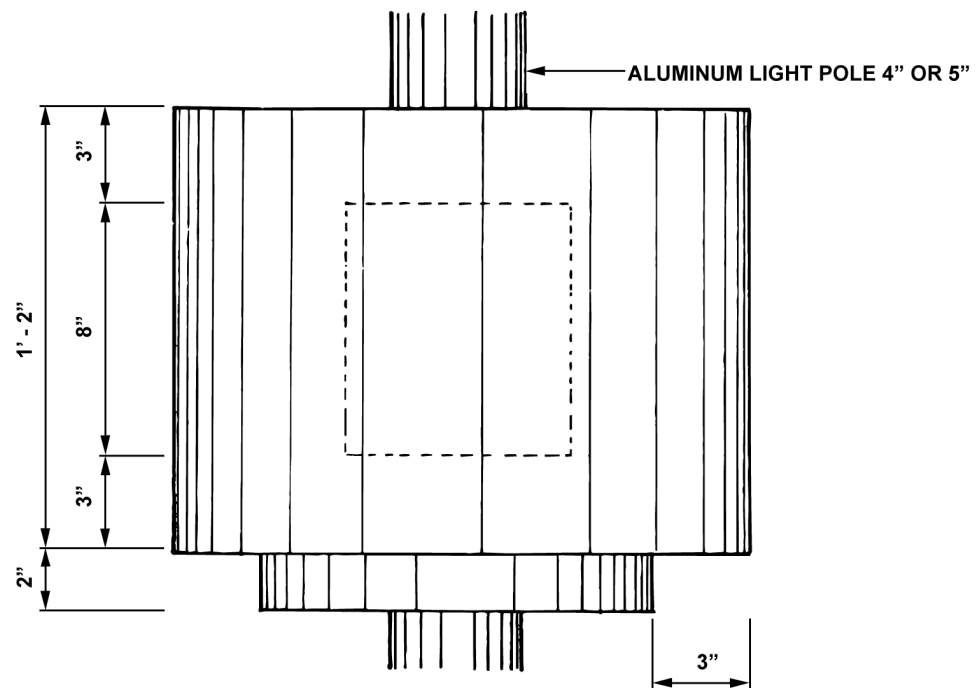
**BORDERS:** NONE

**MOUNTING:** MOUNT ON LIGHT POLES WITH CONCEALED FASTENERS.

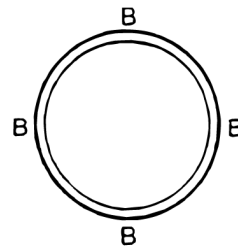
**REMARKS:** TOP AND BOTTOM OF SIGN COLLARS MUST BE SEALED TO PREVENT BIRD NESTING.

Sign Type L-1 - Parking Lot Area Identification

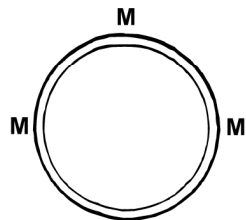
Exhibit II-3-20



TWO LETTER COMBINATION  
DIFFERENT LETTERS AT AREA TRANSITIONS



FOUR LETTER COMBINATION  
SAME LETTERS (BX4)

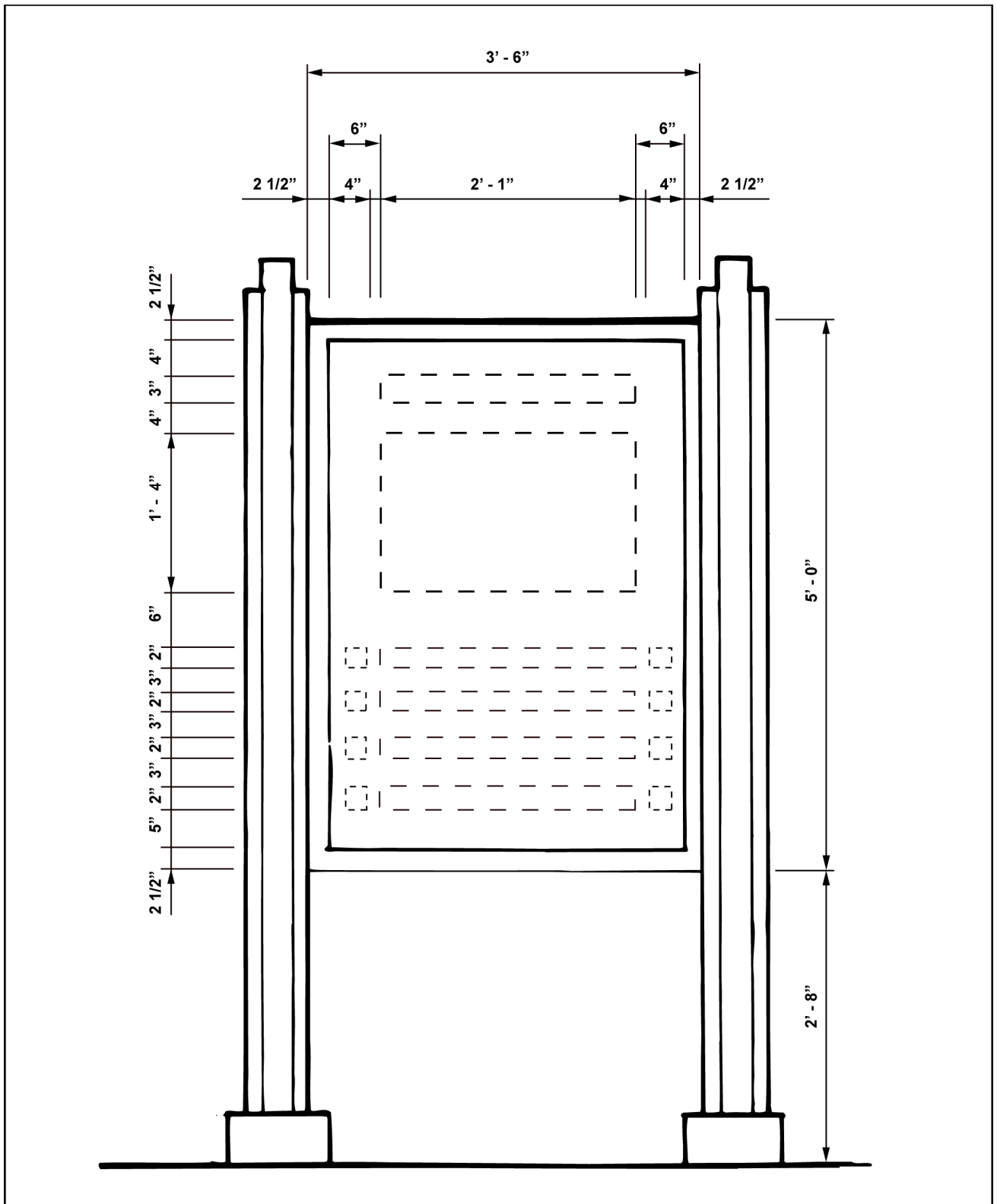


THREE LETTER COMBINATION  
SAME LETTERS (MX3)

Sign Type L-1 - Layout Grid

Exhibit II-3-21





Sign Type H-1 - Layout Grid

Exhibit II-3-22

A blue light will signal a Virginia cab-full condition a purple light will signal a DC/Maryland cab-full condition. Signals shall be remotely operated from the taxi parking structure by an automatic counter device and shall be illuminated only when lot full conditions exist. Use a reflector-type light fixture with 6" diameter colored lenses, fully recessed mounted on the overhead sign column and located as shown in the common design elements roadway sign mounting detail. Refer to **Exhibit II-2-21**.

**3.5.2 Exterior:** Exterior signs shall follow roadway Signing Design Guidelines.

**3.5.3 Interior:** Interior signs shall match existing taxi parking structure signs.

### **3.6 Hangar Buildings**

**3.6.1 Hangar Buildings:** Hangar buildings include those used for maintenance and offices, as well as the general aviation terminal.

**3.6.2 Hangar Identification Numbers:** Hangar buildings not used as passenger terminals shall be identified by number on a ground-mount sign. This sign shall be located to the right of the main entrance of each hangar building.

**3.6.3 General Aviation Terminal:** The general aviation terminal shall be identified by individual letters that are stud-mounted to the wall above the entrance canopy as per existing signage.

### **3.7 South Service Area**

**3.7.1 General:** The south service area includes air cargo, mail, offices, airport support and various other facilities.

**3.7.2 Building and Dock Identifications:** Cargo building docks shall be identified by consecutive numbers, displayed integrally with the tenant names on recessed sign panels on the face of canopies.

**3.7.3 Schematic Drawings:** Refer to related signage in **Paragraph 4.7**.

### **3.8 Regulatory Signing**

**3.8.1 Regulatory signs:** Regulatory signs inform airport users of laws or regulations and should be located at areas wherever those regulations apply. Warning signs identify hazardous conditions and shall be located at or in advance of the hazard, as the specific conditions warrant. Regulatory and warning signs shall be kept to a minimum. Unnecessary uses tend to breed disrespect for all signs.

**3.8.2 Roadway:** Provide signs as specified in the Manual on Uniform Traffic Control Devices for Streets and Highways (Federal Highway Administrative, U.S. Department of Transportation, latest edition). Signs shall follow MUTCD guidelines for size, colors, shapes, text, symbols and mounting locations. Typical sign faces are shown in **Exhibit II-3-23**. Provide single-post mounts for all regulatory signs with a maximum of two signs mounted vertically on a single post. Regulatory or warning sign may not be mounted on overhead sign structures, double-post ground mount signs or light poles. Regulatory signs are typically required for the following roadway locations and purposes:

**3.8.2.1 Parking:** Parking restrictions.

**3.8.2.2 Crosswalks:** Pedestrian crosswalks.

**3.8.2.3 Tow-away:** Tow-away zones.

**3.8.2.4 Lane control:** Traffic lane control.

**3.8.2.5 Speed regulation:** Speed limit signs.

**3.8.2.6 Instructions:** Stop and Yield instructions.

**3.8.2.7 Warnings:** Curve and Do-Not-Enter warnings.

**3.8.2.8 Notices:** Clearance notices.



Typical Roadway Regulatory Signs

Exhibit II-3-23

**3.8.3 Terminals and Building Interiors:** Regulatory signs shall not become part of the architectural design to the extent that they lose their prominence.

**3.8.4 Regulatory Signs:**

**3.8.4.1** Regulatory signs are typically required for the following interior locations and purposes:

- A. Emergency exits.
- B. Elevators.
- C. Escalators.
- D. Fire-fighting equipment.
- E. Standpipes/fire hose connections.
- F. Fire alarm pull boxes.
- G. Alarm annunciator panels.
- H. Smoking regulations.
- I. Occupancy limits.
- J. Load limits.
- K. Stairwells.
- L. Equipment operation instructions.
- M. Building and equipment hazards.
- N. Vehicular parking and standing restrictions.
- O. Pedestrian crosswalks.
- P. Bus, taxi and other designated vehicle stops.
- Q. Accessibility.

R. Applicable codes and standards include-but are not limited to-the following:

- S. American National Standards Institute (ANSI).
- T. Building Officials Conference of America (BOCA).
- U. International Code Council (ICC).
- V. National Electric Code (NEC).
- W. National Fire Protection Association (NFPA).
- X. Uniform Federal Accessibility Standards (UFAS).
- Y. Metropolitan Washington Airports Authority *Design Manual*.
- Z. Virginia Uniform Statewide Building Code (USBC).
- AA. Local and State building codes and ordinances.

**3.8.4.2 Federally Required Signing:** Federally required signing is required at the following locations:

A. Terminals: Notices and information required by Code of Federal Regulations (CFR) and Federal Aviation Regulation (FAR) at curbside check-in, ticket counter, security checkpoints and boarding gates.

B. Curbside Check-in Points:

- 1) Hazardous Materials (49 CFR 175.25).
- 2) Firearms/Checked Bags (FAR 108.1 1 (c)).
- 3) False Statements paragraph.

C. Ticket Counters:

- 1) Hazardous Materials (49 CFR 175.25).
- 2) Firearms/Checked Bags (FAR 108.1 1 (c)).

- 3) Public Tariffs (14 CFR 221.173).
- 4) Liability, Death, Injury (14 CFR 221.175).
- 5) Liability for Baggage (14 CFR 221.176).
- 6) Overbooking (14 CFR 250.1 1).
- 7) False Statements paragraph.

**D. Security Points:**

- 1) Hazardous Materials (49 CFR 175.25).
- 2) Consent to Search (FAR 108.9 (b)(1)(2)).
- 3) Inspection (FAR 108.17).
- 4) X-Ray Film (FAR 108.1 1 (a)).
- 5) Weapons on Board (FAR 108.1 1 (c)).

**E. Boarding Gates:**

- 1) Hazardous Materials (49 CFR 175.25).
- 2) Firearms/Checked Bags (FAR 108.1 1 (c)).

**3.8.4.3 Lettering on Federal Signs:** Lettering on federally required signs shall be at least 1/4 inch high. All lettering of the first three paragraphs of the hazardous materials sign must be at least 3/8 inches high. All lettering must be displayed on a background of contrasting color. Locate federally required signs so as to be clearly readable to the traveling public in the area where the signing is required.

**3.8.5 Parking Structures:** Same as **Paragraph 3.8.2.**

**3.8.6 Surface Parking Lots:** Follow guidelines for Airport roadways **Paragraph 3.8.1.**

**3.8.7 Taxi Parking Structure:** Follow guidelines for Airport interiors **Paragraph 3.8.2.**

**3.8.8 Hangar Buildings:** For exterior signing, follow guidelines provided in **Paragraph 3.8.1.** Additionally, follow guidelines provided by terminal architects. For interior signing, follow guidelines provided in **Paragraph 3.8.2.**

**3.8.9 South Service Area:** For roadway signing, follow guidelines provided in **Paragraph 3.8.1.** Review site conditions and signing needs to install required signs with minimum negative impact on building façades and landscaping. For interior signing, follow guidelines provided in **Paragraph 3.8.2.**

**3.8.10 General Requirements:** Parking regulatory signs shall specify the penalties associated with violations (such as, towing, fines, etc.). Signs shall be designed to be enforceable in Arlington County courts. Where possible, the number of signs shall be minimized by using arrows to designate enforcement areas.

## CHAPTER 4 Commercial Signing Guidelines

### 4.1 Roadways

**4.1.1 Commercial Signing:** Commercial signing is prohibited on airport roadways. Public wayfinding needs are paramount in these areas, and commercial signing would interfere with primary directional signing.

**4.1.2 Restrictions:** Commercial signs are prohibited on all roadways, except for certain Airport supplied signs that may name commercial tenants such as airline directory signs. Tenant supplied signs are prohibited. The Authority maintains complete control over all signs on airport roadways.

### 4.2 Terminals

**4.2.1 Commercial Signing in the Terminal Buildings:** Commercial signing in the terminal buildings is restricted to specific locations and applications. Tenants and leaseholders may supply certain types of commercial signing. However, Authority review and approval is required for every such sign. These requirements apply equally to all terminal buildings. This requirement includes every form of commercial graphics anywhere on Airport property including graphics on machinery, equipment and furnishings such as automatic teller machines, annunciator panels, telephones, vending machines, hand-out boxes, kiosks, etc.

**4.2.2 Terminal Exteriors:** Commercial signs are prohibited on terminal exteriors, except for certain airport-supplied tenant signs such as, signs that list airline names. Tenant supplied signs are prohibited, unless specifically approved by the Authority. Names of specific tenants or transportation providers may appear on information signs only when required to sort users to two or more locations such as, Washington Flyer buses should be identified by name but not by logo since their locations are different from all other buses. Air carrier identification and corporate colors are prohibited on passenger loading bridges and other equipment attached to the building and apron.

### 4.2.3 Air Carriers

**4.2.3.1 Backwalls:** Company logos, typefaces and colors are permitted on ticket counter backwalls, gate-area check-in backscreens and single-carrier hold-rooms, subject to the following restrictions:

**A. Ticket Counter Backwall:** One company logo per 20' – 0" of counter length, maximum 24" – 0" high. One company name sign rendered in one typeface per 20' – 0" of counter length, maximum letter height 18".

**B. Check-In Backscreen:** One company logo per counter, maximum 14" high. One company name sign rendered in one typeface per counter, maximum letter height 10".

**C. Hold-Room Wall:** One company logo per hold room located on end wall, maximum 24" high. One company name sign rendered in one typeface per hold room located with logo on end wall, maximum letter height 18".

**D. Special Service Counters:** Company logos are prohibited. Company typefaces and colors are permitted on service-counter backwalls such as service counters along concourses and service counters in baggage areas. No more than one typeface may be used at each location, and the maximum height of lettering is 18" based on the height of a capital X in the chosen typeface.

**E. Baggage Claim Lobbies:** Company logos, typefaces and colors are prohibited in baggage claim lobbies when claim devices are common use. When baggage areas contain exclusive use claim devices, company logos, typefaces and colors are permitted on the rear baggage claim wall. Corporate identification allowed at each such claim device is as follows: a single company logo maximum total height 24" and a single company name maximum 18" lettering based on the height of a capital X in the chosen typeface. No

more than one typeface may be used at each claim location.

**F. Other Leased Space:** Signage in other leased spaces, including non-public and service areas, is not specifically controlled. However, plans for all signs showing materials, form, color, mounting, illumination and message content shall be submitted for Authority review and approval prior to fabrication.

**G. Airline Self Service Kiosk:** Refer to **Paragraph 2.4.9.4**, for Airline Self Service Kiosks.

**4.2.3.2 Commercial Signs:** Commercial signs, including carrier identification signs, are prohibited in passenger loading bridges, concourse circulation areas, lobbies and other public areas of the Terminal, except as permitted in this Section. Temporary airline promotional signs shall be subject to the same requirements outlined for permanent signs. Further, all airline promotional signage shall be submitted for Authority review and approval not less than three weeks prior to installation. Free-standing pedestal signs and kiosks are specifically prohibited for air carrier promotions, advertising and identification. Company slogans are prohibited throughout the airport. Visiontron or equivalent signing inserts in ticketing and gate areas may include company typefaces and colors if in accordance with Airport design standards. Visiontron or equivalent signage shall follow the Airport design standards for size, color, graphics and mounting.

#### **4.2.4 Car Rental Agencies**

**4.2.4.1 Typefaces:** Company typefaces and colors are permitted, subject to the following restrictions:

**A. Terminal Service Counter Backwall:** One company name sign rendered in one typeface per 20' – 0" of counter length, maximum letter height 18". Company logos or symbols are prohibited at service counters.

**B. Pedestrian Bridges And Tunnel:** Company typefaces, logos and colors are prohibited in the

pedestrian bridges and tunnel that link terminals with parking structures. When company specific signage is required to sort users to two or more locations, company typefaces and colors may be used but shall be no larger than necessary and shall be integral with building directional or informational signing.

**C. Curbsides and Ground Transportation Center:** Company typefaces, logos and colors are prohibited.

**4.2.4.2 Passenger Loading Bridges:** Commercial signs, including agency identification signs, are prohibited in passenger loading bridges, concourse circulation areas, lobbies and other public areas of the terminal, except as permitted in this Section. Temporary promotional signs shall be subject to the same requirements outlined for permanent signs. Further, all promotional signage shall be submitted for Authority review and approval not less than three weeks prior to installation. Free-standing pedestal signs and kiosks are specifically prohibited for agency promotions, advertising and identification. Company slogans are prohibited throughout the airport.

**4.2.5 Concessions:** Company typefaces and colors are permitted on the façades of leased areas. Logos may be allowed in retail-only areas, such as food courts. Sign sizes, materials and mountings must conform to Airport design standards. Otherwise, company slogans are prohibited throughout the airport. Temporary promotional signs shall be subject to the same requirements outlined for permanent signs. Further, all promotional signage shall be submitted for Authority review and approval not less than three weeks prior to installation. Free-standing pedestal signs and kiosks are specifically prohibited for agency promotions, advertising and identification.

**4.2.6 Ground Transportation Providers:** Company typefaces and colors are permitted, subject to the following restrictions:

**4.2.6.1 Terminal Service Counter Backwall:** One company main sign rendered in one typeface per 20 feet of

counter length, maximum letter height 18". Company logos or symbols are prohibited at service counters.

**4.2.6.2 Pedestrian Bridges and Tunnels:** Company typefaces, logos and colors are prohibited in the pedestrian bridges and tunnel that link terminals with parking structures. When company-specific signage is required to sort users to two or more locations, company typefaces and colors may be used but shall be integral with building directional or informational signing.

**4.2.6.3 Curbsides and Ground Transportation Center:** Company typefaces, logos and colors are prohibited, except where required to sort users to two or more locations. Where so required, company typefaces shall be integral with building directional or informational signing.

**4.2.7 Revenue Advertising:** All advertising signage including corporate identification, promotions, banners, etc. must be coordinated with and approved by the Office of Engineering of the Authority. Advertising signs are permitted in terminal buildings, but only in areas specifically designated by the Authority. All advertising signage shall follow Airport design standards and is subject to review and approval by the Authority. Advertising signs may be permitted in designated areas of concourses, pedestrian bridges/tunnel, gate concourses, hold rooms and aircraft loading bridges. All such advertising requires Authority approval of location, mounting, form, colors, size, and illumination.

#### **4.3 Parking Structures**

**4.3.1 Commercial Signing:** Commercial signing in parking structures is restricted to signing that specifically enhances wayfinding. All commercial signing is subject to the control, review and approval of the Authority.

**4.3.2 Car Rental Agencies:** Company typefaces and colors are permitted in pick-up and drop-off areas and on parking stall identification signs. Typefaces and colors shall be integral with public signing only where advantageous to help separate traffic. Over parking stalls, typefaces and

colors shall be integrated with stall number identification signs, maximum 12" x 24" mounted to the bottom of the slab above.

**4.3.3 Revenue Advertising:** Revenue advertising is prohibited in the parking structures.

#### **4.4 Surface Parking Lots**

**4.4.1 Restrictions:** Commercial signing in surface parking lots, shuttle bus shelters and toll area structures is prohibited.

#### **4.5 Taxi Parking Structure**

**4.5.1 Restrictions:** Commercial signing on or in the taxi parking structure is prohibited, except at the food concession area. All signs in this area shall be submitted to the Authority for review and approval prior to fabrication.

#### **4.6 Hangar Buildings**

**4.6.1 General:** Hangar buildings include those used for maintenance, offices and the General Aviation Terminal. Commercial signing at hangars is restricted to tenant identification.

**4.6.2 Major Tenant Identification:** Major tenants are defined as tenants occupying more than 40% of the space in a hangar building. Major tenants are allowed individual signs consisting of 18" high capital letters mounted on façade of the hangar they occupy. On façade signage, a tenant's company name shall be rendered in the shortest recognizable form such as "Northeast" instead of "Northeast Airlines". Major tenants shall also be identified on ground-mount directory signs mounted at the main entrance to the hangar.

**4.6.3 Minor Tenant Identification:** Minor tenants are defined as tenants occupying less than 40% of the space in a hangar building or sub-tenants of a major tenant already identified. Minor tenants are identified only on the ground-mount directory signs mounted at the main entrance to



each hangar. Company logos are prohibited on the directory signs and building lobbies.

**4.6.4 General Aviation Terminal:** Commercial signs are prohibited on hangars used as terminals. The single exception to this guideline is the terminal operator's name, which may be rendered in individual letters on an entrance canopy, following Airport design standards.

#### **4.7 South Service Area**

**4.7.1 Commercial Signing:** Commercial signing in the south service area is restricted to tenant identification on the building façades with the exception that single occupancy, major tenant buildings may also be identified on a ground-mount sign located near the facility entrance.

**4.7.2 Tenant Identification:** Each tenant in the south service area may be identified on the building canopy by a recessed, internally illuminated sign. The tenant's name shall be rendered in white Futura letters on a gray background color to match adjacent finish.

**4.7.3 Ground-Mount Identification Sign:** Tenant identification on the sign is limited to a single company name, company logos are not permitted. The tenant's name shall be rendered in white Futura letters on a gray background.

## CHAPTER 5 Supplemental Information

### 5.1 Leasing Requirements

**5.1.1 Lease Provisions:** Airport property lease documents shall contain a provision that binds tenants and subtenants to compliance with these guidelines. At a minimum, lease agreements shall contain a statement, such as: "Signing by tenants and subtenants shall conform to the requirements of the Authority *Design Manual*, Ronald Reagan Washington National Airport Standards Section II Signing Design Guidelines and all subsequent revisions." To simplify lease documents, signing requirements described in detail in the *Design Manual* should not be repeated in the lease documents. Any exceptions or waivers to the Guidelines should be included in the lease documents. Lease documents may also contain a requirement for tenants to modify existing signing to meet current Authority standards. Example: "Existing signing not in conformance with the requirements of the Authority *Design Manual*, Ronald Reagan Washington National Airport Standard must be removed or modified to bring the signing into conformance within one year after commencement of this lease, or at the time of renovation of leased facilities, whichever comes first." Non-compliance may be considered a violation of lease terms and will be subject to appropriate action as specified in the lease.

### 5.2 Construction Coordination

**5.2.1 General:** Careful project scheduling and coordination of signing projects are necessary to maintain wayfinding throughout the Airport during all stages of building construction and roadwork. The Contractor who installs the signing is responsible for providing continuity of signing direction and information while installation is in progress.

**5.2.2 Project Scheduling:** Schedules of signing installations shall be developed and coordinated with other construction schedules on the Airport, minimizing interference with the operations of other Contractors. Within 10 days after notice to proceed, the Contractor shall

prepare and submit a project construction schedule to the Authority for approval. The schedule shall be in graphic form and shall show the proposed dates of commencement and completion of each of the various subdivisions of work, as well as the date of final completion of all work required under the contract.

#### 5.2.3 Temporary Roadway or Building Closing:

Temporary closing of roadways or buildings for the installation of signing is prohibited, unless the Authority specifically authorizes each such closing. The Contractor shall not unduly or unnecessarily restrict or impede normal pedestrian and vehicular traffic and shall be responsible for maintaining and protecting traffic at all times in all areas involved. The Contractor shall finish and maintain signage, barricades or flares, as required to avoid conflicts with use of existing roadways or structures and shall protect the public from construction hazards. The Contractor shall provide all signs required by the Manual on Uniform Traffic Control Devices for Streets and Highways for any roadway or lane closures during construction of any project at the Airport. Signing diagrams shall be submitted to the Authority at least two weeks in advance of any closure or detour.

#### 5.2.4 Coordination of New, Temporary and Existing Signing:

The Contractor shall sequence sign replacements and removals in a manner consistent with those that may already exist to keep traffic directed in a logical, comprehensible way. Prior to sign installation, the Contractor shall submit a sign installation sequence plan for Authority approval, clearly indicating the order and schedule of sign installations and any temporary signing requiring to effect a smooth transition from existing to new signing. Temporary signing shall, to the extent practicable, follow the common design elements of this Guideline. All temporary signing is subject to review and approval by the Authority.

### 5.3 Outline Specifications

#### 5.3.1 Exterior Sign Specifications

#### 5.3.1.1 Materials and Finishes

**A.** Aluminum Sheet for warning and regulatory signs shall be 0.080 inch minimum thickness and conform to ASTM B-209 for alloy 6061 -T6. Aluminum sheet for guide and information signs shall be 0.06311 minimum and 0.04011 minimum thickness, front and rear respectively, and conform to ASTM B-209 for alloy 6061 -T6.

**B.** Honeycomb sign panels shall be equal to those as manufactured by Colite Sign of Columbia, South Carolina, or Interstate Highway Sign Company of Little Rock, Arkansas.

**C.** Paint shall be of the high performance type, polyurethane enamel, with a minimum life expectancy of 20 years. Surface preparations and priming shall follow the manufacturer's recommendations.

**5.3.1.2 Galvanizing of Steel Hardware** shall conform to ASTM A153 for hot-dip process. Galvanizing of rolled, pressed and forged steel shapes, plates, bars and strip shall conform to ASTM A123. Galvanized surfaces that have been welded, abraded or damaged at any time after the application of the zinc coating shall be repaired by thoroughly wire brushing the damaged areas, removing all foreign substances and damaged coating until bare metal is attained, and treating the cleaned areas with an approved galvanizing repair compound in accordance with the manufacturer's instructions. Any steel elements receiving a paint finish shall be cleaned and all surfaces prepared with an inorganic zinc primer and then top-coated with an approved finish coat. The total dry thickness of all coats shall not be less than 5 mils.

#### 5.3.1.3 Graphics

#### 5.3.1.4 Lighting

**A.** Overhead exterior signs shall be illuminated with 175-watt metal halide lamps. The luminaire shall provide a maximum to minimum uniformity ratio of 6:1 a

gradient not to exceed 2:1 on any two adjacent square feet of sign surface and a minimum of 30 average initial footcandles. Maximum laminar spacing is 8' – 0".

**B.** Dynamic signs shall be composed of rotating drums of triangular configuration, pivoted at each end and mechanically rotated. The sign can operate either horizontally or vertically. The drum shall be supported at each end by flanged ball bearings mounted on bulkheads at each end of the cabinet. Control and drive equipment is mounted in weatherproof compartments at each end of the cabinets. The speed of rotation may vary from one to ten rpm. so that the drive motor and gear reduction unit may be less than 1/4 horsepower. To prevent icing, heating elements shall be inserted in the upper and lower drum border extrusions with built-in thermostatic control.

#### 5.3.2 Parking Structure Sign Specifications

##### 5.3.2.1 Materials

**A.** Aluminum sheet shall be 0.080" minimum thickness and conform to ASTM B-209 for alloy 6061 -T6.

**B.** Sign support members suspended from structure shall be painted aluminum tubes bolted to galvanized steel brackets welded to 6 inch by 6 inch by 1/4 inch galvanized, slab embedded steel plates. Isolate dissimilar materials with bituminous paint or other acceptable material.

**C.** For post-tensioned concrete structure, Contractor and General Contractor shall coordinate location of steel plates with precision and care prior to pouring of concrete slab. After post-tensioned concrete slab placement, additional overhead signs require a structural x-ray to determine the location of cable prior to penetrating the slab with any material.

**D.** Free-standing sign posts shall be 2½" diameter aluminum posts attached to cylindrical concrete base with galvanized steel mounting plates.

E. Paint shall be of the high-performance type, polyurethane enamel, with a minimum life expectancy of 20 years. Surface preparations and priming shall follow the manufacturer's recommendations.

**5.3.2.2 All Surfaces of Structural Steel Supports** shall be cleaned and surfaces prepared with an inorganic zinc primer and then top-coated with an approved finish coat to match clear-finished aluminum framing. The total dry thickness of all coats shall not be less than 5 mils.

#### **5.3.2.3 Graphics**

A. Letters, numerals, arrows, symbols and other features of the sign message shall be cut from high performance, self-adhesive vinyl sheets equal to those manufactured by Minnesota Mining and Manufacturing Company (3M) of St. Paul, MN. Where reflective sheeting is specified, it shall be the encapsulated lens type. Vinyl graphics shall be applied to the sign field by processes recommended by the manufacturer.

B. Text messages shall be composed and produced on sign composition systems utilizing URW, Gerber, or other Authority approved typefaces and letter spacing tables.

#### **5.3.2.4 Lighting**

A. Overhead exterior signs shall be illuminated with 175-watt metal halide lamps. The luminaire shall provide a maximum to minimum uniformity ratio of 6:1 a gradient not to exceed 2:1 on any two adjacent square feet of sign surface and a minimum of 30 average initial footcandles- Maximum laminar spacing is 8' – 0".

B. Dynamic signs shall be composed of rotating drums of triangular configuration, pivoted at each end and mechanically rotated. The drum shall be supported at each end by flanged ball bearings mounted on bulkheads at each end of the cabinet. Control and drive equipment shall be mounted in weatherproof compartments. Heating elements with built-in

thermostatic control shall be provided to prevent icing these shall be located in the upper and lower drum border extrusions.

### **5.3.3 Interior Sign Specifications**

#### **5.3.3.1 Graphics**

A. Letters, numerals, arrows, symbols and other features of the sign message shall be cut from high performance, self-adhesive vinyl sheets equal to those manufactured by Minnesota Mining and Manufacturing Company (3M) of St. Paul, MN. Where reflective sheeting is specified, it shall be the encapsulated lens type. Vinyl graphics shall be applied to the sign field by processes recommended by the manufacturer.

B. Text messages shall be composed and produced on sign composition systems utilizing URW, Gerber, or other Authority-approved typefaces and letter-spacing tables.

### **5.4 Resources**

#### **Government**

Arlington County Department of Public Works  
1 Courthouse Plaza  
2100 Clarendon Boulevard  
Arlington, VA 22201  
703-358-3575 (Traffic Engineering Division)  
703-358-3000 (County government information)

Department of Transportation, Commonwealth of Virginia  
1221 East Broad Street  
Richmond, VA 23219  
804-786-2801

United States Architectural and Transportation Barriers  
Compliance Board  
1111 18th Street, N.W., Suite 501  
Washington DC 20236-3894  
202-653-7834

U.S. Government Printing Office  
710 North Capitol Street, N.W.  
Washington, DC 20401  
202-275-2091

**Associations and Organizations**

American Association of State Highway and Transportation  
Officials (AASHTO)  
444 North Capitol Street, NW, Suite 225  
Washington, DC 20001  
202-624-5800

Air Transport Association (ATA)  
1709 New York Avenue, N.W.  
Washington, DC 20006  
202-626-4103

American Institute of Graphic Arts (AIGA)  
1059 Third Avenue  
New York, NY 10021  
212-752-0813

American National Standards Institute, Inc. (ANSI)  
1430 Broadway  
New York, NY 10018  
212-642-4948

Environmental Design Research Association, Inc. (EDRA)  
P.O. Box 24083  
Oklahoma City, OK 73124  
405-848-9762

Institute of Transportation Engineers (ITE)  
525 School Street, S.W.  
Washington, DC 20024-2729  
202-554-8050

Institutional and Municipal Parking Congress (IMPC)  
2217 Princess Anne Street  
Fredericksburg, VA 22404  
703-371-7535

National Electrical Manufacturers Association (NEMA)  
2101 L Street, NW  
Washington, DC 20037  
202-457-8400

National Electric Sign Association (NESA)  
801 North Fairfax Street  
Alexandria, VA 22314  
703-836-4012

National Parking Association (NPA)  
11121 6th Street, N. W.  
Washington, DC 20036  
202-296-4336

National Fire Protection Association (NFPA)  
Batterymarch Park  
Quincy, MA 02269  
617-770-3000

Society of Environmental Graphic Designers (SEGD)  
47 Third Street  
Cambridge, MA 02141  
617-577-8225

Traffic Institute  
Northwestern University P.O. Box 1409  
Evanston, IL 60204 708-491-5476

Transportation Research Board (TRB)  
2101 Constitution Avenue, N.W.  
Washington, DC 20418  
202-334-2934

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