SEATTLE-TACOMA INTERNATIONAL AIRPORT

Design Guidelines and Standards

SEA
Seattle-Tacoma International Airport

2023
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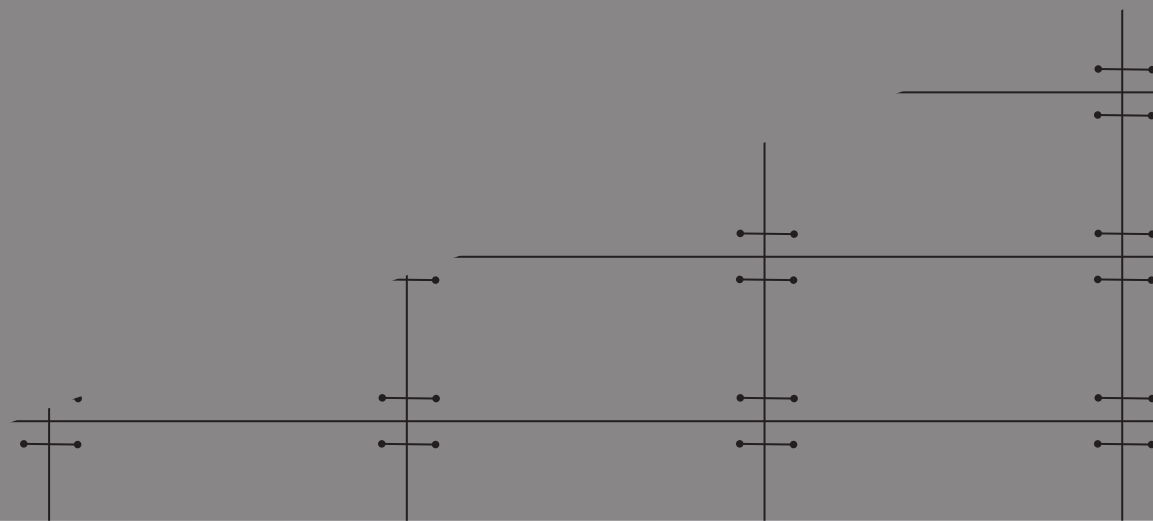
INTRODUCTION

Seattle-Tacoma International Airport welcomes you as a vital partner in helping shape our future. This document is comprised of the SEA Design Vision, Design Guidelines, and Architectural Standards. These resources are designed to guide you in conceptualizing and realizing the SEA design vision.



SEA
Seattle-Tacoma International Airport

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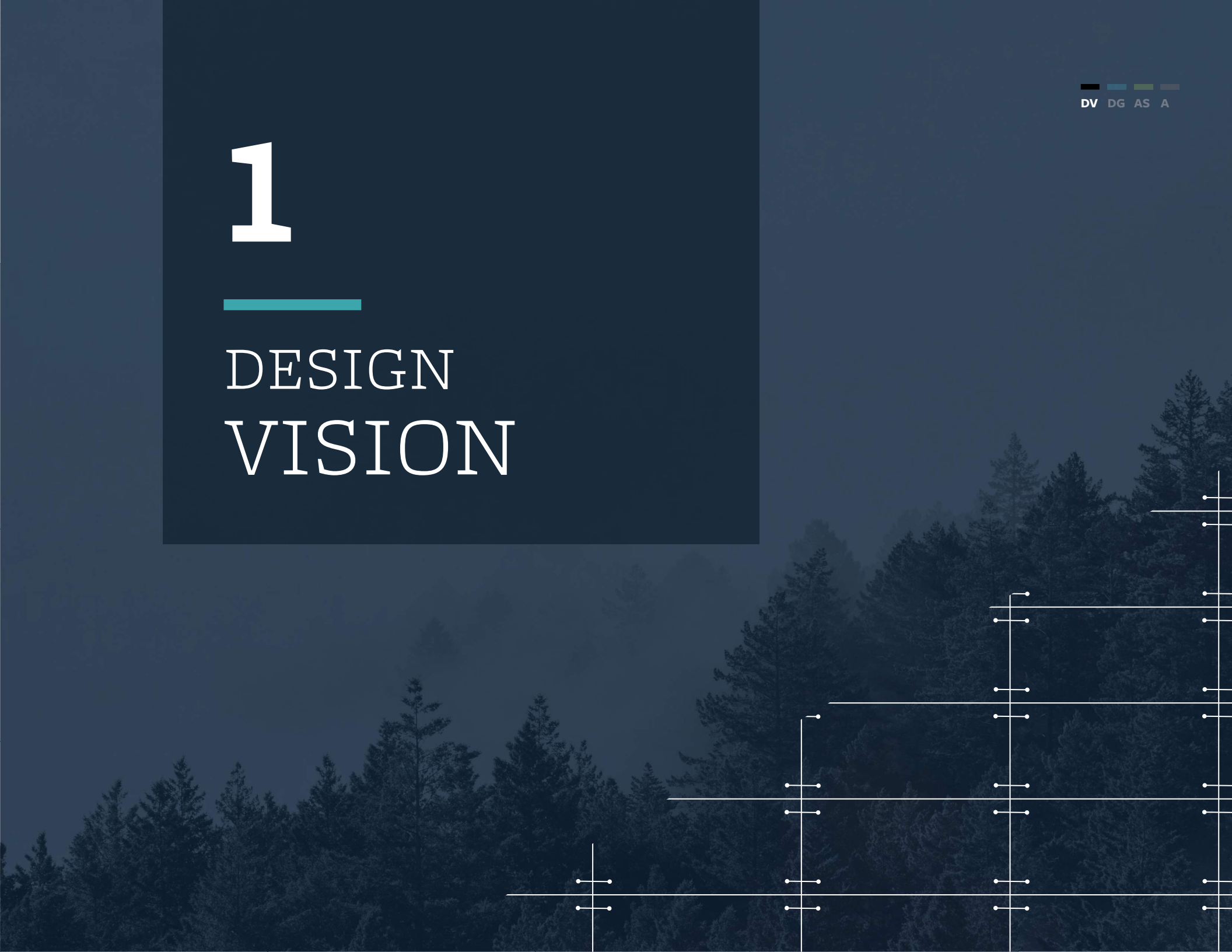
DESIGN VISION



DESIGNING THE FUTURE

Welcome to SEA

As a premier destination for domestic and international air travel, SEA is committed to an unparalleled experience, one that is truly reflective of the grandeur of the Pacific Northwest. The purpose of the Design Vision is to capture a Pacific Northwest viewpoint, guiding the design of unique experiences that engage passengers' emotions, beckoning them to return.

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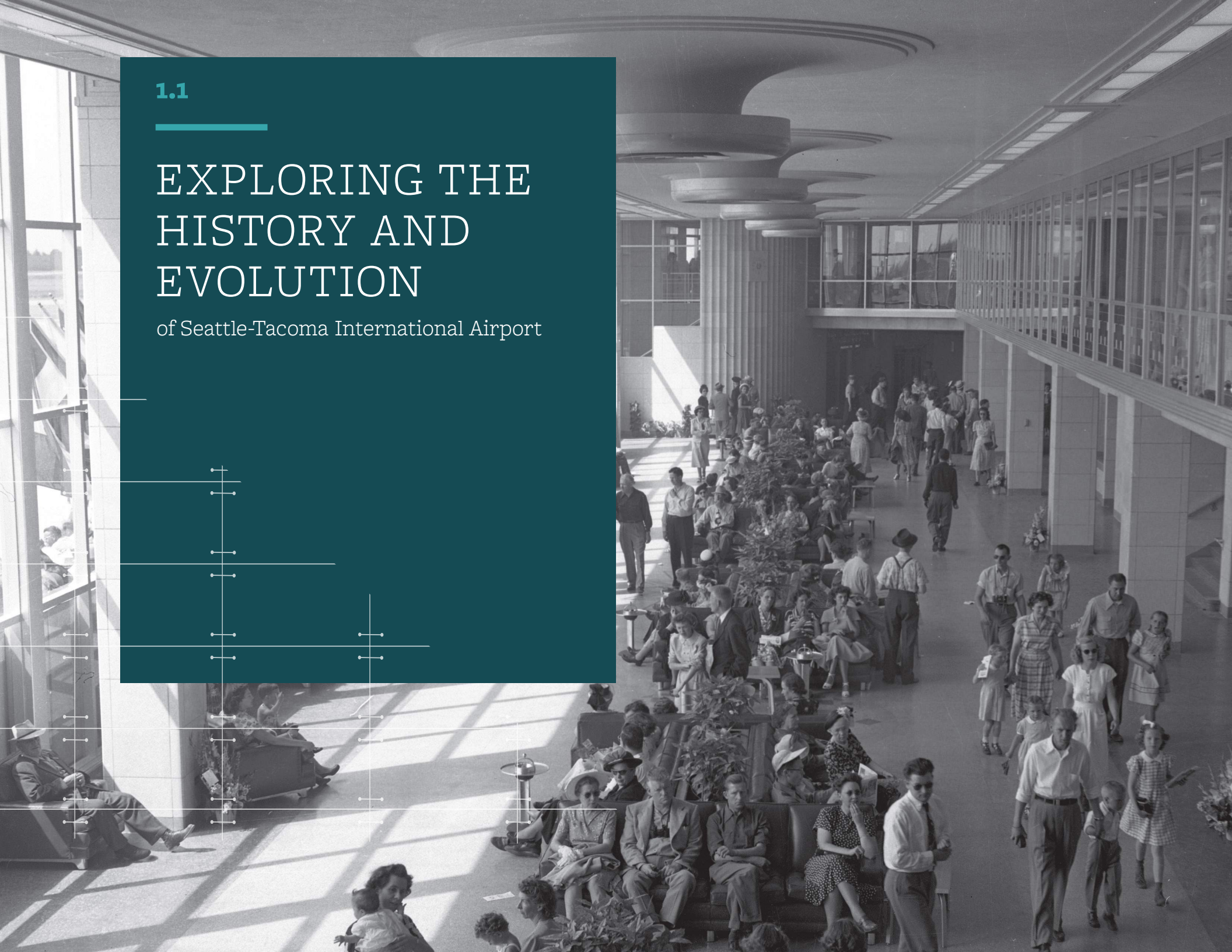


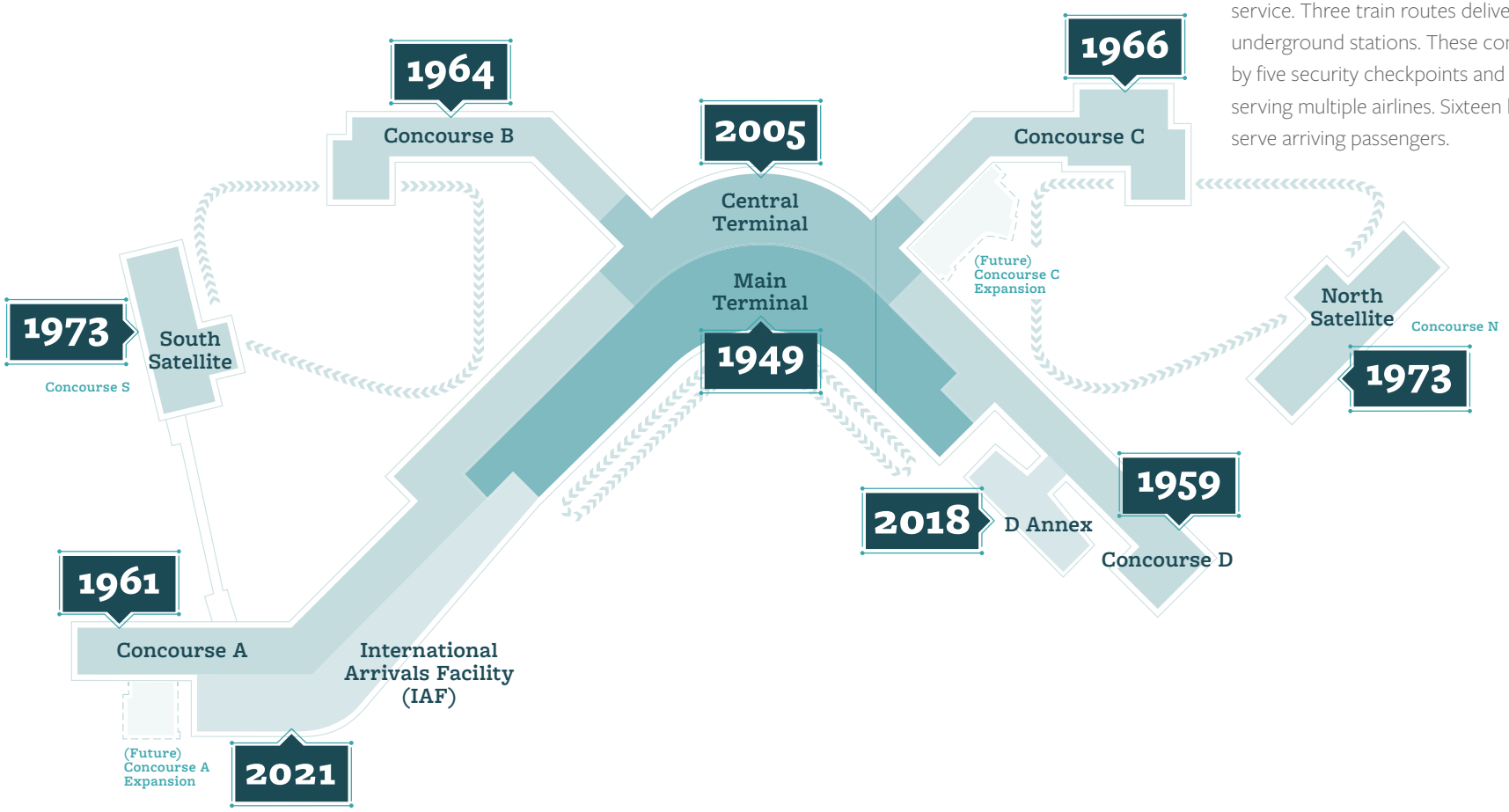
1.1

EXPLORING THE HISTORY AND EVOLUTION

of Seattle-Tacoma International Airport

HISTORICAL SEA GROWTH: CONSTRUCTION DATES

SEA consists of a Main Terminal servicing four attached concourses (A, B, C, D) and two satellite concourses (North, South) that are linked by train service. Three train routes deliver passengers to six underground stations. These concourses are served by five security checkpoints and seven check-in zones serving multiple airlines. Sixteen baggage claim devices serve arriving passengers.



SEA MILESTONES

1943 Construction of new airport begins at Bow Lake, current airport site.

1944 Airport dedicated as Seattle-Tacoma Airport with arrival of United Airlines DC-3 Mainliner. Passengers wait in "The Pantry," a Quonset hut with a wood-burning potbellied stove.

1947 Northwest Airlines and Western Airlines commence first scheduled service.

1949 New Main Terminal opens and renamed Seattle-Tacoma International Airport. Annually serves 130,000 passengers.

1954 Annual passenger demand grows to 1,000,000 people

1961 Fossilized skeleton of a giant sloth, unearthed by construction crews.

1973 Major construction program completed: New Main Terminal, North & South Satellites, underground Satellite Transit System, parking garage, & airport road system.

1971 Billboard appears on Aurora Avenue North in Seattle requesting, "Will the last person leaving Seattle please turn out the lights," in response to the slump in Boeing orders.

1992 Total renovation and expansion of Concourses B, C, and D completed. Airport road system.

1994 SEA becomes a smoke-free facility.

1997 SEA's 50th anniversary.

2004 Completion of new South Main Terminal and Concourse A

2005 Central Terminal renovation and expansion completed.

2008 New third runway opens.

2017 Airport serves 46.9 million passengers.

2018 D Annex opens.

2019 North Satellite Extension opens.

2021 New IAF and the renovated North Satellite are completed.

2034 Forecasts anticipate 66 million annual passengers.

MAIN TERMINAL

AT A GLANCE

OPENED IN

1949

SIGNIFICANT

Renovations

1973 Substantial expansion of Main Terminal

1987 Further expansion to the north

2002 North vertical circulation expansion

2004 South expansion

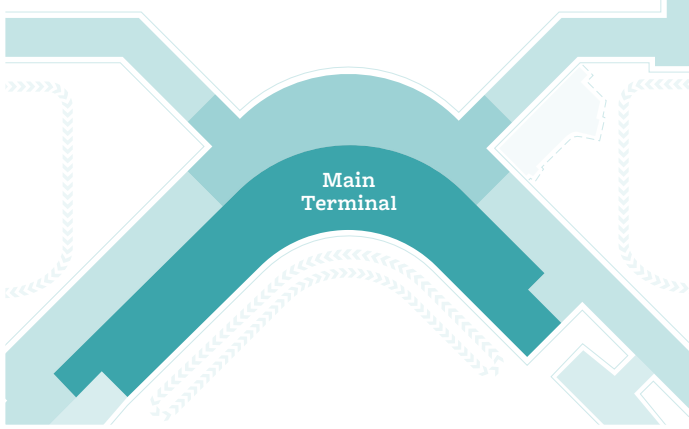
HIGHLIGHTS

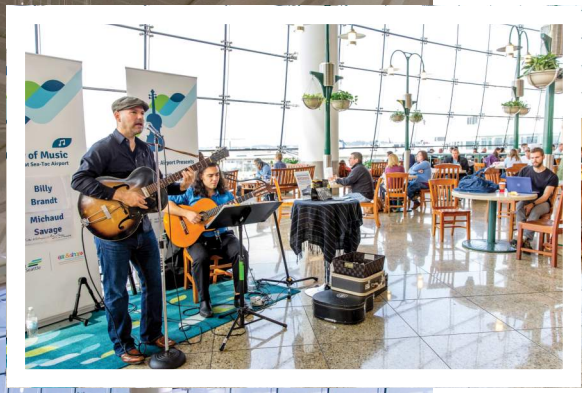
The Main Terminal is the portal through which people arrive and depart the airport, and where they check in for their flights and claim their bags. It is an elegant Modernist building, simple and timeless.

LOOKING FORWARD

SEA is preparing for substantial passenger growth in the next 20 years, and is investing in its infrastructure to keep its place as a premier international airport. The airport is the fastest growing among the top 20 U.S. airports and in the top 10 for busiest US airports. Planned upgrades include a major renovation of Main Terminal through SEA Gateway and Main Terminal Infrastructure Project (MTIP), and Checkpoint 1 will be relocated to baggage claim level.

The front door of SEA,
Welcoming gateway to all.
We guide, where to next?





CENTRAL TERMINAL

AT A GLANCE

OPENED IN

2005

SIGNIFICANT

Renovations

1997 Major renovation/expansion begins

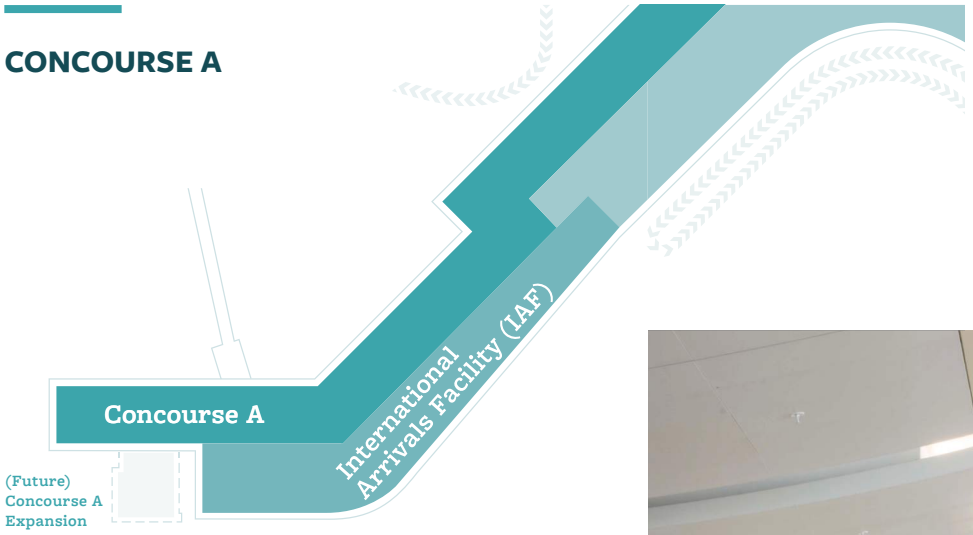
2005 Central Terminal renovation complete

HIGHLIGHTS

The Central Terminal is the airport's living room, the jewel of SEA's dining and retail experience. With its large open space, abundance of natural light, natural stone finishes, live music, and distinctive double curvature curtain wall, it is a sought after destination for travelers waiting for their flight to depart. The backdrop of the Central Terminal is the original facade of the main terminal which includes a frieze of fish leaping above waves; an original integration of Northwest sense of place.

Central Terminal

CONCOURSE A



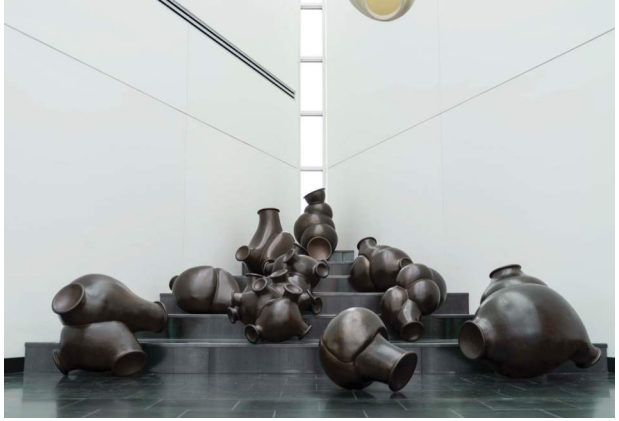
AT A GLANCE

OPENED IN
1961

SIGNIFICANT
Renovations
2005 Replaced with all new expanded building

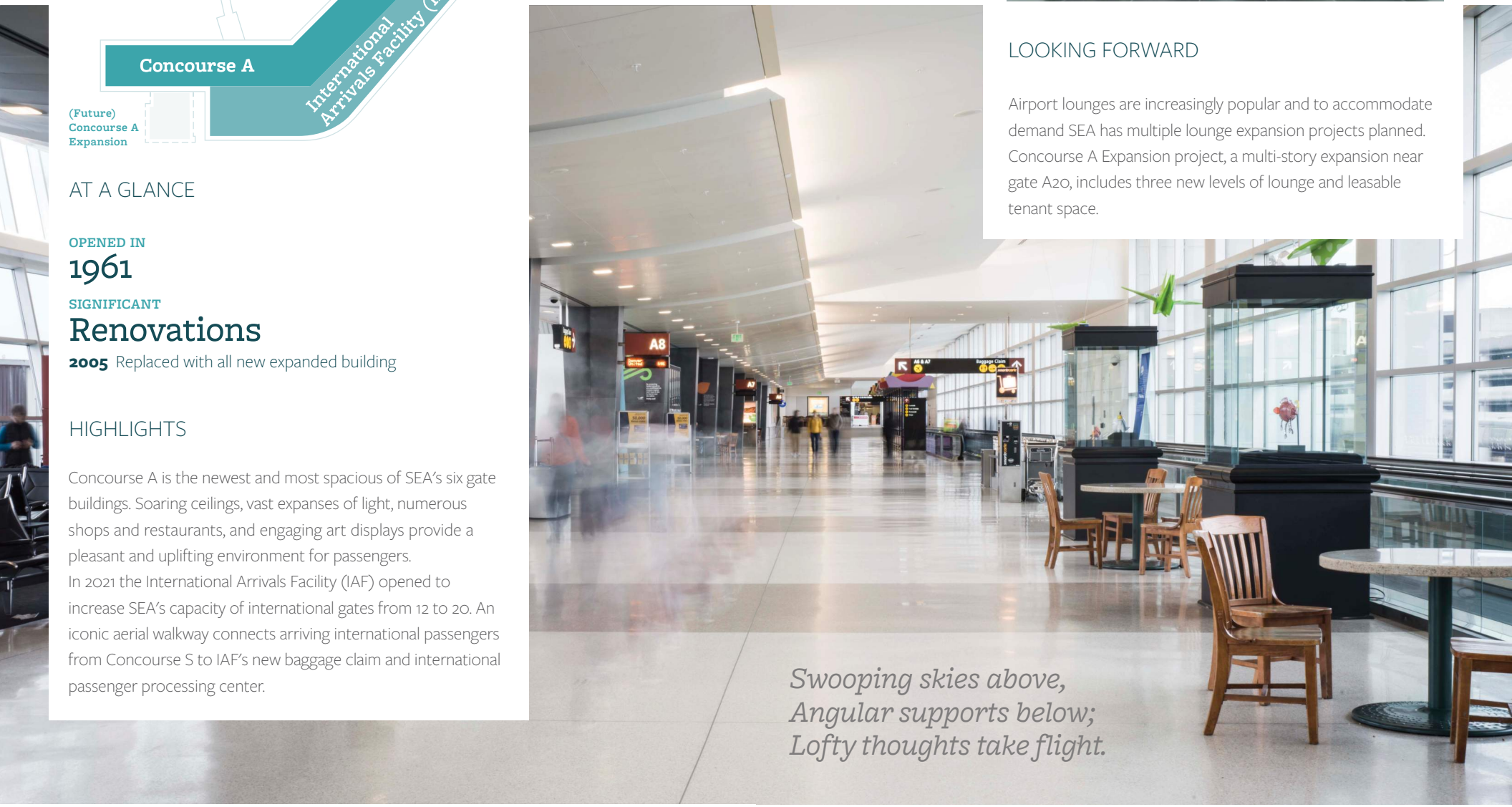
HIGHLIGHTS

Concourse A is the newest and most spacious of SEA's six gate buildings. Soaring ceilings, vast expanses of light, numerous shops and restaurants, and engaging art displays provide a pleasant and uplifting environment for passengers.
In 2021 the International Arrivals Facility (IAF) opened to increase SEA's capacity of international gates from 12 to 20. An iconic aerial walkway connects arriving international passengers from Concourse S to IAF's new baggage claim and international passenger processing center.



LOOKING FORWARD

Airport lounges are increasingly popular and to accommodate demand SEA has multiple lounge expansion projects planned. Concourse A Expansion project, a multi-story expansion near gate A20, includes three new levels of lounge and leasable tenant space.



Swooping skies above,
Angular supports below;
Lofty thoughts take flight.

CONCOURSE B

AT A GLANCE

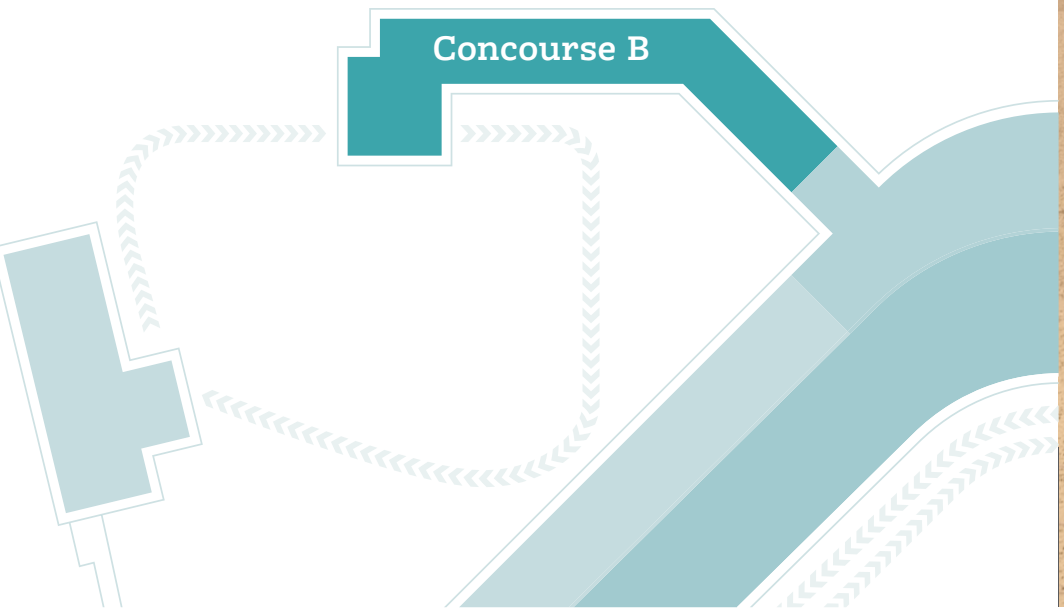
OPENED IN
1964

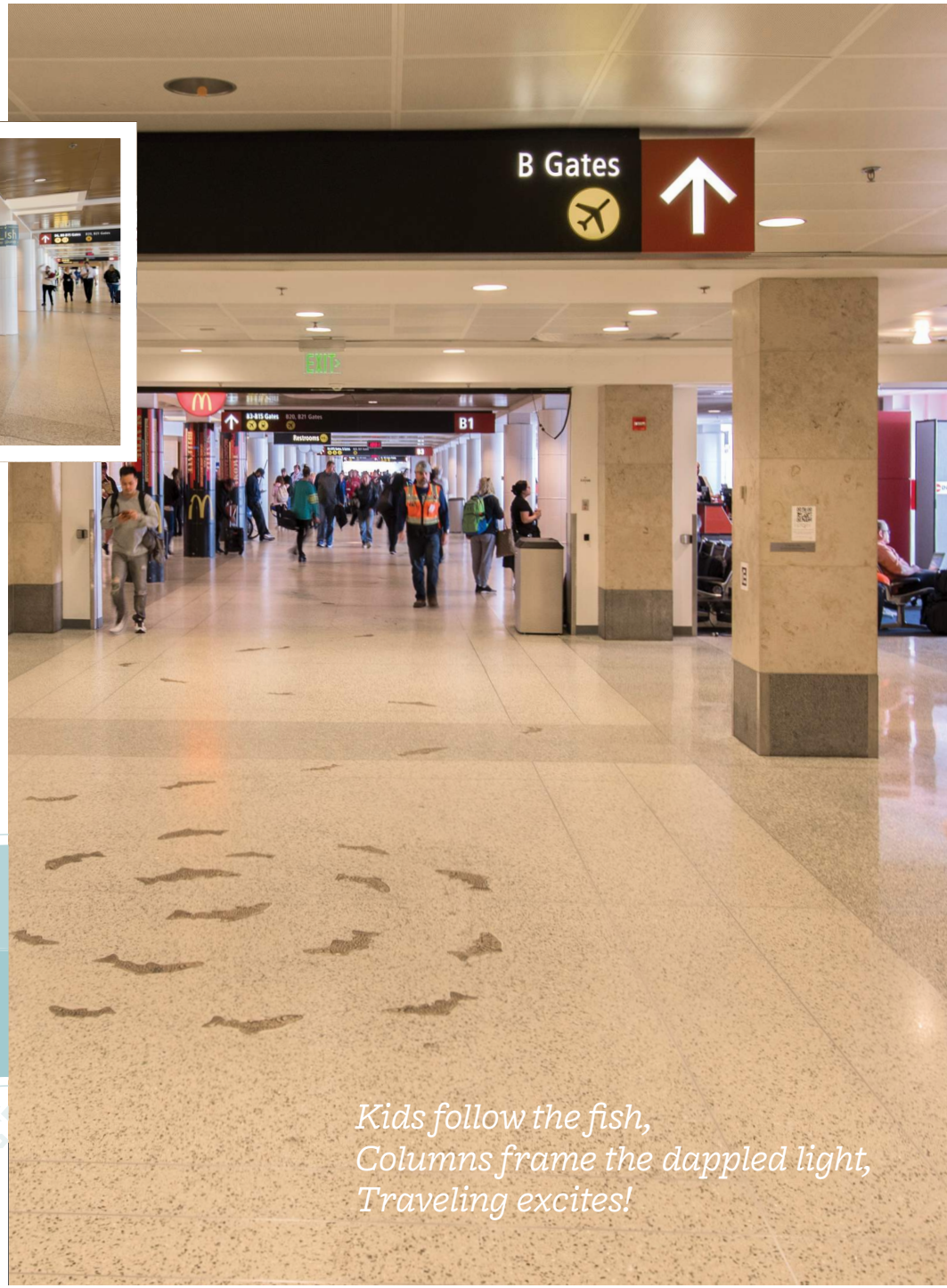
SIGNIFICANT
Renovations

1992 Expansion and remodel

HIGHLIGHTS

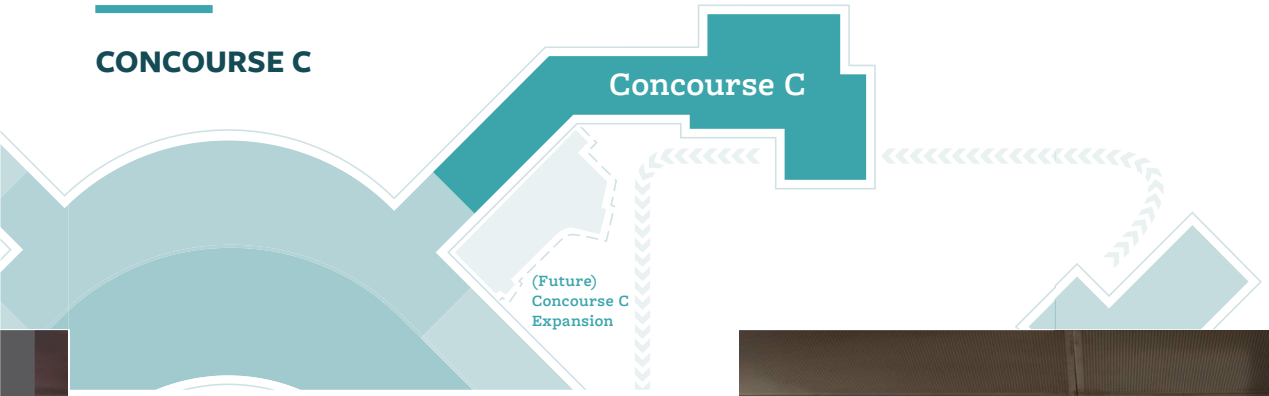
Concourse B incorporates the Northwest Sense of Place through use of materials and art. Children and adults alike are delighted with the bronze fish "swimming" in the terrazzo floor. The bronze ceiling mimics the dappled light of a northwest forest canopy.





Kids follow the fish,
Columns frame the dappled light,
Traveling excites!

CONCOURSE C



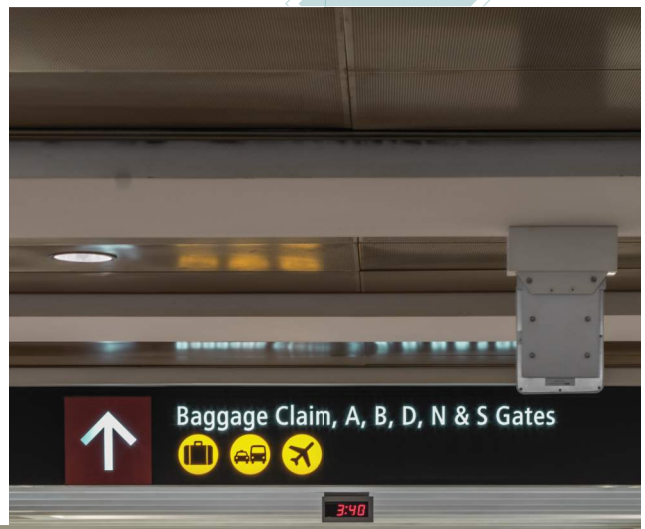
AT A GLANCE

OPENED IN
1966

SIGNIFICANT
Renovations

1992 Expansion and remodel

2016 Vertical circulation expansion



HIGHLIGHTS

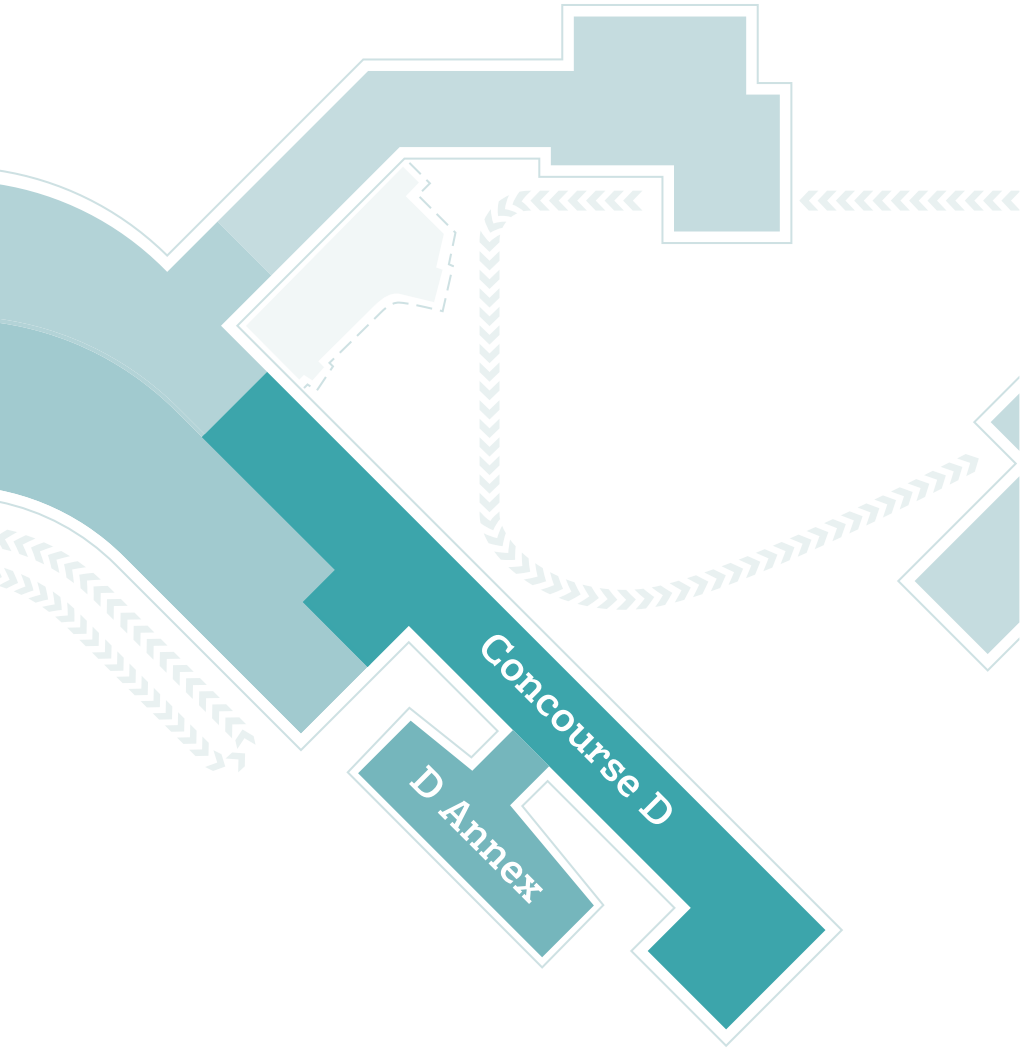
Concourse C's wide corridor and artistic terrazzo welcomes passengers to eat, shop, and relax before their flight. Upgrades to vertical circulation systems in Concourse C were completed in 2015, including weather protected sloped walkways and new elevators, greatly improving customer service and Alaska Airlines' regional operations.

LOOKING FORWARD

C Concourse Expansion (CCE) project expands the intersection of C Concourse with Central Terminal. The project increases dining and retail square footage within a large atrium with dynamic open stair and performance area. The upper stories of CCE include additional passenger amenities, outdoor viewing deck, lease-able tenant space, and future airline lounge.

Symbols underfoot,
Skylights punctuate the path,
Soft, colorful seats.

CONCOURSE D



Travel to the end,
Explore under the canoe,
Journey awaits all.

AT A GLANCE

OPENED IN

1959

SIGNIFICANT

Renovations

1968 Extension

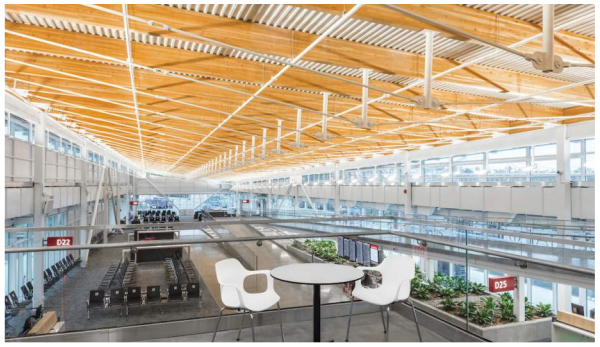
1992 Expansion/ remodel

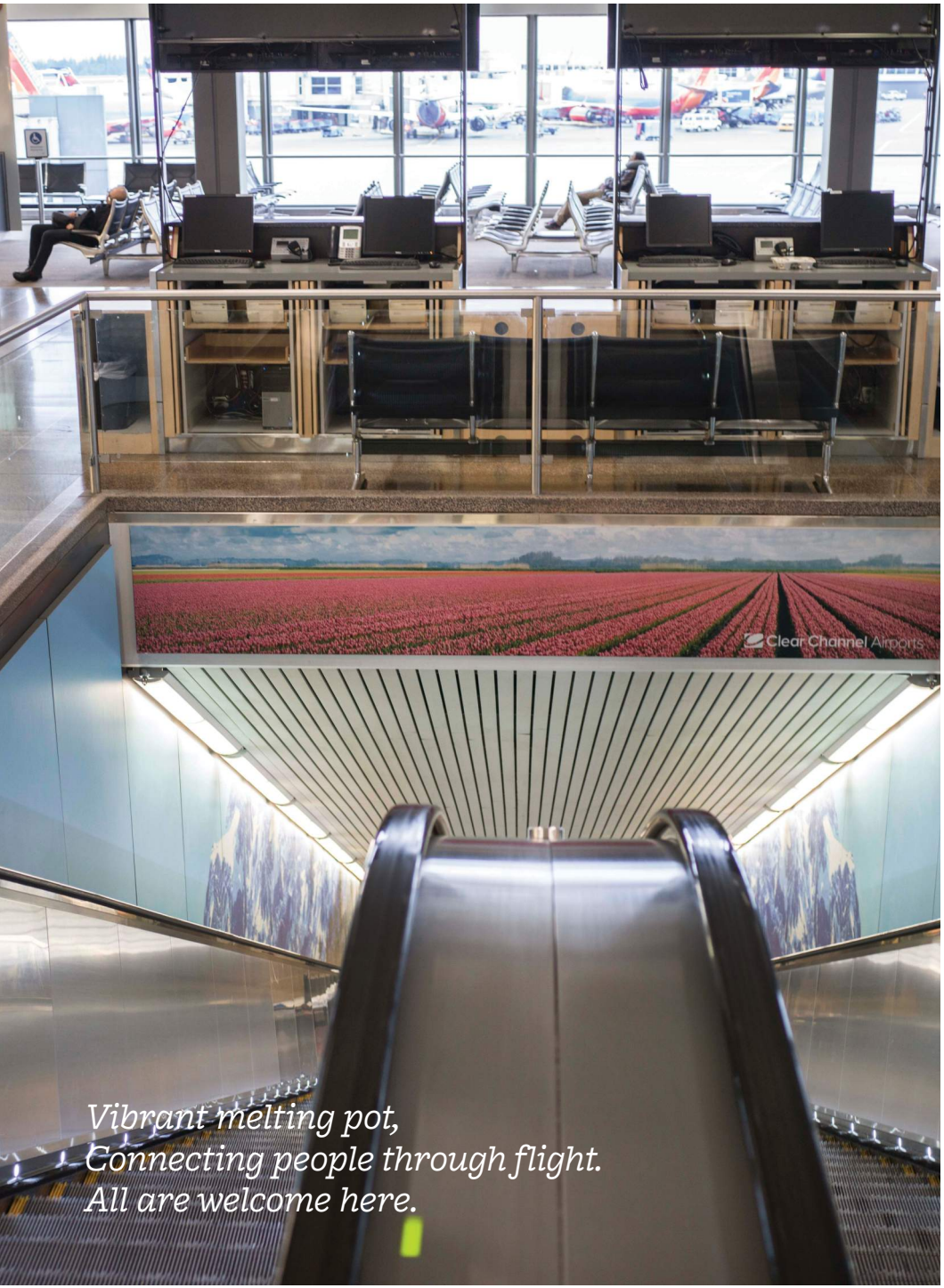
2018 D Annex holdroom addition

HIGHLIGHTS

Concourse D is the oldest and narrowest concourse at SEA and its materials represent the palette used in the early 90's renovation of Concourses B, C, and D.

Concourse D Annex is a beautiful addition to the Concourse D that features unique glulam timber and steel truss system constructed from locally sourced Douglas Fir trees that supports a dynamic roof. The two story, column-free space is bright and open with clear, intuitive wayfinding. The building includes 6 hardstand gates, a concession area, and children's play area. The Annex is the first airport terminal building in the U.S. to achieve Silver certification through the USGBC's LEED v4 for Building Design and Construction.





Vibrant melting pot,
Connecting people through flight.
All are welcome here.

CONCOURSE S

AT A GLANCE

OPENED IN

1973

SIGNIFICANT

Renovations

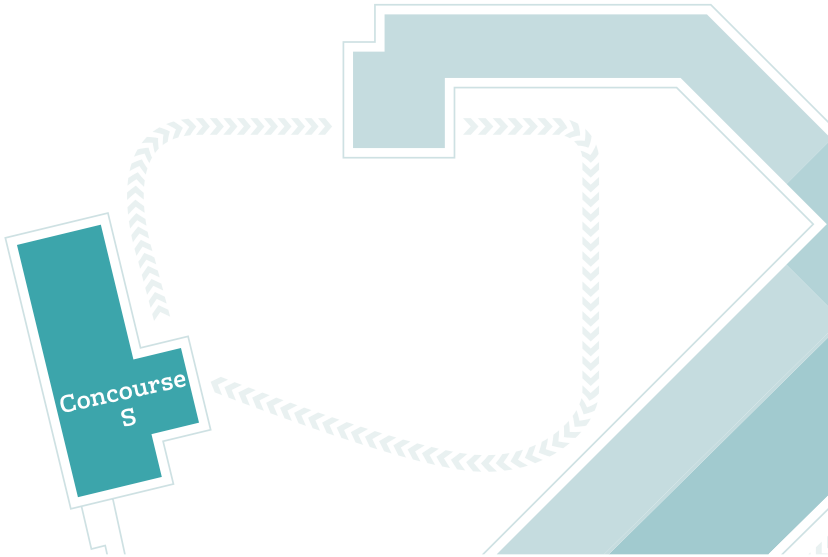
1983 West extension

HIGHLIGHTS

Concourse S (previously South Satellite) was built with Concourse N (previously North Satellite) and Main Terminal as part of the major 1973 expansion of SEA. Along with Concourse A, it is the entry and exit point for SEA's international flights and passengers. Recent improvements include a new aerial walkway spanning across existing aircraft taxiways connecting passengers to International Arrivals Facility (IAF) and concourse level finishes have been updated to provide a more contemporary look to brighten the space.

LOOKING FORWARD

A major capital project is planned to update and expand Concourse S to include a revised concourse layout, updated structural system, additional dining and retail options, passenger amenity spaces, and lounges.



CONCOURSE N

AT A GLANCE

OPENED IN
1973

SIGNIFICANT
Renovations

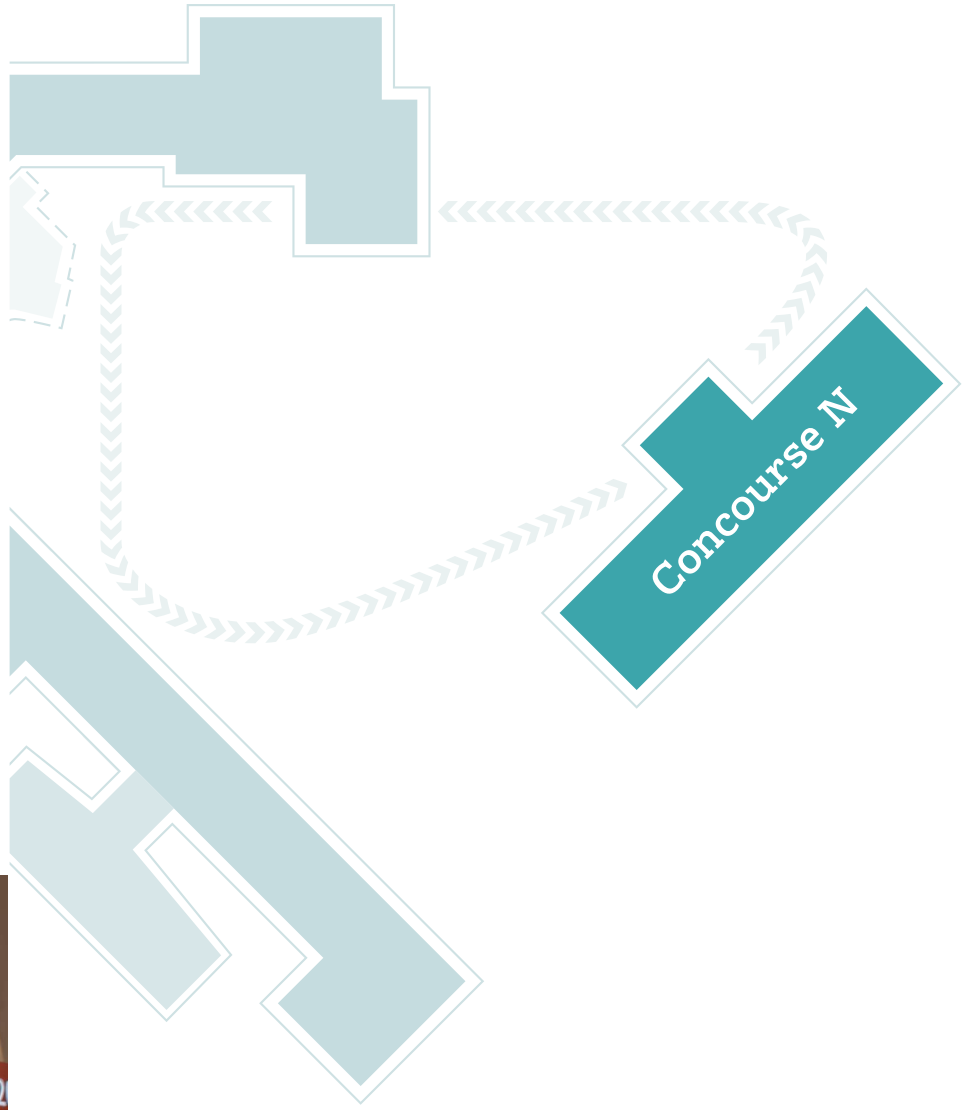
2019 West extension opened

2021 Remaining North Satellite renovation completed

HIGHLIGHTS

For 45 years Concourse N (previously North Satellite) has served as the center for SEA's United and Alaska Airlines flights. A comprehensive baggage system upgrade was completed in 2015, resulting in faster transfers, extended system life, reliability and decreasing operation and maintenance costs.

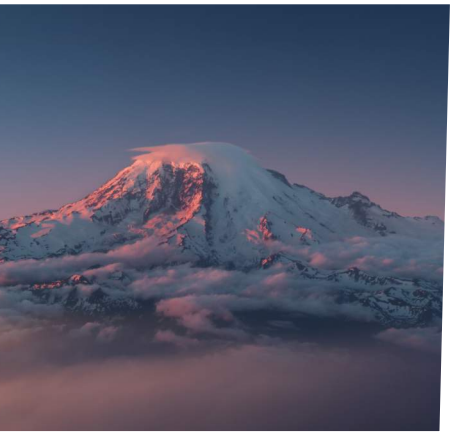
The North Satellite Modernization Project expanded and renovated this facility, as Alaska's flagship facility, responding to continued growth at SEA. The $550 million expansion and renovation of Concourse N included adding eight new gates with a 240-foot extension of the building to the west, an upper level mezzanine, doubled the existing dining and retail square footage, and introduced a new Alaska Airlines lounge with views of the Olympic Mountains.

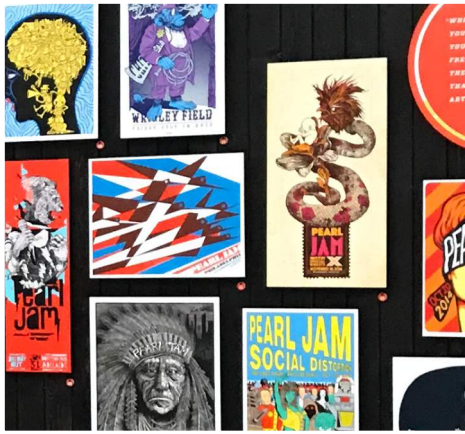


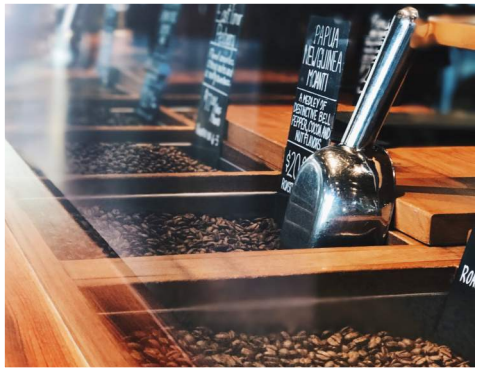
Quick train ride away,
The River shapes your new view,
Travel opens our eyes.

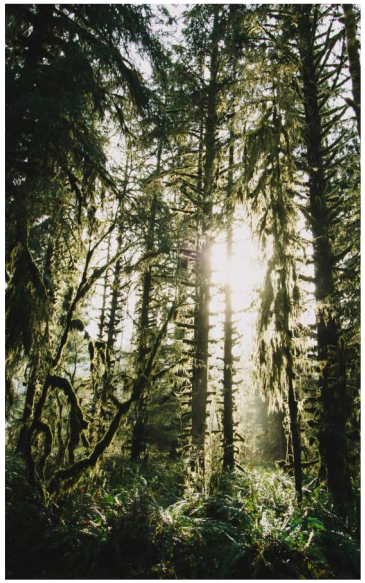
1.2

CRAFTING THE PACIFIC NORTHWEST SENSE OF PLACE









EVOKING THE VIBE

A socially conscious approach to design embodies the ethos of the Northwest region. SEA has chosen a process that contributes to improving the passenger and employee experience. The goal is the creation of inspiring public spaces that engage the emotions of all who pass through—passengers, airline personnel, SEA employees, and the workers who staff businesses in the terminal. Spaces that evoke the unique "vibe" and the authenticity of the Pacific Northwest, setting SEA airport apart from all other airports. Design consultants that shape the future of SEA should express this Northwest sense of place though a variety of means—architecture, interior design, art, graphics, and other media.

DEFINING A NORTHWEST SENSE OF PLACE

1 Distinctive, awe-inspiring natural environment

Invoke the feel of mountains, forest, water, and sky.

2 A dynamic, vibrant built environment

Reference the cities, neighborhoods, parks, and buildings of the Pacific Northwest–both historic and modern-day.

3 A pioneering, cutting-edge spirit

Think of the early settlers to the region, trade and commerce, industries (like timber, fishing, biotech, and aviation), and technology.

4 Rich, diverse culture and history

Consider the various events, arts, entertainment, sports, and education happening in the region.

5 The people

Who we are today and the groups and individuals who have been significant in the region's past.

6 Thriving international trade, commerce, and tourism

Think of ways to create experiential zones that create Pacific Northwest setting by combining visual elements with other senses such as sound, smell, and touch.

7 Green values

Creating and maintaining a sustainable environment.

8 Dining, retail, and advertising

Develop relationships with appropriate brands and concepts.

If you don't know where you are, you don't know who you are.

—Wendell Berry, American Bioregionalist

PROGRESSIVE NORTHWEST MODERN

SEA design vocabulary can be defined as "Progressive Northwest Modern." This style is a blend of progressive modern architecture and the regional influences found in the natural environment and cultures of the area. The term "Progressive Northwest Modern" conveys two fundamental ideas. First, continuity with its existing modern architecture is critical to achieving a unified image for SEA. Second, each new design should be progressive and forward looking while being respectful of the modernism of existing terminal facilities.

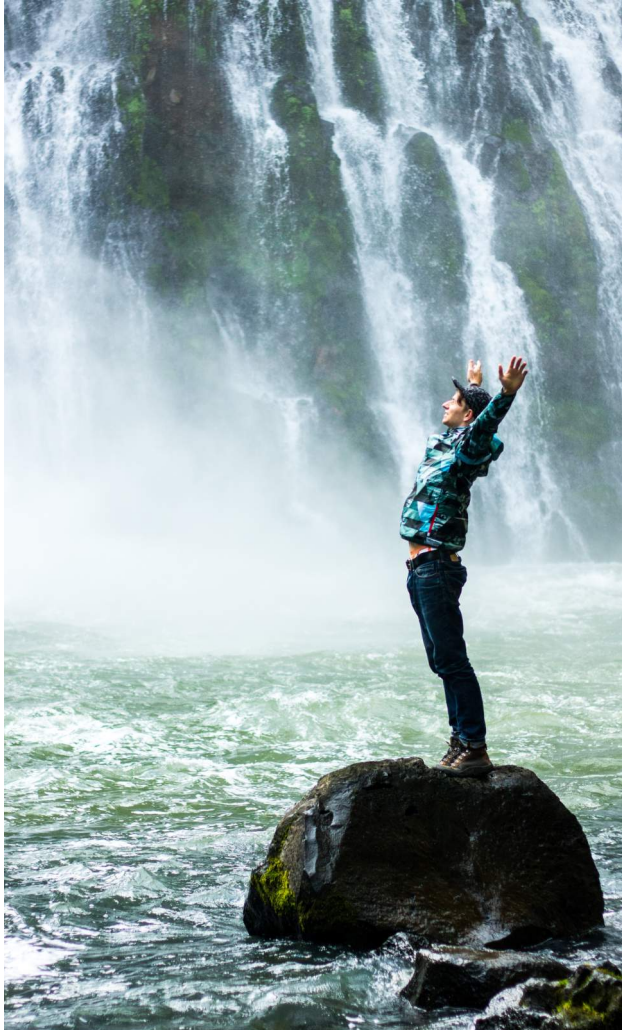
PROGRESSIVE NORTHWEST MODERN FUNDAMENTALS

1. Maintain continuity with existing architecture.
2. Be respectful of the existing terminal's modernism.

NATURE AS A REFERENCE

Architecture and interiors in the Pacific Northwest have responded HISTORICALLY TO THE NATURAL environment, contending with its power in unique ways.

This response to nature has created a vernacular design style, a particular kind of design expression that seeks to connect materials, structure, and nature. The region's dramatic and varied geography includes mountains, volcanoes, islands, temperate rain forests, and multiple bodies of water; these, and abundant natural resources, as well as maritime, agricultural, and industrial histories form a singular context for creativity. There is an inherent human inclination to **connect with nature.** This idea embodies the tenets of biophilia. By extension, biophilic design incorporates natural materials, natural light, vegetation, nature views and other experiences of the natural world into the modern built environment. SEA, as a gateway to the Pacific Northwest, embraces this aesthetic style and its impact on all who use the airport, linking it to the city, community and region in which the airport belongs.

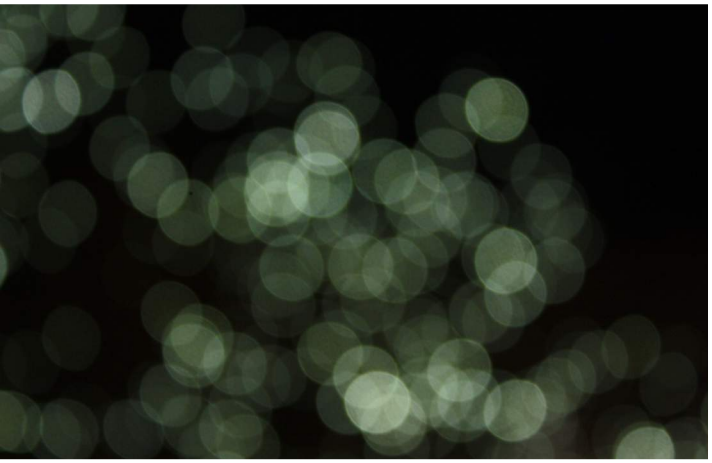


Airports say a lot about a place because they are both a city's business card and its handshake; they tell us what a community yearns to be.

—Pico Lyer, The Golden Soul

Creating an experience that celebrates nature is not about recreating the "great outdoors." A design goal of evoking nature, using nature as a reference is preferred, in impactful, considered ways, balancing the literal with the abstract.

Warm wood detailing, expansive areas of glass, exposed structure, deep overhangs, are all elements in a Northwest sense of place "tool kit." Photography is often employed to reinforce a sense of place, but designers are encouraged not to simply use photos of local icons to impart authenticity. Rather, consider the many regional icons more deeply, seeking to discover and portray the underlying principle of those icons, and celebrating them in a less literal, more abstract way.



Architects and interior designers can achieve this through a variety of means. Materiality—for instance, using a real stone that is regionally sourced, or a species of wood that is local to the area. This honest use of materials is a prerequisite for design at SEA. Or lighting—maybe a moment of surprise and delight, such as a pool of dappled light that recalls a forested path. Or structure—exposed framing members that speak to the utility and strength of early agricultural buildings in the region. This "structural honesty" is celebrated in various ways throughout SEA. One striking example is the great glass wall of the main terminal. Its fully exposed structural system uses machined fittings and cables to create the open view.

SEA DESIGN PREREQUISITES

honest use of materials

LOCAL, NATURAL FINISHES

incorporate natural light

CONNECTION TO THE OUTDOORS

structural honesty

EXPOSED STRUCTURE

CRAFTING AN AUTHENTIC EXPERIENCE

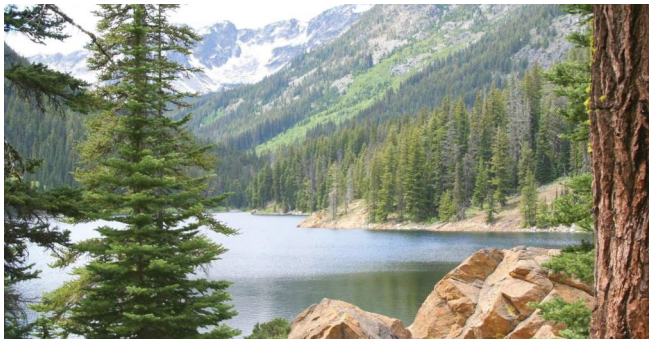
For some guests, a connection through SEA is their only exposure to the Pacific Northwest region. But the changing nature of air travel, impacted by our everything/everywhere culture, means that SEA is so much more than just a place to travel through, it is it's own mini-city. SEA, while obviously serving air travel needs, is also a place to play, work, shop, dine, and experience art, exhibits, music, and other cultural aspects that make the Pacific Northwest a unique destination.

That uniqueness is what we are trying to distill in SEA's design, and it should be immediately apparent when a person disembarks from an airplane, or enters the terminal from outside.

SEA VISION

We think of the airport as a metaphor of the city with the main terminal as the downtown and each concourse and satellite is a neighborhood that represents the diversity of culture and geography of our region.

- Concourse A: Historic and Modern Industry
- Concourse B: Coastal Region
- Concourse C: Cascade Mountain Range
- Concourse D: East of the Cascade Range
- Concourse N: Canyons and Rivers
- Concourse S: Cultural Diversity



Concourse A

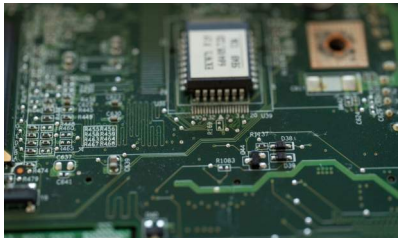
Historic and Modern Industry in the Puget Sound

Inspiration: entrepreneurial, change-makers, craft

Color & Materials: earth tones, wood, metals





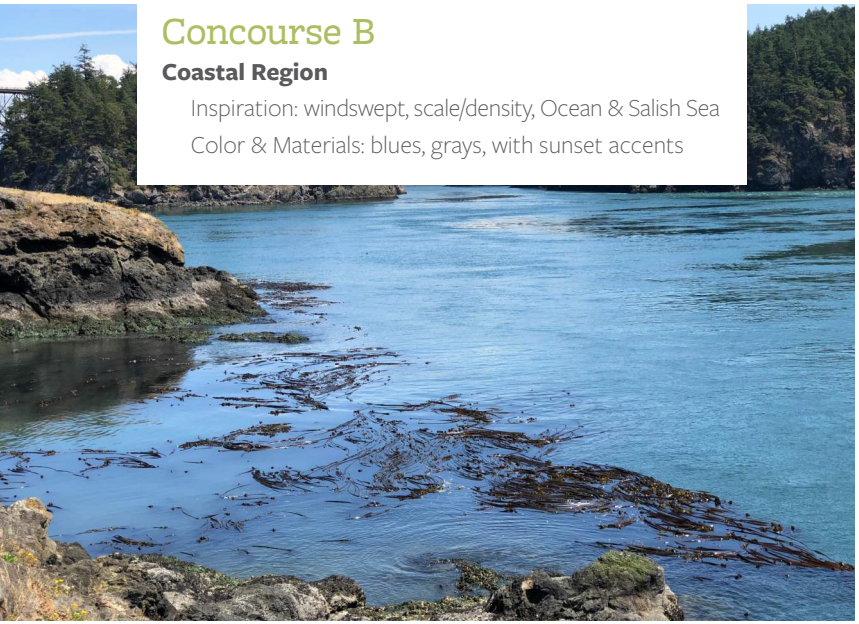



Concourse B

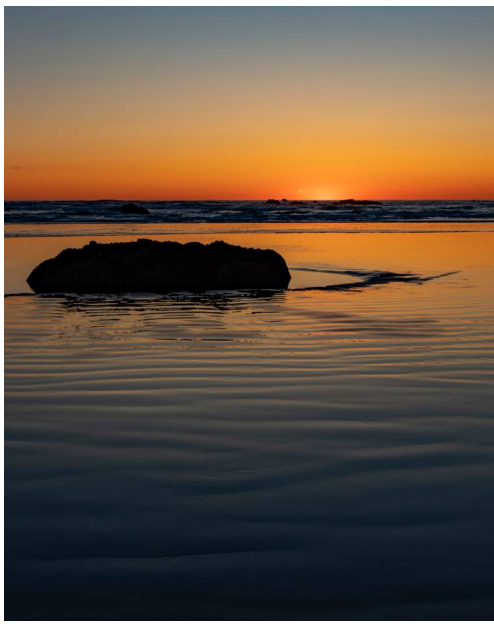
Coastal Region

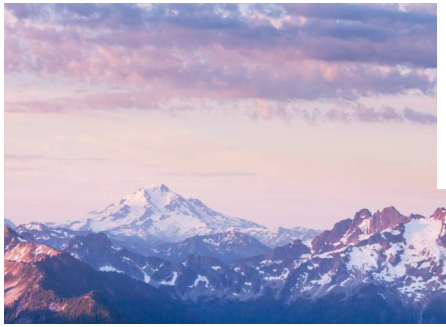
Inspiration: windswept, scale/density, Ocean & Salish Sea

Color & Materials: blues, grays, with sunset accents







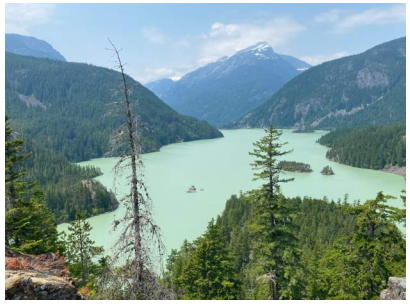


Concourse C

Cascade Mountain Range

Inspiration: grand, awe-inspiring, evolving vistas, vibrant

Color & Materials: green, plum, brown, with wildflower accents



Concourse D

East of Cascade Range - Palouse

Inspiration: agriculture, rugged, wide expanse, textural

Color & Materials: orange, green, tan, sunrise accents

Concourse N

Canyons and Rivers

Inspiration: organic shapes, movement, unexpected moments

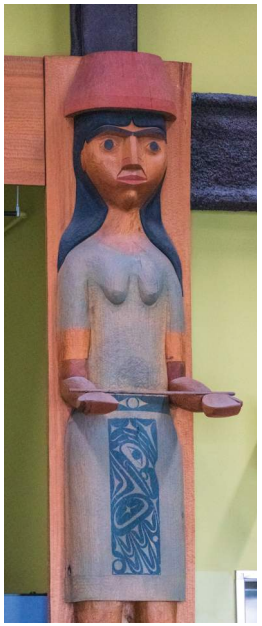
Color & Materials: blue, brown, green, white

Concourse S

Cultural Diversity - celebrating history of Washington

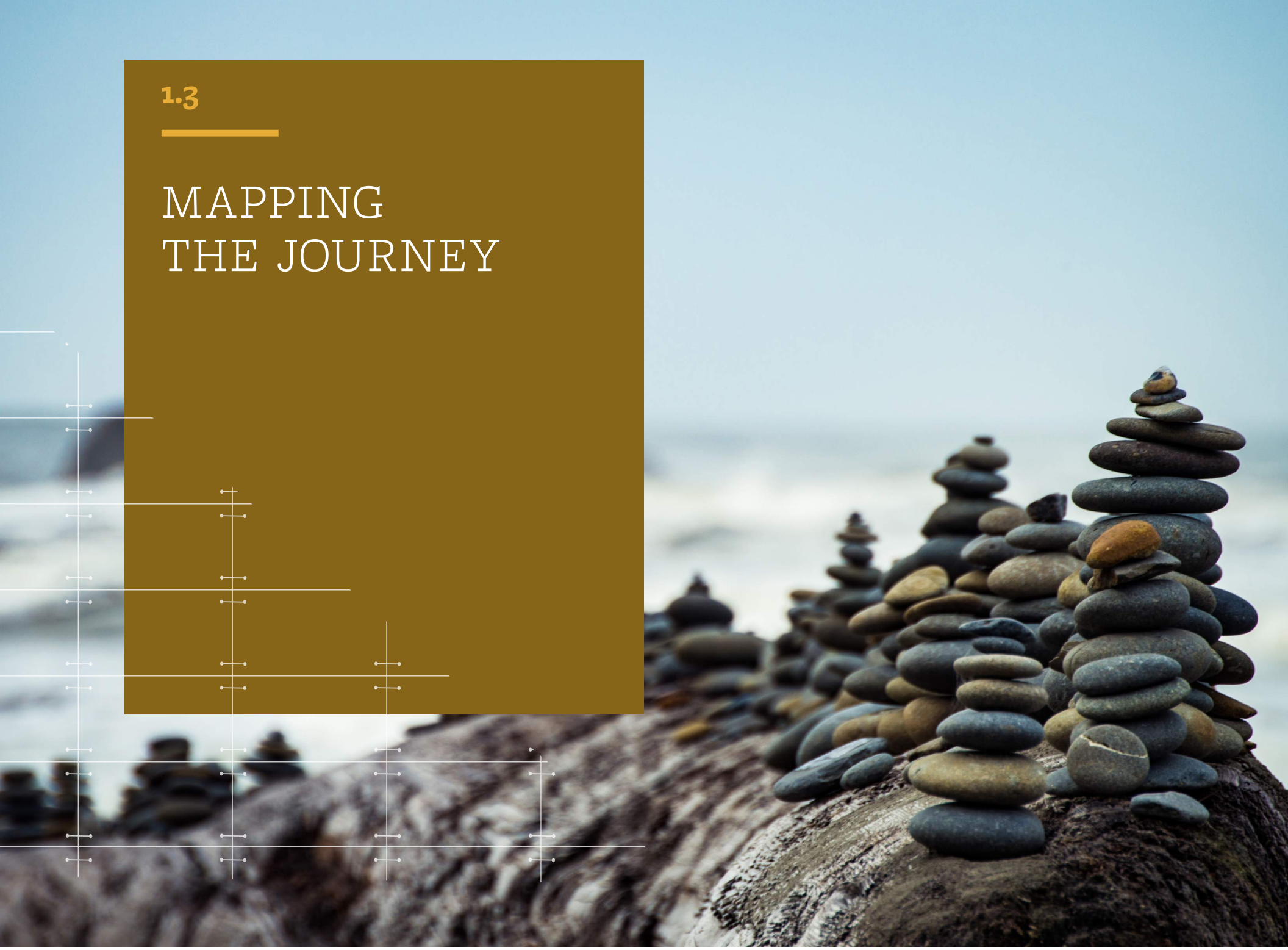
Inspiration: vibrant, retrospective, respectful, educational

Color & Materials: neutral refined base, bold accents of color



1.3

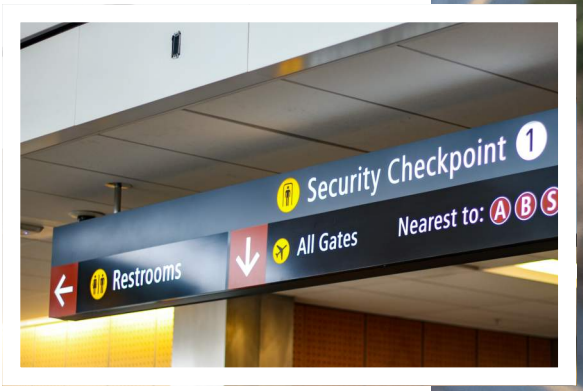
MAPPING THE JOURNEY



CONSIDERING PASSENGERS & EMPLOYEES

SEA is committed to providing the best possible experience for both its passengers and the many employees and varied employers who work there. In addition to serving tens of millions of passengers annually, SEA itself also employs over 30,000 people. Creating a progressive working environment for all employees has a positive net impact—happy employees mean happy passengers.

Design consultants must consider various components when planning projects, including how to enhance the spatial experience, how to emotionally choreograph that experience, and how to provide a clear wayfinding experience for a variety of passenger types and employees.



SEA DESIGN CONSIDERATIONS

1. Enhance spatial experience
2. Choreograph emotional journeys
3. Provide clear wayfinding

ENHANCING THE SPATIAL EXPERIENCE

Public Spaces

Public spaces should be clearly organized, visually open and engaging, generously scaled, and appropriate to the use of the space.

Public Circulation

Public circulation areas should be comfortably sized to allow for easy traveler movement during peak traffic periods.

Vertical Circulation

Vertical circulation between floor levels should be very open, enabling clear way finding and offering opportunities for spatial drama and visual connectivity.

Public spaces should be free of physical impediments that would reduce ease of movement, both for passengers with and without disabilities, and for employees. Service elements should be consolidated and located in alcoves or otherwise well integrated to avoid congestion in public circulation paths. Visual clutter inhibits wayfinding and orientation. "Controlling clutter" is not just an operational issue; designers should develop clear zones for service elements, creating a framework that allows future evolution of service needs without compromising the image and coherence of the public spaces.

Consider how materials, finishes, and artwork can also support and clarify the intended spatial hierarchy.

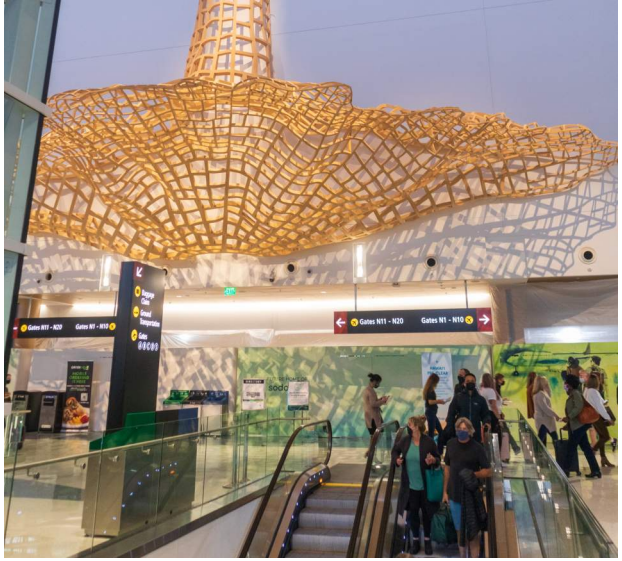
Give primary spaces greater emphasis through the use of featured materials or through prominent integration of artwork. Develop lighting and signage in ways that strengthen and support the spatial hierarchy.

CHOREOGRAPHING THE EXPERIENCE

Approach, decision, arrival, and relaxation are the series of emotional phases that passengers experience while traveling.

The design of the public spaces should support the varied emotional states at each of these sequential experiences. When approaching a new space, passengers seek reassurance with clarity of wayfinding being the most critical aspect of this point in the journey. Your designs must provide a hierarchically clear spatial organization and include intuitive cues to reassure passengers. At decision points where paths converge, your designs must be appropriately scaled to temporarily slow passengers in order for them to make decisions.

Your designs should celebrate arrival moments in a new space or intermediate destination. The creation of gateways and focal points, whether through special architectural features or artwork, can provide a memorable experience. These special features serve an additional purpose as easily defined meeting points, or the perfect photo opp for posting on social media.



And finally, relaxation! Your designs for gate holdrooms and concession areas must encourage relaxation and discovery, focusing on exterior views and natural daylight where possible. Co-locating food and beverage concessions with gate holdrooms allows for ease of use, allowing passengers to take time to "unplug." A balance of comfort with drama is the goal. **Surprise passengers with how comfortable it can be to be in an airport.**

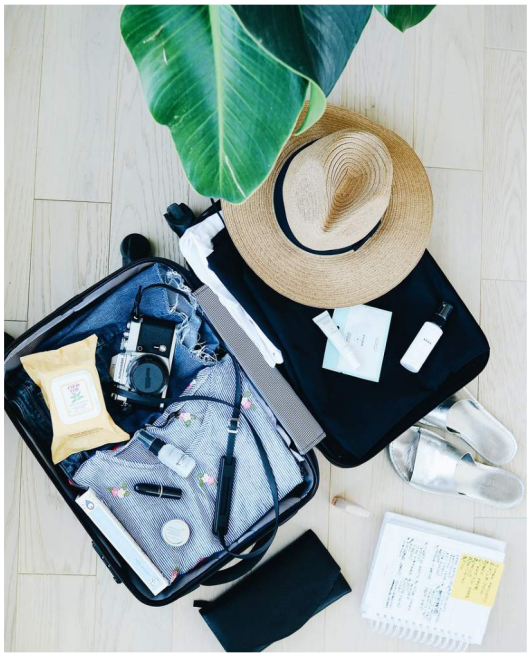
DEFINING PASSENGER TYPOLOGIES

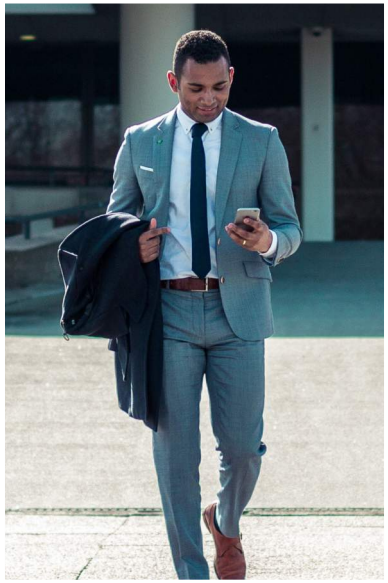
To choreograph the best experience, it is essential to understand what is important to different types of passengers as they experience SEA. Design consultants are encouraged to think about the different passenger journeys through SEA: departing, arriving, and connecting passengers. Passenger typologies are another critical filter to apply while planning and programming projects. The final filter is technology. Self-service technology is prevalent at SEA, and designers must consider how the experiences they create can adapt and tailor to this trend, always keeping specific passenger types in mind. Engaging with technology in SEA will increasingly affect the experience. Equally important will be the desire to retreat from technology. These differences can positively shape the experience. Journey "moments" through SEA include a variety of experiences: curbside (both departing and arriving), ticketing, checkpoint, concessions, concourses, holdrooms, play areas, restrooms, art and exhibits, baggage claim, and connectors, to name a few.

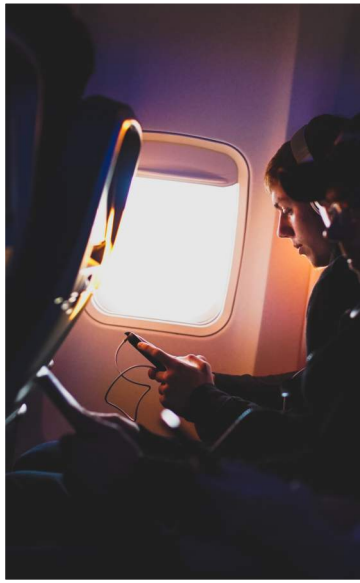
TYPOLOGIES TO CONSIDER

BUSINESS | LEISURE | FAMILY

SPECIAL NEEDS | ASSISTED | ANIMAL





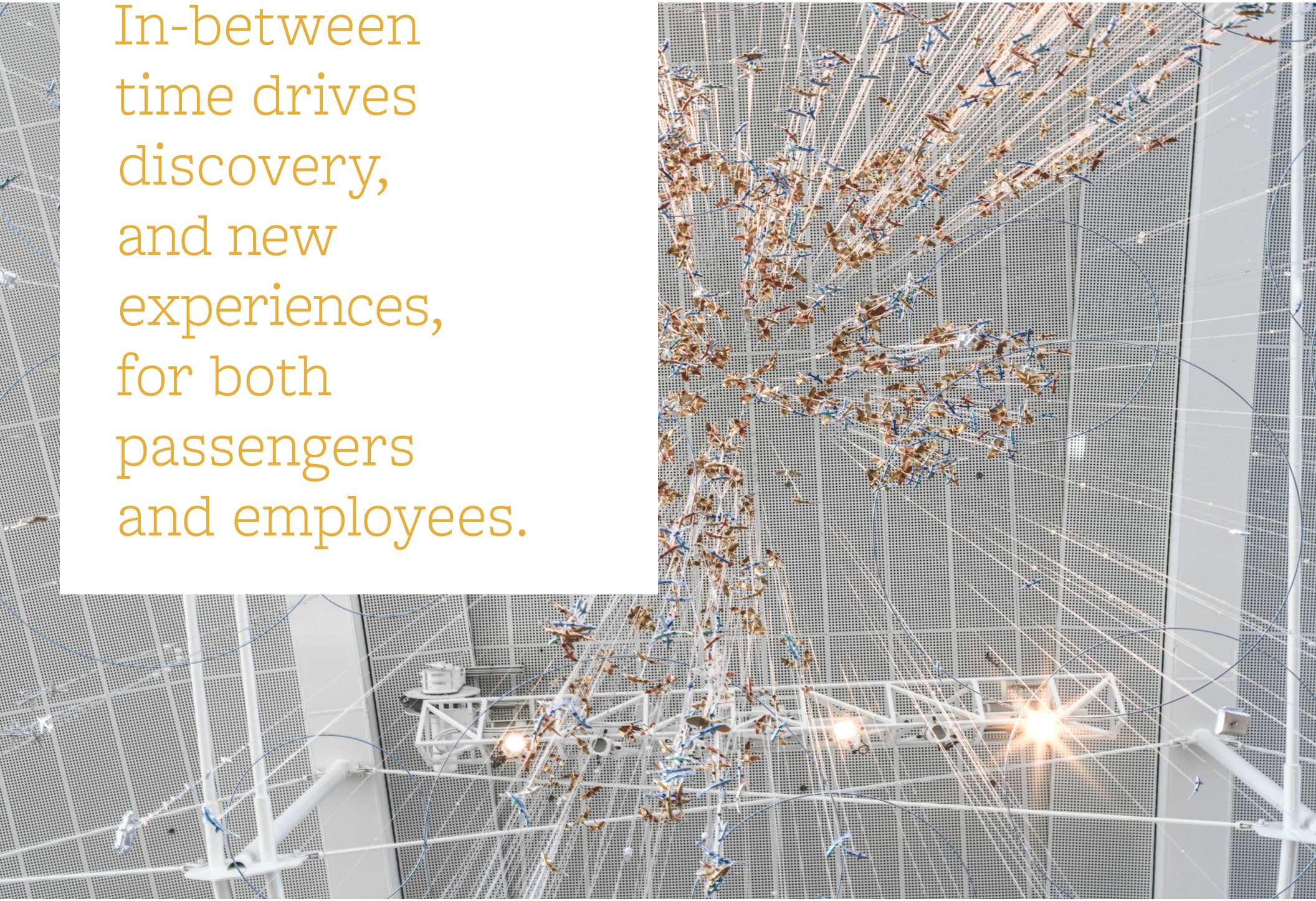


Consultants may find that creating a journey map will guide their programming and planning. **Crafting a narrative for key passenger types, then physically mapping this through all the journey moments, can result in more thoughtful approaches to architecture and interior design.** A key component to this mapping is to consider how a passenger's journey through SEA can maximize non-airline revenue. Can your journey map facilitate 100% of passengers passing by 100% of concessions? Can the journey map also support community and social connection, allowing users

to socialize with family and friends? The time spent waiting to depart should always be productive. This "in-between" time drives discovery, and new experiences, for both passengers and employees. Analyzing the needs, wants, and preferences of differing passenger types and how the physical environment can respond to this, will be a key strategy in positively affecting non-airline revenue at SEA.

Great design is great for business!

In-between time drives discovery, and new experiences, for both passengers and employees.



PROVIDING CLARITY OF WAYFINDING

SEA hosts millions of passengers, guests and employees annually, each with a unique point of view and destination. The most basic need of each user is a clearly defined wayfinding system.

SEA is proactive in assessing its wayfinding systems, implementing new strategies to improve the passenger experience. As a result, design consultants must have a clear understanding of the latest wayfinding guidelines and strategies at the start of design projects.

Design consultants must engage with the SEA Wayfinding and Visual Environment Team at the beginning of the design process to ensure that visual communication is integrated into the design, not added after the design is completed. A uniform hierarchy of messaging, categorized into “primary” (directional and identification) and “secondary” (auxiliary services and support functions) messages will positively impact passenger flow. Although wayfinding clarity is key, designers are encouraged to not sacrifice the character of the spaces they affect. Consider embedding sensory cues into your designs as a way of adding an intuitive layer to the wayfinding system. For example, a creative use of color or pattern in flooring materials, whether terrazzo or carpet, can provide a subliminal reinforcement to a passenger’s progression through the airport.

Additionally, new technologies will have a direct impact on wayfinding, from dynamic overhead signage to smart phone apps, all working in concert with static messaging to guide passengers through the SEA experience.

1.4

ADOPTING AN EXPERIENCE DESIGN APPROACH

WHAT IS EXPERIENCE DESIGN?

In the context of the airport, it can be described as design driven by the thoughtful consideration of the moment of engagement, or touchpoints, between passengers and employees and the SEA brand, and the ideas, emotions, and memories that these moments create.

SEA believes a high-quality environment increases employee and passenger satisfaction. The design consultant's role in creating inspiring public spaces with a positive emotional impact is essential to this vision.

By substituting the word "people" with "passengers" in Maya Angelou's quote, a subtle mindshift begins to occur; an acknowledgment that just as experience is emotional, so is design.

People will forget what you said, forget what you did, but people will never forget how you made them feel.

—Maya Angelou, Poet

experience design

noun

It's the "X" factor of design, inspiring the creation of great places that engage people's emotions and keep them coming back.

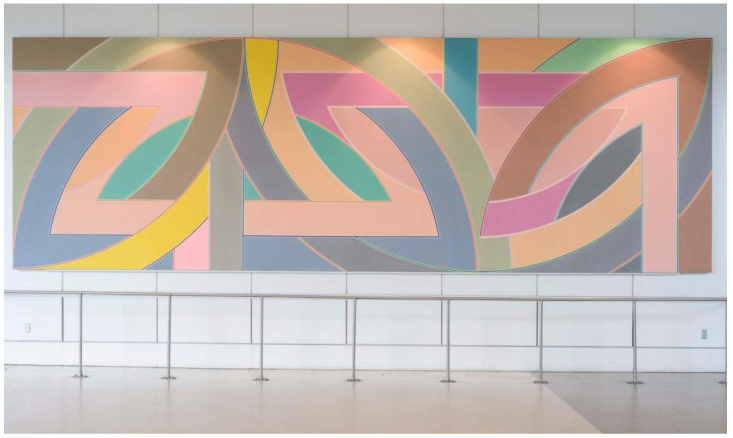
PASSENGER AS GUEST

Think of passengers as "guests." Great hotels anticipate the needs and desires of their guests, understanding that they can't exceed expectations if they don't understand them. Creating the best experience for passengers touches on several things: stress reduction, optimizing operational systems, and a service style that emulates the hospitality industry. While design consultants may not be able to affect all of these things, one goal to strive for is "inclusion," the notion that **all SEA passengers should be made to feel like they are members of a premium club.**

Something as simple as providing a variety of seating types in your designs can alleviate passenger stress. Are there chairs that are designed specifically for the elderly? For children and families? People with disabilities? Are there seating groups that promote social interaction? Powered benching systems borrowed from the workplace world that enable working on your laptop or phone? Lounge options that provide more privacy? By offering multiple choices in the same area, passengers feel both more considered and more in-control of their environment, all elements in a stress-reduction program.

CREATING THE BEST PASSENGER EXPERIENCE INVOLVES:

1. stress reduction
2. optimized operational systems
3. hospitality service model



SHIFTING THE MINDSET

Borrowing from the hospitality industry, single-use spaces have increasingly yielded to spaces that support a variety of activities. SEA, while providing its obvious role of air travel, recognizes that traditional uses of space are blurring. Passengers—guests—are working, dining, shopping, exercising, engaging with art, everywhere throughout the terminal, concourses, and satellite buildings. Spaces that blur boundaries, that are adaptable to change as activities shift over time, are spaces that meet a wide variety of needs for a wide variety of guests. Certain spaces at the airport must maintain primary focus but by layering in other activities to expand a guest's experience, a richer, more emotional response can be achieved.

For example, one of these spaces is the checkpoint, typically the most stressful part of a passenger's journey through the airport. While you might not be able to control that area due to TSA regulations, it is important to consider how your design can "reset" a passenger's emotional state after they pass though security. Consider the calming effect of nature, such as natural daylight, if possible. **Incorporating plantings and artwork are also elements that aid in shifting the mindset to one of discovery.** Direct visual connection to flight information displays (FIDs) is critical, as is de-cluttering this zone from distracting visuals such as advertising. A calming experience is the goal, with ample seating areas where passengers can "recompose" themselves.

I know I just walked through the door but this doesn't feel like any of the airports I've been to. There is such a local Seattle vibe.

COMFORTABLE NOT CROWDED

Consultants addressing the physical environment at SEA are encouraged to create “homes” for a myriad of things: ATMs, shoe shine stands, vending, baggage carts, and advertising. The goal is seamless integration, not clutter.

A primary area of passenger hospitality is gate holdroom comfort. Consultants should review the document “Managing the Factors Affecting Comfort in Waiting/Gate Areas, 2012 Gate Comfort Project,” and any lessons learned post publication date. The key finding is that the quantity of seating is the most important factor affecting gate comfort. This issue must be balanced against the possibility of crowding. Wi-fi service and access to electrical power are also important aspects to ensure the best possible gate experience. When planning for gate comfort, consider a variety of seating types, such as lounge chairs and occasional tables, and wheelchair spaces, to complement tandem seating. Adequate electrical outlets are an important aspect of gate comfort, as is circulation unimpeded by baggage.

Consultants should understand the intended airline gate podium configuration and boarding queuing space. Design for change as well, anticipating shifting airline boarding practices that can have huge impacts on gate layout.

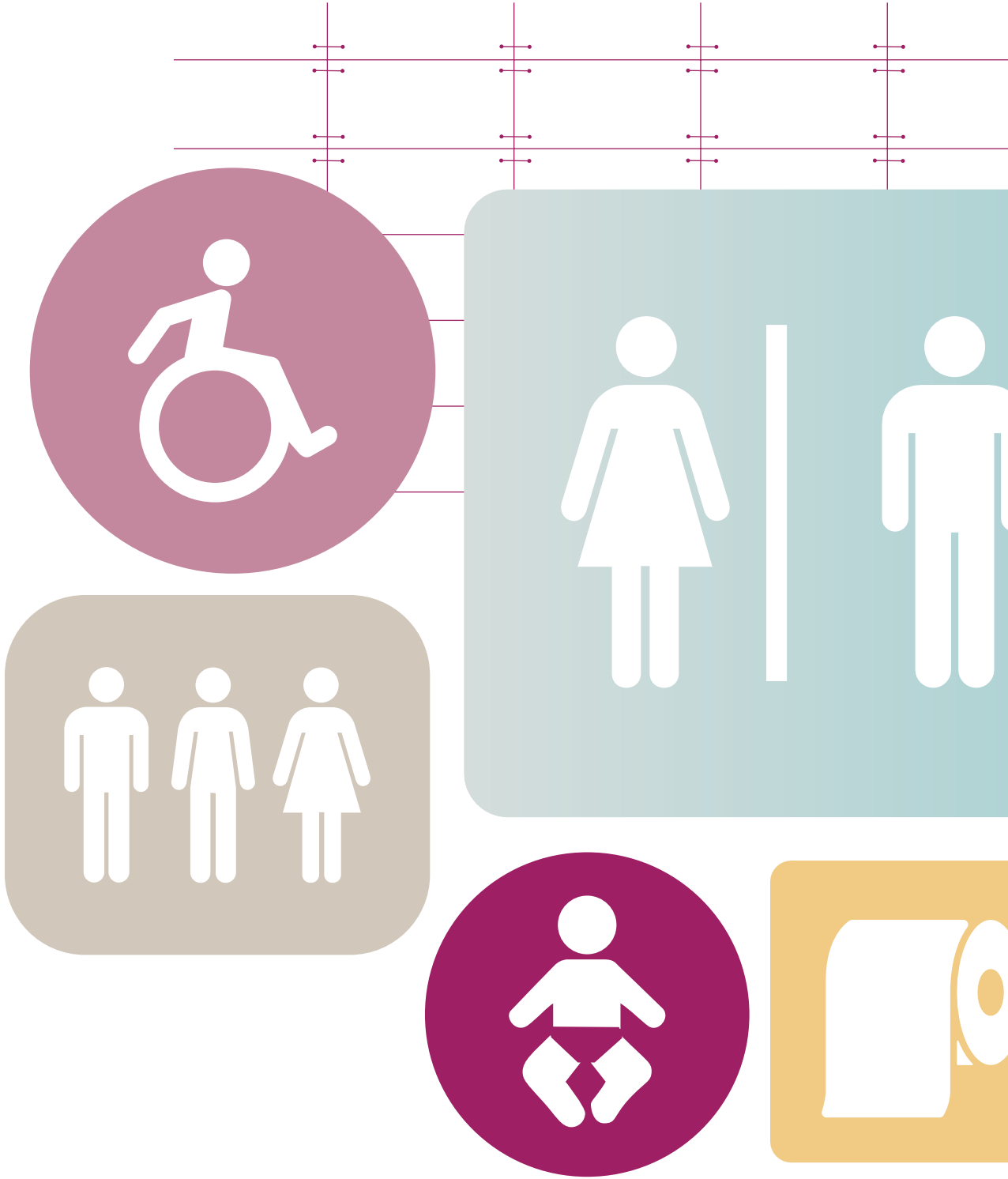
GATE COMFORT ENTAILS:

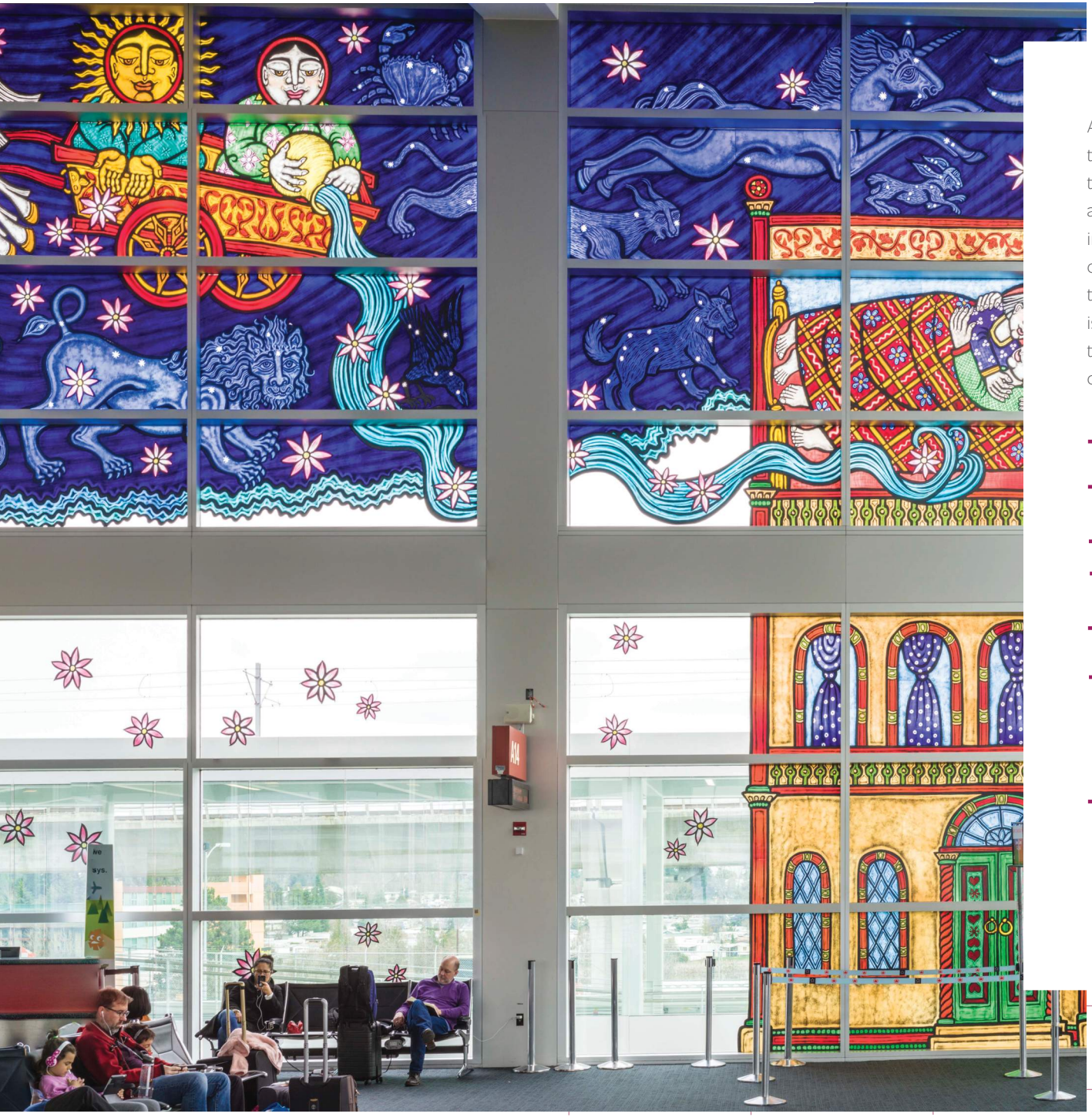
THE RESTROOM EXPERIENCE

It is an undeniable fact that great restroom design sets the baseline for every passenger's expectation of a great airport experience. The goal is a restroom experience that is like that of a premier hotel, that has rigorous attention given to the smallest detail, that goes beyond the basics. Whether through word of mouth, or posted for thousands to see on social media sites, people talk about restrooms and in many cases, every journey begins and ends with a trip to the restroom! Consultants affecting the location and design of restrooms must familiarize themselves with the SEA Restroom Guidelines, and any lessons learned post publication date.

The location and design of restrooms can have an overwhelming impact on the guest experience. In addition to traditional gender-specific restrooms, consider the special requirements of family restrooms, all-gender restrooms, and accessibility needs. And don't forget passengers traveling with pets! The location and design of both pre- and post- secure pet relief stations is not only important, but a code requirement.

Every journey begins and ends with a trip to the restroom.





Although the experience design approach requires more thought and rigor to achieve, it's important to remember that to achieve real impact, you don't need to be perfect at everything, just excellent at the right things. It's also important to remember that many places and spaces today compete on the experience they deliver. A unique approach to design thinking is encouraged by SEA, so that its brand is differentiated, and therefore memorable. So think about the experience design approach not as a series of rules that constrain your design, but as a framework for your creativity.

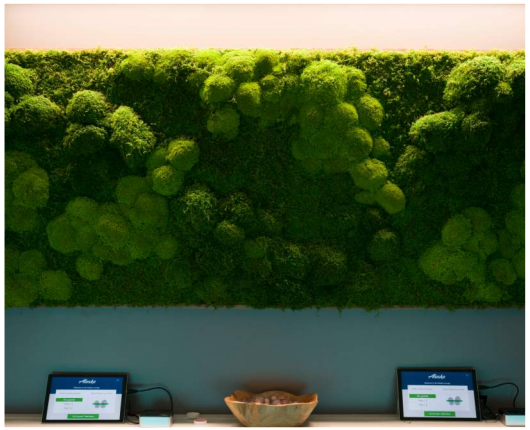
Learn the rules like a pro, so you can break them like an artist. —Pablo Picasso

1.5

INTEGRATING SUSTAINABLE PRACTICES

SUSTAINABILITY PIONEERS

As the first large United States hub airport to fully incorporate sustainability practices as a key component of its master planning effort, SEA is a pioneer. SEA's Sustainable Airport Master Plan (SAMP) develops a long-term blueprint for the airport over 5, 10, and 20 year time frames, reducing environmental and social impacts. SEA is a steward of the Northwest natural environment and champions this role in both literal and metaphoric ways. Literal through the application of sustainable design strategies, and metaphoric through the influence of biophilic design principles.



biophilic design

In architecture, a sustainable design strategy that incorporates reconnecting people with the natural environment.

The goal of biophilic design is to create places imbued with positive emotional experiences...Using inspiration from the local natural environment...to create a sense of place...

—Judith Heerwagen, Author

DESIGN RESILIENCY

One aspect of biophilic design is resiliency—natural systems possess the ability to dynamically respond to change without environmental deterioration.

The building and design industry is adopting the resilient approach due to climate change and natural forces.

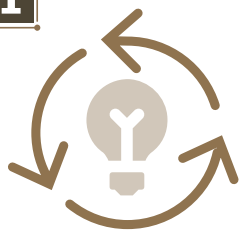
Evolving building technologies are enabling architects to create smarter structures that respond to environmental conditions that impact them. One example of this is the use of dynamic exterior glazing, capable of adapting to shifting sun angles throughout the day, thereby decreasing mechanical loads and improving the users' well-being. SEA has used dynamic glass in two recently completed projects.

Design consultants should consider the implementation of planning and design principals of this trend, increasing the resiliency of their building designs for the passengers who interact with them on a daily basis.

SUSTAINABILITY GOALS

Consultants are required to follow sustainable goals, and to describe basic strategies that can achieve them. To summarize, sustainable building projects at SEA strive to reach five simple goals:

1

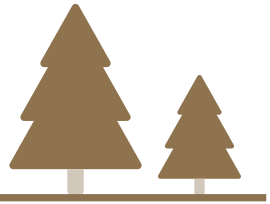


conserve energy

Energy is a finite resource that must be conserved if the region is to achieve a sustainable pattern of development. Each project must meet the Washington State Non-Residential Energy code, and should consider the following energy conserving strategies:

Reduce energy consumption
Harvest site resources
Increase efficiency

2

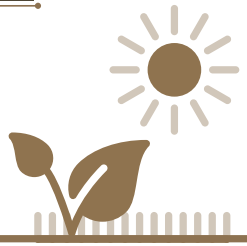


manage material use

The construction of new facilities, as well as the renovation of existing spaces, increase our region's consumption of materials. To approach sustainable patterns of material use, the complete life cycle of a product should be considered. Improving the efficiency of use and lowering the overall resource consumption, can be achieved through four strategies:

Minimize material use
Select sustainable sources
Use durable materials
Close the loop

3



support landscape

Landscaping and the connection to the natural environment is an essential aspect of the vision for SEA Airport. Three important objectives are:

To connect with nature
To preserve native vegetation
To work with natural systems

4

enhance environment

There is growing evidence of the negative impact from exposure to multiple environmental toxins present in building materials. The construction of new facilities can create new sources of pollution and environmental impact both inside and outside of buildings. The approach to enhancing the environment has three key components:

Reduce pollution sources
Eliminate contamination
Dilute pollution strength

5

safeguard water

The beauty of the Pacific Northwest is closely linked to the quality of its water resources. Three strategies are employed to conserve and improve the quality of water:

Reduce potable water use
Maintain natural water flows
Harvest on-site flows

+

Additionally, a LEED Silver designation is the goal for all design and construction projects at the airport.

COMMITMENT WITH RESULTS

SEA's commitment to sustainable practices has resulted in numerous domestic and international industry awards, including:

1 ACI (Airports Council International) 2011 Environmental Achievement Award

for SEA's Sustainable Aviation Fuels Northwest project

2 Seattle Business Magazine's "Green 50 Award"

for the SEA's many environmental initiatives, including:

- Centralized Pre-Conditioned Air for parked jets project
- Leading the effort for the Sustainable Aviation Fuels Northwest project
- The At-Berth clean fuels for cargo vessels project
- The Scrappage & Retrofits for Air in Puget Sound project

3 2011 Best Workplaces for Recycling and Waste Management award

from King County's Solid Waste Division

4 Enterprise Seattle's 2011 Diamond Award

for Special Achievement, in recognition of SEA's employee commute trip reduction program

5 2015 International Tech Awards

sponsored by The American Society of Heating, Refrigerating, and Air-conditioning engineers (ASHRAE), in recognition of SEA's centralized pre-conditioned air project

Our region expects this from us. Our passengers and our airlines expect us to do everything we can to protect air quality.

As the prior awards lists demonstrates, SEA has undertaken highly innovative initiatives, exemplified by the pivotal centralized pre-conditioned air project. SEA faced a dilemma: How could jets waiting at gates get fresh air without running their engines? The result: a centralized plant that pumps hot and cold fluids through 15 miles of pipes to 73 jet gates, where a unit then pre-conditions warm or cool air blown into the aircraft. This program **saves five million gallons in fuel annually, equating to 15 million dollars.** The annual emission reductions equal 40,000 tons of greenhouse gases, which is equivalent to taking 8,000 cars off the road. In addition, SEA provides electric vehicle charging stations in the garage. SEA's efforts reflect and further the values of the people in its community, who demand a reduced carbon footprint and the resulting cleaner air.

40,000 tons
annual reduction
of greenhouse gases

= to

8,000 cars
off the roads

1.6

FOSTERING SUCCESSFUL TENANT RELATIONSHIPS

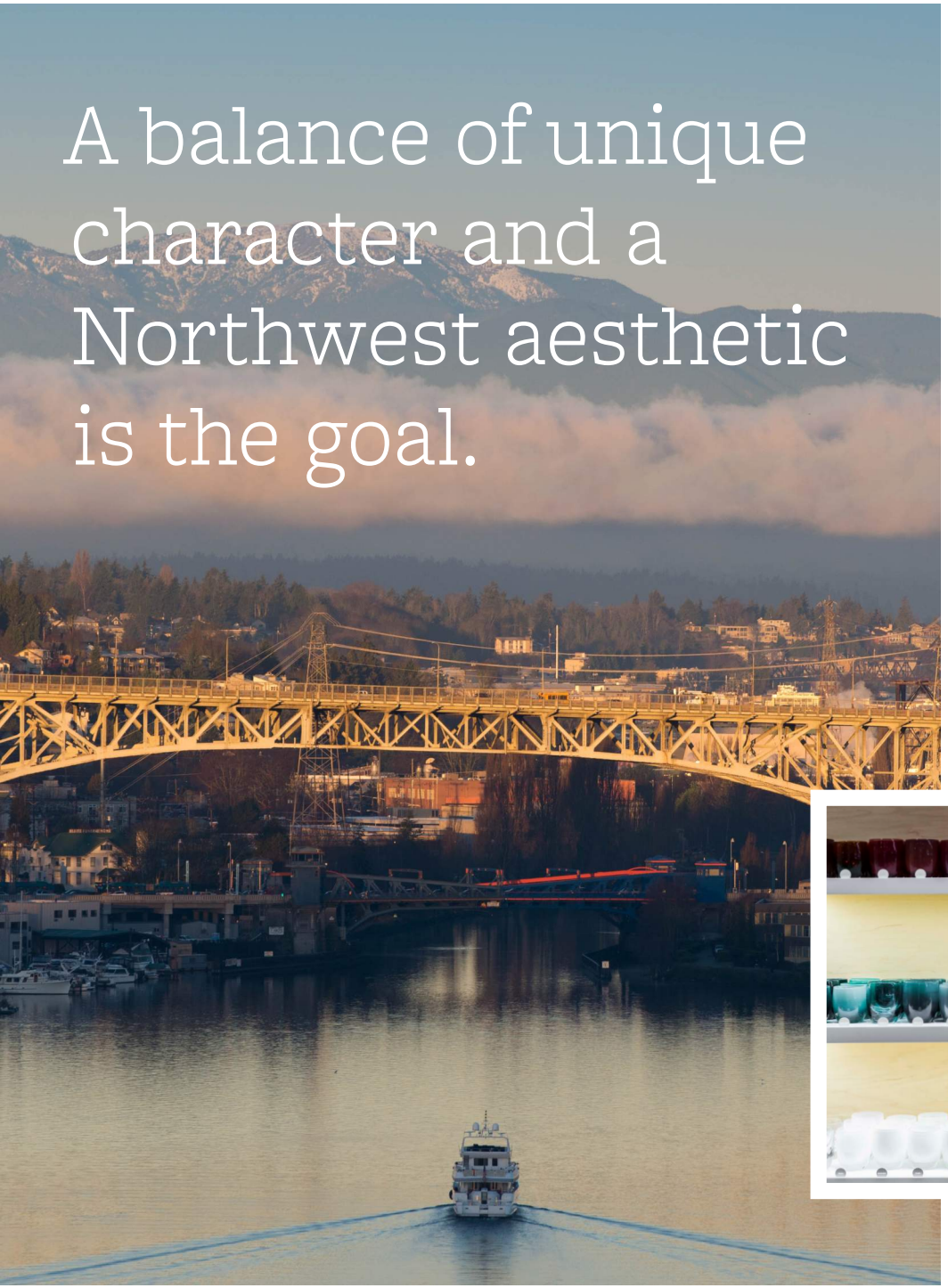
SETTING THE STANDARD

SEA, along with its partners and tenants, strives to provide the highest quality experience, not only for its passengers and guests, but for tenants and other partners as well. Tenants at SEA comprise several types, including airlines, service providers, and municipal departments, among others. Passenger-facing, highly visible tenants, such as retail and food and beverage outlets, deserve the highest attention level by design consultants affecting the SEA concession landscape.

SEA's Dining and Retail Design Guidelines provide a unifying theme for airport dining and retail outlets. Tenants and their design consultants must familiarize themselves with these design guidelines, which outline inspiring and practical design methodologies. The guidelines articulate SEA's design vision, outline principles to guide project teams, define the "Progressive Northwest Modern" aesthetic, and provide a clear understanding of the design review process. The guidelines embrace the qualities of the Northwest by synthesizing the region's natural beauty, international orientation, and local arts and culture. Supporting this design point of view are practical considerations that will ensure the successful implementation and realization of tenant designs.

Passenger-facing, highly visible tenants, such as retail and food and beverage outlets, deserve the highest attention level.

A balance of unique character and a Northwest aesthetic is the goal.



An experience design, hospitality-imbued approach (outlined in Section 1.4, "Adopting an Experience Design Approach") shall guide the design of all concession tenants. A "Progressive Northwest Modern" design aesthetic (outlined in Section 2, "Crafting a Northwest Sense of Place") is the assigned approach, for both airport-unique concepts and nationally recognized brands. The key reason for this style requirement is to achieve a unified brand image for SEA.

Dining and retail operators along with their architects and contractors are encouraged to review the Airport and Dining Retail Design Guidelines prior to completing conceptual design work. All designs are subject to review and approval by the standard airport design review processes.

PLANNING FOR SUCCESS: TENANTS

SEA recommends a few ideas to tenants to ensure successful collaboration and realization of their brands.

1

professional design

The context of your space is critical. Your brand must peacefully co-exist with SEA's brand. Engage professional designers and architects experienced in retail, food and beverage, and airline design. This will help ensure a professional result, and a smoother design and construction process.

2

lighting design

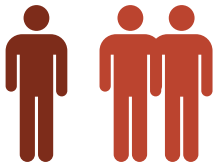
Hire a professional lighting designer to bring your brand to life.

3

graphic design

Turn to a professional graphic designer to provide your brand with the best exposure, particularly regarding food and beverage menu boards/displays

4



inclusive meetings

Bringing your designer/ architect/general contractor to SEA review meetings will be beneficial from a process standpoint, allowing for resolution of issues in a quick and timely manner.

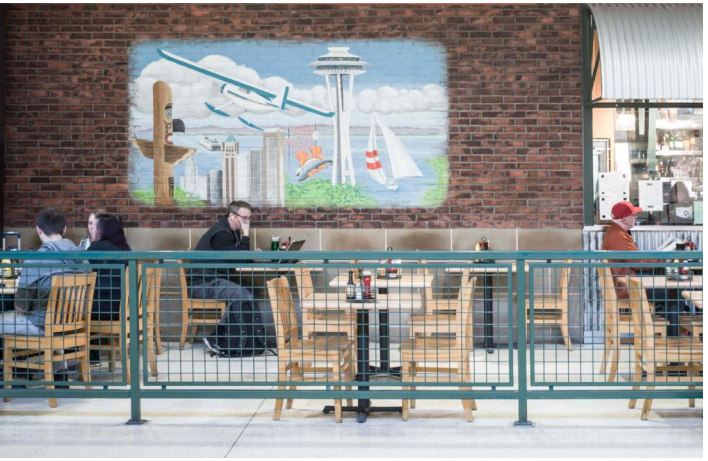
Location, location, location! Again, understanding the context your design will exist in, and the type it is, is critical. For example, is your design an in-line facility? Corner location? Free-standing? Partially free-standing? Or unique operation? Each particular type will have its own impact on SEA base building design, signage, lighting, HVAC, utility connections, sightlines, etc.

Always design a thing by considering it in its next larger context–a chair in a room, a room in a house, a house in an environment, an environment in a city.

—Eliel Saarinen, Architect

CONCESSIONS PLANNING

Circulation design is key. The goal is to allow passengers easily access anything they want to experience.



If your project includes concession planning, consider new planning typologies to make the layout more progressive. Traditional "food courts," with tenants surrounding a communal dining area, are evolving into a more integrated approach. Integrating food and beverage tenants into holdroom lounges creates a symbiotic relationship between the two. Passengers have the convenience of nearby dining, while keeping an eye on their gate, reducing travel anxiety. Tenants have a captive audience, helping with revenue generation. Consultants designing such arrangements should begin the design process by checking in with their SEA Dining and Retail representative to understand the airport's latest thinking on this integrated approach. Regardless of the particular planning approach, guiding the highest number of passengers by concession tenants is critical.

When planning areas adjacent to boarding gates, consider the specific airline and its operational procedures. Gate counters and back counter zones, boarding spatial requirements, airline branding components, even airline brand colors will have an impact on your design. Plan for future changes, as airline requirements can evolve rapidly.

CAN YOUR DESIGN ALLOW...

100% 

TO PASS

100% 

A HOME FOR ADVERTISING

Another tenant type that needs careful consideration is advertising. Advertising partners are a significant source of non-airline revenue generation at SEA.

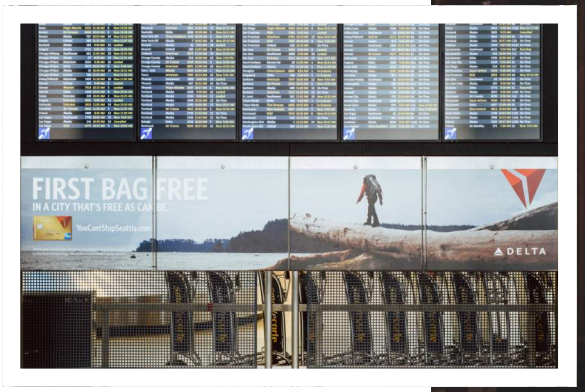
Consultants should understand the type and size of advertisements scheduled for the area they are affecting, and plan accordingly. An integrated approach is desired, with advertisements embedded in the design, not added-on as an afterthought. For example, large format internally illuminated ads work well in recessed niches, creating a flush relationship with the adjacent architecture. Creating "homes" like this will support the "experience design" approach to spaces at the airport. The airport environment is also populated with wayfinding signs, public art, airline branding and other amenities, so achieving a balance between advertising and these important special elements is critical, to avoid conflicts or guest wayfinding confusion. **Wayfinding always takes priority.**

COMMUNICATION HIERARCHY

WAYFINDING

ADVERTISING

ART AND DISPLAY



Other entities/partners are also an important source of non-airline revenue generation. Luggage cart rentals, banking, rental cars, luggage wrap, vending, even shoe shine stands are just some of the services that your design must respond to. Understanding the variety of space requirements to allow is just one aspect of planning for success.

Happy passengers, ready to fly, is the objective.

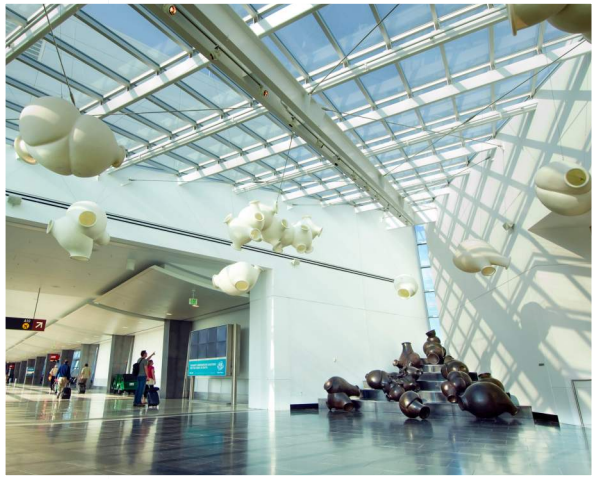
How your design works to this end, benefiting both tenants, and therefore SEA, is crucial.

1.7

FORM FOLLOWS FUNCTION

Whether it be the eagle in its flight, or the open apple blossom, the branching oak, or the clouds drifting over the sun, form (ever) follows function, and this is the law.

—Louis Sullivan, Modernist Architect, 1896



WHAT IS "FORM FOLLOWS FUNCTION"?

Simply put, it's a principle of modernist architecture and industrial design which mandates that the shape of a building (or object) should primarily relate to its intended function or purpose.

How does this credo affect the SEA brand? And how can your design best respond? Airports, by nature, are complex spaces that require users to make multiple decisions throughout their journey. Many elements compete for attention. By respecting and solving for passenger issues first, and stripping away the superfluous, the design that emerges will become a canvas upon which to build the best experience, one that is not only memorable, but intuitive as well. One that is hierarchical from both a messaging and visual standpoint. An environment whose form is born from the functional.

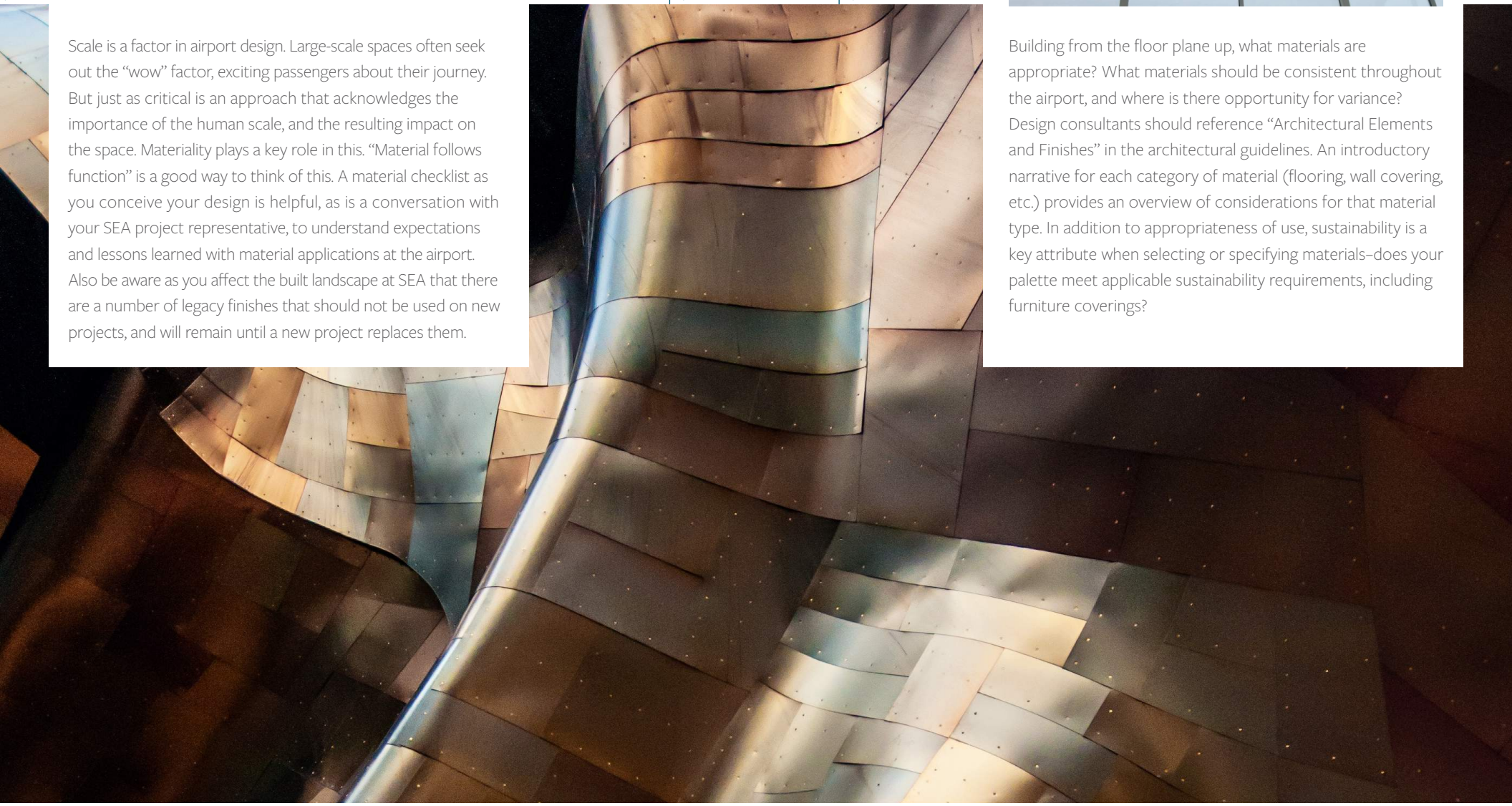
form follows function

MATERIALITY FOLLOWS FUNCTION

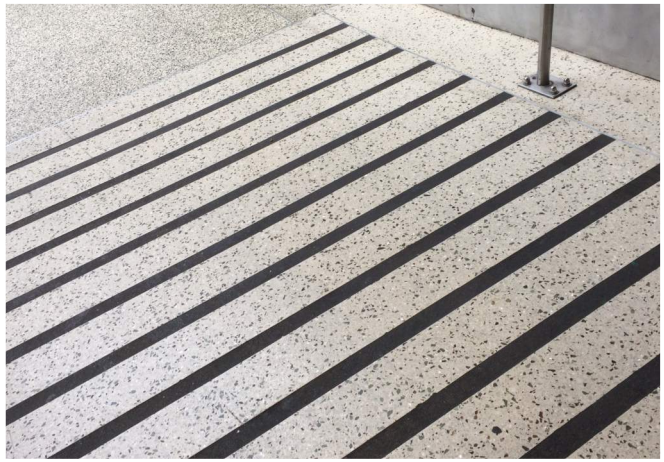
The appropriate material at the right stage or area of the passenger journey, is an important aspect of "form follows function."

Scale is a factor in airport design. Large-scale spaces often seek out the "wow" factor, exciting passengers about their journey. But just as critical is an approach that acknowledges the importance of the human scale, and the resulting impact on the space. Materiality plays a key role in this. "Material follows function" is a good way to think of this. A material checklist as you conceive your design is helpful, as is a conversation with your SEA project representative, to understand expectations and lessons learned with material applications at the airport. Also be aware as you affect the built landscape at SEA that there are a number of legacy finishes that should not be used on new projects, and will remain until a new project replaces them.

Building from the floor plane up, what materials are appropriate? What materials should be consistent throughout the airport, and where is there opportunity for variance? Design consultants should reference "Architectural Elements and Finishes" in the architectural guidelines. An introductory narrative for each category of material (flooring, wall covering, etc.) provides an overview of considerations for that material type. In addition to appropriateness of use, sustainability is a key attribute when selecting or specifying materials–does your palette meet applicable sustainability requirements, including furniture coverings?



BUILDING FROM THE FLOOR UP



Material maintenance must also be considered. Flooring is perhaps the most important material in your design. Major circulation zones should be terrazzo for durability. Flooring materials can often be used in a manner that goes beyond the obvious. For example, when designing with terrazzo, consider the subliminal wayfinding aspect that patterning can create. Consider the sonic environment as well--gate holdrooms should also be carpeted with tiles, acoustically quieting these zones.

Wall base, and wall protective finishes, are important in reducing on-going maintenance costs. Transitions between existing designs and your design warrant particular attention. Many projects, both new build and renovations, will have adjacency concerns that are beyond the specificity of the architectural guidelines. Your SEA project manager can help prioritize a checklist of items/ conditions to assure a smooth transition between your design and existing designs.

FLOORING CONSIDERATIONS

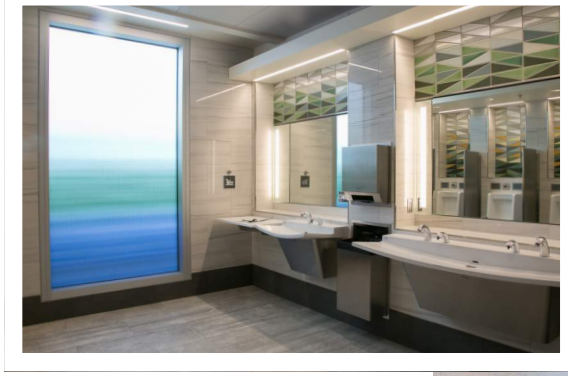
1. major circulation = terrazzo
2. gate holdrooms = carpet
3. restrooms = porcelain pavers

BALANCING MATERIALITY & MAINTENANCE

The idea that "materiality follows function" is never more important than in specifying restroom materials. Simply stated, materials of exceptional durability must be used in restrooms. Practical considerations take precedence, but this doesn't mean that character has to be sacrificed. For example, while a monolithic, non-patterned countertop material may look good in theory, in practice its water-spotting potential will be an on-going maintenance concern. Practical considerations for material backings should also be considered. For example, mirrors with copper-free backing (coatings) will not "pit" when used in conjunction with wet vanity areas. And again, flooring is key – large scale porcelain pavers are durable, typically meet slip-resistance standards, and require fewer grout lines due to their size. Terrazzo is not an acceptable restroom flooring material due to its degradation when exposed to solutions that have acidic properties.

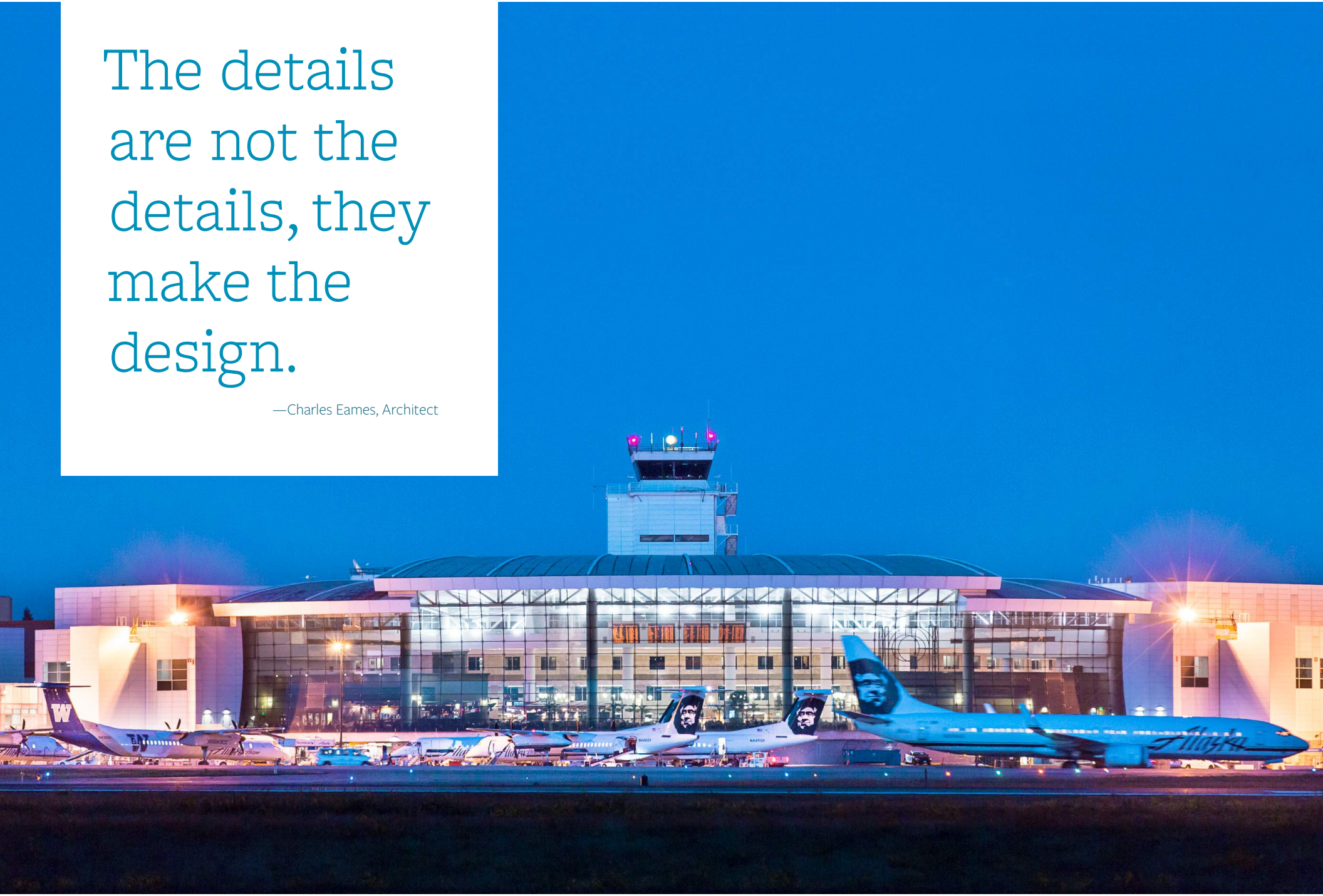
The balance between materiality and maintenance in restroom environments is constantly evolving, spurred by the myriad of commercially available products. As stated earlier, it's important to understand lessons learned from your SEA project manager, especially before selecting or specifying restroom materials.

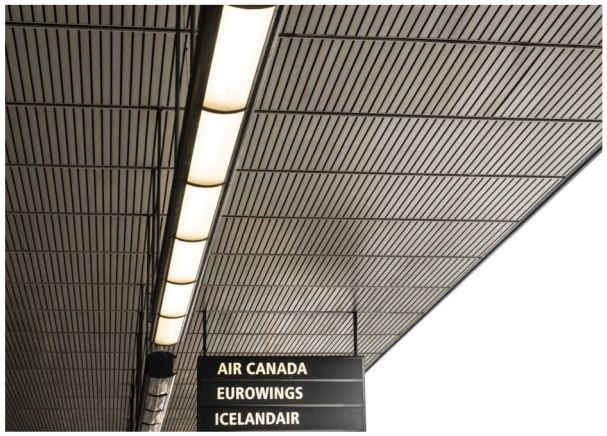
The balance between materiality and maintenance in restroom environments is constantly evolving.

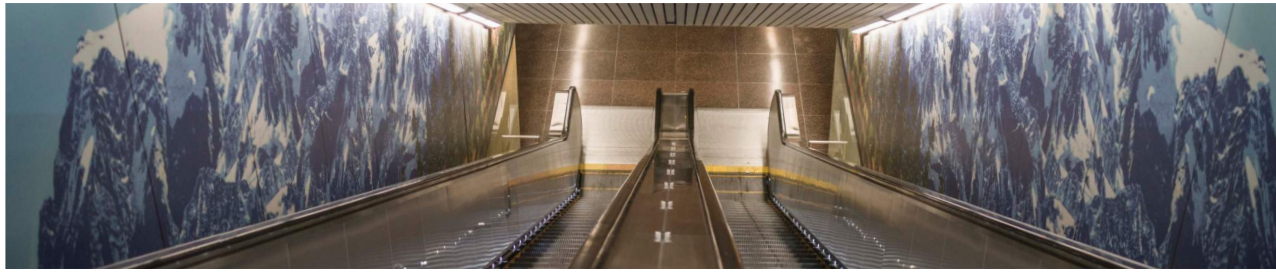


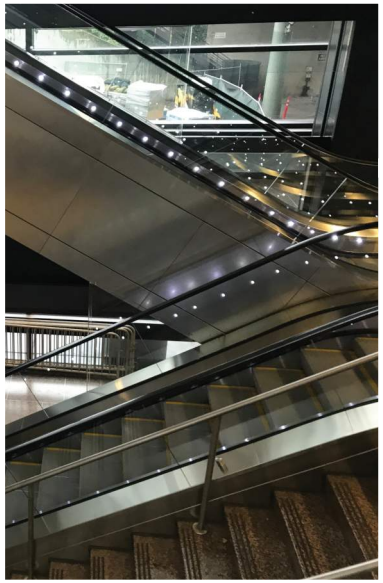
The details are not the details, they make the design.

—Charles Eames, Architect





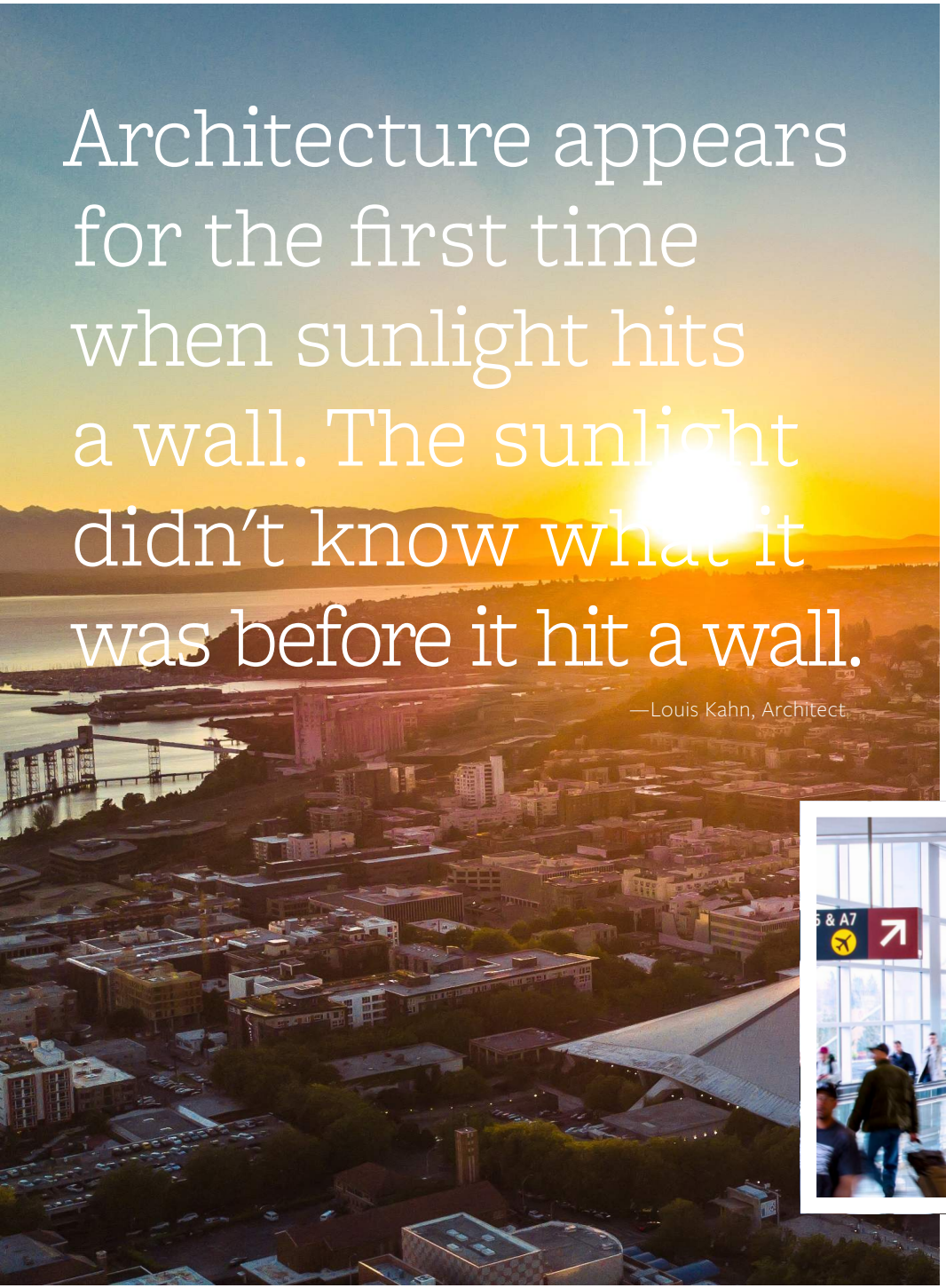




DETAILS MATTER

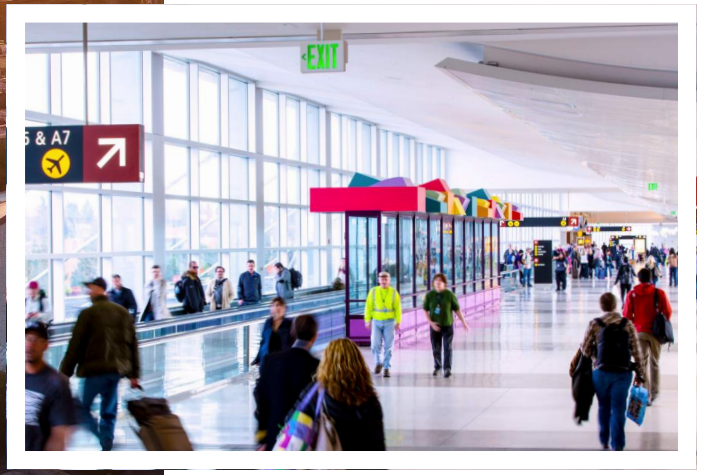
The notion that form follows function has an impact beyond the importance of materiality. From visual cues at vertical circulation moments, down to the smallest detail of something as functional as a ledge, this type of thinking has validity at a multitude of scales throughout the airport.

Airports, by nature, are busy environments that have overlapping functions/ elements vying for passengers' attention. This, added to distracted passengers focused on personal devices, raises safety concerns when negotiating stairs and/ or escalators. Generously scaled spaces are required at these transition points. Consider a tactile detection surface at flooring zones at the top and bottom of stairs and escalators. Materials surrounding stairs and attachment points for handrails must meet accessibility standards. Passengers carrying luggage on escalators pose a special safety concern. Elevators should always be located adjacent to escalators, or within sight lines of escalators. Lighting design should respond with a higher level of illuminance at these vertical transition points.



Daylighting is an essential, challenging aspect of design in thriving civic spaces. The balance of daylight with artificial light, and potential glare, must be considered. The increased demand for, and use of, daylighting and LED-lamped lighting fixtures can sometimes pose glare issues, particularly for flight information displays (FIDS) and airline gate agents, whose work counters/monitors typically get placed adjacent to window walls. Fritted glazing, dynamic glazing, window films, and motorized shade systems are some of the solutions to this issue. Additionally, exterior light shelves or shading systems can redirect the negative effects of daylighting.

It's often stated that if you get the details right, the rest falls into place. While this might be an overstatement, details definitely matter! Design consultants are encouraged to imagine their designs through the lens of a harried passenger. For example, a flat ledge is the perfect spot to leave a coffee cup when a recycling container is not nearby. By simply angling the ledge relative to the floor plane, this visually unpleasant situation is avoided.



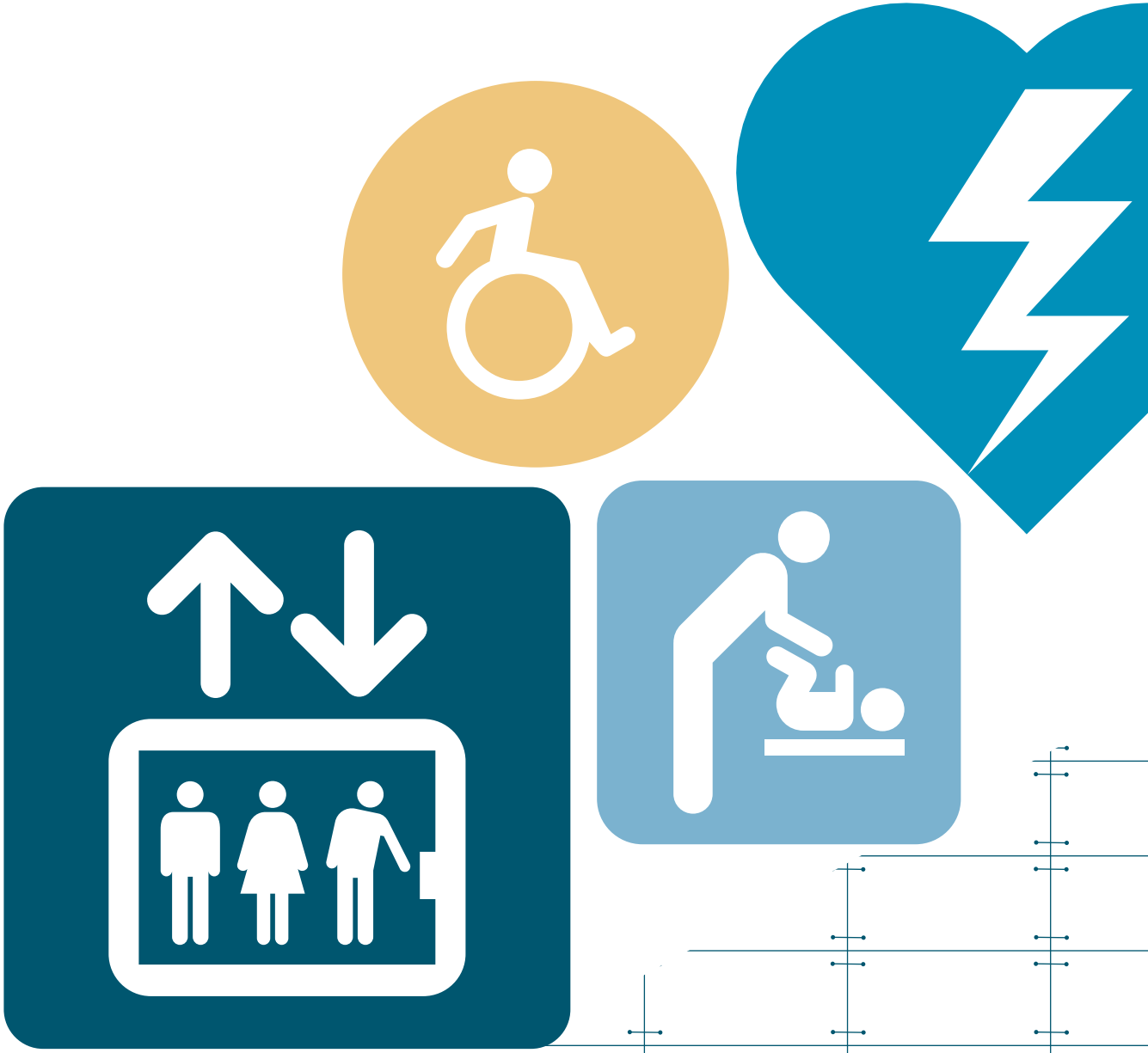
When daylighting, aim to balance brightness levels with methods to reduce glare.

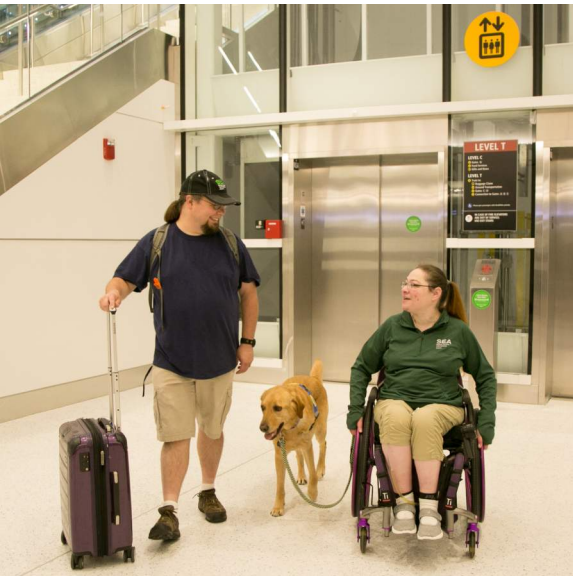
BEYOND ACCESSIBLE DESIGN

"The one argument for accessibility that doesn't get made nearly often enough is how extraordinarily better it makes some people's lives. How many opportunities do we have to dramatically improve people's lives just by doing our job a little better?"

—Steve Krug

Planning an accessible facility embodies the goal of "form follows function." **SEA targets to be the most accessible airport, period.** The airport environment must be designed to fit everyone: young or old, able or disabled, English and non-English speaking. And while all projects must meet the specifications defined and regulated by the Americans with Disabilities Act (ADA), consultants are encouraged to go beyond the required, and consider the aspirational.





UNIVERSAL DESIGN

Going beyond accessible design is also a goal. While Accessible Design is good design, Universal Design not only acknowledges the importance of accessibility, but takes the mission a step further. Simply put, the National Disability Authority (NDA) states that Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. And everyone benefits.

Universal and Accessible Design should be part of all new build projects at SEA, as well as renovations. Even challenging existing conditions have adaptability! Practicing form follows function, Frank Lloyd Wright designed the iconic Guggenheim Museum in New York City decades before accessibility was mandated.

"Great architecture has this capacity to adapt to changing functional uses without losing one bit of its dignity or one bit of its original intention."

—Tom Kerns, Guggenheim Director

The holistic approach of the Design Vision Document, combining the aspirational with practical considerations contained in the architectural guidelines, will provide a framework for the successful planning, design and implementation of projects at SEA airport for consultants, their partners, and SEA tenants.

SEA embraces a dynamic, collaborative design process with its design partners. These creative partnerships will drive our future.

Design creates culture. Culture shapes values. Values determine the future.

—Robert Peters, Design Educator

2

DESIGN GUIDELINES

2

DESIGN GUIDELINES

2.1 INTRODUCTION

The Design Guidelines are intended to be both inspiring and practical, articulating the comprehensive vision for Seattle-Tacoma International Airport (SEA), by clearly defining design criteria to be followed on all projects. They are also a useful reference for maintenance teams.

PURPOSE

As a general rule, these guidelines cover visible architectural elements of the SEA Airport's public-facing real estate facilities, including for SEA tenants. The Design Guidelines are intended to provide a flexible framework, allowing for new discoveries and appropriate responses to each project's unique conditions.

Project teams should first reference these guidelines at the start of each project. They may look to their SEA project manager for clarification or additional insight on project requirements.

The Design Guidelines is an evolving document and will be updated periodically as conditions and criteria change over time to keep up with product availability, and to incorporate new recommendations and best practices. Please check back often for updates to this document.

This document is intended to accomplish the following:

- Outline the design strategies, providing fundamental principles to guide project teams in developing the design of each project.
- Provide a clear basis for design reviews by the Architecture Review Committee (ARC), which has responsibility for reviewing the design of all projects at SEA Airport to assure compliance with the Design Guidelines.
- Set the tone for unity and consistency in the Airport's appearance, drawing a link between existing and new.
- Consolidate relevant information by providing a summary of related documents, resources, authorities, or other entities that are applicable to design work at SEA.

The guidelines are primarily intended for an architecture and design audience (including administrators, project managers, and facilities maintenance personnel), both internal SEA employees and external consultants and vendors. This includes technical consultants (including engineering, maintenance, environmental, F&I) who are being on-boarded.

This document operates in conjunction with other disciplines' design guidelines. Design consultants should review the documents in the Resources section for further information on requirements for each particular project. Also, all projects must proceed in accordance with the SEA Regulations for Airport Construction (RAC), which is available from the Port of Seattle and the Resources section of this document.

The users of the guidelines are responsible for:

- Verifying that they have received the latest version of the guidelines to ensure they are following the most recent specifications in their projects.
- Becoming familiar with and meeting the intent of the guidelines.
- Using good judgment while applying the guidelines to the project.
- Requesting owner approval of a material or product that varies from the guidelines (using the Variance Request form - see Resources), if it is necessary because of specific conditions.
- Abiding by the requirements of the guidelines without sacrificing creative and innovative solutions.
- Providing feedback to the owner on the use of the guidelines.
- Coordinating work with other applicable SEA standards and regulations.
- Presenting designs for selected projects to the design review committees.

There are four main sections to this document: Design Vision, Design Guidelines, Architectural Standards, and Resources. Project teams should work across these sections to ensure their projects are meeting Airport goals and expectations.

Design Vision

The Design Vision aims to set the vision and direction for the Airport going forward. As we work to improve and expand our facilities, new projects and decisions should aspire to align with the Design Vision. The Design Vision sets the long-term direction for the Airport and is not intended to change often.

Design Guidelines

The Design Guidelines provide a breakdown of how we understand and talk about the Airport. They also provide clearly defined design criteria to be followed on all projects. As well as identify the various zones, space types, and the physical features of the facilities.

Architectural Standards

In some cases, the Architectural Standards provide specific recommendations or standards. At other times, they define minimum performance requirements for which project teams should seek equal or better solutions, to be approved by SEA. Additionally, some areas of the Airport will need to maintain legacy features. As such, these guidelines also contain legacy specifications that may be phased out over time, as appropriate. The Design Vision and your project manager help define what, why, and when something should continue following the legacy specifications.

Resources

The Resources section provides links and references to other documents and tools that may impact Airport projects. Project teams are expected to work across documents to ensure their efforts meet all expectations relevant to their project.

ORGANIZATION

These guidelines supersede the following documents:

- STIA Design Guidelines (1999)
- Landscape Design Guidelines (2000)
- STIA Architectural Standards (2008)
- Casework Standards Manual (2016)
- Vitra Meda Gate Seating Standards (2017)
- Maintainability and Janitorial Standards (2017)
- Restroom Design Standards (2015)

For guidelines relating to the base building, non-public areas or tenant spaces, project teams should refer to the following documents:

- Tenant Design and Construction Process Manual
- Tenant Improvement Construction General Requirements
- Dining Retail Design Guidelines
- Brand, Signage and Advertising
- Parking garage
- Port offices and maintenance facilities
- Non-public Tenant spaces

Additionally, the resources section serves as a reference tool, providing the following:

- Definitions and Acronyms
- Documents and Forms
- Design Intent Drawings

The following summarizes the procedures for use of the guidelines:

- The requirement to comply with the guidelines is part of the required project information identified in the Request for Qualifications advertising work as part of the design consultant selection process.
- The guidelines are part of the required project information transmitted to design consultants at the beginning of a project.
- The Port of Seattle project manager is responsible for providing the design consultant with the latest version of the guidelines.
- The design consultant will meet with the Port of Seattle project manager during negotiation to review the design consultant scope and ensure that all aspects of the guidelines are followed and planned well. This meeting will take place once the design consultants have familiarized themselves with the latest version of the guidelines.
- The Professional Services Agreement and design consultant scope of services requires that the consultant be familiar with and conform to the guidelines.
- The Port of Seattle project manager is responsible for seeing that the design consultant's design is in conformance with and consistent with the guidelines.
- Reviews by the Port of Seattle Aviation Facilities and Infrastructure (F&I) Department include verification of conformance with the guidelines.
- The Port of Seattle project manager requires a Variance Request from the design consultant for any requested variance from the guidelines.
- The Port of Seattle project manager forwards Variance Requests to the F&I Architectural Review Committee, which is the reviewing and approving/disapproving body for variances and conformance with the guidelines.

The owner of this document is the Aviation Facilities and Infrastructure Department. They are responsible for the development, implementation, long-term application, and enforcement of the guidelines.

Their responsibilities include:

- Obtaining the latest information from the field concerning the adequacy of the guidelines.
- Obtaining input from and identifying needs of the airport terminal environment from the public, tenants, and employees.
- Establishing the level of quality for finishes that meet the expectations of the public, tenants, and employees.
- Providing information for updating and revising the guidelines to reflect changing needs of the airport terminal environment.
- Providing feedback to users on issues that affect the guidelines.
- Keeping the guidelines up-to-date with the latest revisions.
- Updating the Change Log with changes to this document.

As this document evolves over time, changes will be noted with the icons below:

New

The “new” icon represents that an item has recently changed or is newly listed.

Archive

The “archive” icon notes that an item is archived, and therefore only to be used in legacy areas for “patch and match” fixes. Any projects or repairs requiring large application of archived items should be reviewed with the project manager to see if the area should be renovated to meet current standards.

Sustainable

The “sustainable” icon represents that there may be opportunities for an item to align with SEA’s sustainability goals.

2.2 PLANNING

Several general planning factors should be considered when engaging in any project at the Airport. This section provides an overview of how we think about and manage these projects, as well as what to consider when taking on these efforts.

This section provides a summary of related documents, resources, authorities, and other entities that are applicable to design work at SEA. Please refer to the Resources section for an expanded list of resources. Your project manager can provide more details regarding which documents, regulations, and authorities may be relevant to your project.

Contents

- Review Authorities
- Regulations
- Design Checklist
- Product Selection & Bidding

Airport Building Department is the authority which has jurisdiction and reviews for all building permits. The Airport's Fire Department is the reviewer for fire protection permitting.

Design Review Committees

Design Review Committees provide additional in-person design review to the consultants. These committees meet regularly to review projects that are currently in design. The projects meet with the committees at 30%, 60%, and 90% milestones or as determined needed. The meetings are collaborative discussions between the subject matter expert (SME) and designers that review the progress of the design and allow a chance for team dialogue. Each design team needs to be aware of the demands that will affect our ability to deliver and meter utility services, and to have a clear demarcation between what the relevant Port projects will need to install and what the tenant will need to install in accordance with Port standards. The criteria used to determine which projects are reviewed by these committees are specific to each department. The project manager is required to set up the meetings with the individual committees.

There are eight Design Review Committees:

- Architectural Review Committee (ARC)
- Facility Asset Review Meeting (FARM)
- Mechanical Utility System Team (MUST)
- Proactive Electrical System Team (PEST)
- SEA Telecommunications Architecture Team (START)
- Wayfinding and Visual Environment Team (WAVE)
- Water Infrastructure System Evaluation (WISE)
- Sustainable Project Analysis & Review Collaboration (SPARC)

REVIEW AUTHORITIES

ARC: Architectural Review Committee

ARC looks at the overall design for function and appearance, how the project interfaces and integrates with its context and surroundings, and particular conditions or requirements that are challenging to the design team. ARC reviews most projects of all sizes that are public-facing. They range in size from the major new construction to smaller projects such as major carpet replacement, furnishings, and tenant spaces. Most projects are reviewed at completion of 30%, 60%, and 90% design completion, but larger or more complex projects are usually presented at 15% design completion or concept development phase.

Occasionally, ARC will do specially requested additional reviews to address unusual design challenges. Some non-public, back-of-house projects are reviewed again if they include unusual, challenging conditions or if the design team and project manager would like feedback and assistance.

In-person design reviews can be accomplished much more effectively and more quickly through discussion than with the individual-comment process of the document reviews. The review meetings provide significantly higher overall design quality and better finished products.

FARM: Facility Asset Review Meeting

The Facility Asset Review Meeting construct focuses on ensuring a well-coordinated transfer of assets between project delivery and ownership. As assets enter and exit service, coordination is required between groups of stakeholders that maintain and manage them. The Facility Asset Review provides a place where project delivery can coordinate with Accounting, Facilities & Infrastructure, Finance & Budget, and Maintenance and otherwise asset management.

MUST: Mechanical Utility System Team

The MUST review team meets with A&E's prior to their start of design to explain the systems, requirements, and proclivities of design and construction at SEA. The Airport mechanical design is unique and SEA has specific requirements. Operating chilled water temperatures, central system heating and chilled water, air pressurization, tenant requirements all come into play in the MUST discussions with the ME's. The team includes representatives from F&I, ABD, FIRE, and Maintenance. Projects need to be clear about what utilities or utility-related hardware are require, for example whether natural gas is needed or if an additional meter is needed in the early phases of the project.

REVIEW AUTHORITIES

PEST: Proactive Electrical System Team

Projects need to be aware of increased electric demand requirements and any metering and sub-metering requirements. Changes to leasable space that will result in an installation of a meter-able (or at least flat rate billable) tenant, requiring installation of new metering capacity, need to be addressed in the early phases of a project. PEST can help clarify what the application for service entails.

START: SEA Telecommunications Architecture Team

The SEA Telecommunications Architecture Team includes representatives from Maintenance, ICT and F&I. START meetings are an opportunity for the consultant to meet with concerned departments together and understand the practices and design guidelines we follow at the airport and ask questions before they go on their own. The committee can provide suggestions to improve the infrastructure or any cost saving measures. Cable TV infrastructure needs to be reviewed from a capacity and interconnection standpoint. General design review usually focuses only on project-related matters. The START committee looks at a project to see how it fits in to the entire Airport.

WAVE: Wayfinding and Visual Environment Team

WAVE is intended to provide oversight to the holistic airport experience and review design projects that don't fall within scope of the ARC committee, as well as to develop the future vision for the airport visual environment. WAVE is invested in the idea that the visual environment is important to the overall success of the Airport. It is committed to improving communication and collaboration between departments related to initiatives that impact the public spaces, but do not fall under purview of other design review processes. WAVE is committed to continually evaluating and improving wayfinding through the visual environment of the airport, for a world class passenger experience at SEA.

WISE: Water Infrastructure System Evaluation

REVIEW AUTHORITIES

SPARC: Sustainable Project Analysis and Review Collaboration

For larger capital projects the Port will conduct a project-specific sustainable project analysis and review collaboration (SPARC) process to identify and request analyses of new sustainability opportunities or initiatives relevant to the specific project. SPARC teams are project-specific to ensure relevant subject matter experts are available for each project and related sustainability initiative as appropriate.

Port of Seattle Points of Contact

The project manager is always the initial point of contact for the design team, however it is critical that teams verify additional points of contact with the project manager.

REGULATIONS

Regulations for Airport Construction

Refer to Resources section for additional information on the Regulations for Airport Construction (RAC) 2021 document.

Building Codes

Design Consultants are required to meet all current applicable laws, codes and regulations, including the Americans with Disabilities Act (ADA).

Sample codes include:

- International Building Code
- International Mechanical Code
- International Fuel & Gas Code
- International Existing Building Code
- International Fire Code
- International Residential Code (if applicable structure is built)
- IAPMO/ANSI Uniform Plumbing Code
- Washington State Energy Code
- ASCE Standard ASCE/SEI 7-10
- Accessible & Usable Buildings & Facilities ICC A117.1-2009

Guide Specification

The Port of Seattle maintains a guide specification which is used by both the Aviation and the Seaport Divisions. The guide specification is intended as a foundation from which design teams can build their project specifications. When using the guide specification, designers shall employ track changes for the purposes of efficient design review by the Port. The guide specification is not intended to cover specific projects. Each design team is required to review and modify the specification to suit the specific project requirements.

Drafting Standards

The Port has CAD standards which are summarized in a separate document. Please refer to the Resources section for additional information.

This section provides guidelines to assist the designers during the submittal process by establishing standard practices that achieve uniformity and quality designs.

Note: The Standards are not meant to relieve the Architect of Record from the responsibility to prepare a complete and comprehensive set of construction documents.

Design Submittal Guidelines

- Drawings shall be prepared in accordance with Port of Seattle A/E Design Submittal Requirements. Drawings and specifications will be completed in detail to define installation and operation of all systems.
- Drawings shall comply with Port of Seattle "CAD Standards."
- Drawings shall be coordinated with specifications to ensure that all items indicated in the drawings are covered by specification documents and that all specification sections relate to items in the drawings.
- Drawings shall be created at a 1/8-inch per foot scale with enlarged plans at ¼-inch per foot or greater (with multiple sections) shall be provided for all mechanical rooms, toilet rooms, shafts, and any other areas of complexity.
- Provide Phasing plans as required to maintain Airport's 24 hours per day operation.
- Specifications: Port of Seattle Master Specifications shall be edited to incorporate these Standards and to suit project requirements.
- Architectural Standard legend, symbols, and abbreviations will be incorporated and modified to indicate all symbols and abbreviations used in the project construction documents. Sheets shall be presented in the following order:
  - Cover Sheet
  - Drawing Index
  - General Notes
  - Architectural Standard Legend and Symbols
  - Abbreviations
  - Building Area and Boundary Plan
  - Code Diagrams
  - Architectural Site Plan
  - Floor Plans (all levels and includes: phasing, demolition, enlarged floor plans, reflective ceiling, furniture, etc.)
  - Elevations (exterior)
  - Building and Wall Sections
  - Interior Elevations
  - Details
  - Schedules

DESIGN CHECKLIST

Basis of Design

Basis of design documents shall address the following at minimum:

- Design criteria: Indicate all codes, design standards and guidelines used for the design. Include the title and date of the edition used for the project.

Submittal Requirements

Submittals shall be in accordance with POS A/E Design Submittal requirements. Design submittal shall include the following Architectural requirements for each design phase:

Conceptual Design (15%)

- Cover Sheet
- Sheet Index
- Site Plans - Architectural
- Architectural Plans
- Reflected Ceiling Plans
- Exterior Building Elevations
- Building and Wall Sections
- Schedules
- Outline Specifications
- Basis of Design

Schematic Design (30%)

Further development of the (15%) Conceptual Design and include additional drawing sheets like:

- Interior Elevations
- Details
- Specifications - Draft-w/marked up Port specifications where used. E-Specs tied to BIM model

Design Development (60%)

Further development of the (30%) Schematic Design and include additional drawing sheets like:

- Waterproofing Plans
- Enlarged Wall Exterior Elevations
- Specifications - Draft Full Specifications. E-Specs tied to BIM model

Construction Documents (90% or 100%)

Further development of the (60%) Design Development. Final product will be a complete Construction Document set with all drawings complete and ready for construction.

PRODUCT SELECTION & BIDDING

SEA Airport is owned and operated by the Port of Seattle, a special purpose government agency. As such, the procurement process for any architectural materials, finishes, furniture, casework and equipment, must be competitive. With the exception of pre-approved sole-sourced product specifications (see Variance Request process), include at least three approved manufacturers or detail the minimum performance criteria. Design teams must consider all three options.

It is the intent of SEA Airport to encourage the use of materials and products that are made with local, renewable, or recycled resources. To that end, preference will be given to products that contain a high percentage of recycled material and to those that are manufactured and/or sourced locally. In addition, fabricators and installers are required to utilize means and methods of design, installation, disposal and maintenance that are resource efficient and will minimize the introduction of toxic substances into the interior of the Airport. Project designers should incorporate design practices and features that promote energy efficiency and conservation. These include considerations relating to solar orientation, thermal insulation, sun-shading devices, fenestration, and daylighting.

For additional information, see the Sustainability section. Individual projects may need to achieve a green building certification.

We categorize SEA project types in two ways: owner type and construction type. Each of these categories provides different information about the project. Regardless of scale or scope, every project consists of these categories. Several criteria are outlined to determine project category, with focus on owner and configuration. Together, these categories further define and determine other project parameters, such as limitations and processes to which your project should adhere.

This document focuses on Port of Seattle projects of all construction types. Find documents covering ADR and Tenant ownership types in the Resources section.

Owner Types

The owner type defines the type of group or organization responsible for the design, construction, operations, and maintenance of an airport area.

- Port of Seattle (Port)
- Airport Dining & Retail Tenants (ADR)
- Tenant (airlines and other non-ADR)
- Federal Agencies

Construction Types

The construction type describes the scope of construction, based on the history of the project.

- New construction/ Expansion
- Renovation - Major
- Renovation - Minor
- Furniture and Equipment Procurement
- Signage

OWNER TYPES

OWNER TYPE	DESCRIPTION	EXAMPLES
Port of Seattle (Port/POS)	Areas of the airport managed and maintained by the Port of Seattle	• Circulation • Holdrooms • Concourses • Curbside • Check-in lobby • Esplanade • Central Terminal • Restrooms • Animal relief areas • Waiting areas • New buildings or additions
Airport Dining and Retail (ADR) Tenants	Areas of the airport managed, maintained, and operated by ADR tenants	• Restaurants • Stores • Pop-up shops • Vending
Tenant (airlines and other non-ADR)	Areas of the airport managed, maintained, and operated by airline and other non-ADR tenants	• Airline check-in • Baggage dropoff • Boarding • Lounges • Building additions • Offices • Ground transportation services
Federal Agency	Areas of the airport managed, maintained, and operated by the TSA and similar organizations	• TSA security areas • Projects that have federal funding • Customs • FAA • Federal inspections areas

CONSTRUCTION TYPES

CONSTRUCTION TYPE	DESCRIPTION	DISRUPTION	EXAMPLES
New Construction or Expansion	A new construction project includes ground-up construction, building additions, and construction projects which gut everything except for the structure. Demolition is part of this construction type.		• New satellites • Building expansion • Gut renovations
Renovation - Major	Fixed project budget. Includes any necessary demolition and construction barricades.	Facilities disruption	• Restroom renovation • Relocations of airlines • Tenants • Central terminal improvements • Infrastructure
Renovation - Minor	Fixed project budget. Includes any necessary demolition and construction barricades.	Minimal impact, minor public disruption	• Walls on baggage claim • Casework • Carpet • Paint • Office renovations
Furniture & Equipment Procurement	Floor, walls, are ceiling not changed. Furnishings and Equipment FF&E are.	Minimal	• Furniture • Equipment • Movable stuff • Buses, ramps • FF&E • Stanchions
Tenant	Areas managed by Airport tenants.	Varies	• Airlines, TSA, baggage carts • Specific lease area, including vertical surfaces
Signage	Signage group has say on all types and covers all guidelines, whether standalone, update, or part of a larger project.	Minimal	• Signage and wayfinding • Advertisements • Retail and tenant • Replacing static to dynamic • Temporary and permanent

The success of SEA projects relies heavily on coordination and collaboration across multiple teams and individuals, both internal and external to the Airport.

The SEA project manager will lead most projects and must be able to answer questions regarding project design, process, and completion. The particular structure of each project team will vary depending on project requirements, but some parties that will be engaged are listed below (this is not a comprehensive list):

Internal

- Port of Seattle (Port)
- Project Manager
- Project Management Group
- Architecture Review Committee (ARC) and other Design Review Committees
- Airport Terminal Line of Business
- Facilities and Infrastructure Department
- Contract Administrator

External

- Design Consultants
- Engineers
- General Contractor
- Airport Dining & Retail (ADR)
- Tenant (Airlines)
- Federal Agencies

A number of planning considerations are important to address during the early stages of any project.

Cost awareness should be considered throughout the project, such that teams should be conscious of the financial impact of design, procurement, construction, and ongoing maintenance. Teams should provide meaningful recommendations for efficiencies and savings.

Consistency & Variance

Some projects may be required to match the existing materials and conditions in lieu of complying with these guidelines (verify with the Port of Seattle project manager and F&I Architecture).

Contents

- Accessibility/ADA
- Acoustics
- Circulation
- Connectivity
- Integrated Design
- Building Systems
- Security
- Storage
- Sustainability
- Maintainability

SEA Airport is committed to providing appropriate facilities and services for all travelers including those with disabilities.

This section summarizes the relevant codes and resources to be used by design teams for projects at SEA Airport.

All projects at SEA Airport should be concerned with providing accessibility for travelers and staff. Accessibility design is most successful when well considered early in the design process. Considering accessible routes will affect siting decisions and circulation design. Considering accessible spaces and fixtures will affect the area allotted to restrooms and other specific use spaces. Waiting to add accessible features to a completed design will increase cost, complexity, and create less accessible facilities.

For projects with significant accessibility issues, it is suggested that designers seek the guidance of reputable groups that represent people with disabilities and understand their environmental needs. Local groups, such as the Washington Governor's Committee on Disability and Employment, Easter Seal Society of Washington, Washington Coalition for Citizens with Disabilities, and Lighthouse for the Blind have all participated in past reviews of facility accessibility for The Port of Seattle. These and many others may act as resources to assist in understanding accessibility issues.

While SEA projects will all meet American Disabilities Act (ADA) requirements, it is important that designers seek to go beyond ADA, aiming for Universal Design. This accounts not only for ability, but age, size, gender, and other factors which render spaces less accessible to a portion of users.

To help understand the needs of people with disabilities, the President's Committee on Employment of Persons with Disabilities has fact sheets available on their website for review or to order at www.pcepd.gov.

ACCESSIBILITY/ ADA

What is an accessible facility?

In theory, an accessible facility is a built environment that has no barriers to people with disabilities. In practice, it is one that has been designed to comply with specific laws or codes which act as minimum dimensions that allow only a narrow range of users to experience ease of use. The Port of Seattle's design goals for SEA go beyond accessibility as defined in the laws and codes, to the overarching principal of Universal Design when possible (though not as a requirement). Universal Design is the idea of designing for the widest range of ability, with as few barriers as possible. By considering a wider range of users, even those with temporary physical limitations will be accommodated.

Accessibility Regulations in Washington State

Provisions for accessibility design are a part of the State Building Code for publicly and privately funded buildings of "public accommodation." The state Barrier-Free Regulations reside under WAC 51-40, Washington State Amendments to the Uniform Building Code, Chapter 11. Enforcement for accessibility issues within the state falls to the local building official. If followed to the letter of the code, this now signifies a good faith effort of the designer to comply with the ADAAG. The Port of Seattle requires that current versions of all codes and laws be followed during the design and construction process.

Selecting Goals

The governing commission of SEA aims to make it the most accessible airport. It should be safe and accessible for all and designed to fit everyone: young or old, able or disabled, English or non-English speakers. All projects must meet the specifications defined and regulated by the Americans with Disabilities Act (ADA), as many of the design guidelines outlined by the ADA benefit all.

SEA currently offers apps which aid wayfinding for persons with a hearing or visual impairment, and is investigating ways to make the airport more accessible, including improved wayfinding strategies. Once finalized, those guidelines will be included here.

ACOUSTICS

The intent of this section is to provide acoustical guidelines for the design of all projects at the Airport. It is not intended that this guide provide solutions regarding sound and vibration, but rather that it identify issues requiring consideration and define acoustical criteria for architectural components, mechanical systems, and audio/video systems.

These guidelines do not replace the need for interpretation and response to each project's unique conditions by a qualified acoustical consultant. Any project with significant acoustical issues should include the design input of a qualified acoustician.

Regulatory Criteria

The Mechanical Standards and Regulations for Airport Construction also include information regarding acoustical requirements for projects at SEA Airport. Design teams should review these documents and coordinate with their project manager if there are issues requiring clarification or interpretation.

ACOUSTICS

Architectural Components

The airport environment is, by its very nature, a highly charged, active area. Diverse crowds constantly move through the spaces. Some of the patrons find themselves with excess time allowing them the luxury to browse the retail facilities and leisurely enjoy the surroundings. Others are hurrying to meet a scheduled flight and need only be pointed in the right direction.
The airport facilities need to respond to both of these user groups; providing a stimulating environment for exploration, while controlling the potential confusion associated with the combined sounds of aircraft arrivals and departures, paging and flight information announcements, general crowd activity and music, etc. from the retail spaces.

Building Shell

By code, the exterior envelope of the facility must meet the Noise Level Reduction, NLR, of 35 dBA.

Interior Spaces

An acoustical consultant should be retained to develop the construction appropriate for specialty areas such as conference/ auditorium spaces, administrative offices, FAA, and Immigration areas or mechanical rooms.
Providing an acoustically compatible system of partitions, ceiling, doors, and relights, etc. is also essential to the performance of the space. The sound isolation will only be as good as the weakest element.

Water Features

Water features may be incorporated into the design of interior spaces within the Airport, provided that the noise level of the feature does not exceed 50 dBA at 5 feet from the feature.
Water features have been problematic with wildlife and maintenance. Water feature projects will need to address and include bird deterrents and total cost of ownership evaluation of the systems.
Note: This limits water features to smooth water flow. If more dramatic water features are desired, mock-ups should be prepared to confirm that noise levels will be acceptable to the Port.

CIRCULATION

Maintaining open circulation paths for passengers is important to their overall satisfaction. This includes making sure pathways are free from obstacles, lines of sight are clear, and the layout is intuitive.

The International Air Transport Associations (IATA) Terminal Design Guidelines contains more detail about egress routes and should be referenced on all projects (see Resources).

The control of queues is also essential to ensuring circulation routes remain clear. SEA prefers that stanchions are fixed in position for this reason, but also allows for greater accessibility. The stanchion options below are in order of preference:

01 Magnetic – fixed position, stanchions bond to the floor

02 Screw-In – fixed position, stanchions screw into the terrazzo floor

03 Base – smallest possible footprint

CONNECTIVITY

The various technologies available at SEA can be referenced at the following link:
https://www.portseattle.org/sea-tac/customer-services-amenities

Special routing and equipment required for communications systems should be discussed early, and often revisited as technology improves.

An integrated process ensures that design solutions are thoughtful and aligned with the strategic and sustainability goals of SEA. The process should also consider the total cost of ownership, raw materials, and maintenance.

Project teams should engage the various stakeholder groups through their project manager in the initial planning stages of projects and at stages throughout to ensure the design is iterative.

Stakeholders include:

- Facilities and Infrastructure
- Engineering
- Technology
- Operations
- Sustainability
- Maintenance
- Art – especially when artwork is to be integral with a material, finish, or building element

General Guidelines

The allocation or zoning of ceiling, wall, and even sub-floor spaces for services is a critical consideration essential to achieving high-quality service, ease of maintenance access, and control of clutter.

Building Systems includes MEP (mechanical, electrical and plumbing) telecommunications, conveyance, and civil engineering. It is managed by specialists within SEA.

A summary of high-level requirements are outlined below, but please refer to the additional documents listed in the Resources chapter for more information. When planning for location, infrastructure, and maintenance access to MEP equipment, coordinate with your SEA project manager. Please also refer to Design Considerations and MEP standards for more information.

Mechanical

- Place thermostats according to local code requirements
- Mechanical elements in ceilings should be in locations that are easily serviced with minimum disruption to public activity

Electrical

- Provide power and data in open areas, either integrated into the furniture or concealed in the floor

Plumbing

- Place drinking fountains according to local code requirements and near restrooms.
- Provide water bottle refill stations at each drinking fountain location.

SEA employees and passengers must be kept safe and secure.

Security measures require a combination of procedures and equipment with the aim of deterring unauthorized entry. Project teams should consult their SEA project manager for specific security requirements including secure areas or equipment (cameras, alarms, emergency call box).

Some additional general guidelines include:

- Eliminate spaces or equipment where people can hide bags, etc.
- All storage rooms shall be secure access only
- The placement of security equipment should be consistent across the site (for example, the placement of the door handle to card reader)

Design teams should coordinate storage requirements and locations with their SEA project managers at the beginning of projects.

Storage Needs

- Port of Seattle Facilities
- Common Use (shared by multiple tenants; needed in the check-in lobby and holdrooms)
- Airport Dining and Retail Tenant merchandise storage
- Janitorial closets (storage for janitorial tilt carts between times of active use).
- Elevator and escalator construction barricades (portable, fold-out partition barricades should be distributed for convenience and accessibility)
- The location and placement of fire extinguishers, AEDs, first aid kits, and trauma kits should be considered during the design development phase.
- Emergency safety equipment (blankets, water, emergency response supplies) and emergency preparedness supply storage should be an integral part of the design process. A minimum of 2 storage locations should be provided and incorporated into the design scope. Storage shall be highly visible and clearly marked. Coordinate specific requirements with project manager.
- Equipment (maintenance lifts, carts, barricades, stanchions, utility carts, and trash carts)
- Passenger (wheelchairs, passenger transport carts, luggage carts, abandoned luggage)
- Signage

General Guidelines

- Storage locations should be convenient but not visually obtrusive
- Storage should be integrated wherever possible
- All storage areas or closets must be secure access
- Sealed concrete floor is not required, but acceptable for man-lift storage
- Storage for lifts need to have 10 foot high doors and dedicated electrical outlets
- The space needs to be big enough to maneuver the lift in and out
- Storage rooms should have robust wainscoting

Sustainable design is the idea of creating buildings and landscapes that enhance our quality of life with the least negative impact to our environment. The Port of Seattle Aviation Division has not developed a detailed sustainable design approach, however design teams are encouraged to explore sustainable design strategies that are achievable within budget and other parameters.

This section of the Guidelines outlines the approach to sustainable design, describes the environmental impacts of conventional construction, and suggests a proactive approach that minimizes those impacts. This section also defines sustainable design goals for consultants, describes the basic strategies that can be employed to reach them. It does not stipulate specific design criteria as these have not yet been determined, beyond existing codes.

SEA follows best practices for sustainability for its projects, with the aim of achieving LEED Silver status, depending on project size. One of the strategic objectives under the Century Agenda is to "be the greenest, and most energy efficient port in North America". For more information, reference our Environmental Strategy Plan 2009 and the Strategy for a Sustainable SEA (S3).

General Guidelines

- Connecting to power from renewable sources
- Specifying Energy Star appliances and other energy conservation methods
- Incorporating biophilic design principles (bringing nature inside) into projects to achieve balance that promotes building function and occupant well-being.
- Focusing on maintaining ecosystem vitality and air, water, and soil quality

SUSTAINABILITY

Material Selection

Material selection and use is important in order to achieve SEA's sustainability goals. Specific notes about the composition, source, or prohibited content of materials has been provided in the relevant sections. Some general guidelines are included below:

- Source local and sustainable materials and products
- Preference materials containing recycled content

Design Goals

Where projects can be certified, they should follow one of green building certification programs. However, when projects cannot met the requirements for the certification, they should incorporate their concepts as much as possible by following these five simple goals:

1. Conserve Energy

- Reduce Energy Consumption
- Harvest Site Resources
- Increase Efficiency

2. Enhance Environment

- Reduce Pollution Sources
- Eliminate Contamination
- Dilute Pollution Strength

3. Manage Material Use

- Create a Strategy for Material Use
- Select Sustainable Sources
- Use Durable Materials
- Close the Loop

4. Support Landscape

- Connect with Nature
- Preserve Native Vegetation
- Work with Natural Systems

5. Safeguard Water

- Reduce Potable Water Use
- Maintain Natural Water-flows
- Harvest On-site Flows

This section establishes general design criteria as well as requirements for specific materials and systems. This section should be utilized for general design direction and providing assistance to design teams to coordinate their work with Port expectations and other design teams.

Specific information about finishes and performance requirements can be found in the Architectural, Casework, Furniture, Finishes, and Equipment sections.

Contents

- Consistency & Variance
- Design Strategies
- Structural
- Mechanical
- Electrical
- Artwork

SEA is an amalgam of various architecture styles and materials influenced by the time period of construction.

With this in mind, a combination of consistency and variance is the design intent or vision for the Airport. A consistent approach has been defined for finishes, most notably flooring, wall-coverings and columns. Instances where design teams can employ variations have also been noted in the Finishes section.

The design strategies in this section are interwoven and interdependent. It is intended that design teams thoroughly integrate these strategies as a unified design approach.

These strategies are not intended to be seen as independent of one another. However, in the following pages, it is useful to consider each strategy separately as a means of identifying critical issues that each design team needs to address.

Contents

DESIGN STRATEGIES

Spatial Experience

Visually Open & Engaging

Public spaces should be clearly organized, visually open and engaging, and generously scaled, as appropriate to the use of the space. Public circulation areas should be comfortably sized to allow for easy traveler movement during peak traffic periods. Vertical circulation between floor levels should be very open, enabling clear wayfinding and offering opportunities for spatial drama and visual connectivity.

Materials and finishes in public spaces should enhance the sense of openness and visual engagement. Glazing in lobby spaces should be as transparent as possible, to maximize visibility and openness. Interior mezzanine rails should be glazed or otherwise detailed in a way to maximize visibility. Primary interior material palettes should be very light to enhance the sense of openness and natural lighting.

Public spaces should be free of physical impediments that would reduce ease of movement. “Controlling clutter” is not just an operational issue. Designers should develop clear zones for service elements, creating a framework that allows future evolution of service needs without compromising the image and coherence of the public spaces. Service elements should be consolidated and located in alcoves or otherwise well integrated to avoid congestion in public circulation paths.

Natural daylighting and exterior views are an essential aspect of achieving open and engaging public spaces. Daylighting and views should be carefully integrated with artificial lighting and control of solar glare and heat gain, to achieve a strong connection to the natural environment without compromising energy efficiency and functional considerations.

The use of clerestory windows in lieu of skylights should be considered where possible, as clerestory windows are more easily maintained and are less prone to developing water infiltration problems. Where skylights are used, it is recommended to use translucent glazing. Skylights should not be placed over areas where sensitive equipment such as security will be located.

Integration of landscaping, both in exterior locations and where appropriate as interior features, supports the design vision and enriches the traveler’s spatial experience.

DESIGN STRATEGIES

Appropriate Spatial Hierarchy

Public spaces should be organized in a hierarchy that creates a clear and comfortable traveler experience. Primary public circulation paths should have generous ceiling heights, while secondary spaces—such as holdrooms and support spaces—should typically have lower ceilings. Low ceilings in primary circulation paths, such as those in the existing concourses B, C, and D, are to be avoided.

Materials, finishes, and artwork can also support and clarify the intended spatial hierarchy. Primary spaces can be given greater emphasis through use of featured materials or through prominent integration of artwork. Lighting and signage should also be developed in ways that strengthen and support the spatial hierarchy.

Choreographed Experience

The traveler's experience follows a sequential cycle while moving through the airport: approach, decision, arrival, relaxation. The design of the public spaces should be appropriate to the travelers' needs and emotional state at each step of these sequential experiences. Clarity and good visibility are essential throughout the sequence.

01 Approach: In approaching a new space or decision point, travelers seek reassurance and clues to assist with wayfinding. The spatial organization in these approach routes should be very clear, to minimize traveler confusion and uncertainty. The space itself should naturally lead travelers toward their destination. Finishes, artwork, and lighting should enrich the experience without creating significant distractions to travelers.

02 Decision: At points where paths diverge or options are presented to travelers, spaces should be generously scaled to allow travelers to slow and make decisions. Primary paths should be emphasized spatially, while secondary paths should be clearly defined and legible, without confusing the natural hierarchy with more important routes. Materials, lighting, and clear signage all enhance the decision-making process.

03 Arrival: The creation of gateways, focal points, or other transitional elements can help travelers recognize and celebrate their arrival in a new space or intermediate destination. These transition points are ideal locations for

dramatic artwork or specially designed architectural elements. Material transitions offer more subtle ways to enhance the arrival sequence.

04 Relaxation: After arriving at destinations such as holdrooms or concession areas, (and to a lesser extent ticketing and baggage claim), travelers have an opportunity to relax and enjoy their surroundings, as they await the next step in their journey. The character of these spaces should create a relaxing and enjoyable environment, offering exterior views and ample natural light. The design character and material expression should balance a sense of drama with comfort and reassurance to travelers.

Integration of Tenant Spaces and Other Amenities

Integration of tenant spaces (like: retail facilities) enhances the traveler experience, and should be fully considered and integrated early in the design process. Any tenant spaces that remain in publicly accessible areas, past the terms of their lease, must follow Port standards.

DESIGN STRATEGIES

Space Allocation

Floor Area Space Allocation

Space allocation typically is determined through a programming process at the outset of each project. This section provides information about space allocation, generally. More information is available about specific spaces in the Space Types section.

Wall and Ceiling Space Allocation

Space allocation is not only an issue related to floor area. The allocation or "zoning" of ceiling, wall, and even sub-floor spaces for services is also a critical consideration, and essential to achieving high quality service, ease of maintenance access, and control of clutter.

Considerations

- Ceiling access: Assure that mechanical elements above ceilings are zoned in locations that are easily serviced with minimum disruption to public activity.
- Zoning of services on walls: typical locations or methods for integrating miscellaneous elements such as water fountains and electrical outlets, should be defined to maintain a consistent image.
- Routing of special systems: Space needed for routing and maintenance should be defined and coordinated with appropriate stakeholders.
- Advertising: Typical methods of locating and integrating advertising should be established to maintain the cohesiveness of SEA. (The ADR manages the advertising contract. Any proposed modifications to advertising locations need to be reviewed with ADR.)
- Signage: Wayfinding and informational signage needs to be considered throughout the design process. See signage standards.

DESIGN STRATEGIES

Wayfinding

Open and Clear Traveler Circulation

Maintaining good visibility and clear circulation paths are essential. The design and layout of all public spaces must use this as a fundamental basis of design.

Effective Message Systems

Primary wayfinding signage, service signage, FID's, and advertising all must be effectively integrated into a coherent whole, which enables travelers to easily find the information they need in a timely manner.

Signage systems must be designed such that each system is legible and given the appropriate level of emphasis. Primary wayfinding signage must be visually emphasized to avoid confusion and visual clutter.

Advertising should be integrated in clear zones that are highly visible, but not in conflict with primary wayfinding. Advertising should not be in conflict with art nor installed in calmer areas or concessions. Additionally, it should not be on columns, elevator doors, or in other locations in which it disrupts the clarity of the architecture or wayfinding experience.

DESIGN STRATEGIES

Diversity

Coherent Image: Holistic Experience

Achieving unity and consistency throughout the airport is essential to creating a coherent image for the airport. The selection of materials and design expression should be developed to relate well with existing and other new designs. Details should support the design character of the specific project, and each project should be seen as an integral part of the entire traveler experience.

In addition to the coherence of the architectural details, it is also important that all services, commercial elements, landscaping, and movable furnishings support and strengthen the entire design character.

Diversity of Creative Expression

The airport is large enough to accommodate and benefit from diverse architectural and artistic expressions within different parts of the airport. This diversity can enrich the overall character of the airport, but it should be balanced with a commitment to maintaining continuity of material palette and general architectural principles. These moments should be thoughtful and done with intention considering how they fit in with the Airport as a whole and why, how, and where these moments happen.

Enhancement of Existing Architecture

Renovations and expansions of existing architecture should seek ways of maintaining existing high quality materials or elements, while creating stronger continuity with newer portions of the facility. For instance, in the main terminal, the introduction of lighter materials and finishes could be balanced with refurbishing rather than replacing the dark granite wall cladding.

Consistent Use of Clean Simple Materials, Honestly Expressed

Consistent material use is important to achieving continuity throughout the airport. The intent is to maximize consistency while still allowing appropriate variations and development of feature elements within specific areas.

DESIGN STRATEGIES

Services & Amenities

Ease of Access & Use

All services and amenities must be easy for travelers to find and use. Services should be grouped in zones that, while easily accessible do not clutter or confuse the primary activities in public spaces.

Well Organized & Efficient

Services and amenities must be efficiently organized to meet traveler needs and expectations.

Clean & Well Maintained: Control of Clutter

Public spaces should be designed to be easily cleaned and maintained, and should integrate service elements in a way that reduces and controls clutter. Appropriately sized, well located, and readily accessed storage areas should be designed and provided to support long and short term storage of cleaning, maintenance, and other items.

Appropriate Sizing for Current & Future Needs

Designs should be carefully developed to meet current demands. Designs should consider potential future changes or developments and make provisions to allow for future growth or expansion. This is not a mandate to "over-design" the initial systems; rather, design teams should look ahead to future possibilities, and with the Port, make sound long-term decisions that provide appropriate levels of future flexibility.

STRUCTURAL

Structural System

The design of the structural system needs to meet project goals, code requirements, and maintain future flexibility of interior renovations. Any new floor levels may vary from existing finish floor levels but main circulation levels must transition with sloped walkways.

Structural Grid

Due to the airport's complex network of buildings, we keep a uniform building grid numbering system. All new projects are to use the existing grid numbering system and new grid lines added are to be reviewed with key stakeholders for proper naming convention before 30% design. In addition, columns in back-of-house and mechanical areas are to have a written grid number for easy identification in the field.

Existing Drawings

The Port of Seattle maintains a library of drawings from past projects. The designer must research all construction completed in the area of the project, paying particular attention to adjoining structures and utilities.

Record Drawings

It is critical that as-built documents of all projects be filed with the Port.

MECHANICAL

Mechanical requirements are documented separately; please see the Resources section. Design teams should coordinate with their project manager in acquiring the most current mechanical standards. Acoustical considerations are an important aspect of mechanical systems.

Please refer to the Planning section for more information on Sustainable Design and Acoustics recommendations. Project teams are encouraged to explore these concepts as they relate to mechanical issues, to the extent feasible within the project budget and other parameters.

ELECTRICAL

Electrical requirements are documented separately. Design teams should coordinate with their project manager in acquiring the most current electrical standards.

Project teams are encouraged to explore sustainability concepts as they relate to electrical issues, to the extent feasible within the project budget and other parameters.

ARTWORK

Artwork requirements are documented separately in the Port of Seattle Art Policy and Guidelines. Design teams should coordinate with their project manager in acquiring the most current artwork standards.

The Airport consists of various zones of spaces with complex but important relationships.

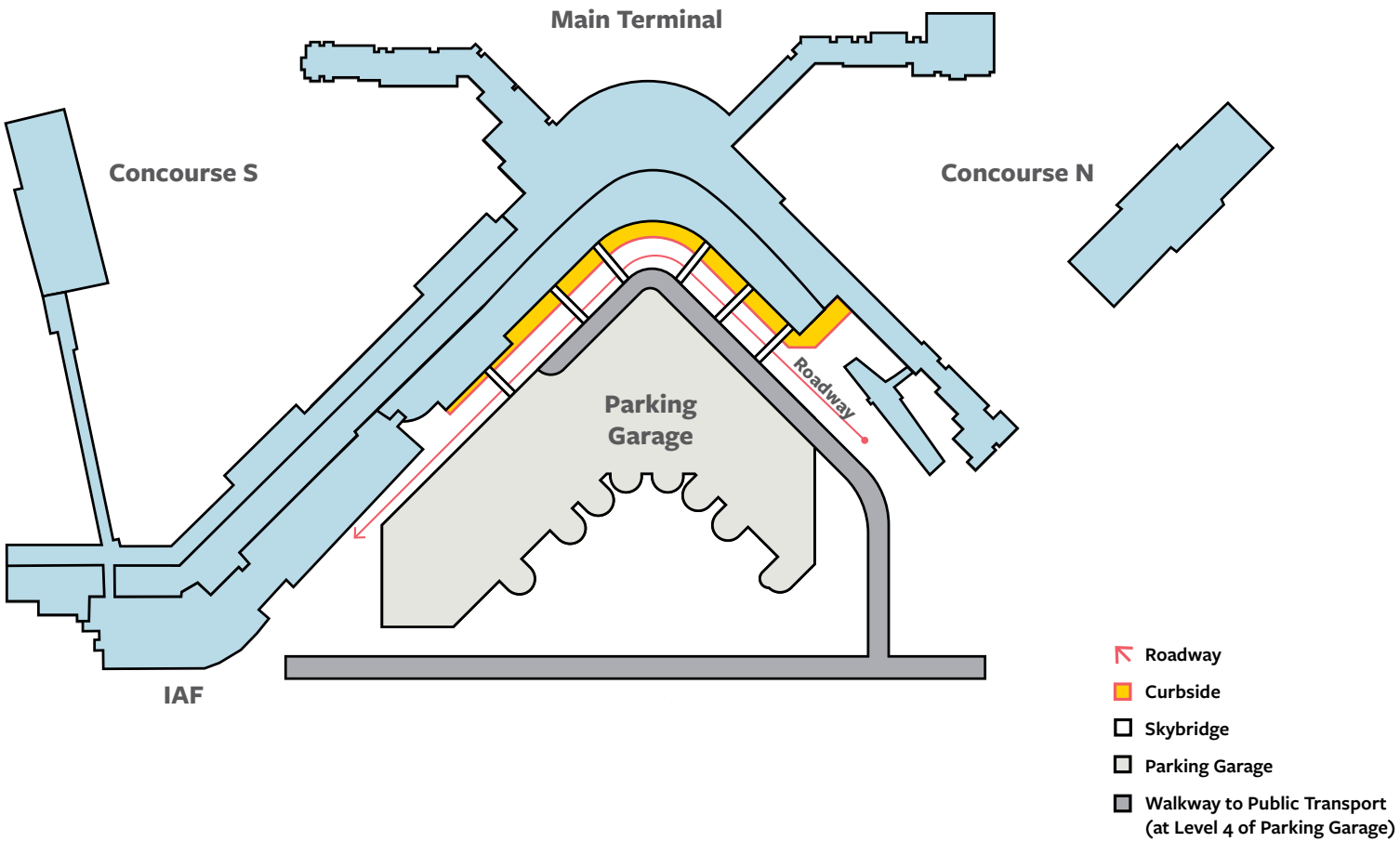
This section aims to provide clarity as to the relationships, locations, and components of the zones.

Contents

- Airport Site Plan
- Main Terminal Access Plan
- Secure vs. Non-secure
- Main Terminal Levels
- Pre-Security Ticketing/ Concourse Level
- Baggage Claim/ Ramp Level
- Bridge (Skybridge/ Promenade) Level
- Satellite Transit System (STS) Level
- Pre-Security
- Concourse

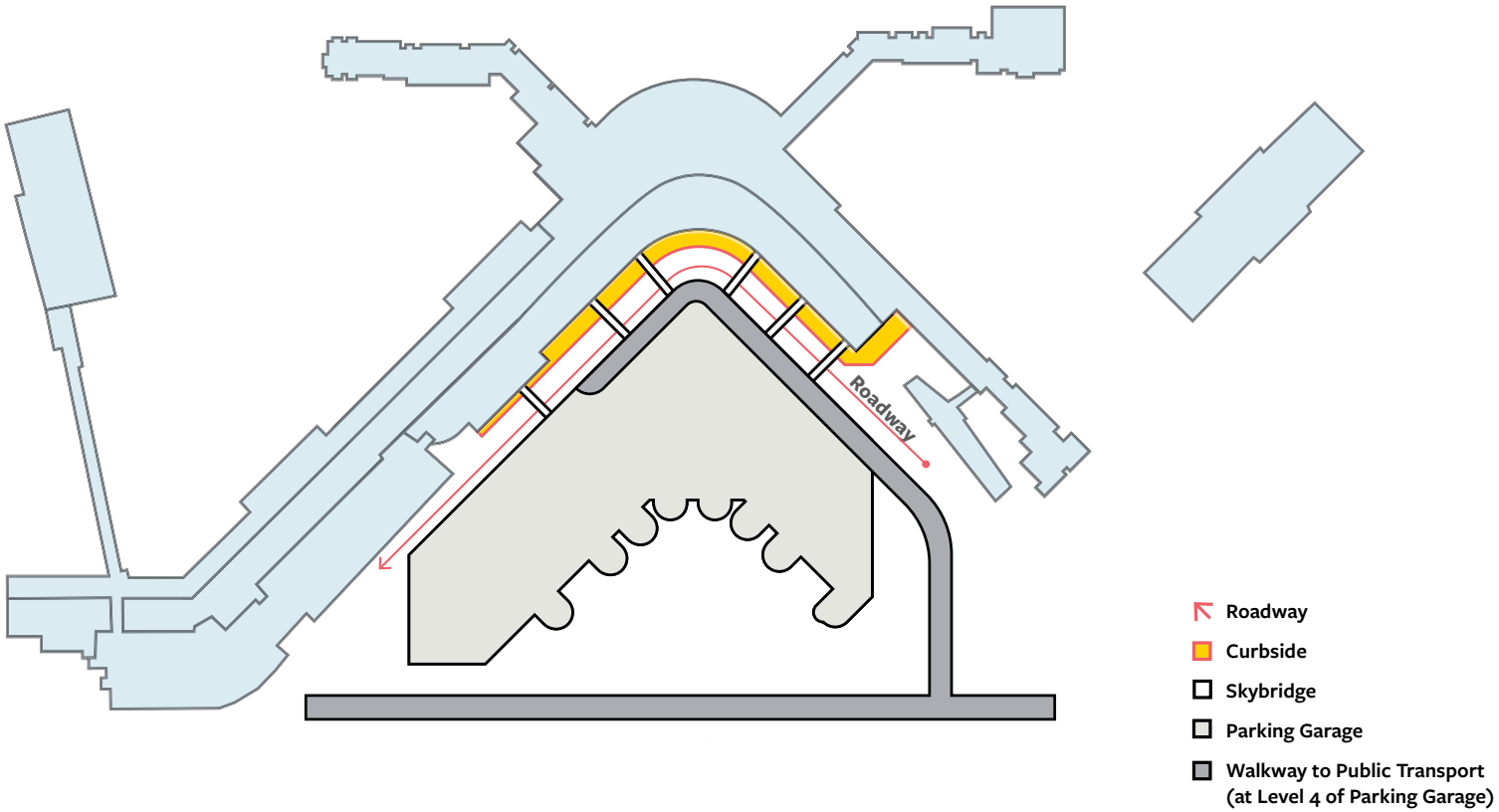
AIRPORT SITE PLAN

The Airport site is comprised of a system of several buildings and roadways. These buildings were built at different times, but all function together to support our passengers on their journeys.



MAIN TERMINAL ACCESS PLAN

Passengers can arrive to the Airport through several means. However there are only two main access points in which they can enter the Main Terminal, other than gate access from their plane. Passengers can access the Main Terminal from the Curbside Zones on either level of the main roadway (Airport Expressway) and the Skybridges that feeds in pedestrian from fourth level of the Parking Garage.



SECURE VS. NON-SECURE

Areas of the Airport campus are understood as falling into two main categories: Secure and Non-secure.

Secure

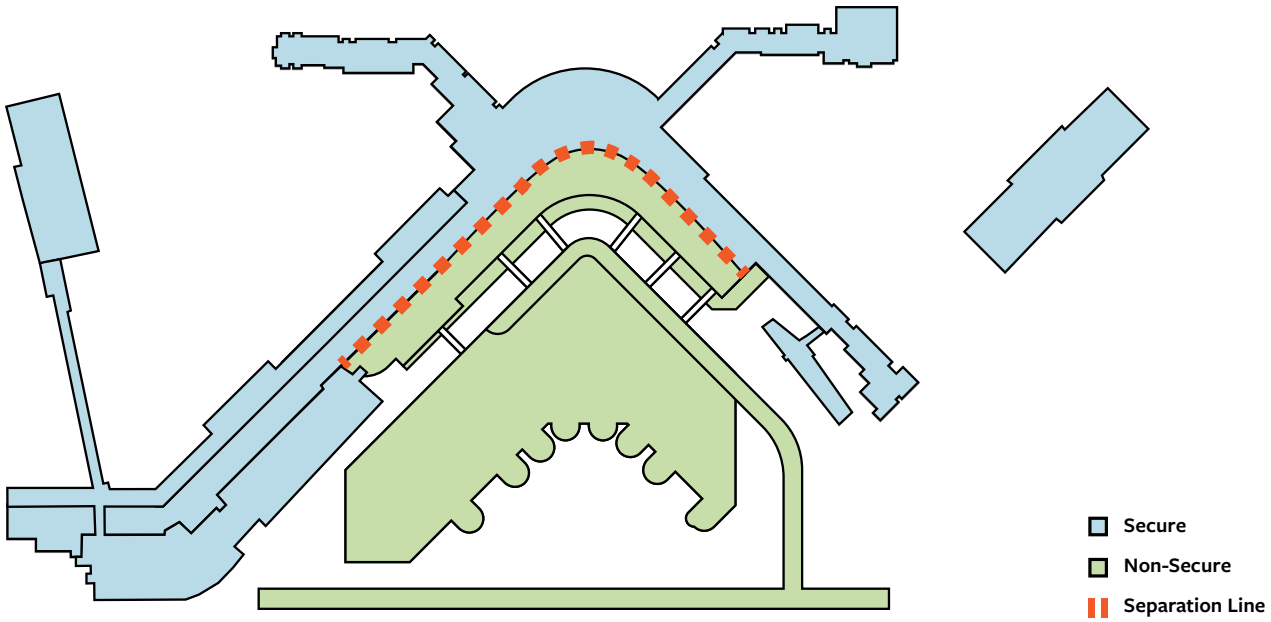
The Secure zone includes buildings and infrastructure that are connected and provide access to activities that happen in the air, such as airplanes and flying. They are accessible only by passing through security. It includes the following:

- Concourses / Ramp
- Central Terminal

Non-Secure

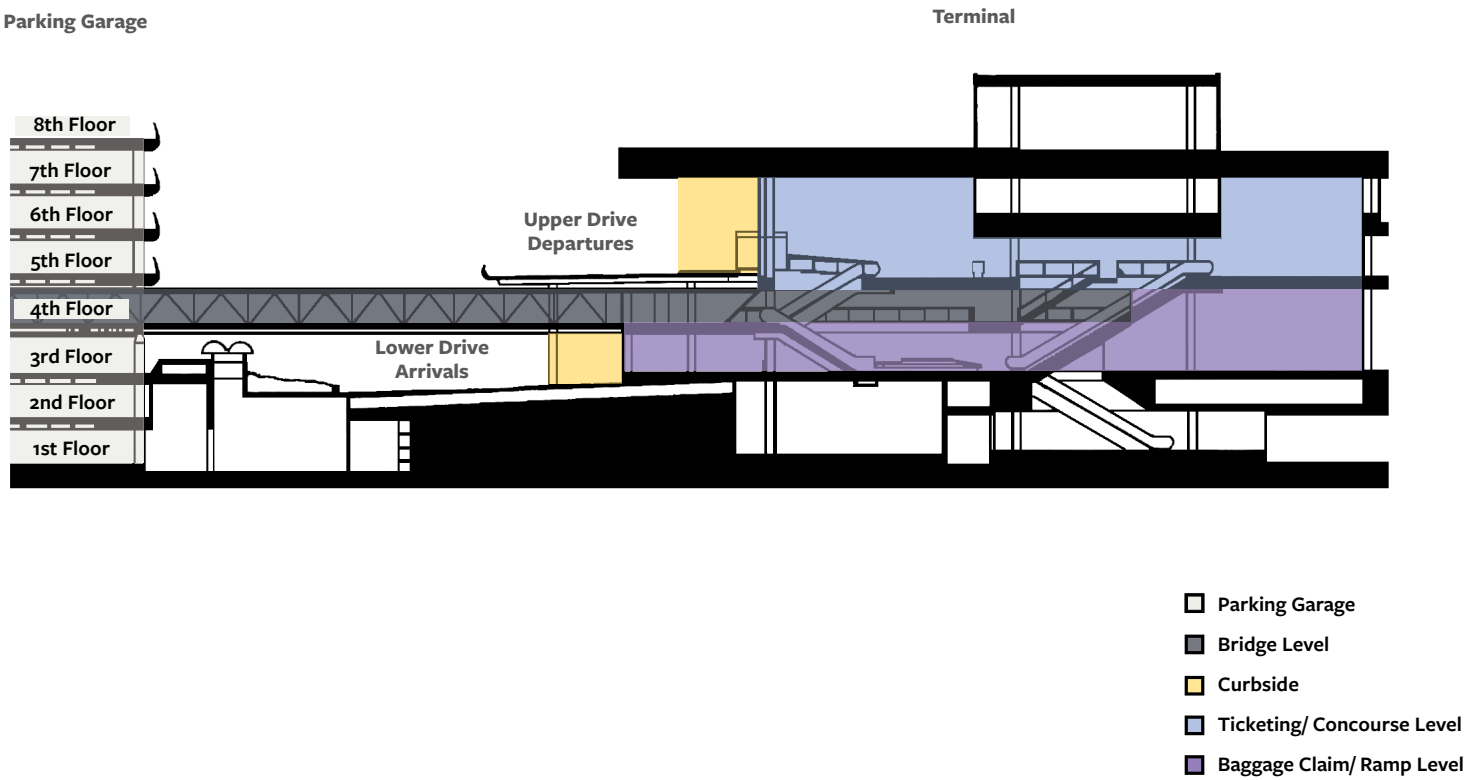
The Non-secure zone includes buildings and infrastructure that are connected to activities that happen on land, such as driving and accessing the city. It includes the following:

- Roadway and Curbside
- Parking
- SoundTransit Access



MAIN TERMINAL LEVELS

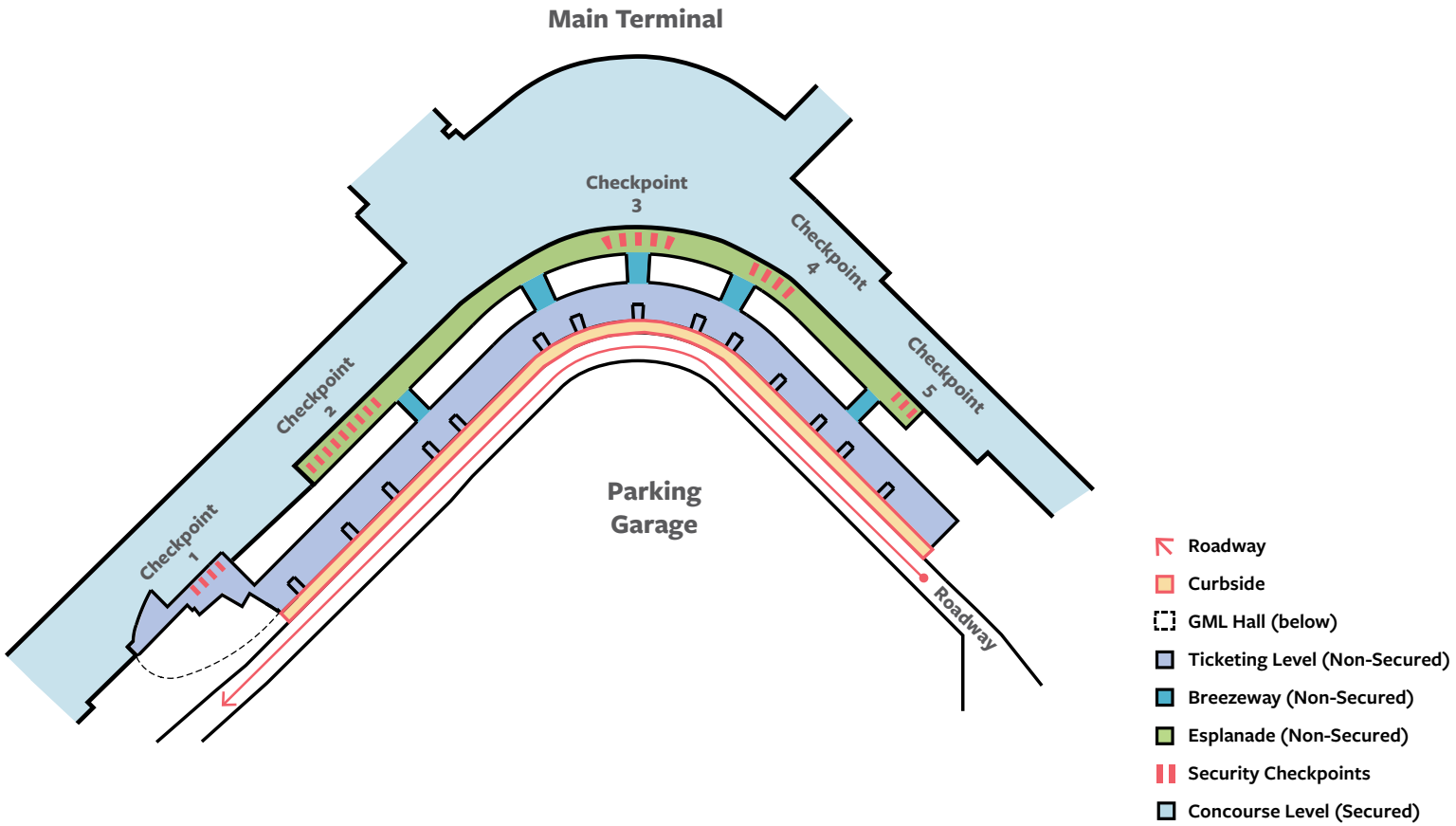
The Main Terminal is made of a system of spaces that must work together to create a positive passenger experience. It is important to understand the different zones and how they work together to ensure decisions are appropriate for each space and compatible with those adjacent. This section describes the main zones of the Main Terminal and their vertical relationships.



TICKETING/ CONCOURSE LEVEL

Upper Drive / Departures

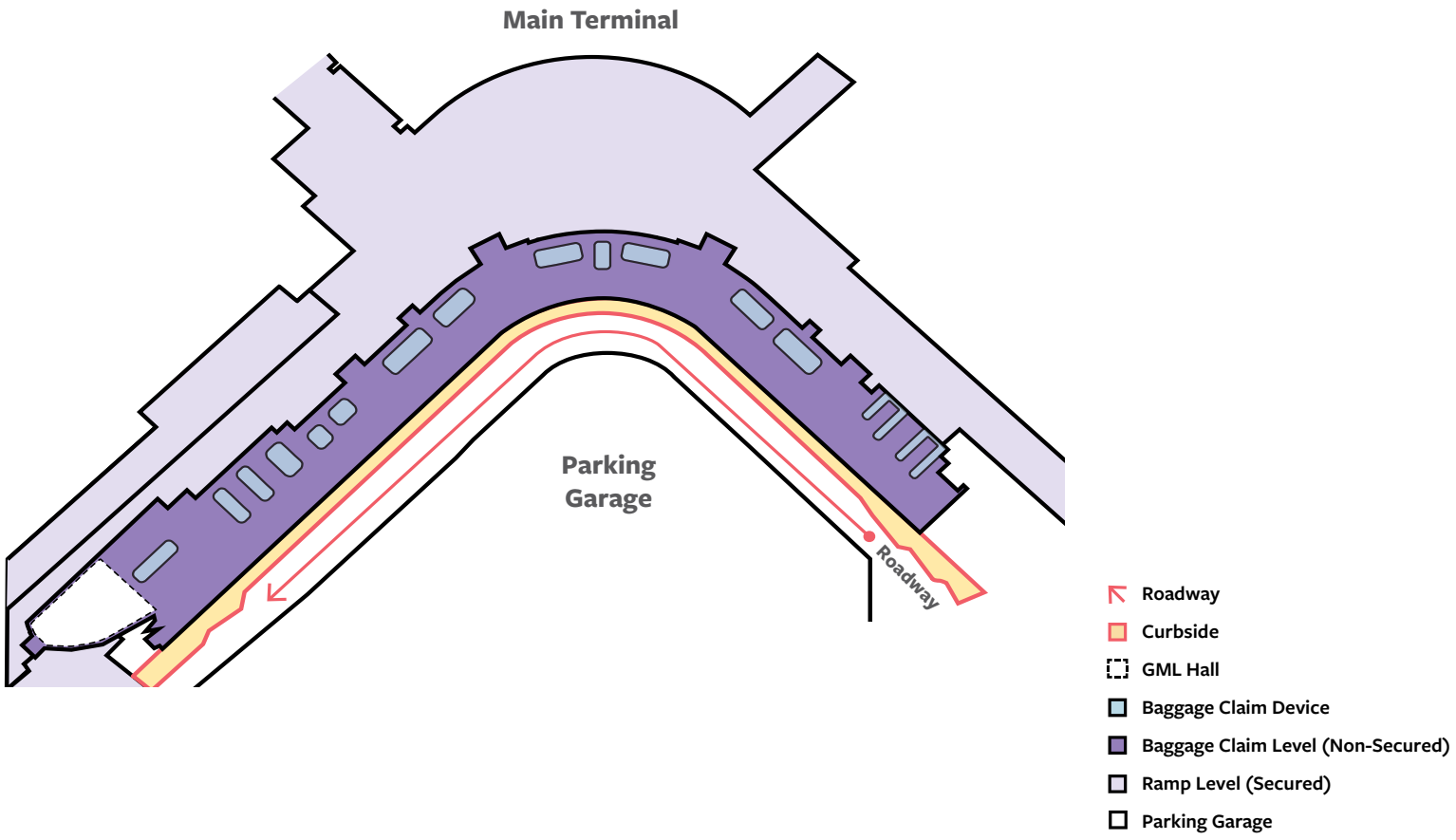
From the Curbside (Upper Drive/ Departures) passengers enter the Main Terminal on the Ticketing Level (non-secured). On this level, passengers can check-in to their flights at either a self service kiosk or agent service counter before proceeding to the Breezeways paths leading to Checkpoints. Once through the Security Checkpoints, passengers are on the secured side of the Terminal also known as the Concourse Level and can proceed to their gate.



BAGGAGE CLAIM/ RAMP LEVEL

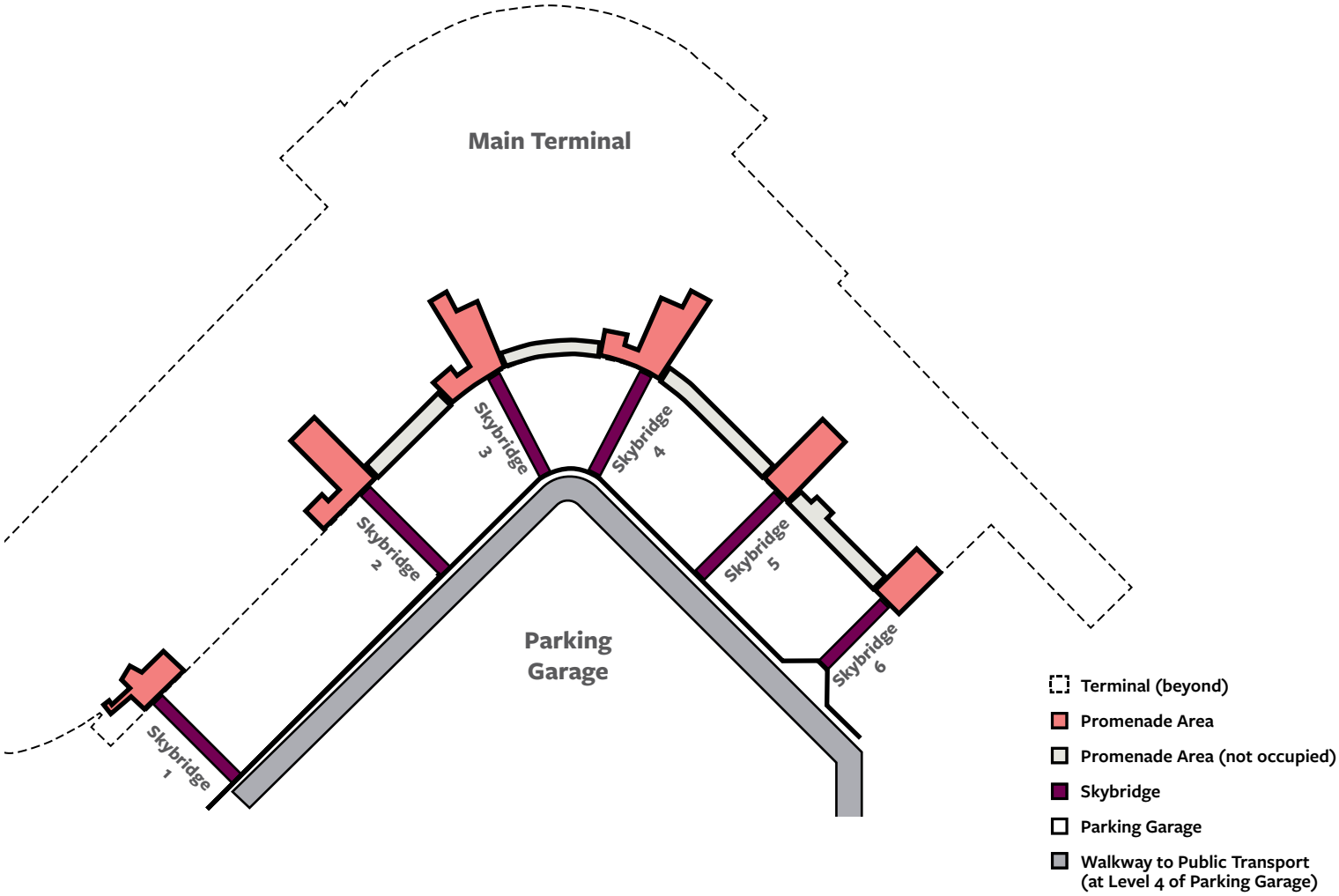
Lower Drive / Arrivals

Passengers departing their fights will make their way to Baggage Claim to exit the secured side of the Terminal. On Baggage Claim Level (non-secured), passengers can head towards the Parking Garage, obtaining their checked bag(s), meet local family and friends, and access the Rental Car Shuttle from the Curbside (Lower Drive/ Arrivals). As passengers are waiting for their bag(s) at the assigned baggage claim device, Airport Operation is busy on the secured side (Ramp Level) moving bags across the Terminal to and from the planes.



BRIDGE LEVEL

The Bridge Level (non-secured) connects passengers between the Parking Garage and the Main Terminal. Passengers cross over the Lower Drive/ Arrivals Roadway and Curbside areas to access either structure.



SATELLITE TRANSIT SYSTEM LEVEL

The Satellite Transit System (STS) provides underground transportation between the concourses in the secure zone. It is composed of three routes: South Loop (blue), Shuttle (yellow), and North Loop (green). The interior finishes at the stations integrate the color associated with their loop to reinforce wayfinding.

South Loop (Blue)

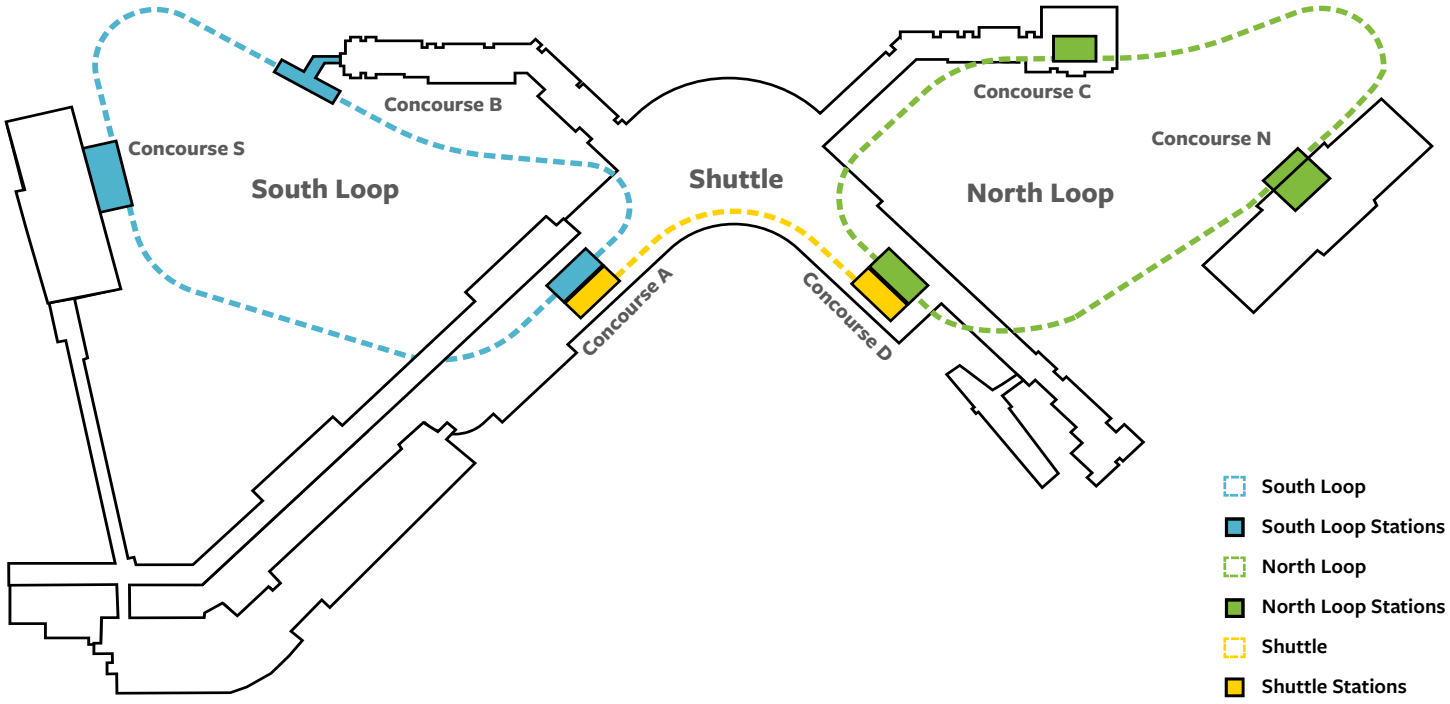
The South Loop connects Concourses A, B, and S.

Shuttle (Yellow)

The Shuttle connects the South and North Loops and Concourses A and D.

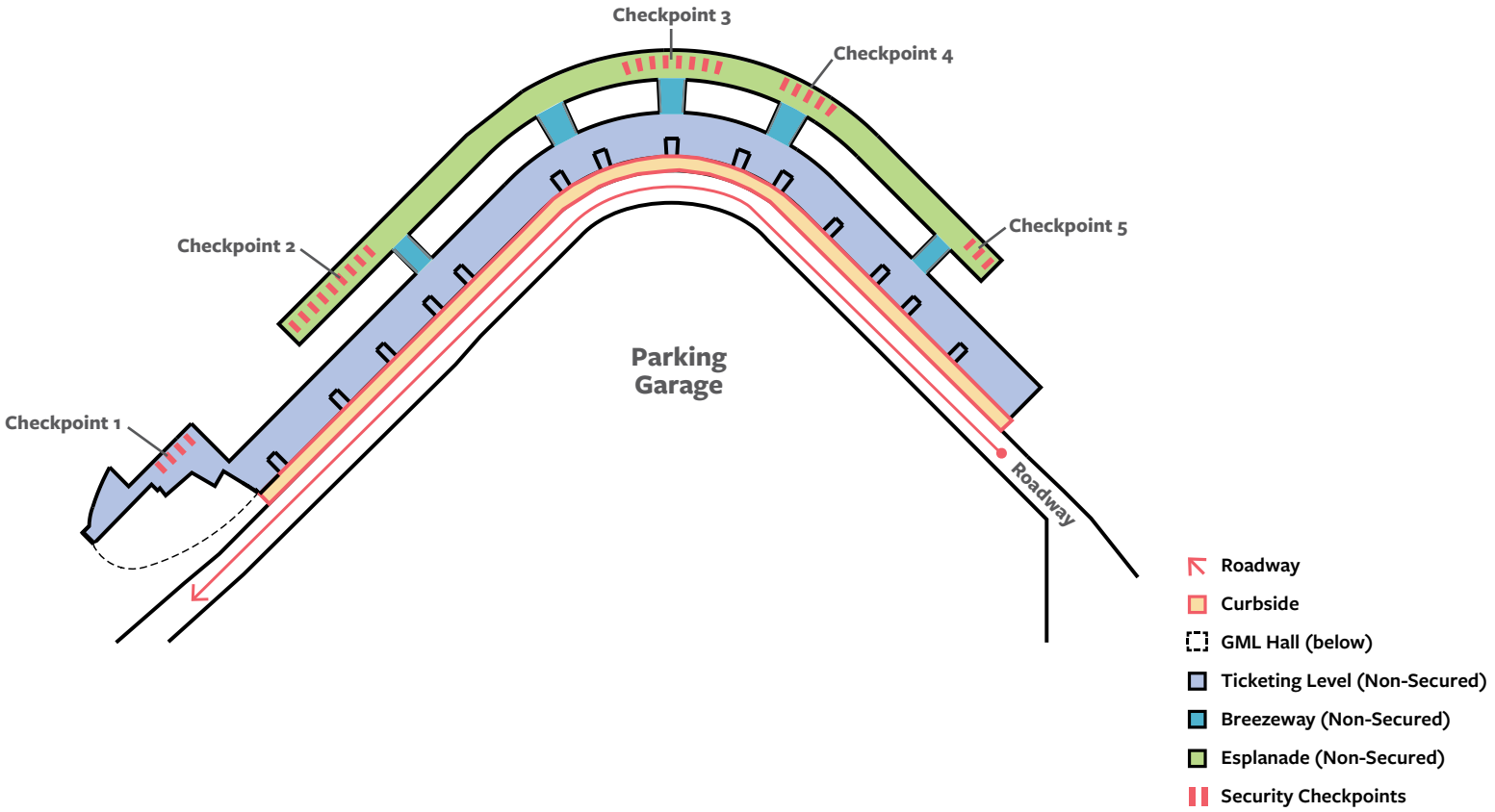
North Loop (Green)

The North Loop connects Concourses C, D, and N.



PRE-SECURITY
Ticketing Level

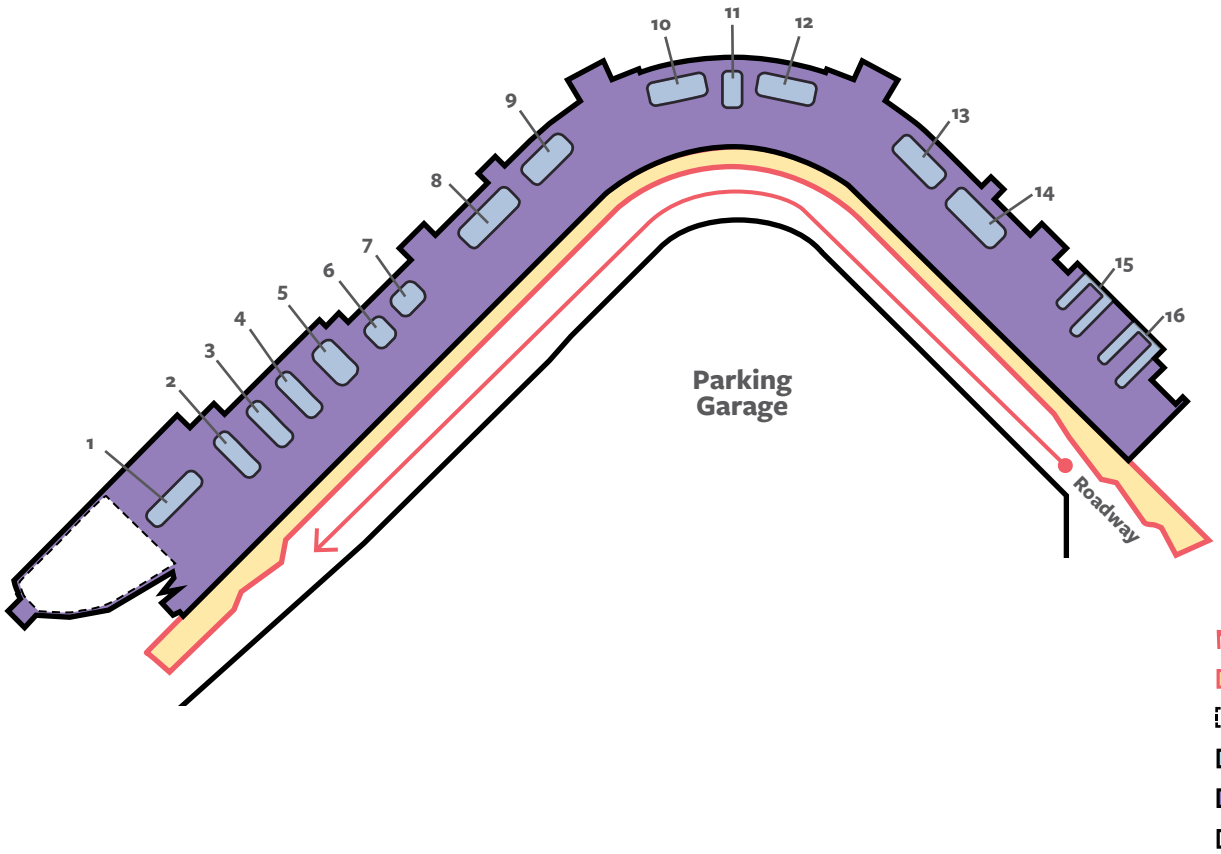
Prior to going through the Security Checkpoints, passengers are considered to be in the pre-security zone of the Terminal. This includes the curbside area of the Upper Drive/ Departures and the interior area of the building known as the Ticketing Level.



PRE-SECURITY

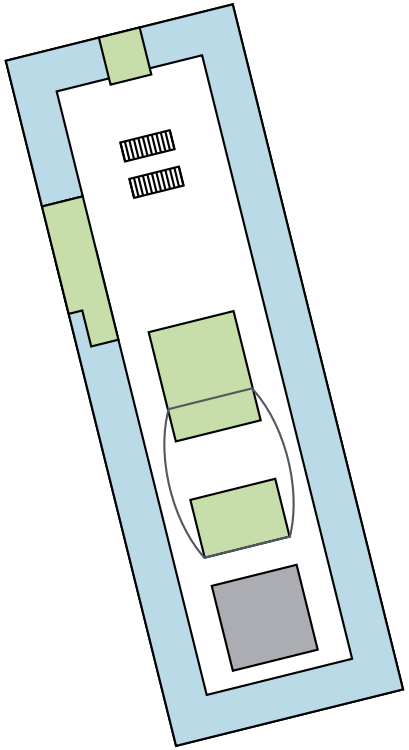
Baggage Claim Level

Passengers waiting for their bags by a Baggage Claim Device are located on the Baggage Claim Level of the Terminal This area along with the curbside (Lower Drive / Arrivals) are also considered part of the pre-security zone.



CONCOURSE ACCESS

The Concourses serve the same purpose: connecting passengers to their gates for boarding. While most Concourses are accessible by foot, directly from security, Concourse N and Concourse S are accessed by the Satellite Transit System (STS).



- Holdrooms
- ADR
- Circulation
- Restrooms

2.3 SPACE TYPES

The Airport consists of a system of zones containing various space types, with the main terminal building at the center.

The various zones of the terminal building can be categorized in a number of ways, including by level, Port- or tenant-owned, secure or non-secure, and by base building, tenant, or ADR management.

A number of diagrams in the Planning section show this delineation of zones. Each zone contains a number of space types. In this section, each space type is described and detailed with planning notes and requirements for architectural elements, furniture, and equipment.

Their designation according to the zones above is also listed. Space types that occur in both secure and non-secure areas are listed under Amenities & Support.

Non-secure

- Skybridges
- Curbside (Arrivals)
- Curbside (Departures)
- Baggage Claim
- South Arrivals (GML) Hall
- Check-In Lobby
- Esplanade
- Mezzanine
- Passageways
- Parking Garage

Secure

- Security Checkpoints
- Central Terminal
- Concourses
- Subgrade Transit Stations
- Corridors
- Holdrooms
- Aircraft Passenger Loading Bridge
- International Arrivals

Amenities & Support

- Conveying (Elevators, Escalators, Moving Walkways)
- Restrooms
- Nursing Suite
- Lactation Room & Modular Pods
- Interfaith Prayer & Meditation Room
- Sensory Room
- Service Animal Relief Areas
- Children's Play Areas
- Lounges
- Storage
- Loading Docks

SKYBRIDGES

Non-secure

Skybridges are pedestrian bridges that connect the fourth floor of the Parking Garage to the terminal at the Skybridge level.

Planning Considerations

- As a high traffic area, flooring material is critical for durability, aesthetic, and catching moisture.

Fenestration

- Public Entrance Doors
- Storefront Glazing

Ceilings

- Linear Metal Ceiling

Finishes

- Carpet Tile
- Walk-Off Mat
- Interior Paint Type 2

Equipment

- Security Camera

CURBSIDE (ARRIVALS)

Non-secure

The (Arrivals) Curbside walkway is the zone between the arrivals level roadway curb and the front of the terminal, typically used by passengers who have picked up their bags in baggage claim and are on their way out of the airport.

Planning Considerations

- The space should feel enlivened with sufficient seating.
- Confirm any provisions for smoking areas with the project manager. Keep smoking areas away from doors and air intake.

Building Envelope

- Curtain Wall
- Curbside Soffit
- Exterior Paint

Structure

- Concrete Columns
- Concrete Floor

Fenestration

- Public Entrance Doors

Equipment

- Security Camera
- Bird Control
- Bollards
- Exterior Waste/Recycle Receptacle
- Cigarette Trash Receptacle (at designated smoking areas)

CURBSIDE (DEPARTURES)

Non-secure

The (Departures) Curbside walkway is the zone between the departures level roadway curb and the front of the terminal, typically used by passengers arriving for flights.

Planning Considerations

- The space should be clear of excess equipment of impediments for entering airport.
- There are some areas for curbside check in and available baggage conveyors associated on this level.
- Accessible curb ramps need to be provided at minimum every 100′.
- Confirm any provisions for smoking areas with the project manager. Keep smoking areas away from doors and air intake.

Building Envelope

- Curtain Wall
- Curbside Soffit
- Exterior Paint

Structure

- Concrete Columns
- Concrete Floor

Fenestration

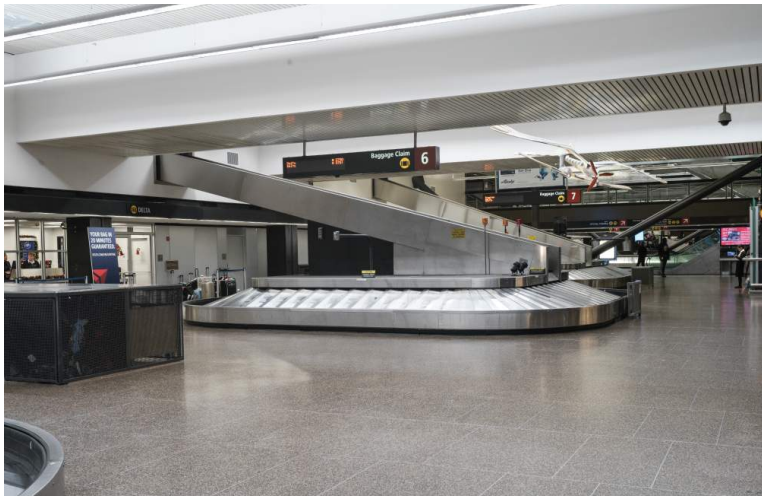
- Public Entrance Doors

Equipment

- Security Camera
- Bird Control
- Stanchions
- Bollards
- Exterior Waste/Recycle Receptacle
- Cigarette Trash Receptacle (at designated smoking areas)
- Walk-off carpet tiles

BAGGAGE CLAIM

Non-secure



The Baggage Claim is the non-secure lobby and hall on the arrivals level of the terminal. It includes the baggage claim devices and the area around them, the escalator wells, and the landing circulation areas from the entry doors to Curbside (Arrivals). It extends from the north end of the terminal to the South Arrivals Hall.

Planning Considerations

- Original columns finished in black granite should remain; any additional columns should follow new column guidelines.
- Some ADR tenant spaces and information kiosks are provided in this area.
- Consider appropriate storage solutions and locations for this area.
- Columns to remain clad in black granite, exposed concrete, or be painted to match concrete.

BAGGAGE CLAIM

Fenestration

- Public Entrance Doors

Partitions

- Demountable Partitions

Conveying

- Baggage Claim Rails

Furniture

- Meda Gate Seating

Finishes

- Terrazzo Flooring
- Walk-Off Mat
- Broadloom Area Rug
- Interior Paint
- Concrete Paint
- Wall Covering
- PLam Wall System 2
- Metal Wall System
- Wall & Corner Guards
- Stainless Steel Base
- Granite Column Cover

Ceilings

- Acoustic Ceiling Tile
- Linear Metal Ceiling

Equipment

- Security Camera
- Baggage Claim Devices
- Interior Waste/Recycling Receptacles
- Bicycle Racks / Storage
- Maintenance Lifts

SOUTH ARRIVALS (GINA MARIE LINDSEY) HALL

Non-secure

The South Arrivals Hall, also known as the Gina Marie Lindsey Arrivals Hall, was named after a former director of the Airport. It is a large-scale, double height public gathering space at the south end of the terminal on the arrivals level, but is also experienced from the departures and mezzanine levels.

Planning Considerations

- The South Arrivals Hall is very light and bright by design, but should transition in a complementary way to the older terminal buildings and areas, which have darker finishes.
- Structure to remain exposed in a white finish.
- Provide freestanding furniture for ease of moving for maintenance.

SOUTH ARRIVALS (GINA MARIE LINDSEY) HALL

Building Envelope

- Curtain Wall

Fenestration

- Public Entrance Doors

Conveying

- Interior Stairs
- Guardrails

Finishes

- Stone Flooring
- Fixed Floor Mats
- Interior Paint
- Urethane Semi-Gloss
- Wallcovering
  - PLam Wall System 1
  - Metal Wall System
  - Wood Paneling
  - Stone Wallcovering

Ceilings

- Acoustic Ceiling Tile
- Linear Metal Ceiling

Equipment

- Fire Extinguisher
- Fire Extinguisher Cabinet
- Interior Waste/Recycle Receptacles
- Stanchions
- Emergency Cones
- Bird Control

CHECK-IN LOBBY

Non-secure

The Check-In Lobby is on the departures level of the terminal. It spans from the entry doors at Curbside (Departures) to the Esplanade. It is inclusive of the connecting corridors (the passageways) to the Esplanade and extends from the north end of the terminal to the South Arrivals Hall.

Planning Considerations

- Original columns finished in black granite.
- Signage is supplied by SEA for all common use check-in casework. Some airlines may provide their own signage, as approved by SEA. Appropriate storage should be provided.
- Intend to make Check-In continuous with the Esplanade.

CHECK-IN LOBBY

Fenestration

- Public Entrance Doors

Conveying

- Guardrails

Casework

- Check-In Lobby Counters
- Check-In Baggage Scale Shell
- Flight Information Display

Furniture

- Meda Gate Seating

Finishes

- Terrazzo - Legacy Flooring
- Walk-Off Mat
- Fixed Floor Mats
- Interior Paint
- Wallcovering
  - PLam Wall System 1
  - Metal Wall System
  - Wood Paneling System
  - Stone Wallcovering
  - Granite Column Cover

Ceilings

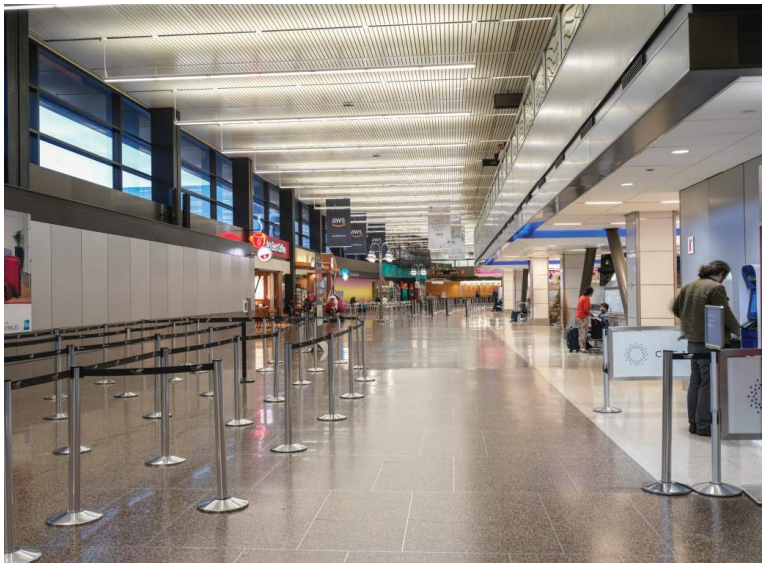
- Acoustic Ceiling Tile
- Linear Metal Ceiling

Equipment

- Security Cameras
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Planters
- Emergency Cones
- Stanchions
- Interior Waste/Recycle Receptacles
- Bird Control

ESPLANADE

Non-secure



The Esplanade is the circulation hall on the departures level of the terminal behind the Check-In Lobby. It is accessible from the Check-In Lobby through the Passageways, which pass through the tenant check-in areas.

Planning Considerations

- The Esplanade should have a similar look and feel to the Check-In Lobby.
- Vending machines to be located in an alcove, where loaded palate jacks don't need to cross over expansion joints to get to them, and not below an access panel.
- Consider opportunities for artwork in this space.
- Consider stanchion placement, especially for the Checkpoint overflow lanes.

ESPLANADE

Conveying

- Elevator

Casework

- Flight Information Display

Finishes

- Terrazzo - Light
- Terrazzo - Accent
- Terrazzo - Legacy
- Fixed Floor Mats
- Interior Paint
- Wallcovering
- Stainless Steel Wall Base
- PLam Wall System 1
- Metal Panel System
- Wood Panel System
- Wall & Corner Guards
- Granite Column Covers

Ceilings

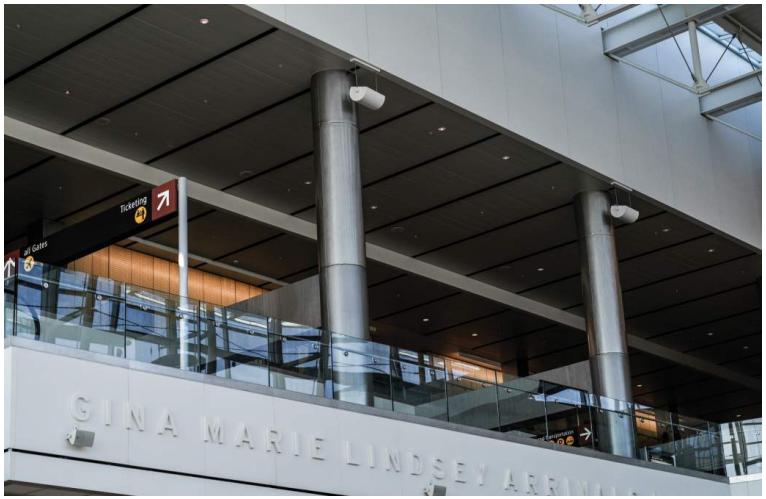
- Linear Metal Ceiling

Equipment

- Security Camera
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Emergency Cones
- Stanchions
- Interior Waste/Recycle Receptacles
- Bird Control

MEZZANINE

Non-secure



The mezzanine is located above and visible from the Esplanade. There is limited passenger access, as it includes Port of Seattle, airline, and other offices.

Planning Considerations

- Railing to be glass to maintain openness and transparency.

MEZZANINE

Conveying

- Guardrails

Finishes

- Interior Paint

Ceilings

- Linear Metal Ceiling

Equipment

- Security Camera
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Bird Control

PASSAGEWAYS

Non-secure

The Passageways are the perpendicular walkways connecting the Check-In Lobby and the Esplanade on the departures level, passing between tenant check-in areas. Some contain circulation up to the Mezzanine or down to the Baggage Claim. The passageways are also known as breezeways.

Planning Considerations

- Consider art integration in this space.

Conveying

- Interior Stairs
- Escalators
- Metal Railings (at structure)
- Guardrails (at stairs and escalators)

Ceilings

- Acoustic Ceiling Tile

Finishes

- Interior Paint Type 2 (at structure)
- Wallcovering
  - PLam Wall System 1
  - Wood Paneling System

Equipment

- Bird Control

PARKING GARAGE

Non-secure

The Parking Garage is an eight-level parking structure. Its fourth level connects to the Skybridge level of the terminal building and is the only parking level that aligns with the Airport. Passengers park their cars in the Parking Garage and also utilize the structure to access Sound Transit.

Planning Considerations

- The cruise area is on level 1.
- Rental cars, Uber, etc. are accessed on level 3.
- Elevator lobbies to be suitable for wet locations.
- Parking lots shall be designed to eliminate problems associated with pavement cleaning and snow removal.
- Garage should have restrooms and janitorial closets.
- Concrete to remain raw and exposed except for when painted for wayfinding.

Conveying

- Stairs
- Rails

Finishes

- Carpet Tile (in elevator lobbies)
- Exterior Paint (at elevator lobbies)
- Concrete Paint

Equipment

- Security Camera
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Exterior Waste/Recycle Receptacles

SECURITY CHECKPOINTS

Secure

The Security Checkpoints divide the non-secure and secure areas of the Airport, helping the TSA ensure safe flights for our passengers. They connect the Esplanade and the Concourses.

Planning Considerations

- Finishes vary by location, but should coordinate with existing finishes and surrounding areas.
- Furniture and floor mats provided by TSA.
- Stanchions supplied by SEA with base determined by floor condition.
- Demountable partitions used to create enclosed areas to be approved by ARC.

Casework

- Flight Information Display

Finishes

- Terrazzo - Light
- Interior Paint Type 1
- Wallcovering
  - Wood Paneling System
  - PLam Panel System 1
  - Wall & Corner Guards

Partitions

- Demountable Partitions

Ceilings

- Acoustic Ceiling Tile

Equipment

- Security Cameras
- Stanchions
- Interior Waste/Recycle Receptacles
- Bird Control

CENTRAL TERMINAL

Secure

Central Terminal is the main, large-scale public gathering space on the departures level. Providing passengers a place to relax and refresh, it is home to many food and beverage options and has ample seating. Occasionally, local musicians may be invited to perform in the space. The second floor is accessible by stairs and elevators.

Planning Considerations

- Floor is terrazzo.
- Walls have stone.
- Granite stone in select feature areas.
- Any stone used should match existing materials.
- Neutral columns between concessions must maintain existing stone.

CENTRAL TERMINAL

Building Envelope

- Curtain Wall

Conveying

- Stair
- Guardrail

Casework

- Flight Information Display

Finishes

- Terrazzo Flooring
- Stone Flooring
- Interior Paint Type 1
- Urethane Semi-Gloss
- Wallcovering
  - Stone Wallcovering System
  - Limestone Travertine
  - Gazelle Granite
  - Wall & Corner Guards
  - Base & Wainscot
  - Chair Rails

Ceilings

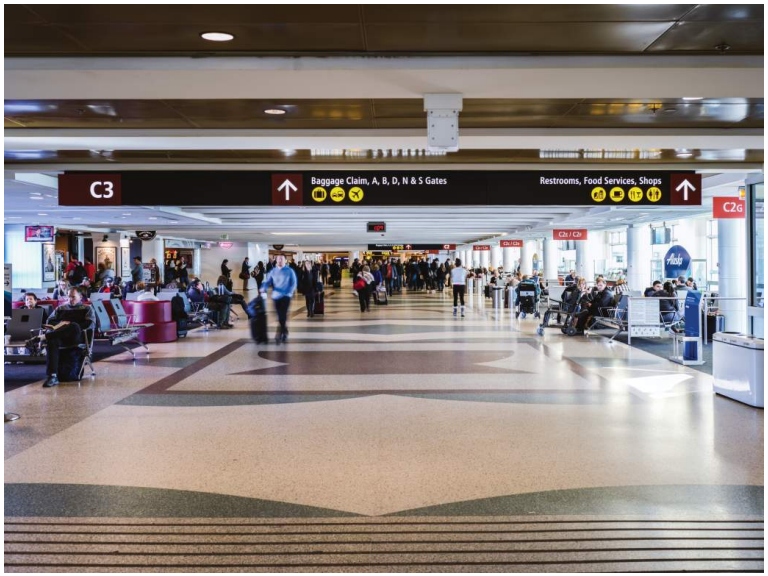
- Acoustic Ceiling Tile
- Metal Ceiling Tile
- Gypsum Board Ceiling (at soffits)

Equipment

- WiFi Diffuser
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Planters
- Interior Waste/Recycle Receptacle
- Bird Control
- Vending

CONCOURSES A, B, C, D, N & S

Secure



Passengers travel through the Concourses to reach their flights on the departures level. The Concourses consist of wide circulation paths, holdrooms, aircraft boarding gates, airline check-in counters, and some ADR concession areas. Concourses A, B, C, and D are attached to the main terminal, connecting to Central Terminal and Security Checkpoints. Concourses N and S are accessible by the Satellite Transit System (STS).

Planning Considerations

- Finishes vary by location, but should coordinate with existing.
- No exposed concrete on column or wall bases. These should be clad in metal panels.
- Cameras and WiFi routers should be minimal in size and blend in with the surrounding finishes.

CONCOURSES A, B, C, D, N & S

Fenestration

- Concourse Entry/Exit Doors

Casework

- Ticket Lift Podium (Concourses C, D, N, S)
- Flight Information Display

Finishes

- Terrazzo - Light
- Interior Paint Type 1
- Wallcovering
  - PLam Wall System 1
  - Fabric Wrapped Panel
  - Base & Wainscot
  - Chair Rails
- Wall & Corner Guards
- Column Enclosures

Ceilings

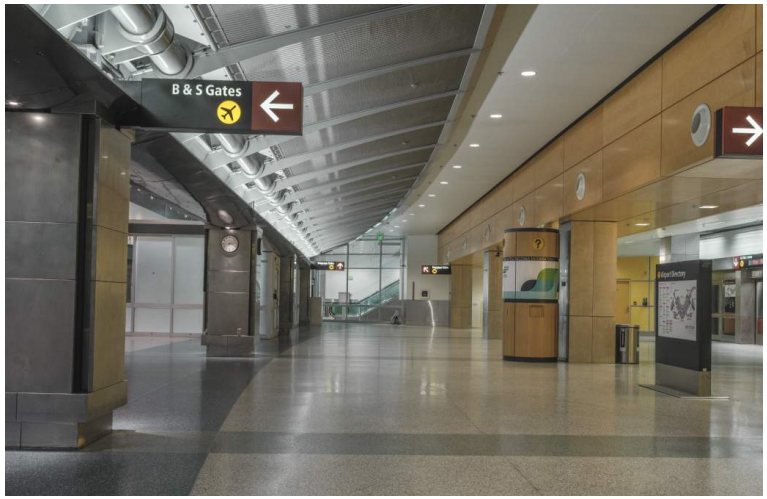
- Acoustic Ceiling Tile
- Metal Tile Ceiling
- Gypsum Board Ceiling (at soffits)

Equipment

- Security Cameras
- Wall Power
- WiFi Diffuser
- Fire Extinguisher
- Fire Extinguisher Cabinet
- Emergency Cones
- Interior Waste/Recycle Receptacle
- Vending

SUBGRADE TRANSIT STATIONS

Secure



The Satellite Transit System (STS) Stations connect passengers from the main terminal to concourses. The subgrade stations include the escalator/ elevator wells, the Mezzanine circulation level, the station lobbies, and the trains themselves. The four STS Stations are connected by three train lines.

Planning Considerations

- Passengers are most interested in finding their gate; color coding is not an important strategy to continue as long as wayfinding is clear.
- STS stations' design intent is to feel comparable to a premiere city subway station. Each station has an overhead metal structure with ambient lighting.
- Acknowledge confusion of passengers and importance of wayfinding.

STS Routes:

North Loop - (green)
- connects Concourses D, N, and C

South Loop - (blue)
- connects Concourses A, S, and B

Shuttle between North & South Loops (yellow)
- connects Concourses A and D

SUBGRADE TRANSIT STATIONS

Fenestration

- STS Doors

Conveying

- Interior Stairs
- Guardrails
- Metal Railings

Finishes

- Terrazzo - Light
- Interior Paint Type 1
- Wallcovering
  - PLam Wall System 1
  - Wood Paneling System
  - Base & Wainscot
  - Chair Rails
- Stainless Steel Column Enclosures

Ceilings

- Metal Ceiling Tile
- Linear Metal Ceiling

Equipment

- Security Cameras
- Emergency Cones
- Fire Extinguisher Cabinet
- Interior Waste/Recycling Receptacles

CORRIDORS

Secure

Corridors are used to connect various areas of the Airport together. It is important that they are kept clean and clear to facilitate passengers' quick and easy circulation and navigation.

Planning Considerations

- Maintain a minimum 80" headroom and minimum 48" width along all pathways.
- Include access for future removal and replacement of equipment through the doorways, route to and through the rooms, corridors, and elevators.
- All routes and conveyances shall be sized and aligned to accommodate removal and replacement of major equipment without disassembly from factory shipped configuration.
- Specify corner protection.
- Back of house corridors need additional durable wainscoting with plywood backing.

CORRIDORS

Conveying

- Metal Railings (at stairs and ramps)

Casework

- Flight Information Display

Finishes

- Interior Paint Type 1
- Wallcovering
- Column Enclosures

Ceilings

- Acoustic Ceiling Tile
- Gypsum Board Ceiling (at soffits)

Equipment

- Security Cameras
- WiFi Diffuser
- Fire Extinguisher Cabinet
- Emergency Cones
- Vending

HOLDROOMS

Secure

Holdrooms are the waiting areas located at each gate. They provide seating and charging stations to passengers. Occasionally, these spaces also include artwork.

Planning Considerations

- Size and location vary on a case by case basis.
- Power outlets to be distributed across the floor and positioned underneath seating.
- Stanchions set up by tenant.
- Frames at boarding doors vary by Concourse and could include portals to be harmonious with Holdroom finishes.

HOLDROOMS

Fenestration

- Concourse Entry/Exit Doors

Casework

- Charging Station
- Gate Check-In Counter
- Flight Information Display

Furniture

- Holdroom Seating
- Accent Seating

Finishes

- Carpet Tile
- Interior Paint Type 1
- Wallcovering
  - Fabric Wrapped Panel System
  - Fabric Wallcovering
  - Base & Wainscot
  - Chair Rails
- Column Enclosures

Ceilings

- Acoustic Ceiling Tile

Equipment

- Floor Power Cover
- Wall Power
- WiFi Diffusers
- Stanchions
- Stanchion Bases
- Interior Waste/Recycle Receptacle

AIRCRAFT PASSENGER LOADING BRIDGE

Secure

Aircraft Passenger Loading Bridges connect passengers from the Airport Holdrooms and gates to their planes. They are the last opportunity to make a positive impact on passengers' experience with SEA before their departure. Likewise, they provide the first impression for arriving passengers.

Planning Considerations

- Holdroom doors to Passenger Loading Bridges require special hardware connected to the smoke alarms in the bridge. See the updated hardware in the Port of Seattle Guide Specification.
- Slip resistance in flooring material critical. Provide ASTM E303-22 Pendulum Test Report of flooring material in wet and dry conditions. Must achieve minimum pendulum test value of 36 for both wet and dry tests.

Fenestration

- Concourse Entry / Exit Doors

INTERNATIONAL ARRIVALS

Secure

The new International Arrivals Facility (IAF) welcomes passengers from international flights arriving at SEA. This facility consolidates the baggage claim and federal inspection processing for all international travelers and connects to arriving gates in Concourse A and S. Baggage claim and federal inspection services are housed in this facility.

Planning Considerations

- Security is priority - maintain secure area.
- This facility is the first impression international travelers have entering the US or Seattle, quality of finishes and having a Pacific Northwest Sense is important.

INTERNATIONAL ARRIVALS

Fenestration

- Concourse Entry/Exit Doors

Conveying

- Guardrails
- Queue Rails
- Baggage Claim Rails

Casework

- Flight Information Display

Furniture

- Meda Gate Seating

Finishes

- Terrazzo
- Carpet Tile
- Wood Flooring
- Interior Paint Type 1
- Wallcovering
  - PLam Wall System 3
  - Base & Wainscot
  - Chair Rails
  - Wall & Corner Guards
- Stainless Steel Column Covers

Ceilings

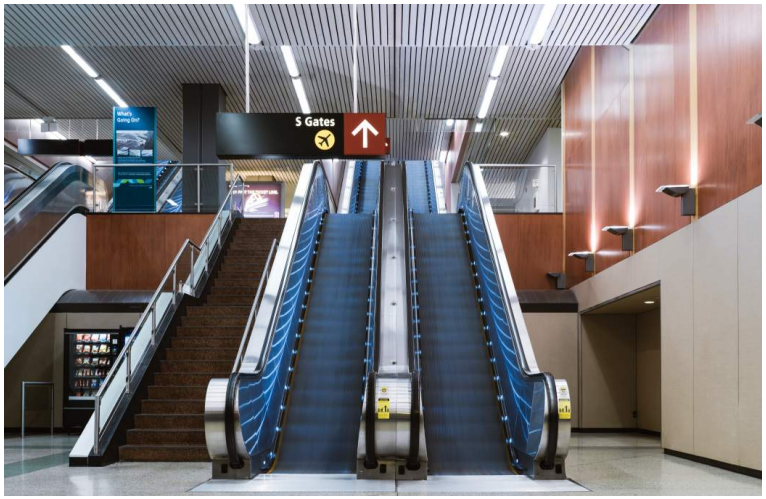
- Linear Metal Ceiling

Equipment

- Security Camera
- Fire Extinguisher
- Fire Extinguisher Cabinets
- Stanchions
- Interior Waste/Recycle Receptacles
- Emergency Cones

CONVEYING

Amenities & Support



One of the first points of contact for passengers, the elevator lobbies, escalators, moving walkways, and other areas of conveying should be clean and simple by design. Visual interest can be created through the selection of materials and the application of light.

Planning Considerations

- Do not provide single elevators or escalators.
- Coordinate quantity of vertical and horizontal transportation elements with building code requirements as well as expected passenger traffic flow.
- Storage for emergency barricades should be considered.
- Refer to Mechanical Systems Standards for additional information.

Conveying

- Guardrails
- Metal Railings

Finishes

- Terrazzo - Light
- Interior Paint Type 1
- Wallcovering
- Metal Wall System

Ceilings

- Linear Metal Ceiling

Equipment

- Emergency Cones & Barricades

RESTROOMS

Amenities & Support

Restrooms are often the first and last place passengers visit when they arrive at or depart from an airport. They should be welcoming, clean, and easy to maintain. There are two overarching types of restroom layouts: multi-fixture and single-fixture. Each type has several sub-types that accommodate a variety of passengers.

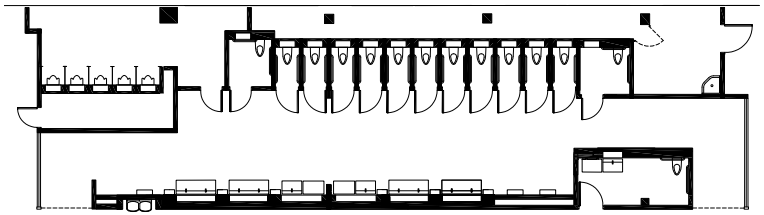
Planning Considerations

- Restroom layouts consist of multiple nodes including an Entrance Node, Sink Node, Toilet / Urinal Node, and Pipe Chase Node.
- Provide minimum 36″ clear width chases behind all plumbing walls, preferably with access from the exterior of the restrooms or just inside it. Eliminate chases that cannot meet required width or are too narrow to access.
- Provide 40ml waterproofing membrane in all wet areas.
- Color and material palette should be light for walls and ceiling, with medium to dark tones on the floor. Incorporate color to accent key feature areas behind sinks or toilets. Finishes should reinforce a bright and clean appearance.
- Frame out any leftover space created within rows of toilet partitions with new walls.
- Standard size stalls doors to be on a 5 degree hold open.
- Additional considerations apply to pre-security restrooms and should be confirmed with project manager.
- Restroom fixture count should exceed code (IBC Appendix Chapter 29, Minimum Plumbing Fixtures, Table A-29-A) for toilet fixture counts. Fixture counts to be confirmed with project manager.
- Reference the Mechanical Guidelines and Standards for all mechanical and plumbing requirements.
- Reference the Maintainability Standards

RESTROOMS - TYPE 1A

Multi-Fixture All Gender Shared

Amenities & Support



Multi-fixture all gender restrooms are restrooms that any person can use regardless of their gender. They benefit a variety of users, including transgender and gender non-conforming individuals, caretakers and parents who assist someone of opposite gender, and provide a safe place for those in human traffic situations.

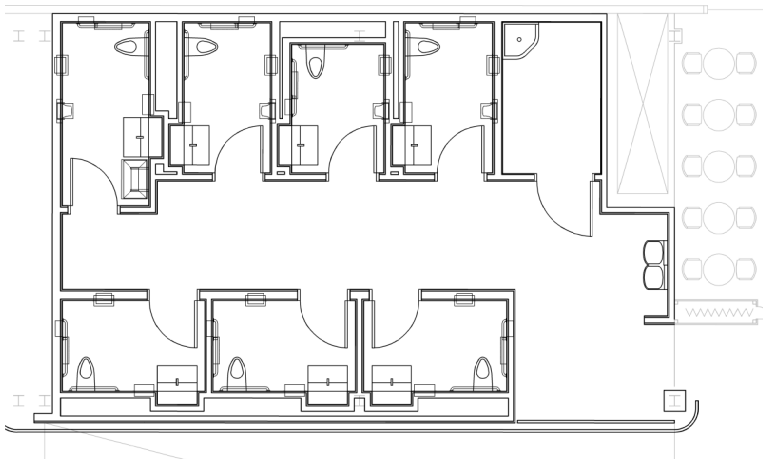
Planning Considerations

- Provide a galley layout with full height stalls and shared open washing area. A separate room dedicated to urinals should be provided if space is available; alternatively urinals can be enclosed in full height stalls.
- All stalls to be ambulatory, in addition to the minimum code requirements for wheelchair accessible stalls.
- Integrate maintenance and janitorial flexibility in the design to allow portions of the restroom to be closed off while still allowing users access to other portions of space.
- Perimeter entries are preferred for ease of access and minimizing egress distances.
- Use restroom Type 1A recommended when converting existing gendered restrooms to all gender restrooms.
- A family restroom (single-fixture assisted use) with baby changing table must be included as a part of the restroom design.

RESTROOMS - TYPE 1B

Multi-Fixture All Gender Compartment

Amenities & Support



Compartment restrooms offer an alternative design solution to multi-fixture all-gender shared restrooms. Privacy is increased further while offering individual fixtures and amenities within each compartment rather than a shared open washing area.

Planning Considerations

- Compartment style restrooms are preferred when converting existing gendered restrooms to all gender restrooms. They offer additional privacy, and the ability to close individual compartments for service and repair.
- Provide compartmentalized stalls that include a toilet, sink, and associated accessories in one enclosed private space.
- Integrate maintenance and janitorial flexibility in the design to allow accessibility of plumbing fixtures and infrastructure from within compartments, or provide adequate chase space to allow access behind compartments.
- A family restroom (single-fixture assisted use) with baby changing table must be included as a part of the restroom design.

RESTROOMS - TYPE 1C

Multi-Fixture Gendered

Amenities & Support

Multi-fixture gendered restroom (Men's or Women's Restroom) entrances should be separate with flexibility to close a portion of the space for cleaning and maintenance. The layout for these restrooms should contain a centralized entry with a simple dividing wall that would allow easy conversion to a multi-fixture all gender restroom in the future.

Planning Considerations

- New 'greenfield' projects at SEA must incorporate designs that can be easily converted to all gender restrooms in the future.
- Provide a galley layout with sinks and toilets.
- Women's fixture count should exceed minimum code requirements when possible. Ideally provide 50% more women's fixtures than men's to increase efficiency and provide the best customer service possible.
- Family restroom should be accessible from the corridor beyond the restrooms rather than from within.
- Centralized entries with a single demising wall between gendered restrooms is preferred.
- Urinals should be in full height stalls to simplify an all gendered restroom conversion in the future.
- All stalls to be ambulatory, in addition to the code minimum requirement for accessible stalls.
- For larger restroom layouts, where there are two banks of toilets and sinks for the same gender, provide the ability to close off one half of the restroom for cleaning / maintenance.

RESTROOMS - TYPE 2/2A

Family Restroom / Single-Fixture Assisted-Use

Amenities & Support

Single-fixture assisted-use restrooms (Family Restroom) offer flexibility to users with a higher level of privacy. One is required at each multi-fixture restroom location and at least one in every Concourse is required to include an adult changing station. Type 2A is the same as a Family Restroom but includes an adult changing table.

Planning Considerations

- Each assisted-use restroom should be ADA compliant with a baby changing table and an adult changing table (for Type 2A) when space is available.
- Provide open / occupied indicator for door lock and automatic door hardware.
- Reference the Signage Guidelines and Standards for restroom signage requirements.
- Provide a 10″ deep ledge 2″ above sink deck for placing belongings while washing.
- Above the mirrors provide accent panel with tiles that follow the concourse theme. Tiles in restrooms should have continuity both within the interior of the restroom as well as the exterior wall exposed to the concourse. Accent tiles are highlighted by a recessed LED wall wash fixture in soffit.

RESTROOMS - ALL TYPES

Fenestration

- Restroom Doors (Type 2/2A only)
- Custodial Closet Doors
- Access Panels
- Yellow chain separation between spaces in large multi-fixture restrooms

Finishes

- Tile Flooring
- Interior Paint Type 1
- Wall Tile
- 10″ Stainless Steel Base
- Terrazzo at exterior

Ceilings

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling
- Gypsum Board Soffit (spanning length of the sink node)

Equipment / Accessories

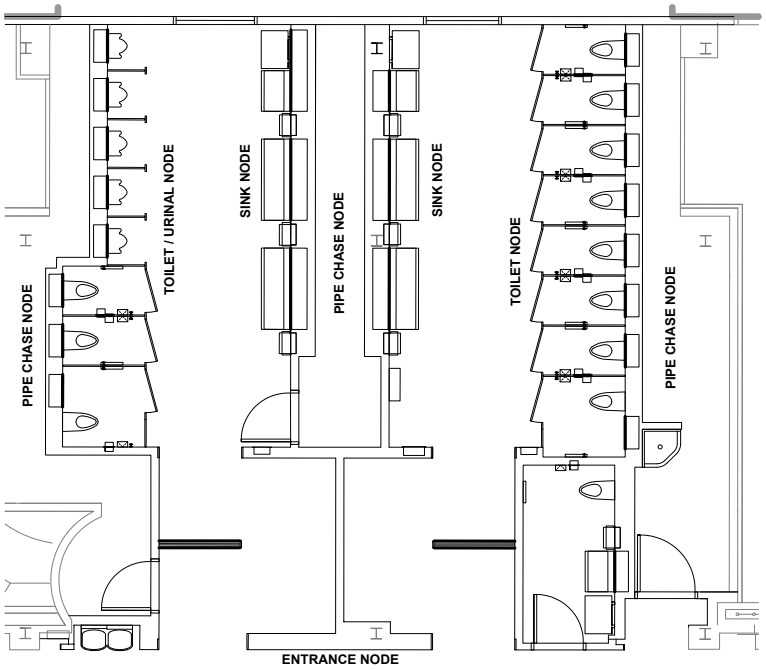
- Power Activated Door Operator (Accessible Stalls only)
- Restroom Occupancy Indicators
- Toilet
- Sink/Faucet (accessible two-person trough where applicable)
- Floor Drain
- Waste Receptacle
- Napkin Disposal Receptacle
- Recessed Lighted Mirror
- Full-Length Mirror (near entrance)
- Grab Bars (where applicable)
- Toilet Paper/Cover Dispenser
- Soap Dispenser
- Paper Towel Dispenser
- Diaper Dispenser
- Sanitary Napkin Dispenser
- Biohazard Disposal Cabinet
- Garment Hook & Shelves (Type 2/2A)
- Baby Changing Station
- Adult Changing Station (Type 2A)
- Toddler Safety Seat (Type 2/2A)

Pipe Chase Node

- Fenestration
  - Chase Doors
- Finishes
  - Waterproof Traffic Coating
  - Sealed concrete floor (floor slopes to floor drain)
  - Sealant/waterproofing should go from the horizontal surface up the wall 4″
- Ceilings
  - Open to Structure
- Equipment
  - Two single gang duplex outlets
  - Mop Sink
  - Floor Drain
  - Braced Spigot (with integral bucket hook)
  - Mop Rack / Shelf
  - 18″ deep shelving for 60 cubic feet of supplies
  - Hooks on wall to hang 36″ wide vacuum

RESTROOMS - NODES

Amenities & Support



Restroom design elements have been divided into series of modular "nodes" that can be combined in multiple ways to create a cohesive design throughout the airport campus. These nodes include the entrance, sink, toilet/urinal, and pipe chase.

Planning Considerations

- Restroom finishes should align with the overall conceptual design themes for each concourse. Colors and orientation of wall and floor tile finishes must be confirmed with the Airport.
- Large format floor tiles flow out from restroom and abut existing concourse terrazzo floor.
- Extend wall tile materiality from the interior of the restroom to the exterior concourse facade to highlight the entry and differentiate the restroom from the rest of the concourse.
- Coordination with the Art Program should occur early in any restroom project to determine if art can be incorporated into the project.

RESTROOMS - NODES

Entrance Node

Amenities & Support

The entrance node of the restroom acts as a beacon for passengers walking through the concourse, providing easy identification of the amenities provided that area.

Planning Considerations

- Provide a decorative divider at the entrances of the restrooms. Divider should compliment design of concourse restroom facade.
- Provide 12" brushed stainless steel base and sturdy jambs to protect the decorative materials on the concourse wall and dividers.
- Provide direct access to family / single-fixture assisted-use restrooms and pipe chases from the concourse.
- Provide a high-low accessible drinking fountain with water bottle filler station.
- Entries shall be designed so that they can be easily modified to an all gender restroom configuration in the future.
- Provide gypsum board soffits with continuous indirect LED lighting fixtures custom backlit, metal signage letters centered above entrance to restrooms.
- Reference the Signage Guidelines and Standards all restroom signage requirements.
- Integrate flush mounted recessed digital displays on the exterior concourse wall near each restroom wall sign. The monitor is to provide information to passengers about scheduled cleaning, other nearby restrooms, and how many stalls are available.

RESTROOMS - NODES

Sink Node

Amenities & Support

With a larger and more open design, the sink node in the restrooms provides users more flexibility to move around within the space. Inclusive to this node are baby changing stations and grooming stations.

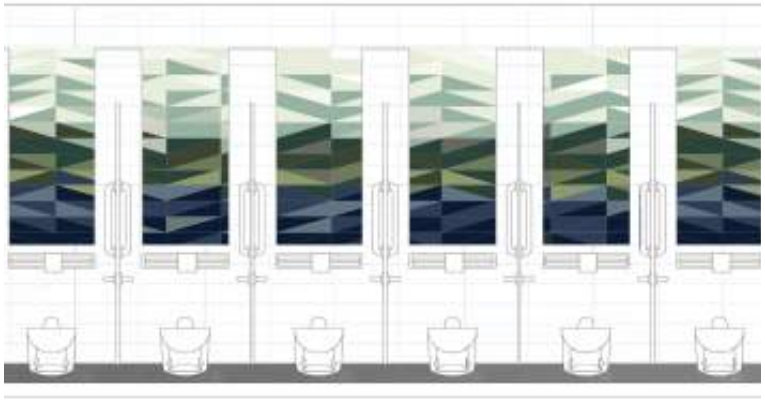
Planning Considerations

- Sink are to be mounted with a 2" space between deck back and wall.
- Provide a semi-recessed touchless paper towel dispenser and waste receptacle between each sink.
- Provide an integral, removable shroud below the sink to conceal pipes and other items.
- Behind and 2" above sink deck, provide a 10" deep ledge for placing belongings while washing.
- Above the mirrors provide accent panel with tiles that follow entrance theme. Accent tiles are lit by a recessed LED light strip in soffit.
- For the grooming node, provide a shelf with lighted mirror above and a duplex outlet centered between the two.
- Provide a staging area for custodial carts to be parked during cleaning without interfering with customer flow and experience.
- Mirrors above sinks need to have enough clearance around the top and bottom edges in order to safely remove the mirror for maintenance. Exposed edges of tile around mirrors shall be intentionally finished with trim, such as a Schluter strip.

RESTROOMS - NODES

Toilet / Urinal Node

Amenities & Support



To support SEA accessibility goals, ambulatory stalls should be the default typical stall size unless fixture counts are unable to be met within the project footprint. In pre-security locations, the default in limited-space areas is a standard stall to allow increased overall fixture count.

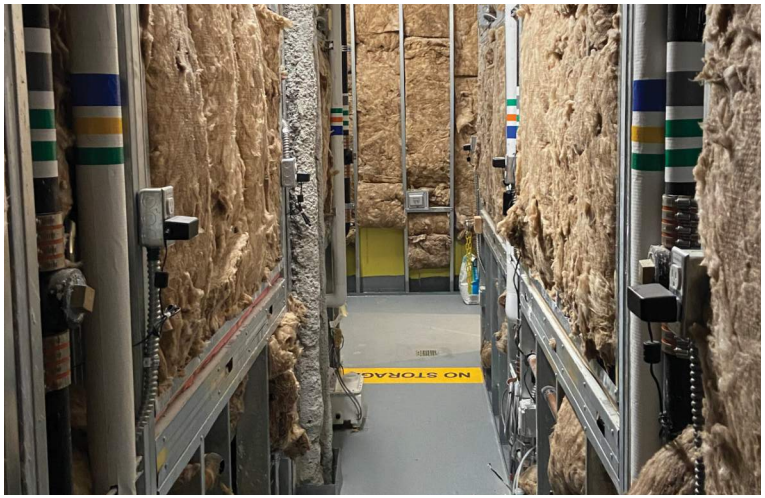
Planning Considerations

- Full height compartment stalls are to be provided for Type 1B multi-fixture all-gendered restrooms and considered for multi-fixture gendered restrooms identified for future all-gender conversion.
- Rigid ceiling hung stalls with stainless steel partitions could be used for Type 1 - Restrooms, when accepted by the Port.
- All standard toilet partition stall doors should swing outwards and hold open at 5 degrees to inform passengers which stalls are available, along with an occupancy indicator in the ceiling above the door. All ambulatory and accessible toilet partition stall doors must be self-closing.
- There should be no sight-line into the stalls from the corridor.
- Surface mount and through-bolt all accessories on one side of a partition to the same accessories on the opposite side of the partition.
- Continue the corresponding restroom theme along back wall of the Toilet / Urinal Nodes.
- Provide a 10" deep x 24" wide ledge for belongings on the back wall of toilet/ urinal stalls. Adjust shelf height at ADA fixtures locations.
- Urinals to be separated with wall hung divider partitions.

RESTROOMS - NODES

Pipe Chase Node

Amenities & Support



A pipe chase is to be provided behind plumbing walls for access to sinks, toilets, and urinals. These chases also serve as a place to store custodial equipment and supplies, and can be combined with larger custodial closets.

Planning Considerations

- The custodial area should be at the entrance of the node and be separated from the pipe chase by a lockable door.
- The custodial area should have (at minimum) a mop sink, dedicated locations for storage carts/equipment and receptacles for equipment. Mop sink and Pipe Chase area will need to follow requirements for wet floor.
- Pipe chases are to be 3'-0" wide by 7'-6" high, with a minimum 2'-0" clear circulation space to be maintained throughout chase, free of any obstructions. Chases should maintain a straight and consistent path without jogs to the maximum extent possible.
- Vertical pipes, ductwork for exhaust, and conduit at toilet and urinal niches are to run between niches.
- Bulk soap storage tank(s) is to be located in sink pipe chase and be readily accessible for refilling.
- Illuminated mirror and LED lighting drivers to be located and accessible in pipe chases.
- Each concourse should have at least one central custodial storage area for paper stock and cleaning supplies. The custodial area should have 18" deep shelving for approximately 60 cubic feet of supplies.
- Where a standard chase is not feasible the space behind trash receptacles shall be used to access the soap refill.

NURSING SUITE

Amenities & Support

The Nursing Suite is a quiet, private space designed to help ease the stress of traveling on parents and families. The room provides a safe, comfortable place for nursing and pumping with additional privacy.

Planning Considerations

- Provide a minimum of one Nursing Suite per Concourse that ideally includes or is directly adjacent to a Type 2 Assisted-Use Restroom, Lactation Room, and Custodial Room.
- The space should be designed with a mix of comfortable soft seating and flat surfaces with easy access to receptacles.
- Provide a cleanup area for washing hands and cleaning pump parts. Cleanup area will need to follow requirements for wet floor.
- When possible incorporate natural daylight in addition to soft, dimmable circadian lighting.
- Doors into a Nursing Suite should be wood with a frosted glass vision lite.
- Provide areas for strollers and luggage storage inside the space that are within line of sight of the seating areas.
- Individual Nursing Areas and Lactation Rooms within the suite are not required to have locking doors but must include option of an additional level of privacy such as a curtain. Lockable doors with no vision lites are preferred for individual nursing areas within the suite when possible. In a standalone Individual Nursing Area, the door should be lockable for privacy.

NURSING SUITE

Fenestration

- Nursing Suite: Wood Door w/ Frosted Glass Vision Lite
- Lactation Rooms: Solid Wood Door
- Access Panels

Furniture

- Accent Seating
- Table

Finishes

- Tile or Resilient Flooring
- Interior Paint
- Wall Tile
- Wallcovering System - Acoustic Panels
- Wall Base

Ceilings

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling

Equipment

- Power Activated Door Operator
- Sink
- Faucet
- Floor Drain
- Mirror
- Full-Length Mirror
- Soap Dispenser
- Paper Towel Dispenser
- Diaper Dispenser
- Biohazard Disposal Cabinet
- Garment Hook & Shelves
- Baby Changing Station
- Interior Waste / Recycle Receptacle
- Water Heater

LACTATION ROOM & MODULAR PODS

Amenities & Support

Lactation Rooms and Modular Pods are private spaces for nursing parents to use a breast pump. The space should be private, lockable, have a table or counter, comfortable seating, with direct access to power, and within close proximity to running water.

Planning Considerations

- While Nursing Suites are preferred, available space sometimes dictates the use of single user Lactation Rooms & Modular Pods. Where multi-user modular pods are used provide separation between users with a maximum of three users within the space.
- Provide a minimum of one Lactation Room per Concourse that is near a Restroom and adjacent to or within a Nursing Suite. If a Lactation Room is not possible, provide a modular Nursing Pod.
- All Nursing Rooms and Pods must be ADA accessible.
- Space requires a lockable door and should include an open / occupied indicator.
- The space should be designed with a mix of comfortable soft seating and flat surfaces with easy access to receptacles.
- When possible incorporate natural daylight in addition to soft / dimmable circadian lighting.
- Provide a sink and cleanup area for washing hands and cleaning pump parts. Cleanup area will need to follow requirements for wet floor.

LACTATION ROOM & MODULAR PODS

Fenestration

- Solid Wood Door for Lactation Rooms
- Access Panels

Furniture

- Accent Seating
- Table

Finishes

- Tile
- Resilient Flooring
- Interior Paint
- Wallcovering System - Acoustic Panels
- Wall Base

Ceilings

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling

Equipment

- Power Activated Door Operator
- Full-Length Mirror
- Garment Hook & Shelves
- Paper Towel Dispenser
- Interior Waste / Recycle Receptacle
- Nursing Pod (when a Lactation Room is not possible)

INTERFAITH PRAYER & MEDITATION ROOM

Amenities & Support

Interfaith Prayer and Meditation Rooms are fully enclosed spaces intended for meditation or prayer. The space is a peaceful environment where passengers can safely practice their faith or meditation practices away from other airport activity.

Planning Considerations

- Design the room to be used by people of any faith. Therefore, the overall tone of the room shall be religiously neutral other than required elements to support religious prayer and meditation.
- Provide a calming color palette with a neutral base. As well as natural textures and materials to add tactile richness to the room. Consider using a biophilic design approach when designing the space.
- Incorporate art to enhance space.
- Design space with open floor space, kneeling area with kneeler, meditation alcove(s) with bench, and additional movable seating.
- Any storage of personal items needs to be within line of sight of the seating areas.
- Provide STC levels of 45 minimum, 50-60 preferred.
- Access to receptacles should be limited, to avoid passengers from lingering.
- Locate off of concourses and near restrooms. Entrance can be adjacent to Sensory Room.

INTERFAITH PRAYER & MEDITATION ROOM

Fenestration

- Door - wood door with vision lite
- Access Panels

Furniture

- Accent Seating - movable

Finishes

- Padded Carpet Tile Floor
- Tile, Resilient Flooring (wet area and entry)
- Interior Paint
- Wallcovering System - Acoustic Panels
- Wall Base

Ceilings

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling

Equipment

- Foot Wash Station
- Paper Towel Dispenser
- Garment Hook & Shelves
- Interior Waste / Recycle Receptacle
- Water Heater
- Low Movable Privacy Screens (and place to store in space)

Required Elements

- Dimmable Lighting
- Acoustic Treatments
- Qibla - indicator towards Mecca
- Mizrach - indicator towards Jerusalem
- Open Floor Area for prayer
- Alcove for Kneeling
  - with Kneeler
- Meditation alcove(s) - comfortable seat/bench with back support
- Storage - near entry
  - Shoe Storage
  - Bench
  - Prayer Items

SENSORY ROOM

Amenities & Support

Sensory Room provides a multi-functional space for passengers with sensory related issues to decompress or recover within their travel experience. The space is intended to provide opportunities for both proprioceptive and vestibular input for users and their families.

Planning Considerations

- Provide a variety of privacy options within room. Provide spaces for individuals of all ages and larger space for families.
- Include multiple types of furniture to accommodate sensory needs of neurodiverse passengers. Limit any furniture or equipment that would make noise or contain water.
- Provide durable replaceable padded finishes with rounded corners, when possible.
- Consider using a biophilic design approach within the space with calming color palette.
- STC levels of 45 minimum, 50-60 preferred.
- Provide soft / dimmable circadian lighting.
- Provide above code required number of power receptacles.
- Provide balance of view angles of people entering and exiting space while maintaining feelings of privacy.
- Storage for personal items within line of sight of sitting areas.
- Locate off of concourses and near restrooms. Entrance can be adjacent to Interfaith Prayer and Meditation Room.

SENSORY ROOM

Fenestration

- Door - wood door with vision lite
- Access Panels

Furniture

- Accent Seating

Finishes

- Carpet Tile
- Rubber Tile
- Vinyl Tile
- Padded Floor
- Interior Paint
- Wallcovering System - Acoustic Panels
- Padded Wall Panels
- Wall Base

Ceilings

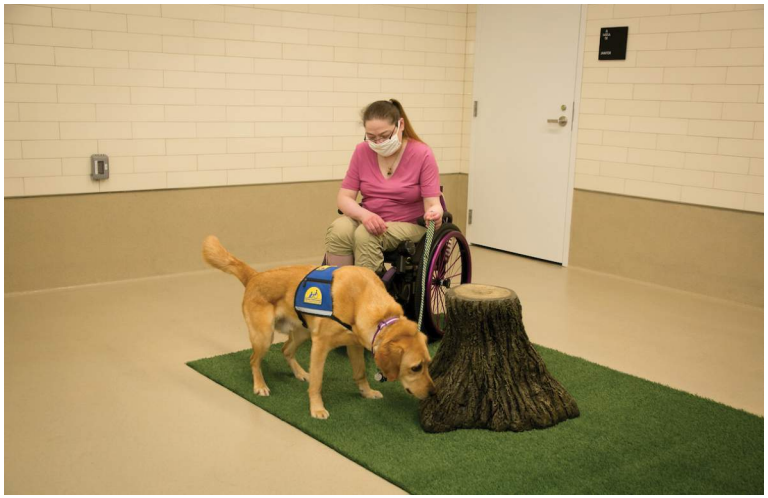
- Acoustic Ceiling Tiles
- Gypsum Board Ceiling

Equipment

- Garment Hook & Shelves
- Interior Waste / Recycle Receptacle and paper towel dispenser - built in

SERVICE ANIMAL RELIEF AREAS

Amenities & Support



Today's passengers often travel with service animals and pets. Service Animal Relief Areas (S.A.R.A.) provide an opportunity for our animal passengers to stretch and relieve themselves before departing, connecting or arriving at the airport.

Planning Considerations

- Provide a minimum of one S.A.R.A per concourse that is design to meet all ADA /Federal Regulations. Designs for S.A.R.A.'s must include a review by a local service animal training organization.
- It is ideal that S.A.R.A. are located no further than 15 minutes from any gate (based on a walking pace of 200 ft/min).
- Provide two different floor surfaces, sub-floor, and 4" baseboard waterproofing membrane.
- DO NOT provide communal drinking bowls but do provide a water bowl filling station.
- Provide a dedicated Custodial Room directly adjacent to the S.A.R.A.
- Use finishes acceptable for wet areas. Wall panels and flooring are to be designed to withstand power washing.
- The pet pad area should be designed and built using a flushable plumbed system. Surface of pet pad should be a combination of turf and non-turf.
- Provide ventilation at minimum to the same standard as a restroom, preferably higher. When in use air exchanges shall increased to allow for a clean and fresh experience.
- Locate on main concourse circulation paths adjacent to restrooms.

SERVICE ANIMAL RELIEF AREAS

Fenestration

- Stainless Steel Doors
- Access Panels
- Stainless Steel Custodial Doors

Furniture

- Bench
- 3-D Device (to encourage urination)

Finishes

- Tile Flooring
- Traffic Coating (Custodial Room)
- Artificial turf (specifically designed as an animal relief surface)
- Interior Paint
- Wall Tile

Ceilings

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling
- Open to structure (Custodial Room)

Equipment (S.A.R.A)

- Power Activated Door Operator
- Sink (for passengers' hand washing)
- Faucet
- Floor Drain
- Waste Receptacle
- Recessed Lighted Mirror
- Soap Dispenser
- Paper Towel Dispenser
- Retractable Long Hose
- Pooper scooper (with long handle)
- Bag Dispenser (for animal waste collection bags)
- Interior Waste/Recycle Receptacle (for bagged animal waste disposal)

Equipment (Custodial Room)

- Mop Sink
- Floor Drain
- Braced Spigot (with integral bucket hook)
- Mop Rack / Shelf
- Area to hang additional turf to be cleaned and dried
- Retractable Hose with wall mounted hose reel

CHILDREN'S PLAY AREA

Amenities & Support

Children's Play Areas provide equipment and toys for our younger passengers' entertainment and seating for their accompanying adults. Overall goals of the play areas are to provide a safe place to play and for children to expend their energy before getting on a plane.

Planning Considerations

- Design the space to be used by children (up to the age of 6).
- Goal of providing one per Concourse. Locate off of main concourse circulation. Provide internal or locate adjacent to restrooms, and nursing suite.
- Reflect the theme of the concourse that the play area is in (see Design Vision).
- Provide an area to accommodate luggage, strollers, and shoe storage (for children) within line of sight of the resting zone.
- STC levels of 45 minimum, 50-60 preferred due to higher acoustic requirements in the space to limit outside noise and sound intrusion to other spaces.
- Provide durable materials and padded finishes with rounded corners.
- Provide a resting zone with a mix of comfortable soft seating and flat surfaces with easy access to receptacles for parents, guardians, and children.
- When possible incorporate high ceiling and natural daylight, in addition to circadian lighting.
- Consider incorporating technology in the design of the space like interactive media walls.

CHILDREN'S PLAY AREA

Fenestration

- Storefront

Furniture

- Accent Seating

Finishes

- Carpet Tile
- Rubber Tile
- Vinyl Tile
- Padded Floor
- Interior Paint
- Wallcovering System - Acoustic Panels
- Padded Wall Panels
- Wall Base

Ceiling

- Acoustic Ceiling Tiles
- Gypsum Board Ceiling

Equipment

- Security Camera
- Garment Hook & Shelves
- Interior Waste/Recycle Receptacle

LOUNGES

Amenities & Support

Lounges are where passengers go for relaxation, food, and comfort away from the crowded airport.

Planning Considerations

- Incorporate high quality finishes and unique designs that reflect the Pacific Northwest SEA Vision.
- SEA branded lounges design to be cohesive with SEA Concourse Themes (see Design Vision).
- Majority of lounge customers are individual travelers.
- Provide maximum amount of seating that still provides a comfortable and relaxed experience. Lounge should not feel crowded or cramped. Seating count of 45-55 SF/passenger.
- Access to daylight and exterior views is a priority.
- Entries to lounges need to be recognizable from the concourse level for wayfinding but subtle enough to not compete with other signage.
- Reception area to be appropriately sized to comfortably allow for waiting area and queue inside door. Office near reception.
- Provide a variety of seating types and zones to accommodate varied passenger interests, including but not limited to: tables for eating, individual lounge chairs, work counters, group seating, etc.
- Provide power at minimum 75% of each seating type per zone.
- Provide a bar with ample seating.
- Provide a kitchen with adjacent servery. Food is cooked on site, coordinate with kitchen consultants.
- Provide minimum of two individual showers, nursing room, and family restroom.

STORAGE

Amenities & Support

Storage is an important component of our Airport, allowing the Airport and our tenants to store important items and equipment when not in use. Well-designed storage is conveniently located, adequately sized, and appropriately marked. Specific requirements will vary and depend on intended contents and location.

Planning Considerations

- Consider ways to integrate storage into architectural design to make it as inconspicuous as possible.
- Provide easy access to necessary tools and materials where needed.
- Consider placement and sizing based on items stored.
- Consider charging requirements for tool storage.
- Consider storage for emergency supplies.
- Consider storage for janitorial tilt carts between times of active use.
- Consider storage for tenant, ADR, and common use items such as stanchions and signage.

LOADING DOCKS

Amenities & Support

The Loading Docks are where recycling and waste are compacted, stored, and loaded onto trucks for disposal. It also serves as delivery location for tenants and other airport needs.

Applicable LEED Credit Requirements:
MR – Storage & Collection of Recyclables

Planning Considerations

- Locations for trash compactors to include overhead clearance (minimum 14') for the compactor to be tilted up and slid off of the flatbed truck. Also, ample maneuvering room must be included. Clearances must comply with DOT requirements.
- Trash collection areas need to have reinforced membrane waterproofing (both floors and walls), non-skid flooring, power washing equipment, drains, and separators.
- Reinforce the surrounds of the building opening, in addition to bollards.
- All finishes need to be suitable for wet locations, including but not limited to light fixtures.
- Add elevated loading dock and space for at least three, 30 cubic yard, fully enclosed compactors. Compactors should have sufficient space between them to allow for easy human access for maintenance and disposal of solid wastes via optional side doors.
- Provide space for the truck moving compactors to move in and out without interfering with other load dock, terminal, or airfield operations and without requiring multi-point turns.

LOADING DOCKS

- Provide guide rails for inserting and removing the compactors. Guide rails shall extend / protect over (minimum H20 rated) slot drain grates without obstructing service access.
- Provide robust backstop on guide rails to prevent inadvertent significant horizontal load and mitigate risk of compactor impacting other infrastructure.
- Provide space for a cardboard baler, including space to store bales awaiting pickup and easy access to the bales for pickup. (Include vertical space for the ram also - not just the footprint.)
- Provide space for a bottle shredder, including drainage, and sufficient space to store shredded bottles awaiting pickup.
- Provide space for additional dumpsters for specialty items such as compost and glass — and ideally, also for metals and plastic with space for easy access.
- Provide space for a sufficient number of cooking oil tanks, with space for access by the oil hauler.
- Provide easy access for all users of the solid waste system to the control systems used for each of the compactors; including footprint space for the hydraulic and electric power systems.
- Provide easy access for all users of the various solid waste systems to the doors of the equipment. Design so that minimal physical effort is required to load the compactors/ baler and there is sufficient space for structures and/or equipment required to ensure safe operation of the various systems.
- Layout should be visible from a single pan-tilt-zoom digital camera.
- Provide drainage and sewage capabilities to accommodate drains for each compactor and drainage for the barrel washing station.
- Use of trash compactors is currently logged by users; provide connectivity for data.
- Provide power and compressed air for all relevant equipment.
- Provide electrically heated water pressure washer with retractable hose and reel. Hose should reach the furthest location in the space plus an extra 10′.
- Design the floor space and dock space for easy cleaning with water. Include macerators in the drains and floor and wall materials that will not facilitate accumulation of biological materials that contribute to odors.

LOADING DOCKS

- All drains shall go to sanitary systems, without need for pumps. Provide a drain basket, with mesh no larger than 1/4" openings positioned to be accessible for service and not blocked by equipment
- Dock levelers are required.
- Provide enclosed access, so that system operators do not have to carry materials outside during inclement weather.
- Provide stripping to indicate no parking (for various haulers), safety rails and toe kicks to prevent falling off dock and safety interlocks on compactors to prevent activation with personnel inside the danger area.
- Provide hand wash station and eye wash station.
- Provide space for a cart / barrel washing station and drying station with wall mounted clips for hanging floor mats for washing and drying extra.
- Provide staging area for material delivery. Designated area to be stripped and large enough to temporary place large deliveries of items like kegs, pallets, etc...
- Additional asset space for consideration includes cooking oil tanks (8'x5' for a pair), glass dumpster (8'x22'), swing dumpster for on demand streams (metal, CDL, etc).
- Roll down doors controls for operator to be binary full open or close; with manual jog inside secured control box.
- Provide access pathways between grades and supporting ladders with fiberglass covered treads and yellow contrasting nosing.

3

ARCHITECTURAL STANDARDS

SEA
Seattle-Tacoma International Airport

3

ARCHITECTURAL STANDARDS

3.1 ARCHITECTURAL ELEMENTS

Architectural elements relate to both the exterior base building and the interior, and to both existing structures and new construction. This chapter provides some general guidelines on each approved item.

LEED REQUIREMENTS

To align with our sustainability goals, below are some LEED requirements we encourage projects to follow:

Applicable LEED Credit Requirements

- MR – Building Product Disclosure & Optimization – Environmental Product Declarations
- MR – Building Product Disclosure & Optimization – Material Ingredients
- MR – Building Product Disclosure & Optimization – Sourcing of Raw Materials

Roofing and Structural (Pavement)

- SS – Heat Island Reduction

Equipment (Plumbing)

- WE – Indoor Water Use Reduction

Lighting

- SS – Light Pollution Reduction

EXTERIOR

The exterior of our buildings is the face of the Airport to the city. Passengers experience the exterior when arriving by car and plane, and through photographs of the Airport. Quality exterior design and construction ensures the longevity of our facilities and the well-being of our passengers, partners, and employees. The guidelines below aim to support these goals.

Exterior

- Any future external building finish is to be white.
- Finishes should be cleanable and abrasion resistant.
- Parapets are required to meet OSHA standards. Roofs must have 42" parapets, as the 4' elevation is the limit where fall protection is required. Where parapets are unworkable, Personal Fall restraint, fall arrest and fall prevention systems are necessary.
- Rooftop anchors or swing staging is required for window cleaners who use bosun chairs. If staging on rollers or tracks, it needs an enclosed shelter for storage with lighting and room for inspections.
- Glazing should match existing.
- An overall aim is to minimize glare while maximizing access to daylight and views.
- Light Shelves in new construction can be used.
- Frit (applied opaque lines to diffuse light) should be considered for existing glazing, instead of window shades.
- Bird Control measures should be installed inside and outside the terminal buildings, namely at parapets, fixtures, pipes, and horizontal mullions. The aim is to minimize possible perch points. For specifications, a single metal line is preferred over barbs.
- Exterior metal, such as stairs, shall not have exposed galvanization. Powder coating and aluminum are acceptable.
- Exterior stair treads should not be exposed metal. Cover metal treads with anti-skid fiberglass treads with contrasting integral nosing.

INTERIOR

The interior of our buildings is experienced more intimately by our passengers, as they spend time in our facilities while in transit. Quality interior design and construction enforces a positive, cohesive identity for SEA Airport.

Interior

- Partitions are used throughout the airport to create private rooms for security screening or offices for tenants. Acoustics and privacy are important, but so are visibility and access to natural light.
- Demountable partitions for creating enclosed rooms in open areas must be approved by ARC.
- Temporary partitions, used during renovations, must be approved by ARC.
- When specifying windows and doors, project teams should consider whether a higher up-front cost will result in lower long-term maintenance costs. The AVM Maintainability Standards offer door sizing guidelines to accommodate minimum equipment clearances.
- While the ceiling height within the building may vary, a typical door height per project should be established.
- A number of railing styles can be seen throughout the airport. Where possible the new standard should be followed. In some locations, it may be necessary to match a legacy standard.

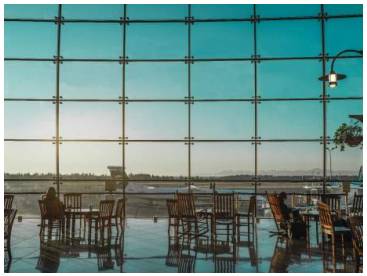
3.2 BUILDING ENVELOPE

The building envelope is the skin of the Airport. Its components work together so that the Airport looks good and works well.

CURTAIN WALLS

Structural Glass

CATEGORIES	Glazing
ACCEPTABLE MATERIALS	Clear laminated tempered glass Insulated units Suspended or ground-supported Fittings or metal mullions Glass fins
NOTES	• Coordinate the structural glass curtain wall interface with other exterior closure trades so the exterior wall system components function properly. • Single source responsibility to be maintained for the entire system, including fabrication, installation, and total coordination of all curtain wall components. • Curtain wall system shall meet all pertinent structural requirements and weather resistance requirements. • Curtain Walls must be designed so that they can be maintained, design must include ability to access and replace glass panels.
LOCATIONS	Building Exterior



CURTAIN WALLS

Glazed Aluminum

CATEGORIES	Glazing
RECOMMENDED MANUFACTURERS	Benson Industries Flour City Architectural Harmon Glass
FINISHES	Exterior and interior aluminum to have a three-coat spray, shop-applied, high performance fluorocarbon coating with a minimum of 70% Kynar 500 resin.
ACCEPTABLE MATERIALS	Anodized Aluminum
NOTES	• Bird Control at parapets, pipes, and horizontal mullions. • Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing. • Ensure uniformity of color and visual appearance in all frame components and glazing surfaces. • Coordinate the structural glass curtain wall interface with other exterior closure trades so the exterior wall system components function properly. • Single source responsibility to be maintained for the entire system, including fabrication, installation, and total coordination of all curtain wall components. • Exposed fasteners finished to match adjacent aluminum. • Provide stainless steel protection cover with non-directional, 100 grit, brushed finish along sill mullions at floor.
LOCATIONS	Building Exterior

WINDOW WALL

Tinted Glass

CATEGORIES	Glazing
RECOMMENDED MANUFACTURERS	Viracon PPG LOF Guardian
SIZE	Float glass shall be 1/4" minimum thickness.
FINISHES	Frit on windows
ACCEPTABLE MATERIALS	Gray insulated glass with low-E coating, with frit pattern Gray insulated glass, uncoated Gray insulated glass, uncoated, with sandblast Gray monolithic glass, uncoated Gray insulated glass with low-E coating Gray laminated insulated glass

WINDOW WALL

Tinted Glass

NOTES

- Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing.
- Gray tinted insulated glass used at concourse relates to existing Concourses B, C, and D. It is preferable that new glazing is lighter than the existing at the concourses. Within energy conservation goals, increase natural daylight transmittance and enhance visibility.
- Clear, low-E coated insulated glass is to be used in custom designed curtain wall, as used in the International Arrivals Hall.
- As translucent insulating panel is used as a secondary glazing material at Concourses B, C, and D, new concourses may also use translucent insulating panel in a similar manner. Presently, Concourses B, C, and D use translucent insulating panels by "Kalwall."
- Gray glass that is lighter than, but still compatible with, the existing dark gray glass at the Main Terminal shall be utilized in Main Terminal extensions.
- Translucent glazing will be required where visibility must be obscured. In such cases, fritted glazing is preferred over sandblasting. Sandblasted finish to be used only in areas not accessible to the public.
- Insulated glass shall be double glazed, dual sealed units, with air space between panes hermetically sealed with sealant at the perimeter of the unit.
- Vision glass shall be heat strengthened.
- Radar reflection on glass must be taken into consideration. For all airside exterior glazing, refer to "FAA Requirements" in Section 1.
- Specify performance criteria for solar energy transmittance, shading co-efficient, ultraviolet transmittance, visible light transmittance, and infrared transmittance.
- Exterior windows to have a Sound Transmission Class (STC) rating of 38 minimum.

LOCATIONS

Building Exterior

WINDOW WALL

Clear Glass

CATEGORIES	Glazing
ACCEPTABLE MATERIALS	Clear insulated glass with low-E coating Clear insulated glass with low-E coating, with frit pattern Translucent laminated glass Anodized Aluminum Mullions
NOTES	• Frit is used on windows. • Bird Control at parapets, pipes, and horizontal mullions • Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing.

WINDOW WALL

Clear Glass

NOTES

- Gray tinted insulated glass used at concourse relates to existing Concourses B, C, and D. It is preferable that new glazing is lighter than the existing at the concourses. Within energy conservation goals, increase natural daylight transmittance and enhance visibility.
- Clear low-E coated insulated glass is to be used in custom designed curtain wall, as used in the International Arrivals Hall.
- As translucent insulating panel is used as a secondary glazing material at Concourses B, C, and D, new concourses may also use translucent insulating panel in a similar manner. Presently, Concourses B, C, and D use translucent insulating panels by "Kalwall."
- Gray glass that is lighter than, but still compatible with, the existing dark gray glass at the Main Terminal shall be utilized in Main Terminal extensions.
- Translucent glazing will be required where visibility must be obscured. In such cases, fritted glazing is preferred over sandblasting. Sandblasted finish to be used only in areas not accessible to the public.
- Insulated glass shall be double glazed, dual sealed units, with air space between panes hermetically sealed with sealant at the perimeter of the unit.
- Vision glass shall be heat strengthened.
- Radar reflection on glass must be taken into consideration. For all airside exterior glazing, refer to "FAA Requirements" in Section 1.
- Specify performance criteria for solar energy transmittance, shading co-efficient, ultraviolet transmittance, visible light transmittance and infrared transmittance.
- Exterior windows to have a Sound Transmission Class (STC) rating of 38 minimum.

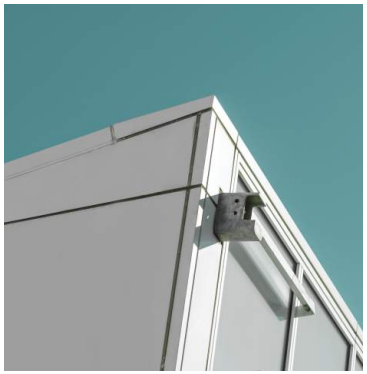
LOCATIONS

Building Exterior

PANEL SYSTEMS

Translucent

CATEGORIES	Glazing
PRODUCT NAME	For Aluminum Extrusions: Kynar 500 coating system or Hylar 5000 coating system
RECOMMENDED MANUFACTURERS	Kalwall Skywall
FINISHES	Aluminum Extrusions: Fluoropolymer finish multiple coats; thermally cured; non-specular; as fabricated mechanical finish; acid chromate-fluoride-phosphate chemical coating.
HARDWARE SET	Glazing gaskets, manufacturer standard extruded heat-cured silicone rubber structural glazing adhesive; manufacturer recommended neutral curing silicon sealant.
ACCEPTABLE MATERIALS	Aluminum Extrusions
NOTES	• Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing. • Coordinate the structural glass curtain wall interface with other exterior closure trades so the exterior wall system components function properly. • Ensure uniformity of color and visual appearance in all frame components and glazing surfaces. • Single source responsibility to be maintained for the entire system, including fabrication, installation, and total coordination of all work components. • Glazing must be designed so that they can be maintained, design must include ability to access, clean and replace panels.
LOCATIONS	Building Exterior for Concourses A, B, C, D



PANEL SYSTEMS

Metal Foam

CATEGORIES	Cladding & Panels
RECOMMENDED MANUFACTURERS	Centria ASP. I.B.P Kingspan
COLOR	Metal panels of the terminal to match existing anodized bronze color. Metal panels at the concourses to match existing white color.
FINISHES	Fluoropolymer finish - Lilly "Visalure" 2 Metalescent" or an equivalent pearlescent finish.
ACCEPTABLE MATERIALS	"Galvalume" sheet coated with zinc-aluminum alloy Galvanized steel sheet (G90 hot dipped galvanized).
NOTES	• The surface of the metal panel shall be smooth and dead flat. • Textured surface not permitted because textured panels hold contaminants that increase streaking and are difficult to clean. • Panels to be self-cleaning, with a finish that is durable to climatic conditions. • Match existing systems where required. • Specify systems that attain a watertight condition mechanically; where joint sealers are required, the sealer shall not streak or stain the panel surface. Sealant joints should be minimized. • Radar reflection shall be taken into consideration for all airside exterior metal wall panels. • Panel material shall have a minimum Sound Transmission Calls (STC) rating of 40.
LOCATIONS	Building Exterior

PANEL SYSTEMS

Preformed Metal

CATEGORIES	Cladding & Panels
COLOR	Metal panels of the terminal to match existing anodized bronze color. Metal panels at the concourses are to match the existing white color.
FINISHES	The exterior and interior of the metal panels shall receive a three-coat, spray applied, high performance fluorocarbon coating containing a minimum of 70% Kynar 500 resin.
NOTES	• The surface of the metal panel shall be smooth and dead flat. • Textured surface not permitted because textured panels hold contaminants that increase streaking and are difficult to clean. • Panels to be self-cleaning, with a finish that is durable to climatic conditions. • Match existing systems where required. • Specify systems that attain a watertight condition mechanically; where joint sealers are required, the sealer shall not streak or stain the panel surface. Sealant joints should be minimized. • Radar reflection shall be taken into consideration for all airside exterior metal wall panels. • Panel material shall have a minimum Sound Transmission Calls (STC) rating of 40.
LOCATIONS	Building Exterior

PANEL SYSTEMS

Bronze Anodized Aluminum

CATEGORIES	Cladding & Panels
COLOR	Metal panels of the terminal to match existing anodized bronze color. Metal panels at the concourses are to match the existing white color.
FINISHES	Colors to match existing bronze anodized aluminum finishes
NOTES	• The surface of the metal panel shall be smooth and dead flat. • Textured surface not permitted because textured panels hold contaminants that increase streaking and are difficult to clean. • Panels to be self-cleaning, with a finish that is durable to climatic conditions. • Match existing systems where required. • Specify systems that attain a watertight condition mechanically; where joint sealers are required, the sealer shall not streak or stain the panel surface. Sealant joints should be minimized. • Radar reflection shall be taken into consideration for all airside exterior metal wall panels. • Panel material shall have a minimum Sound Transmission Calls (STC) rating of 40.
LOCATIONS	Building Exterior at Terminal

PANEL SYSTEMS

Aluminum

CATEGORIES	Cladding & Panels
COLOR	Metal panels of the terminal to match existing anodized bronze color. Metal panels at the concourses are to match the existing white color.
FINISHES	Clear or color anodized
NOTES	• The surface of the metal panel shall be smooth and dead flat. • Textured surface not permitted because textured panels hold contaminants that increase streaking and are difficult to clean. • Panels to be self-cleaning, with a finish that is durable to climatic conditions. Match existing systems where required. • Specify systems that attain a watertight condition mechanically; where joint sealers are required, the sealer shall not streak or stain the panel surface. Sealant joints should be minimized. • Radar reflection shall be taken into consideration for all airside exterior metal wall panels. • Panel material shall have a minimum Sound Transmission Calls (STC) rating of 40.
LOCATIONS	Building Exterior

CONCRETE MASONRY UNIT (CMU)

CATEGORIES	Envelope
FINISHES	Colored Mortar Pigments: Iron oxides with demonstrated record of satisfactory performance in mortar mixes. Moisture Control: Water repellent additives for blocks and mortar; surface applied water repellent treatment. CMU Walls at Exterior Ramp Level: "Black Pearl" by Sherwin Williams. For painted finishes, finish coat to be exterior masonry acrylic flat coating.
ACCEPTABLE MATERIALS	Hollow load bearing units; integrally colored Common Honed Split-faced finish Profiled face units (require approval by the Design Review Committee)
NOTES	• Exposed mortar joints between masonry units shall be visually and dimensionally consistent. • Joints to be tooled concave. Other joint profiles may be allowed based on the ability to drain or shed water from joint. • Blocks and mortar to have water repellent additives, block filler, and coatings; all finish surfaces to receive water repellent treatment.
LOCATIONS	Building Exterior

VESTIBULE

CATEGORIES	Envelope
DESCRIPTION	A thickened zone of the building envelope which allows people to enter the building, by passing through a buffer that separates the interior and exterior environments from coming in direct contact.
NOTES	Provide at main entrances in areas where wind-driven rain prevails.
LOCATIONS	Building Exterior at building entrances

SOFFITS

CATEGORIES	Envelope
MATERIAL	Paint White For Linear Metal Ceiling System: Panels to have backed enamel finish, white color to match existing For Metal Panel System: Fluoropolymer exterior finish
ACCEPTABLE MATERIALS	Mineral Fiber Tile Metal Soffit • For Linear Metal Ceiling System: Match existing panel profile • For Metal Panel System: Minimum 20 gauge corrosion resistant sheet metal
HARDWARE SET	Hold-down clips
NOTES	• Panel texture to be smooth • Perforations to match existing • The exterior soffit system along the terminal drive to match the interior ceiling system within the ticket lobby, where makes sense. • The terminal drive metal soffit system is an interior/exterior system. • Panels shall be formed to snap on and be securely retained on carriers without separate fasteners. • The exterior soffit system along the terminal drive to match the interior ceiling system within the ticket lobby. • The terminal drive metal soffit system is an interior/exterior system. • Soffit system to match adjacent wall panel system.
LOCATIONS	Building Exterior at Curbside Arrivals and Departures Mineral Fiber - Exterior Ramp Level

3.3 ROOFING

The roof supports several systems and keeps our occupants sheltered and dry. It is the face of our Airport from the sky.

PVC

CATEGORIES	Exterior
RECOMMENDED MANUFACTURERS	Sarnafil Inc. Johns Manville Carlisle SynTec Systems
DESCRIPTION	Mechanically fastened over metal deck; seams hot air welded; fully adhered over insulating substrate
SIZE	Walking treads: 24” wide
COLOR	Walking treads: light grey Sheet metal roofing: choose a light color for high reflectivity Color to be approved by Port of Seattle
FINISHES	Typical roof field: 60 mil white or off-white PVC membrane Roof fields with limited access control and subject to moderate walking over the entire roof surface: 80-mil white or off-white PVC membrane
HARDWARE SET	Membrane roofing fasteners: galvanized steel, plain or with factory applied corrosion resistant coating Sheet metal roofing fasteners: use only screw fasteners with integral cap and grommet. Face fasten sheet metal only. Fasteners to be compatible with the metal through which it is fastened.
ACCEPTABLE MATERIALS	Reinforced PVC single-ply membrane roofing or sheet metal walking treads: 90 mil PVC walking tread/pad, welded onto surface of 60 mil roofing membrane. Reinforcement: polyester Metal sheet roofing

PVC

NOTES

- Select the roofing system on a life-cycle cost basis.
- For ease of maintenance, specify a long-lasting premium roofing system commensurate with the facility life cycle and architectural theme.
- Design shall account for the slope of the building frame. This is preferred over other methods, such as tapering the roof to achieve a positive slope.
- Provide roof drainage overflows through parapet walls, where field drain overflows are not constructible.
- Provide slip resistant walkway pads on low-slope roofs subject to heavy foot traffic to prevent roof damage.
- At roof walkways, penthouse door entries, and other high traffic roof areas, walking treads shall be provided with a color contrasting to the field color to clearly define the pathways.
- Provide adequate clearance between roof surfaces and other objects to allow access for roof repairs and replacement.
- Maintain clear access pathways to get maintenance materials and equipment to and across the roofs. This includes coordinating conduits, piping, and expansion joints. Do not install pipes or conduits across walkways without installing permanent low slope crossover ramps, with hand rails and slip resistant walking surface for delivering materials using hand trucks.
- Do not design for use of access hatches or forklift/crane without approval.
- Specify a minimum slope of 1/2" per foot to ensure positive drainage of the roof surface.
- Specify 1" slope per foot for roofing crickets, diamonds, and saddles.
- No asphalt based products are allowed above or over PVC roof material.
- Provide white 60 mil minimum PVC roof membrane on standard roofs; 85 mil PVC on unusual surfaces.
- Flame spread index is 25 at minimum when tested in accordance with ASTM E84.
- Roofing shall meet Factory Mutual requirements for conditions of use, including minimum 1-120 Wind test at the Port of Seattle.
- Do not use pop rivets on exposed sheet metal details.
- Provide 1/2" coverboard.

PARAPETS

CATEGORIES	Exterior
NOTES	• Provide 42" high parapet walls or rails on roofs, bridges, and other elevated walk surfaces above 48"; where not feasible, provide other fixed fall protection system for 2 or more concurrent personnel. • Parapets, cants, and curbs should be used to provide an overall pleasing and unified appearance for the building facade, concealing unsightly or complex roof-scapes. Their design should respond to the specific conditions and sight lines of the individual project. • Parapets to be designed to slope inwards towards roof.

ROOFING DETAILS

Gutter

CATEGORIES	Exterior
NOTES	• Buildings with gutters shall have concrete downspouts connected to storm drainage system. • Exposed galvanized metal is not allowed unless approved by Port Environmental

ROOFING DETAILS

Roof Drain

CATEGORIES	Exterior
NOTES	• Roof drains shall be designed to avoid water damage to structural system. • For drains located at low points, consider the deflected position of the structure under load. • Interior roof drains are preferred over perimeter drains on low-slope roofs. • Exposed galvanized metal is not allowed unless approved by Port Environmental.

ROOFING DETAILS

Roof Expansion Joints

CATEGORIES	Exterior
NOTES	• If expansion joints (EJ) are required, verify that they are placed at the high point, with drainage directed away. • Expansion joints shall allow movement in three directions. • Interior and exterior EJ are specified wherever the wall can move relative to an abutting wall, curb, or other building component. • Curbs for expansion joints, area dividers, roof hatches, and rooftop equipment shall be sized to permit a base flashing height that is a minimum of 8" and a maximum of 12", from top of curb to top of roofing.

ROOFING DETAILS

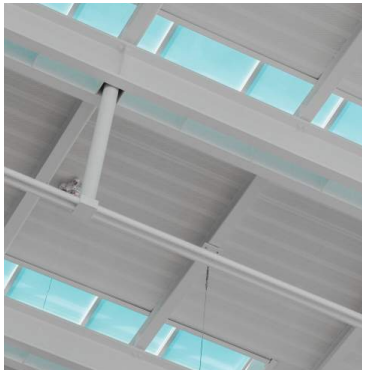
Roof Sealant

CATEGORIES	Exterior
PRODUCT NAME	Kemcaulk 900 Sikaflex Vulkem
ACCEPTABLE MATERIALS	Urethane construction sealant
NOTES	• Sealants shall be approved by the manufacturer of adjacent surfaces for compatibility. • No silicone sealants are allowed. Exceptions are products that specify a particular sealant for warranty, such as Dow 795.

ROOFING DETAILS

Skylight

CATEGORIES	Exterior
PRODUCT NAME	For Aluminum Extrusions: Kynar 500 coating system or Hylar 5000 coating system For Skylight Systems: Okeeffe's, Inc. Evergreen House DeaMor Kalwall
RECOMMENDED MANUFACTURERS	Kalwall Skywall
DESCRIPTION	Translucent Panel System
FINISHES	For aluminum extrusions: fluoropolymer finish with multiple coats; thermally cured; non-specular; as fabricated mechanical finish; acid chromate-fluoride-phosphate chemical coating
HARDWARE SET	Glazing gaskets, manufacturer standard extruded heat-cured silicone rubber Structural glazing adhesive; manufacturer recommended neutral curing silicon sealant.
ACCEPTABLE MATERIALS	Aluminum extrusions Glazing: match existing skylights gray insulated glass with high performance low-E coating.
NOTES	• Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing. • Coordinate the interface with other exterior closure trades so the combined exterior wall system components function properly. • Ensure uniformity of color and visual appearance of all frame components and glazing surfaces.



ROOFING DETAILS

Skylight

NOTES

- Maintain single source responsibility for the entire system, including fabrication, installation, and total coordination of all work.
- Skylights shall be designed for personnel loading without additional fall protection.
- Skylight must be capable of sustaining the weight of a 200-pound person with a safety factor of 4. See WAC 296-155-24615 (3).

3.4 STRUCTURE

The structure supports the Airport architecture and is a key part of building construction. Exposed columns are consistent with the desired look-and-feel of our space.

CONCRETE

Columns

CATEGORIES	Superstructure
FINISHES	If left uncovered, use sealed plain concrete finish If painted, verify with Port Light sandblast to eliminate slight imperfections Column enclosures
ACCEPTABLE MATERIALS	Cast-in-place concrete
NOTES	• Choice of finishes and textures must take into consideration the material's ability to resist abuse and conceal slight imperfections or minor physical damages. • Finish new concrete columns to closely match the appearance of existing columns. • Plain (unfinished) cast-in-place concrete finish is preferred at columns although painted concrete is an acceptable finish. If plain sealed concrete finish is used, remove all scales, stains, and form markings to ensure surface is smooth and uniformly clean before applying sealer. • Use only penetrating type of concrete sealers. Film forming sealers may not be able to hold against outward moisture migration. • In areas accessible by the public, use a permanent or non-sacrificial type of anti-graffiti coating, or other applicable soil and dirt control coating, that does not alter the appearance of the exposed concrete surface.
LOCATIONS	Check-In Lobby Curbside - Arrivals Curbside - Departures Baggage Claim Lobby Parking Garage Promenade South Arrivals Hall (GML) Concourses & Satellites

CONCRETE

Beams

CATEGORIES	Superstructure
FINISHES	Stucco Pre-cast concrete panels Manufactured metal cover If left uncovered, use sealed, plain concrete finish If light sandblast finish, seal prior to sandblast
ACCEPTABLE MATERIALS	Cast-in place concrete
NOTES	• Concrete surfaces to be appropriately sealed before applying finishes. Choice of finishes and textures shall take into consideration the material's ability to resist abuse, and conceal slight imperfections or minor physical damages. • Use only penetrating type of concrete sealers. Film forming sealers may not be able to hold against outward moisture migration. • In areas accessible by the public, use a permanent or non-sacrificial type of anti-graffiti coating, or other applicable soil and dirt control coating, that does not alter the appearance of the exposed, concrete surface.
LOCATIONS	Curbside (Arrivals) Curbside (Departures) Parking Garage

CONCRETE

Walls

CATEGORIES	Superstructure
FINISHES	Textured finish is recommended, such as brush-hammered, medium sandblast minimum Stucco Pre-cast concrete panels Manufactured metal panels
ACCEPTABLE MATERIALS	Cast-in-place concrete
NOTES	• Concrete surfaces to be appropriately sealed before applying finishes. Choice of finishes and textures shall take into consideration the material's ability to resist abuse, and conceal slight imperfections or minor physical damages. • Use only penetrating type of concrete sealers. Film forming sealers may not be able to hold against outward moisture migration. • In areas accessible by the public, use a permanent or non-sacrificial type of anti-graffiti coating, or other applicable soil and dirt control coating, that does not alter the appearance of the exposed, concrete surface. • For sidings and panels, provide clearance at panel edges, corners, and transitions. • Use concealed fasteners where practical. • All structural, expansion, and movement joints shall be appropriately covered.
LOCATIONS	Curbside (Arrivals) Curbside (Departures) Parking Garage Central Terminal South Arrivals Hall (GML)

CONCRETE

Floor

CATEGORIES	Superstructure
DESCRIPTION	Sealed concrete floor
NOTES	• Epoxy sealant to be applied to floors in electrical and communications rooms. • Bagwell, which is not slab on grade, should have a waterproof coating with grit for vehicle traction. Bagwell slab on grade should have epoxy non-skid finish. • Unless otherwise indicated, all other concrete floors shall receive a hardener and sealer, and not receive paint.
LOCATIONS	Curbside (Arrivals) Curbside (Departures) Conveying - Elevators (new projects; charges of lifts) Storage Janitor Closet Parking Garage Loading Dock

EXPOSED STEEL STRUCTURE

Beams & Bracing

CATEGORIES	Superstructure
FINISHES	Depending on location finish color may vary Verify with Port for approved color
ACCEPTABLE MATERIALS	Structural steel
NOTES	• Ensure uniform finish color in all exposed parts of the steel structure. • Color to match existing and adjacent exposed structural steel. • Fasteners, nuts, and washers finished to match adjacent steel.
LOCATIONS	Check-In Lobby Passageways Skybridges Baggage Claim Lobby South Arrivals Hall (GML) Central Terminal

PAVEMENT

CATEGORIES	Exterior Superstructure
ACCEPTABLE MATERIALS	Portland cement concrete (PCC)
NOTES	• In areas subject to acid spills, an acid-resistant coating shall be applied to PCC pavement. • Concrete pavement design accommodates for maximum joint spacing of 20 feet. Match existing layout. • Joint resealing project design provides for complete removal of old joint seal material. • Joint width is at least 12 millimeters, regardless of joint seal type (i.e., preformed or field- poured).
LOCATIONS	Parking Garage Loading Dock

EXPANSION JOINTS

CATEGORIES	Superstructure
FINISHES	Metal floor cover plates Metal wall cover plates Ceiling cover plates
NOTES	• Expansion and control joints shall be located to accommodate building movement, with interior bellows sloped to drain. • All expansion joints at interior and exterior finishes shall be covered with appropriate expansion joint covers. • Ensure a smooth transition at interface of joint cover and adjacent finish.
LOCATIONS	As required for structural soundness - consult with structural engineer

3.5 FENESTRATION

The Airport employs various types of fenestration throughout the building to provide access, daylight, and ventilation to the building and its occupants.

DOORS

Public Entrance Doors

CATEGORIES	Exterior
DESCRIPTION	Automatic sliding doors
HARDWARE SET	Overhead motion sensor Stainless Steel
ACCEPTABLE MATERIALS	Tinted glass Anodized aluminum frames
NOTES	• No exposed fasteners are allowed. • All exterior doors to have full height glass.
LOCATIONS	Skybridge Check-In Lobby Baggage Claim Lobby South Arrivals Hall (GML)

DOORS

Concourse Entry/Exit Doors

CATEGORIES	Exterior
FINISHES	Stainless steel door frames (No. 4 brushed) Metal doors are anodized aluminum (clear or colored), powder coated or stainless Steel should have metal finish (No. 4 brushed or hollow metal exterior doors with paint finish)
ACCEPTABLE MATERIALS	Stainless steel door frames Metal doors: anodized aluminum or hollow metal exterior door
LOCATIONS	Aircraft Passenger Loading Bridges

DOORS

Hollow Metal Doors

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
FINISHES	Doors to have paint finish Frames to have metal finish Sheet material to have sanded finish that is non-directional, 100 grit Formed or cast materials with flat faces are required to have sanded finish that is non-directional, 100 grit. Formed or cast materials with curved or shaped surfaces are required to have a No. 4 brushed finish Bead blast finishes, sealers and coatings are not allowed
HARDWARE SET	Lever type door pulls Best Series 35H, Core Housing 7, Lever Style 15, contour / angle return, Trim Style H, Finish 626: verify with the Port of Seattle General Foreman, Lock and Key Shop Finish: Standard stainless steel finish: US26D Kick-plate (on push side): Stainless Steel, 8400 Series 12" (or 18" as required) x US26D, Ives Or similar.
ACCEPTABLE MATERIALS	16-gauge minimum brushed stainless steel Painted metal frames are subject to approval by the project manager, and shall match the color of surrounding wall finishes. The Port of Seattle prefers unpainted frames to eliminate the cost and effort of repainting them. If glazed, use tempered clear glass, translucent laminated glass, or clear polished wire glass
NOTES	• Doors must accommodate the AVM lifts which will likely be used in the facility. There must be at least one entrance point in each high ceiling area for the required articulating lift to service the zone. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finish. • Fire-rated glazing is required for all rated doors. • Door relites require clear, tempered glazing.

DOORS

Hollow Metal Doors

LOCATIONS

Check-In Lobby
Baggage Claim Lobby
Esplanade
Central Terminal
South Arrivals Hall (GML)
Concourses & Satellites
Transit Stations
International Arrivals
Federal Inspection Services
International Arrivals Baggage Claim

DOORS

Flush Panel Hollow Metal Door

Restrooms

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
SIZE	Door panel height: 8’ - 0”
COLOR	Door frame should be inset into rough opening.
HARDWARE SET	Lever type door pulls Mortised lock-set, keyed on both sides Concealed finger pull, both sides Concealed offset mortised hinge with non-removable pins Smoke gasket Overhead concealed closer with kick-plate (on push side): stainless steel, 8400 series 12” (or 18” as required) x US26D, Ives Or similar.
ACCEPTABLE MATERIALS	16” - gauge minimum brushed stainless steel, hollow metal door and frame assembly
NOTES	• Fire protection rating, as required. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finish.
LOCATIONS	Restrooms

DOORS

Flush Panel Hollow Metal Door

Nursing Room

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
SIZE	Door panel width: 3’ - 0” Door panel height: 7’ - 0”
HARDWARE SET	Mortised lock-set with thumb turn and key override, privacy indicator Lever, both sides Hinges with non-removable pins Smoke gasket Overhead concealed closer with swing restrictor Kick-plate (on push side): Stainless Steel, 8400 Series 12” (or 18” as required) x US26D, Ives or similar.
ACCEPTABLE MATERIALS	16” -gauge minimum brushed stainless steel hollow metal door and frame assembly
NOTES	• Fire protection rating, as required. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finishes.
LOCATIONS	Nursing Suite (prefer solid wood door with vision lite; hollow metal as alternative) Lactation Room (prefer solid wood door; hollow metal as alternative) Family Restrooms

DOORS

Flush Panel Hollow Metal Door

60-Minute Fire-Rated

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
SIZE	Door panel width: 3' - 6" Door panel height: 7' - 0"
HARDWARE SET	Mortised lock-set, storeroom Lever, both sides Hinges with non-removable pins Standard card reader Smoke gasket Overhead concealed closer with 180 degree swing Kick-plate (on push side): Stainless Steel, 8400 Series 12" (or 18" as required) x US26D, Ives Or similar.
ACCEPTABLE MATERIALS	16" -gauge minimum brushed stainless steel hollow metal door and frame assembly
NOTES	• Fire protection rating, as required. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finishes.
LOCATIONS	Janitor Closet

DOORS

Double Doors

CATEGORIES	Interior
DESCRIPTION	Magnetic hold at fire-rated walls
SIZE	10’ x 6’ (3’ leaf)
LOCATIONS	Storage

DOORS

Framed Glass Doors

CATEGORIES	Exterior
RECOMMENDED MANUFACTURERS	Hardware: Best Cylinders or Intellikey Glass: Viracon, PPG, LOF, Guardian
SIZE	Door panel width: 3’ - 3 3/4” or 3’ - 6 1/2” Door panel height: 8’ - 2 1/4” or 8’ 2 3/4” Float glass: minimum 1/4” thick
FINISHES	Metal to be clear or colored anodized, or color powder coated Hardware finish to be US26D, where hardware requirements are verified with Port of Seattle General Foreman, Lock and Key Shop
HARDWARE SET	Electrified rim exit panic device, fail-secure Panic hardware Continuous geared hinge with electric transfer - tamper resistant enclosure Biometric card reader with pin pad Request-to-exit device Smoke gasket Overhead concealed closer: LCN Model 4314 ME-SF 24V, 0°-180° swing with no pressure Threshold

DOORS

Framed Glass Doors

ACCEPTABLE MATERIALS

Metal door frames are anodized aluminum (clear or colored); powder coated, or stainless steel (No. 4 brushed)
Metal doors are anodized aluminum (clear or colored); powder coated or stainless steel (metal finish, No. 4 brushed or Hollow metal exterior doors with paint finish)
Glazing:
Clear insulated glass with low-E coating
Clear insulated glass with low-E coating, with frit pattern
Gray insulated glass, uncoated
Gray insulated glass, uncoated, with sandblast
Gray monolithic glass, uncoated
Gray insulated glass with low-E coating
Gray laminated insulated glass

NOTES

- All door glazing must match adjacent window or curtain wall system glazing.
- Insulated glass shall be double-glazed and dual sealed with air space between hermetically sealed panes with silicone at the perimeter of the unit.
- Vision glass is to be heat strengthened.
- Specify performance criteria for solar energy transmittance, shading co-efficient, ultraviolet transmittance, visible light transmittance, and infrared transmittance.
- All exterior doors to have a Sound Transmission Class (STC) rating of 33 minimum.

LOCATIONS

Holdrooms

DOORS

Overhead Roll-Up Doors

Exterior

CATEGORIES	Exterior
ACCEPTABLE MATERIALS	Galvanized Non-painted Fabric: used for high-speed roll-up doors at the ramp level

DOORS

Overhead Roll-Up Doors

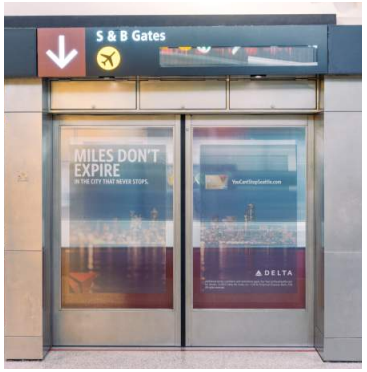
Interior

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
FINISHES	Unpainted slats Sheet material sanded finish to be non-directional (100 grit) Formed or cast materials with flat faces are required to have non-directional sanded finish (100 grit) Formed or cast materials with curved or shaped surfaces are required to have a no. 4 brushed finish Bead blast finishes, sealers and coatings are not allowed
ACCEPTABLE MATERIALS	Anodized aluminum Natural Stainless steel
NOTES	• Fire protection rating, as required. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finish. • At all locations where fire-rated door and frame assemblies are required, provide assemblies which comply with the applicable National Fire Protection Association (NFPA) requirements, and have been tested and labeled in accordance with ASTM standards by an agency acceptable to governing authorities. • All doors to meet ADA requirements. • UL listing is required by code. • Coordinate with the Port of Seattle General Foreman. • Reference Lock and Key Shop for detailed hardware information.

DOORS

Satellite Transit System Doors

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Hardware: Intellikey
ACCEPTABLE MATERIALS	Stainless steel doors Stainless steel frames Tempered clear glass Translucent laminated glass Clear polished wire glass
NOTES	• Fire protection rating, as required. • Bead-blasted finish, sealers, and coatings are not allowed on any stainless steel finish. • Clear, tempered glazing is required for door relites.
LOCATIONS	Transit Stations



WINDOWS

Glazed Partitions

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Julius Blum/Blumcraft Livers Bronze Company Newman Brothers, Inc.
DESCRIPTION	Interior glazing to create a permanent partition between spaces
FINISHES	Stainless steel base uses sheet material that requires non-directional, 100 grit sanded finish Formed or cast materials with flat faces are required to have sanded finish that is non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to have a no. 4 brushed finish Bead blast finishes, sealers and coatings are not allowed
ACCEPTABLE MATERIALS	Glazing: Clear Glass Translucent laminated glass monolithic float glass Sandblasted glass Fritted glass Stainless Steel

WINDOWS

Glazed Partitions

NOTES

- Translucent, sandblasted, or fritted glazing will be required where visibility must be obscured. Sandblasted glazing is susceptible to fingerprints and should not be used in areas accessible to the public. Frit is preferred.
- All glazing must be tempered. Cut glass to size, and shape and drill holes prior to tempering.
- Glass panel sizes shall allow easy removal and re-installation. Panels that are too heavy may be cumbersome and would need extra measures for safe handling.
- Glass panels to be butt-jointed and should not have horizontal mullions.
- Full height partitions at security areas are to be continuous along the floor to prevent items from passing below.
- All glass partitions, free standing or with top supports, must have a stainless steel base of 4" height to match the standard glass guardrail system.
- Provide certified safety glazing where required.
- Grind exposed edges smooth, using methods recommended by manufacturer.

LOCATIONS

Children's Play Area

WINDOWS

Storefront

CATEGORIES	Interior
ACCEPTABLE MATERIALS	Aluminum or stainless steel window frames Clear, non-colored glass Translucent laminated glass Sandblasted glass Fritted glass
NOTES	• Translucent, sandblasted, or fritted glazing will be required where visibility must be obscured. Sandblasted glazing is susceptible to fingerprints and should not be used in areas accessible to the public. Frit is preferred. • Provide certified safety glazing where required. • All glazing shall be tempered. Cut glass to size, and shape and drill holes prior to tempering. • Grind exposed edges smooth, using methods recommended by the manufacturer. • Submit minimum 12" square samples for each glass type, except clear monolithic glass. • Window frames shall be unpainted for ease of maintenance.

LOUVERS & GRILLES

Grilles

CATEGORIES	Interior
COLOR	To match color of surrounding wall, subject to approval by the Port of Seattle
FINISHES	For aluminum, use shop applied enamel or Fluoropolymer finish For stainless steel, sheet material is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers, and coatings are not allowed
ACCEPTABLE MATERIALS	Aluminum Stainless steel Galvanized steel
NOTES	• All HVAC grilles shall be installed visually symmetrical and compatible with surrounding architectural elements. • Grilles shall have a minimum 60% net free area. • Blank-off panels to be fabricated from sheet metal, to match the same metal and finish as louvers.
LOCATIONS	All Space Types

LOUVERS & GRILLES

Grilles & Screens

CATEGORIES	Exterior
FINISHES	Aluminum: clear or colored anodized Powder coated Primed and painted Enamel Stainless steel: No. 4 brushed metal finish. Stainless steel flat surfaces to be non-directional 100 grit Galvanized steel: brushed Powder coated Primed and painted Enamel
HARDWARE SET	Fasteners for aluminum members to be aluminum, stainless steel, or galvanized steel Fasteners for steel or galvanized steel members to be stainless steel or galvanized steel Fasteners for stainless steel members to be stainless steel Finish fastener heads that are exposed to view to match adjacent surface
ACCEPTABLE MATERIALS	Fabricate all blades and frames from extruded aluminum, stainless steel, or galvanized steel
NOTES	All HVAC grilles shall be installed visually symmetrical and compatible with surrounding architectural elements.

LOUVERS & GRILLES

Louvers

CATEGORIES	Exterior
FINISHES	All aluminum blades and frames are fabricated from extruded aluminum Stainless steel use No. 4 brushed metal finish Stainless steel flat surfaces to be non-directional 100 grit Brushed galvanized steel Powder coated Primed and painted Enamel
HARDWARE SET	Fasteners for aluminum members to be aluminum, stainless steel, or galvanized steel Fasteners for steel or galvanized steel members to be stainless steel or galvanized steel Fasteners for stainless steel members to be stainless steel Finish fastener heads that are exposed to view to match adjacent surface
ACCEPTABLE MATERIALS	Aluminum, Stainless Steel, or Galvanized Steel
NOTES	Louvers shall be storm proof with 45-degree stationary blades.

LOUVERS & GRILLES

Louvers & Vents

CATEGORIES	Interior
FINISHES	For Aluminum, use extruded aluminum finish (anodized, clear or colored, powder coated, primed, and painted, enamel) For stainless steel: sheet material is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers and coatings are not allowed For galvanized steel: Brushed Powder coated Primed and painted Enamel Finish to match surrounding wall or ceiling color, unless approved otherwise
HARDWARE SET	Fasteners for aluminum members to be aluminum, stainless steel, or galvanized steel Fasteners for steel or galvanized steel members to be stainless steel or galvanized steel Fasteners for stainless steel members to be stainless steel Finish fastener heads that are exposed to view to match adjacent surface
ACCEPTABLE MATERIALS	Extruded aluminum Stainless steel Galvanized steel
NOTES	• Installation of units shall be visually symmetrical and compatible with architectural requirements; reveals and recesses to fit accordingly. • Louvers are stationary 45-degree blades.
LOCATIONS	All space types

ACCESS PANELS

Ceiling

CATEGORIES	Interior
SIZE	24" x 24"
NOTES	Ceiling access panels do not require keys; shall use flat blade screwdriver to open. Install 8' on center.
LOCATIONS	Restrooms

ACCESS PANELS

Wall

CATEGORIES	Interior
SIZE	24” x 24” minimum
NOTES	Access doors shall be keyed to match existing port maintenance keys.

3.6 PARTITIONS

Partitions separate and define spaces. Their construction and finishes allow spaces to function as intended.

DEMOUNTABLE PARTITIONS

CATEGORIES	Interior
DESCRIPTION	Used by tenants to create administrative, storage, or private areas for screening.
COLOR	Silver anodized aluminum Frosted glass
NOTES	• Coordinate with surrounding finishes. • Can be full pane or dividing mullions.
LOCATIONS	Baggage Claim Security Checkpoints

GYPSUM WALLBOARD

CATEGORIES	Interior
DESCRIPTION	Impact resistant
FINISHES	Neutral, light, and subtle Paint Wallcovering Column Enclosures
NOTES	• If using metal stud wall construction, the bottom track of the wall needs to be designed and secured to the floor to resist impacts from motorized pallet jacks. • Gypsum wallboard finishes shall only be used in areas on wall or column covers which are not susceptible to damage and not accessible to the public. The exception shall be for use on temporary walls and columns. • In high traffic areas, a durable finish shall be used as a removable wainscot to protect the wall from people and carts. In general the lowest 24" of walls receive the most damage; therefore a removable wainscot 36" high (with or without a 12" base) is required so that maintenance can repair and replace without removing the entire wall panel. • In general, for maintenance purposes, wall surfaces shall have no texture.

GREEN-BOARD

CATEGORIES	Interior
DESCRIPTION	Mold-resistant
NOTES	• Gypsum wallboard finishes shall only be used in areas on wall or column covers which are not susceptible to damage and not accessible to the public. The exception shall be for use on temporary walls and columns. • In high traffic areas, a durable finish shall be used as a removable wainscot to protect the wall from people and carts. In general the lowest 24" of walls receive the most damage; therefore a removable wainscot 36" high (with or without a 12" base) is required so that maintenance can repair and replace without removing the entire wall panel. • In general, for maintenance purposes, wall surfaces shall have no texture.
LOCATIONS	Janitor Closet

3.7 CONVEYING

Conveying systems help us get to where we're going faster. It's important that these areas are kept clear, clean, and well demarcated.

STAIRS

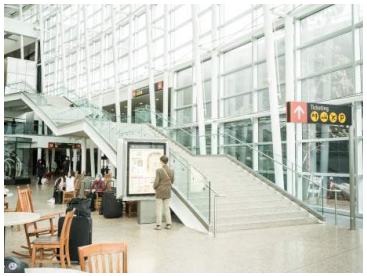
Exterior

CATEGORIES	Exterior
FINISHES	Hot-dipped galvanized after fabrication
ACCEPTABLE MATERIALS	Stringers: steel Treads: steel safety flooring Risers: steel sheet Landings: steel safety flooring Railings: steel
NOTES	• Provide with non-slip nosing and tread. • Solid treads and risers (with no openings) are required. • STIA exterior stairs are occasionally used for passenger loading and unloading. • Concrete treads are acceptable, but subject to approval. • All bolts shall be galvanized. • All welding sites shall be treated with a galvanized coating. • Paint finishes are not allowed. • Match visual appearance of existing stairs on Concourse B, C, and D.
LOCATIONS	Aircraft Passenger Loading Bridges

STAIRS

Interior

CATEGORIES	Interior
FINISHES	Paint finish to be used on steel stair structural supports and framing members exposed to view
NOTES	• Uniform finish color to be used in all exposed portions. • Paint finish shall be cleanable. • In all stairwells, a 5'-0" high wainscot shall be applied using a paint three to four shades darker than the standard white.



RAILS

Metal Railings

CATEGORIES	Exterior
FINISHES	Steel is hot-dipped galvanized after fabrication Stainless steel sheet material is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers, and coatings are not allowed
ACCEPTABLE MATERIALS	Steel, or stainless steel
NOTES	• Close exposed, open ends of railings using same material as the member. • Wall mounted handrails shall be returned to the wall. • Handrails are left unpainted for ease of maintenance. • Connections and accessories to be finished to match railing finishes.
LOCATIONS	Aircraft Passenger Loading Bridges

RAILS

Guardrails

CATEGORIES	Interior
RECOMMENDED MANUFACTURERS	Julius Blum Blumcraft Livers Bronze Company Newman Brothers Inc.: Econorail" glass rail system
FINISHES	Stainless steel base: sheet material with sanded finish is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to have sanded finish that is non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to have a No. 4 brushed finish Bead blast finishes, sealers, and coatings are not allowed
ACCEPTABLE MATERIALS	Clear 3/4" solid glass with stainless steel handrail and base
NOTES	• Railings, guardrails, and metalwork shall be shop fabricated per code and industry standard. • Aluminum railings are not allowed. • Glass panel sizes shall be selected to ensure easy removal and re-installation. Panels that are too heavy may be cumbersome and would need extra measures for safe handling. • All rails and guardrails are to be provided with a 4" high base to protect glass from maintenance procedures and carts. • For railings at seismic bracing, infill panels and bases are not allowed.

RAILS

Guardrails

LOCATIONS	Check-In Lobby Baggage Claim Promenade Esplanade Central Terminal South Arrivals Hall (GML) Concourses & Satellites International Arrivals Federal Inspection Services International Arrivals Baggage Claim
LINKS	Design Intent Drawings

RAILS

Queue Rails

CATEGORIES	Interior
ACCEPTABLE MATERIALS	Stainless steel, metal panel top surface
LOCATIONS	International Arrivals Federal Inspection Services International Arrivals Baggage Claim

RAILS

Baggage Claim Rails

CATEGORIES	Interior
FINISHES	Stainless steel base: sheet material with sanded finish is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to have sanded finish that is non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to have a No. 4 brushed finish Bead blast finishes, sealers, and coatings are not allowed
ACCEPTABLE MATERIALS	Stainless steel handrail and base with perforated metal screen
NOTES	• Railings, guardrails, and metalwork shall be shop fabricated per code and industry standard. • Aluminum railings are not allowed.
LOCATIONS	Baggage Claim Lobby International Arrivals Baggage Claim

3.8 CASEWORK

Casework is present in most space types where airlines operate: namely the check-in lobby and the holdrooms. Where the space is shared by multiple airlines, referred to as “common use,” the casework is supplied by SEA. In other instances, the airlines provide their own casework. SEA provided casework is detailed in this section, each item referencing the shop drawings that apply.

CASEWORK

In order to maintain a unified look throughout the terminal public areas, all casework and cabinetry must consistently conform to these guidelines:

- Surface materials must exhibit a matte and even appearance, and must be resistant to dents, scratches, nicks, and other deformities caused by arbitrary public abuse.
- Color and finish must be fade resistant, have a uniform color intensity throughout the finish, and shall not exhibit visual changes in color or appearance when scratched or subjected to fingerprints.
- Casework design shall be based on modular panel components, factory produced, and interchangeable for flexibility.
- Concealed mechanical fasteners are used for the assembly of components. They shall be rigid, sturdy, and give an overall neat and unobtrusive appearance, showing no loose or poorly constructed joints. Square joints are preferred for solid surface.
- Use commercial grade hardware and use master keying system for all locks, compatible to POS key cores.
- Select materials that are expected to be available in the future.
- Preference will be given to the use of wood products made from FSC (Forest Stewardship Council) certified wood. Overall, preference for plywood. Cabinet drawers must be plywood.
- All casework shall meet the requirements for AWI Premium Grade and be registered for and receive certification under AWI Quality Certification Program for Premium Grade. The use of composite wood (e.g., MDF, particleboard, plywood, agrifiber board etc.) made with glues or resins that contain added urea-formaldehyde is prohibited. This prohibition includes any part of any assembly fabricated on or off site.
- Per the requirements of NFPA415, 4.1.2, all materials within the airport terminal are required to carry a classification of either Class A or Class B Fire Rating.
- Consideration should be given to evolution of technology, airline processes, and minimizing the footprint of the units.


New


Archive


Sustainable

CASEWORK

There are three primary types of casework, depending on the concourse location and the needs of the space:

- **Check-In Lobby** — Check-In Lobby Counter and Baggage Scale (passenger check-in and bag drop-off)
- **Concourses A & B** — Boarding gate cabinets made of red cedar
- **Concourses C, D, N & S** — Boarding gate cabinets made of maple

Additionally, there are other types of casework found around the airport:

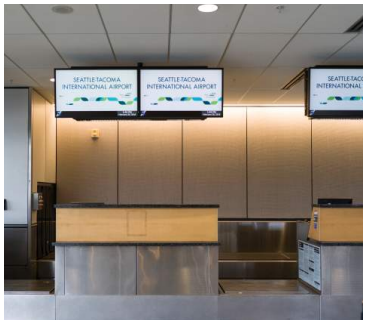
- **Miscellaneous** — Flight Information Display
- **Concourses** — Charging Station

Applicable LEED Credit Requirements:

- MR – Building Product Disclosure & Optimization – Environmental Product Declarations
- MR – Building Product Disclosure & Optimization – Material Ingredients
- MR – Building Product Disclosure & Optimization – Sourcing of Raw Materials

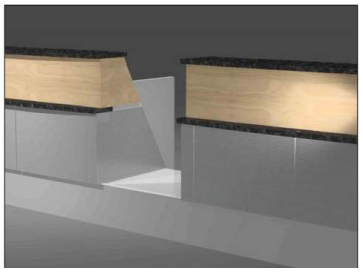
CHECK-IN LOBBY COUNTER

SIZE	5’ - 7” L 3’ - 6 1/8” W 4’ - 1 1/4” H
COMPONENTS	Podium shell Podium insert (including the printer cabinet)
FINISHES	Refer to drawings
NOTES	• Provide and maintain access to power outlets when providing cabinet inserts. • Seal inside of work counter to cover any gaps. • On vertical surface of casework adjacent to scales, eliminate any overhangs of material that can be damaged by heavy baggage. • Coordinate drawer hardware with weight of equipment.
LOCATIONS	Check-In Lobby



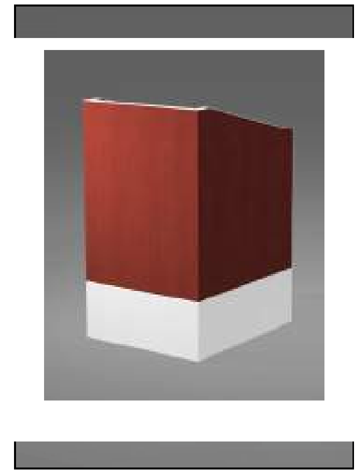
CHECK-IN BAGGAGE SCALE SHELL

SIZE	2’ - 6” L 1’ - 10” W 1’ - 0” H
FINISHES	Stainless steel
NOTES	• Top of scale must be removable.
LOCATIONS	Check-In Lobby

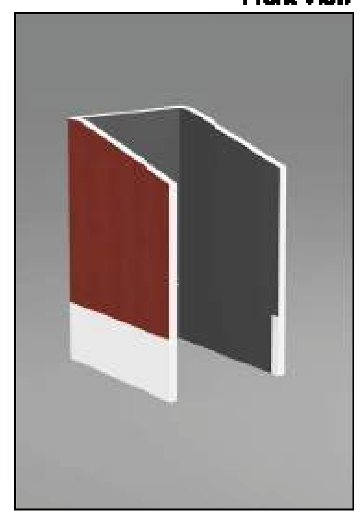


TICKET LIFT PODIUM

SIZE	2' - 3" L 2' - 9" W 4' - 0 1/8" H
COMPONENTS	Podium shell Podium insert
FINISHES	Maple wood veneer Stainless steel
NOTES	• Seal inside of work counter to cover any gaps. • Protect and reinforce corners.
LOCATION	Concourses C, D North, South Satellites



Front View

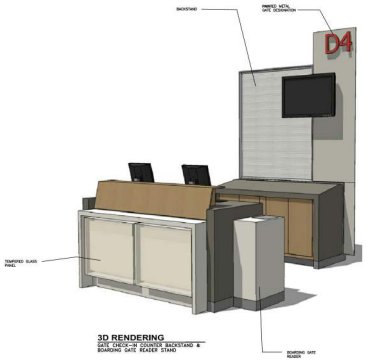


Rear View

RENDERED ILLUSTRATIONS

GATE CHECK-IN COUNTER

SIZE	**Counter:** 7’ - 0” L 3’ - 6” W 3’ - 11” H **Backstand:** 6’ - 4” L 2’ - 6” W 9’ - 2” to 10’-8” H
COMPONENTS	Gate check-in counter Backstand Boarding Gate Reader (BGR) stand Boarding Door Cabinet
FINISHES	Refer to drawings
NOTES	• Design intent is for standardization of outer appearance and shell. Airline specific casework would be coordinated per project requirements and fit into shell. • Front panels of shell to be removable to access electrical chase. • This casework is also the standard for ground transport and cruise ship counters. • Provide and maintain access to power and data outlets when providing cabinet inserts. • Design backstand to be transparent to not block light. • Align back of backstand to prevent passenger movement behind and place near gate door. • Integrate boarding gate reader into gate check-in counter whenever possible. • Provide robust foot rail on counter on side with workstations. • Doors to be standards hinged doors, no pocket doors.
LOCATIONS	Holdroom



FLIGHT INFORMATION DISPLAY

SIZE	11’ - 8” L (varies depending on number of monitors units included) 1’ - 10 7/8” W 9’ - 8 8” H
FINISHES	Stainless steel
NOTES	• Flight Information Displays (FIDs) can be ceiling, wall, or floor mounted.
LOCATIONS	Check-In Lobby Esplanade Central Terminal Concourses & Satellites Holdrooms

CHARGING STATION

SIZE	13’ - 3” L 3’ - 6” W 4’ - 8” H
COMPONENTS	Countertops Divider with power and lighting Stools anchored to floor
FINISHES	Metal base Wood veneer Solid surface
NOTES	• The charging station is a counter height ledge that provides passengers a place to rest and charge their devices. • 25% of available seats to be accessible stations. • Passengers are likely to lean on this perch, so it should support the appropriate weight. Provide additional support mid-span on long countertops. • Charging stations shall come with floor mounted seating units. Seats should have automatic returns and no height adjustment. • Charging station outlet receptacles shall be easily replaceable, meet Electrical Systems Standards and provide both standard 120V and USB charging options. • Provide access panels to electrical chase. Locate access door under counter and out of ‘kick-zone’ of passengers sitting. Provide hinged door or dual locks. • Provide robust anchorage or reinforced support at floor to prevent damage of vertical edges and warping.
LOCATIONS	Holdrooms

3.9 FURNITURE

Furniture is situated throughout SEA for customer comfort and waiting. Seating includes chairs, benches, and ganged gate seating located in interior public areas such as holdrooms, baggage claim, check-in lobby, and dining areas.

FURNITURE

Different seating options for interior public areas shall be provided, so the passengers will have various waiting options.

- Provide Holdroom seating for 70% of passengers. Port of Seattle to provide the number of passengers per holdroom, based on the largest aircraft utilizing gate.
- Once 70% of required holdroom seating is provided, introduce a variation of 5-10% of accent seating.
- Maintain 5'-0" aisle spacing between rows of seats. Exceptions require Port of Seattle approval, exceptions will be needed for Concourse D.
- 75% of general Holdroom seating should be powered. 100% of ADA seating to be powered.
- Seating with arms is to be provided in areas where people are prone to use the seats for sleeping.
- Seating color may vary throughout the airport, but must be from the selected palette.
- Color should be determined based on context (e.g., terrazzo, carpet) and concourse colors.
- Powder coated finishes not preferred. Finished metal or wood.
- Gate seating arrangement should be perpendicular to windows.
- Preference will be given to products with a high percentage of recycled content and/or manufactured within 500 miles of the project.
- Tables will be provided in select public areas to provide alternative waiting options.
- Dining furniture - tables to be reviewed by Port of Seattle. Goal is 25% accessible seating in dining areas and open ADR spaces. Dining chairs currently used: Encore Ole, and Agati Sensi.
- Fire Rating - Must comply with Port of Seattle Fire Department requirements - Per NFPA 415, 4.1.2, all materials used within airport are required to carry classification of Class A or Class B fire rating (in conjunction with Chapter 8 of IBC). All furniture in airport public spaces must be minimum CAL 117-13 compliant. Custom furniture shall be treated to provide minimum Class B fire rating. Plastic or injection molded furniture without minimum Class B rating will not be allowed.

New

Archive

Sustainable

CHECKPOINT SEATING

Bench

CATEGORIES	Accent Seating
PRODUCT NAME	Vector Seating System
FINISH	Frame: Dark Grey Metallic Texture Powdercoat Seat Slat: Cumaru Hardwood with fire rated coating
MANUFACTURER, MODEL	Forms + Surfaces Vector Bench, Backed, Seat Dividers
DESCRIPTION	Modular bench seating, with backing and seat dividers
NOTES	• Interchangeable modules include linear benches in 2, 4, 6, and 8- foot lengths. Verify with Port on length. • Furniture to be attached to the floor. • Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances.
LOCATIONS	Checkpoints, Recompose Areas

HOLDROOM SEATING

Meda Gate

CATEGORIES	Holdroom Seating
PRODUCT NAME	Meda Gate
FINISH	Seat Shell: Polyurethane integral-skin foam Armrest, Base and Legs: Polished aluminum Table Units: Black solid core laminate Power Modules: Polished aluminum with black cable channels Cup holder: black plastic
MANUFACTURER	Vitra
DESCRIPTION	Modular seating system with chrome finishes
NOTES	• Interchangeable modules with multiple combinations, lengths and accessories. Verify with Port on systems. • Typical seat shell color for Holdrooms: Basalt "Dark" Gray (RAL 7012) and black for Concourse D Annex, only. • Colored seat shells are optional, especially when there is no room for accent seating. • Slip glides required for carpet flooring and anti-slip glides for hard flooring locations. • (2) arm rests per seat for powered units and shared arm rests for non-powered units. • Provide arm rests with cup holders at seats that are not adjacent to table units. • Power module placed between seats for powered units (on T-form) • Power arm configuration (top to bottom): 50% (1) reversible USB-A, (1) USB-C, electrical 120V, electrical 120V. Other 50% with (3) electrical 120V. • On designated ADA seating units provide electrical outlets on ends of the rows, so outlets are accessible by individuals sitting in wheelchairs next to unit. • At other locations when possible, power outlets should be placed at the end of a row of seats so someone with a wheelchair can easily access the outlet.

HOLDROOM SEATING

NOTES

- Male end electrical plug shall be standard straight cord, NOT right angle. Port preference is for short straight cord electrical plug that fits into floor outlets.
- It is recommended that at least one end seat not have an arm rest.
- ADA designator inlay: black symbol on white
- Raised ADA seats typically on the outside unless the entire row is ADA. Include raised arms for raised ADA seats.
- Use entire row of all ADA seating when applicable to the seating layout.
- Allocate 5% or more of total Holdroom seating for ADA seats.
- Locate ADA seats near gate door and in line of sight to podium.
- Place seats away from wall to avoid back rest hitting structure behind.
- As a precaution, provide chair rail at seat back height where seats hit walls.
- Clearance to wall should be: 10" from wall to back edge of leg; 9" to back edge of glide or 33" from wall to seat front.
- Allow a minimum of 5'-0" between rows of seats. Exceptions require Port of Seattle approval, exceptions will be needed for Concourse D.
- Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations.
- Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances.

LOCATIONS

Concourse, Holdrooms
IAF, Resting Areas and Baggage Claim
Main Terminal, Baggage Claim

ACCENT SEATING

Meda Gate - Recliner

CATEGORIES	Accent Seating
PRODUCT NAME	Meda Gate - Recliner
FINISH	Seat Shell: Polyurethane integral-skin foam Armrest, Base and Legs: Polished aluminum Table Units: Black solid core laminate Power Modules: Polished aluminum with black cable channels Cup holder: black plastic
MANUFACTURER	Vitra
DESCRIPTION	Modular reclining lounge chair with chrome finishes
NOTES	• Interchangeable modules with multiple combinations, lengths and accessories. Verify with Port on systems. • Slip glides required for carpet flooring and anti-slip glides for hard flooring locations. • (2) arm rests per seat • Power module placed between seats for powered units (on T-form) • Power arm configuration (top to bottom): (3) electrical 120V. • Male end electrical plug shall be standard straight cord, NOT right angle. Port preference is for short straight cord electrical plug that fits into floor outlets. • Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances.
LOCATIONS	Concourse, Holdrooms

ACCENT SEATING

Agati Gee

CATEGORIES	Accent Seating
PRODUCT NAME	Agati Gee Collection
FINISH	Upholstery Seat Leg Finish: Chromed
MANUFACTURER, MODEL	Agati Gee Straight, Gee Curve
DESCRIPTION	Upholstery modular lounge chair, with multiple configurations
NOTES	• Interchangeable modules with multiple combinations, lengths and accessories. Verify with Port on systems. • Optional straight or curved configurations. • Work with Manufacturer to confirm suitable fabric materials. Previous installations have utilized fabrics: Mayer Caressa, Mayer Durango and Momentum Silica. • Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations. • Plastic laminate occasional tables with built in power. • Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances. • Allow 18" clearance along building perimeter for manual window cleaning or 36" minimum where a lift is required. • Furniture to be attached to the floor.
LOCATIONS	Concourse, Holdrooms Public Areas Club at SEA

ACCENT SEATING

Agati Gee - Bench

CATEGORIES	Accent Seating
PRODUCT NAME	Gee - Custom Bench
FINISH	Upholstery Seat Leg Finish: Chromed
MANUFACTURER, MODEL	Agati Custom Bench, Vista
DESCRIPTION	Upholstery modular bench, chrome leg, and powered table
NOTES	• Interchangeable modules with multiple combinations, lengths and accessories. Verify with Port on systems. • Work with Manufacturer to confirm suitable fabric materials. Previous installations have utilized fabrics: Mayer Caressa, Mayer Durango and Momentum Silica. • Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations. • Plastic laminate occasional tables with built in power. • Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances. • Allow 18" clearance along building perimeter for manual window cleaning or 36" minimum where a lift is required. • Furniture to be attached to the floor.
LOCATIONS	Concourse, Holdrooms Public Areas

ACCENT SEATING

Agati Fan Lounge

CATEGORIES	Accent Seating
PRODUCT NAME	Fan Lounge
FINISH	Upholstery Seat Leg Finish: Chromed
MANUFACTURER, MODEL	Agati Fan Lounge
DESCRIPTION	Upholstered lounge chair, chrome disc base with self-centering cylinder
NOTES	• Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances. • Freestanding or floor mounted with automatic return.
LOCATIONS	Concourse, Holdrooms Public Areas

ACCENT SEATING

Fractals

CATEGORIES	Accent Seating
PRODUCT NAME	Fractals Seating
FINISH	Upholstery Seat Leg Finish: Chrome
MANUFACTURER, MODEL	Studio TK, Partnership with Arconas Fractals Seating
DESCRIPTION	Upholstered lounge chair, sette and ottoman
NOTES	• Two back heights available as upholstered or wood • Work with Manufacturer to confirm suitable materials equal to Nissimi Espirit or better. • Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations. • Plastic laminate occasional tables with built in power. • Ensure size and weight of pieces will fit in doorways and elevators from point of delivery to placement location, and that weight does not exceed structural limitations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances. • Allow 18" clearance along building perimeter for manual window cleaning or 36" minimum where a lift is required. • Freestanding.
LOCATIONS	Concourse, Holdrooms Public Areas

ACCENT SEATING

Qui Ottoman

CATEGORY	Accent Seating
PRODUCT NAME	Qui Ottoman
FINISH	Upholstery Seat
MANUFACTURER, MODEL	Studio TK, Partnership with Arconas Qui Ottoman
DESCRIPTION	Upholstered ottoman
NOTES	• Ottoman Diameter: 25.5 inches (small), 44.5 inches (medium) or 60 inches (large). • Only the medium and large sized ottomans can be floor mounted. • Power available with USB in medium and large ottomans. • Work with Manufacturer to confirm suitable materials equal to Nissimi Espirit or better. • Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations. • Ask the furniture dealer to create a fully-dimensioned furniture plan based on the final installation including circulation clearances. • Furniture to be attached to the floor.
LOCATION	Concourse, Holdrooms Public Areas

ACCENT SEATING

Ginkgo

CATEGORY	Accent Seating
PRODUCT NAME	Ginkgo Ply Lounge
FINISH	Upholstery Seat Exposed Veneer Shell: Oak or Walnut Leg Finish: Chrome
MANUFACTURER, MODEL	Davis Ginkgo Collection
DESCRIPTION	Upholstered lounge chair
NOTES	• Two back heights available as upholstered or wood veneer. • Four Prong - memory return swivel base • Optional footrest with exposed shell • Work with Manufacturer to confirm suitable materials. • Fabric Requirements: CAL117 Flammability, Bleach Cleanable (diluted), UV and Stain Resistant, exceed 500,000 double rub Wyzenbeek or have previous heavy use installations.
LOCATION	Club at SEA, First Class Lounge

3.10 LIGHTING

A series of lighting options are used throughout SEA. Selections should be reviewed for performance, light distribution, energy efficiency, budget, maintenance requirements, and aesthetic qualities.

LIGHTING

The overall lighting strategy for SEA is to be lighter and brighter. Some general guidelines are outlined below:

- Use standard, rather than custom options when selecting light fixtures.
- All lighting should be LED fixtures.
- Accent lights can be used at decision points, as a highlight/ feature, and on artwork.
- Ceiling lighting is preferred over lighting that is integrated into furniture or wall sconces (except in restrooms or special locations).
- Where possible, conform to LEED best practices.
- Diffused field lighting should be used in ACT systems.
- Coffered lighting should be used at columns and where drywall ceilings end.
- Project teams should ensure compliance with local standards and codes for lighting efficiency, lumen output, and power consumption.
- Lighting controls should be provided to reduce unnecessary lighting when daylight levels are adequate or when spaces are unoccupied.
- Lighting fixtures should be coordinated with adjacent finishes; the same finish should be used throughout the same area.
- Metal paneled ceiling, particularly linear metal ceilings, should employ up-lighting.

Applicable LEED Credit Requirements:

- SS – Light Pollution Reduction
- MR – Building Product Disclosure & Optimization – Environmental Product Declarations
- MR – Building Product Disclosure & Optimization – Material Ingredients
- MR – Building Product Disclosure & Optimization – Sourcing of Raw Materials

3.11 FINISHES

Finishes help define the look, feel, and character of the airport, supporting coherency and legibility of the Airport design and experience.

FINISHES

Finishes are used throughout the airport and include the following subcategories:

- Flooring
- Paint
- Wallcovering
- Column Enclosures

Some general notes on the categories are provided here, including where consistency and variance apply. The following pages document each approved material, detailing performance criteria where appropriate, approved manufacturers, and the space types where it can be used.

SEA Airport is understandably an amalgamation of numerous time periods, and therefore also materials. Throughout the airport, there are a number of legacy finishes (not to be used on future projects) that will remain until a large project is undertaken to replace them. Legacy finishes have been included in the guidelines and are marked with a legacy icon. They should only be used for maintenance, repair, or replacement purposes.

Applicable LEED Credit Requirements:

- IEQ – Low-Emitting Materials
- MR – Building Product Disclosure & Optimization – Environmental Product Declarations
- MR – Building Product Disclosure & Optimization – Material Ingredients
- MR – Building Product Disclosure & Optimization – Sourcing of Raw Materials

New

Archive

Sustainable

FLOORING

Flooring types have been chosen primarily for their durability or acoustic properties, depending on the area. A number of general guidelines apply below, and the approved materials are detailed on the following pages.

Best Practices

- Terrazzo is the flooring preferred for any circulation areas.
- Accent colors of terrazzo are used for visual interest and wayfinding only.
- Any artwork in the terrazzo floor should be flush with the surface and should be approved by ARC.
- If wood is to be used, orient with the end grain facing up on the surface.
- Carpet tile is used in holdrooms. The same type should be used throughout a concourse, but it may vary between concourses.
- Carpet selected should have a pattern and mixture of tones to help conceal stains and seams.
- The pattern on the carpet can vary in scale depending on the size of the space
- The carpet should be colored in medium to dark tones of muted neutral colors (e.g., gray, brown, khaki) in order to easily hide stains.
- CRI (Carpet and Rug Institute) Green Label Plus certification (or its equivalent) is required for all new carpet and carpet tiles installed on site.
- Flooring in restrooms shall be durable and easily cleanable floor tile, in medium to dark tones.

Desired Finishes

- Primarily light-colored neutral terrazzo with accents that align with concourse themes (accent colors may vary)
- Carpet tile
- Walk-off mats

Legacy Finishes

- Terrazzo (dark brown) will be replaced as areas are renovated.

FLOORING

Carpet Tile

Type 1

DESCRIPTION

Linear-organic patterned carpet, with pattern scale based on the size of the space
All carpet shall meet air quality test criteria of CRI (Carpet and Rug Institute) Green Label plus certification
Flammability is less than or equal to .45, Class I
5/64" gauge (number of stitches/tufts per inch)
11.3 stitches per inch
115,000 tufts per square yard (approx.)
Pile tuft between .125" to .218"
Yarn weight of 32 ounces per square yard
100% type 6,6 bulk continuous filament (BCF) nylon
Hollow filament fiber shapes for optimum soil hiding capability
Modification ratio of less than 1.5.
TARR rating or 4 or less
Polymer type identification to AATCC TM 20
Solution dye; no vat dye or printed patterns
Yarn density of 5534 ounces per cubic yard
Smoke density (NFPA-258-T or ASTM-E-648) less than or equal to 450
Must pass Methenamine Pill Test and be specified as self-extinguishing
Recycled content
Unique blend, such as fiber shape, and composition

COLOR

Neutral color

NOTES

- Refer to Port's Guide Specifications - Section 09 68 13 Tile Carpeting
- Conceal the carpet seam.
- Do not use a quarter turn pattern.
- Preference is given to carpet tiles over broadloom, but it should have the look of broadloom.
- For new installations do not use large graphic patterns that make seams difficult to match.
- For carpet tiles, select patterns that permit random replacement of single tiles without disrupting the overall effect.
- Choose colors and patterns that can effectively camouflage dirt and stains, and allow easy cleaning, maintenance, and repairs.

FLOORING

Carpet Tile

Type 1

LOCATIONS

Promenade
Concourses A, B, C, D
North, South Satellites
International Arrivals
Federal Inspection Services
International Arrivals Baggage Claim
Aircraft Passenger Loading Bridges

FLOORING

Carpet Tile

Type 2

DESCRIPTION

Linear-organic patterned carpet, with pattern scale based on the size of the space
All carpet shall meet air quality test criteria of CRI (Carpet and Rug Institute) Green Label plus certification
Flammability is less than or equal to .45, Class I
5/64" gauge (number of stitches/tufts per inch)
11.3 stitches per inch
115,000 tufts per square yard (approx.)
Pile tuft between .125" to .218"
100% type 6,6 bulk continuous filament (BCF) nylon
Hollow filament fiber shapes for optimum soil hiding capability
Modification ratio of less than 1.5.
TARR rating of 4 or less.
Polymer type identification to AATCC TM 20
Solution dye; no vat dye or printed patterns
Yarn density at 5534 ounces per cubic yard
Smoke density (NFPA-258-T or ASTM-E-648) is less than or equal to 450
Must pass Methenamine Pill Test and be specified as self-extinguishing
Recycled content
Unique blend, such as fiber shape, and composition

COLOR

Neutral color

NOTES

- Refer to Port's Guide Specifications - Section 09 68 13 Tile Carpeting
- Preference is given to carpet tiles over broadloom.
- For new installations, do not use large graphic patterns that make seams difficult to match.
- For carpet tiles, select patterns that permit random replacement of single tiles without disrupting the overall effect.
- Choose colors and patterns that can effectively camouflage dirt and stains, and allow easy cleaning, maintenance, and repairs. The Design Review Committee must approve all carpet selections.

LOCATIONS

Skybridge

FLOORING

Terrazzo

FINISH	Non-slip surface type sealer
NOTES	• Requires approval by Port F&I Architecture • Terrazzo finish is to be used in all stairs in public circulation areas. • Terrazzo colors and finishes on stairs must match, or be compatible with the adjacent terrazzo floor finishes and other adjacent floor treatments • Use pre-cast terrazzo stair treads and risers, terrazzo base, and non-skid nosing insert.
DESIGNATION	STEP TZ-4
LOCATION	South Baggage Claim Level GML Hall
AGGREGATE MIX	3/8" Epoxy Resin: General Polymers #21769 75% Bottechino #0,1,2,3,4,5 5% Black 5% Demarco Gray #1,2 5% White #1 5% Clear Glass #3,5 5% Amber Glass #1

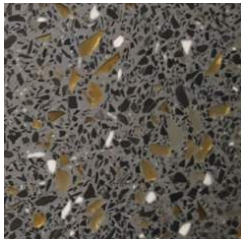
DESIGNATION	STEP TZ-2
LOCATION	Ticketing and Baggage Claim Level
AGGREGATE MIX	3/8" Epoxy Resin: General Polymers #23517 75% Raven Black #0,1,2 25% Cream Botte #0,1,2

FLOORING

Terrazzo

DESIGNATION	STEP TZ-1 CTE ET-2
LOCATION	South Ticketing and Mezzanine levels GML Hall - Stairs
AGGREGATE MIX	3/8" Epoxy Resin: General Polymers, "Sandrift," #18817 80% Bottechino #0,1,2 10% White #1,2 10% Clear Glass #3

DESIGNATION	STEP TZ-5 CTE ET-6
LOCATION	GML Hall, Concourse A, and CTE - Restrooms and Janitorial Closets
AGGREGATE MIX	3/8" Epoxy Resin: General Polymers "Charcoal" #19503 80% Black #0,1,2 10% White #01,2, 10% Amber Glass #3 or clear glass to match existing location (Amber glass at GML Hall and Concourse A locations and clear glass at CTE)



DESIGNATION	STEP TZ-3 CTE ET-3
LOCATION	South Ticketing Level Main Terminal Central - Esplanade, Checkpoint 3, Breezeway
AGGREGATE MIX	3/8" Epoxy Resin: White to match existing 60% White and Gold #0,1,2 15% White glass 15% Clear glass 10% Mother of Pearl Roman Tile & Mosaic #4297, #TI-3 04-28-9

FLOORING

Terrazzo

DESIGNATION	STEP TZ-6
LOCATION	South Terminal Expansion Project
AGGREGATE MIX	3/8" Epoxy Resin: Match Pratt & Lambert #1426 "ANCESTRAL White" 30% "Cactus Canyon" Green Marble 20% "Chewelian" White Marble, 15% "Cardiff" Green Marble 20% Mother-of-Pearl 15% CS Amber #9 Glass

No image provided

DESIGNATION	STEP TZ-7
LOCATION	-
AGGREGATE MIX	3/8" Epoxy Resin: Match Engineer's Sample 70-80% Clear Glass #2 15-30% White & Gold Marble #01,2, 0-15% Mother-of-Pearl size 2

No image provided

DESIGNATION	CTE ET-4
LOCATION	Main Terminal Central - Esplanade (Compass Design)
NOTE	• Compass design is part of the Art Program • Coordinate with Port Art
AGGREGATE MIX	100% Green Epoxy Resin 60% Sage Green Glass #1 20% Light Green Glass #1 15% Mother-of-Pearl # 2 5% Black Glass #1

FLOORING

Terrazzo

DESIGNATION	CTE ET-5
LOCATION	Main Terminal Central - Esplanade (Compass Design)
NOTE	• Compass design is part of the Art Program • Coordinate with Port Art
AGGREGATE MIX	100% Blue Epoxy Resin 85% Blue Plastic 98 15% Mother-of-Pearl #2
DESIGNATION	Concourse B - Field (Formula 553-1)
LOCATION	Concourse B - Stream
NOTE	• Bronze fishes in stream are part of the Art Program • Coordinate with Port Art
AGGREGATE MIX	General Polymers #40873 10% Chewalla White #0 25% Chewalla White #1 12 ½% Chewalla White #2 12 ½% CC Green #2 10% Mop #2 (Mother of Pearl) 5% CS Amber 9 #1 25% Marble Mix Seed 2 ½% T-Blue 5 #1 7 ½% Mop #2 25% CR Green 6 #2 25% Ant Green #2 10% CS Amber 9 #1 15% CO Blue 7 #1 15% CO Blue 7 #2

FLOORING

Terrazzo

DESIGNATION	Delta Sky Club TZ-1
LOCATION	Concourse S - Delta Sky Club elevator lobby
AGGREGATE MIX	"Terroxy" epoxy "lighter SEA brown" #522 40% Chew Black #1 45% Chew Black #2 10% Chew Cream #2 5% Chew Cream #1 Filler MW 200 (Note: Rough 24-80; fine 50 resin grout; polish 120 pads) (Sealer: 1 coat TESCO Crystal Seal High gloss solvent)

No image provided

DESIGNATION	Delta Sky Club TZ-2
LOCATION	Concourse S - Delta Sky Club
AGGREGATE MIX	"Terroxy" epoxy Sandrift #1462 80% Inyo Bronze # 0, 1, 2; 800 800 800 by Terrazzo and Marble Supply Co. (Chicago) 10% Chew White #1 10% Clear Glass #2 by Terrazzo and Marble Supply Co. (Sealer: 1 coat TESCO Crystal Seal II High gloss) (2 coats ZEP Floor Finish 3 wet look sheen)

No image provided

FLOORING

Terrazzo

DESIGNATION	Concourse B TER-1, 1995
LOCATION	Concourse B
AGGREGATE MIX	Ancestral White Epoxy (GP) 20% CH. White #0 30% CH. White #1 15% CH. White #2 10% CC Green #2 15% Mother of Pearl #2 10% Amber Glass #1

DESIGNATION	Concourse B TER-2, 1995
LOCATION	Concourse B
AGGREGATE MIX	Ancestral White Epoxy (GP) 20% CH. White #0 15% CC Green #1 15% CC Green #2 5% Cardiff Green #1 10% Cardiff Green #2 20% Mother of Pearl #2 15% Amber Glass #1

FLOORING

Stone Flooring

NOTES

Stone flooring is not to be used as a finish material for any interior public space, except in special spaces, such as the Central Terminal and the South Arrivals Hall.

LOCATIONS

Central Terminal
South Arrivals Hall (GML)

FLOORING

Tile Flooring

Type 1

PRODUCT NAME	Ambassador AM36 Ceramic Tile
DESCRIPTION	Porcelain ceramic tiles with integral material and color
SIZE	Minimum of 12" x 12"
COLOR	Medium to medium light color palette
FINISH	Minimal surface texture for easy and effective cleaning Medium or dark colored epoxy grout Unglazed Matte finish Slip resistant Cushion edge type Glazed (as accents only)
NOTES	• High quality installation is essential to minimize the risk of cracking. • Base to be coved for ease of maintenance.
LOCATIONS	North, South Satellites

FLOORING

Tile Flooring

Type 2

DESCRIPTION	Porcelain ceramic tiles with integral material and color
SIZE	Minimum of 12" x 12"
COLOR	Medium to medium light color palette
FINISH	Minimal surface texture for easy and effective cleaning Medium or dark colored epoxy grout Unglazed Matte finish Slip resistant Cushion edge type Glazed (as accents only)
NOTES	• High quality installation is essential to minimize the risk of cracking. • Base to be coved for ease of maintenance.
LOCATIONS	Animal Relief Area

FLOORING

Broadloom Area Rug

LOCATIONS

Check-In Lobby
Baggage Claim Lobby
Esplanade

FLOORING

Walk-Off Mat

Type 1

PRODUCT NAME	Abrasive Action II Walk-Off Mat 6'-0" Roll Powerbond
DESCRIPTION	Basket weave or checkerboard pattern with recessed extruded aluminum Units of edge grain laminated and chenille buffed rubber tire mats 3/8" to 7/16" thick Rubber tires are recycled
SIZE	12" x 12"
NOTES	• Walk-off mats are in high traffic areas and must be durable. The mats are to be rubber tire floor mats and act as a transition from the exterior to interior. • Mats will be recessed in frames set in terrazzo floors. • The recessed mat frames will require corner pins, or reinforcing and installation anchors. • The floor mats will be installed from the center point so tiles at each edge will be no less than one-half tile and equal in width. • Extruded aluminum shall be ASTM B 221, with alloy 6063-T%. • Provide edge members in single lengths.
LOCATIONS	Check-In Lobby Baggage Claim Lobby South Arrivals Hall (GML)

FLOORING

Walk-Off Mat

Type 2

PRODUCT NAME	Abrasive Action II Walk-Off Mat 6'-0" Roll Powerbond
DESCRIPTION	Basket weave or checkerboard pattern with recessed extruded aluminum Units of edge grain laminated and chenille buffed rubber tire mats 3/8" to 7/16" thick Rubber tires are recycled
SIZE	12" x 12"
NOTES	• Walk-off mats are in high traffic areas and must be durable. The mats are to be rubber tire floor mats and act as a transition from the exterior to the interior. • Mats will be recessed in frames set in terrazzo floors. • The recessed mat frames will require corner pins, or reinforcing and installation anchors. • The floor mats will be installed from the center point so tiles at each edge will be no less than one-half tile and equal in width. • Extruded aluminum shall be ASTM B 221, with alloy 6063-T%. • Provide edge members in single lengths.
LOCATIONS	Skybridge

FLOORING

Fixed Floor Mat

DESCRIPTION	Rubber tire mats with recessed mat frame and mat installation adhesive
SIZE	Size and style to fit floor mat type
FINISH	Edge grain laminated and chenille buffed rubber tire mats 3/8" to 7/16" thick 12" square tiles are to be set in a basket weave or checkerboard pattern
NOTES	• Mats will be recessed in frames set in terrazzo floors. • The recessed mat frames will require corner pins, or reinforcing and installation anchors. • The floor mats will be installed from the center point so tiles at each edge will be no less than one-half tile and equal in width. • Preference will be given to products with a high percentage of recycled content.

FLOORING

Astro Turf

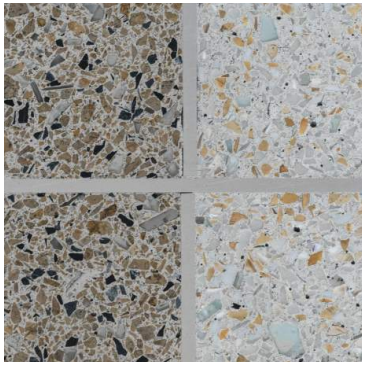
DESCRIPTION	Washable permeable surface with drainage system underneath
LOCATIONS	Animal Relief Area
NOTES	• Artificial turf specially designed as an animal relief surface, treated to inhibit the spread of disease, for indoor (and outdoor) areas

FLOORING

Transition Details

Terrazzo to Terrazzo

FINISH	Zinc
NOTES	Plastic dividers are not allowed.
LOCATIONS	All areas with terrazzo flooring
LINKS	Design Intent Drawings



FLOORING

Transition Details

Walk-Off Mat to Terrazzo

PRODUCT NAME	Schiene
COLOR	Gray | Black
LOCATIONS	All areas with walk-off mats and terrazzo flooring

FLOORING

Expansion Control Cover Plates

PRODUCT NAME	MM Systems Series HDT 2-1 Extra Heavy Duty
FINISH	Stainless steel satin finish Pre-finished aluminum
LOCATIONS	All areas with expansion joints

PAINT

- Paint finishes for walls should be chip-resistant and suitable for high-traffic areas.
- "Port Super White" is the standard paint color.
- Low VOC paint should be specified.
- Any accent paint on walls should be neutral colors.
- Any painted drywall should be above 8 feet — out of passengers' reach.

PAINT

Interior Paint

Type 1

ACCEPTABLE MANUFACTURERS	Sherwin Williams
DESCRIPTION	Low VOC latex paint
COLOR	Port super white
FINISH	Egg shell
NOTES	• Use custom manual match. • To ensure consistent color, always order enough paint to complete the job and mix all containers of the same color before application. • Mixed colors may vary slightly from color strip or color chip.
LOCATIONS	All areas

PAINT

Interior Paint

Type 2

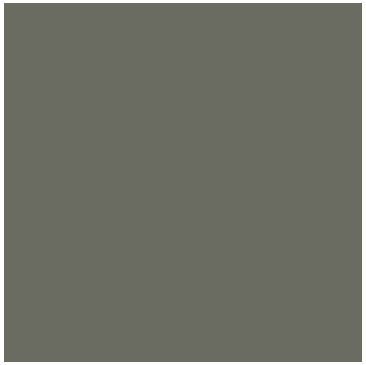
COLOR	Dark Bronze
NOTES	• Should be applied to bracing and other horizontal elements throughout the main terminal. • To ensure consistent color, always order enough paint to complete the job and mix all containers of the same color before application. • Mixed colors may vary slightly from color strip or color chip.
LOCATIONS	Mezzanine Skybridges Esplanade

PAINT

Exterior Paint

Type 1

PRODUCT NAME	8090-52102 Ramp Gray
ACCEPTABLE MANUFACTURERS	Sherwin Williams
COLOR	Gray
FINISH	Flat
NOTES	• To ensure consistent color, always order enough paint to complete the job and mix all containers of the same color before application. • Mixed colors may vary slightly from color strip or color chip.
LOCATIONS	Exterior Ramp Level



PAINT

Exterior Paint

Type 2

FINISH	Primer: zinc-rich non-ferrous urethane primer, high solids polyamide epoxy, or urethane, as recommended by topcoat manufacturer for adhesion to new galvanized surfaces and compatibility with finish coat material Intermediate coat: high solids polyamide epoxy or urethane Finish coat: urethane
NOTES	• Finishes shall be cleanable and abrasion resistant. • Allow for ease of matching finishes in-situ.

PAINT

Powder Coating

FINISH	Opaque, translucent, or transparent system appropriate for metal paint finish scheduled tubing, and sheet material Minimum 70-micron TGIC polyester based coating that is prepared, pre-treated, and applied based on manufacturer instructions Primer and base coats applied as per manufacturer requirements
NOTES	• Finishes shall be cleanable and abrasion resistant. • Allow for ease of matching finishes in-situ.

PAINT

Concrete Paint

FINISH	Primer: exterior masonry acrylic primer, low-sheen Intermediate coat: same as topcoat Topcoat: exterior masonry acrylic flat coating, low sheen
NOTES	• Finishes shall be cleanable and abrasion resistant. • Allow for ease of matching finishes in-situ.

PAINT

Liquid Applied System Paint

DESCRIPTION	Shall be appropriate for all paint finish scheduled substrate material
NOTES	• Finishes shall be cleanable and abrasion resistant. • Allow for ease of matching finishes in-situ.

PAINT

Opaque Cementitious Paint System

DESCRIPTION	Water based system compatible with substrate and appropriate to exposure conditions
FINISH	Sand aggregates may be used to achieve visual requirements
NOTES	• Finishes shall be cleanable and abrasion resistant. • Allow for ease of matching finishes in-situ.

PAINT

Slip-Resistant Floor Coating

PRODUCT NAME	ArmorSeal 8100 Epoxy (Part A) B70A8160
ACCEPTABLE MANUFACTURERS	Sherwin Williams
DESCRIPTION	Aluminum oxide non-slips #46-70 grit for combination with matrix
COLOR	Haze gray
FINISH	Satin
NOTES	• Coating to be 2-part water-based epoxy. • Add H&C Sharkgrip Slip-Resistant Additive. • Non-skid inserts must be provided at stair tread nosings, ramps, and other sloped floor surfaces; and shall be installed flush to the floor to minimize dirt entrapment and chipping. • A medium colored, non-skid material is preferable to maintain a tidy appearance by hiding soiling and staining.
LINKS	https://www.paintdocs.com/docs/webPDF.jsp?SITEID=SWPROTECT&doctype=SDS&lang=E&prodno=B70V08100

PAINT

Slip-Resistant Floor Coating

Hardener

PRODUCT NAME	ArmorSeal 8100 Epoxy (Part B) B70V8100
ACCEPTABLE MANUFACTURERS	Sherwin Williams
DESCRIPTION	Aluminum oxide non-slips #46-70 grit for combination with matrix
COLOR	Hardener
FINISH	N/A
NOTES	• Non-skid inserts must be provided at stair tread nosings, ramps, and other sloped floor surfaces; and shall be installed flush to the floor to minimize dirt entrapment and chipping. • A medium colored, non-skid material is preferable to maintain a tidy appearance by hiding soiling and staining.

PAINT

Urethane Semi-Gloss

ACCEPTABLE MANUFACTURERS

- TNEMEC Series 75 “Endura Shield”
- Wasser “MC-Luster”
- Sherwin Williams “Hi-Solids Polyurethane”
- B65 Series/B60V30
- Carboline “Carbothane” 134 HS with flatting agent

LOCATIONS

Central Terminal
South Arrivals Hall (GML)

WALLCOVERING

Walls are subjected to much wear and tear, primarily from luggage and luggage carts. Durability and longevity of finishes are the primary concerns. Some additional guidelines apply:

- Acoustic treatment should be considered for vertical surfaces, especially in the holdrooms.
- The fabric used on stretched or tackable wall panels should have a suitable noise reduction coefficient (NRC).
- Wood is an accent only and should be used with a wainscot.
- Wood paneling used as a wallcovering should ideally wrap around the corner to feel continuous and create a transition into the next space.
- Stone is acceptable for feature or accent but it should match existing finishes.
- A chair rail should be installed on all public-facing areas.

SEA has defined wall panel systems as outlined below. Any additional variations must be approved.

High-traffic area (anywhere that's visible and accessible) wall panel system (total height 8 feet):

- Ribbed panels: alternating directions
- 12" stainless steel base (angel hair finish)
- 24" wainscot (above base or 36" without base)
- 60" panel on top

Low-traffic (baggage claim back wall) or back of house:

- Rubber Base
- PLam panels

WALLCOVERING

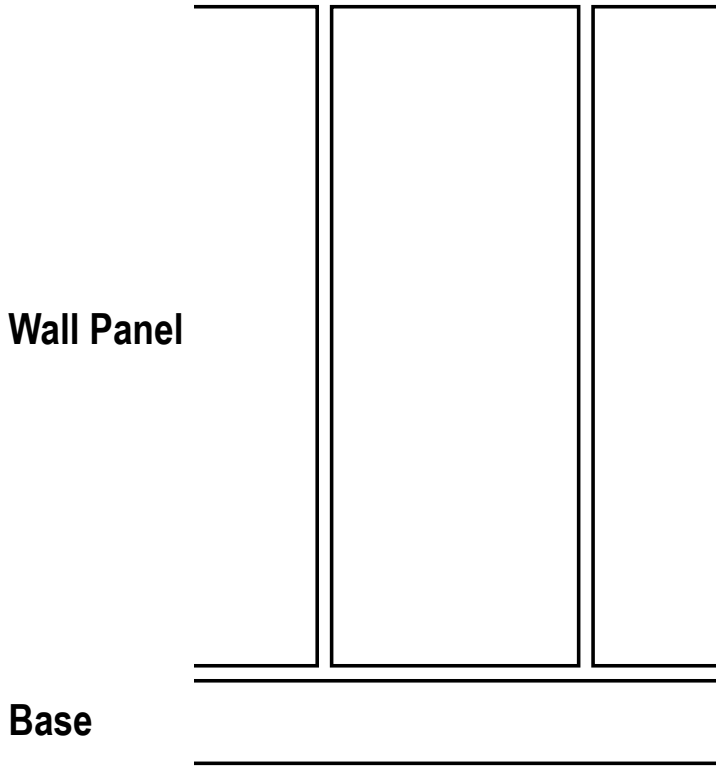
Holdrooms:

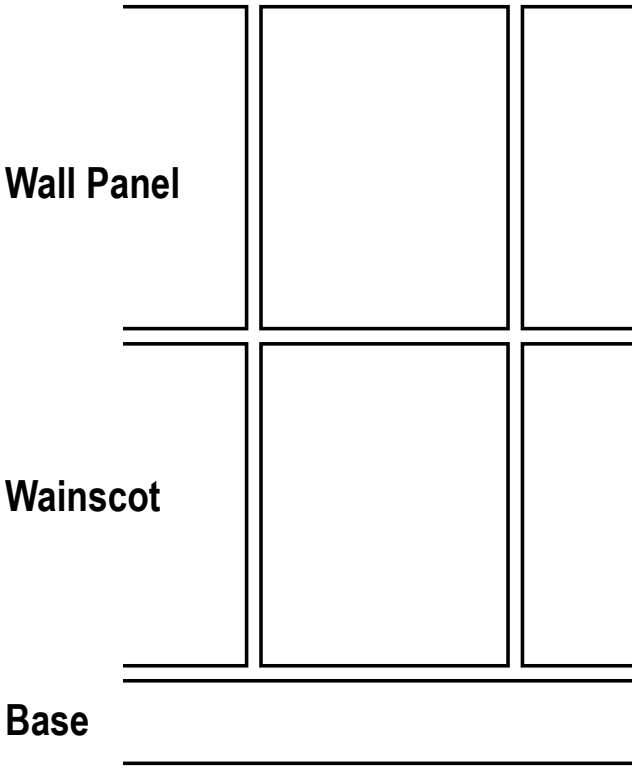
- Wainscot
  - Solid core PLam (phenolic core)
  - 12" stainless steel base
  - 24" wainscot (above base or 36" without base)
- Chair rail above all wainscots at a height that aligns with furniture heights, so as to protect the wall from banging
- Variable material above wainscot, but it must be:
  - Replaceable
  - Cleanable
  - Modular
  - Acoustic
  - Durable

Acceptable top material:

- Fabric
- Paint on Drywall (above 8 feet)
- Wood Paneling
- Metal Panel

WALLCOVERING



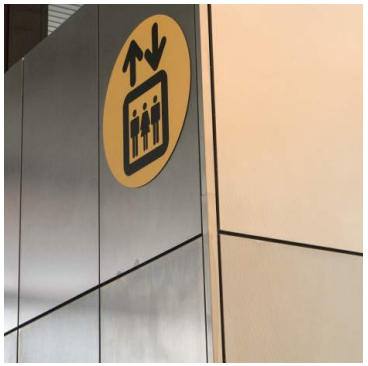


WALLCOVERING

Systems

PLam System Type 1

ACCEPTABLE MANUFACTURERS	Formica Nevamar WilsonArt Laminart InPro Sanparrel
DESCRIPTION	Colored, high-pressure decorative laminate with solid color core Panel trim: stainless steel flat bar, half round trim, or aluminum trim
SIZE	Panel trim: PVC edging to be 2mm or 3mm thick flat strip 36" base and wainscot on high traffic areas
COLOR	Neutral color
FINISH	Matte finish Panel trim: wood tape PVC edging
NOTES	• Old standard followed in south pier. • Hang on a French Cleat system. • For plastic laminate, apply full coverage of manufacturer's recommended quantity of adhesive to each surface. • Generally, light to medium neutral colors and subtle patterns are preferred. • Custom colors and textured plastic laminate finishes are not allowed.



WALLCOVERING

Systems

PLam System Type 1

NOTES

- Plastic laminate panel walls must be provided with a separate wainscot panel of a relatively heavy-duty material, such as stainless steel laminate or other acceptable metal laminate finishes. Although the wainscot finish and plastic laminate are of different materials, they must be visually compatible. Standard wainscot height is 36" from finish floor.
- Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning.
- Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners.
- Maximum reveal widths between panels to be 1/4".
- Masonite spacers, black, or dark painted, must be provided at reveal locations.
- Edges at reveals shall be stainless steel or aluminum trim.
- Provide durable protection for all panel edges exposed to potential damage.
- Plastic laminate panels to be trimmed with either stainless steel flat bar, stainless steel half round panel trim, vinyl (PVC) panel trim, or aluminum trim. Stainless steel and other metal laminate wainscot panels to be trimmed with stainless steel flat bar.
- Metal edges shall be chamfered or rounded.
- Formed edges and joints in the plastic laminate panel face are not allowed.
- Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt.

WALLCOVERING

Systems

PLam System Type 1

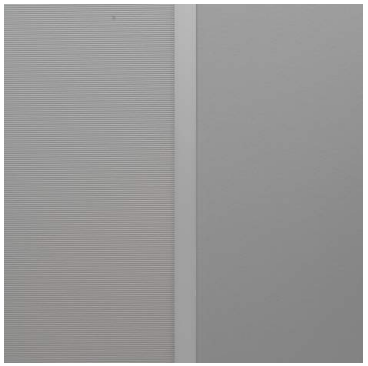
LOCATIONS	Esplanade
	Passageways
	Check-In Lobby
	Promenade
	Central Terminal
	South Arrivals Hall (GML)
	Concourses A, B, C, D
	North, South Satellites
	Satellite Transit System Stations
	International Arrivals
	Federal Inspection Services
	International Arrivals Baggage Claim
	Aircraft Passenger Loading Bridges

WALLCOVERING

Systems

PLam System Type 2

ACCEPTABLE MANUFACTURERS	Formica Nevamar WilsonArt Laminart InPro Sanparrel
DESCRIPTION	Full height panels with a rubber base for non high traffic areas Colored high-pressure decorative laminate with solid color core Panel trim: stainless steel flat bar, half round trim or aluminum trim
COLOR	Neutral color
FINISH	Matte finish Panel trim: wood tape PVC edging



WALLCOVERING

Systems

PLam System Type 2

NOTES

- For plastic laminate, apply full coverage of manufacturer's recommended quantity of adhesive to each surface.
- Generally, light to medium neutral colors and a subtle pattern are preferred.
- Custom colors and textured plastic laminate finishes are not allowed.
- Plastic laminate panel walls must be provided with a separate wainscot panel of a relatively heavy-duty material, such as stainless steel laminate or other acceptable metal laminate finishes. Although the wainscot finish and plastic laminate are of different materials, they must be visually compatible. Standard wainscot height is 36" from finish floor.
- Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning.
- Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners.
- Maximum reveal widths between panels to be 1/4".
- Masonite spacers, black, or dark painted, must be provided at reveal locations.
- Edges at reveals shall be stainless steel or aluminum trim.
- Provide durable protection for all panel edges exposed to potential damage.
- Plastic laminate panels to be trimmed with either stainless steel flat bar, stainless steel half round panel trim, vinyl (PVC) panel trim, or aluminum trim. Stainless steel and other metal laminate wainscot panels to be trimmed with stainless steel flat bar.
- Metal edges shall be chamfered or rounded.
- Formed edges and joints in the plastic laminate panel face are not allowed.
- Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt.

LOCATIONS

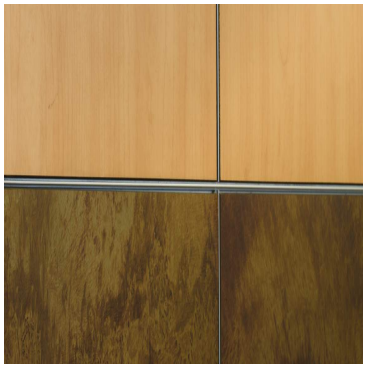
Baggage Claim Lobby

WALLCOVERING

Systems

PLam System Type 3

ACCEPTABLE MANUFACTURERS	Formica Nevamar WilsonArt Laminart InPro Sanparrel For Panel Trim: Wood tape PVC Edging
DESCRIPTION	Dual-tone wall system Colored high-pressure decorative laminate with solid color core Panel trim: stainless steel flat bar, half round trim, or aluminum trim
FINISH	Matte finish, neutral colors



WALLCOVERING

Systems

PLam System Type 3

NOTES

- For plastic laminate, apply full coverage of manufacturer's recommended quantity of adhesive to each surface.
- Generally, light to medium neutral colors and a subtle pattern are preferred.
- Custom colors and textured plastic laminate finishes are not allowed.
- Plastic laminate panel walls must be provided with a separate wainscot panel of a relatively heavy-duty material, such as stainless steel laminate or other acceptable metal laminate finishes. Although the wainscot finish and plastic laminate are of different materials, they must be visually compatible. Standard wainscot height is 36" from finish floor.
- Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning.
- Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners.
- Maximum reveal widths between panels to be 1/4".
- Masonite spacers, black, or dark painted, must be provided at reveal locations.
- Edges at reveals shall be stainless steel or aluminum trim.
- Provide durable protection for all panel edges exposed to potential damage.
- Plastic laminate panels to be trimmed with either stainless steel flat bar, stainless steel half round panel trim, vinyl (PVC) panel trim, or aluminum trim. Stainless steel and other metal laminate wainscot panels to be trimmed with stainless steel flat bar.
- Metal edges shall be chamfered or rounded.
- Formed edges and joints in the plastic laminate panel face are not allowed.
- Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt.

LOCATIONS Restrooms

WALLCOVERING

Systems

Metal Wall System

DESCRIPTION

Wainscot (36" A.F.F.)
- Lower panel: ribbed stainless steel
- Upper panel: smooth stainless steel

Stainless steel:
- Sheet material is required to be non-directional, 100 grit
- Formed or cast materials with flat faces are required to be non-directional, 100 grit
- Formed or cast materials with curved or shaped surfaces are required to be No. 4 brushed
- Bead blast finishes, sealers, and coatings are not allowed

FINISH

Use finishes which give the overall surface a matte and non-reflective look, and an even color tone throughout

Finishes shall not exhibit visual changes when subjected to fingerprints and scratches

NOTES

- Metal wall panels shall be provided with a separate wainscot panel of the same metal material or another acceptable metal laminate finish. If of different materials, wainscot finish, and metal panel finish shall be visually compatible.
- Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning.
- Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners.
- Maximum reveal widths between panels to be 1/4".
- Masonite spaces, black, or dark painted, shall be provided at reveal locations.
- Provide durable protection for all panel edges exposed to potential damage with stainless steel flat bar or aluminum trim. Stainless steel or aluminum trim finish shall match or blend well with the metal panel finish and color.
- Exposed fasteners shall not be used.
- Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt.
- Sandblasted finish, sealers, and coatings are not allowed in any stainless steel finish.

WALLCOVERING

Systems

Metal Wall System

LOCATIONS

Elevator
Check-In Lobby
Baggage Claim Lobby
Esplanade
Central Terminal
South Arrivals Hall (GML)

WALLCOVERING

Systems

Wood Paneling System

DESCRIPTION	Consider wrapping finish around corners to make any transition in finish or space feel continuous and smoother 3/4" thick minimum all face solid veneer plywood panels with fire retardant finish
COLOR	Maple or similar light wood (Anigre is no longer an acceptable species.)
FINISH	Transparent clear sealer Transparent stain
NOTES	• Use uniform grained and light colored wood finishes to maintain an open and bright interior space quality. • Wood panels to be used only in areas that are protected and out of public reach (above 8 feet). • Wood panel walls shall be provided with a separate wainscot panel of a relatively heavy-duty material, such as stainless steel laminate or other acceptable metal laminate finishes. Standard wainscot height is 36" from finish floor. • Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning. • Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners. • Maximum reveal widths between panels to be 1/4". • Masonite spaces, black, or dark painted, must be provided at reveal locations. • Panel edges at reveals to have stainless steel or aluminum trim. • Provide durable protection for all panel edges exposed to potential damage with stainless steel or aluminum flat bar. • Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt. • Composite wood and adhesives, used on any fabrications built for the interior of the Airport, will not contain added urea-formaldehyde.

WALLCOVERING

Systems

Wood Paneling System

LOCATIONS

Check-In Lobby
Baggage Claim Lobby
Esplanade
Central Terminal
South Arrivals Hall (GML)
Concourses A, B, C, D
North, South Satellites
Satellite Transit System Stations

WALLCOVERING

Systems

Stone Wallcovering System

NOTES	Approval from the Port of Seattle is required for any intended use of stone wall facing in specially designated areas.
LOCATIONS	Central Terminal South Arrivals Hall (GML)

WALLCOVERING

Systems

Fabric Wrapped Panel System

DESCRIPTION	Acoustic panel core with acoustically absorbent semi-rigid fiberglass.
NOTES	• Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning. • Details that allow panel removal and replacement should not sacrifice the finished wall's overall tidy and uncluttered appearance; do not use exposed fasteners. • Use square edge acoustic panels with appropriate edge protection where edges are susceptible to damage. • Use panels rated for high impact.
LOCATIONS	Concourses A, B, C, D Holdrooms
LINKS	Design Intent Drawings

WALLCOVERING

Systems

Pre-Cast Concrete Panels System

ACCEPTABLE MANUFACTURERS	Tecon Pacific Architectural Pre-Cast Structures Panorama Building Systems, Ltd. Olympian Pre-Cast, Inc. Walters & Wolf Pre-Cast
FINISH	Light sandblast to eliminate imperfections
NOTES	• Concrete surfaces to be appropriately sealed prior to application of finishes. • Choice of finishes and textures shall take into consideration the material's ability to resist abuse and conceal slight imperfections or minor physical damages. • Use only penetrating type of concrete sealers. Film forming sealers may not be able to hold against outward moisture migration. • In areas accessible by the public, use a permanent or non-sacrificial type of anti-graffiti coating, or other applicable soil and dirt control coating, that does not alter the appearance of the exposed, concrete surface. • For sidings and panels, provide clearance at panel edges, corners, and transitions. • Use concealed fasteners where practical. • All structural and movement joints shall be appropriately covered.

WALLCOVERING

Materials

Plastic Laminate

NOTES	For plastic laminate, apply full coverage of manufacturer's recommended quantity of adhesive to each surface.

WALLCOVERING

Materials

Fabric Wallcovering

PRODUCT NAME	Xorel
ACCEPTABLE MANUFACTURERS	Carnegie - Xorel
DESCRIPTION	Vinyl coated fabrics or wall fabrics
FINISH	Fabric material, colors, and finishes shall be durable and able to maintain and sustain appearances To ensure a neat appearance, use only non-staining, non-pigmented adhesives, and concealed cleats If required, use stainless steel or aluminum trims and metal accessories
NOTES	• Use only woven fabrics and synthetic fibers. • Fabric wallcovering to be used only in low traffic, passive areas; the fabric finish itself shall be above wainscot level. • Avoid using in areas exposed to damage and abuse. Panel system should allow easy removal and replacement of individual panels without damage to adjacent panels. • Fabric to be directly glued down to core panel. • Fabric wrapped panels shall be butt-jointed or use reveals between fabric panels. In cases where a reveal is necessary between a fabric panel and a panel of a different finish material, provide Masonite spaces, painted to match or be compatible with the panel finishes. Maximum reveal width is 1/4". • End walls exposed to traffic shall be appropriately protected to prevent damage to the fabric material.
LOCATIONS	Holdrooms

WALLCOVERING

Materials

Limestone Travertine

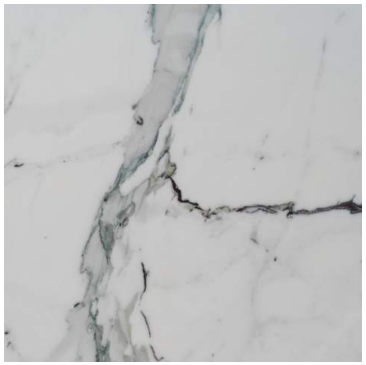
DESCRIPTION	Legacy wallcovering material
LOCATIONS	Central Terminal

WALLCOVERING

Materials

Gazelle Granite

DESCRIPTION	Legacy wallcovering material
LOCATIONS	Central Terminal

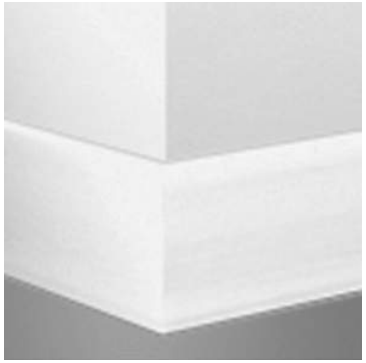


WALLCOVERING

Details

Rubber Wall Base

PRODUCT NAME	Millwork Mandalay Rubber Wall Base

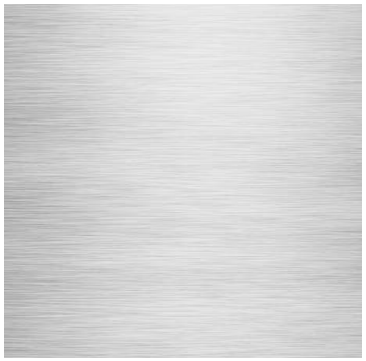


WALLCOVERING

Details

Base & Wainscot

PRODUCT NAME	Stainless steel
DESCRIPTION	Backed stainless steel base laminated to MDF and to be trimmed with stainless steel flat bar or half-round trim, or aluminum flat bar or half-round trim
SIZE	12" high wall base 24" high wainscot if above 12" wall base 36" high wainscot
FINISH	Stainless steel: angel hair (non-directional) Granite: honed Pre-cast terrazzo: polished or unpolished Trim: wood tape PVC edging Finish and colors must be visually compatible and consistent with the overall wall appearance Stainless steel: Non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers, and coatings are not allowed
NOTES	• Bumper rails or hard-surface wainscot shall be specified and shown on the walls in high-traffic corridors. • Wall base material and finish shall be compatible with, if not similar to, the adjacent wall and floor finish material.



WALLCOVERING

Details

Base & Wainscot

NOTES

- A base must be provided where a wainscot of a durable materials is not preferred.
- For new installations and renovations, base height is a minimum of 12" from finish floor. Base height shall also protect the wall surface from damage caused by floor maintenance equipment. Match adjacent existing base heights where necessary and applicable.
- Wall bases shall be stainless steel, granite, terrazzo, or pre-cast terrazzo.
- 14-gauge or 16-gauge stainless steel shall be backed with wood for impact resistance. 10-gauge stainless steel shall be detailed for rigidity.
- Detail reveal or junction between base and wall/wainscot panel to allow removal of base and/or wall/wainscot panel without damage to either.
- Detail the junction between base and finish floor to prevent dirt from collecting into the junction.
- Where a wainscot is preferred in lieu of a base, the standard wainscot height shall be 36" from finish floor.
- Chair rails to top all wainscot.
- Use manageable panel sizes and concealed metal cleats for panel attachment so individual panels can be easily removed and replaced for repairs and cleaning.
- Do not use exposed fasteners. Metal edges to be chamfered or rounded.
- Sealant at floor junctions shall be dark colored and detailed so deep pockets will not form to collect dust and dirt.

LOCATIONS

Storage
Check-In Lobby
Baggage Claim Lobby
Promenade
Central Terminal
South Arrivals Hall (GML)
Concourses A, B, C, D
North, South Satellites
Satellite Transit System Stations
International Arrivals
Federal Inspection Services
International Arrivals Baggage Claim
Janitor

WALLCOVERING

Details

Chair Rails

NOTES	• Rails shall protect walls from furniture striking the walls but must not create a hazard for individuals striking their heads on the railing while sitting down.
LOCATIONS	Holdrooms

WALLCOVERING

Details

Wall & Corner Guards

DESCRIPTION	Stainless steel, fastened mechanically and with adhesive Granite column covers are exceptions and shall have vinyl corner guards and black stone-faced columns in terminal (where susceptible to damage, use black vinyl corner guards)
SIZE	Minimum height above finish floor to be 36”
FINISH	Color and finish to match wall surfaces and finishes, or match column finishes, whichever is deemed more visually compatible Stainless steel corner guard: sheet material is required to be non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers, and coatings are not allowed Vinyl corner guards: to match column facing
NOTES	Aluminum corner guards are not allowed.
LOCATIONS	All space types

COLUMN ENCLOSURES

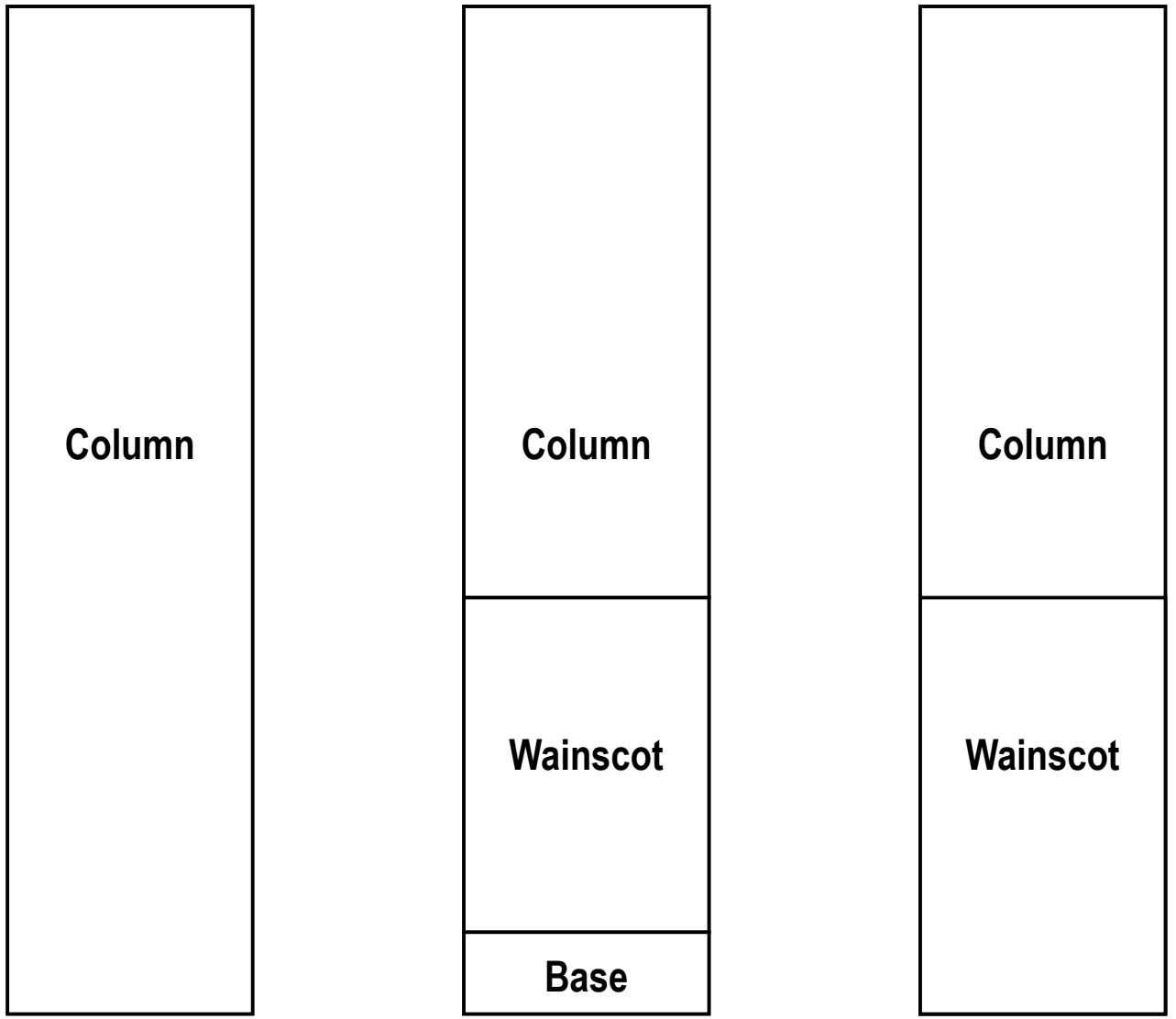
A number of column enclosure treatments exist throughout the airport, some of them tied to the base building materials. Going forward, a few standard approaches have been defined and are outlined below. Additionally, some general guidelines include:

- Existing main terminal building exterior column enclosures to remain dark in color, the same on both levels, in order to be architecturally cohesive.
- Interior concrete columns within the main terminal may adopt the approaches outlined below.
- All columns within the same area should receive the same material treatment.
- Columns should be kept free of signage, advertising, and equipment as much as possible.
- Alternative approaches to column enclosures in ADR areas are subject to review.
- Legacy finishes to not be used include all paint (white or white with gray base), white metal cladding, and stainless steel corner guards.

Preferred treatments:

- All stainless steel wrap
- Stainless steel wainscot 36” high (heavy gauge angel hair finish)
  - The top of columns may be a place for artistic work with ARC approval
- Existing materials
  - Black Granite
  - Cement (exterior)

COLUMN ENCLOSURES



COLUMN ENCLOSURES

Granite

DESCRIPTION	Black granite
SIZE	3/4" thick
FINISH	Vinyl corner guards
NOTES	• Anodized aluminum reveal to match existing columns with no exposed fasteners. • This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Painted metal covers may be used only above the 36" wainscot height. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and height pressure plastic laminate to match the column cover.
LOCATIONS	Check-In Lobby Baggage Claim Lobby Promenade Esplanade
LINKS	Design Intent Drawings

COLUMN ENCLOSURES

Stainless Steel

DESCRIPTION	Sheet metal gauge selected for damage resistance Stainless steel base: 14 or 16 gauge, backed with wood for impact resistance Round columns: 14-gauge minimum unbacked Square columns: 12-gauge minimum unbacked Minimum 14 gauge is recommended for column covers
FINISH	Non-directional, 100 grit Formed or cast materials with flat faces are required to be non-directional, 100 grit Formed or cast materials with curved or shaped surfaces are required to be no. 4 brushed Bead blast finishes, sealers, and coatings are not allowed
NOTES	• This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be within public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Painted metal covers may be used only above the 36" wainscot height. • The Port of Seattle to approve any use of textured steel to ensure that the surface will not collect dust and be easy to clean. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and height pressure plastic laminate to match the column cover. • Columns must be protected with column corner guards of compatible durable material. • Polished stainless steel finish is not allowed.
LOCATIONS	South Satellites
LINKS	Design Intent Drawings

COLUMN ENCLOSURES

Manufactured Metal

DESCRIPTION	Columns: minimum 16-gauge smooth galvanized steel for durability at locations Beams: minimum 18-20 gauge smooth galvanized steel, with detailing appropriate to maintain a flat surface appearance All exterior fasteners or fasteners in wet areas to be series 300 stainless steel
FINISH	Exterior and interior of metal panels to receive a shop-applied three-coat spray application of high performance fluorocarbon coating with a minimum of 70% Kynar 500 resin
NOTES	• This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Painted metal covers may be used only above the 36" wainscot height. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and height pressure plastic laminate to match the column cover. • Columns must be protected with column corner guards of compatible durable material.
LOCATIONS	Concourses A

COLUMN ENCLOSURES

Stucco

FINISH	Three-coat Portland cement plaster, white Portland cement for finish coat Smooth finish with sand aggregate in finish coat Sealed prior to finish
NOTES	• This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Painted metal covers may be used only above the 36" wainscot height. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and height pressure plastic laminate to match the column cover. • Columns must be protected with column corner guards of compatible durable material.

COLUMN ENCLOSURES

Textured Column Finish

NOTES

- The ARC to approve any use of textured steel to ensure that the surface will not collect dust and will be easy to clean.
- This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height.
- Painted metal covers may be used only above the 36" wainscot height.
- Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and height pressure plastic laminate to match the column cover.
- Columns must be protected with column corner guards of compatible durable material.
- Polished stainless steel finish is not allowed.

LOCATIONS

Concourses A, B, C, D
North, South Satellites

COLUMN ENCLOSURES

PLam

ACCEPTABLE MANUFACTURERS	Formica Nevamar WilsonArt Laminart InPro Sanparrel
FINISH	Colored high-pressure decorative laminate with solid core, matte finish Vinyl corner guards
NOTES	• This highly durable cover material shall be used as a finish for all surfaces within public reach. A different material can thus be used above this height to mitigate costs (e.g., painted gypsum board). Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Painted metal covers may be used only above the 36" wainscot height. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and high pressure plastic laminate to match the column cover. • Columns must be protected with column corner guards of compatible durable material.
LOCATIONS	North, South Satellites International Arrivals Federal Inspection Services International Arrivals Baggage Claim

COLUMN ENCLOSURES

Gypsum Board

FINISH	Paint
NOTES	• Use painted GWB in areas deemed to be above public reach. Exceptions to this finish must be used only above the 36" wainscot height. • Always provide a minimum base height of 12" or a wainscot height of 36", whichever is applicable. Acceptable base and wainscot materials are stainless steel, granite, and high pressure plastic laminate to match the column cover. • Columns must be protected with column corner guards of compatible durable material.

3.12 CEILINGS

Ceilings offer architectural and visual interest, as well as sound-absorbing acoustic properties. Additionally, they hide potentially unsightly infrastructure and mechanical systems from sight.

CEILING

Best Practices

- Ceilings should be clean and simple.
- Acoustic properties and performance are the most important criteria.
- Ceiling height should be maximized, while taking into consideration cost and access for MEPF infrastructure.
- Utilize the same ceiling system throughout a concourse .
- Limit the use of hard ceilings to accent areas and soffits.
- Drywall soffits to be painted white.
- Metal ceilings and wood ceilings can be used in feature areas.
- Align floor and ceiling treatments, particularly in public spaces.
- Provide access panels in all ceiling types. They should be able to be maneuvered by one person without assistance.
- Up-lighting is preferred on paneled ceilings.

Desired finishes

- Acoustic Ceiling Tile (ACT)
- Metal Panels
- Wood Panel
- Gypsum Board

Legacy finishes

- Textured Acoustic Ceiling Tile (ACT)
- Linear Metal Ceiling

Applicable LEED Credit Requirements:

- IEQ – Low-Emitting Materials

New

Archive

Sustainable

ACOUSTIC CEILING TILE (ACT)

PRODUCT NAME	Ultima Regular 1912 Ceiling Tile
ACCEPTABLE MANUFACTURERS	Armstrong
SIZE	24” x 24” x 3/4” 24” x 48” x 3/4”
COLOR	White
NOTES	• Allow an access panel. • For wire suspended ceilings, wrap “tails” of the wires tight to the main cord of wire. Tails shall not interfere with tile removal or pose a safety hazard for maintenance activities. • Use acoustical panels that comply with all requirements for fire resistance, thermal, sound, noise reduction properties, deflection, contraction, and expansion. • Installation shall allow damaged tiles to be easily removed and replaced. • Ensure future availability of acoustic tile product to match initial installation. • Suspension system will be airport standard grid system as specified in this section. • No concealed grids or splines will be allowed. • Install smoke barriers as required by code. Smoke barriers to have clear glazing and frameless concealed fasteners.
LOCATIONS	Throughout Terminal

METAL CEILING

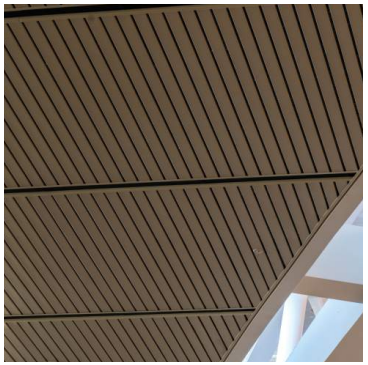
Tile

ACCEPTABLE MANUFACTURERS	Simplex Ceilings
DESCRIPTION	Perforation pattern #2, .0625" (1/16") diameter holes at .226"; 45-degree staggered centers; .24" unperforated borders
SIZE	24" x 24" 24" x 48"
COLOR	White
FINISH	Baked enamel, fluorocarbon resin, or powder coated; with adhered acoustic inserts Ceiling color shall be white throughout to maintain a quality of openness and brightness in the interior space.
NOTES	• Coordinate with POS (carpenter shop) before removing or replacing existing metal ceiling tiles. Improperly removed or installed ceiling material may create an overhead hazard. • Durability, ease of plank removal and replacement, as well as ease of cleaning should all be considered in product choice. • Install smoke barriers as required by code. Smoke barriers to have clear glazing and frameless concealed fasteners. • Steel panels shall be 20-gauge minimum. Aluminum panels shall be minimum .04" thick.
LOCATIONS	Concourses

METAL CEILING

Linear

PRODUCT NAME	(A) Paraline 1 Integral Splice Perforated Texture Steel Ceiling
ACCEPTABLE MANUFACTURERS	(A) USG (B) Simplex Ceilings
DESCRIPTION	Linear perforated metal ceiling system
SIZE	(A, C) 4” (B) 12”
COLOR	(A, B) White (C) Dark Bronze All linear metal ceilings shall match existing. In other spaces, ceiling color shall be white to maintain a quality of openness and brightness in the interior space.
NOTES	• Paint linear ceiling light for refresh projects. • Salvage for turnover to the Port of Seattle. • Coordinate with POS (carpenter shop) before removing or replacing existing metal ceiling tiles. Improperly removed or installed ceiling material may create an overhead hazard. • Durability, ease of plank removal and replacement, as well as ease of cleaning should all be considered in product choice. • Install smoke barriers as required by code. Smoke barriers to have clear glazing and frameless concealed fasteners.



GYPSUM BOARD CEILING

FINISH	Three-coat paint finish system for all exposed work Flat finish Non-textured treatment Tapered edges
NOTES	• Gypsum board ceiling finishes shall only be used in areas that are not easily susceptible to damage and soiling, and where ceiling space accessibility is not required. • Use corrosion resistant coated steel trims, control joints, and accessories. • Install smoke barriers as required by code. Smoke barriers to have clear glazing and frameless concealed fasteners.
LOCATIONS	Restrooms Soffits

3.13 EQUIPMENT

Equipment is installed throughout SEA for safety, sanitation, and amenities.

EQUIPMENT

Each approved piece of equipment is detailed on the following pages. In some instances minimum performance criteria have been listed, in other cases recommended manufacturer(s) or distributor(s) have been included. Consult with your SEA project manager regarding the particular equipment requirements of your project. However, some general guidelines apply:

- Food and drink vending machines should be located near escalators but in locations reachable for delivery or service without crossing expansion joints.
- Fold out signs to alert passengers about hazards should be conveniently located and accessible, while not being visually obtrusive.
- Trash receptacles should be modular and expandable, and contain composting (at food areas), mixed recyclable receptacles, as well as compactors.

New

Archive

Sustainable

FIRE/LIFE SAFETY

Fire Extinguisher Cabinet

CATEGORIES	Safety
PRODUCT NAME	Fire Extinguisher Cabinet, recessed
MANUFACTURER	Larsen's Manufacturing Company J.L. Industries
MODEL	Architectural Series AL-2409-6R, Vertical Duo Break Glass Door by Larsen's Manufacturing Company or matching product
SIZE	Tub (interior dimensions): width 12", height 27", depth 7 3/4" Frame (outer dimensions): width 15 3/8", height 30 3/8" Wall opening: width 13", height 28", depth 7 5/8"
NOTES	• Preference is for cabinets to be recessed mounted, with 3/8" flat trim. • When recessed is not possible, provide semi-recessed 1 1/2" trim square, protruding not more than 2-1/2" from face of the wall. • Each cabinet shall be sized accordingly to house one fire extinguisher. • Coordinate with Port Fire for equipment. • Coordinate with Port Signage for signage, include signage on cabinet and signage above on wall. • Color finish will vary depending on location, preference is stainless steel. • When possible, install adjacent to AED/ Trauma Kit Cabinet.
LOCATIONS	All areas

FIRE/LIFE SAFETY

AED/ Trauma Kit Cabinet

CATEGORIES	Safety
PRODUCT NAME	AED/ Trauma Kit Cabinet, recessed
MANUFACTURER	Activar Construction Products Group Inc. Larsen's Manufacturing Company
MODEL	Ambassador Series, Steel Fire Extinguisher Cabinet, C2037F10, Full Glass or matching product
SIZE	Tub (interior dimensions): width 12", height 27", depth 7 3/4" Frame (outer dimensions): width 15 3/8", height 30 3/8" Wall opening: width 13", height 28", depth 7 5/8"
NOTES	• Preference is for cabinets to be recessed mounted, with 3/8" flat trim. • When recessed is not possible, provide semi-recessed 1 1/2" trim square, protruding not more than 2-1/2" from face of the wall. • Provide Alarm on/ off key switch, to sound when door is open. • Each cabinet shall be sized accordingly to house one AED and one Trauma Kit. • Cabinet to include, one J-Hook (FE20C) to hang Trauma Kit on top of AED (or vs.) • Coordinate with Port Emergency Preparendess and Port Fire for equipment. • Coordinate with Port Signage for signage, include signage on cabinet and signage above on wall. • Color finish will vary depending on location, preference is stainless steel. • When possible, install adjacent to Fire Extinguisher Cabinet.
LOCATIONS	Post Security Areas Coordinate with Port Emergency Preparedness for Pre-Security requirements

FIRE/LIFE SAFETY

Emergency Cones

CATEGORIES	Safety
PRODUCT NAME	Emergency Safety Cone Caution Wet Floor
DESCRIPTION	Folding safety cone, indicating Caution / Wet Floor on 4 sides
NOTES	• Used by maintenance for temporary signage to indicate slip or trip hazards. • Provided with plastic case that is mounted on wall for emergency cones to slide in. • Locate on walls and columns so it is easy accessed by staff, at minimum of 100 feet apart. • Install near wet areas like restrooms and drinking fountains.
LOCATIONS	All hard surfaces throughout the terminal.

RESTROOM ACCESSORIES

Receptacle & Dispenser

Partition

CATEGORIES	Accessories
PRODUCT NAME	Toilet Partition Stalls Urinal Partition Screen
FINISH	Partition: Stainless Steel, Diamond Plate Pattern Partition Hardware: Stainless Steel or Dull Chrome
MANUFACTURER, MODEL	Bradley Corporations, Mills Partitions Series 600 Sentinel American Specialties, Inc, Ultimate Privacy Global Steel Product Corporations
DESCRIPTION	Ceiling hung toilet partition with out-swinging stainless steel door hardware. Wall mounted urinal screen
SIZE	Door size, 72" H, with gap at bottom 10" A.F.F. Panel size, 72" H, with gap at bottom 10" A.F.F. Wall mounted urinal screen 60" H, with gap at bottom 10" A.F.F.
NOTES	• Privacy design with sight-line trim at doors. • Provide adjustable gravity hinges that hold the door open when not in use. • Provide occupancy indicators and latch on toilet stall doors. Coordinate with Restroom occupancy sensors/ accessories, if being installed. • Toilet compartments partitions and screens are to be secure rigidly in place with adequate blocking, diagonally braced red-iron bracing above the ceiling for mounting pilasters. Partitions are to be rigid without any racking. • Provide internal reinforcement in metal units for compartment mounted hardware and accessories. • Provide bumper and stop. • Coordinate with Port Signage for signage on partitions.
LOCATIONS	Restroom
LINK	SEA Signage Standards

RESTROOM ACCESSORIES

Receptacle & Dispenser

Paper Towel Dispenser

CATEGORIES	Accessories
PRODUCT NAME	Paper Towel Dispenser
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 68523AC-4 Bobrick, B-29744
DESCRIPTION	Semi-recessed automatic touchless roll towel dispenser
NOTES	• 8" W x 8" Dia. standard towel roll up to 800 ft. Dispensing adjustable by length, delay, and paper economy. • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide all electric behind the towel dispenser, 2 quad outlets and 2 regular outlets inside the Pipe Chase / Custodial Area. • Install paper towel dispenser adjacent to the lavatory and waste receptacle. • Provide paper towel dispenser, preferably near but not directly above the baby changing station. • Provide flexibility for additional paper towel dispensers in the future by identifying locations and wiring for those dispensers in the design documents.
LOCATIONS	Restroom Nursing Suite
LINKS	Electrical System Standards Mechanical System Standards

RESTROOM ACCESSORIES

Receptacle & Dispenser

Waste Receptacle

CATEGORIES	Accessories
PRODUCT NAME	Waste Receptacle
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0458-DX Bobrick, 368-60 Bradley, 334
DESCRIPTION	Semi-recessed waste receptacle, container locks into cabinet, removable for servicing.
NOTES	• Reusable, removable vinyl liner (ASI model: 25-Py) • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide waste receptacle adjacent to paper towel dispenser. • Provide flexibility for additional waste receptacles in the future by identifying locations in the design documents.
LOCATIONS	Restroom Nursing Suite

RESTROOM ACCESSORIES

Receptacle & Dispenser

Paper Towel Dispenser & Waste Receptacle

CATEGORIES	Accessories
PRODUCT NAME	Paper Towel Dispenser with waste receptacle
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	Bobrick, B-39747 Bobrick, B-39617
DESCRIPTIONS	Semi-recessed automatic touchless roll towel dispenser with semi-recessed waste receptacle
NOTES	• Reusable, removable vinyl liner (model: 368-16) • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide electrical receptacles behind the towel dispenser, 2 quad outlets and 2 regular outlets inside the Pipe Chase / Custodial Area. • Install paper towel dispenser adjacent to the lavatory. • Provide near but not directly above the baby changing station. • Provide flexibility for additional paper towel dispensers in the future by identifying locations and wiring for those dispensers in the design documents.
LOCATIONS	(NSAT) Restroom
LINKS	Electrical System Standards Mechanical System Standards

RESTROOM ACCESSORIES

Receptacle & Dispenser

Toilet Paper Dispenser

CATEGORIES	Accessories
PRODUCT NAME	Toilet Paper Dispenser
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0039 Bobrick, B-5425
DESCRIPTION	Partition or surface mounted, low profile jumbo-roll Toilet paper dispenser
NOTES	• Dispenser to hold two 9" diameter jumbo-rolls with 3" to 2.25" cores. • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Toilet Waste Receptacle

CATEGORIES	Accessories
PRODUCT NAME	Toilet Waste Receptacle (Sanitary Napkin Receptacle)
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0852 Bobrick, B-270
DESCRIPTION	Partition or surface mounted, waste receptacle
SIZE	10" H x 7.5" W x 3-13/16" D
NOTES	• Capacity of 1.2 gallon with disposable liner bags. • No locks. • Waste receptacles to be installed in all restrooms.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Toilet Seat Cover Dispenser

CATEGORIES	Accessories
PRODUCT NAME	Toilet Seat Cover Dispenser
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0477-SM Bobrick, B-221
DESCRIPTION	Partition or surface mounted, seat cover dispenser
NOTES	• Dispenser to hold 250 single or half fold paper toilet seat covers. • No locks.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Toilet Paper & Seat Cover Dispenser, Waste Receptacle

CATEGORIES	Accessories
PRODUCT NAME	Toilet Paper & Seat Cover Dispenser, Waste Receptacle
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	Bobrick, B-3574 (Recessed flush) Bobrick, B-3571 (Dual access, 1-sided flush) Bobrick, B-357 (Dual Access) Bobrick, B-3579 (Surface mounted- BOH)
DESCRIPTION	Combination toilet paper & seat cover dispenser with waste receptacle
NOTES	• Seat cover dispenser to hold 500 single or half fold paper toilet seat covers. • Toilet paper dispenser to hold two rolls per compartment. • Waste receptacle, capacity of 0.8 gallon with disposable liner bags. • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • At the NSAT Restrooms, the waste receptacles are installed in the Women's Restroom. The Port goal is to install waste receptacles in all restrooms.
LOCATIONS	(NSAT) Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Biohazard Disposal Receptacle

CATEGORIES	Accessories
PRODUCT NAME	Biohazard Disposal Receptacle (Sharps Container)
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0548 Bobrick, B-35016
DESCRIPTION	Fully recessed sharps disposal cabinet
NOTES	• Biohazard receptacle to accommodate 1 Becton, Dickinson, and Co. (BD) sharps collector, model: 305443. • Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide biohazard receptacle, near the entrance/ exit of all restrooms, including BOH restrooms.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Sanitary Napkin Dispenser

CATEGORIES	Accessories
PRODUCT NAME	Sanitary Napkin Dispenser
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 0468-25 Bobrick, B-37063 Bradley, B-4017
DESCRIPTION	Fully recessed dual sanitary napkin/ tampon dispenser, 25 cent coin operation
NOTES	• Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide dispenser, near the entrance/ exit of the restrooms.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Receptacle & Dispenser

Diaper Dispenser

CATEGORIES	Accessories
PRODUCT NAME	Diaper Dispenser
FINISH	Stainless Steel, Satin
MANUFACTURER, MODEL	Koala Kare, KB 143-SS Global Industrial, 106-SS
DESCRIPTION	Recessed diaper dispenser, coin operation
NOTES	• Lockable cabinet. Provide CAT 74 (Bobrick) replacement cylinders and keys. • Provide diaper dispenser, preferably near the baby changing station.
LOCATIONS	Restroom Nursing Suite

RESTROOM ACCESSORIES

Mirror & Glass

Light Integrated Mirror

CATEGORIES	Accessories
PRODUCT NAME	Light Integrated Mirror
FINISH	Clear Anodized Aluminum White Acrylic Lens
MANUFACTURER	Form + Surfaces Paris Mirror
DESCRIPTION	Dimmable LED integrated mirror
SIZE	Nominal 34” W x 36” H
NOTES	• Mirrors should have vandal resistant coating and be provided at each washing station. • Provide an additional “vanity station” mirror with integral illuminated LED panels and GFCI outlet above the counter for personal appliances where feasible. • For 60” W mirrors at double sinks, include two integral illuminated LED panels the same as the smaller mirror. • Include integrated mirror lighting above sinks, at baby changing stations, and at grooming station • Mirrors shall be easily replaceable. Hung on cleats and not tightly bounded or constrained by finishes or other projecting items. • Mirrors shall not be glued in place. • Provide adequate clearance around mirror so that it can be safely removed from cleats. Finish all tile edges surrounding mirror with a Schluter strip.
LOCATIONS	Restroom
LINK	Electrical System Standards

RESTROOM ACCESSORIES

Mirror & Glass

Full Length Mirror

CATEGORIES	Accessories
PRODUCT NAME	Full Length Mirror
SIZE	2'o" wide
NOTES	• Mirrors should have vandal resistant coating. • Mirrors shall be easily replaceable. Hung on cleats and not tightly bounded/constrained by finishes or other projecting items. • Mirrors shall not be glued in place. • Full length mirror shall be installed adjacent to the "vanity station" and align the top of the mirror with the adjacent lighted mirror and align the bottom with the metal trim at tile base. • Provide lighting overhead; no integrated mirror lighting. • Provide Schluter strip around tile edges surrounding mirror.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Mirror & Glass

Welded Frame Mirror

CATEGORIES	Accessories
PRODUCT NAME	Welded Frame Mirror
MANUFACTURER, MODEL	Bobrick, B-290 series Or approved equal
DESCRIPTION	Glass mirror with stainless steel angle frame
NOTES	• Mirrors should have vandal resistant coating. • Mirrors shall be easily replaceable. Hung on cleats and not tightly bounded/constrained by finishes or other projecting items. • Mirrors shall not be glued in place. • Full length mirror shall be installed adjacent to the "vanity station" and align the top of the mirror with the adjacent lighted mirror and align the bottom with the metal trim at tile base. (Typical size: 6'-4 H x 3'-10" W) • Custom size mirror above "vanity station".
LOCATIONS	(NSAT) Restroom

RESTROOM ACCESSORIES

Mirror & Glass

Channel Frame Mirror

CATEGORIES	Accessories
PRODUCT NAME	Channel Frame Mirror
NOTES	• Mirrors should have vandal resistant coating and be provided at each washing station plus an additional full length mirror per restroom. • Provide an additional "vanity station" mirror with ledge and GFCI outlet above the counter for personal appliances where feasible. • Mirrors shall be easily replaceable. Hung on cleats and not tightly bounded/constrained by finishes or other projecting items. • Mirrors shall not be glued in place.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Mirror & Glass

Decorative Glass

CATEGORIES	Accessories
PRODUCT NAME	Decorative Glass
MANUFACTURER	Forms + Surface Berman Glass Nathan Allen
DESCRIPTION	Back applied image glass with kiln cast glass
NOTES	• Nest laminated Hikaru + Obsidian (vertical) with custom graphic interlayer. Custom design and location will depend on Restroom location within the terminal. Coordinate with Port for location and design. • Tempered low iron glass. • Top and bottom lite, to provide a continuous glow to the glass. • Fit tight to frame and glass, with a minimum of 1/4" gap.
LOCATIONS	Restroom
LINK	Electrical System Standards

RESTROOM ACCESSORIES

Grab Bars

CATEGORIES	Accessories
PRODUCT NAME	Straight Grab Bar
FINISH	Stainless Steel, Satin with Safety Grip
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 3800-P series Bobrick, B-6806 series Bradley, 812 series
DESCRIPTION	1 1/2" dia. grab bars with snap on flange covers
NOTES	• Lengths and locations as show in drawings.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Garment Hooks & Shelves

Double Garment Hook

CATEGORIES	Accessories
PRODUCT NAME	Double Garment Hook
FINISH	Stainless Steel
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 7312 Bradley, 9125
DESCRIPTION	Double robe hook with wall flange and concealed mounting bracket
NOTES	• Hooks should have a capacity greater than 50lbs. • Hooks should be provided in stalls and near the baby changing station. • Shelving should be wide integrated, recessed ledges at least 12" - 16" deep above urinals, water closets and lavatories for personal items. • When ledges are not possible, deep shelving between urinals and lavatories is acceptable but shall not be constructed and placed to create hazards for pedestrians using the various fixtures. • Ledges should be designed at accessible heights for accessible urinals, water closets, and lavatories.
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Garment Hooks & Shelves

Single Robe Hook

CATEGORIES	Accessories
PRODUCT NAME	Single Robe Hook
FINISH	Solid Aluminum, matte finish with rubber bumper
MANUFACTURER, MODEL	Bobrick, B212 Or approved equal
NOTES	• Hooks should be provided in stalls, but nowhere else. • Shelving should be wide integrated, recessed ledges at least 12" - 16" deep above urinals, water closets and lavatories for personal items. • When ledges are not possible, deep shelving between urinals and lavatories is acceptable but shall not be constructed and placed to create hazards for pedestrians using the various fixtures. • Ledges should be designed at accessible heights for accessible urinals, water closets, and lavatories.
LOCATIONS	(NSAT) Restroom

RESTROOM ACCESSORIES

Garment Hooks & Shelves

Mop Holder

CATEGORIES	Accessories
PRODUCT NAME	Mop Holder with Shelf
FINISH	Stainless Steel
MANUFACTURER, MODEL	Bobrick, B-224 Or approved equal
DESCRIPTION	Surface mounted, mop and broom holder
NOTES	• Spring-loaded rubber cam holders • Rack to hold up to 4 mops or brooms • Locate above mop sink or out of circulation path.
LOCATIONS	Pipe Chase/ Custodial Area

RESTROOM ACCESSORIES

Changing Station

Counter Baby Changing Station

CATEGORIES	Accessories
PRODUCT NAME	Baby Changing Station
COMPONENTS	Wall mounted baby changing counter Nylon strap with plastic buckles
FINISH	Solid surface
NOTES	• Counter baby changing stations are required. • Stations should be located near waste receptacles and paper towel dispenser. • Stations should be located adjacent to a lavatory • Baby changing stations should not be located inside ADA stalls. • Nylon straps must be detailed such that they can be easily replaced
LOCATIONS	Restroom Nursing Suites

RESTROOM ACCESSORIES

Changing Station

Recessed Baby Changing Station

CATEGORIES	Accessories
PRODUCT NAME	Baby Changing Station
FINISH	Stainless Steel (exterior)
MANUFACTURER, MODEL	Koala Kare, KB110-SSRE Or approved equal
DESCRIPTION	Horizontal, recessed baby changing station
NOTES	• Provide only when a countertop baby changing station is not possible. • Stations should be located near waste receptacles and paper towel dispenser. • Baby changing stations should not be located inside ADA stalls.
LOCATIONS	Restroom Nursing Suites

RESTROOM ACCESSORIES

Changing Station

Adult Changing Station

CATEGORIES	Accessories
PRODUCT NAME	Adult Changing Station
MANUFACTURER, MODEL	Pressalit, SCT-3000 Koala Bear, KB3000 Or approved equal
DESCRIPTION	Electrically height adjustable, adult changing station
NOTES	• Stations should be located near waste receptacles and paper towel dispenser. • Adult changing stations should be provided in single-fixture, assisted-use restrooms (family restrooms) in addition to baby changing stations. • Consider placement of wired remote control, so it not damaged by the mechanics of the system and easy to access.
LOCATIONS	Restrooms (Single-Fixture, Assisted-Use)
LINKS	Electrical System Standards

RESTROOM ACCESSORIES

Step Stool

CATEGORIES	Accessories
PRODUCT NAME	Step Stool
FINISH	Stainless Steel, with marine grade non-slip tread
MANUFACTURER, MODEL	Step 'n' Wash, SNW-SS 975B KinderStep, KSE-1
NOTES	• Secure to floor. • Provide one step stool near public lavatory
LOCATIONS	Restroom

RESTROOM ACCESSORIES

Toddler Safety Seat

CATEGORIES	Accessories
PRODUCT NAME	Toddler Safety Seat
FINISH	High-Density Polyethylene, Light Gray
MANUFACTURER, MODEL	American Specialties Inc, (ASI) 9020 Koala Kare, KB102 Sanliv, 5862
DESCRIPTION	Wall mounted child protection seat
NOTES	• Provide in single-fixture, assisted-use restrooms (family restrooms) • Location of toddler safety seat should be that it does not obstruct other functions in the restroom, nor near the Automatic Swing Door Operator button.
LOCATIONS	Restrooms (Single-Fixture, Assisted-Use)

RESTROOM ACCESSORIES

Occupancy Sensor

CATEGORIES	Technology
PRODUCT NAME	Restroom Occupancy Sensors
MANUFACTURER	Tooshlights Or approved equal
NOTES	• Provide ceiling mounted indicator light above each stall door entrance • Provide smart latch system and/or deadbolt
LOCATIONS	Restroom

BOLLARDS & STANCHIONS

Bollards

CATEGORIES	Security
PRODUCT NAME	Bollard
FINISH	Stainless steel
NOTES	• Where bollards are installed, anchor bolts shall be designed for GSE tug impact. (Pushback tugs on the AOA weigh up to 160,000 pounds.) • Bollards installed at slab on grade shall be concrete filled: minimum 6" diameter pipe, painted safety yellow, and with 3' embedment. • Provide bollards, timbers, rails, or jersey barriers to protect charging stations and other equipment. • Provide bollards and guide rails at the service entrances and freight elevators to prevent pallets from damaging the door frame and the edges of doors with horizontal travel.
LOCATIONS	Curbside (Arrivals) Curbside (Departures) Parking Garage Loading Dock Ramp Level

BOLLARDS & STANCHIONS

Magnetic Stanchion

CATEGORIES	Miscellaneous
PRODUCT NAME	Magnetic Stanchion
FINISH	Satin Aluminum, at Checkpoints Polished Chrome, all other areas
MANUFACTURER	Lavi Industries, Beltrac Public Guidance System, or matching product
DESCRIPTION	Magnetic bases attached to magnets embedded into the terrazzo floor
NOTES	• All stanchions should match within the same space and have breakaway belt ends. If belts have locking mechanism installed, they must be disabled. • Black ribbon with SEA branding, typical. • Red ribbon with “Emergency Exit” for egress paths. • Rails to include concealed retractable belt, • Provide a cover plate for the rail base. • Preference shall be given to products made with a high percentage of recycled content and/or manufactured and sourced within 500 miles of the Airport. • Belt lengths at checkpoint should be 13 feet, to reduce number of post needed.
LOCATIONS	Check-In Lobby Esplanade Security

BOLLARDS & STANCHIONS

Screw-In Stanchion

CATEGORIES	Miscellaneous
PRODUCT NAME	Standing Screw-In Stanchion
FINISH	Satin Aluminum, at Checkpoints Polished Chrome, all other areas
MANUFACTURER	Lavi Industries, Beltrac Public Guidance System, or matching product
DESCRIPTION	Base of stanchions screws into the terrazzo floor
NOTES	• Second preferred option. • All stanchions should match within the same space. • Rails to include concealed retractable belt. • Provide a cover plate for the rail base. • Preference shall be given to products made with a high percentage of recycled content and/or manufactured and sourced within 500 miles of the Airport.
LOCATIONS	Check-In Lobby Esplanade Security

BOLLARDS & STANCHIONS

Stanchion Base

CATEGORIES	Miscellaneous
PRODUCT NAME	Stanchion Base
FINISH	Satin Aluminum, at Checkpoints Polished Chrome, all other areas
MANUFACTURER	Lavi Industries, Beltrac Public Guidance System, or matching product
DESCRIPTION	Stanchion base should be minimal and as flush to floor as possible
NOTES	• All stanchions should match within the same space. • Rails to include concealed retractable belt. • Provide a cover plate for the rail base. • Preference shall be given to products made with a high percentage of recycled content and/or manufactured and sourced within 500 miles of the Airport.
LOCATIONS	Check-In Lobby Esplanade Security Holdroom

BOLLARDS & STANCHIONS

Stanchion Ribbon

CATEGORIES	Miscellaneous
PRODUCT NAME	Retractable Stanchion Ribbon
FINISH	Stainless Steel with florescent yellow ribbon
MANUFACTURER	Lavi Industries, Beltrac Public Guidance System Global Industries Visiontron Retracta Belt Wall Mount
DESCRIPTION	Stanchion base should be minimal and as flush to wall as possible
NOTES	• Stanchions should be located from a distance that passengers should be able to see the restrooms are closed. • Provide ribbon at 4'-0" A.F.F. • Belts to be 1.5" longer than the area they are spanning. • Belt to include (2) no entry symbol with the verbiage "Closed for Maintenance"in the middle. • When possible provide a magnet end, rather than a clip system.
LOCATIONS	Restroom - Entrance Nodes

LANDSCAPE CONTAINERS

Movable Interior Landscape Containers

CATEGORIES	Landscaping
FINISH	No. 4, non-directional, 100 grit brushed stainless steel finish or painted black aluminum
NOTES	• Planters and other landscape containers must be in locations where they do not interfere with or block public view of directional and informational signage. • Design and finishes must be consistent or compatible with the adjacent interior finishes. • Use stainless steel or aluminum materials. • Preference shall be given to products that contain a high percentage of recycled content and/or are manufactured within 500 miles of the project.
LOCATIONS	All areas

LANDSCAPE CONTAINERS

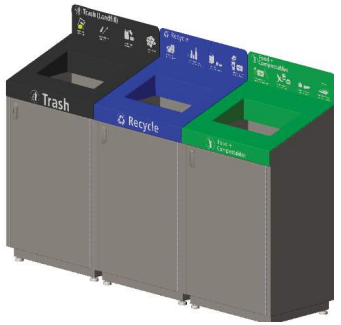
Planters

CATEGORIES	Landscaping
NOTES	• Interior landscaping would be desirable in key locations within the terminals if adequate natural light is available to ensure healthy and sustainable planting that does not incur excessive maintenance costs. • The decision to integrate interior planting will involve expert landscape consultants, who understand the specific environmental and maintenance issues for the specific space being considered.
LOCATIONS	All areas

WASTE RECEPTACLES

Interior Receptacle

CATEGORIES	Trash, recycling and compost
PRODUCT NAME	Single Stream - Removable Top - Receptacle Unit
DESCRIPTION	Single receptacles grouped together to collect trash, recyclables and compost throughout the airport to improve public access to recycling, reduce visual clutter, divert waste from landfills and minimize maintenance
MANUFACTURER	Architectural Brass
FINISH	Stainless steel base with powder coat removable top
SIZE	Single Unit size, 24" W x 18" D x 48" H
NOTES	• Currently, compost collection in public terminal spaces only occurs in food court/market place areas. However, the Port may choose to extend compost collection to additional airport public areas in support of Century Agenda and Environmental Strategy Plan goals. • Distribute receptacles evenly throughout interior airport facilities, in high-traffic areas, and near point sources that generate waste. Grouping (at minimum) trash and recycling units together. • Side-loading service doors are preferred over top-loading alternatives. • Fiber glass liner that maintain separate streams of collection, with finger grommets for easy removal and a gallon capacity of 39 gallons. • Labels that communicate trash, recycling, and compost disposal options use a combination of F&I Signage approved text, color and symbols. • Stand-alone or grouped modular receptacles of similar design with distinguishing signage may be collocated as an alternative where combined receptacles are not practical. • Provide dedicated circuit for trash compactors (one compactor circuit at every other column along both sides of the walkways or concourses). Trash compactor unit to be provided by the Port.
LOCATIONS	All interior areas



WASTE RECEPTACLES

Exterior Receptacle

CATEGORIES	Trash and recycling
PRODUCT NAME	Single Stream - Removable Top with Weather Top - Receptacle Unit
DESCRIPTION	Single receptacles grouped together to collect trash and recyclables throughout the exterior of the airport to improve public access to recycling, reduce visual clutter, divert waste from landfills and minimize maintenance
MANUFACTURER	Architectural Brass
FINISH	Stainless steel base with powder coat removable top and stainless steel weather top
SIZE	Single Unit size, 24" W x 18" D x 49" H
NOTES	• Currently the collection of compost only occurs within interior airport spaces. However, it is the Port's goal is to provide collection of compost throughout the airport (in addition to recycling and waste collection) as it supports our Century Agenda and Environmental Strategy Plan goals. • Distribute receptacles evenly throughout interior airport facilities, in high-traffic areas, and near point sources that generate waste. Grouping (at minimum) trash and recycling units together. • Side-loading service doors are preferred over top-loading alternatives. • Fiber glass liner that maintain separate streams of collection, with finger grommets for easy removal and a gallon capacity of 39 gallons. • Labels that communicate trash, recycling, and compost disposal options use a combination of F&I Signage approved text, color and symbols. • Stand-alone or grouped modular receptacles of similar design with distinguishing signage may be collocated as an alternative where combined receptacles are not practical.
LOCATIONS	All exterior areas, including Parking Garage

WASTE RECEPTACLES

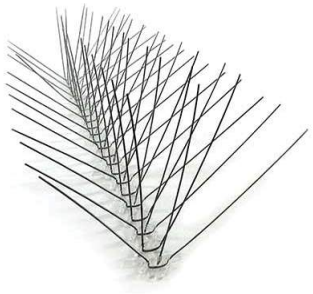
Cigarette Trash Receptacle

CATEGORIES	Trash and recycling
PRODUCT NAME	Humo Ash Urn
DESCRIPTION	Receptacle for tobacco ash and cigarette butts.
MANUFACTURER	Landscape Forms
FINISH	Stainless Steel brushed finish
SIZE	5” D x 36” H, Capacity 1.25 Gallon
NOTES	• Ash trays will be located only in designated exterior smoking areas and not within 25 feet of entry doors or ventilation air intakes. • Coordinate or match ash tray/ash urn design with that of exterior waste receptacle to achieve a consistent look and minimize visual clutter.
LOCATIONS	Curbside - Arrivals / Departures

MISCELLANEOUS

Bird Control

CATEGORIES	Pest Control
DESCRIPTION	System utilized to eliminate or deter bird perching and/ or nesting by minimizing perch points
NOTES	• Birds pose an issue for both interior and exterior surfaces at the airport. • Proposed bird deterrents, to be reviewed and approved by Port Wildlife. • A single metal line is preferred over barbs.
LOCATIONS	On beams, parapets, pipes, horizontal mullions, etc.; use as appropriate inside and outside the building.



MISCELLANEOUS

Bag Dispenser

CATEGORIES	Pet Relief
PRODUCT NAME	Dog Waste System Dispenser
DESCRIPTION	Receptacle for Dog Waste bags
MANUFACTURER	Uline
FINISH	Powdered coated aluminum
SIZE	9" L x 3" W x 16" H
NOTES	• Install within 5 feet of S.A.R.A., grass area for easy access. • For interior applications coordinate receptacle with adjacent room accessories. • For exterior applications, receptacle to be installed on post with sign and trash receptacle (with a closing lid).
LOCATIONS	Curbside - Arrivals / Departures S.A.R.A.

MISCELLANEOUS

Compactor

CATEGORIES	Trash and recycling
PRODUCT NAME	30 cubic yard model
MODEL NUMBER	JV (SCR-02, SC-T2, SC-02)
SIZE	8’ x 22’
NOTES	• Each requires 12’x22’ footprint, with 45’ space in the front to allow freedom of maneuver for a 32’ long hauling truck and 14’ vertical clearance for hauls in enclosed locations. Although a 30 cubic yard compactor is 8’x22’, the additional space is required for personnel to access for side use, maintain, and ensure clean hauls. • Requires a dedicated120V 20A circuit.

4

APPENDIX

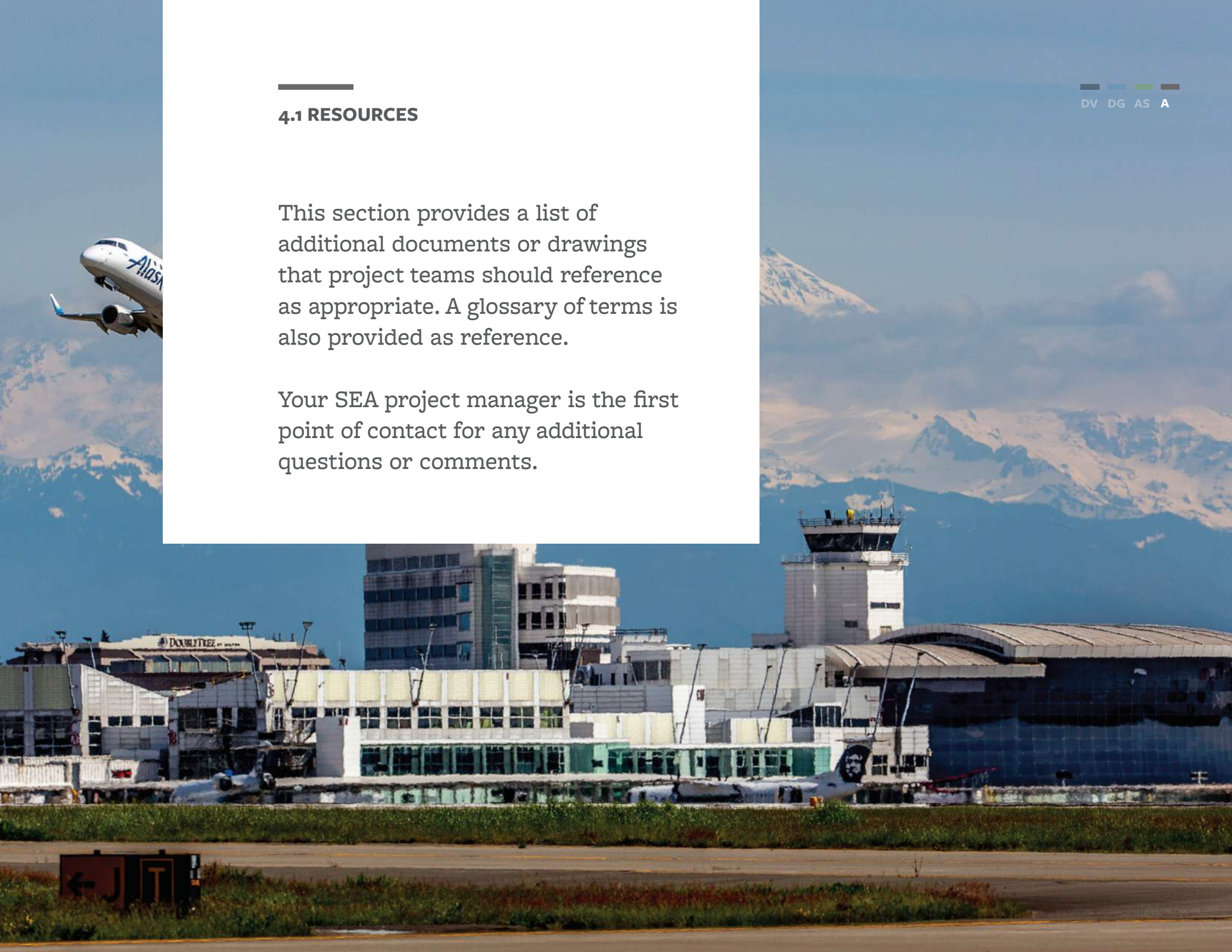
4

APPENDIX

4.1 RESOURCES

This section provides a list of additional documents or drawings that project teams should reference as appropriate. A glossary of terms is also provided as reference.

Your SEA project manager is the first point of contact for any additional questions or comments.



DEFINITIONS & ACRONYMS

A full list of definitions and acronyms is also available at http://compass.portseattle.org/aviation/Pages/Acronyms.aspx .

ITEM	DEFINITION
A/E	Architect/Engineer
ADR	Airport Dining and Retail
AP	Acquisition Plan
AV	
CA	Contract Administrator
CE	
CM	Construction Management
COMMISSION	Port of Seattle Commission
CPO	Central Procurement Office
EN	Engineering
ERL	Environmental Remediation Liability
F&B	Finance and Budget
F&I	Facilities and Infrastructure
FTE	Full-time Employee
IC	Investment Committee
MEPF	Mechanical Electrical Plumbing Fire
MII	Majority in Interest (airlines)
NEPA	
OSR	Office of Social Responsibility
PCS	Port Construction Services
PE	
PM	Project Manager
PM	Project Manager
PMG	Project Management Group
RDR	Requesting Department Representative
RFQ	Request for Qualification
RFS	Request for Service (w/CPO)
RM	Risk Management
RMM	Regulated Materials Management
RT	Review Team
SA	Service Agreement (consultant contract)
SD	Service Directive
SEA	Seattle-Tacoma International Airport
SEPA	
SME	Subject Matter Expert
SOQ	Statement of Qualifications
SOW	Scope of Work
START	SeaTac Telecommunications Architecture Review Team
STIA	Seattle-Tacoma International Airport

REGULATIONS

Laws and codes for accessibility design in Washington State include:

Chapter 51-40 WAC: Uniform Building Code and Uniform Building Code Standards (contains Chapter 11 ACCESSIBILITY amendments) is available through:

Community Trade and Economic Development
Washington State Building Code Council
Post Office Box 48300
Olympia, Washington 98504-8300
(360) 753-1184

Americans with Disabilities Act Accessibility Guidelines is available through:
Calling the ADA information Line of the U.S. Department of Justice at (800) 514-0301 (voice) or (800) 514-0383 (TDD).

A recognized resource for the background on accessibility design in Washington State with illustrations of design suggestions is **Accessibility design for all: an illustrated handbook.** It is available through:

Easter Seal Society of Washington
521 2nd Avenue, West
Seattle, Washington 98119
(206)281-5700
(800)678-5708

Seattle and the Pacific Northwest are viewed as being an exceptional environment, both natural and built, with a character and quality of life that inspire innovation and creativity. Future programs and building projects can strengthen our unique identity—our brand—in an authentic way through a variety of strategies and initiatives. These can be organized around the following major categories, or themes.

Distinctive, awe-inspiring natural environment: Mountains, forests, water, sky

- Views: Connection with outdoors; capture and frame views of mountains, trees/forests, sky/clouds, and weather/rain
- Outdoor spaces and mini-parks: Indigenous plants and trees, stone, water; provide more, as close as possible to building public areas; add to secure side
- Site landscaping: Indigenous plants and trees, stone, water; enhance main north entry, curbsides/"gorge"; integrate nature with buildings
- Water features and concepts: Indoors and out
- Quality of natural light, clarity of the air: Expanses of glass, skylights, clerestories
- Design forms and detailing: Natural features, organic expression
- Indigenous, natural materials and finishes: Wood, stone, patinated metal
- Colors, patterns, textures: Muted gray and brown neutrals; accents of blue, green, cedar
- Art and exhibits: Aquariums, interactive marine-life touching pools; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept

  Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal

- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors. Real-time video—Ballard Locks, local beaches, neighborhoods, etc
- Seasonal displays

Dynamic, vibrant built environment—cities, neighborhoods, parks, buildings: Historic and present

- Contemporary, Modernist architecture: Simple, subdued, restrained, elegant; honest expression of form, structure, materials; open, spacious; classic, timeless
- Historic references in building elements: Pioneer Square, Pike Place Market, neighborhoods
- Art and exhibits: AIA sustainable architecture models exhibit, Seattle historic theater exhibit; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc
- Seasonal displays

Pioneering, innovative, cutting-edge spirit: Early settlers, trade/commerce, industry (timber, fishing, biotech, Boeing, amazon, Starbucks, Costco), technology (Microsoft), arts and culture

- New, innovative technology: Building components, finishes, systems; wayfinding/information display on signs and hand-held devices (iBeacons, STQRY)
- Art, exhibits, demonstrations; logging/timber and skills; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- References in building elements: Form, details, patterns, colors, materials

- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc

NORTHWEST SENSE OF PLACE GUIDELINES

Rich, diverse culture and history: Events, the arts, entertainment, sports, education

- Art and exhibits: More glass art—Pilchuck School, Chihuly; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- Music: More live performances, buskers; more variety in broadcast music; visual displays
- Other live performances and demonstrations: Theater, dance, improv, stand-up comedy, magic, mime, glass-blowing, rock climbing and other outdoor activities, etc
- References in building elements: Form, details, patterns, colors, materials
- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc
- Seasonal displays
- Entertainment/activity venues: Climbing wall

People: Who we are today, and the groups and individuals who have been significant in the region's past.

- Airport employees: Friendly, helpful, proud of what they do; an open, welcoming environment
- Art and exhibits, live performance, demonstrations: Ethnic dance, Native American basket-weaving and weaving; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- References in building elements: Form, details, patterns, colors, materials
- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc

NORTHWEST SENSE OF PLACE GUIDELINES

Thriving international trade, commerce, tourism.

- Visitor information centers and displays: Enhance, expand, add interactive displays; kiosks and apps that sell tickets to local attractions and events
- Art and exhibits: Experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc
- References in building elements: Form, details, patterns, colors, materials

Green values: Creating and maintaining a sustainable environment.

- Building materials: Local sourcing, recycled content, etc
- User practices and behavior: Water conservation, recycling, composting, PC Air, electric vehicle charging stations and service vehicles, bicycle facilities
- Art and exhibits, demonstrations: Environmental outreach displays, green walls, Seattle AIA sustainable building exhibit; experiential rooms/zones that create Northwest settings combining visual elements with elements of other senses, such as sound, smell, and touch—forest, beach, working waterfront/marina, neighborhoods, market; similar to sustainable lounge concept
- Static graphic displays: Large-scale photos, photo murals—inexpensive, easily integrated to provide high-impact thematic overlay throughout terminal
- Dynamic displays: Video screens, digital walls, projections, screensavers on monitors; real-time video—Ballard Locks, local beaches, neighborhoods, etc

Dining, retail, advertising: Develop relationships with appropriate brands and concepts.

- Genuine local flavor
- New restaurants and chefs: Incubator food concepts, with short lease cycle and communal tables; combine food with music
- Food trucks and stands

Demonstrations, tastings: Fish-throwing ala Market, wine/beer sampling

NORTHWEST SENSE OF PLACE GUIDELINES

Other Contributors to Sense of Place:

- Several additional themes were identified that although not specific to a Northwest character, are significant and desirable for a memorable sense of place at SEA
- Designing around the passenger journey by responding to the passenger mindset:
- Own the passenger experience
- Convey the excitement of travel: importance of landside entry by road or train could be better
- Focus groups: incorporate feedback
- Wayfinding and environmental design: Making the airport understandable, communicating our story
- An open environment with inclusive design: Ensuring easy access for everyone
- Go beyond the ADA when appropriate, with focus on best practices and customer service rather than only legal compliance
- Reinforce with technology

4.2 FORMS & DOCUMENT LIBRARY

The Airport utilizes forms and documents to facilitate and track tasks. You will find more information on them here.

UTILITIES CONNECTIONS APPLICATIONS

Listed below are all utilities connections applications. Your Project Manager will work with you to complete their forms for your project.

- Communication Systems
- Electrical Systems
- Industrial Wastewater Systems
- Mechanical Systems
- Natural Gas Systems
- Sanitary Waste System
- Storm Drainage System
- Water System
- Radio Frequency Systems

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
Brand + Signage	Signage Standards		The Signage Standards Manual for Seattle-Tacoma International Airport (STIA) contains the standards for all airport signage and the regulations governing the design, construction, and installation of airport signs.		
Brand + Signage	Brand Guide		These guidelines include direction on everything from visual identity do's and don'ts to logo usage and more.		
	Maintenance Guidelines		Documents regarding the upkeep and maintenance for the airport.		
	Standard Details		Drawings of typical architectural details.		
Tenant Improvement	Construction General Requirements (CGR)	2015	These Seattle-Tacoma International Airport (STIA) Tenant Improvement Construction General Requirements are all inclusive and intended to address a wide variety of tenant and concessionaire projects.		Port construction project representative (Construction Manager, Project Manager, Engineer or Inspector)
Tenant Improvement	Design and Construction Process Manual	2015	STIA Tenant Improvement Design and Construction Process Manual are for use by the Tenant's Design Team (TDT) and should be used in conjunction with Regulations for Airport Construction (RAC 2014). This manual will help guide the TDT through the design and construction at STIA for any tenant mid-term refurbishment, improvement project, or new construction.		Port construction project representative (Construction Manager, Project Manager, Engineer or Inspector)

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
Construction	Construction Safety	v03.22.16	Document outlining the requirements for construction safety at the airport and a plan for preventing job-related accidents.		Manager of Construction Safety Management (206)-787-5587
	MEP		Guidelines regarding the Mechanical, Electrical, and Plumbing requirements.		
	AV		Audio/Visual guidelines.		
Construction	Rules (Regulations) for Airport Construction (RAC)	2014	This document provides an orientation to the various Port departments associated with completing a construction project and guidelines to supplement the Construction General Requirements in project documents associated with the Seattle Tacoma International Airport (STIA). It serves as guide for contractors to better understand the focus of each department highlighting areas of concern and guidelines for successfully completing a project . For Tenant Improvement projects, it does not add to, alter, or delete any portion(s) of existing or future leases. If there is a conflict between a lease and this document, the terms of the lease shall govern.		Port construction project representative (Construction Manager, Project Manager, Engineer or Inspector)

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
Maintenance	Maintainability and Janitorial: Concourse D Hardstand Terminal	2016	These Maintainability Standards are drafted with the intent to support Total Cost of Ownership, Maintainability and Sustainability. To support a safe and efficient work environment in order to maintain the Airport, its functions, and the assets of the Port of Seattle. These Standards are supplementary to the Port's F&I Standards, Performance Specifications, and Engineering Specifications. Compliance with Inter Local Agreements and regulatory requirements is mandatory.		
Maintenance	General Drawing Notes POS AVM Maintainability Standards	2017	For the general drawing notes page, these are built off of the POS AVM Maintainability Standards.		
Landscape Design Guidelines		2000	This document is intended to be used in conjunction with the POS Landscape Design Standards to help guide the vision of future development at STIA. Where any conflicts occur between these two documents, the Landscape Design Standards take precedence over any recommendations presented in these guidelines. This document contains three parts: 1. Themes and images; 2. Conceptual plan; and 3. Appendix.		

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
Landscape Design Master plan and Standards		2006	This document is currently being updated to be consistent with the 2018 ILA. The building department is also adding a permit for clearing and grading, which will include revised tree retention and vegetation mitigation development standards.		
Architecture and Interiors	Regulations for Airport Construction (RAC)	1996			
Architecture and Interiors	Restroom Design Standards	1999			
Architecture and Interiors	Communication Implementation Plan	1999			
Architecture and Interiors	POS Interim Landscape Design Standards for STIA	2000			
Facilities & Infrastructure	Mechanical Systems Standards	1999			
Facilities & Infrastructure	Electrical Systems Standards	1999			
Facilities & Infrastructure	Water and Sanitary Waste Systems Standards	1999			

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
Graphics and Signage	Advertising Graphic and Display Design Guidelines	1996			
Graphics and Signage	STIA Signing and Graphics Guidelines				
Graphics and Signage	Environmental Graphic Design Master Plan	2001			
Graphics and Signage	Roadway and Garage Signage Master Plan	1999			
	Variance Request Form		Used to requesting owner approval of a material or product that varies from the guidelines if it is necessary because of a specific condition.		
	Request for Qualifications				
	Professional Services Agreement				
	Port of Seattle Tenant Agreement				
	AV/PMG Procedure Manual				

DOCUMENTS

CATEGORY	DOCUMENT	VERSION	DESCRIPTION	LINK	CONTACT
	Guide Specifications		A foundation from which design teams can build their project specifications, not intended to cover specific projects.		Port of Seattle
	CAD Standards		CADD and drafting standards		Project manager
	POS Communications Standards		A complete list of CMS nomenclatures for when listing spaces, pathways, cable, and termination hardware ID's.		
	Committee Meetings Scheduling			http://collab.portseattle.org/sites/avficommittee/SitePages/Home.aspx	
	Committee Meeting SharePoint			http://collab.portseattle.org/sites/avficommittee	
	AV/PMG Project Process Documentation		Detailed documentation of the process for projects to reach each project status.		Aviation Project Management Group

4.3 MAINTAINABILITY STANDARDS

The maintainability standards help us to keep the Airport up to date and functioning properly, lowering cost and increasing passenger comfort.

MAINTAINABILITY STANDARDS

These Maintainability Standards are drafted with the intent to support Total Cost of Ownership, Maintainability, and Sustainability. To support a safe and efficient work environment in order to maintain the Airport, its functions, and the assets of the Port of Seattle. These Standards are supplementary to the Port's F&I Standards, Performance Specifications, and Engineering Specifications. Compliance with local agreements and regulatory requirements is mandatory.

Note: The following standards are to be incorporated into their relevant discipline's standards at a later date. All design, aesthetic, architectural, or passenger-facing references have been incorporated into the Design Guidelines & Architectural Standards.

MAINTAINABILITY STANDARDS

General Directions

Technical Review:

- Aviation Maintenance Technical Review Team will participate in walk-throughs, field reviews, design reviews, Plan-In-Hand field reviews, Requests for Information, Change Orders, Punch Lists, and decisions that deviate from these standards.
- Provide a submittal log for all materials and equipment for the POS to select items for review. Detailed drawings for review shall include equipment schedules, locations, and specifications. For all equipment schedules, indicate and specify the necessary units, capacities, types, sizes, and special notes.
- Drain line grade calculations and invert elevations shall be indicated on the drawings.
- Provide As-Built drawings for review and record drawings.
- Provide Operations & Maintenance Manuals per Port of Seattle Master Specifications Section 01 78 23.13 – Aviation Operations and Maintenance Documentation.

Asset Management:

- Designer Builder shall provide CMMS form with the first three columns populated (Equipment Description, POS equipment ID #, physical location) by approximately 90% design. The Contractor shall fill the balance of their form based upon actual equipment installed. The document shall be a PDF as part of the O&M Manual and an Excel (live) spreadsheet. The CMMS form will be provided to the designer in excel format.
- Project/Design data management system shall have the ability to integrate with Maximo for data interfacing.
- Submittals that will go into the O&M Manual should be original electronic documents. When scanning is necessary, the scan should be made with OCR enabled to make the content of the attachments fully text searchable. Contractor submittals and Operations & Maintenance manuals shall be submitted in electronic format of Microsoft Office or PDF with index and tabs, and should be fully text searchable.
- The Contractor and Subcontractor's literature shall bear the POS project name and number on the first page of the submittals.

MAINTAINABILITY STANDARDS

General Directions

Sustainability:

- Provide heavy gauge metal column wraps in public areas for protection from passenger baggage scrapes and impacts from passenger transportation scooters and electric pallet jacks. On permanent corners such as restrooms with radius metal entries, if heavy gauge is not available, consider detail for grout fill.
- Utilize high impact products such as impact resistant gypsum wall board, industrial laminate wainscot, bumper rails, or ¼" stainless steel (SS) for the lower 48" of walls in corridors, delivery locations, storage of goods locations, and back of house areas. If using metal stud wall construction, the bottom track of the wall needs to be designed and secured to the floor to resist impacts from motorized pallet jacks. Panels and corners shall be maintainable, replaceable, and available in the market. Stainless steel may be appropriate as wall protection as it doesn't need painting.
- Provide steel jacketed concrete filled column wraps in the bagwell and at ground service equipment (GSE) locations. Tugs use the columns and rails as pivot points for turning. Building seismic structure needs to be designed for the rigid concrete encasement.
- Shop floors slope away from equipment and hydraulic lift shafts, toward adequately sized drains (not less than 2"), and are connected to the appropriate treatment system.
- Weep holes for water drainage shall be oval, not round. This applies to windows, siding, and other surfaces subject to water.
- For interior equipment protection along GSE (tug) travel pathways, 13" high concrete curbs with angle iron embedments at the top exposed corner with removable 12" x 12" timbers are strongly recommended rather than bull rails except at BHS make-up devices. At BHS makeup devices, 6" high raised concrete walkways should be installed for ergonomics and the protection of personnel.
- Outdoor equipment subject to damage by freezing shall be heat traced and insulated or installed in a hot box enclosure sufficient in size to allow full access for maintenance.
- Provide WiFi and cell phone coverage without. Do not degrade existing coverage.
- Radio coverage is required in all spaces. Do not degrade existing radio coverage.
- Salvage materials shall be identified in the 90% design drawing submittals and approved by the Port.

MAINTAINABILITY STANDARDS

General Directions

Redundancy:

- Provide redundancy in equipment. Ensure systems that shall remain in operation at all times shall have equivalent or adequate capacity for outages. This is a 24/7 operation and there should never be only one of any critical system or piece of equipment.
  Example: Rather than (1) large fan, provide (2) slightly smaller fans so that if one goes down, the system is still operational at a reduced capacity rather than totally out of service. The two fans should be fed from separate circuits.
- Dual feed/power to facility required to provide increased reliability (redundancy). Feed from both ends keeping tie breakers open.

Clearance requirements:

- Adequate space shall be provided for the operation and maintenance (O&M) of installed equipment and inspections to equipment. Verify with the manufacturer's literatures for equipment sizes, clearances and requirements.
- Common conflicts are with conduits, fire sprinkler piping, and clearance in front of electrical boxes in the ceiling, light fixtures, ceiling grids, and access to HVAC boxes for controls.
- Provide 24" clear width and 90" clear height in utility chases. The clear width measurement shall be between the brackets, insulation and all other objects.

Maintenance Access:

- Provide safe and efficient pathways for access to equipment.
- All elevated equipment requiring any service has to be safely accessible with a POS standard device such as: lifts, ladders, steps or catwalk (not temporary scaffolding). This includes access to equipment that is above ceiling grids or in recessed locations. Any equipment that exceeds the requirement for servicing by a standard device needs proper access provisions without horizontal or vertical obstructions.
- Equipment installed above ceiling grid shall be installed such that the ceiling grid does not have to be disassembled for maintenance access and that all service points are no more than 24" above the ceiling grid.
- Access to routine service points shall be by foot at ground level without obstruction or by stairways and OSHA and WISHA-compliant access platforms or catwalks.
- Provide clear access to valves and cleanouts.
- Access to equipment rooms shall accommodate pallet jack deliveries, which include minimal ramp break over angles.
- No equipment shall be positioned in a confined space.
- Provide walkways with 80" headroom and width sufficient to move tools and equipment along the pathway.

MAINTAINABILITY STANDARDS

General Directions

- Doors and floors must accommodate AVM lifts used in the facility. The articulating lift will be used in high ceiling areas with (at least) one entrance point. Consider travel pathways, floor openings, and obstructions such as escalators, stairwells, and overhead obstructions such as beams and artwork when calculating the reach of lifts and placement of outriggers. Common personnel lifts used inside the airport buildings (subject to change):

Articulating Crawler:

Model: JLG X770AJ
Machine dimensions: 6'-7" H x 20'-9" L x 3'-3" W
Outrigger Footprint: 14'-0" L x 13'-6" W
Platform height: 77'-5"
Maximum Ground Bearing Pressure: 8 psi
Ground Bearing Pressure - Outriggers: 65 psi
Machine Weight: 9665 lb

Scissor:

Model: Genie GS-2632
Platform height: 26'-0"
Lift capacity: 500 lbs
Stored height: 7'-5"
Footprint: 8'-0" x 2'-8"
Weight: 4,413 lbs

Model: Genie GR-20
Platform height: 19'-11""
Lift capacity: 350 lbs
Stored height: 6'-0"
Footprint" 4'-5" x 2'-7.5"
Weight: 2,451 lbs

MAINTAINABILITY STANDARDS

General Directions

Bucket Truck for AOA Building Lighting Maintenance:
Actual truck width with outriggers down is 16'-0". Full extension measurements taken from the truck side of the top rim of the bucket. Bucket truck reach measurements:

Height (ft)	Horizontal Side Reach From Base of Outrigger (ft)	Horizontal Reach Over Cab From Front Bumper (ft)
65	27	22.5
70	25	20.5
75	22.5	18
80	16	11.5
83	12	7.5

The AVM 85'-0" bucket truck is about 37'-0" long; with the outriggers down, it is approximately 20'-0" wide. The platform can reach 80'-0" straight up. The boom base is right behind the cab of the truck. The electrical shop has set the upper limit for bucket truck accessible ramp lighting at 65'-0" since, due to GSE, it is highly unlikely that we will have the pathway to move the truck into position the clear space to set up the truck in the ideal location.

(lower segment not shown in fully vertical position)

MAINTAINABILITY STANDARDS

General Directions

Equipment Removal and Replacement:

- The doorways, ceilings, approaching and through a room, corridors, and elevators shall be sized and aligned to accommodate removal and replacement of major equipment without disassembly from factory shipped configuration.
- All equipment shall have provisions installed for removing failed components (>50#) in a safe manner. This may require built-in lifting points or hoisting systems. Provide complete lifting information on how each component can be removed and replaced while adhering to this requirement.
- Do not abandon equipment or infrastructure in place, they are to be removed. This includes pipes that penetrate roofs. Patch the holes and surfaces and provide fireproofing to the satisfaction of the AHJ.

Service Lighting:

- Provide at least 25 foot candle lighting on roof access to walkways, in mechanical chases, and all service locations.
- Spaces, such as interstitials containing equipment that requires maintenance, shall be provided with appropriate lighting.

Confined Space:

- Create no confined spaces.

Service Power:

- Provide 120V 20A convenience power outlets in mechanical chases and on roof tops within 25' of service equipment.

Ventilation:

- Provide adequate ventilation for personnel to work in mechanical and electrical chases.

Elevators:

- Paint and label the perimeter edges of the service elevator cab floor to encourage centering of the loads.
- Design with bollards and guide rails at the entrances to service and freight elevators to prevent pallets from damaging the door frame and the edges of doors with horizontal travel.
- Service elevators shall be graphically labeled, inside and outside, to prohibit pallet jacks.
- Freight elevators shall travel from load dock level to the penthouse.
- Size freight elevators to accommodate all equipment replacement on the floors served.
- Size elevators for personnel lifts required to be used in the facility.

MAINTAINABILITY STANDARDS

General Directions

Future:

- Designer and builder shall design and build with allowances for future upgrades, new technology upgrades, access and loading.

Training:

- Submit an equipment and system matrix for the Port to identify the quantity of hours and shifts which will require training.
- The training requirements will vary based on the equipment selected by the contractor. Equipment which is new to the Port will likely require more training than equipment which matches existing Port equipment.
- Equipment and systems training may be video recorded by the Port. If standard manufacturer's training videos are available for the applicable equipment, provide the manufacturer's video files.
- Provide training sessions for all three shifts. Training days and times are:

MAINTAINABILITY STANDARDS

General Directions

POS AVIATION MAINTENANCE TYPICAL CONTRACTOR TRAINING SCHEDULE				
Craft	**Preferred Day of Week for Training**	**Preferred Time of Day to Start Training**	**Lunch Breaks**	**Notes or Shift Hours**
Mechanical Utilities (BLRM)	Days shift: Tuesday Swing shift: Wednesday Grave shift: Wednesday Weekend Day shift: Monday Weekend Grave Shift: Monday	Days 06:30 Swing 15:30 Grave 05:00 Weekend Days 06:30 Weekend Grave 05:00	Days 11:30 - 12:00 Swing 19:00 - 19:30 Grave 04:00 - 04:30 Weekend Days 11:30 - 12:00 Weekend Grave 04:00-04:30	Days 4x10 Swing 4x10 Grave 4x10 Weekend Days 4x10 Weekend Grave 4x10
Conveyor & Passenger Loading Bridge (PLB)	Wednesday Tuesday Night	Days 07:30 Swing 14:30 Grave 23:30	Flexible	Days 4x10 05:30 - 15:30 Swing 4x10 14:00 - 24:00 Grave 4x10 22:00 - 08:00
Carpenters Architectural	Tuesday, Wednesday, Thursday	07:00 to 15:30	11:00	Weekdays 4x10
Electricians	Wednesday (not on third Wednesday of the month)	Days 07:30 Swing 15:30 Grave 23:30	Days 12:00 - 12:30 Swing 18:00 - 18:30 Grave 05:00 - 05:30	Days 07:00 - 15:30 Swing 15:00 - 23:30 Grave 23:00 - 07:30
ET Electronic Technicians	Wednesday	Days 07:30 Swing 15:30 Grave 23:30	Flexible	Various
Civil Field Crew	Tuesday, Wednesday, Thursday	Days 07:00	Flexible	

POS AVIATION FIRE DEPARTMENT TYPICAL CONTRACTOR TRAINING SCHEDULE				
Craft	**Preferred Day of Week for Training**	**Preferred Time of Day to Start Training**	**Lunch Breaks**	**Notes or Shift Hours**
Fire Department	Tuesday, Wednesday, Thursday	07:00	Flexible	

MAINTAINABILITY STANDARDS

Architecture

General Maintenance Notes:

- Weather vestibules shall be provided at main entrances in areas where wind-driven rain prevails.
- Mechanical and electrical equipment rooms should be on the ground floor with doors and pathways of adequate size to accommodate installation and removal of equipment for repair and maintenance. If not on the ground floor, provide freight elevator(s) adequate for the transportation of the equipment without disassembly.
- Building system components shall be accessible for periodic inspection and maintenance.
- Stairway shall be provided in the design for servicing of roof mounted equipment; ladders may be an exception after review with Aviation Maintenance.
- Consider types of traffic in the area - office, public corridor with baggage, and motorized pallet jack traffic.
- Lockers shall have sloped tops.
- Coordinate with POS (carpenter shop) before removing or replacing existing metal ceiling tiles. Improperly removed or installed ceiling material may create an overhead hazard.
- Connect to smoke alarm(s) in the loading bridge and rotunda for closure upon smoke alarm activation.

Sustainability:

- Siding shall be low-maintenance and not prone to staining.
- Fascia or trim shall be low-maintenance sheet metal, aluminum, or other low-maintenance material.
- Masonry and concrete surfaces shall be sealed to prevent efflorescence and leaching.
- Wall panels shall have sufficient intermediate supports to limit deflection under maximum designed wind loads so that weather seals will not fail.
- Ventilation shall be designed to prevent moisture accumulation.
- Vapor and moisture barriers shall be included in the exterior design.
- MDF or particle board shall not be used in cabinetry.
- For plastic laminate, apply full coverage of manufacturer's recommended quantity of adhesive to each surface.
- Design shall provide for a sturdy and sealed building. Silicone sealants are not acceptable except for glazing systems designed for silicone joints. All exterior envelope penetrations subject to weather shall have redundancy built into the weatherproofing.
- Bumper rails or hard-surface wainscot shall be specified and shown on the walls in high-traffic corridors.

MAINTAINABILITY STANDARDS

Architecture

Doors, Doorways and Access Panels:

- Doors and windows shall be designed to seal correctly and include protection from water running down the face of the structure.
- Windows, doors, and hardware shall be extra heavy duty commercial grade.
- Hinged doors are preferred vs. the roll down screen for closures.
- Design hinged doors and show on the drawings with ~180° swing, unless the swing is blocked by a wall or equipment. This applies to personnel doors as well as cabinetry.
- Preferred model for Airport door closers from holdroom doors to loading bridges: LCN Model 4314 ME-SF 24V, 0°-180° swing with no pressure.
- Thresholds should not be used in equipment room doorways.
- Power and generator room doors should open to the exterior of the building.
- Do not swing doors into corridors or tug drives. Recess the doors into alcoves. If necessary to swing doors into traffic lanes, provide protection for full swing of door so that passing traffic will not strike the door or personnel.
- Doors from back of house (BOH) shall be equipped with robust power openers or electromagnetic hold opens connected to the smoke detection system.
- Family Restroom locksets shall be BEST dormitory function 45H7T15H626RH VIB or 45H7T15H626LH VIB
- Access Hatches shall be positioned for maintenance access and shall be 24”x 24” minimum. Overhead access panels shall not exceed 20 pounds and be operable by one person.
- For roll-up and personnel doors, BEST/Stanley sole source compliance is required for locks and locksets utilizing the Airport approved keyways. Cores shall be figure 8, 7 pin. All cabinet locks must accept the BEST 7 pin SFIC core (Small Format and Interchangeable Core).
- New keyed devices shall match existing POS AVM key systems (e.g. controls, equipment panels, access doors); no new keys shall be allowed unless specifically requested and approved by the Port AVM Lock Shop Manager. Current device key list:

Key	Blank	Application
Flat blade screwdriver		Access panels which are not specified with a key
NSR251		Square D Panels
Do18		Allen-Bradley pilot devices. Widely used as JAM RESET switches in conveyor system.
270	54G	Access Control Systems (ACS) electrical cabinets for: Interface Termination Box (ITB), power supply cabinets, CK721 cabinets
CAT 45		Plumbing & Piping access panels
CAT 74		Dispensers, Restroom accessories
FAB 11	CCL	Diaper, sanitary napkin coin boxes and sharps containers

MAINTAINABILITY STANDARDS

Architecture

Key	Blank	Application
B286A	Illinois Lock Co.	Sometimes interchangeable with CAT 45
508CH	Y14	Loading Bridge Cabinet Locks
WEM 2		"Flat Key" (no groove on one side) manufactured by Illinois Lock Co. for Eaton Electrical Panel
Simplex	B	Fire Alarm panels
LL805		Fire Alarm panels
E158	Illinois Lock Co.	Emergency Fuel Shut Off (EFSO)

Door coordination on drawings:

- Design drawings shall have correct room and door numbers as issued by Port of Seattle Lock Shop.
- All disciplines drawings shall be cross-checked to determine that access openings are provided, properly sized, proper clearances, and located for servicing the facility and equipment.

Wall coverings:

- Corner protectors shall be specified for corridors. Protection shall be appropriate for the traffic.
- Provide wall construction, panels, and corners to resist cart or pallet impacts.
- Interior wall finishes, corners, and wainscot materials shall be durable and low-maintenance.
- Panels and corners shall be maintainable, replaceable, and readily available in the market.
- Specify and use paint approved for POS environmental requirements and paint standards verified by the Port paint shop.
- Interior and exterior painting schedule should match the existing.
- Chair rails shall be installed in offices and conference rooms to reduce scratches, scuffs, and repainting of walls.
- Provide heavy gauge metal column wraps in public areas for protection from passenger baggage scrapes and impacts from passenger transportation scooters and electric pallet jacks not less than 36" above finish floor.

Floor finishes:

- Select floor finishes considering maintenance activities, moisture, soiling (abrasiveness and staining), chemicals, wheel loads, dropped objects, movable furniture, foot traffic, and traffic patterns.
- Provide details for expansion joints for roofs, floors, and walls at required intervals.

MAINTAINABILITY STANDARDS

Janitorial

General:

- Design the facility with durable surfaces for easy cleaning and avoid creation of tight spots which lend themselves to soiling or the accumulation of debris.

Custodial Areas:

- Cleaning supplies and equipment shall be stored out of customers' view when not in use.
- Design adequate clearance to access the shelving without removing the service carts from the room.
- Provide allocated service cart space of at least 34 sqft:
  Utility cart: 24"x51"
  Tilt cart: 33"x73"
  Garbage receptacles: 24" diameter
- 42" wide door with adequate room to maneuver the equipment stored in the room and functionally use the mop sink.
- New facilities shall include a front load washer and dryer, with power, water, and exhaust.
- Depending on the new facility size, space and utilities will need to be provided for powered janitorial equipment. Quantity of each determined by discussion with AVM Manager. The equipment will not be purchased by the project.

Walk behind machine burnisher (Basis is Tenant B5 or B7)

- Machine Height: 43"
- Machine Width: 24.5"
- Machine Length: 59"
- Dedicated 120VAC 20A charging circuit

Walk behind scrubber (Basis Tenant T2)

- Machine Height Maximum (Handle Lowest Position): 36.6"
- Machine Width: 18.8"
- Squeegee Width: 27.4"
- Machine Length: 44.1"
- Cold water hose bib with mop sink or drain to sewer

Wide vacuum cleaner (Basis Tenant V-WA-30)

- Machine Height: 39.75"
- Machine Width: 30.5"
- Machine Length: 36"
- No power required for storage location

Wet Vacuum (Basis Tenant V-WD-15)

- Machine Height: 37.5"
- Machine Width: 15.5"
- Machine Length: 29"
- Cold water hose bib with mop sink or drain to sewer
- No power required for storage location

MAINTAINABILITY STANDARDS

Janitorial

Floor Dryer – floor fan (Basis Tenant Commercial Dryer / Air Mover)

- Height: 18.5”
- Width: 15”
- Length: 18”
- No power required for storage location

MAINTAINABILITY STANDARDS

Civil / Site Work

Plants:

Coordinate approved plant list from Landscape Standards and the Aviation Wildlife Department.

Drainage:

- Ensure that all areas drain away from the facility.
- Storm drainage system shall be designed to minimize maintenance and account for velocities in open ditches and swales.
- Facility draining and grading design shall provide an easily maintained surface and consider future site development and/or expansion.
- Provide curbs and gutters on streets and parking areas to contain traffic and protect pavement edges.
- Roof drains and overflow drains shall be connected to the existing drainage system.

Manholes & Hand holes:

- All hand holes and manholes located within the shoulder areas of aprons, taxiways, tow ways, runways, and overruns shall be designed to accept FAA required wheel load minimum 100Kip. Trench drains or channel drain system shall be designed to support a minimum of 200,000lb loads per AASHTO M306 or 202,320lbs per EN-1433 Load Class F.
- All handholes and manholes located outside of the locations described above shall have a minimum rating of two times the wheel load of a fully loaded Cobus or H-20, whichever is greater.
- Handholes and manholes in traffic areas shall be secured with bolts or hinged with a spring-loaded, retractable bolt to secure it closed.

MAINTAINABILITY STANDARDS

Pavement & Grounds

Pavement/ground:

- Proper pavement type shall be designed for areas subject to kerosene, gasoline, or oil spills.
- Portland Cement Concrete (PCC) should be used to minimize surface deterioration. In areas subject to acid spills, an acid-resistant coating shall be applied to PCC pavement.
- Lots shall be designed to eliminate problems associated with pavement cleaning and snow removal.
- All foundations located within the AOA shall be flush with grade.
- In areas where mowing will be difficult, or where shade or other conditions do not support lawn growth, specify a low-maintenance ground cover compatible with the Interlocal Agreement and POS wildlife control requirements.
- Specify a low-maintenance ground cover compatible with the Interlocal Agreement and POS wildlife control requirements.

Joints:

- Design provides for joint spacing not greater than 20’ in concrete pavement. Match existing layout.
- Joint resealing project design provides for complete removal of old joint seal material.
- Joint width is at least 12 millimeters, regardless of joint seal type (i.e. preformed or field-poured).
- Spacing and groove types are specified for AC and PCC pavements per FAA specifications.

MAINTAINABILITY STANDARDS

Roof & Roofing

Roof:

- Do not design for use of access hatches or forklift/crane without approval of Aviation Maintenance.
- Place no obstructions on the roof deck in the travel path of maintenance personnel. Where it is necessary to cross the travel path with obstructions, provide cross-over ramps with handrails for hand truck passage.
- Curbs for mechanical equipment and other roof penetrations shall have 18" separation from adjacent vertical surface for working clearances.
- Curbs and penetrations shall include a minimum of 8" above the insulated roofing material for boots and vertical PVC. Cap and counterflashing shall not be less than 8" above the insulated roof membrane.
- Roof-mounted equipment properly mounted and flashed. Mounting of mechanical and electrical equipment on the roof should be avoided. Rooftop equipment creates difficult flashing details, obstructs drainage paths, increases repairman traffic, accelerates corrosion and equipment weathering, and negatively affects maintainability of both the roof and equipment.
- Roof design shall have provisions to prevent ice, snow and heavy rain from sheeting off the roof.

Roof Access:

- Where roof access stairways are impractical for small areas, use ladders with 32"clear width flare at top, round side rails, include intermediate landings with safety gates. If roof hatch is acceptable to AVM, provide parapet or fall protection at hatch and around the work areas.
- Provide adequate vertical and clearance between roof surfaces and other objects to allow access for roof repairs and roof replacement. For small objects, the clearance would be minimum 18". For larger objects, the clearance would be minimum 48".

Service Power:

- Provide 120V 20A convenience power outlets on roof tops within 25' of service equipment.

MAINTAINABILITY STANDARDS

Fall Protection

Fall Protection:

- Fall protection is required for open-sided floors and platforms above 4'-0", WAC 296-800-26010-1 (http://wisha-training.lni.wa.gov/training/presentations/CompChartFallProtReqts.pdf). This requirement also applies to temporary installations where POS personnel will be working.
- Provide tie-offs for service of elevated equipment. Example is elevated cameras. Access shall be safe and efficient.
- Fall arrest systems shall be designed to support two concurrent users.
- Provide a third party inspection on the installations of new fall protection systems.
- Fall protection system components requiring periodic inspections shall be selected from systems which do not require qualified personnel for the inspections. Select equipment which, per the manufacturer's instructions, may be inspected by competent personnel.

MAINTAINABILITY STANDARDS

Plumbing & Wastewater

General Maintenance Notes:

- Before and after construction, video record underground piping to ensure that it is not blocked with construction debris or crushed.
- Video record underground piping interiors at appropriate times during construction and punch list to ensure that it is not blocked with construction debris or crushed.
- Provide spaces that will not require “confined space” entry requirements.
- POS boiler room assigns equipment numbers for mechanical equipment and shall be used on all equipment matrices.
- Drawing details and data shall be provided to allow for later servicing, repair, and redevelopment.
- Provide complete comprehensive, (Isometrics are preferable) multi-level plan as-built.
- Process and Instrument Diagram (PID) as appropriate.

Maintenance Access:

- Provide structural support members and hoists over large pieces (+>50lbs) of equipment to allow removal for maintenance.
- Provide access roads and service areas around outdoor equipment for removing large internal equipment.
- Maintain clear access to valves and cleanouts. Provide appropriately sized and secure access doors in walls and hard ceilings where cleanouts are located.
- Water and sewer lines shall be located in readily accessible areas for cleaning and/or repair (not under paved roads or in heavy traffic areas).
- An adequate building opening and associated passageway shall be provided for large equipment installation and removal.
- All equipment should have adequate space (horizontal and vertical) for a work area to allow repair, adjustment, or removal. (In some places, a maintenance platform may be necessary.)

Electrical/Lighting:

- Quick-disconnect electrical plugs shall be provided on submerged equipment to allow rapid replacement during maintenance.
- Operational lighting in all spaces shall be installed.
- Provide 120V 20A convenience power outlets in mechanical chases so that all locations can be reached with a 25’ cord.

Valves:

- Electronic or automatically controlled valves shall have manual override or bypass capability for maintenance or use during power outages.
- Provide sufficient valving provided to isolate minimum system sections (e.g., by floor, wing, bay) for repair or maintenance.
- Provide automatic air vents with isolation valves at all high points and heat exchangers.

MAINTAINABILITY STANDARDS

Plumbing & Wastewater

Freeze protection:

- Provide freeze-proof hose bibs in exterior locations.
- Potential freezing problems for piping and plant components shall be considered.

Equipment Schedules:

- Indicate and specify the necessary units, capacities, types, sizes, and special notes for the operators and maintainers.

Cleanouts:

- Accessible cleanouts with 24" access clearance envelope.
- Cleanouts on pressure lines shall be equipped with clamp-on caps.

Direct Digital Controls (DDC):

- Siemens Direct Digital Control (DDC) - Building Automation System is required. All control systems for heating, ventilation, air conditioning, plumbing, and PC Air systems shall be provided by the Siemens Building Technology Division, no substitutions.
- Graphics shall be created using CAD drawings, program code, and formatting to match existing DDC.

Water:

- Sampling taps with isolation shall be provided to all make-up water system for adequate testing and process control.
- Provide domestic water lines with hose bibs adjacent to equipment for cleaning (freeze-protected).
- Provide domestic water and drain connections to allow bypass of mechanical systems during maintenance.

Piping:

- Install an analog thermometer next to well-type sensors.
- All elevation drops will have an easily accessible low point drain and all elevation gains will have an easily accessible high point vent.
- Provide dielectric unions at connections of dissimilar metals.

Sanitary Waste, Vent and Storm System:

- Provide nearby space for storage of treatment chemicals.
- Provide corrosion test racks.
- Provide system capacities to calculate amount of treatment chemicals required.
- Chemical Pot Feeders: All heating, chilled and process-cooling water systems shall be provided with chemical pot feeders.
- Provide freeze-protection features specified for systems subject to freezing.
- Provide meters for make-up and blow-down water. Provide adequate ventilation and containment.

MAINTAINABILITY STANDARDS

Plumbing & Wastewater

Sewage treatment and collection systems:

- Manholes and clean-outs shall be provided to permit maintainability.
- Manholes and tanks shall have ladders securely anchored to the wall. Ladders should be constructed of corrosion-resistant materials, and if the manhole depth is greater than 4 feet, attachment points for safety belts shall be installed. Above grade safety extensions are required on below grade ladders.
- Ladders or handrails exposed to sewage gases shall be made of Stainless Steel.
- Traps and separators shall be provided to prevent oil and grease from entering sewage system.
- Sewer lines shall have sufficient slope to maintain full flow velocity of 0.6 meter (2 feet) per second, and an average flow velocity of 0.4 meter (1.6 feet) per second.

MAINTAINABILITY STANDARDS

HVAC & Steam

General Maintenance Notes:

- POS boiler room assigns equipment numbers for mechanical equipment and shall be used on all equipment matrices.
- Contractor shall protect all new and existing equipment and ductwork from construction dust and debris.
- Clean all ductwork prior to placing into service.
- Seal the ends of all new ductwork to prevent contamination until placed into service.
- Special construction features shall include: double sloped drain pans, motor removal rail to cabinet door, sliding racks for prefilters, all filters upstream loaded, extended grease lines where applicable, access doors open such that pressure effects seal, access doors sized for removal of largest internal component, receptacles located inside motor sections, cooling coil drain pan extending 2 feet downstream of cooling coil, magnehelic pressure gauge at each filter section, and gaskets or boots at all factory and field cabinet penetrations (caulking not acceptable).
- Design to provide for adequate air bleeding.
- Slope piping and accessories to allow for drainage.
- Air dryer redundancy with bypass valving for minimum down time.
- Special tools required to service equipment shall be supplied with a lockable metal toolbox for security.

Maintenance Access – provide the following:

- Clearance around equipment for maintenance access shall be sized larger than the biggest piece of equipment to be serviced and/or removed at the location.
- Minimum 24” clear space for maintenance personnel.
- Openings in fan guards for checking fan speed.
- Extended grease fittings for bearings when required for access.
- Provide access doors (appropriately sized for the equipment) for cleaning coils, drain pans, and fan blades.
- Fan coils are installed to allow full opening of access doors.
- Servicing clearance available for coil removal and filter changing.
- Cleaning space specified between cooling and heating coils.
- Coils that can be drained and cleaned.
- Stacked coils shall be independently supported.
- Piping to coils should be offset for easy coil removal.
- Space provided to pull tubes or coils.
- Duct access doors specified on both sides of all dampers.

MAINTAINABILITY STANDARDS

HVAC & Steam

Air Handling Equipment:

- Inside lights provided for air handlers with at least 2.3 square meters (25 square feet) of coil area. Use exterior mounted switch with indicator light.
- Lights, 15 foot-candle minimum with exterior on/off switch and pilot light provided in duct chases for maintenance use.
- 120v, 20amp service receptacle adjacent to roof mounted equipment.
- Air handling units shall be installed in equipment rooms, where possible.
- Air handlers above a suspended ceiling shall be provided with servicing platforms, extending a minimum of 0.4 meter (1.5 feet) from the edge of the equipment, and a clear space 0.9 meter (3 feet) high on the control side and other side where access is necessary.
- Trap provides a minimum difference in inlet-to-outlet elevation of 12 millimeters (1/2 inch) plus the air handling unit (AHU) total static pressure rating.
- AHU – Heating and Cooling Coils: Specifications shall indicate that coils should not exceed a specific size to allow for easy removal.
- AHU may have 2+ coils.

Compressed Air Systems:

- Pneumatic tank systems specify cut-off pressure, start pressure, and associated tank volume percentages for ease of start-up and servicing.

Steam and Condensate – provide the following:

- Traps mounted 0.3 meter to 0.4 meter (1 foot to 1.5 foot) below steam coil outlet to provide condensate head on the trap.
- Minimum dirt leg of 152 millimeters (6 inches) provided before trap inlet.
- Strainers provided upstream of steam traps, control valves, meters, and pumps.
- Strainer housings equipped with drain valves.
- Isolation valves provided for redundant parallel strainers in critical systems.
- Meters are provided with bypass lines and isolation valves to allow removal of meters with no down time.
- Condensate return lines slope in direction of flow.
- Dielectric unions specified at connections of dissimilar metals.
- Steam traps located to allow maintenance.
- Drain diameter is at least 25 millimeters (1 inch).
- Piping is sloped at least 6 millimeters (0.25 inch) per 0.3 meter (12 inches) in the direction of flow.
- For steam traps: Numbered brass tag specified to be connected to the valve with a brass jack chain. (Tags will be at least 50 millimeters (2 inch) round or square with stamped black-filled lettering. In addition to numbers, tags will be lettered to indicate fluid carried through the valve [e.g., “cw”]. Numbers will be keyed to the mechanical construction drawings.)
- Steam equalizing bypass valve installed at main steam valves.

MAINTAINABILITY STANDARDS

HVAC & Steam

Chillers and Cooling Equipment:

- Flanges (or unions) and isolation valves in condenser water piping are located to allow removal of piping and headers immediately in front of tubes.
- Ample space is provided to inspect and clean condenser tubes.
- Flanges or couplings and isolation valves located to allow piping removal directly in front of device (above, below, and/or to the side).
- Devices sloped to allow for drainage.

Pumps:

- Flow measurement equipment (e.g. orifice plates) specified for pumps and major heat exchange devices.
- Pressure gauges are specified on the discharge side of all major pumps.
- Air bleed-off valves provided at high points in pump discharge lines to allow removal of air locks.
- Floor trenches are provided around pumps to carry water spills to sumps.
- Storm and Sanitary Pumps: Indicate lifting eye in structure above to facilitate removal of sump pumps.

Valves:

- All ball valves shall be fully ported.
- Utilize Ball valves. (rather than gate or butterfly valves)
- Numbered brass tag specified to be connected to the valve with a brass jack chain. Tags shall be at least 50 millimeters (2 inch) round or square with stamped black-filled lettering. In addition to numbers, tags will be lettered to indicate fluid carried through the valve [e.g.: “CW”]. Numbers will be keyed to the mechanical construction drawings and include the Project Number.
- Provide clear access to valves and cleanouts.

Lift Stations:

- Dual submersible pumps with automatic alternating lead pump controls with manual override.
- Wastewater storage for short power outages or maintenance downtime.
- Adequate heat, lighting, and freeze protection.
- Explosion-proof switches.
- Easy access for maintenance personnel and pump replacement.
- External switch for quick connection of mobile emergency generator.
- Drains from possibly oil- or grease-contaminated sources have separator units.

MAINTAINABILITY STANDARDS

Fire Protection

Fire Sprinkler System:

- Exterior and interior fire protection systems (e.g., standpipes, sprinklers, hoses, accessories, extinguishers) shall be completely described and drawn, and shall conform to appropriate technical manuals and National Fire Protection Agency (NFPA) codes.
- Fire alarm is coordinated with electrical central alarm system.
- Provide sprinkler system piping with free draining to riser drain valves.
- Electrical and mechanical drawings shall show location of fire alarm system appurtenances and automatic fire doors, fire and/or smoke dampers, ceiling dampers, and similar means of fire protection for air duct systems.
- Fire extinguishing systems, smoke evacuation systems, and related systems and equipment shall be designed so operation does not depend upon high maintenance. The design objective is a highly reliable, easily maintainable, and low Total Cost of Ownership for the system.
- Systems shall be compatible with and match existing Airport systems.

MAINTAINABILITY STANDARDS

Baggage Handling Systems

Definition:

Baggage Handling System is defined as both an area, referred to as BHS Ramp, and as the Baggage Handling System itself (BHS) comprised of (conveyors, service equipment, cat walks, beltways, etc.) all things related to the movement of bags.

General Maintenance Notes:

- The baggage handling system shall be designed so that no scheduled repair/maintenance task requires more than two (2) hours of full-system shutdown, three (3) hours of reduced operation, or any combination of both in excess of three (3) hours.
- All components and sub-systems shall be designed for quick replacement as field installed. All components and assemblies shall be easily disconnected and removed from the equipment without necessity for extensive disassembly.
- Minimize motor and gearbox weights. When larger (greater than 5hp), heavier motors are necessary, provide space for additional crew members to service the equipment and the capability to hoist the equipment to/from the service location.
- Only solid sections should be enclosed inside of walls. No bearings, rollers, or drives inside of walls unless a minimum of 36” clearance available on both sides.

Construction Access:

- Do not work over BHS without securing the conveyor by Lock-Out Tag Out.
- During construction over existing systems provide a solid deck with toe boards over BHS in work areas.

Clearance:

- Conveyor and catwalk is a single unit and must have 80” head clearance, which encompasses a minimum 48” width with 72” clearance for all belts. Safety tape and provide padding for items under 80”.
- A minimum of 48” width with 80” clearance for service catwalks.
- Cross-over conveyor must have 80” clearance above top step.
- When no conveyor/catwalk assembly is installed, a personnel lift is required to work on conveyor and power equipment mounted in overhead areas above 6’. Room for the personnel lift to penetrate the plane of the BHS conveyor is needed; a clear footprint and air space to drive personnel lift on the floor below is needed.

MAINTAINABILITY STANDARDS

Baggage Handling Systems

Maintenance Access:

- All service points, bearings, shafts, motors, etc. must be accessible and unobstructed with a minimum of 12" clearance for maintenance and removal.
- Walkways should also be made wide enough to access Auto Tag reader (ATR) for service and maintenance.

Sideguards:

- Sideguard height shall be 12" or minimum allowed by regulations.
- Do not permanently attach anything to removable sideguards.

Safety:

- Provide start-up warning with strobe that is accessible and visible. Lenses shall be clear and easily visible. All audible devices shall be properly sized for area.
- The alarm silence shall be readily accessible and for qualified personnel only.
- Conveyor beds are considered elevated walkways and shall meet regulations.
- Provide safety cables per WAC 296. Where installed - Make one end removable to allow for access by maintenance personnel.
- Keyed HOAs are required for areas accessible to non-POS maintenance personnel.
- Safety tape and provide padding for items under 80".
- Emergency Stop Push-Buttons (E-Stops) shall be lockable and located in easily reached areas; consult with conveyor shop for location. E-stop zones shall be clearly identified on all equipment in the field.

Equipment:

- All equipment shall be clearly labeled for system requirements.
- All motor assemblies shall include pick points where rigging would be necessary for removal.

Belts:

- Stainless steel lacing for belt splices. No sewing for belts. For durability and long life for belts. Rip stop fibers shall be integrated into belt material.
- A minimum 12" clearance required all around the belt for long term maintainability and ease of access to pull bearing.
- At Merge conveyors, laced belt or interrupted belt; no continuous belts allowed.
- Belt Tracking: No end roll tracking, always install snub rollers.

MAINTAINABILITY STANDARDS

Baggage Handling Systems

Motor:

- Minimum 3' long cord with quick (cord plug) disconnects.
- Maximum 5 HP motor size.
- Motor Overloads: Provide access for safe replacement of overloads. Be sure overloads are properly sized and sizing sheet is posted in cabinet.
- Motor Control Panel (MCP): Make sure control station is easily accessible in accordance to the belts it services for ease of securing belts, resetting jams, and motor changes. Keep drawings current throughout the work. Provide As-Built drawings to ensure ease of replacement.

Control Devices:

- Mounted on the accessible side of conveyor so that it can be easily reached for clearing jams and performing maintenance. Consult with Conveyer Shop for placement.

Electrical/Lighting:

- Conduit runs shall not obstruct head clearance or access points.
- Install quick disconnects on motors, VFD's, photo eyes, tachometers, etc.
- Provide a 20amp, 120v circuit sized to prevent nuisance breaker trips.
- Provide 120V 20A utility power outlets throughout all systems reachable with a 25' extension cord.
- Do not install conduit under floor-mounted conveyor.
- Do not block access to light fixtures or illumination from light fixtures.
- Provide a minimum of 10 foot candles at the conveyor bed and all service locations.
- Photocell Functions: Easily accessible for cleaning, adjustment, replacement and quick disconnect.

Rolls and shafts:

- All rolls must be "taper-lock" attached to shaft.
- Taper lock must be removable (not welded).
- Shafts must be chamfered and center drilled (min. 1/8") at both ends.

MAINTAINABILITY STANDARDS

Baggage Ramp

Attachments:

- With the exception of items directly related to the specific conveyor line, do not support, suspend, or attach conduit, piping, or other infrastructure or equipment to the Baggage Handling Systems (BHS) or the BHS support system.

Construction Access:

- Do not work over BHS without securing the conveyor by Lock-Out Tag Out. Alternatively, provide a solid deck with toe boards over BHS in the work area.

Clearance:

- The Contractor shall recognize and make every effort to preserve the 3'-0" baggage and 7'-6" tug clearance heights. In some cases, low profile conveyor, catwalk, and support equipment will need to be utilized in order to avoid infringement into the right of way clearance areas.
- Clearance deviations require prior approval from Aviation Maintenance.

Flooring

- Tug pathway flooring into/out of the bag well shall be slip resistant.

MAINTAINABILITY STANDARDS

PLB Maintainability Standards

General Maintenance Notes:

- These maintainability guidelines apply to new bridges and existing bridges throughout STIA.
- Variations from these practices for the rehabilitation of existing bridges shall be authorized by F&I and AVM.
- All attachment points integral to the initial design and provisions for future accessories (PC Air, 400Hrz, bag chute) shall be considered to avoid welding attachment points in the field.
- Provide permanent communications equipment between control stations and areas requiring routine maintenance (machinery drive areas, power & control panel locations, and ACC).

Maintenance Access:

- Provide a service area not less than 30-inches wide around system drive components.
- Unobstructed access to all zerk fittings, limit switches, and other service points.
- All maintenance access points accessible even after PC Air and the 400Htz are installed.
- 3' of access in a 3D envelope from widest part of column extending vertically into infinity.
- Must be able to reach all limit switches and grease fitting safely from a ladder or the ground.
- Full platform around vertical drive on top of the cab tunnel.
- Platform must be removable in the event the column needs to be replaced.

Add-ons or accessories:

- Design criteria shall include provisions the 400 Hz power attachments.
- Equipment location will not block access to fittings and switches.
- Mounting of the air handling unit can only be placed on the "CAB" tunnel of bridge assembly. Interference of the vertical drives will not be acceptable.
- Provide mounting locations for PC Air lines that do not block maintenance access.
- Design access to service points around the future installation of PC Air.
- Bag Chute
- Location does not obstruct access to maintenance components.
- Considerations for heavy wheelchair load/unload.

MAINTAINABILITY STANDARDS

PLB Maintainability Standards

Diagnostic Reference Guide for Maintenance:

- Include diagnostic instrumentation and system fault displays for mechanical and electrical systems. Malfunction information must be presented on a control system monitor located in the bridge control house.
- Data must be automatically recorded and include:
- System descriptive information, such as ladder diagrams and wiring data, must be available on the system memory to enable corrective actions on system malfunctions and to identify areas requiring preventative maintenance.
- Alarm history.

Drive System Bushings:

- All bearing housings and bushings in open machinery drive and lock systems must utilize split-bearing housings and bushings and must be individually removable and replaceable without affecting adjacent assemblies

Lubrication Provisions:

- Bridge system components requiring lubrication must be accessible without use of temporary ladders or platforms.
- Provide permanent walkways and stairwells to permit free access to regions requiring lubrication. Lubrication fittings must be visible, clearly marked, and easily reached by personnel.
- Designs for automatic lubrication systems must provide for storage of not less than three months' supply of lubricant without refilling.
- Refilling locations must be readily accessible to allow for refilling within a period of 15 minutes.

Machinery Drive Systems:

- Design machinery drive assemblies so that components are individually removable from the drive system without removal of other major components of the drive system.
- For example, a speed-reducer assembly can be removed by breaking flexible couplings at the power input and output ends of the speed-reducer.
- Use Environmentally "Green" drive systems. Do not use hydraulic.
- Use solid tires only.

Service Lighting and Receptacles:

- Provide a 120V-20Amp service receptacle above and below Cab for maintenance use.
- Provide supplementary, switchable task lighting under tunnel section and under Cab.

MAINTAINABILITY STANDARDS

PLB Maintainability Standards

Trunnions:

- Specify Trunnions bushings and housings of a split configuration. The bearing cap and upper-half bushing (if an upper-half bushing is required) must be removable without span jacking or removal of other components.

Tunnel Sections of Bridge:

- Use slip resistant hardened flooring.
- Provide access to tunnel rollers for servicing. Do not block access panels.
- Secure points to hold transition ramps when servicing underneath.
- No components should interfere with bridge travel or maintenance access.
- Install roof access ladders.

Weatherproofing:

- New and rehabilitated bridge designs must incorporate details to help water drainage and use non-galvanized components.
- Protective coatings shall be resistant to wet Seattle weather conditions.
- Protective coatings shall use an approved substance accessible to Maintenance.

Working Conditions for Improved Maintainability:

- When specified by the Department, for either new or rehabilitated bridge design, use enclosed machinery and electrical equipment areas.
- Install “permanent” non-slip surface to ladder rungs (not a tape-on type).
- Include lock/out and E-Stop options for safety.
- Roof designed to limit standing water.
- Avoid details that trap dirt and water; provide drain holes, partial enclosures, sloped floors, etc., to minimize trapping of water and snow accumulation.
- Provide exterior roof access for Vertical Drive System with handrails around roof perimeter.

MAINTAINABILITY STANDARDS

Electrical

General – provide the following:

- Full compliance with NEC, WAC, RCW. Washington Labor & Industries electrical permit is required to be obtained by the contractor.
- POS Electrical shop and F&I will assign equipment numbers for electrical equipment and shall be used on all electrical equipment matrices.
- On electrical drawings, if home run is new, show the full pathway from the new work to the panel.
- All electrical assemblies shall be UL listed.
- GFCIs shall be self-testing.
- Provide arc flash studies during design. Do not exceed 40 calories per square centimeter.
- Circuit breakers used instead of fuses. Use of circuit breakers increases Reliability and Maintainability (R&M).
- Dual feed/power to facility required to provide increased reliability (redundancy). Feed from both ends keeping tie breakers open.
- Maintenance space provided around generators, switchgear, and auxiliary equipment.
- Provide for adequate space for two workers on all gear rated above 208V.
- Where transformers or other heavy equipment is stacked, provide overhead removal system such as a trolley/hoist. See Equipment Removal and Replacement on page 5.
- Provide a list of recommended spare parts with part numbers, and note any critical or long lead items.
- Electrical equipment rooms, vaults, and substations, shall be ventilated to not exceed a maximum temperature of 32°C (90°F).

Medium voltage cables:

- Underground primary cables are cross-linked polyethylene (XLPE) or ethylene propylene rubber (EPR) with 133% insulation level with outer jacket. Outer jacket is only necessary to protect concentric neutral from corrosion.
- Underground cable splices employ maintenance-free methods and materials (e.g., heat shrink, resin casting).
- Megger test:
- Electrical acceptance testing on complex facilities specified to be accomplished in accordance with NETA ATS 1999.
- Use Port-approved form for documentation which becomes part of the project records.

Grounding and Bonding for electrical systems:

- Grounding systems in compliance with NEC.
- Compression or blast-on connections specified. (Split-bolt connections should not be specified as the quality of installation is inconsistent.)
- Allow for reasonable growth capacity.

MAINTAINABILITY STANDARDS

Electrical

Underground ducts and raceways for electrical systems:

- All hand holes and manholes within apron, taxiway, tow way, runway, and overrun shoulder areas designed for a minimum of 100-kip wheel load or FAA requirements, whichever is greater.
- Sump holes (sealed sump holes in high-water areas) and pulling irons opposite all duct entrances, plus one on center of floor. Consider reinforcing duct entrances to reduce shearing. Specify sealed duct ends to prevent rodent intrusion.
- Metallic Line markers installed above all buried runs used to locate duct routes and turns.
- Cable warning tapes required above all underground cables.

Power Systems Studies:

- Computerized short circuit analysis and coordination study. Study should include line-to-ground faults and coordinate the largest transformer on the feeder.
- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Electrical acceptance testing on facilities specified to be accomplished in accordance with NETA ATS 1999.
- Breakers are coordinated and higher than minimum AIC ratings utilized.
- Underground cable capacity designed for future growth. Cable size should take into account any de-rating requirements, such as multi- cable ducts.
- Adequate bypass capability so breakers can be serviced (redundancy).
- Electrical review team will review findings for acceptance.

Preferred Substation Locations:

- Located away from perimeter fences and heavy-traffic roads.
- Access roads able to accommodate line maintenance vehicles.

Large Underground Vault:

- Designed with devices and equipment to facilitate removal and replacement of equipment, such as an overhead crane.
- Heat loading considered. Vault may require air conditioning.
- Adequate work space and storage area.
- Maintenance space provided around generators, switchgear, and auxiliary equipment.

Secondary Unit Substations & Switchgear:

- Surge lightning and transient protection installed on service entrances, solid-state uninterrupted power supplies, and isolation transformers.
- Adequate workspace around all equipment for two people.
- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Dual feed/power to facility required to provide increased reliability (redundancy). Feed from both ends keeping tie breakers open.

MAINTAINABILITY STANDARDS

Electrical

- Circuit breakers used instead of fuses.
- Adequate instrumentation.
- No Underground switches.
- Two sets of multi-ratio current transformers (one set each for instruments and relays).
- Low-maintenance breakers (e.g., vacuum, SF6, air).
- Any special maintenance tools required for service to be part of substation supplied equipment.
- Permanent schematics with mimic bus specified to be installed on equipment.

Medium Voltage Switchgear and Transformers:

- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Spare stub-up/conduit (with cap) provided at pad-mounted transformers.
- Adequate workspace around distribution equipment pad-mounted transformer, switches, substation equipment. Sufficient working space for two people.
- Switchgear must have: draw out breakers, lifting brackets for breaker maintenance, easy access for maintenance around the equipment, cable trenches, emergency lighting, and adequate instrumentation.
- Distribution transformers have taps with external changers.
- Pad-mounted transformers have traffic barriers in high-traffic areas e.g., highly visible painted concrete posts.
- External transformers must have: an external tap changer, a pressure- relief valve with alarm contacts, a thermal relay with alarm contacts, a magnetic oil gauge, an oil drain and sample valve, undercoating, and must produce a test report.
- T-stat/alarm well with silencing relays, pushbutton, and indicating light, in weatherproof enclosure.
- Standard transformers (not self-protecting transformers) specified.
- Automatic transfer switch has bypass capability for easy maintenance.
- Auto-start equipment of backup generators capable of being locked out during maintenance.

Low Voltage Switchgear and Transformer:

- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Spare stub-up/conduit (with cap) provided at pad-mounted transformers.
- Adequate workspace around distribution equipment pad-mounted transformer, switches, substation equipment. Sufficient working space for two people.

MAINTAINABILITY STANDARDS

Electrical

- Switchgear must have: draw out breakers, lifting brackets for breaker maintenance, easy access for maintenance around the equipment, cable trenches, emergency lighting, and adequate instrumentation.
- Distribution transformers have taps with external changers.
- Pad-mounted transformers have traffic barriers in high-traffic areas e.g., highly visible painted concrete posts.
- External transformers must have: an external tap changer, a pressure- relief valve with alarm contacts, a thermal relay with alarm contacts, a magnetic oil gauge, an oil drain and sample valve, undercoating, and must produce a test report.
- T-stat/alarm well with silencing relays, pushbutton, and indicating light, in weatherproof enclosure.
- Standard transformers (not self-protecting transformers) specified.
- Automatic transfer switch has bypass capability for easy maintenance.
- Auto-start equipment of backup generators capable of being locked out during maintenance.

Equipment Keys:

- Provide locks that match existing POS keys. See key list under Architecture.
- In the event the system is not automatic, provide Kirk keys on power centers.

Switchboards:

- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Neutral sizes should not be reduced, even though allowed by NEC.
- Suggest 200% neutral in locations where harmonics are present, and where supplying electronic/computer & server loads.
- Adequate workspace around equipment. Sufficient working space for two people.

Panelboards:

- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Neutral sizes should not be reduced, even though allowed by NEC.
- Suggest 200% neutral in locations where harmonics are present and where supplying electronic/computer & server loads.
- Adequate workspace around equipment. Sufficient working space for two people.

MAINTAINABILITY STANDARDS

Electrical

Motor control centers:

- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Motor control centers have draw-out breakers, where applicable.
- Motor size and application warrant use of under voltage motor protection.
- Motor control center has adequate workspace to ensure maintainability. Sufficient working space for two people.
- National Electrical Manufacturer's Association (NEMA) standard voltages and frame size specified for motors.

Motor controllers:

- Correct overloads specified for motors. Overloads should be no larger than specified by the NEC.
- Breaker and fuse interrupter ratings are adequate according to findings of the short circuit analysis.
- Circuit breakers used instead of fuses.
- Adequate workspace around equipment. Sufficient working space for two people.
- National Electrical Manufacturer's Association (NEMA) standard voltages and frame size specified for motors.

Emergency Generators:

- Emergency generators are for Life Safety. Do not add loads that are not Life Safety.
- Emergency systems require periodic testing. If other loads, like computers, are on the emergency generators, they will lose power during the regular periodic generator testing.
- Adequate workspace around equipment. Sufficient working space for two people.
- Solid-state exciter (radio frequency interference [RFI] free) and voltage regulator specified.
- Generator compatible with solid-state uninterrupted power supply [SSUPS] installation (e.g., harmonics). Harmonics from SSUPS may interfere with generator controls. Generator must be sized to handle SSUPS in rush current.
- Generators smaller than 750 kW can be skid-mounted.
- Prime power generators grounded in accordance with IEEE Standard142, IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems, and the National Electrical Code.
- Computerized short circuit analysis and coordination study provided for prime power plants.
- Backup generators can be refueled and oil checked without shutdown.

MAINTAINABILITY STANDARDS

Electrical

- Backup generators have bypass capability with cannon plug-type receptacle for quick connection of mobile electric power (MEP) unit in case of failure.
- Auto-start equipment of backup generators capable of being locked out during maintenance.
- Backup generator prime mover shutdown limited to low oil pressure, high temperature, and over speed. Alarm will be connected to status panel, but consider remote alarm to central status location, such as the energy management and control system [EMCS].
- Alternator has maintenance-free, sealed, 50,000-hour bearing. Consider multitap leads.
- Class C generator regulator has automatic and manual capability, and is easily accessible for maintenance or repair.
- Louvers are thermostatically controlled.
- Battery chargers are float-charge type, adjustable down to 0.1 ampere, and batteries are sealed, maintenance-free type.
- Standby units that cannot tolerate reapplying power without cycling have dropout/lockout relays.
- Exhaust outlets located to avoid intakes of adjacent buildings.
- Audible alarms provided to alert operators of abnormal conditions.
- Voltage generated at distribution level, when possible.
- Control unit soundproofed for larger multi-unit plant.
- Auxiliary fuel tanks placed below grade for emergency generators located within the airfield environment.

Rotary 400 HZ converters:

- Adequate workspace around equipment. Sufficient working space for two people.
- Solid-state exciter (radio frequency interference [RFI] free) and voltage regulator specified.
- Generator compatible with solid-state uninterruptible power supply [SSUPS] installation (e.g., harmonics). Harmonics from SSUPS may interfere with generator controls. Generator must be sized to handle SSUPS in rush current.

Surge Protection For Low-Voltage Electrical Power Circuits:

- Surge lightning and transient protection installed on service entrances, solid-state uninterruptible power supplies, and isolation transformers.

Interior Lighting:

- If emergency lighting is not able to be installed on an emergency circuit, use maintenance-free gel cell-type batteries in emergency lights.
- Vapor proof fixtures provided in rooms containing moisture (e.g., dishwashing rooms).
- Explosion-proof fixtures or systems provided in areas subject to flammable vapors. Hazardous areas are refueler vehicle maintenance bays, paint rooms, and aircraft fuel system docks.

MAINTAINABILITY STANDARDS

Electrical

Egress Lighting:

- Avoid emergency light fixtures that require battery backup. Coordinate the loads, and install on emergency circuits where possible.

Exterior Lighting:

- For exterior lighting, such as on a bridge, provide maintenance access from the interior, or by lowerable assembly or pivoting light pole for access from the roof which has a parapet or from a 65’ bucket truck.
- All elevated visual navigational aids incorporate frangible, low- impact resistant, or semi-frangible design principles in accordance with FAA and POS standards.

Corrosion Prevention:

- Galvanized Materials:
- These items apply to all sections below.
- Galvanized electrical equipment installed exposed outdoors shall be painted with a minimum 3 mil coating of paint to prevent zinc runoff to the storm water system.
- Paint application by manufacturer is preferred to field painting for coverage and quality.
- Cathodic Protection: Metallic construction members, either buried or submerged in an electrolyte, have been designed for cathodic protection.

MAINTAINABILITY STANDARDS

Electronic Systems (Telecommunications and Airport Systems)

Voice and Data Systems – provide the following:

- Radio Systems are designed to work during power outages because they are life safety systems. Think holistic security for Radio Systems. All components shall reside in safe & secure locations.
- Provide sufficient room for gear to be installed with consideration to added space necessary to extend gear from drawers on their slides and allow technician to align, repair, and troubleshoot.
- Plans shall include consideration for heat load on the HVAC.
- Provide 120V 20A electrical outlets for test and monitoring equipment.
- Sites and equipment rooms need Telephone installations
- Equipment is heavy and bulky and requires racks for installation.
- Antennae need to be located in secure environments where tampering or vandalism is not likely.
- Safety systems shall be provided to provide workers safe access and working conditions so they can be securely tied off as well as instruments and antennae that are under repair/test or removal/replacement. They are heavy, bulky, and if the wind is blowing, can make for dangerous maneuvering.
- Power shall be available for test and/or calibration equipment or battery backup systems as necessary.
- Consideration for a system design that allows for partial de-energization of system that allows for needed Trouble shooting and testing without a total disruption.
- Radio systems are regarded as a “Life Safety” System. Radio coverage is required throughout the facility.
- Room Lighting: bright enough for techs to see with adequate amount on backup power to ensure emergency needs are met during power outages. Minimum of 20 Foot-candles.

Public Address and Paging:

- Shall be intelligible in low and high noise conditions and take into account the hearing impaired.

WiFi and Cell Phone Antennas and Repeaters:

- Most communication rooms have only one entry.
- All communication rooms should have adequate UPS capability to backup systems during voltage transients or power outages for up to 4 hours.
- These are critical systems and shall have redundancy built in.
- Locate support equipment in communication rooms.
- Provide adequate cooling protect equipment.

MAINTAINABILITY STANDARDS

Electronic Systems (Telecommunications and Airport Systems)

Common Use Passenger Processing Systems:

- Access to cables and peripherals should be as easy as loading paper.
- Placement of Common Use equipment on pullout drawers or trays with proper cable management systems speeds response time for techs to return to service gate stations.
- Mill work (cabinetry) needs to be of Common Standard for architecture of equipment layout.
- Paper stock has to feed from the bottom for machines to work.
- Millwork should be lockable so Airline personnel have no way to tamper with systems. Some have tried to plug their cell phones into a USB and hope it charges. This will only cause problems.

CUSS:

- Weatherproofing for exterior applications. Weather-rated equipment. Consider location or use of awnings for protection.
- Power and Data accessibility. Avoid wireless systems until product reliability is proven.
- Support enclosures should be weatherproof or resistant or under shelter or awning and not affixed to overhead location in a lane of people traffic or vehicles.
- Choose passenger paths that avoid congestion areas. Determine a clear path for the kiosk location which meets accessibility and traffic flow and don't forget ADA standards to provide kiosks at lower heights to assist people in wheelchairs.
- Provide signage that is specific to the capability of the machine and the airlines it serves. Don't put advertisement in front of passenger faces when they need to be focused on the task of checking in.
- Controlled environments are highly preferred.
- Provide enough 120V 20A electrical outlets so we don't have to use power strips.
- Data outlets separate ICT phone from CUSE.
  Design and install equipment to prevent the accumulation of small papers, trash, and items that may catch fire in warm equipment.
- Provide enough 120V 20A electrical outlets. Technicians visiting site need power for their tools.
- Avoid locating equipment in areas where cell phone usage is poor. A bad signal may delay POS Electronic Technician (ET) in working with tech support to correct an issue.

Video Surveillance:

- Bigger cameras are not always better. Sometimes too big makes for an enticing target for vandalism/tampering.
- Some products are designed to undergo abuse and may be a better choice than cheaper unit with no chance of survival.
- Location in a stairwell may inhibit maintenance should a sufficiently tall ladder may be not usable. And if installed, tie-offs for securing fall protection harness need to be present to protect against falls.

MAINTAINABILITY STANDARDS

Electronic Systems (Telecommunications and Airport Systems)

- Installing a camera along a busy road with no place to park a maintenance vehicle or without means to use a snorkel or scissors lift is useless.
- Although camera may be well installed and easily accessible, the design should ensure that any support enclosures or accessories are just as easily accessible. Some present airport designs have support electronics (fiber optic controls) in a ceiling or within a cavity and they are not easily accessible.
- Much of the present airport cameras use 30 year old Coaxial cable that is way below standard for today's cameras. New camera installations require big picture consideration of camera installation. I.e. camera, mounts, cable, power, termination cabinets, transmission systems. Complicated and with many areas where one mistake can cripple the end result.

Security Access Controls:

- Access Control enclosures should be near desired door(s). Need to be protected from public tampering. Many cases choosing a high location over door is best but mindful not to be in high traffic areas.
- Protect from harsh environmental elements, such as wind, rain, snow, or even blazing sunshine. Card readers need weather protection and the poles that they are attached to need to be clear of traffic that may damage them. Tugs come to mind.
- Many CCTV cameras outlast their production run and are obsolete when failed. Requires possibility of replacement of large group of cameras to maintain a cohesive look/appearance or technical limitation.
- CCTV cameras come in many shapes and sizes and with a variety of housings to efficiently work in harsh environments.
- Some are very Tamper-resistant and need to be considered when public have opportunity to tamper with performance of camera.
- Regarding repairs, in many cases a camera or a lens component may be a "throw away" and not worthy of repair.
- Install cameras in accessible locations for maintenance and servicing.

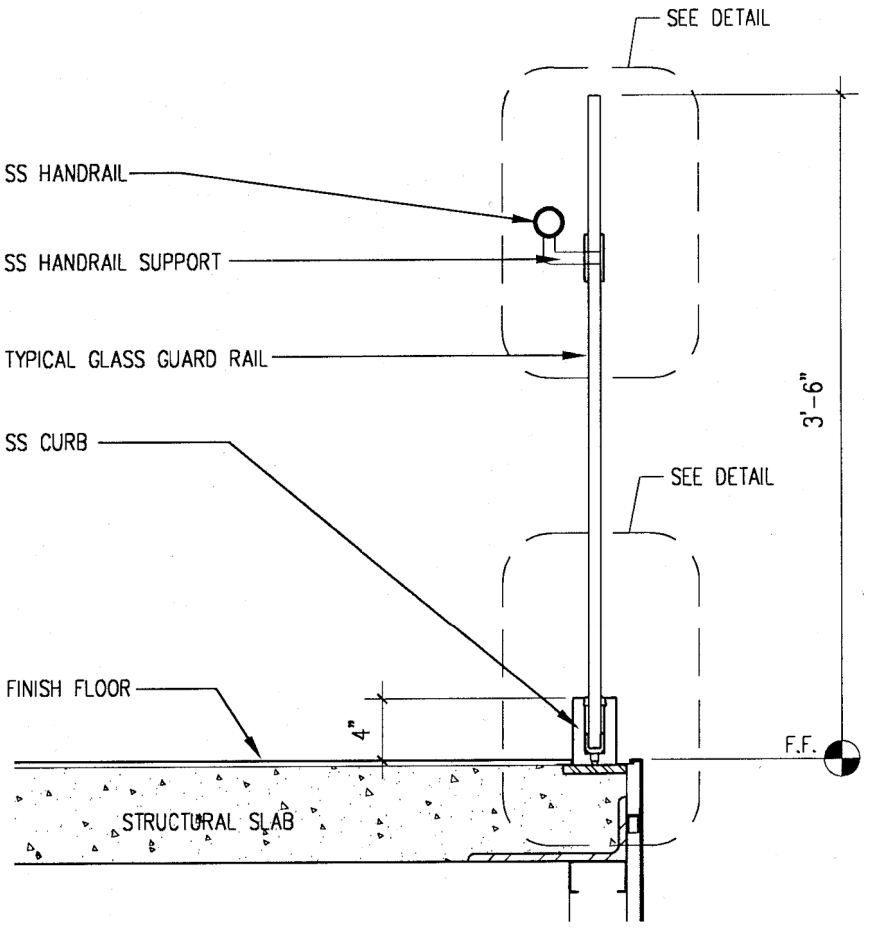
Exit Lane Breach Detection:

- Need excellent location for system to insure techs have ease of access to multiple sensors, motors, and drive mechanisms.
- If we are considering the "Flip Flow" product, much consideration should be made to understand product reliability before installation.
- Parts cost and ease of technical repairs or the cost of doing business with Parent Company or subsidiary for a Maintenance Coverage with understood response times.

4.4 DESIGN INTENT DRAWINGS

This section include design intent drawings for various features produced for the Airport.

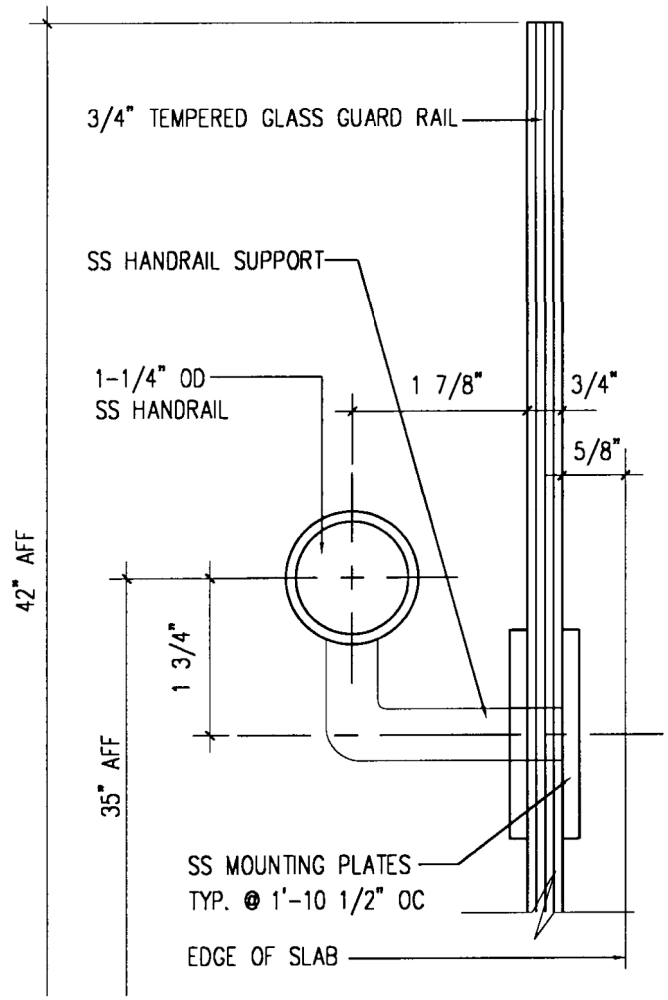
CSI Master Specification Division: 05520



TYPICAL GUARD RAIL SECTION

NTS; For Reference Only

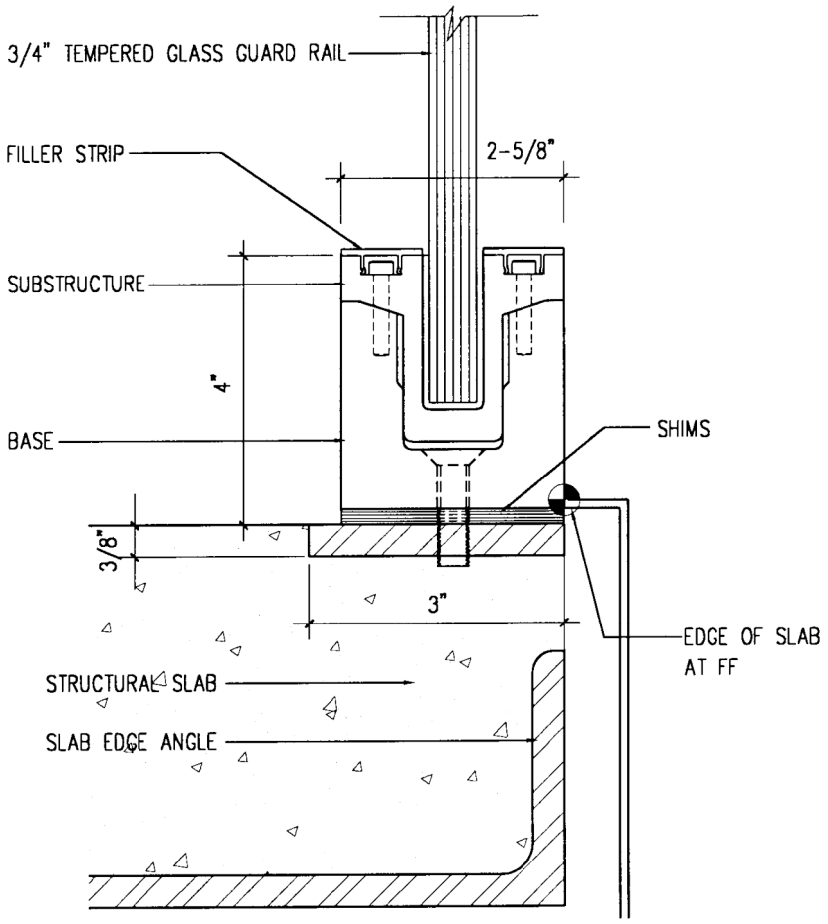
CSI Master Specification Division: 05520



GLASS GUARD RAIL TYPICAL DETAIL @ TOP

NTS; For Reference Only

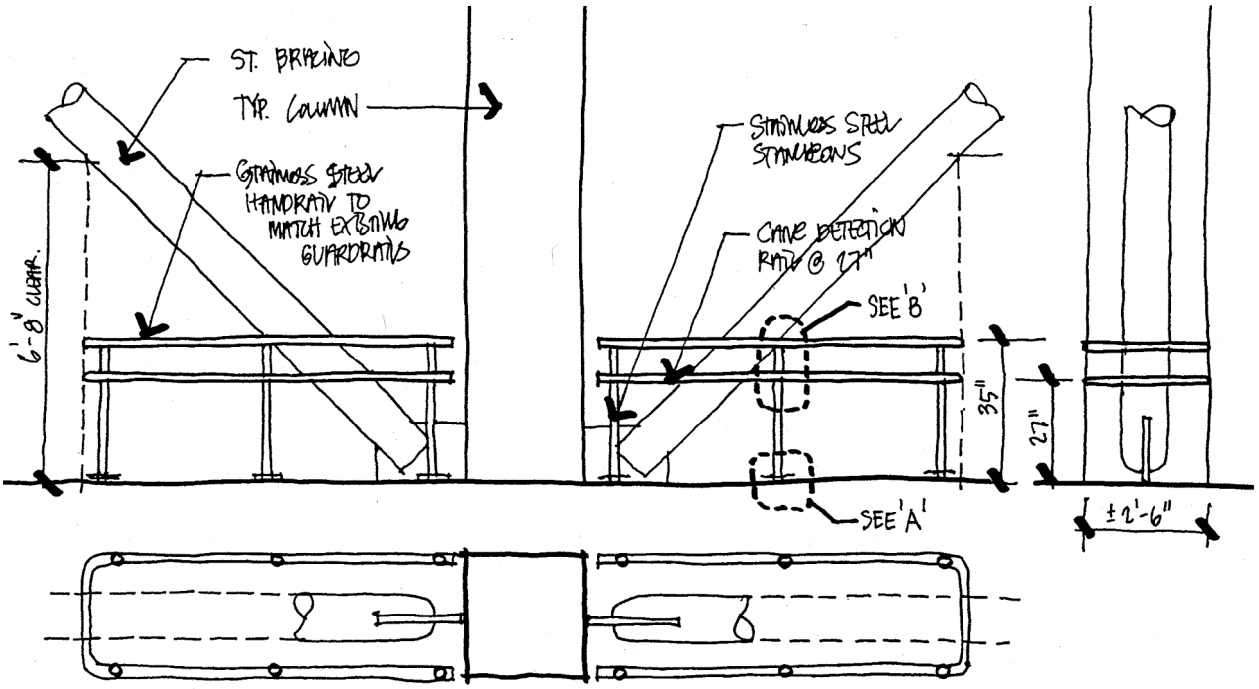
CSI Master Specification Division: 05520



GLASS GUARD RAIL TYPICAL DETAIL @ BASE

NTS; For Reference Only

CSI Master Specification Division: 05520



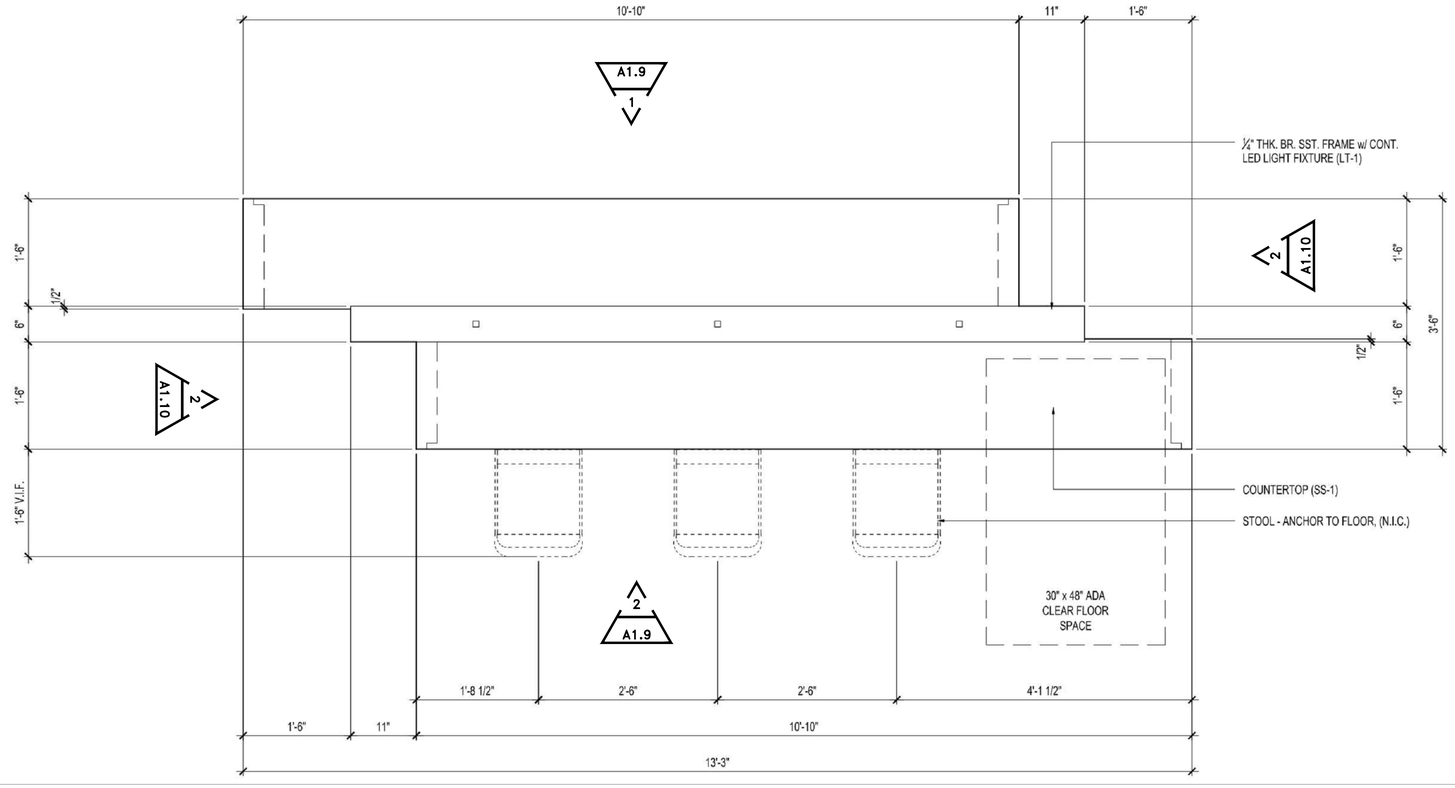
PLAN AND ELEVATION
TYPICAL GUARDRAIL AT SEISMIC BRACES

NTS; For Reference Only

GENERAL NOTES

1. G.C. TO CONFIRM & COORDINATE ALL EQUIPMENT SIZES, CLEARANCES & ACCESS REQUIREMENTS PRIOR TO FABRICATION.
2. REFER TO FLOOR PLAN FOR CHARGING STATION ORIENTATION.

3D RENDERING
CHARGING STATION



ENLARGED PLAN
CHARGING STATION
SCALE: 1" = 1'-0"

1
A1.8

FINISH SCHEDULE
REFER TO SPECIFICATIONS FOR ADDITIONAL INFO

MT-1	METAL BASE
WD-1	WOOD VENEER
SS-1	SOLID SURFACE
SS-2	SOLID SURFACE
LT-1	LED LIGHT FIXTURE

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DESIGNER:
DRAWN BY: TCU
SCALE: AS SHOWN
DATE:
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CHECKED/APPROVED BY:

REVISIONS

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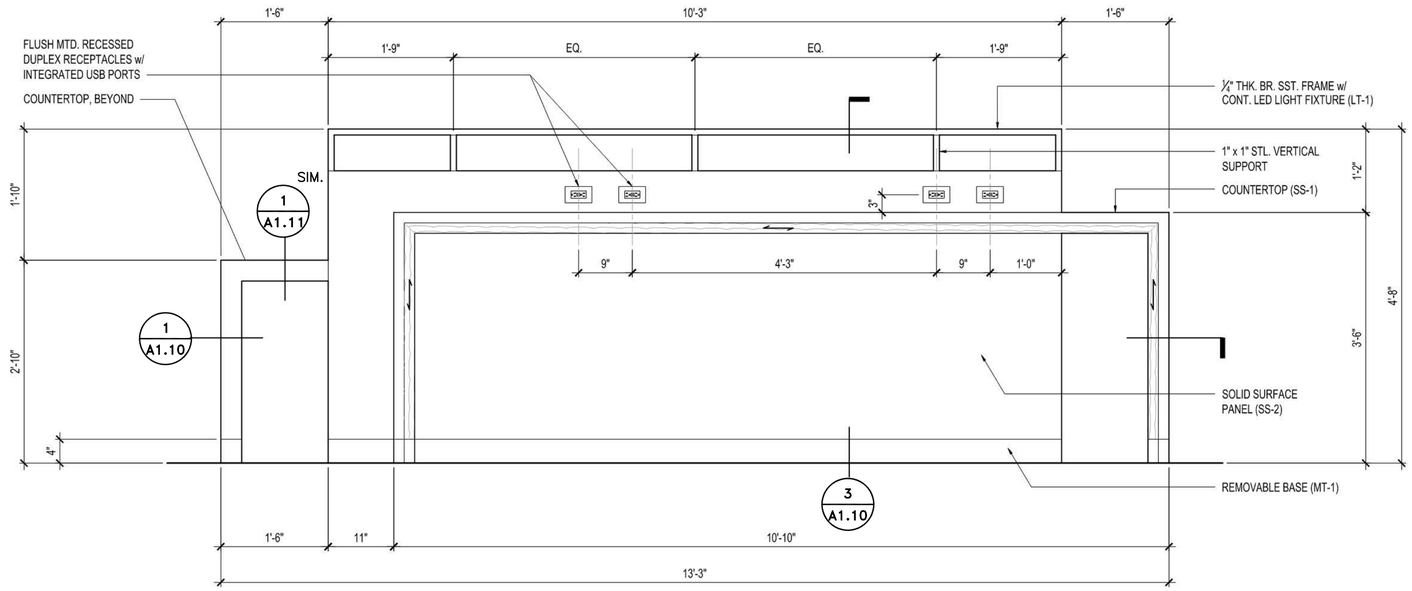
Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
STANDARD HOLDROOM CASEWORK

SHEET TITLE: CASEWORK DETAILS CHARGING STATION

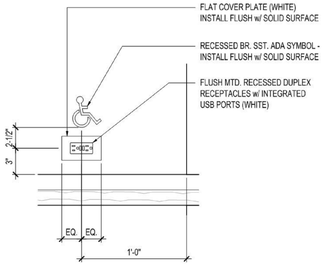
WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO.
A1.8

PERMIT SET



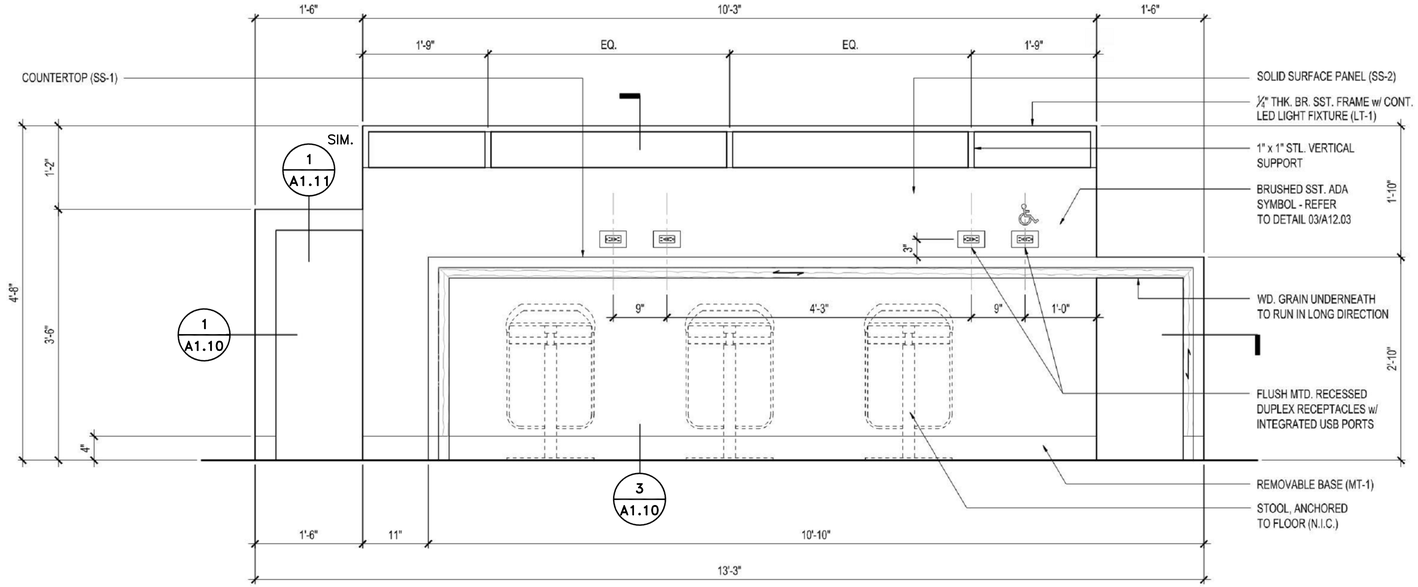
ELEVATION
CHARGING STATION
SCALE: 1" = 1'-0"

1 / A1.9



DETAIL
CHARGING STATION
N.T.S.

3 / A1.9



ELEVATION
CHARGING STATION
SCALE: 1" = 1'-0"

2 / A1.9

GENERAL NOTES

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2. REFER TO FLOOR PLAN FOR CHARGING STATION ORIENTATION.

FINISH SCHEDULE

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

MT–1	METAL BASE
WD–1	WOOD VENEER
SS–1	SOLID SURFACE
SS–2	SOLID SURFACE
LT–1	LED LIGHT FIXTURE

LEGEND

WOOD GRAIN DIRECTION

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STANDARD HOLDROOM CASEWORK
SHEET TITLE: CASEWORK DETAILS CHARGING STATION

WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO. A1.9

PERMIT SET

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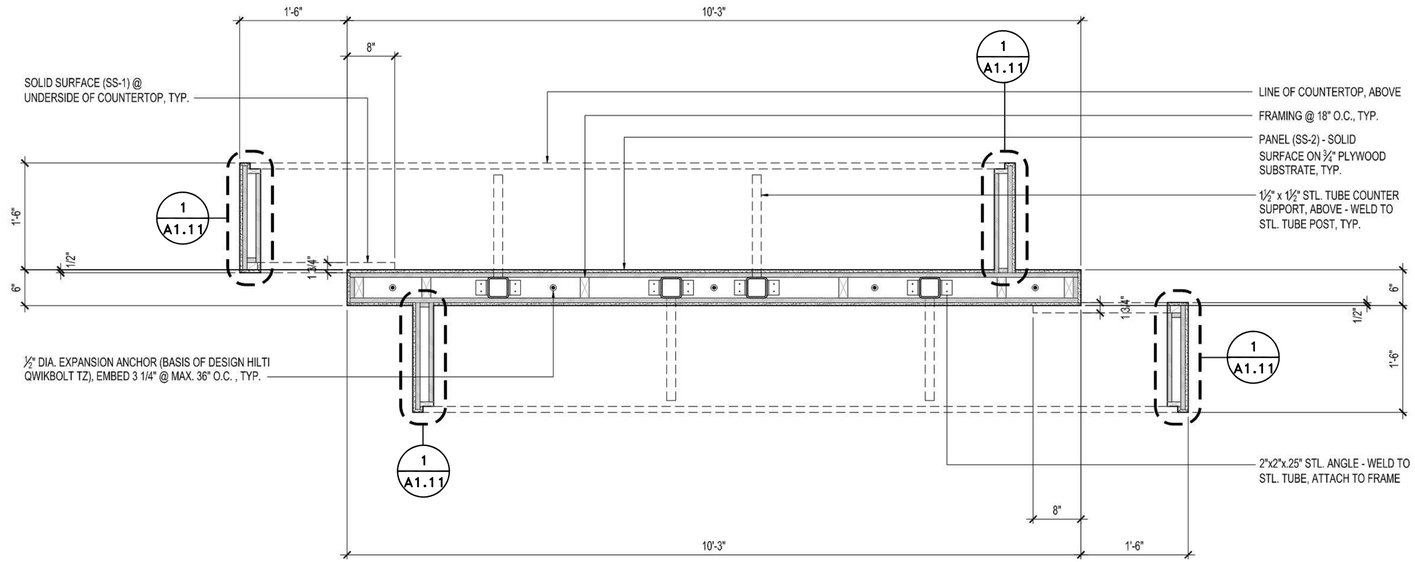


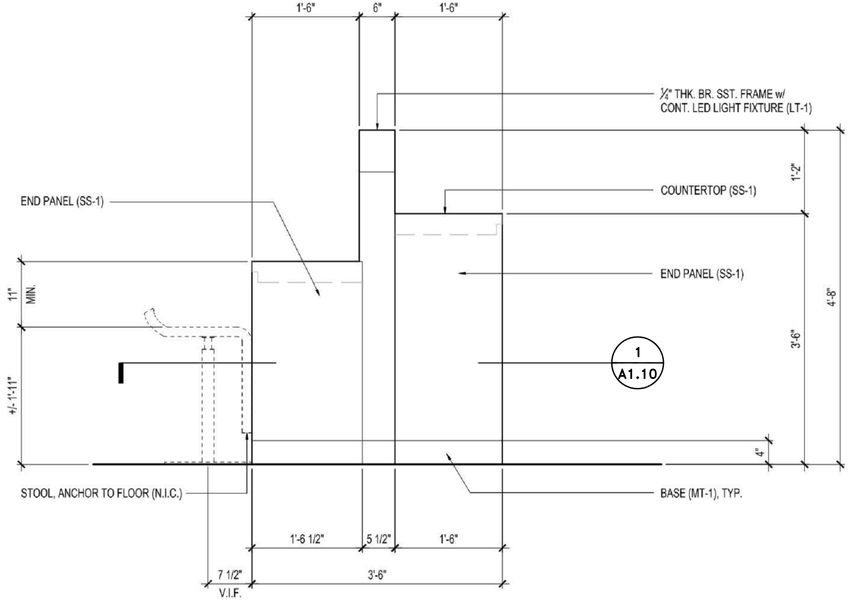
DETAIL
CHARGING STATION
SCALE: 1" = 1'-0"
1 A1.10

FINISH SCHEDULE

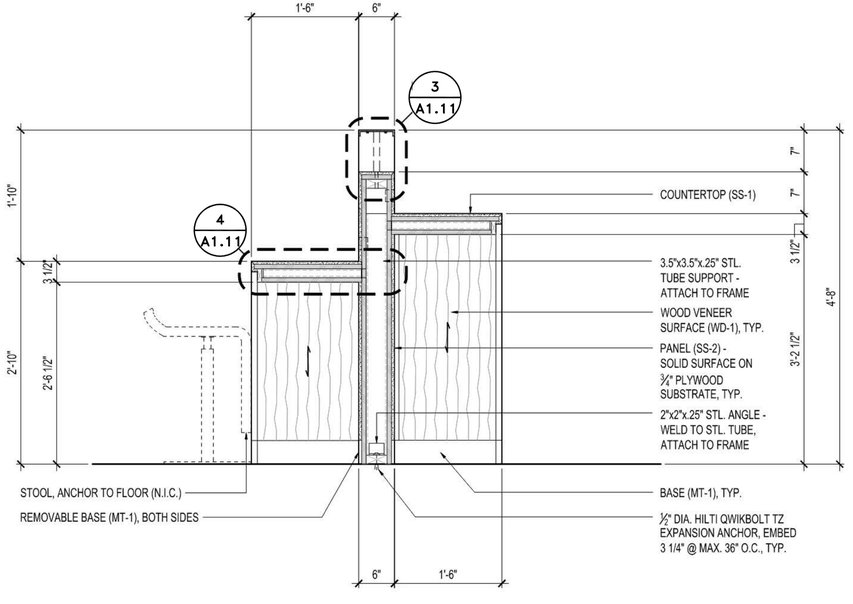
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

MT-1	METAL BASE
WD-1	WOOD VENEER
SS-1	SOLID SURFACE
SS-2	SOLID SURFACE
LT-1	LED LIGHT FIXTURE

LEGEND



ELEVATION
PODIUM
SCALE: 1" = 1'-0"
2 A1.10



SECTION
CHARGING STATION
1"=1'-0"
3 A1.10

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CONSULTANT'S NO.
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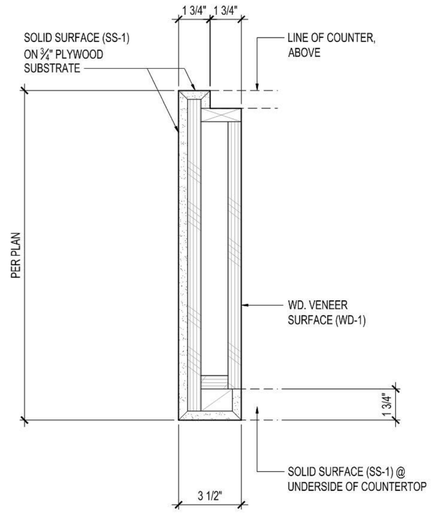
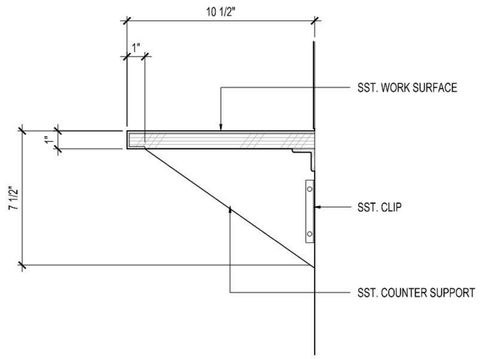
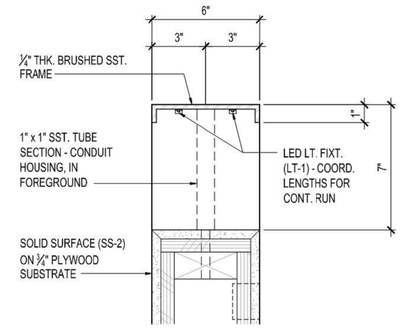


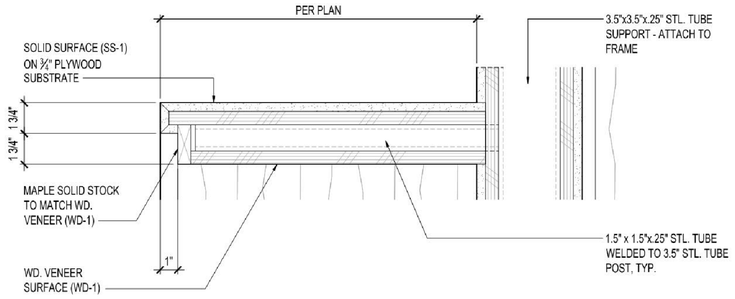
DETAIL 1 / A1.11
CHARGING STATION
SCALE: 3" = 1'-0"



DETAIL 2 / A1.11
EXISTING CHARGING STATION RETROFIT
SCALE: 6" = 1'-0"



DETAIL 3 / A1.11
CHARGING STATION
SCALE: 3" = 1'-0"



DETAIL 4 / A1.11
CHARGING STATION
SCALE: 3" = 1'-0"

GENERAL NOTES

1. ALL EXPOSED STEEL TO BE STAINLESS STEEL – BRUSHED FINISH, U.N.O. WELD JOINTS PER NOMMA FINISH #1 STANDARD.
2. PROVIDE ⅛" RADIUS EASED EDGE AT ALL SOLID SURFACE OUTSIDE CORNERS. FOLLOW MANUF. INSTRUCTIONS FOR SURFACE HANDLING, TREATMENT & FINISHING.
3. PROVIDE TIGHT, CLEAN, MITERED CORNERS AT ALL OUTSIDE EDGE CONDITIONS, U.N.O. PER SPECIFICATIONS AND AWI & INDUSTRY STANDARDS.

FINISH SCHEDULE

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

MT–1	METAL BASE
WD–1	WOOD VENEER
SS–1	SOLID SURFACE
SS–2	SOLID SURFACE
LT–1	LED LIGHT FIXTURE

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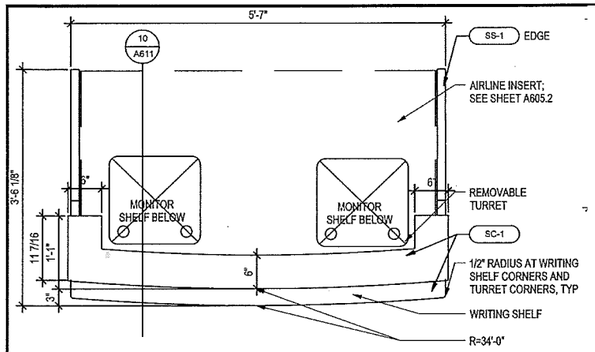
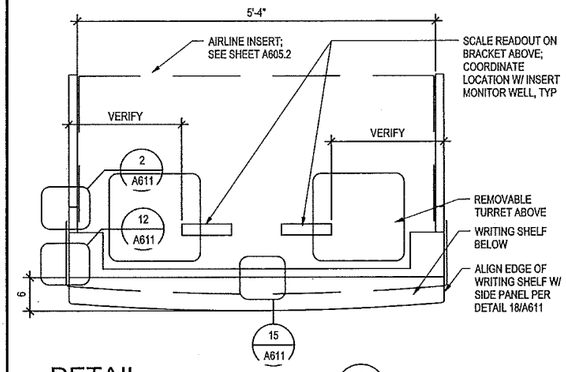


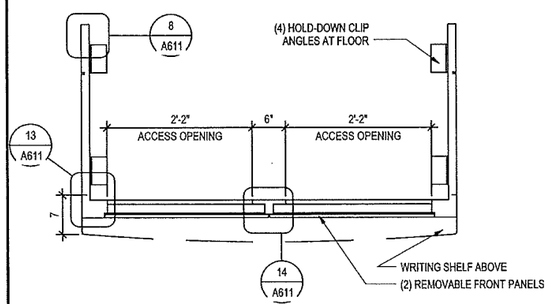
DETAIL 1/A610

AGENT PODIUM SHELL PLAN
SCALE: 1" = 1'-0"



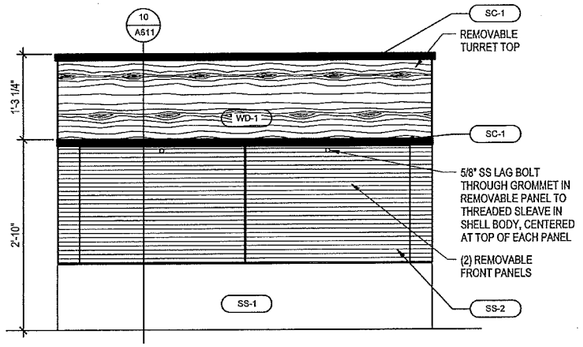
DETAIL 6/A610

AGENT PODIUM SHELL PLAN SECTION THROUGH TURRET
SCALE: 1" = 1'-0"



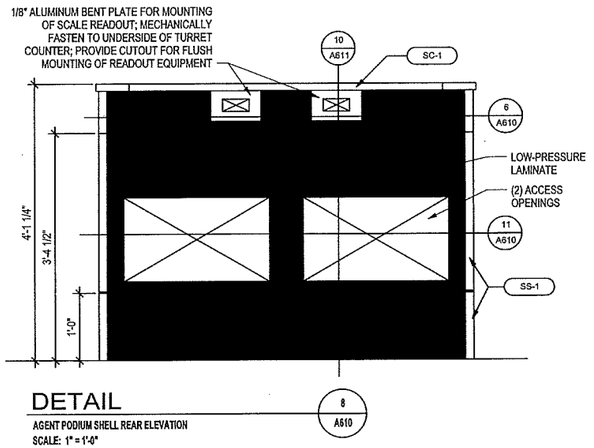
DETAIL 11/A610

AGENT PODIUM SHELL PLAN SECTION THROUGH OPENINGS
SCALE: 1" = 1'-0"



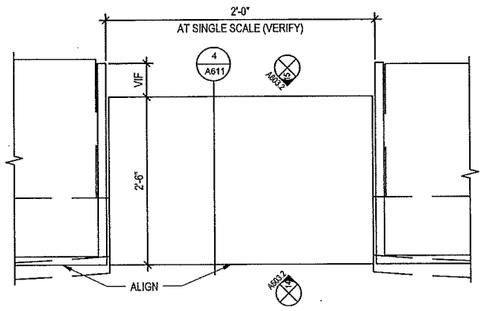
DETAIL 3/A610

AGENT PODIUM SHELL FRONT ELEVATION
SCALE: 1" = 1'-0"



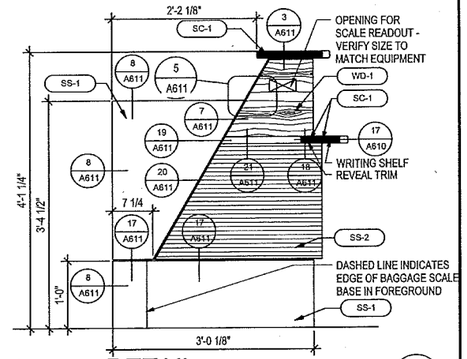
DETAIL 8/A610

AGENT PODIUM SHELL REAR ELEVATION
SCALE: 1" = 1'-0"



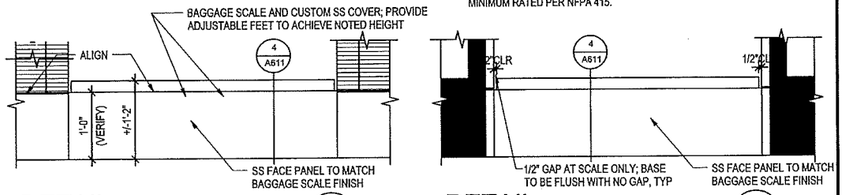
DETAIL 13/A610

BAGGAGE SCALE SHELL PLAN (SIM AT SINGLE SCALE)
SCALE: 1" = 1'-0"



DETAIL 5/A610

TICKETING AGENT PODIUM SHELL SIDE ELEVATION
SCALE: 1" = 1'-0"

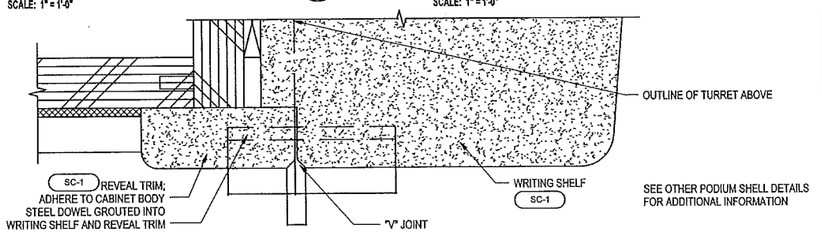


DETAIL 14/A610

BAGGAGE SCALE SHELL FRONT ELEVATION
SCALE: 1" = 1'-0"

DETAIL 15/A610

BAGGAGE SCALE SHELL REAR ELEVATION
SCALE: 1" = 1'-0"



DETAIL 17/A610

AGENT PODIUM SHELL REVEAL TRIM
SCALE: 12" = 1'-0"

AGENT PODIUM SHELL AND INSERT GENERAL NOTES

1. PROVIDE 1/8" RADIUS AT ALL FORMED/WELDED CORNERS OF STAINLESS STEEL SHEET LAMINATED PANELS.

2. EASE ALL EXPOSED STAINLESS STEEL FLAT BAR EDGES W/ 1/32" CORNER CHAMFER.

3. MECHANICALLY ATTACH ALL STAINLESS STEEL EDGES; NO VISUALLY EXPOSED SCREW HEADS OR ATTACHMENT ALLOWED

4. ALL PLYWOOD TO BE PREMIUM GRADE

5. ALL CONCEALED OR VISUALLY NON-EXPOSED SURFACES SHALL HAVE LOW-PRESSURE LAMINATE FINISH, UNLESS OTHERWISE NOTED

6. ALL ACCESS OPENING EDGES TO BE FACED W/ PLASTIC LAMINATE TO MATCH PANEL FACE, UNLESS OTHERWISE NOTED

7. EASE ALL EXPOSED AND ACCESSIBLE CABINET EDGES, INCLUDING ALL PLYWOOD AND OTHER PANELS, COUNTERTOPS, CABINET BODIES, ETC.

8. TYPICAL DRAWER CONSTRUCTION AND FINISHES SHALL BE AS FOLLOWS:
   - FRONT: 3/4" PLYWOOD W/ LAMINATE-FACED FINISH
   - BOX SIDES AND BACK: 1/2" PLYWOOD W/ CLEAR MATTE FINISH
   - BOX BOTTOM: 1/4" PLYWOOD W/ LAMINATE-FACED FINISH

9. REFER TO PORT OF SEATTLE CASEWORK STANDARDS MANUAL FOR FINISH SPECIFICATIONS

10. ALL MATERIALS (PLYWOOD, PARTICLE BOARD, PLAM) TO BE CLASS B MINIMUM RATED PER NFPA 415.

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PROJECT ENGR./ARCH:	BRETT HANSON
DESIGNED:	KDD
DRAWN BY:	TCU/YNJ
SCALE:	AS NOTED
DATE:	AUGUST 16, 2016
CHECKED BY:	KDD
CHECKED/APPROVED BY:	---

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

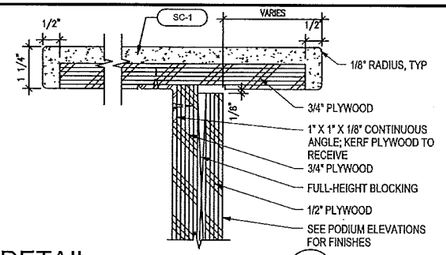
11049 REGISTERED ARCHITECT
Brett Joe Hanson
STATE OF WASHINGTON

PROJECT MANAGER:	PATTY BERGSTEDT
PROJECT ENGINEER:	---
DESIGN ENGINEER:	---
DRAFTER:	---
SCALE:	---
DATE:	AUGUST 16, 2016
CHECKED/APPROVED BY:	---

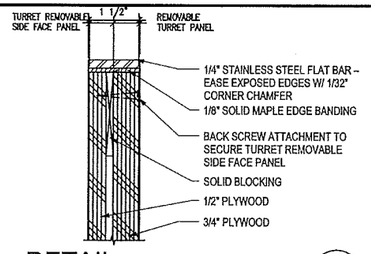
Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
ZONE 5 TICKET LOBBY MODIFICATIONS
SHEET TITLE: DETAILS
SERVICE DIRECTIVE 2

WORK PROJECT NO.	U00253
CONSULTANT'S NO.	
PORT OF SEATTLE NO.	STIA-SW1605 A6.10

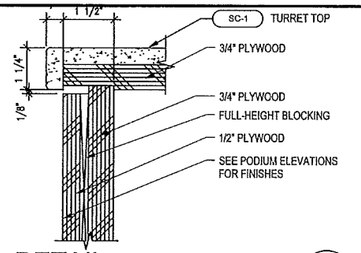
100% SUBMITTAL/ BID DOCUMENTS - AUGUST 16, 2016



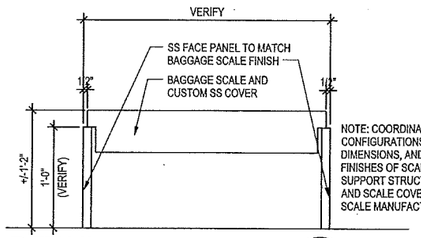
DETAIL 1 A611
AGENT PODIUM SHELL TURRET TOP
SCALE: 6" = 1'-0"



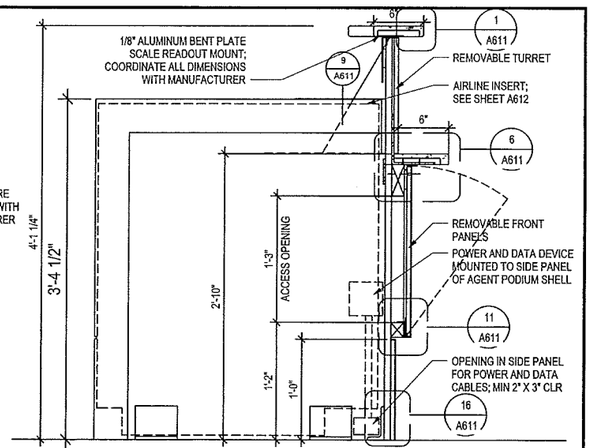
DETAIL 2 A611
AGENT PODIUM SHELL TURRET EDGE
SCALE: 6" = 1'-0"



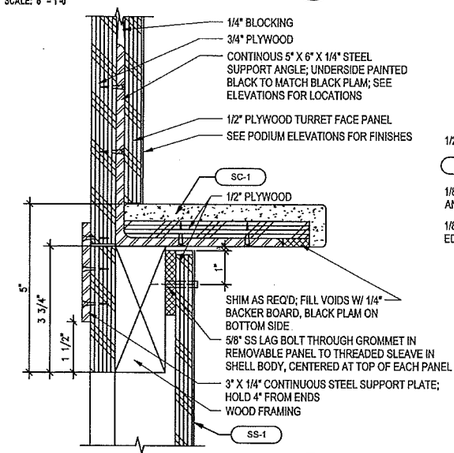
DETAIL 3 A611
AGENT PODIUM SHELL TURRET TOP SIDE
SCALE: 6" = 1'-0"



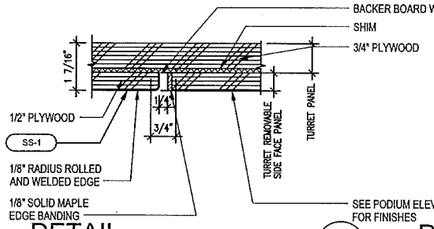
DETAIL 4 A610
BAGGAGE SCALE SHELL SECTION
SCALE: 1 1/2" = 1'-0"



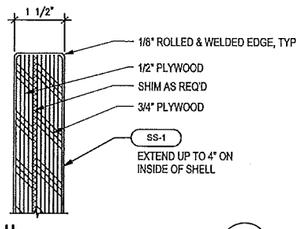
DETAIL 10 A610
AGENT PODIUM SHELL SECTION
SCALE: 1 1/2" = 1'-0"



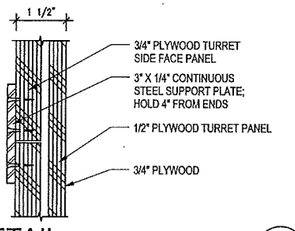
DETAIL 6 A611
AGENT PODIUM SHELL SHELF
SCALE: 6" = 1'-0"



DETAIL 7 A611
AGENT PODIUM SHELL TURRET AT SIDE PANEL
SCALE: 6" = 1'-0"



DETAIL 8 A611
AGENT PODIUM SHELL SIDE PANEL TOP (SIM AT PANEL END)
SCALE: 6" = 1'-0"



DETAIL 9 A611
AGENT PODIUM SHELL TURRET CONNECTION
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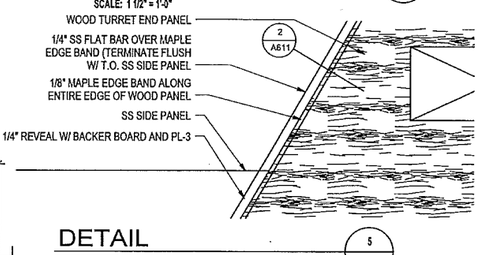
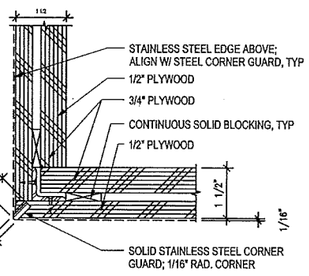
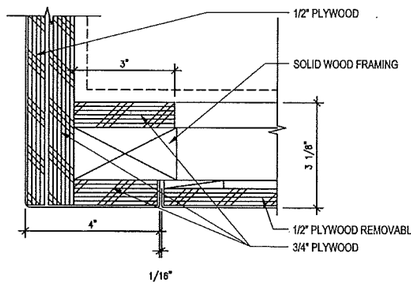


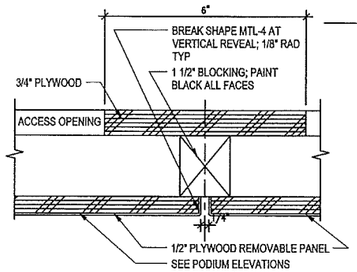
DETAIL 5 A611
AGENT PODIUM TURRET TRIM DETAIL
SCALE: 6" = 1'-0"



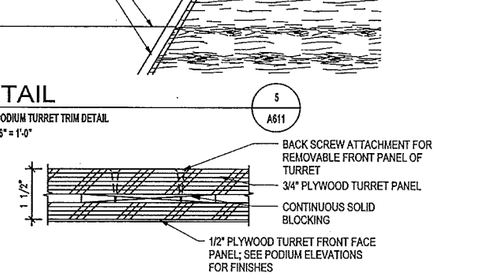
DETAIL 12 A611
AGENT PODIUM SHELL TURRET CORNER
SCALE: 6" = 1'-0"



DETAIL 13 A611
AGENT PODIUM SHELL CORNER
SCALE: 6" = 1'-0"

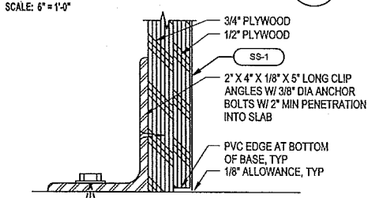


DETAIL 14 A611
AGENT PODIUM SHELL REMOVABLE FRONT PANEL
SCALE: 6" = 1'-0"

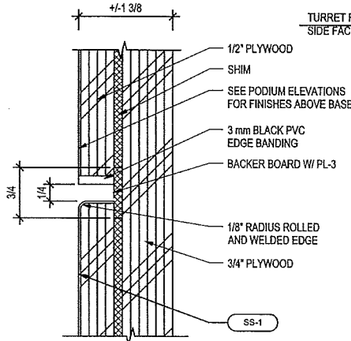


DETAIL 15 A611
AGENT PODIUM SHELL TURRET FRONT
SCALE: 6" = 1'-0"

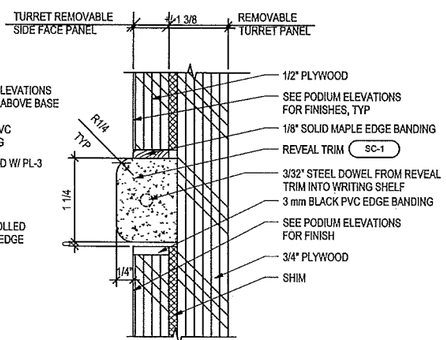
DETAIL 11 A611
AGENT PODIUM SHELL REMOVABLE PANEL AT BASE
SCALE: 6" = 1'-0"



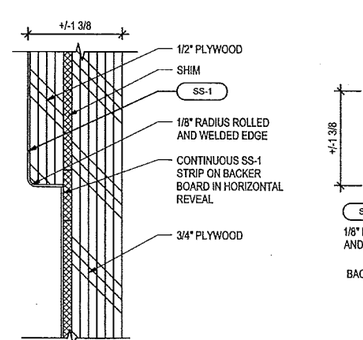
DETAIL 16 A611
AGENT PODIUM SHELL BASE
SCALE: 6" = 1'-0"



DETAIL 17 A611
AGENT PODIUM SHELL REVEAL AT BASE
SCALE: 12" = 1'-0"



DETAIL 18 A611
AGENT PODIUM SHELL REVEAL AT SHELF
SCALE: 12" = 1'-0"



DETAIL 19 A611
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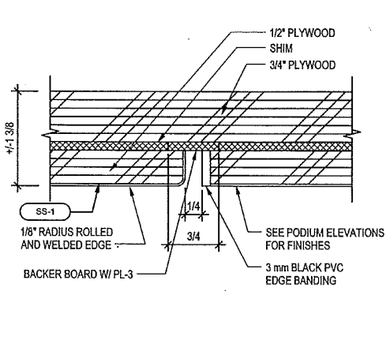
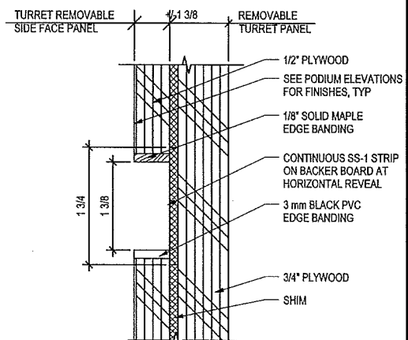
SCALE: 12" = 1'-0"



DETAIL 20 A611
AGENT PODIUM SHELL REVEAL AT SIDE PANEL
SCALE: 12" = 1'-0"



DETAIL 21 A611
AGENT PODIUM SHELL REVEAL ALIGNED W/ SHELF
SCALE: 12" = 1'-0"

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PROJECT ENGR./ARCH:	BRETT HANSON
DESIGNED:	KDD
DRAWN BY:	TCU/TNJ
SCALE:	AS NOTED
DATE:	AUGUST 16, 2016
CHECKED BY:	KDD
CHECKED/APPROVED BY:	--

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

11049 REGISTERED ARCHITECT
Brett Lee Hanson
STATE OF WASHINGTON

PROJECT MANAGER:	PATTY BERGSTEDT
PROJECT ENGINEER:	--
DESIGN ENGINEER:	--
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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
ZONE 5 TICKET LOBBY MODIFICATIONS
SHEET TITLE: DETAILS

WORK PROJECT NO.	U00253
CONSULTANT'S NO.	
PORT OF SEATTLE NO.	STIA-SW1605 A6.11
SERVICE DIRECTIVE	2

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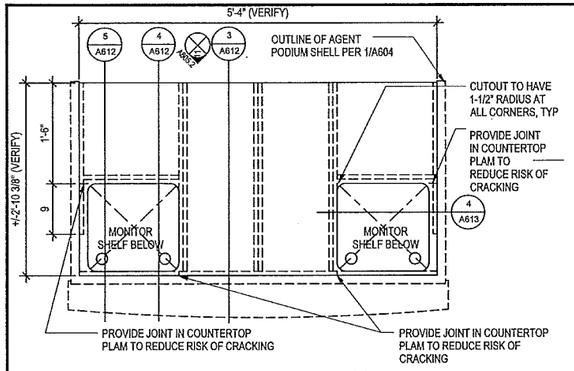
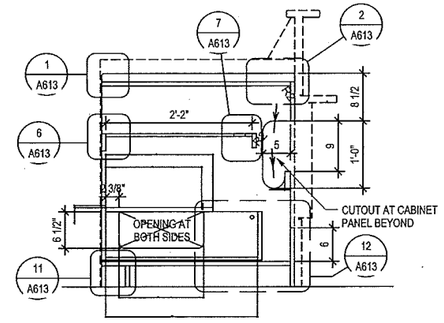


DETAIL

TICKETING INSERT PLAN
SCALE: 1" = 1'-0"

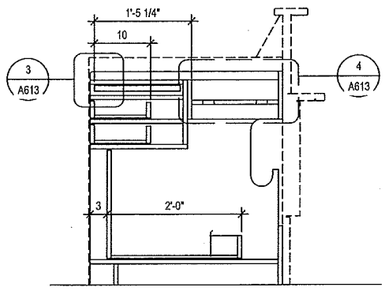
1 A612



DETAIL

TICKETING INSERT SECTION THROUGH PRINTERS
SCALE: 1" = 1'-0"

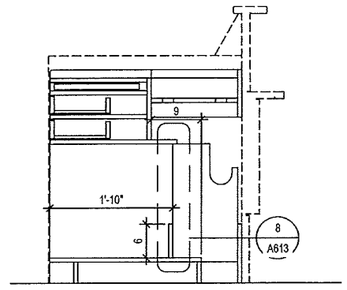
3 A612



DETAIL

TICKETING INSERT SECTION THROUGH DRAWERS
SCALE: 1" = 1'-0"

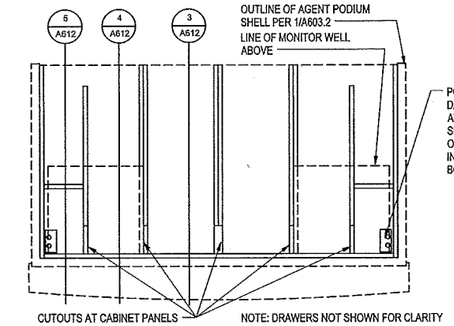
4 A612



DETAIL

TICKETING INSERT SECTION THROUGH STORAGE WELL
SCALE: 1" = 1'-0"

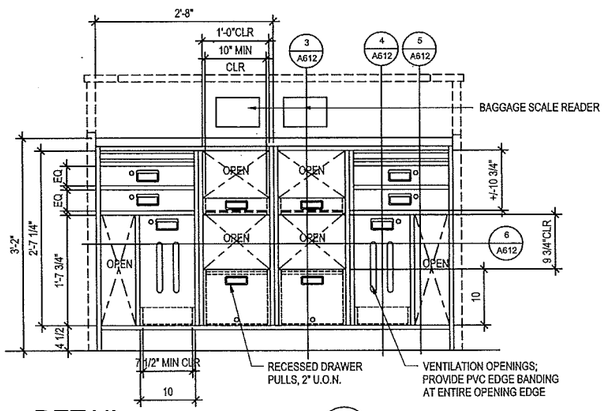
5 A612



DETAIL

TICKETING INSERT PLAN SECTION
SCALE: 1" = 1'-0"

6 A612



DETAIL

TICKETING INSERT ELEVATION
SCALE: 1" = 1'-0"

11 A612

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PROJECT MGR./ARCH:	BRETT HANSON
DESIGNER:	KDD
DRAWN BY:	TCU
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11049 REGISTERED ARCHITECT
Brett Lob Hanson
STATE OF WASHINGTON

PROJECT MANAGER:	PATTY BERGSTEDT
PROJECT ENGINEER:	---
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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
ZONE 5 TICKET LOBBY MODIFICATIONS
SHEET TITLE: DETAILS
SERVICE DIRECTIVE 2

WORK PROJECT NO.	U00253
CONSULTANT'S NO.	
PORT OF SEATTLE NO.	STIA-SW1605 A6.12

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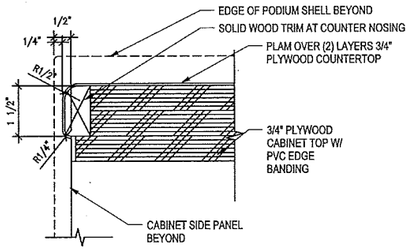

DETAIL 1 / A613
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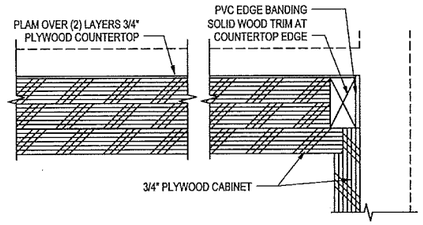
SCALE: 6" = 1'-0"



DETAIL 2 / A613
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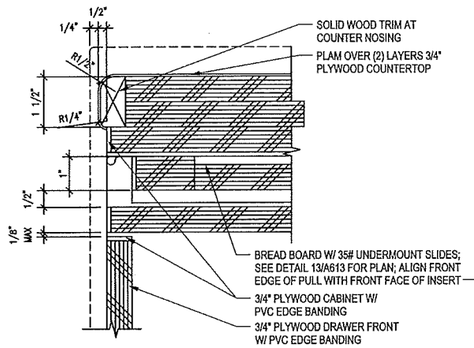

DETAIL 3 / A613
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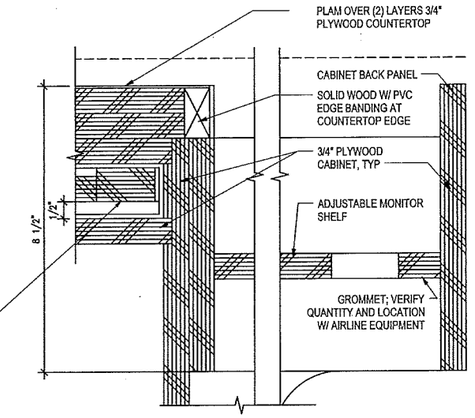
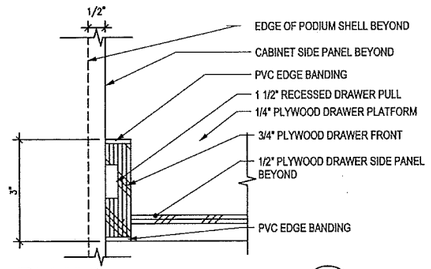


DETAIL 4 / A613
TICKETING INSERT MONITOR WELL
SCALE: 6" = 1'-0"



DETAIL 6 / A613
TICKETING INSERT DRAWER FACE
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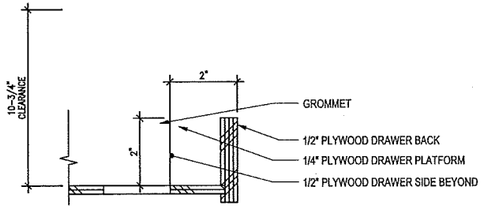

DETAIL 7 / A613
TICKETING INSERT DRAWER BACK
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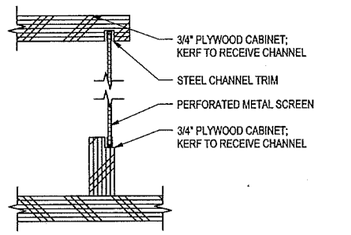

DETAIL 8 / A613
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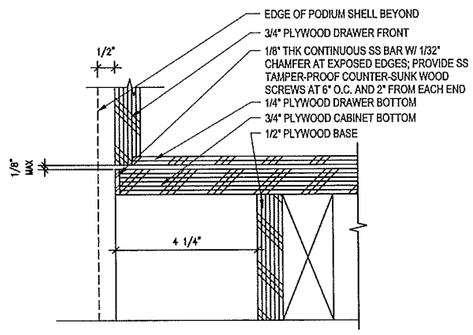
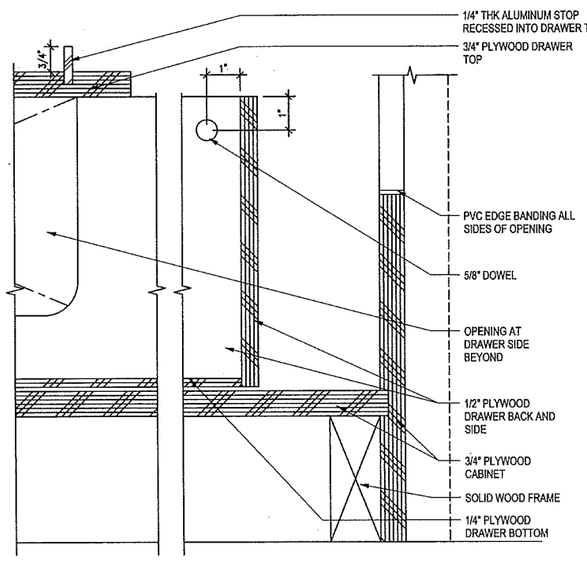
SCALE: 6" = 1'-0"



DETAIL 11 / A613
TICKETING INSERT BASE
SCALE: 6" = 1'-0"



DETAIL 12 / A613
TICKETING INSERT BACK
SCALE: 6" = 1'-0"

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DESIGNED: KDD
DRAWN BY: TCU
SCALE: AS NOTED
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REVISIONS

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11049 REGISTERED ARCHITECT Brett Beelman STATE OF WASHINGTON

PROJECT MANAGER: PATTY BERGSTEDT
PROJECT ENGINEER: --
DESIGN ENGINEER: --
DRAFTER: --
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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
ZONE 5 TICKET LOBBY MODIFICATIONS
SHEET TITLE: DETAILS
SERVICE DIRECTIVE 2

WORK PROJECT NO. U00253
CONSULTANT'S NO.
PORT OF SEATTLE NO. STIA-SW1605 A6.13

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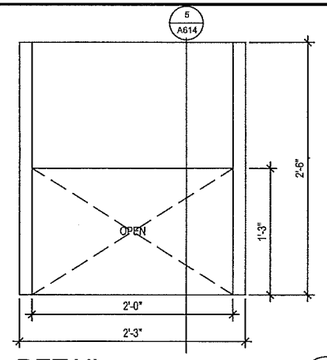
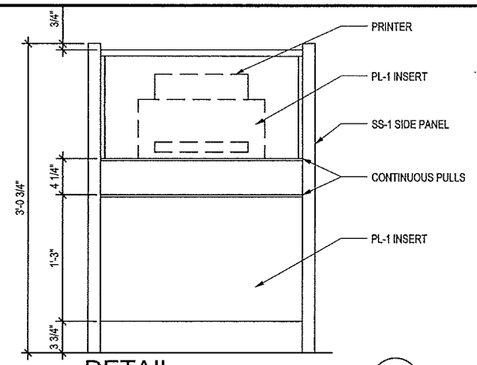


DETAIL 1 A614

PRINTER CABINET PLAN - CLOSED CONFIGURATION

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



DETAIL 2 A614

PRINTER CABINET FRONT ELEVATION - CLOSED CONFIGURATION

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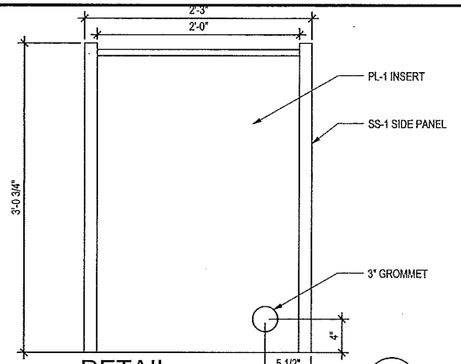
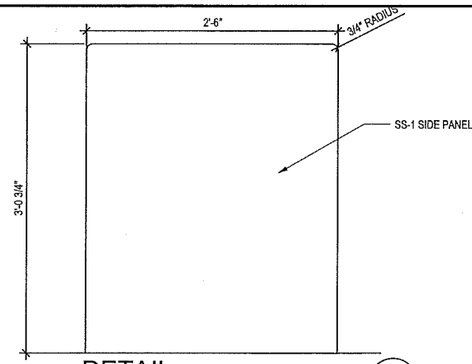


DETAIL 3 A614

PRINTER CABINET REAR ELEVATION

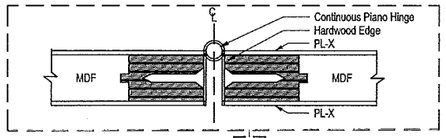
SCALE: 1 1/2" = 1'-0"

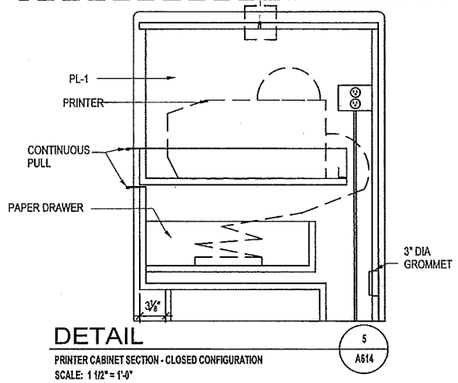


DETAIL 4 A614

PRINTER CABINET SIDE ELEVATION

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





DETAIL 5 A614

PRINTER CABINET SECTION - CLOSED CONFIGURATION

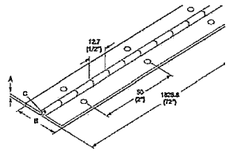
SCALE: 1 1/2" = 1'-0"

HÄFELE — Hinges and Stays

Furniture Hinges

Piano Hinge

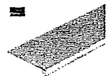
- Hinges are post-plated and free of machine oil
- Stainless steel is 304 grade with a bright annealed (BA) finish
- BA finish provides a shiny, more decorative look
- All holes are countersunk for screws
- Hinges can be cut by the customer to desired length
- Special order Hinges are available in a minimum quantity of 300 ft. (steel) and 150 ft. (stainless steel)



Continuous Hinge
For furniture, cabinetry and machine applications
Knuckle length: 12.7 mm (1/2")
Hole spacing: 50 mm (2")
Length: 1828.8 mm (72")

Material	Finish	Open Width (B)	Gauge (A)	Pin Diameter (C)	Item No.
steel	polished brass	37 (1 1/16")	1.02 (.04")	2.29 (.09")	351.09.513
steel	polished nickel	37 (1 1/16")	1.02 (.04")	2.29 (.09")	351.09.613
steel	polished brass	31.8 (1 1/4")	1.02 (.04")	2.29 (.09")	351.09.523
steel	polished nickel	31.8 (1 1/4")	1.02 (.04")	2.29 (.09")	351.09.623
stainless steel	stainless steel	31.8 (1 1/4")	.64 (.025")	2.54 (.1")	351.10.029
steel	polished brass	38.1 (1 1/2")	1.02 (.04")	2.29 (.09")	351.09.533
steel	polished nickel	38.1 (1 1/2")	1.02 (.04")	2.29 (.09")	351.09.633
stainless steel	stainless steel	38.1 (1 1/2")	.64 (.025")	2.54 (.1")	351.10.032
steel	polished brass	50.8 (2")	1.02 (.04")	2.29 (.09")	351.09.543
steel	polished nickel	50.8 (2")	1.02 (.04")	2.29 (.09")	351.09.643
stainless steel	stainless steel	50.8 (2")	.91 (.035")	2.54 (.1")	351.10.043

Packing: 5 pcs. (includes screws)



View Full-Size

PRINTER CABINET SPEC DATA

SEA AR SC-2
ZONE 1 PRINTER CABINETS
08.05.13

GENERAL NOTES AND SPECIFICATION DATA

1. (2) POS PINTER CABINETS, FREE-STANDING UNITS - COMPLY WITH AWS GRADE PREMIUM INCLUDING "RULES" SECTION, SECURE TO FLOOR WITH ADHESIVE SEALANT ALONG SIDE PANELS.
2. PORT OF SEATTLE, SEATTLE-TACOMA INTERNATIONAL AIRPORT, INTERNATIONAL WINDOW WALL - TICKET COUNTERS AND BAG BELT, MC-0317526, WORK PROJECT #104662, PROJECT MANUAL DIVISION
6 - WOOD AND PLASTICS, SPECIFICATIONS SECTION 06410 - CUSTOM CABINETS APPLIES.
3. "SIDE PANEL" REFERS TO STAINLESS STEEL AND PANELS OF PRINTER CABINET. "INSERT" REFERS TO LAMINATE-FACED CABINET BETWEEN SIDE PANELS. MECHANICALLY FIX INSERT TO SIDE PANELS.
4. SPECIALTY CABINET HARDWARE NOT SPECIFIED IN REFERENCE DOCUMENT LISTED IN #2:
   - 1½" PIANO HINGER, 304 STAINLESS STEEL CONTINUOUS FOR LENGTH OF LID
   - EPCO EDGE PULL, CONTINUOUS, CUSTOM LENGTH ANODIZED ALUMINUM, DP42-L-A (6' STOCK LENGTH)
   - ALUMINUM 90 DEGREE 1½" ANGLE STOCK, ⅛" LEG THICKNESS, MILL FINISH (4' STOCK LENGTH)
5. PROVIDE 3MM PVC EDGE BANDING FOR CABINET INSERT, SHELF FRONT, DRAWER FRONT, EXCEPT AS NOTED - EDGE BANDING TO MATCH ESI NORTH SEAT #2477E.
6. PLASTIC LAMINATE: PL-1, GP GRADE AS SPECIFIED FOR LOCATION, MATCH NEVAMAR MARITIME GRAY#S6027T.
7. SILENCERS AT HINGED CABINET TOP TO BE MECHANICALLY FASTED TYPE, ATTACH TO TOP EDGE OF INSERT SIDE PANELS.
8. EASE CORNERS AND EDGES AT CUT ENDS OF ALUMINUM PULLS AND TRIM 1/32".
9. MACHINE EASE CORNERS AND EDGES AT PLASTIC LAMINATE FACINGS EXCEPT WHERE PVC EDGE BANDING PROVIDED - FOLLOW AWS PREMIUM GRADE RULES SECTION.
10. PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR PRINTER CABINET ACCORDING TO #2 ABOVE.

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PROJECT ENGR./ARCH:	BRETT HANSON
DESIGNER:	KDD
DRAWN BY:	TCU
SCALE:	AS NOTED
DATE:	AUGUST 16, 2016
CHECKED BY:	KDD
CHECKED/APPROVED BY:	---

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

11049 REGISTERED ARCHITECT Brad Lee Hanson STATE OF WASHINGTON

PROJECT MANAGER:	PATTY BERGSTEDT
PROJECT ENGINEER:	---
DESIGN ENGINEER:	---
DRAWN BY:	---
SCALE:	---
DATE:	AUGUST 16, 2016
CHECKED/APPROVED BY:	---

Port of Seattle

PROJECT: SEA-TAC INTERNATIONAL AIRPORT
ZONE 5 TICKET LOBBY MODIFICATIONS

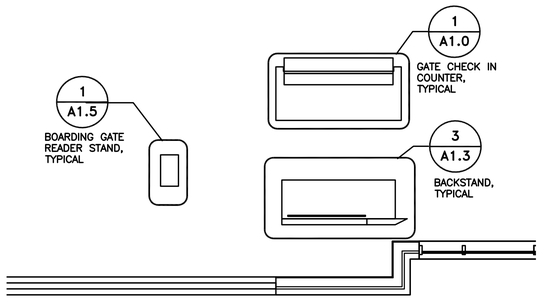
SHEET TITLE: DETAILS

SERVICE DIRECTIVE 2

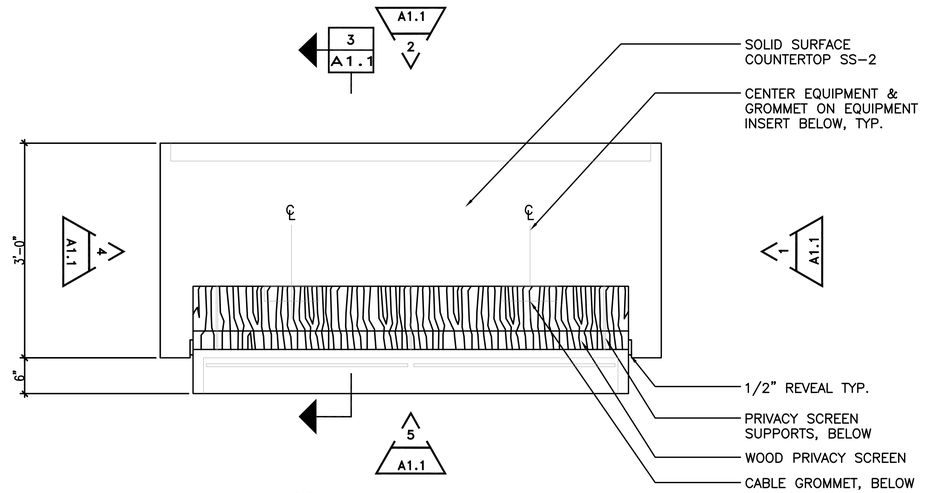
WORK PROJECT NO.	U00253
CONSULTANT'S NO.	
PORT OF SEATTLE NO.	STIA-SW1605 A6.14

100% SUBMITTAL/ BID DOCUMENTS - AUGUST 16, 2016

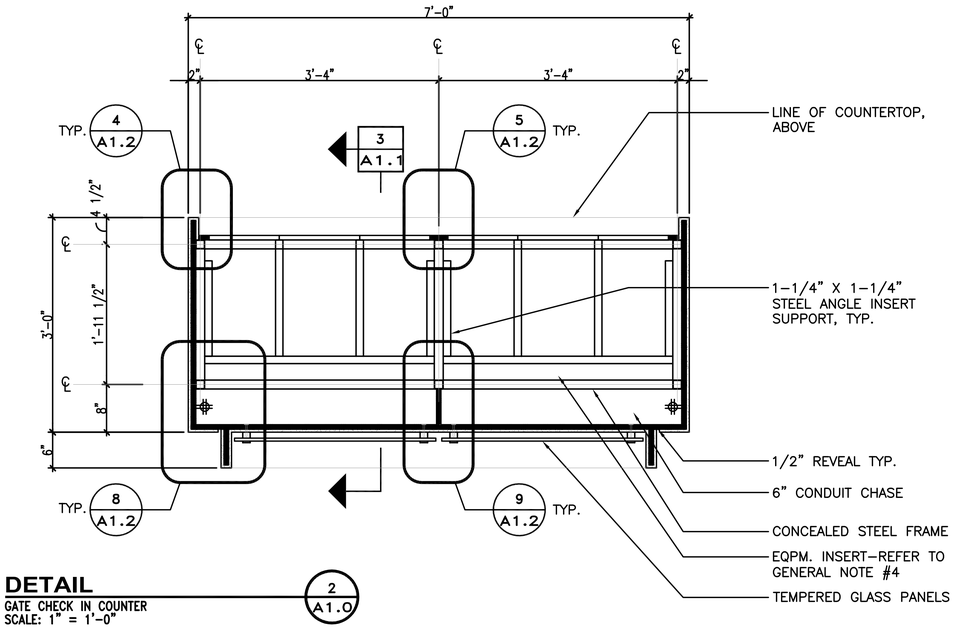
3D RENDERING
GATE CHECK–IN COUNTER BACKSTAND & BOARDING GATE READER STAND



ENLARGED PLAN
GATE CHECK – IN
SCALE: 1/4" = 1'–0"
3 A1.0



ENLARGED PLAN
GATE CHECK – IN COUNTER
SCALE: 1" = 1'–0"
1 A1.0



DETAIL
GATE CHECK IN COUNTER
SCALE: 1" = 1'–0"
2 A1.0

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PROJECT ENGR./ARCH: BRETT HANSON
DESIGNER:
DRAWN BY: TCU
SCALE: AS SHOWN
DATE:
CHECKED BY:
CHECKED/APPROVED BY:

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

PROJECT MANAGER: PATTY BERGSTEDT
PROJECT ENGINEER:
DESIGN ENGINEER:
DRAFTER:
SCALE:
DATE:
CHECKED/APPROVED BY:

Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
STANDARD HOLDROOM CASEWORK
SHEET TITLE: CASEWORK DETAILS
GATE CHECK IN COUNTER

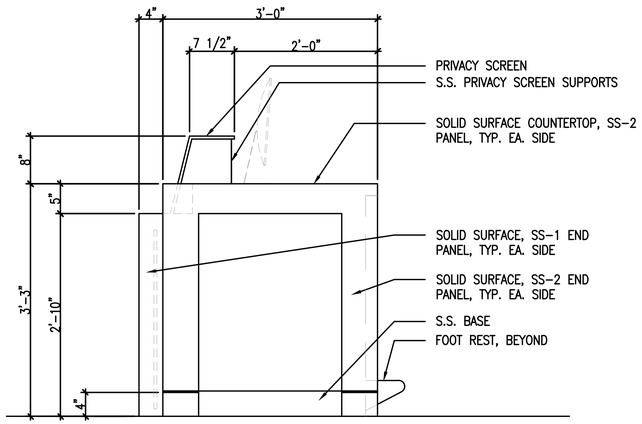
WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO.
A1.0

PERMIT SET

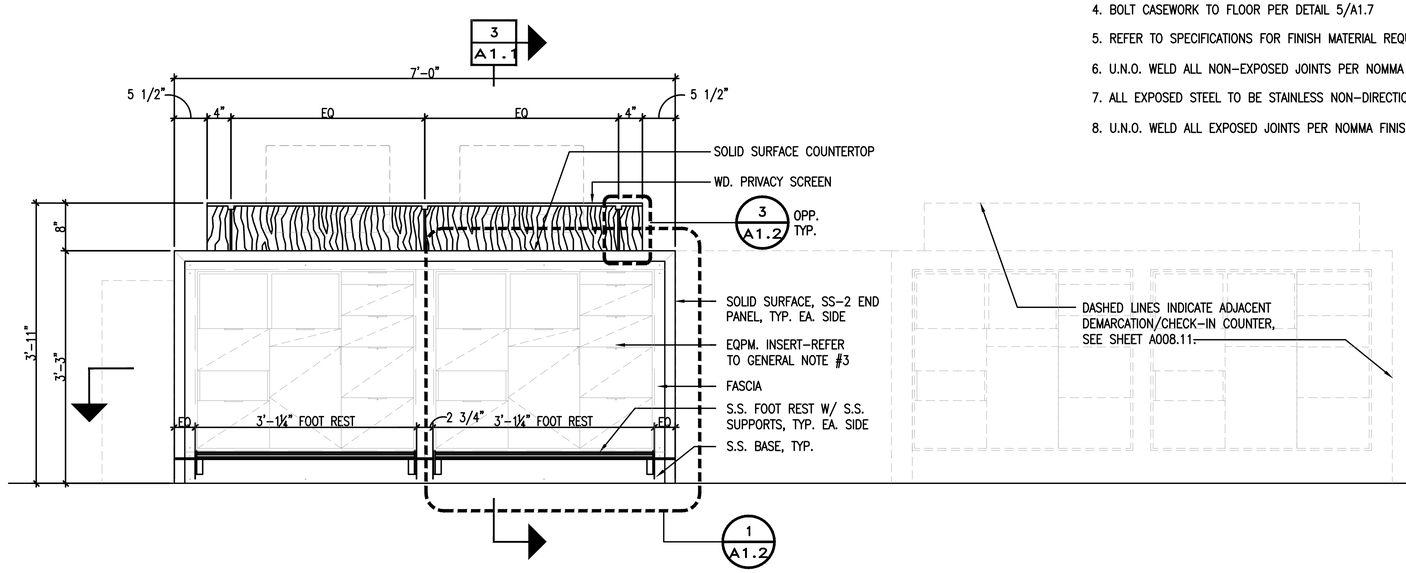
GENERAL NOTES

CONTRACTORS:

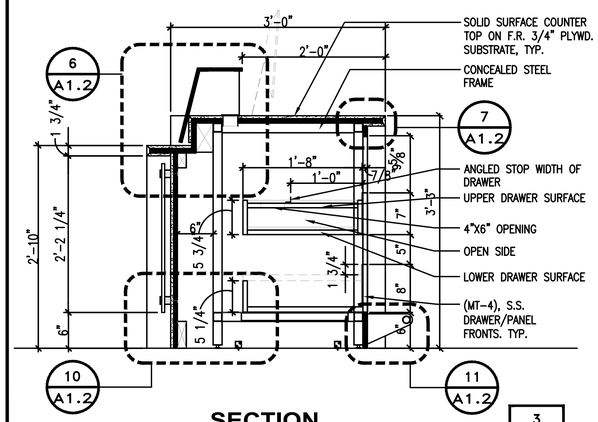
1. G.C. TO CONFIRM AND COORDINATE ALL EQUIPMENT SIZES, CLEARANCES AND ACCESS REQUIREMENTS PRIOR TO FABRICATION.
2. REFER TO FLOOR PLAN FOR GATE CHECK-IN COUNTER/BGR STAND ORIENTATION.
3. ALL CASEWORK SHALL BE CONSTRUCTED OF FIRE RESISTANT TREATED PLYWOOD WITH ALL SURFACES COVERED WITH PLASTIC LAMINATE OR SOLID SURFACE MATERIAL MEETING CLASS B OR HIGHER WHEN TESTED IN ACCORDANCE WITH ASTM E84.
4. BOLT CASEWORK TO FLOOR PER DETAIL 5/A1.7
5. REFER TO SPECIFICATIONS FOR FINISH MATERIAL REQUIREMENTS.
6. U.N.O. WELD ALL NON-EXPOSED JOINTS PER NOMMA FINISH #2 STANDARD.
7. ALL EXPOSED STEEL TO BE STAINLESS NON-DIRECTIONAL FINISH.
8. U.N.O. WELD ALL EXPOSED JOINTS PER NOMMA FINISH #1 STANDARD.



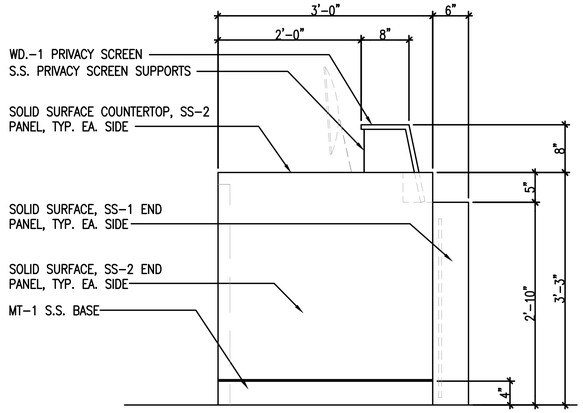
SIDE ELEVATION 1 A1.1
SCALE:1"=1'-0"



INTERIOR ELEVATION 2 A1.1
SCALE:1"=1'-0"



SECTION
SCALE: 1"=1'-0"
3 A1.1



SIDE ELEVATION 4 A1.1
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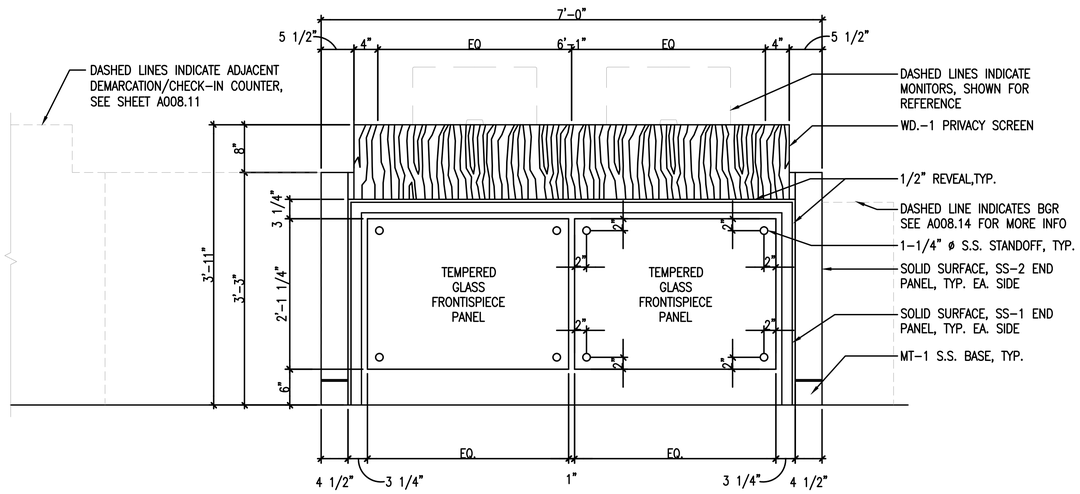

FRONT ELEVATION 5 A1.1
SCALE:1"=1'-0"

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PROJECT DIVR./ARCH:	BRETT HANSON
DESIGNER:	
DRAWN BY:	TCU
SCALE:	AS SHOWN
DATE:	
CHECKED BY:	
CHECKED/APPROVED BY:	

REVISIONS

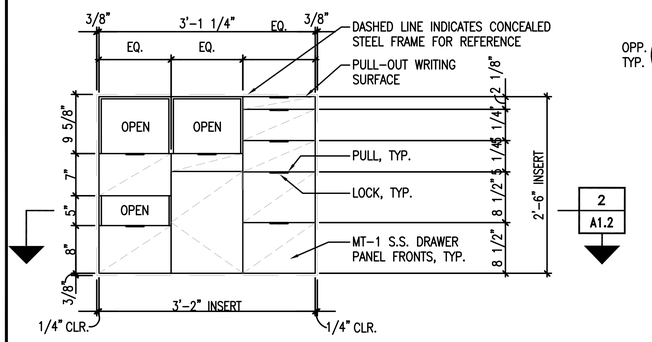
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

PROJECT MANAGER:	PATTY BERGSTEDT
PROJECT ENGINEER:	
DESIGN ENGINEER:	
DRAFTER:	
SCALE:	
DATE:	
CHECKED/APPROVED BY:	

Port of Seattle
SEA-TAC INTERNATIONAL AIRPORT
PROJECT: STANDARD HOLDROOM CASEWORK
SHEET TITLE: CASEWORK DETAILS
GATE CHECK IN COUNTER

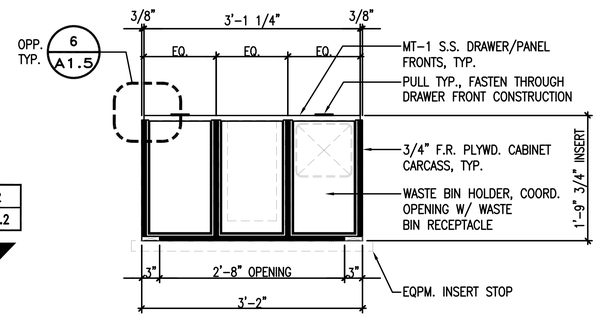
WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO.
A1.1

PERMIT SET



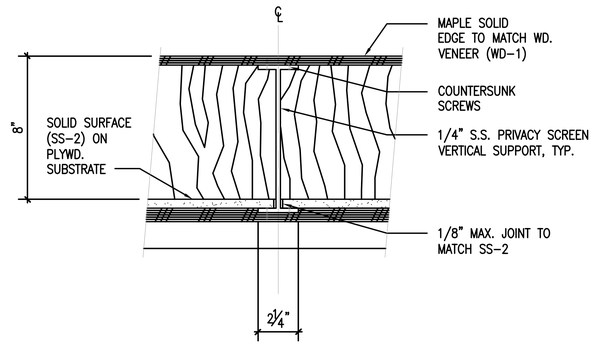
DETAIL
CHECK-IN PODIUM INSERT TYPE 1
SCALE: 1" = 1'-0"

1 / A1.2



SECTION
CHECK-IN PODIUM INSERT TYPE 1
1"=1'-0"

2 / A1.2



GENERAL NOTES

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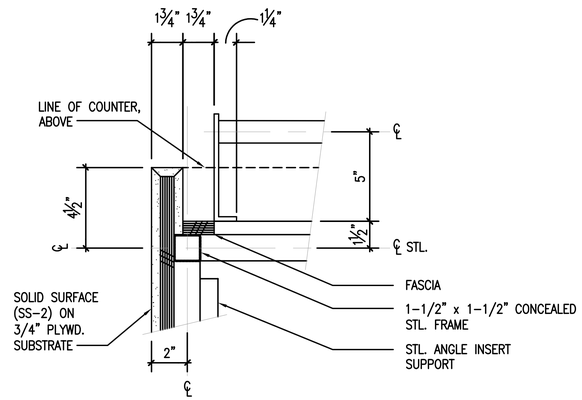
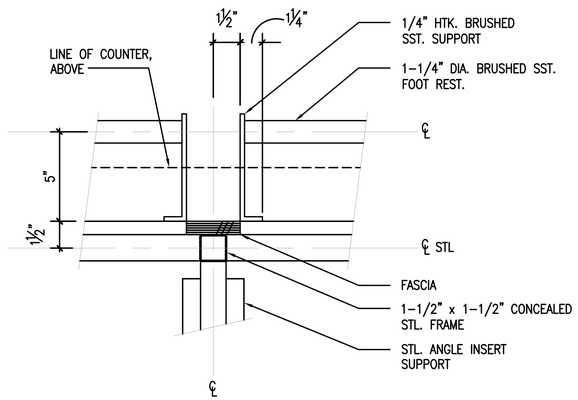


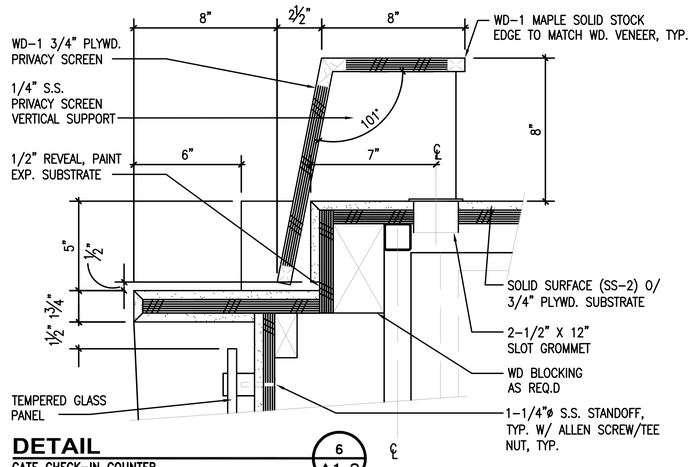
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

4 / A1.2



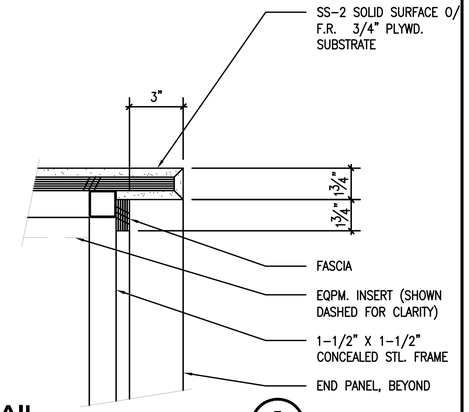
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

5 / A1.2



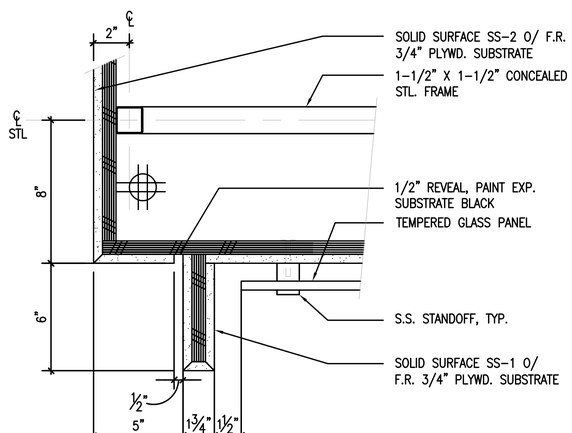
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

6 / A1.2



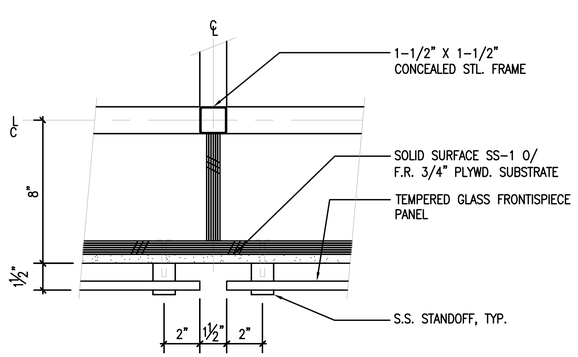
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

7 / A1.2



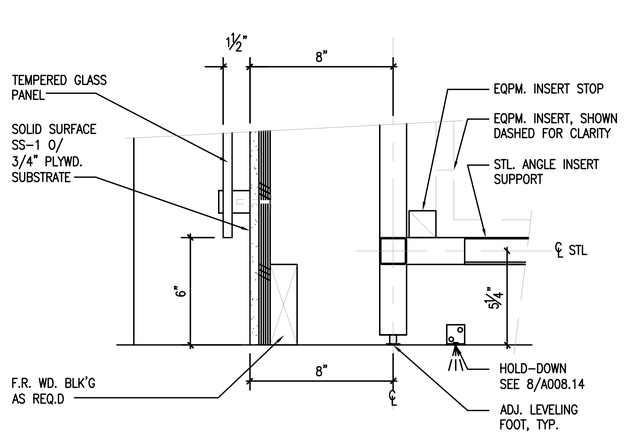
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

8 / A1.2



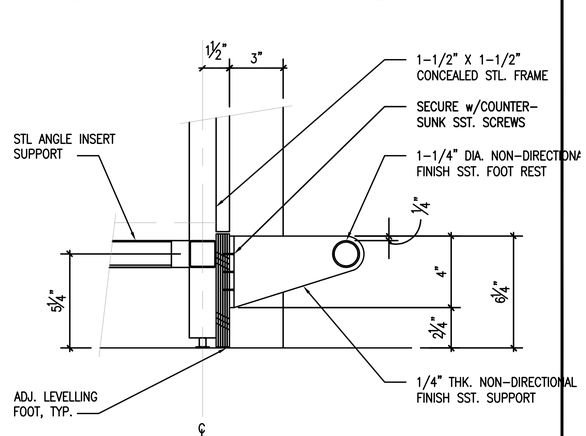
DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

9 / A1.2



DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

10 / A1.2



DETAIL
GATE CHECK-IN COUNTER
SCALE: 3" = 1'-0"

11 / A1.2

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PROJECT ENGR/ARCH: BRETT HANSON
DESIGNER:
DRAWN BY: TCU
SCALE: AS SHOWN
DATE:
CHECKED BY:
CHECKED/APPROVED BY:

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

PROJECT MANAGER: PATTY BERGSTEDT
PROJECT ENGINEER:
DESIGN ENGINEER:
DRAFTER:
SCALE:
DATE:
CHECKED/APPROVED BY:

Port of Seattle
SEA-TAC INTERNATIONAL AIRPORT
PROJECT: STANDARD HOLDROOM CASEWORK
SHEET TITLE: CASEWORK DETAILS GATE CHECK IN COUNTER

WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO. A1.2

PERMIT SET

GENERAL NOTES

CONTRACTORS:

1. G.C. TO CONFIRM AND COORDINATE ALL EQUIPMENT SIZES, CLEARANCES AND ACCESS REQUIREMENTS PRIOR TO FABRICATION.
2. REFER TO FLOOR PLAN FOR GATE CHECK–IN COUNTER/BGR STAND ORIENTATION.
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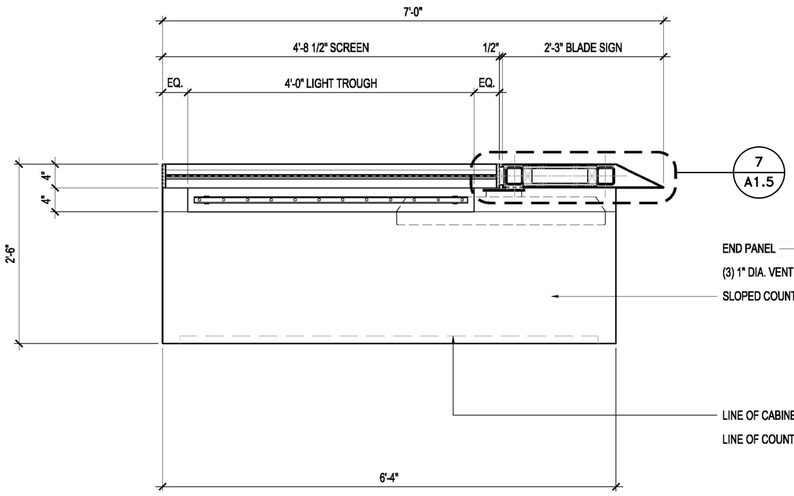
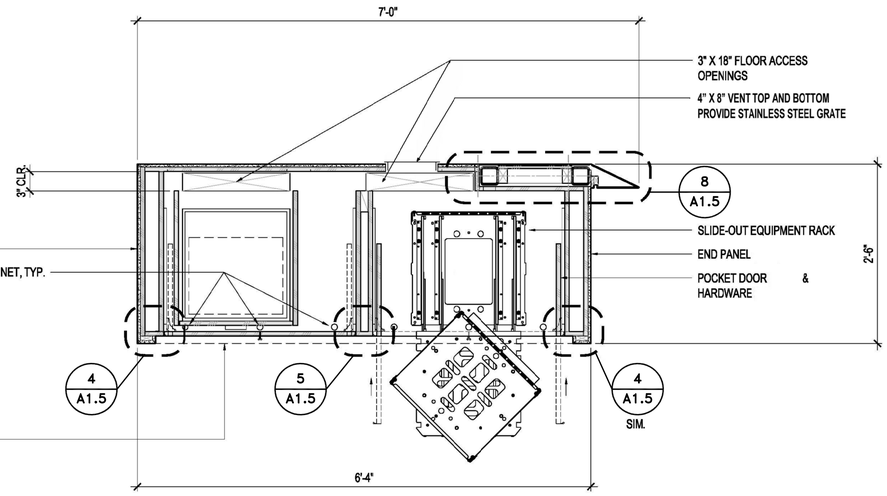
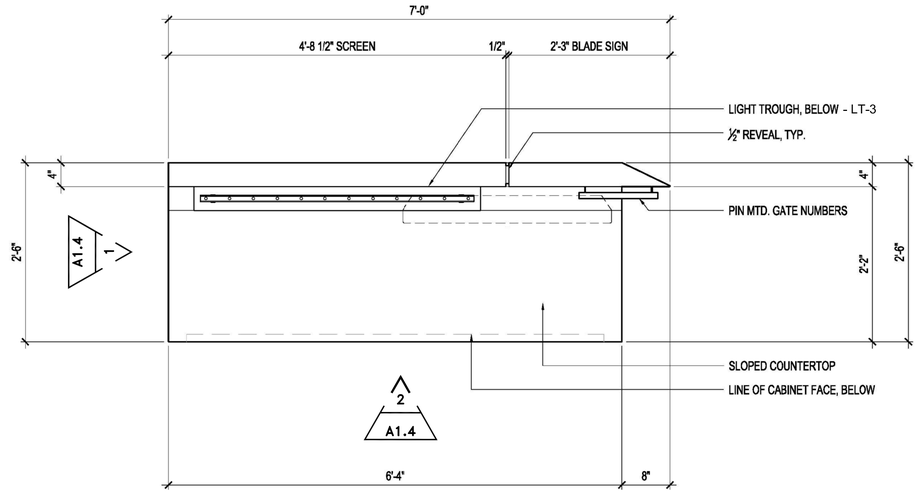


DETAIL 1 / A1.3
BACKSTAND – RIGHT PYLON
SCALE: 1" = 1'–0"
LEFT PYLON OPPOSITE SIMILAR



DETAIL 2 / A1.3
BACKSTAND – RIGHT PYLON
SCALE: 1" = 1'–0"
LEFT PYLON OPPOSITE SIMILAR



ENLARGED PLAN 3 / A1.3
BACKSTAND – RIGHT PYLON
SCALE: 1" = 1'–0"
LEFT PYLON OPPOSITE SIMILAR

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PROJECT DSGN./ARCH: BRETT HANSON
DESIGNER:
DRAWN BY: TCU
SCALE: AS SHOWN
DATE:
CHECKED BY:
CHECKED/APPROVED BY:

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

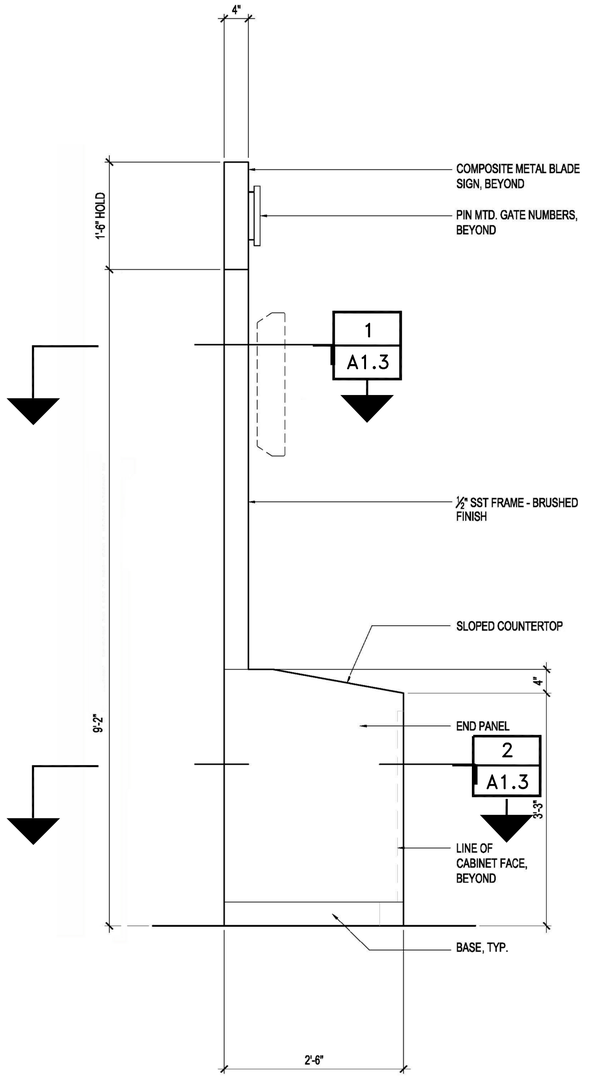
PROJECT MANAGER: PATTY BERGSTEDT
PROJECT ENGINEER:
DESIGN ENGINEER:
DRAFTER:
SCALE:
DATE:
CHECKED/APPROVED BY:

Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
STANDARD HOLDROOM CASEWORK

SHEET TITLE: CASEWORK DETAILS BACKSTAND

WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO.
A1.3

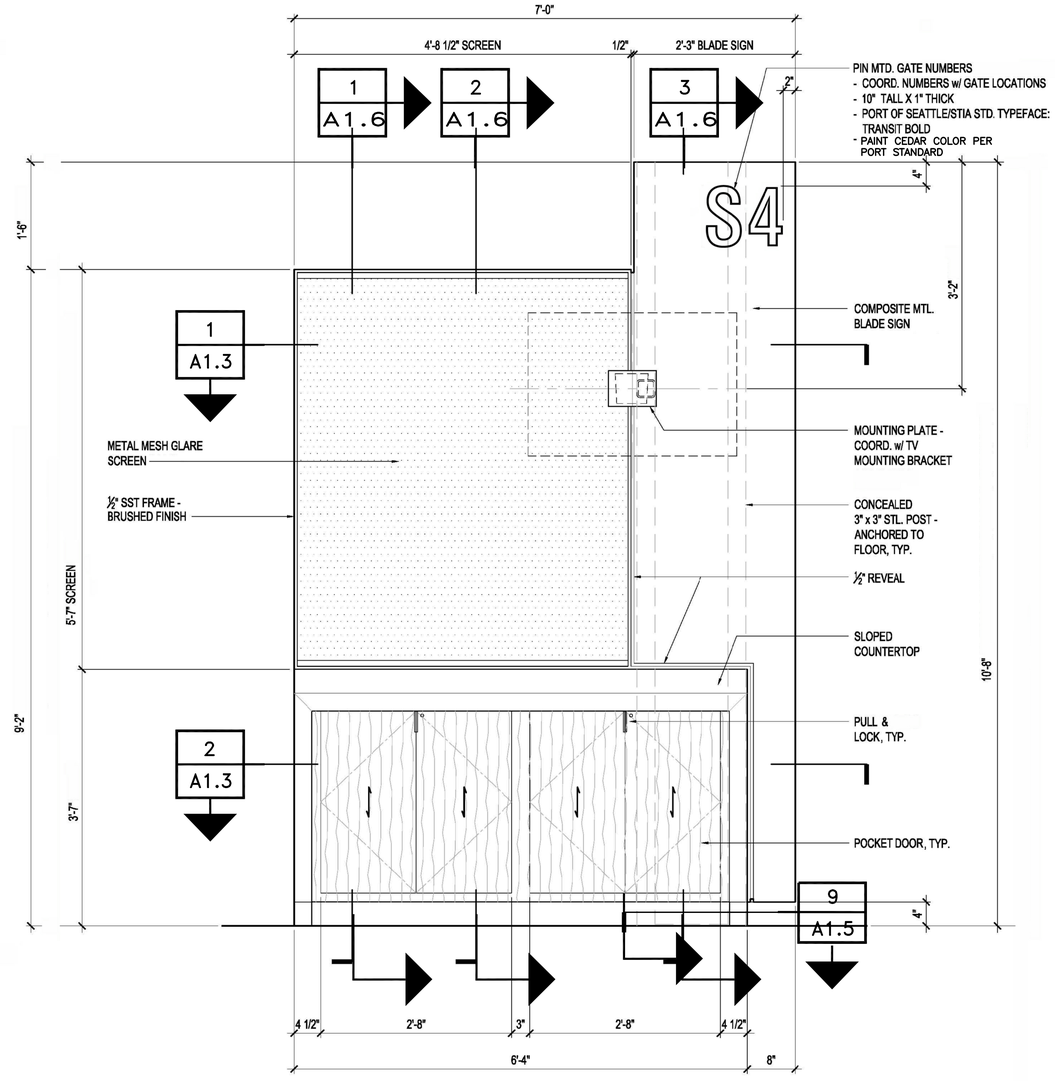
PERMIT SET



ELEVATION

BACKSTAND
SCALE: 1" = 1'–0"

1 / A1.4



ELEVATION

BACKSTAND
SCALE: 1" = 1'–0"

2 / A1.4

GENERAL NOTES

CONTRACTORS:

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DESIGNER:
DRAWN BY: TCU
SCALE: AS SHOWN
DATE:
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CHECKED/APPROVED BY:

REVISIONS

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PROJECT ENGINEER:
DESIGN ENGINEER:
DRAFTER:
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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
STANDARD HOLDROOM CASEWORK

SHEET TITLE: CASEWORK DETAILS BACKSTAND

WORK PROJECT NO.
CONSULTANT'S NO.
PORT OF SEATTLE NO.
A1.4

PERMIT SET

GENERAL NOTES

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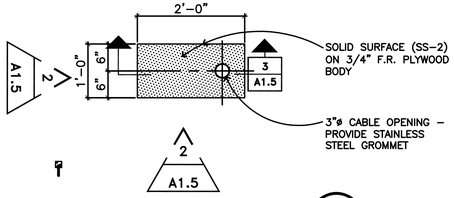
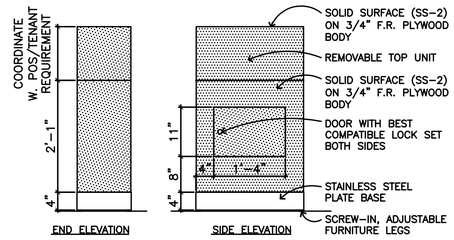
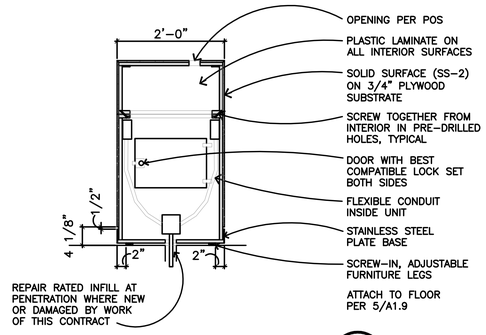


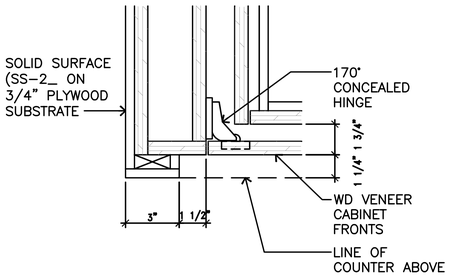
DETAIL 1 A1.5
BOARDING GATE READER STAND
SCALE: 3/4" = 1'-0"



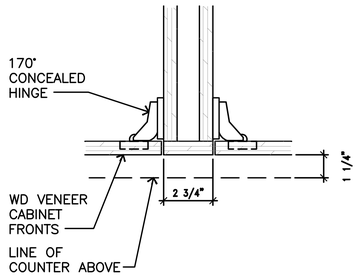
ELEVATION 2 A1.5
BOARDING GATE READER STAND
SCALE: 3/4" = 1'-0"



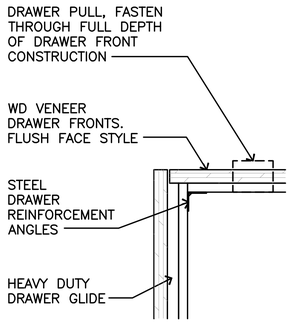
DETAIL 3 A1.5
BOARDING GATE READER STAND
SCALE: 3/4" = 1'-0"



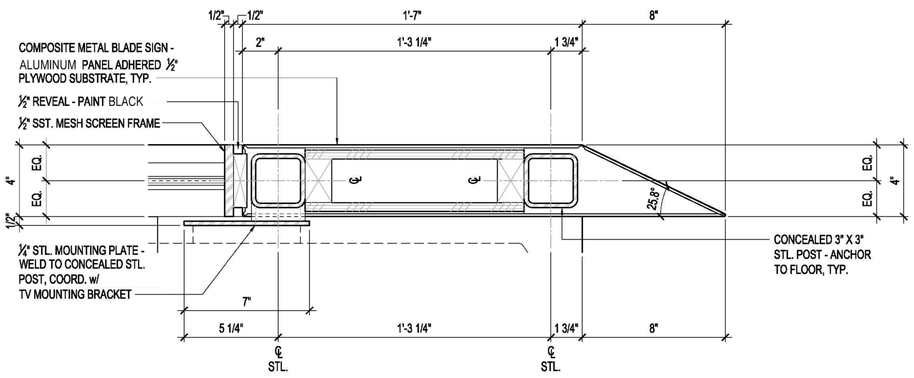
DETAIL 4 A1.5
BACKSTAND
SCALE: 3" = 1'-0"



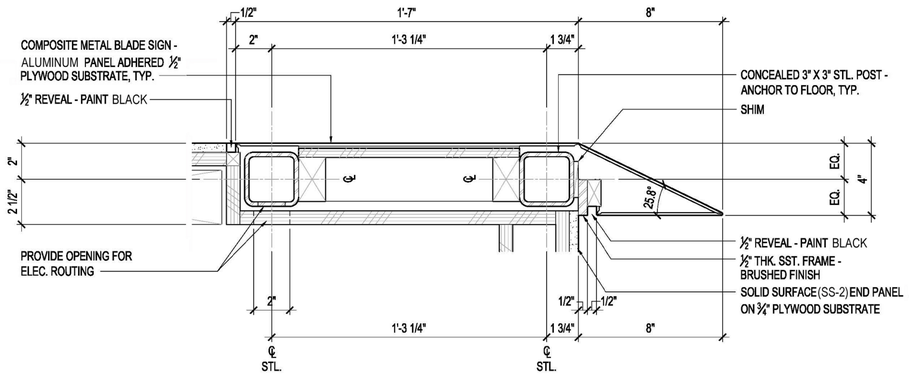
DETAIL 5 A1.5
BACKSTAND
SCALE: 3" = 1'-0"



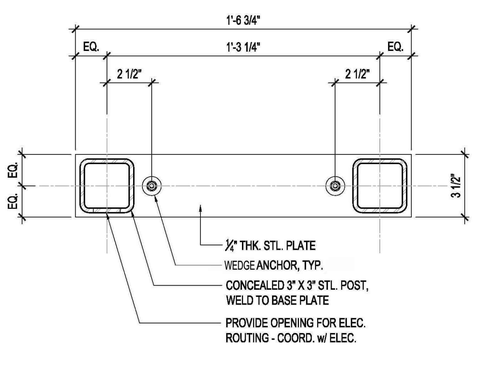
DETAIL 6 A1.5
DRAWER
SCALE: 3" = 1'-0"



DETAIL 7 A1.5
BACKSTAND
SCALE: 3" = 1'-0"



DETAIL 8 A1.5
BACKSTAND
SCALE: 3" = 1'-0"



DETAIL 9 A1.5
BACKSTAND
SCALE: 3" = 1'-0"

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DESIGNER:	
DRAWN BY:	TCU
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CHECKED/APPROVED BY:	

REVISIONS

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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
STANDARD HOLDROOM CASEWORK

SHEET TITLE: **CASEWORK DETAILS**
GATE CHECK IN COUNTER AND BACKSTAND

WORK PROJECT NO.	
CONSULTANT'S NO.	
PORT OF SEATTLE NO.	A1.5

PERMIT SET

GENERAL NOTES

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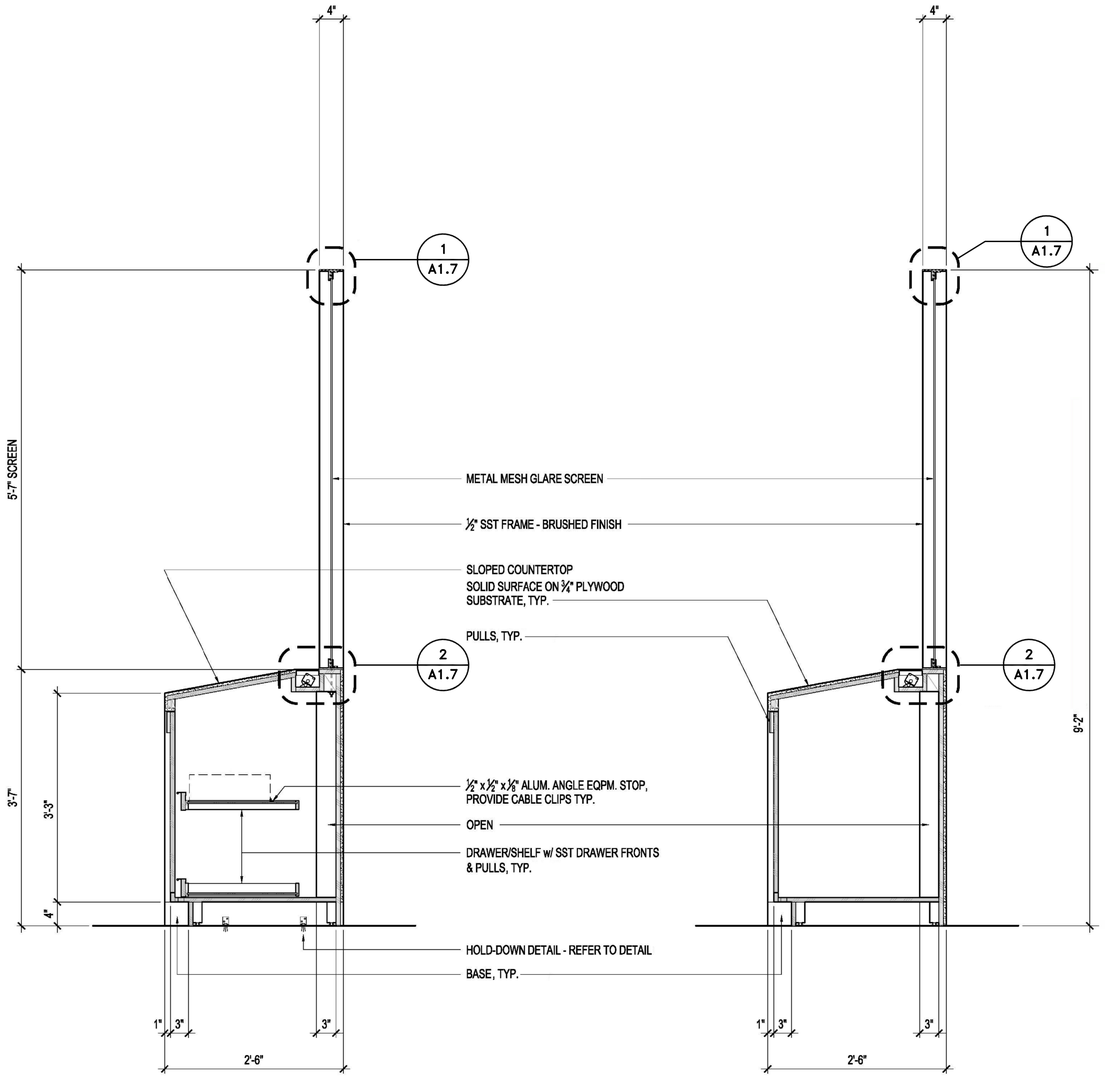
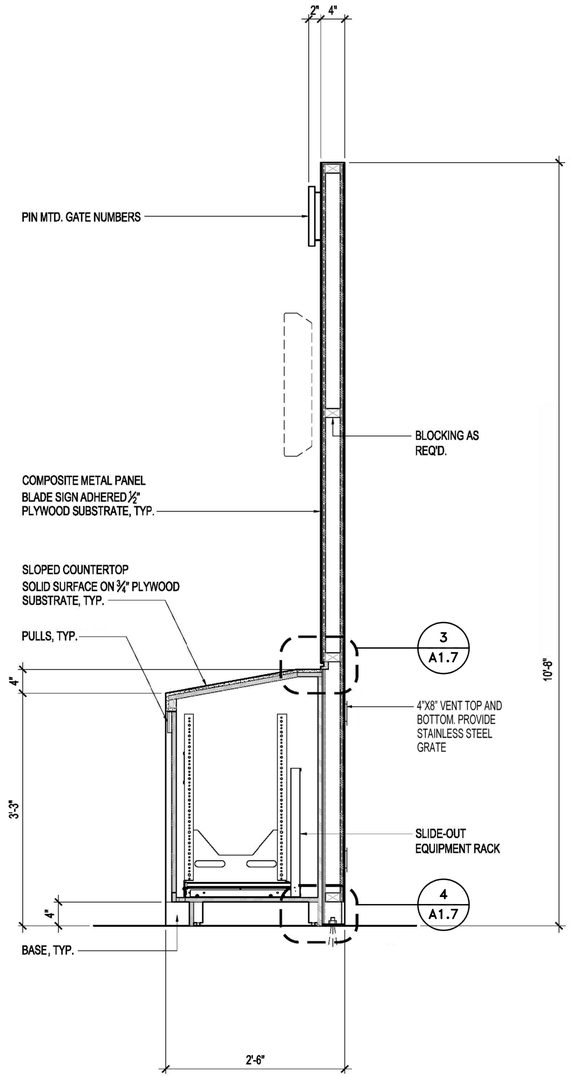


SECTION 1
BACKSTAND
SCALE: 1" = 1'–0" A1.6

SECTION 2
BACKSTAND
SCALE: 1" = 1'–0" A1.6



SECTION 3
BACKSTAND
SCALE: 1" = 1'–0" A1.6

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Port of Seattle
PROJECT: SEA-TAC INTERNATIONAL AIRPORT
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SHEET TITLE: CASEWORK DETAILS
BACKSTAND

WORK PROJECT NO.
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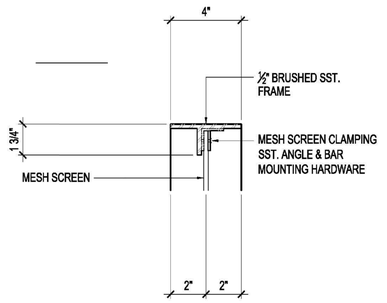
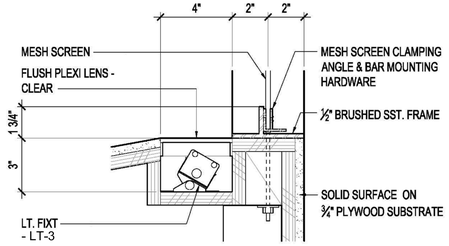
A1.6

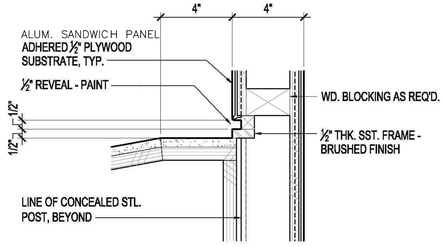
PERMIT SET



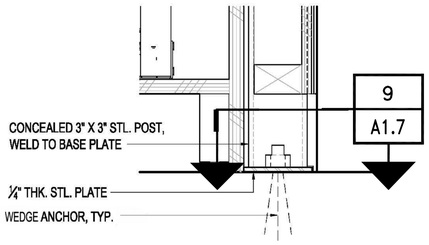
DETAIL 1 / A1.7
BACKSTAND
SCALE: 3" = 1'-0"



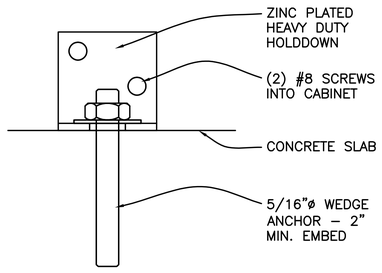
DETAIL 2 / A1.7
BACKSTAND
SCALE: 3" = 1'-0"



DETAIL 3 / A1.7
BACKSTAND
SCALE: 3" = 1'-0"



DETAIL 4 / A1.7
BACKSTAND
SCALE: 3" = 1'-0"



DETAIL 5 / A1.7
CASEWORK HOLD DOWN
SCALE: FULL

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Port of Seattle
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SHEET TITLE: CASEWORK DETAILS
GATE CHECK IN COUNTER

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PORT OF SEATTLE NO.
A1.7

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