

# **Seattle-Tacoma International Airport Rules for Airport Construction**

Final Draft Pending Legal Review



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## **ACRONYMS AND ABBREVIATIONS**

ABD	Airport Building Department
ADR	Airport Dining and Retail
A/E	Architect/Engineer
AMA	Airport Movement Area
AOA	Airport Operations Area
ARC	Architectural Review Committee
AV	Aviation
CAD	Computer Aided Design (also CADD)
CIP	Capital Improvement Project
COPS	Application for Certification of Port Standards
DCS	Document Control Specialist
DDC	Direct Digital Control
ILA	Interlocal Agreement
F & I	Facilities and Infrastructure
FAA	Federal Aviation Administration
HVAC	Heating Ventilations and Air Conditioning
LOB	Line of Business
MUST	Mechanical Utilities System Team
NTP	Notice to Proceed
PCS	Port Construction Services
PEST	Proactive Electrical Systems Team
PM	Project Manager
Port	Port of Seattle
RAC	Rules for Airport Construction
RE	Resident Engineer
RMM	Regulated Material Management
START	SeaTac Telecommunications Architecture Review Team
STIA	Seattle-Tacoma International Airport



## **1. GENERAL INFORMATION**

### **A. Introduction**

The Rules for Airport Construction (RAC) apply to all construction projects at Seattle Tacoma International Airport (Airport or STIA) and properties associated with the Airport, whether implemented by the Port of Seattle (Port) or one of its tenants. The Port owns and operates the Airport. See Section I.C. Tenant Improvement Projects for additional information for tenant improvement projects..

### **B. Purpose and Scope**

The Port is committed to developing and maintaining safe, pleasant, and efficient facilities, which meet all environmental requirements for the public and for the people working in and adjacent to the Airport. This document provides guidance and direction in executing construction. Where this document is general rather than specific, Contractors shall refer to specific project documents and adhere to standard practices, materials, and workmanship.

These guidelines apply, within the legal boundaries of Seattle-Tacoma International Airport and Port of Seattle properties associated with the airport, to the construction, alteration, repair, relocation or demolition of any facility, its structure, exterior or interior finishes; filling or grading of land; landscaping; construction of pavement; installation of water, storm drainage, sewer and industrial waste lines; power and control systems and other underground facilities; installation of heating, ventilating, air conditioning systems; conveying and mechanical systems; fire protection systems and facilities; electrical power facilities and systems; environmental protection systems; communication systems – including wireless; cleanup of soils and groundwater conducted under Federal or State environmental regulations and aboveground and underground fuel storage and distribution facilities.

Contractors working at the airport interface with various Port departments including project management, building, fire, construction management, operations, maintenance, environmental and security. The RAC is organized by these disciplines to inform Contractors how these departments facilitate and assist in the completion of construction projects at the airport.

The Port is implementing electronic systems for the design, permitting, and construction process. Tenants, tenant designers, tenant vendors, and tenant contractors shall use the platform(s) that the Port implements.

### **C. Tenant Improvement Projects**

In addition to the RAC, tenant improvement projects are required to comply with the Tenant Improvement Design and Construction Process Manual, the Port Tenant Improvement Construction General Requirements, and the Construction Safety Manual, along with Port Standards, Guidelines, Rules, and Regulations. The Tenant Improvement Construction General Requirements provide Port specifications that have been tailored for tenant improvement projects and are to be included in the Tenant's construction documents. The RAC does not add to, alter, or delete any portion or portions of existing or future leases. If there is a conflict between a lease and this document, the terms of the lease shall govern.

### **D. Amendment of These Rules**

It is expressly provided that the requirements set forth herein shall apply to all construction at the Airport and pertain to all Contractors executing the work. To retain flexibility and permit the adoption of new techniques, criteria, procedures, any requirements herein may be

revised from time to time by the Port without prior notice to enhance the overall safety and utility of the facility. Contractors shall be required to conform to all such amendments.

### E. Interpretation of Guidelines

These Guidelines are to be interpreted, administered and enforced by the Port personnel as described within this manual.

Key Port Personnel interfaces with Construction:

- Resident Engineer/Engineer (RE)
- Construction Inspector/Inspector
- Project Manager (PM)
- Port Construction Services (PCS) Construction Managers (CMs)
- Airport Operations Construction Support Representatives (CSRs)
- Airport Building Department (ABD) Reviewers and Inspectors
- Aviation Maintenance (AVM)
- Aviation Facilities and Infrastructure (F&I)
- Port of Seattle Fire Department (Port FD)
- Airport Security
- Aviation Environmental(AV/ENV)

### F. Appeal of Code Interpretations

Appeals regarding code interpretations or the suitability of alternate materials shall be directed to the Airport Building Department.

### G. Codes and Authorities

All construction must meet the requirements of the most current edition of the following codes, standards, regulations and resolutions in place at the start of construction:

- a. Washington State Building Code per RCW 19.27
- b. Federal Aviation Administration (FAA) Requirements
- c. Washington Industrial Safety and Health Act (WISHA)
- d. Occupational Safety and Health Administration of the United States
- e. Environmental Protection Agency (EPA)
- f. Washington State Department of Ecology (WDOE)
- g. US. Department of Fish and Wildlife (USDFW)
- h. U.S. Geological Survey (USGS)
- i. U.S Army Corps of Engineers (USACE)
- j. National Fire Protection Association
- k. Interlocal Agreement between the Port of Seattle and the City of SeaTac, for projects located on Port-owned property within or facing the City of SeaTac

### H. Safety

No construction shall be carried on which is or may become dangerous to public health and safety. Contractors approached by Port staff about safety shall take immediate action to address the identified concern(s).

### I. Damage to Airport

The contractor is financially responsible for and must repair, to the satisfaction of the Port, all damage to existing Airport facility interior and exterior finishes, structure, pavement, roads, bridges, drainage pipelines, lighting system, or other Airport improvements impacted by its work. When essential utilities or systems are damaged, repairs shall be made immediately. The Contractor is responsible and liable for all injury to persons and damage to property resulting from their operation.

If damage to airport facilities occurs, the Contractor must notify and coordinate with the Port Inspector, Resident Engineer, PCS Construction Manager or Project Manager before undertaking repairs. Associated costs incurred by the Port shall be reimbursed by the Contractor.

### J. Access and Inspections

The Port reserves the right to enter a construction project work zone or storage area(s) at any time for the purpose of providing fire protection, ensuring emergency and routine security, performing maintenance, performing safety, health, environmental and construction inspections and ensuring conformance with Port rules and standards, and code requirements.

### K. EEO Requirements

For projects funded in whole or part by the Port of Seattle or federal government, additional Equal Employment Opportunity (EEO) requirements may apply. In those situations, contact the Port of Seattle Central Procurement Contract Services for additional guidance.

### L. Prevailing Wages

Where required by law, the Contractor shall pay prevailing wages.



## **2. DESIGN APPROVALS**

### **A. Applications for Certification of Compliance of Port Standards (COPS)**

Prior to submitting to the authorities having jurisdiction for permits, the design must be reviewed for compliance with all Port Rules, Regulations, Standards, and Guidelines. A signed Application for Certification of Compliance of Port Standards (COPS) form must be included with the permit submittal. A copy of the COPS form may be obtained from the Port Project Manager.

### **B. Roadway Systems**

Port Engineering approval of changes to airport roadway systems is required.

### **C. Federal Aviation Administration**

Depending upon the scope and location at the airport one or more separate Federal Aviation Administration (FAA) reviews of the project may be required. These include:

- **FAA Form 7460 Review:** This is required if the project will use a crane anywhere at the airport, if it will alter the footprint of an existing terminal or building, or if a 'temporary' structure is being installed for longer than six months. Please note that 7460 reviews take a minimum of 90 calendar days for approval.
- **Contractor's Safety Phasing Plan (CSPP) Review:** If required, a CSPP can take 6 to 8 weeks for FAA review and approval.
- **NEPA/SEPA Environmental Review:** If required the NEPA/SEPA Review and approval process can take 4 to 6 months.
- The Port will coordinate reviews with the FAA.



### **3. AIRPORT BUILDING DEPARTMENT**

With the assigned Port Project Manager, review the City of SeaTac/Port of Seattle Interlocal Agreement (insert link to ILA) to confirm the agency(ies) having permitting authority and applicable ILA Development Standards for the specific project location.

#### **A. Codes and Authority**

As of July 1, 2016, the Airport Building Department (ABD) is responsible for administering and enforcing the following State of Washington codes:

- The Washington Building Code that is based on the 2015 edition of the International Building Code® published by the International Code Council with State Amendments and as further modified for fee schedule and grading requirement by the Port of Seattle Commission (these latter provisions are available by request).
- The Washington Mechanical Codes that consist of:
  - For everything except fuel gas and propane installations, the 2015 edition of the International Mechanical Code® plus state amendments.
  - For all fuel gas provisions except for propane installations, the 2015 edition of the International Fuel Gas Code® by reference (and by amendment in WAC 51-52-0101).
  - For propane installations, 2014 NFPA Standard № 58, the “National Liquefied Petroleum Gas Code®, supplemented by the following propane-installation-related Sections only: 5.5.2, 5.6.7.4, 5.6.9(4) and 8.1.4 in 2015 NFPA Standard № 54, the “National Fuel Gas Code®” (by legislative action).
- The Washington Plumbing Code, consisting of the 2015 edition of the “Uniform Plumbing Code™,” published by the International Association of Plumbing and Mechanical Officials plus UPC Standards therein and State amendments.
- The 2015 edition of the Washington State Energy Code.

The Airport Building Department has also adopted the following codes for administration of existing construction or to facilitate innovative and/or alternate methods of design or construction:

- The 2015 edition of the International Existing Building Code®, published by the International Code Council.
- The 2015 edition of the International Code Council Performance Code®, published by the International Code Council.

Every project for alteration, addition, relocation, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures shall satisfy the following Minimum Design Criteria:

- Ground/Roof Snow Load: 25 psf
- Wind Speed:
  - 110 mph Ultimate, Exposure C, Risk Category II
  - 110 mph Ultimate, Exposure C, Risk Category II
  - 115 mph Ultimate, Exposure C, Risk Category III
- Topographic Effects: No

- Seismic Design Category: D2
- Subject to Damage From:
  - Weathering: Moderate
  - Frost Line Depth: 12 inches
  - Termite: Slight to Moderate
  - Decay: Slight to Moderate
- Outside Design Temperatures: 24° F Heat; 83° F Cool.
- Ice Shield Underlayment Required: No
- Flood Hazards: FEMA # 530320
- Air Freezing Index: 50
- Mean Annual Temperature: 51.4

Although the International Fire Code®, published by the International Code Council, and associated State of Washington amendments are enforced by the Port of Seattle Fire Department, there are certain chapters and sections in it that were developed in conjunction with the other International codes above. These provisions need to be considered and coordinated with each other. The ABD and Port FD will meet by appointment together, with designers and others who wish to and have specific questions, to ensure this coordination during the plan review process by appointment.

#### B. Construction Procedures

The ABD's inspection responsibilities extend to all airport construction, including airport related businesses (as defined in the Inter Local Agreement with the City of SeaTac) on Port owned property beyond the confines of the Airport. Inspectors can be contacted directly by phone or e-mail. However, there is no guarantee of an inspection unless it is given at least 24 hours in advance. The inspectors will consider requests for "emergency" or similar inspections if schedules allow.

The plan reviewers/inspectors have oversight on Special Inspectors; and, do at least all the inspections given in IBC Section 110, IMC Section 107, IFGC Section 107 and UPC Sections 103.5 and 103.6. They also administer the deferred submittal process, changes and modifications to the plans after permit issuance and bookkeeping on special inspection and structural observation paperwork. Special Inspection and similar construction reports are required and only as a summary of deficiencies that are outstanding and status of a solution thereof.

#### 1) Additional Requirements

- a) **DEFERRED SUBMITTALS** are defined as "those portions of the design that are not submitted at the time of application and that are to be submitted to building officials within a specified period." (IBC Section 107.3.4.1)
- b) "Substantial" **CHANGE ORDERS, MODIFICATIONS, or SUBSTITUTIONS** generally mean any material, method or work that is specified in Port specifications or the approved plans which, if changed or replaced, can have a major effect on the suitability, strength, durability, effectiveness, safety, fire resistance and/or sanitation of that portion

of the project. (Based on IBC Section 107.4 Amended Construction Documents.) Note: Substantial revisions and/or changes to the scope may result in added plan review fees.

- c) Deferred submittals and "substantial" change orders, modifications or substitutions can include, but are not limited to the following:
- Wall and window-wall cladding
  - Special door and window hardware
  - Through-penetration fire-stop listing and details
  - Moved sprinkler lines or heads, or fire alarm systems
  - Those and other safety systems that are not compatible with Port Standards
  - Sprinkler plans for hydraulic, brace and connection designs
  - Seismic bracing of other types of mechanical or plumbing systems
  - Major revision to original plans
  - Alternate designs that change contract documents
  - Plans for stairs
- d) These rules and requirements for changes are strictly enforced and administered by the ABD.
- e) Projects that start construction without a building permit are subject to Fines.

## 2) Certificate of Occupancy

After all construction is completed and all life safety, sanitation, structural, mechanical, plumbing, energy conservation and accessibility items are installed and usable, the Port's requirements for as-built CAD Record Drawings are met, and all agencies, such as the Port FD, Port Environmental, F&I, ABD, State of Washington's Labor and Industries Electrical Inspection Division, Elevator Section, and other associated agencies, have given their approval that their codes and standards have been met, the Building Official will consider granting a Certificate of Occupancy (C of O) under the authority of and provision in IBC Section 111.2.

Temporary C of O's are discouraged. However, in the event that one is requested, the Building Official will administer it under the provisions in IBC Section 111.3

C of O's are not to be confused with other contract terms such as "substantial completion", "beneficial occupancy" and so forth.



## 4. FIRE DEPARTMENT

With the assigned Port Project Manager, review the City of SeaTac/Port of Seattle Interlocal Agreement (insert link to ILA) to confirm the agency(ies) having permitting authority and applicable ILA Development Standards for the specific project location.

### A. Introduction

The Port of Seattle Fire Department (Fire Department or Port FD) is responsible for administrating and ensuring fire and life safety compliance on all Airport properties and facilities including the proper use of newly installed equipment and maintaining life safety control during necessary system shutdown activities related to construction. In order to meet this responsibility, the Fire Department requires the assistance of the Contractor to ensure construction projects do not impact the existing life safety systems in place at the airport. For the purposes of the Rules of Airport Construction, all references to "Fire Department," shall be in reference to the Port of Seattle Fire Department.

The Port Fire Department performs regular building, construction and fueling inspections to help assure the safety at the airport. These inspections include regular testing of alarms, sprinklers and other life safety systems. The Fire Prevention division issues permits for system shut-downs, hot work activities, and operational permit. The Port of Seattle Fire Department also reviews construction plans, deferred submittals, and shop drawings for code compliance.

The Port Fire Department is currently enforcing the **2016 Edition of NFPA 415 - Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways as well as the 2015 Edition of the International Fire Code with Washington State Amendments** and as amended by the following sections.

#### AMENDMENTS TO INTERNATIONAL FIRE CODE – CHAPTER 80, REFERENCE STANDARDS

The following reference standards supersede the ones listed in IFC, Chapter 80:

- NFPA 12 - Carbon Dioxide Extinguishing Systems, 2015 Edition
- NFPA 12A - Halon 1301 Fire Extinguishing Systems, 2015 Edition
- NFPA 13 - Installation of Sprinkler System, 2016 Edition
- NFPA 14 - Installation of Standpipe and Hose Systems, 2016 Edition
- NFPA 20 - Installation of Stationary Pumps for Fire Protection, 2016 Edition
- NFPA 24 - Installation of Private Fire Service Mains and Their Appurtenances, 2016 Edition
- NFPA 72 - National Fire Alarm and Signaling Code, 2016 Edition
- NFPA 105 - Smoke Door Assemblies and Other Opening Protectives, 2016 Edition
- NFPA 110 - Emergency and Standby Power Systems, 2016 Edition
- NFPA 111 - Stored Electrical Energy Emergency and Standby Power Systems, 2016 Edition
- NFPA 400 - Hazardous Materials Code, 2016 Edition
- NFPA 407 - Aircraft Fuel Servicing, 2017 Edition
- NFPA 409 - Aircraft Hangars, 2016 Edition
- NFPA 410 - Aircraft Maintenance, 2015 Edition

- NFPA 720 - Installation of Carbon Monoxide (CO) Detection and Warning Equipment, 2015 Edition
- NFPA 750 - Water Mist Fire Protection Systems, 2015 Edition
- NFPA 2001 - Clean Agent Fire Extinguishing Systems, 2015 Edition

### B. Fire System Shut Downs

All utility shutdowns related to Fire Department system connections and testing are coordinated with Port AV/Operations and AV/Maintenance utilizing the utility shutdown request form and must be submitted and approved 72 hours prior to work (not counting weekends or holidays). This includes fire main, sprinkler system, and fire alarm system shutdowns. After Port AV/Operations and AV/Maintenance have signed the shutdown request form; the Fire Department shall receive it for final review, approval and signature prior to submitting the request.

Port AV/Maintenance boiler room staff or field crew are responsible for the following fire system shutdown support on the airfield and inside airport facilities:

- Tracing water and sprinkler lines
- Scheduling shutdowns
- Turning valves
- Draining and resetting systems

If a utility shutdown results in fire system impairment, a fire watch may be required and provided by the Contractor. This condition is assessed by the Port Fire Department with each request.

### C. Inspections

Fire inspections are conducted on a between the hours 8:00 am to 3:00 pm, Monday through Thursday, based on availability and should be scheduled a minimum of 48 hours in advance.

Fire inspections include, but are not limited to, fire stopping, fire proofing, sprinkler and sprinkler hanger/bracing, thrust blocks, pressure testing of fire systems, flow and flush tests of fire mains/hydrants, and fire alarm acceptance.

For inspection personnel and contact information. Please contact the Port Fire Department front desk at (206) 787-5327 for the most up to date information.

Final inspections for occupancy are required to be submitted 72 hours in advance. The Contractor requesting the final fire inspection shall contact the Port Inspector to coordinate with the Port Fire Department for the requested inspection.

### D. Fire Department Access

#### 1) Street Address Signage

- All construction sites, whether the structure is built or not, must provide an emergency telephone contact and street address per IFC 3309.
- For all buildings located on Port property, an address sign at least 8" in height that is visible from the public way is required to be installed. Final location shall be coordinated with Fire Code Official.

### 2) Access Roads

- Access roads for Fire Department use are required per the International Fire Code. They are required to be 20 feet wide and maintain access to all portions of the construction site. They are required to be kept clear at all times.

### 3) Site Access

- Where site access by key(s) is required, the Port Fire Department requires all required key(s) be placed in a Port Fire Department keyed SupraBox in an obvious location next to the entrance or in its vicinity. Key(s) shall be labeled and the Contractor shall provide signage indicating the location of the SupraBox.
- For construction projects, the construction core for all locks is an AP-4. It is the Contractor's responsibility to coordinate with the Port Inspector for any construction cores and obtaining any AP-4 keyed padlocks from the Port Lock Shop. The holes in the barricade or partitions doors for the padlock and chain shall be large enough for Fire Department personnel to reach through and unlock from either side of the barricade. This prevents being locked in or locked out of an area. For Port projects refer to the project specifications, for Tenant projects see the Port's Tenant Improvement Construction General Requirements, Section 01\_50\_00 Temporary Facilities and Control for detailed requirements.

### 4) Barriers and Enclosures

- Barricades and enclosures required to separate construction areas from the public shall be in accordance with NFPA 241 and Port Construction standards. The location and extent of all barricades are required to be coordinated and approved by the Port Fire Department prior to erection. If constructed of fire-treated or metal studs, and fire-treated plywood or gypsum wallboard, the fire-treated stamp must be visible on the inside of the barricade.

## E. Fire Mains

### 1) Installation

- All installations shall be approved by both the Port AV/Facilities & Infrastructure Department and by Port Fire Prevention prior to construction.
- Port Fire Prevention shall inspect all installations prior to backfill or cover.
- Water mains shall be installed, flushed and tested per the International Fire Code and NFPA 24 "Private Fire Service Mains and Their Appurtenances."
- All water mains shall be installed with field lock gaskets.
- Port Fire Prevention shall witness all tests. Contractor will present all necessary test forms at the time of the test. All tests and inspections require 48 hours advance notice to both the Port Water Department and Fire Prevention.
- Mega-lug type connections are not approved for installations without thrust blocking or rodding.

### 2) Inspection/Testing

- Thrust block forming must be inspected by the Port Fire Department prior to concrete placement. The Port Fire Department will also approve concrete mix design and inspect the thrust block following concrete placement prior to backfill. Thrust blocks are required per NFPA 24 at any change in direction of fire main piping.

- Testing Notification – Notify the Port Fire Department and Port AV/Maintenance a minimum of 24 hours prior to the fire main acceptance testing.
- Port Fire Mains Testing Pressures/Times are as follows:
  - Mains shall be tested at not less than 250 psi for two (2) hours.
  - The Port Fire Department will inspect the fire main, gauges, and testing process prior to the two (2) hour duration. The test must be conducted using NFPA 24 criteria.
  - Calibrated pressure gauge and valve locations shall be as follows: The fire main or hydrant to be tested must have a gauge on the hydrant or main itself. The pump used to pressurize the hydrant or main shall be disconnected during the test. If this is not done correctly, the test will not be accepted.

### 3) Construction Water

- Port Fire Department water supply is required on all construction sites per the International Fire Code. A clear path to the fire hydrant, Fire Department connection, etc., shall be provided.
- Use of Fire Hydrants During Construction:
  - The use of fire hydrants for construction purposes requires approval from Port AV/ Maintenance and Fire Department. A certified backflow prevention device (RPBA: Reduced Pressure Backflow Assembly) must be used and tested by Port AV/Maintenance prior to use.
  - The hydrant used must be fully opened or fully closed at all times to prevent undermining. Contractors are restricted from operating hydrant keys or valves.
  - A maximum of one, 2½" connection is allowed per hydrant for construction purposes.

## F. Fire Hydrants

### 1) Design

The hydrants shall be a standard pattern of a single manufacturer approved by the Engineer. The name or mark of the manufacturer, size of the valve opening, and the year made shall be plainly cast in raised letters and so placed on the hydrant barrel as to be visible after the hydrant is installed.

All hydrants shall be designed for a minimum working pressure of 250 psig and 500 psig test pressure. The manufacture shall conform to AWWA C502 and the following requirements stated in this section for workmanship, design, and material.

The hydrant body shall be cast iron, fully mounted with approved non-corrodible metals. All wear surfaces shall be bronze or other non-corrodible material. There shall be no moving bearing or contact of iron or steel with iron or steel. All contact surfaces shall be finished or machined and all wearing surfaces shall be easily renewable.

The design of the hydrant shall be such that all working parts may be removed through the top of the hydrant.

The hydrant stem shall have the AWWA specified number of turns to open the gate and area equal to the area of the valve opening.

All upright hydrants shall be provided with collision protection, breakaway devices, and sidewalk flanges. In addition to the protection, hydrants shall be designed to provide a minimum 5 feet clear access directly behind the hydrant.

All hydrants shall have two (2) means of restraint with the primary means being thrust blocking. Mega-lug type connections are not approved for installation without thrust blocking or rodding.

Fire hydrants shall be located no further than 300 feet apart, measured along the centerline of the road.

Fire hydrants shall be located within 50 feet of a FDC connection.

Underground piping from the foot valve to hydrant shall be 6." Piping and the foot valve shall be sized according to the following:

- Less than 50 feet: 6"
- Greater than 50 feet: 8" minimum with a reducer to 6" past the foot valve

All hydrants shall be painted red with reflectorized silver top. Paint is based upon Sherwin Williams Fast Dry Acrylic Enamel (F78R27), equivalent by Benjamin Moore, Pittsburgh, Carboline, Tnemec, Kelly-Moore, Parker Paint, or approved equal. This is a water based product used for the red base. The top is based upon Rust-Oleum High Performance Acrylic Enamel (5215) equivalent by Benjamin Moore, Pittsburgh, Carboline, Tnemec, Kelly-Moore, Parker Paint, or approved equal. This is also a water based product. Reflectorized glass beads to be Potter Industries "Highway Safety Spheres", Brite Blend by Flex-O-Lite, Swarco Beads from Swarco Industries, or approved equal. The beads are to be applied to the silver top only.

The dimensions of the bell or hub end connection shall conform to the dimensions of AWWA Standard C100. The dimensions of the mechanical joint (if used) shall conform to AWWA C110.

## 2) Hydrant Requirements

The Port Fire Department in cooperation with Port AV/Maintenance requires the following standards in hydrant installation to maintain uniformity on equipment and spare parts required to maintain hydrants:

### a) Upright hydrant

M&H Style 929 "Reliant," Mueller Super Centurion, Kennedy Guardian, or approved equal Fire Hydrant.

- Hydrant foot valve to be installed no less than four (4) feet and no more than ten (10) feet from the base of the hydrant.
- Drain holes shall be connected by piping and shall terminate above ground.
- Upright hydrant location to be marked with reflective hydrant signs to match present standards.

### b) Flush hydrant

M&H Fire Hydrant or approved equal, Flush Model, and AWWA Compression Type

- Hydrant foot valve to be installed no less than four (4) feet and no more than ten (10) feet from the base of the hydrant.
- Drain holes shall be connected by piping and shall terminate above ground.
- Flush hydrant location to be marked with reflective hydrant signs to match present standards.
- Flush hydrant box to be provided with adequate drainage to keep water from accumulating inside the box.

- Flush hydrant location to be marked with reflective hydrant signs to match present standards.

### 3) Connections

#### a) Hydrant Steamer Adapter

- Provide a quick connect fitting with blind cap and cable on all fire hydrants.
- iQuick connect fitting shall be 5" Storz to Rigid Rocker Lug Style
  - 4" Pacific Coast Pumper thread: six (6) threads per inch
  - Outside diameter: 4.828 inches
  - Thread root diameter: 4.580 inches
  - Thread length of male nipple: P.C.P. Standard
  - No substitution is permitted
- Material to be hardcoat anodized MIL-A-8625-F, type 3, dark grey of 6061-T6.
- Aluminum and cap secured to nozzle with 2 stainless screws set 180 deg apart. The cap shall be tethered with a 0.125" vinyl coated aircraft cable.
- All parts, cables, and levers to be AISI 304/316 stainless steel. Storz gasket shall be BUNA-N.

#### b) Port Fire Department Connection (FDC)

All FDC's shall be either:

- Storz 5" with Blind Cap and Cable
- Siamese Connection - 2 side hose nozzle connections with 2-½" NST, and 7.5 threads per inch at 60 degree V thread. Thread length of 1 inch. Root diameter of thread to be 2.8715 inches. Outside diameter of finished nozzle to be 3.0625 inches.

## G. Fire Sprinklers

All buildings on Port property are required to be fully sprinkled, regardless of type of construction, setback distance, or individual fire area size. An exception to this requirement may be granted, but a formal request must be submitted and accompanied by a stamped fire engineering analysis to the Port Fire Code Official for review. The final determination on the acceptable of the request will be solely the responsibility of the Port Fire Code Official.

### 1) System Requirements

- The Airport requires a minimum of 175 psi working pressure for all piping, fitting, materials.
- All sprinklers systems on Port property shall be designed for a minimum of Ordinary Hazard 1 per NFPA 13.
- All new piping shall be Schedule 40 minimum. All existing Schedule 10 thin walled or XL piping shall be removed and replaced with Schedule 40.
- All sprinklers shall be quick response, glass bulb sprinklers.
- All hangers shall be clevis type to resist upward movement.

- Fittings above grade shall be actual elbows, tees, reducers and other required fittings. Coupling reducers, coupling tees, or mechanical tees are not allowed. Plain end fittings or drain elbows are not allowed.
- Weld-o-lets, thread-o-lets, or actual tees with mechanical couplings are the only connections allowed at pipe connections where more than two connections are required (tees/crosses). Coupling tees and mechanical tees are not allowed.
- The use of flex heads and/or adjustable drop nipples are not allowed. NO EXCEPTIONS.
- Provide guards where clear height under sprinkler head is less than 7'-0".
- In multi-level buildings a floor control valve and drain assembly shall be provided for every floor including intermediate floors and penthouses. The floor control assembly shall be detailed and shown on the submittal shop drawings.
- Every new sprinkler system shall include a double-check backflow preventer. Existing buildings being extensively remodeled or renovated, with existing sprinkler system not already having a PIV or double-check backflow preventer shall have these items added to the system. Double-check backflow preventers shall be installed above grade in the position approved for use (Horizontal or vertical).
- All rooms that contain a fire sprinkler riser or a deluge valve shall have a floor drain installed and the floor shall slope to drain.
- A 500 gpm hose allowance shall be added to the base of each riser demands
- Obtain latest water supply engineering test data prior to design. The proposed sprinkler system demand must be 10-percent or 10 psi (whichever is greater) below the water supply curve. Contact the Port of Seattle Fire Department for the most current water supply information.

## 2) Design Criteria for New Systems

### a) New Buildings:

The design for new buildings will be based on hydraulically calculated system as follows:

#### **Ticketing, Offices, General Public Areas, Concourses, Satellites:**

- 0.15 gpm per square foot over most remote 2,200 sq. ft.
- Head Spacing: 130 sq. ft. per head maximum.
- 1/2-inch orifice sprinkler heads rated at 165 F.

#### **Non-Public Ramp Level Area:**

- 0.25 gpm per square foot over most remote 2,500 sq. ft.
- Head Spacing: 100 sq. ft. per head maximum.
- 1/2-inch orifice upright sprinkler heads rated at 212 F.

#### **Baggage Claim:**

- 0.15 gpm per sq. ft. over most remote 2,000 sq. ft.
- Head Spacing: 130 sq. ft. per head maximum.
- 1/2-inch orifice sprinkler heads rated at 165 F.

#### **Boiler and Chiller Rooms:**

- 0.25 gpm per sq. ft. over most remote 3,000 sq. ft.
- Head Spacing: 100 sq. ft. per head maximum.
- 1/2-inch orifice upright sprinkler heads rated at 286 F.

### **Mechanical Rooms:**

- 0.20 gpm per sq. ft. over most remote 2,000 sq. ft.
- Head Spacing: 100 sq. ft. per head maximum.
- 1/2-inch orifice upright sprinkler heads rated at 286 F.

### **Equipment Storage Rooms:**

- 0.20 gpm per sq. ft. over most remote 2,500 sq. ft.
- Head Spacing: 100 sq. ft. per head maximum.
- 1/2-inch orifice upright sprinkler heads rated at 286 F.

### **Buildings permitted by City of Seatac:**

- Shall be designed for minimum of Ordinary Hazard 1 per NFPA 13

#### **b) Design for Existing Systems**

The design for existing buildings will be based on hydraulically calculated system as follows:

- Existing building or areas currently not sprinklered: Provide sprinkler system in accordance with new buildings design parameters.
- Existing building remodel, currently sprinklered: Provide sprinkler system to match the basis for the existing system wherever possible. Pipe schedule method for Ordinary Hazard is acceptable.

### **3) Installation/Testing**

All new systems/piping are required to be hydrostatically tested to 1.5 times the working pressure or 225 psi, whichever is greater. The test duration shall be 2 hours.

All fire mains and branch lines, 2 1/2" in diameter or larger shall be labeled on both sides of all wall or floor penetrations and every 25 feet with a vinyl label. Labels shall have white letters at least 1" in height on a red background. Labels shall indicate direction of water flow, the riser name, and include the words "Fire Sprinkler." For rooms/areas supplied with or by piping smaller than 2 1/2" in diameter, the riser name, flow direction, and "Fire Sprinkler" shall be written on the piping using a white paint pen.

## **H. Fire Alarms**

All fire/smoke detection and alarm system components installed on Port property shall be compatible and connected to the existing Port-owned proprietary fire alarm system (Simplex/Grinnell). The Port's current system is a Simplex 4100ES.

The Port Fire Department shall approve all fire alarm system components and modifications prior to installation.

All fire alarm system installations and modifications shall be subject to the Port Fire Department plan review process.

Contractor is responsible for providing all devices, wire, cable, and conduit which are to be installed by a qualified Contractor from the device to a Port-owned fire alarm cabinet as designated by the Port Fire Department.

If no Port-owned fire alarm cabinets are available within a reasonable distance or do not yet exist, the Contractor is required to supply a new cabinet. The cabinet shall be provided and installed with line voltage and a termination to the Port's proprietary system for monitoring.

The Contractor is responsible for all terminations of fire alarm field devices.

All fire alarm panel terminations and system programming are provided by the Port Fire Department.

If required, the fire alarm systems will be intertied into the HVAC building automation system (BAS Siemens DDC) as shown on the design documents or as designated by Port Fire Department at the project's expense and may incorporate programming requirements for emergency responses of the HVAC systems ("Smoke Control") depending on project scope and location.

### I. Interior Materials and Furniture

Per the requirements of NFPA 415, 4.1.2, all materials used within the Airport Terminal are required to carry a classification of either a Class A or Class B fire rating. This requirement shall be applied in conjunction with Chapter 8 of the IBC. This requirement applies to all casework, cabinetry, and woodwork.

Any lumber/wood used on Airport property for construction, temporary structures or any other reason shall be of fire-treated material. Any wood not treated with fire retardant material shall be painted with intumescent paint on both sides. Any plastic sheeting used shall be fire retardant material.

The use of expansion foam, which does not have a UL fire-rated listing, is not allowed for any reason or application.

All furniture in the Airport Terminal located in public spaces and in all A and B occupancies, with an occupancy load greater than 50 people, shall be CAL 133 (TB 133) compliant. All other furniture on Port property must be CAL 117 (TB 117) compliant. Custom furniture shall be treated to provide a minimum Class B fire rating.

### J. Temporary Structures

#### 1) Definitions

- Temporary structures are trailers, modular buildings, shacks, and sheds that do not exceed 2,000 square feet, either in individual floor area or in an aggregate grouping.
- Protected terminal buildings are those passenger transportation terminals/concourses that include interior sprinkler protection and exterior deluge sprinkler protections.
- Construction barricades and partitions are temporary structures utilized to cordon off construction areas as described in the Port's Tenant Improvement Construction General Requirements Section 01 50 00 Temporary Facilities.

#### 2) Life Safety Requirements:

The inherent risks caused by having non-fire rated or non-fire protected structures or construction barricades on an airfield or in terminal buildings relates to their location, hazards, and exposures where these structures are placed. Factors that prompt the need for life safety systems include:

- The large proximity of aircraft and aircraft fueling operations to such buildings.

- Large numbers of ground service operations and equipment around them and the potential exposure of fire and smoke to terminal buildings and large numbers of people.
- Large numbers of people in close proximity to a construction area within any terminal building.

### 3) Life-Safety Provisions

All temporary structures shall be a minimum of 50 feet from any aircraft fuel vent, fuel truck, or fuel hydrant cart in accordance with NFPA Standard No. 407.

Minimum clearance of temporary structures from the terminals shall be as follows:

- Unprotected terminal building to protected temporary structure: 20 feet
- Protected terminal building to unprotected temporary structure: 20 feet
- Protected terminal building to protected temporary structure: 5 feet

Unprotected temporary structures, other than construction barricades or partitions, shall not be placed within a terminal building.

No temporary structure shall remain at its approved location more than one consecutive 180-day period without written authorization for extensions from the Building Official and Port Fire Marshal. Time limits or extensions may be revoked for due cause.

Temporary structures shall not become permanent structures without complying with Port of Seattle standards and minimum building code/fix code provisions for type of construction and other life-safety, structural, and sanitation issues relative to their occupancy group.

### 4) Installation and Use

a. Temporary Structures on construction sites shall comply with applicable Port Fire Department code regulations. They shall be inspected prior to occupancy and equipped with the proper type and number of fire extinguishers.

## K. Construction Storage

### 1) Construction materials storage is allowed only under the following circumstances:

- Within a secure, protected and Port Fire Department, Port AV/Operations and AV/Maintenance approved location for storage use.
- The Contractor shall supply and maintain suitable means of fire protection whenever combustible materials are used or stored at the work site. Fire protection will, at a minimum, consist of portable extinguishers or approved wet fire lines, valves, hoses, and nozzles in such number and location as approved by the Port Fire Department. Fire protection is to be maintained as long as there are combustible materials at the work site. Storage of combustible materials shall comply with the IFC – Fire Safety during Construction and these guidelines.
- The amount of stored material does not exceed the amount needed for use of the specified project for that day.
- Stored materials are not within the exit corridor or path, blocking access to a fire lane or means of egress system, or under stairs.

- Storage of flammable or combustible liquids methods and locations must be approved by the Port Fire Department.

### 2) Refuse

Trash, refuse, or garbage within terminal projects shall be removed after each shift and never left over night. Refuse shall be removed in a timely manner from all outdoor construction sites.

Trash, refuse, or garbage must be secured in pest-resistant receptacles with closed lids at all times in all locations to prevent FOD or wildlife/pest attractants. Contractors may be responsible for hiring pest control services if pests are found in construction sites with open garbage containers or other attractants on site.

### 3) Flammable/Combustible Gas and Liquid Containers

All flammable and combustible liquids to be used on a construction project must be kept in an approved location, whether it is in an approved flammable/combustible liquids storage cabinet or in a remote area. The amount of product stored must not exceed the amount specified by the Fire Department. All compressed gas cylinders must be chained in the upright position and stored in an approved location as well.

## L. Hot Work Permits and Guidelines

### 1) Hot Work

All open flame or spark-producing operations including, but not limited to, cutting, welding, brazing, soldering, and grinding on airport property shall require a Hot Work Permit from the Port Fire Department in accordance with NFPA 51B.

A sign-off sheet, (i.e., Hot Work Permit) indicating the required safety precautions (see below) have been met shall be signed by the Fire Department representative and the person responsible for doing the hot work. This permit shall be located at the job site and a copy will be held at the fire station until the date on the permit has expired.

Hot Work Permits are free of charge and available by calling Port Fire Dispatch or the fire inspector during normal business hours.

Emergency operations in the airport may delay the response of the firefighter issuing the permit. For better service, call Port Fire Dispatch one hour in advance.

Contractors working within a construction zone with no risk to non-construction personnel may be issued a weekly permit. These permits will be made out to the nearest Tuesday and will be renewed after an inspection of the work site.

The Contractor is responsible for making the work area as fire safe as possible.

- a) Hot work area: Any area exposed to sparks, hot slag, and radiant or convective heat as a result of hot work. All interior spaces require mechanical ventilation ducted to the exterior.
- b) Prohibited areas: Hot work shall not be conducted in rooms or areas where flammable liquids or vapors, lint, dust, or combustible storage is at risk of ignition from sparks or hot metal.
- c) Combustibles: All combustible material within 35 feet of the hot work area shall be removed or covered with a burn blanket to prevent ignition from heat, sparks, or slag.

- d) Openings: Openings or cracks in walls, floors, ducts, or shafts within the hot work area shall be tightly covered to prevent the passage of sparks to adjacent combustible areas. Shielding by metal or fire resistant guards or curtains shall also be provided to prevent passage of sparks or slag into potentially hazardous areas.
- e) Overhead work: When hot work is performed above locations where persons are likely to pass, non-combustible shields shall be used for protection from sparks and hot metal or oxide. The Contractor shall provide a live fire watch below any spark-producing operation above areas occupied by non-construction personnel or by the general public. Additional fire watch personnel may be required as determined by the Fire Department.
- f) Housekeeping: Floors shall be kept clean and/or swept within the work area.
- g) Conveyor systems: Conveyor systems that could carry sparks to distant combustibles shall be shielded or shut down.
- h) Exterior hot work on the AOA: No hot work is permitted within 50 feet of any aircraft. If an aircraft is fueling, all hot work is stopped until fueling is complete.
- i) Fuel lines: Any hot work involving fuel lines containing fuel shall require standby Port Fire Department apparatus and crew. The Contractor shall compensate the Fire Department using the Washington State Schedule of Standard Charges.
- j) Pre-hot work inspection: The individual responsible for the hot work and a representative of the Fire Department shall inspect the entire area before starting any hot work. The inspection shall insure that all of the above requirements are followed, including but not limited to:
  - Hot work equipment is inspected and verified to be in good working condition by the operator.
  - There are no exposed combustibles on the opposite side of partitions, walls, ceilings, or floors.
  - The fire watch shall be equipped with a fire extinguisher and shall be trained in its use.
  - In all hot work areas, fire extinguishers shall be provided and maintained by the Contractor and verified to be operable.

## 2) Firewatch

- a) General: A firewatch shall be provided during hot work activities and shall continue for a minimum of 30 minutes, for up to four hours, or as otherwise determined by the Fire Department representative after the conclusion of the work. Exception: A firewatch may not be required when the hot work area has no fire hazards or combustible exposures.
- b) Location: The firewatch shall include the entire work area. Hot work conducted in areas with vertical or horizontal fire exposures that are not observable by a single individual shall have additional personnel assigned to firewatch to ensure that all exposed areas are monitored.
- c) Duties: Individuals designated to firewatch detail shall have a fire extinguisher readily available and shall be trained in its use. It is the responsibility of the firewatch to look for spot fires, extinguish them if possible, stop the hot work, and notify the Port Fire Department immediately for investigation.

## M. Fuel Storage and Distribution Systems

Removal and/or installation of all above-ground and underground tanks and piping, fuel hydrant systems, fuel farms and related systems must be coordinated in advance with the Port Fire Department and the Port AV/Environmental Staff. All work, including any clean up, must be accomplished in accordance with WAC 173-360 and any additional federal, state and local laws and regulations.

All tanks and system components taken out of service permanently shall be removed from the ground. Exceptions may be approved due to extraordinary physical or operational restrictions. Tanks not removed will be filled with an inert solid material. All piping shall be removed from the ground. Exceptions may be approved due to extraordinary physical or operational restrictions. Piping not removed will be cleaned and inerted.

## N. Operational Permits

In additions to the operational permits required by Sections 105.6.1 through 105.6.48 of the 2015 IFC, the following activities require an operational permit from the Port Fire Department:

- Fuel Storage Tanks
- Powder Actuated Fasteners
- Use of Aircraft Hangers or Warehouses for an event with more than 100 people
- Food Trucks

## O. Emergency Lighting

The following amends IBC 1008.3.3. Within the airport, emergency lighting shall be provided in all public restrooms and non-public restrooms, regardless of size. Non-public, single occupancy restrooms are exempt from this requirement.

### P. Elevators

The following amends IBC 3002.4. On all airport Port property, where elevators are provided, the car shall be sized to accommodate an ambulance stretcher.

All elevators within the terminal shall be provided with a connection to an approved Fire Command Center to facilitate the monitoring, recall and emergency/standby power selector per IBC 911.1.6.

Located next to the Washington State L&I Knox Box on the primary recall floor, a Supra Box cored to the Port Fire Department barrel key shall be provided. Inside the Supra Box, a key to access the L&I Knox Box shall be provided.

### Q. Fire Command Centers

All new terminal building shall be provided with Fire Command Center that complies with IBC 911.1.1 through IBC 911.1.6.

### R. AED Location and Spacing

Within the Airport Terminal, AED's shall be located in all public circulation spaces and holdrooms with a maximum travel distance of 150 feet.

A minimum of one (1) AED shall be located in each airline lounge, club, or tenant breakroom designed to serve more than 50 occupants.

All buildings on Port property shall have a minimum of one (1) AED located in an obvious location such as an elevator lobby/entrance.

### S. Exterior Concrete Stairs

All new exterior concrete stairs shall be provided with anti-slip safety treads or troweled grooves and nosings.

### T. Type 1 Kitchen Hoods

All Type 1 kitchen hoods are required to be provided with an approved suppression system that meets the requirements of the IBC and IFC.

Ventless hoods are not allowed within the terminal.

The suppression system for all Type 1 hoods shall be either dry chem, wet chem, or a clean agent. Water deluge hoods are not allowed.

Type 1 hoods should not rely on the Port's water system for functionality. Should a self-cleaning hood be requested by a tenant, it is required to be connected to the domestic water system, not the fire sprinkler system.

Type 1 Kitchen hoods required to use Siemens DDC for control of operation exhaust fan. No standalone control panels, except for local emergency activation of fire suppression system.

### U. Exterior Metal Wall Panels

All metal panel panels and system components shall be provided with the following fire-test-response characteristics, as determined by testing identical panels and system components per test method indicated below by UL or another testing and inspecting agency acceptable to the Port Fire Department.

- Fire-Resistance Characteristics: Provide materials and construction tested for fire resistance per ASTM E 119.

#### 4. PORT FIRE DEPARTMENT

- Intermediate-Scale Multistory Fire Test: Tested mockup, representative of completed multistory wall assembly of which wall panel is a part, complies with NFPA 285 for test method and required fire-test-response characteristics of exterior non-load-bearing wall panel assemblies.
- Radiant Heat Exposure: No ignition when tested according to NFPA 268.
- Potential Heat: Acceptable level when tested according to NFPA 259.
- Surface-Burning Characteristics: Provide wall panels with a flame-spread index of 25 or less and a smoke-developed index of 450 or less, per ASTM E 84.

Final Draft Pending Legal Review



## **5. REGULATED MATERIALS MANAGEMENT**

### **A. Asbestos**

Many of the terminal building structural members and adjacent building surfaces above suspended ceilings and inside walls are protected by spray-on fireproofing containing asbestos. Subfloors and other components may also have asbestos containing overspray. Prior to drilling into a floor or removal of ceiling systems the Contractor shall request a survey from the Port. Contractors are prohibited from any removal of metal ceiling systems unless approved in advance by Port AV/Maintenance.

Upon discovery of asbestos behind an enclosed space where the color is not blue or wherein there is no asbestos-free signage, the Contractor shall not proceed with work and call for a Port inspection before proceeding.

Upon encountering or exposing Asbestos Containing Material (ACM) not identified in the scope of work, the Contractor shall immediately notify the Port Inspector and shall not further disturb the ACM until and unless given direction by the Port.

Unless specifically identified in contract documents as work by the Contractor, asbestos abatement work is typically completed by Port Construction Services (PCS). Asbestos abatement projects require notification of the Puget Sound Air Pollution Control Agency and the State Department of Labor and Industries. A "waiting period" of up to 10 working days after notification is imposed before a project can be started. Early contact with the Port regarding asbestos abatement for a project is recommended so that the required forms can be filed as early as possible.

All workers involved in construction activities located in areas known to have asbestos containing materials (ACM) must attend a two-hour asbestos awareness training class provided by the Port of Seattle. Attendance at this class is required prior to the commencement of work. Contact the Port Project Manager, PCS Construction Manager, Resident Engineer or Inspector for location and schedule of these classes.



## **6. ENVIRONMENTAL**

With the assigned Port Project Manager, review the City of SeaTac/Port of Seattle Interlocal Agreement (insert link to ILA) to confirm the agency(ies) having permitting authority and applicable ILA Development Standards for the specific project location.

### **A. Introduction**

Port Aviation Environmental(AV/ENV) provides environmental compliance support for all environmental disciplines including SEPA/NEPA; Water Quality/Stormwater Management; Waste Management/Contaminated Soil; Construction Waste Management; Air Quality; Wetlands & Natural Resources. Port AV/ENV has environmental strategic objectives that support the Port's Century Agenda and Aviation Division Strategic Planning Goals. In order to meet these goals Port AV/ENV provides support for incorporation of sustainable facility design and encourages all Contractors to implement environmentally preferable construction practices and recycling of construction and demolition debris.

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

### **B. SEPA/NEPA Requirements.**

1. Construction on Port property may not commence until appropriate State Environmental Policy Act (SEPA) and/or National Environmental Policy (NEPA) analysis has been completed.
2. Construction on Port property may not commence until AV/ENV has reviewed and approved that project design meets all permits, and is in alignment with applicable Environmental Strategic Goals and objectives.

### **C. General Permit Compliance**

1. Where environmental permits have been obtained for projects; contract plans and specifications will provide a critical component of environmental permit compliance, and compliance with those plans and specifications is required. Those environmental contract specifications commonly include, but are not limited to 1) – 01 35 43 Environmental Regulatory Requirements; 2) – 01 57 23 Pollution Prevention Planning and Execution 01 57 13 - Temporary Erosion and Sediment Control Planning and Execution; 3) 01 74 19 (a & b) Construction Waste Management; 4) 02 83 19 - Lead Controls in Construction; 5) 02 84 33 - Removal of PCBs and PCB Containing Material; 6) 02 82 13 – Asbestos Abatement 7) 02 61 13 Contaminated Soil Handling; 8) 01 59 00 – Construction Water Management System; 9) 02 84 16 - Light Ballast and Lamp Removal and Management; 10) Attachment A – NPDES Contractor Permit Statement 00 80 00A.

### **D. Water Quality, and Stormwater Management**

All construction activities shall comply with applicable environmental permits. The Port has obtained an NPDES (National Pollutant Discharge Elimination System) permit from the Washington State Department of Ecology that addresses construction within the "permit boundary", a specific geographic area around the airport. All construction projects within the permit boundary are subject to the provisions of the permit and shall comply with that

permit. Any Port or tenant projects outside of the permit boundary must file for General Construction Permit, if applicable.

Contract change orders that are determined to have potential to affect environmental permit compliance shall be reviewed and approved by Aviation Environmental or other designated staff.

All applicable environmental permits, Temporary Erosion and Sediment Control Plans, Pollution Prevention Plans and Stormwater Pollution Prevention Plans for projects to be constructed shall be maintained and available at the project site or specific location defined by permit.

Construction/demolition activities by Port or tenants shall not interfere with operation of or access to Port stormwater monitoring stations and equipment around the airport. The party managing construction shall be responsible to understand the locations of these stations and equipment that may be impacted by the project.

Specification Section 01 57 13 Temporary Erosion and Sediment Control Planning and Execution has been developed to control erosion and sediment transport as well as air quality related to fugitive dust that may be generated during outdoor construction. If applicable to a project, compliance with all conditions of the specification is required in order to assure compliance with the Port's NPDES permit, unless otherwise approved by Port AV/ENV Program staff prior to start of construction.

All temporary erosion and sediment control and pollution prevention measures required for construction work shall be in place prior to start of work, and those measures shall be inspected daily and maintained as required by contract or as directed by the project manager.

All construction stormwater must meet permit requirements prior to discharge. The Contractor is required to monitor all construction stormwater discharges. Specific project requirements will be defined in Specification Section 01 57 13 and/or Specification Section 01 59 00. No construction runoff is allowed to drain or be pumped to the Industrial Waste System (IWS) without prior approval. Contact Port AV/ENV for Industrial Waste Treatment Plant (IWTP) Discharge Request Form and specific information on how to obtain approval.

Process water or chlorinated/potable water is not permitted to be discharged to SDS. Process water includes, but is not limited to; Wheel wash water, Concrete saw cut slurry, Road wash water, Sweeper waste water. Chlorinated/Potable water must be de-chlorinated prior to discharge.

Where construction stormwater monitoring of a Port or Tenant construction site is required, access shall be coordinated with and granted to Port AV/ENV Program staff who will conduct that monitoring.

### E. Contaminated Soil and Groundwater Management

All contaminated site remediation must be accomplished in accordance with federal, state, and local laws and regulations, contract specifications and/or as directed by the Port AV/ENV Program staff.

Prior to start of work, the Contractor shall provide to AV Environmental Programs a work plan, and schedule of work for approval for construction projects where contaminated soil or groundwater is expected to be encountered. Port AV/ENV Program staff may need to provide inspection for these projects in order to assure regulatory or permit compliance, which will be determined no later than the preconstruction meeting.

The Port AV/ENV Program staff shall be notified immediately if potentially contaminated soil or groundwater is encountered during construction work.

All construction on ground water and vapor monitoring wells, including installation, decommissioning, and refurbishing shall be conducted in accordance with WAC 173-160. Plans for these types of construction activities must be approved in advance by the Port AV/ENV Programs. Contractors shall provide copies of Washington Department of Ecology documentation as required by Port AV/ENV Programs.

Use of the Contaminated Soil Stockpile facility, operated by the Port, may only occur after approval by Port AV/ENV Program staff.

### F. Hazardous Materials and Waste

Port Master Specification Section 01 57 23 Pollution Prevention Planning and Execution has been developed to assure appropriate handling and management of hazardous materials and waste. Compliance with all conditions of the specification during construction work is required in order to assure compliance with the Port's NPDES permit, unless otherwise approved by Port AV/ENV Program staff prior to start of construction.

Any spill of pollutants that occurs during construction must be reported to the Port AV/ENV Programs immediately and as required by the applicable Pollution Prevention Plan. Contractors are responsible for reporting any spill deemed reportable under local, state, or federal statute immediately to that respective agency, in addition to reporting to Port AV/ENV Programs.

Spill Kits used to contain and clean up any spills of hazardous materials/waste must be on-site during construction.

Prior coordination with Port AV/ENV Program staff shall be made by the Port Project Manager, PCS Construction Manager or Resident Engineer related to removal of hazardous waste. Port AV/ENV must be present at time of removal of all hazardous waste from Port property. Port AV/ENV Program staff shall sign all hazardous waste manifests prior to removal of that waste from airport property.

During construction of projects, any unanticipated hazardous materials, waste or contaminated soils encountered during demolition or construction that are not generated by the Contractor's activities, shall be immediately brought to the attention of the Port Project Manager, PCS Construction Manager or Resident Engineer. The materials shall not be disturbed until proper designation has been determined by Port AV/ENV Programs.

For projects to be constructed by the Port, documentation for disposal of Universal Waste shall be submitted to the Port AV/ENV Programs no later than 30 days after project completion, but prior to contract closeout.

Abatement of regulated materials must comply with Port abatement requirements identified in contract documents.

### G. Waste Disposal

Waste water shall be disposed of in accordance with all applicable federal, state and local laws or regulations, including but not limited to those of the affected sewer district. All discharges of Liquid Waste must be approved by Port AV/ENV. Wash water of any type, including road washing, is considered process water and not permitted to be discharged to any Storm Drainage System or Industrial Waste System.

Prior to connection to the existing Industrial Waste System (IWS) and/or the existing Storm Drain System (SDS), or sanitary sewer system, the Contractor shall verify that connection to the existing Port system is appropriate, that there is sufficient capacity and detention for the proposed additional loads, and acquired approval from the Port. This is documented in the Stormwater Site Plan submittal that is reviewed by the Port.

The Port of Seattle shall be listed as Generator of all Hazardous or Universal Waste generated from construction projects, except waste generated directly from Contractor activities (i.e. Contractor vehicle maintenance, Contractor chemical spills). Contractor must coordinate with Port Aviation Environmental for disposal requirements.

### H. Air Quality

If applicable, Contractors are required to abide by air quality regulations and if applicable, obtain "Notice of Construction" Order of Approval from the Puget Sound Clean Air Agency.

Every reasonable effort shall be made to utilize vehicles efficiently and to minimize engine idle time in order to reduce vehicle emissions.

### I. Construction Waste Management

In order to support the Port's Strategic Goals, Contractors are required to develop and implement a Construction Waste Management Plan and final report as defined in Specification Section 01 74 19 (a & b). The specification provides template forms for both the plan and report.

To the maximum extent practicable, Contractors working at the Port are encouraged to divert construction waste from the landfill by utilizing salvage, reuse, source separated or co-mingled recycling activities.

Quantities are typically reported by weight (tons) unless otherwise approved by the Port. Submit copies of manifests, weight tickets, recycling/disposal receipts or invoices which validate the calculations or a signed certification of completeness and accuracy of the final quantities reported.

### J. Critical or Sensitive Area Protection

The Port properties adjacent to the Airport contain an abundance of critical or sensitive areas such as streams and wetlands. Disturbance or impact to these areas and their designated buffers is not allowed. Disturbance of critical and sensitive areas and their buffers may only occur in accordance with local, state and federal regulations or project specific permit. Contact Port AV/ENV if to determine if the project impacts or is near these areas.

### K. Inspections

Port AV/ENV Program and/or Engineering staff will inspect construction sites as needed to assure compliance with applicable environmental regulations and contract specifications.

## **7. AIRPORT OPERATIONS**

### **A. Introduction**

Port Airport Operations (Port AV/OPs) is committed to maintaining the Operational Continuity of Seattle-Tacoma International Airport (Airport) while upholding the highest levels of safety, security and customer service. Port AV/OPs is comprised of several different groups, including construction coordination.

For more detailed information on Port AV/OPs requirements refer to the Specification Section 01 35 13.13 Operational Safety on Airports During Construction.

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

### **B. Coordination of Construction with Airport Operations**

Airport operations will continue throughout periods of construction work. Where airport operations conflict with those of the Contractor, the operations of the airport take precedence.

No construction activity shall be unreasonably noxious, offensive, or create an unreasonable annoyance or nuisance to others on or adjacent to the Airport.

Port AV/OPs Construction Support Representatives (CSRs) schedule and communicate construction activities with Airport stakeholders. The Port Project Manager, PCS Construction Manager, Resident Engineer or Inspector identifies the CSR for the project.

With support from the Port Inspector, it shall be the sole responsibility of the Contractor to schedule and coordinate its activities with those of the Airport to minimize disruption of Airport operations.

Support from Port AV/ Maintenance requires a request submission prior to 08:00 Thursdays for the following work week to provide escorting to restricted locations.

### **C. FAA Requirements**

FAA Notice of Proposed Construction or Alteration

- FAA approval is required for certain types of construction at the airport. All requirements for FAA compliance shall be incorporated into contract documents.

### **D. Noise**

Except for the operation of motor vehicles, aircraft or other transportation equipment, the maximum permissible sound levels at any point shall not exceed those levels established by any state, federal or local government agency with jurisdiction to regulate noise.

Noise level restrictions are identified in Specification Section 01 50 00 Temporary Facilities and Controls.

For work conducted within Airport buildings, noise levels from work activities shall not exceed 80 dBA.

### **E. Heat and Glare**

Any operations producing intense glare or heat shall be performed within an enclosed or screened area in such manner that the glare or heat emitted will not be perceptible at the lease boundary line of the construction site. Additionally, any glare from activities conducted on the Air Operations Area (AOA) needs to be shielded to assure there is no

interference with the exterior wall deluge system, the vision of vehicle operators, flight crews, or air traffic controllers. In addition to screening, bagging of infrared detectors is permissible as coordinated with Port Fire Department in advance.

### F. Equipment Lighting

Cranes and other construction equipment with an overall height in excess of 15 feet must be lowered when not in use and/or during hours of darkness. Equipment stored or operated on the AOA that is in excess of 15 feet in height must be equipped with obstruction lighting in accordance with FAA regulations or as required by the Port.

### G. Vehicles in the Air Operations Area

#### 1) Markings

Contractor's vehicles operating within the AOA must display signs of commercial design on both sides of the vehicle identifying the vehicle as the Contractor's. The Contractor's firm or name must appear in letters a minimum of two inches high. The company name on the vehicle must match the company name on the driver's identification badge. See Specification Section 01 35 13.13 Operational Safety on Airports During Construction for additional details.

#### 2) Operations

Drivers of vehicles operating within the AOA must strictly comply with the Port requirements Motor Vehicle Operations section of the Airport Schedule of Rules, Regulations and Charges as identified in Specification Section 01 35 13.13 – Operational Safety on Airports During Construction.

During periods of low visibility the airport will transition into a restricted access protocol which will only permit essential vehicle traffic on the Airport Operations Area which precludes Contractors or their vendors making deliveries.

#### 3) Parking

No parking is provided on the airfield unless a project has a demarcated and enclosed construction site.

There are several parking stalls around the facility marked Tenant/Contractor that have a maximum 2 hr. time limit. Violators will be penalized and run the risk of losing SIDA badge privileges.

### H. Demolition and Construction

#### 1) Housekeeping

The Contractor is responsible for mitigation of noise, dust, odors, foreign object debris (FOD), smoke, obstructions, and other annoyances. To the extent possible, work in public areas should be performed during off-peak periods; in high-volume areas, this may be required. The Contractor may not unreasonably encumber the premises with unused materials, equipment, or scaffolds. The terminal buildings must be kept in operation at all times. Airfield construction Contractors are responsible for control of FOD on a continual basis for the duration of the project activity. This includes mechanical sweeping operations on all construction travel routes on the AOA.

The Contractor is responsible for cleaning the work area to the satisfaction of the Port Inspector. The Contractor shall be responsible for the removal of all construction debris

upon project completion. However, debris that constitutes a hazard to the operation of the airport or creates an unacceptable visual condition must be removed immediately.

### 2) Flagging

When there is a requirement to conduct vehicle flagging on public highways controlled by the Port or on Airport property including the bag well and ramp, the flaggers are required to submit current certification from the State of Washington, see Specification Section 01 55 26 Traffic Control. Haul routes, if not on the construction documents, will be coordinated with the Port at the pre-construction meeting.

### 3) Temporary Construction Barricades

Temporary Construction Barricades are required for all projects See Specification Section 01 50 00 Temporary Facilities and Controls for detailed requirements. Continuous maintenance of construction barricades and partitions in all public areas is required. On exterior of the project construction barricade or partition the Contractor is responsible to post 24 hour project contacts in case of an emergency need.

### 4) Protection

Protection - Any work in the plenum space above the corridors in the Main Terminal, Concourses A, B, C, D or the North and South Satellites will require the area below the work to be barricaded. The barricades shall be placed such that ceiling tiles or other materials that may become dislodged and fall from shaking or heavy walking, or falling objects from above, will not injure any people below.

### 5) Temporary Ceiling Removal

Temporary Ceiling Removal – Prior to ceiling tile removal, verify with the Port PM whether the area requires assistance for removal from PCS or Port Maintenance. Areas of the terminal contain asbestos fireproofing above the dropped acoustical tile ceilings. Metal ceiling tile may not be removed by a contractor unless approved in advance. Any open drop ceilings shall be covered with white fire retardant plastic sheeting, at least 6 mil thick, between shifts. See Specification Section 01 50 00 Temporary Facilities and Controls for detailed requirements.

### 6) Equipment in the Terminal

Storage of man or scissor lifts inside the terminal public areas is only permitted with approval of the CSR and AV/Maintenance. During non-working periods, all equipment of this type should have a placard attached which includes the owner or renter, project name and a 24-hour point of contact in the event the lift needs to be relocated during off-shift hours or weekends. Availability of power to charge equipment may not always be available in storage locations provided to Contractors.

Large equipment utilized on site shall have a sign identifying the name of the Contractor, 24 hour contact information and the project.

### 7) Direct Digital Control System

The HVAC building automation control system (BAS Siemens DDC) has experienced significant impacts due to damage during demolition. Contractor shall contract with Siemens Building Technologies Division, prior to any demolition by any trade of ceilings and walls. Siemens will note work area on DDC graphics, secure FLN wires to mechanical equipment, and remove temperature sensors. Contractor should not cut any DDC wiring.

## 8) Utility Shutdown Impacts

Contractor should be prepared to provide temporary services to tenants or Airport should they impact such basic services as HVAC, water, electric or plumbing. This may be during a simple utility shutdown or a long term period when modifying HVAC for instance.

## I. Laydown Areas and Office Operations

No office areas shall be set up anywhere in the airport facilities without prior approval from the Port. Contractors and their subcontractors shall store materials and equipment within areas identified in the project plans or as identified by the Port at the start of the project.

- Mechanical and electrical rooms are not acceptable locations for storage or Contractor field offices.

### 1) Stored materials

- Any and all materials and equipment used for construction will generally need to be stored within the boundaries of the project. Additional lay down and storage space may be available through the Port PM per the Specification Section 01 50 00 (c)-Project Logistics Appendix. Airport activities outside of the project area shall not be affected and must be kept operational.
- All construction materials allowed to be stored in areas accessible to the general public must be protected by full height (approximately 8 feet) barricades acceptable to the Port (see Specification Section 01 50 00 Temporary Facilities and Controls). If stored in areas other than a tenant's leased area, the tenant must coordinate such storage with the Port.
- See Section 4 Port Fire Department Paragraph K Construction Storage for further details on storage requirements.

See Tenant Improvement Design and Construction Process Manual Section 3.C.7) for information on availability of tenant contractor employee parking and tenant contractor logistics space for tenant projects. Generally space is not available within the Terminal Building. Limited space may be available for rent.

## J. Site Access / Deliveries / Removal of Demolished Materials

See Paragraph K for work hours and time restrictions around Use and Occupancy of the Airport Terminal Building

### 1) Deliveries/Removals

Personnel access and material deliveries to the worksite are to be by designated routes only.

Pallet jacks or hand carts being used inside the terminal to move materials must have non-marking wheels or casters. Pneumatic wheels are required when transporting material across the Central Terminal Granite floor. In certain circumstances it may be necessary to lay down plywood or Masonite on the path of travel to avoid damaging the terrazzo and granite flooring inside the terminal. All routes must be delineated and left clean.

In general, tenants and their contractors will not be permitted to enter restricted airport areas, except where there is no other access route to the premises. However, should a particular item of material be of such size or configuration that it is physically impossible to transport it by the designated route, permission to enter the restricted area, under

supervision and after stipulated protective measures have been taken, may be granted by an authorized representative of the Port.

Limited use of loading dock facilities and freight elevators will be granted to the contractors by reservation. Outside regular working hours, such facilities may be made available by reservation and at the tenant's cost.

The contractor shall not use baggage carts provided by the airport's baggage cart vendor to transport or store equipment or construction materials.

Oversized materials which will not fit in any of the available elevators may be eligible to be transferred from the non-sterile area into the sterile area dependent on sufficient advance notice and subsequent TSA and Port Security Department permission.

Minimum review and approval process is typically two weeks. This movement is known as a "reverse push" and is typically routed via one of the concourse passenger exit lanes. This option is not available at Concourse B and may become unavailable at all Concourses as specialized doors are installed in the exit lanes.

### 2) Elevators and Hoistways

The contractor may use designated freight elevators and shall not use passenger elevators for transporting materials to and from the worksite. The contractor may schedule material hoisting time slots with the Port Inspector in advance. The tenant shall coordinate its move-in schedule of furnishings, accessories and fixtures with the Port Inspector. Any damage to elevator cabs will be repaired by the Port and charged to the tenant at costs plus overhead.

Loads shall be centered and not exceed the nameplate capacity.

Public passenger-only elevators are not available for contractor use. Public elevators are not intended for movement of construction materials unless permission is provided by the CSR. Costs, plus overhead, for the temporary threshold bridge installation and removal shall be charged to the tenant.

All interior finishes shall be protected and the cab immediately cleaned of any dust or debris.

### 3) Use of Lobbies and Concourses

No concrete, plaster, terrazzo, debris, or other bulk materials may be brought through lobbies or concourses used by passengers unless written permission is obtained from Port AV/ Operations. All existing work must be protected against damage during the contractor's work.

### 4) Construction Dumpsters

Placement of a dumpster on the airport drives may be permitted but only during very limited hours and for limited durations.

Placement of a dumpster on the ramp level for use in support of an interior terminal project is unlikely and only approved under special circumstances other than inside tenants leased space when the dumpster is on behalf of that tenant's ongoing project. Contractor should be prepared to store demolition materials during the shift in which demolition occurs and remove them at the end of the shift.

Management of all construction waste must be included in Construction Waste Management Plan as specified in Section 01 74 19 Construction Waste Management.

Food waste and other organic matter that may become a wildlife or pest attractant shall not be placed in construction dumpsters. Lids must be secured when dumper is not in use to limit access of animals to contents.

### K. Work Hours, Holidays, Black-out Periods, and Other Time Restrictions

#### 1) Standard Construction Work Hours

Unless otherwise arranged with the Port, construction hours are as follows:

- a) Standard Day Shift Work Hours: 0700 – 1530 (7:00am until 3:30pm), Mon - Fri. The Contractor shall limit activities so there is no disruption to Airport operations.
- b) Standard Night Shift Work Hours: 2030 – 0500 (8:30pm – 5:00am), Sun - Fri. All of the work that is considered disruptive to Airport operations shall be performed during the night shift. Disruptive work includes but is not limited to:
  - Work within tenant offices
  - Conduit routes over and around the baggage systems
  - Equipment and furniture moves and deliveries
  - Work that creates noise, dust or odors

Work outside of the standard work shift hours, as defined in this section, can be requested and may be granted by the Port Inspector, Resident Engineer or Project Manager. No work outside of the standard work hours, as defined in this section, shall be allowed without written approval from the Port.

#### 2) Port Staff Holidays

- Jan – New Year's Day
- Jan – Martin Luther King Day
- Feb – Presidents Day
- May – Memorial Day
- July – Independence Day
- Sept – Labor Day
- Nov – Thanksgiving Day and day after
- Dec – Christmas Day and day after

#### 3) Construction Black-out Periods

During seasonally high travel volume, terminal operations may result in contractors and suppliers being subjected to restrictions by the Port regarding hours of work, scheduling, and coordination of work.

#### 4) Other Specific Time Restrictions

- Floor core drilling should occur between the hours of 2400-0400 (12:00 am – 4:00 am) unless approved otherwise by CSR.

## 7. AIRPORT OPERATIONS

- The Central Load Dock is permitted for use to access Freight Elevator 3F but only between the hours of 1400 – 0400 (2:00 pm - 4:00 am).
  - Access to the Central Load Dock will be limited by construction from Month-Year through Month-Year. Coordinate with Port Inspector.
- Central Load Dock is permitted for use besides access to Freight Elevator 3F between the hours of XXXX – XXXX (X:00 am – X:00 am)
- Material handling on the airport arrival or departure drives is restricted, by CSR approval, to between the hours of 2300-0400 (11:00 pm – 4:00 am) on the Departure Drive (upper drive) and 2400-0800 (12:00 am – 8:00 am) on Arrivals Drive (lower drive).
- Drivers of vehicles handling materials on the drives are required to remain with their vehicle for the entire period parked on the drive.
- Movement of a significant amount of materials, tools, or equipment (more than two people carrying materials or pushing one hand cart) is allowed thru public areas only during the hours of 2230 – 0300 (11:30 pm – 3:00 am) unless prior permission has been provided by the CSR.



## **8. TRAFFIC / LANDSIDE OPERATIONS**

### **A. Introduction**

Port AV/Operations – Landside is responsible for maintaining safe and effective vehicular and pedestrian access to the Seattle-Tacoma International Airport (Airport). In order to meet this responsibility Landside requires the assistance of the Contractor to ensure construction projects do not impact Landside operations and facilities.

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

Contractors are required to abide by the Specification Section 01 55 26 Traffic Control.

### **B. General**

Landside is responsible for maintaining operations in a variety of Landside facilities. These include the following:

- Northern Airport Expressway, between State Route 518 and the Main Terminal Roadway System (including the ramps at South 170th Street and Air Cargo Road).
- Air Cargo Road, between South 154th Street and the City of SeaTac right-of-way located just north of South 188th Street (including the Service Tunnel).
- South 160th Street, between Air Cargo Road and the City of SeaTac right-of-way located at Host Road.
- South 161st Street, between Air Cargo Road and the AOA gate.
- South 170th Street, between Air Cargo Road and the City of SeaTac right-of-way located at the Northern Airport Expressway ramps.
- Main Terminal Roadway System, including the Departures/Upper Drive, Arrivals/Lower Drive, and all associated re-circulation ramps (includes the South 182nd Street access at International Boulevard/State Route 99).
- Main Terminal Parking Garage, including the 3rd Floor Ground Transportation Center Entrance and Exit, 4th Floor Entrance, North and South Parking Entrances, and the North Toll Plaza.
- North and South Employee Parking Lots.
- South 160th Street Ground Transportation and Taxi Holding Lots.
- Doug Fox Public Parking Facility.
- Bus Maintenance Facility/Transportation Operations Center

### **C. Project Definition**

Prior to starting construction the Contractor and Port PM, PCS CM, Resident Engineer or Inspector will evaluate the project's anticipated scope and schedule in an effort to identify if, where, when and how severely the project will affect vehicular and pedestrian traffic operation and safety. Typical questions to be considered include the following:

- Which Landside facilities will be affected by the project?
- Will the project require the closure of any of these facilities on a temporary or permanent basis? Will the closures involve a partial or full closure? Will it affect the curb, shoulder or sidewalk areas? Will it affect employee or public parking facilities?

## 8. TRAFFIC / LANDSIDE OPERATIONS

- How long will these impacts last? During what hours of the day? During what months of the year?
- Will existing Landside operations be affected? Will the employee or rental car bus systems be affected? Will ground transportation services be affected (these include public transit, scheduled services, unscheduled services, taxis and limousines)?
- How much and what type of construction orientated traffic is anticipated to be generated? What routes and access points will be used?
- Will any project material (i.e. pipes, beams) or construction equipment (i.e. cranes) deliveries affect any of the Landside facilities?

Any project that requires the partial or complete closure of any airport roadway (including travel lanes and shoulders) will require a traffic control plan. The Contractor shall coordinate with the Port Inspector and AV/Operations Construction Support Representative to determine the level of coordination necessary, the scope of the traffic control plans to be prepared as part of the project and the scope of the traffic operations analysis if necessary. The Contractor shall consider the following:

- Identify potential constraints likely to be applied to the project as a result of Landside operations (i.e. closure of part of the Arrivals/Lower Drive will not be allowed between 1000 - 2400 (10:00am and 12:00am)).
- Provide further direction on the scope of the traffic control plans to be included in the design documents.
- Provide detailed direction on the scope of laydown areas adjacent to or within Landside facilities.
- Identify any other potential impacts on Landside facilities due to the project (i.e. extension of the water line will require temporary shutdown of employee bus driver break room).
- Review of the results of the Traffic Operations Analysis if necessary.
- Identify special considerations to be included in the project specifications.

If a traffic control plan is deemed necessary for a project, as described by the project contract documents, submittal and approval are required prior to the start of construction.

## 9. SECURITY

### A. Introduction

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

All Contractors working at the Airport are subject to current Department of Homeland Security / Transportation Security Administration (DHS / TSA) regulations as detailed in Specification Section 01 14 13 Airport ID Access Security. These requirements identify how to get badges for access into and through the airport facilities and maintain compliant and secure project construction practices.

The Credential Center is responsible for issuing identification badges, keys for restricted and public areas, and assigning access into restricted areas.

Security is responsible for ensuring Contractors conduct operations in a manner that maintains all security requirements and practices identified in the Airport Security Plan.

### B. Identification / Facility Access

#### 1) Badges

- In ALL areas of the airport, the Contractor's personnel must obtain and wear above the waist on their outer garments photo ID badges issued by the Port Credential Center. More information on the ID badge program can be found at this link:

<http://www.portseattle.org/about/employeeservices/idbadges.shtml#id>

- At the conclusion of the contract, the Contractor will be charged for each badge not returned. The cost for unreturned badges is found at the above link.

#### 2) Keys

- The Contractor will submit a key request at the Credential Center requesting temporary construction cores and keys provided by the Port Key Shop. The key request will be submitted a minimum of two weeks in advance of the construction start. Temporary construction barricades typically use an AP-4 key.
- A deposit for each security key is required prior to the issuance of the requested key. All costs for obtaining Airport security keys are identified at the above link and shall be at the Contractor's expense.
- When the specific project work is completed, the Tenant will submit another key request for the final keying of the tenant space. After all construction cores and keys are returned to the Port Lock Shop, the deposit will be returned.
- The deposit will be forfeited if the key is lost or not returned.

### C. Terminal Work

When coordinating construction barricades, any special situation that may affect the security of the Airport shall be identified and discussed with the Port Airport Security Department. See Specification Section 01 50 00 Temporary Facilities and Controls for more details on construction barricades.

#### D. Perimeter Fencing

Prior to removing or making holes in the airport perimeter fencing, the tenant/Contractor shall obtain permission and approval of the Port Airport Security Department and shall take adequate precautions to prevent entry by unauthorized personnel or animals. Modifications to the perimeter fence shall be communicated to AV/Operations/Wildlife to allow for appropriate actions to prevent hazardous wildlife from entering the airfield.

Any modification and/or relocation of the Air Operations Area (AOA) perimeter fence line (whether temporary or permanent) must be submitted by Airport Security to the TSA for approval and inclusion into the Airport Security Plan (ASP). A minimum of 45 calendar days is required for the approval process. Gates must be either staffed or locked at all times. The AOA perimeter fence line must be clear and free of all debris, storage of materials and equipment, vehicles, or above ground facilities for a distance of at least five (5) feet on both sides of the fence.

#### E. Restricted Areas

When work is to be performed within designated airport restricted areas, Contractors may access only those areas of work or storage designated by the Port Inspector, Resident Engineer, Project Manager, Airport Security, and authorized by the Credential Office. Restricted access points must be either staffed by a Port Construction Support Specialist or locked at all times. All prohibited items must be locked up and secured when left unattended.

Upon completion of construction, all exterior doors and gates leading to a restricted area must have the appropriate security signs and must be incorporated into the airport's security system. (Signs are typically supplied by the Port. Contact Airport Security for details on appropriate signs. Security devices are provided and installed by the tenant. Coordinate terminations and programming with the Port during design to clearly indicate roles and responsibilities.)

All construction documents for new construction and/or modification of facilities or fencing leading to the AOA and/or restricted areas shall include raceways, wiring, devices/hardware and the installation of all equipment and devices required for incorporation into the Airport Security Access Control System.

## **10. CONSTRUCTION MANAGEMENT**

### **A. Introduction**

Construction Management ensures projects are executed utilizing industry best standards for construction processes and procedures within the project's contract terms. Port Engineers and Inspectors provide a key role in supporting the Contractor in coordinating and facilitating work at the Airport while complying with the Port's Rules, Standards and Guidelines.

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

For Tenant projects please refer to the Tenant Improvement Design and Construction Process Manual for information about construction processes such as construction submittals, deferred submittals, substitutions, requests for information, construction barricades, punch lists, and other tenant specific items.

### **B. Notice to Proceed and Pre-Construction Meetings**

No construction work will start at the Airport without receiving notice to proceed (NTP) and participating in a preconstruction meeting. For Tenant projects see Tenant Design and Construction Process Manual Section 5 Pre-Construction for detailed requirements.

### **C. Schedule Management and Coordination**

Prior to the start of work, the Contractor shall submit a detailed progress schedule for approval. For tenant projects see the Tenant Improvement Design and Construction Process Manual Section 5 Pre-Construction for detailed requirements.

Weekly look ahead schedules are utilized to identify and communicate project activities to a wide variety of Port stakeholders. This supports the Contractor in understanding what necessary steps are required to begin and execute work.

Weekly coordination meetings with Port personnel and Contractors are required, unless otherwise agreed with the Port Resident Engineer, Inspector, PCS Construction Manager or Project Manager.

### **D. Construction Coordination**

The Airport is an operating facility that must remain in full operation throughout the term of this contract. Where facility operations conflict with those of the contractor, the operations of the facility take precedence over those of the contractor. It shall be the sole responsibility of the contractor to schedule and coordinate its activities with those of the facility to assure minimum disruption of facility operations. See Specification Section 01 31 13 - Project Coordination.

#### **1) Construction Advisory Form (CAF)**

Communication with Aviation Operations is critical to airport safety and project progress. A minimum of two (2) weeks' advisory notice must be given to the Port Inspector and AV Operations Construction Coordinator prior to project commencement and any work that will impact airport operations. The Contractor is responsible for coordinating exact dates and times of all activities regarding access for crew, material, and equipment delivery.

## 2) Coordination Meetings

The Port Inspector will conduct regular construction meetings to coordinate the work of the contractors, answer questions and resolve issues. The Port Inspector will publish meeting minutes.

## 3) Coordination with other Port Work

During construction, work by others may be occurring within, or adjacent to the boundaries of this project. The contractor shall cooperate with the Port and other contractors to prevent impact to any other construction projects.

## E. Pre-Installation Meetings

Based on project scope, Contractors shall schedule pre-installation meetings in order to coordinate work. The purpose of these meetings is to review scope of work, identify participants and plan activities that involve the Port or other Contractors and have the potential to impact Port operations.

The Contractor shall work with the Port Resident Engineer, PM, PCS CM or Inspector to determine what work will require pre-installation meetings.

Pre-installation meetings are scheduled by the Contractor and held prior to commencing Work or a portion of Work by the Contractor or any Subcontractor. The Port Resident Engineer or Inspector may waive this requirement if deemed unnecessary, or request additional meetings as required.

## F. Contractor Quality Control Program

The Contractor shall provide a quality construction product. To establish the level of quality, the Contractor shall meet the Port design and quality standards of the existing base building as identified in project documents. This level of quality shall include, without limitation, the grades of material, thickness, strengths, any national or international standards that must be met, any samples that must be submitted, any testing required to assure quality, experience required of installers, all fabrication and installation tolerances, and other related quality items.

The Port shall have the right to inspect all work at any time to assure that the Contractor provides the minimum quality level required.

## G. Utility Shutdown Coordination: HVAC, Plumbing, and Electrical Utility Systems

All construction activities interfacing with existing systems must be fully coordinated with Port AV/Maintenance to preserve system integrity. Extensive coordination is required to facilitate system and utility shutdowns for construction activities. All shutdowns require complete and extensive planning to ensure the operations of the Airport continue with minimal impacts. The Contractor shall coordinate the work with the Port Inspector and AV/Maintenance. A request for shutdown of a utility at the airport will be accepted only from the contractor or authorized tenant's representative.

In order to manage the risk associated with shutdowns and to minimize the time a system is down, an Airport Systems and Utility Shutdown Request (SDR) must be submitted and approved well in advance of the work. The Contractor shall coordinate the work with the Inspector and AV/Maintenance. The Shutdown Request must be completed (all necessary sign-offs received) a minimum of three (3) working days or 72 hours before the shutdown date. Weekend days do not count as part of the 3 days or 72 hours.

- 96 hours' notice is required for domestic water system shutdowns.

- SDRs that have a substantial impact to Airport Operations or tenants may require the submission of a Construction Advisory Form (CAF) along with the SDR, as required by the Airport Operations Construction Support Representative. This form must be completed two (2) weeks prior to commencement of work.

The contractor shall not turn on or off any utility on the airport premises. Port AV/Maintenance personnel perform all shutdowns and restarts of existing systems. In some cases, if coordinated and agreed to in writing, the contractor may perform a shutdown.

All building interior preparation will be completed before scheduled shutdown time (i.e., restrooms closed, signs put in place advising public of no restroom facilities, etc.). Port AV/Maintenance personnel will not turn off/on any utilities without the Contractor present. Contractor will advise the Inspector when the work is finished so that Port AV/Maintenance personnel can be called to place the utility back in service. If the utility service is shut down within the Contractor's requested time frame and the Contractor does not perform the work as scheduled, the Contractor or tenant will be responsible for all Port costs associated with the utility shutdown.

Fire system shutdowns shall be coordinated through the Port Inspector and be carried out in accordance with the guidelines outlined in the RAC. See Section 4 Port Fire Department.

**The contractor shall also submit a plan for the Port Inspector's approval detailing the contractor's actions regarding accidental damage to a fire detection or fire suppression system.**

See Specification Section 01 31 13 Project Coordination for more details.

## H. Construction Inspections

Port stakeholders and consultants may observe or test the Contractor's work to determine compliance with approved project documents. The Port monitors construction processes and methods to ensure compliance with Port and industry standards and evaluates whether material, equipment, furnishings, fixtures, systems, and finishes installed satisfy the requirements of the "approved" or "approved as noted" construction documents, shop drawings, product data and sample submittals, and the Contractor's warranties.

The Contractor shall permit inspectors access and provide the means of access to all work areas and to off-site facilities used to store or manufacture materials, furnishings, fixtures and equipment to be incorporated into the work. The Contractor shall respond to any other reasonable request that will further the inspector's ability to observe or complete any tests. Such inspections and tests shall not relieve the Contractor of any obligations under its owner-Contractor agreement.

## I. Inspections

During construction, various Port stakeholders have a role in inspecting projects as identified, but not limited to, in the following chart:

Port Inspector	Airport Building Department	Port Fire Department	AV/ Maintenance & Facilities & Infrastructure	State of Washington Labor & Industries	Other Inspections
Oversees project for compliance to: - Plans - Specifications - F&I Standards - Applicable codes	- Deferred Submittals - Building Plumbing - Mechanical - Demolition - Commissioning - Temporary CO - Final CO	- Deferred Submittals - Temp barricades - Fire Sprinkler Systems - Alarm/Strobes - Hot Work Permits - Temporary CO - Final CO	- Equipment Accessibility - Discipline Conflicts - Potable water connection & testing - Temporary power connection - Waterproofing applications - Inspections before covering ceilings and walls. - Building envelope (for example roofing, exterior window wall systems, roof top equip., ceiling systems)	- Electrical - Vertical conveyance - Temporary CO - Final CO	- Health Department - Liquor Board - Airport Dining and Retail Facility Manager

The Airport Building Department requires evidence of these inspections to issue a "Certificate of Occupancy."

In addition to the above inspections, intermittent inspections by Port AV/Maintenance or AV/Facilities and Infrastructure may occur to verify that Architectural, Structural, Mechanical, Electrical, Plumbing, HVAC, and Communication systems are installed per Port Standards.

Port AV/ENV will conduct periodic inspections to verify compliance with applicable stormwater, other water resources permits, waste management and any other environmental regulations associated with the project.

Port AV/Operations/Wildlife will conduct periodic inspections to verify compliance with Port of Seattle Rules and Regulations.

## J. Inspections Coordination

### 1) Construction Inspections

In general, the contractor is responsible for scheduling required Airport Building Department (ABD), Port Fire Department, Engineering, and Environmental inspections and for ensuring that inspections are completed. The Port may conduct any inspections it deems necessary and shall bring any irregularities to the tenant or contractor's attention. The Port shall have no liability for failing to make any such inspections, or for failing to bring such irregularities to the tenant or contractor's attention.

The tenant or contractor shall notify the Port Inspector forty-eight (48) hours prior to covering up work so that the work may be reviewed by appropriate Port AV/Facilities & Infrastructure, AV/Maintenance, and other Port stakeholder representatives. Any work covered up without first providing such forty-eight (48) hour advance notice may be required to be removed.

The contractor shall provide for the Port and any party designated by the Port all access including, but without limitation, ladders, access doors, lifts, and ventilation needed to review the quality of the work.

### 2) Special Inspections

Required IBC special inspections shall be accomplished by inspection firms or certified inspectors approved by the ABD. The Port Inspector and ABD Inspector will take part in and must be notified prior to those special inspections required by IBC. Copies of all inspection reports and tests shall be forwarded to the Port Inspector and ABD.

The ABD's final acceptance of occupancy will be when the ABD has received all inspection reports, certifications, and record documents. The ABD's inspection file must be complete and satisfactory prior to the issuance of a Certificate of Occupancy.

### 3) Defects – Uncovering Work

Port Inspectors are authorized to reject any work, fixtures, systems, materials, equipment, furnishings, or any component of the work in non-conformance to the approved construction contract documents.

Port Inspectors review against approved construction contract documents, shop drawings and samples to determine whether the work is acceptable. If the appearance and/or performance of any element of the work fail to conform to the plans, specs, code and standards, a Non-Conformance (NCR) will be communicated by the Port in writing to the tenant and the contractor.

Removal or modification, as directed by the Port Inspector, the ABD or L&I inspector of any work that is not in conformance with the approved construction documents, codes, Port Standards or the Rules for Airport Construction, shall be at the contractor's expense. Failure to take immediate action to remedy the situation may result in suspension of the building permit.

## K. Electrical Room Access for Work or Work Requiring Electrical Shutdowns / Project Electrical Safety Meeting

Requests for Port AV/Maintenance Electrical department escorts and room access requests must be submitted by 8 am Thursday for the following week, and are required for access to power centers, chiller distribution room, emergency and STS power rooms.

- Work in these rooms requires a "Capital Improvement & Expense Project Support Request" completed by the Port.

Projects that require electrical room access must hold a pre-installation or Project Electrical Safety meeting with the electrical shop before proceeding.

When a Contractor requires access to all other electrical rooms, they are to call the electrical shop at (206) 787-5311; when there is no answer, leave a message with a return phone number. The Port AV/Maintenance Electrical Department will determine if a Port electrician will be present during access to the electrical room(s) provided an advance notice support request has been submitted.

## L. Temporary Utility Connections

See Specification Section 01 50 00 Temporary Facilities and Controls for more details about temporary utility connections.

Temporary connections will be used during the course of the construction and then completely disconnected and removed.

- Electrical – An application for connection for temporary electrical power should be submitted for approval to Port AV F&I.
- Water – An application for connection for temporary water services should be submitted for approval to Port AV F&I. Each temporary water connection requires a certified backflow prevention device (RPBA: Reduced Pressure Backflow Assembly) that was tested by Port AV/Maintenance prior to use. This includes all hoses and any other type of temporary connections.

## M. Port Facility and Infrastructure Standards

The Airport has an in-depth set of Standards written by the Port Aviation Facilities and Infrastructure Group (AV/F&I). These standards apply to every Airport project design regardless of size and cover a wide range of disciplines. The standards assure that the materials, components and workmanship are built to a uniform standard and can be maintained after construction is complete.

In the past, Contractors have used materials or methods in conflict with the Port standards. Success rates for project acceptance are substantially increased when Port Standards are followed. The following paragraphs contain an abbreviated list compiled for items that historically cause problems for Contractors.

### 1) Mechanical

Please review Port Mechanical Standards for further requirements and clarifications.

- a. All material, equipment and components shall be new.
- b. Plastics (ABS, CPVC, PE, and PVC) shall not be used inside the building.
- c. All new equipment and components, including gaskets, shall be asbestos free.
- d. Electronically powered mechanical equipment and assemblies shall have the approval of and be labeled from UL, CSA, or ETL.
- e. ASME code stamp required on all pressure vessels and relief valves.
- f. Use of valves incorporating more than one function in a common body is prohibited. Wafer Style Butterfly Valves or combination valves (i.e. Strainer/ball or ball/butterfly) are not allowed.
- g. At a minimum, the following systems and components shall be insulated:
  - i. Hot water, tempered, recirculating;
  - ii. Cold water, non-potable, roof drains, rain leaders;
  - iii. Steam, condensate, heating water, steam vent piping;
  - iv. Chilled water, condensate drain;
  - v. Brine
- h. All supply ductwork requires insulation interior lining or exterior wrap.

- i. Interior ductwork bracing is not allowed except when approved by Port AV/F&I (some large sized ducts require).
- j. Access panels (and access space) are required at relief valves, mixing valves, and other concealed plumbing components.
- k. Join duct sections together with metal cleats.
- l. Seal all HVAC duct connections so no audible leaks detected. (No duct tape allowed)
- m. Properly identify access panels (and allow access space) for all fire smoke dampers with label (see label requirements).
- n. Mechanical equipment, piping and valves have proper Port identification (color coded banding and valve ID tags) after installation (see label requirements)
- o. Access panels (and access space) are required at dampers and filters.
- p. Engineered seismic bracing as identified in the project plans is required for all Mechanical, Electrical, Plumbing and Sprinkler lines.
- q. Install all mechanical services plumb and parallel to the building structure and so that it does not block access to service points on any equipment.
- r. All piping and ductwork systems crossing structural (building) expansion joints shall be required to have a type of flexible installation.
- s. Fire stopping is required at all penetrations through fire rated walls so that the rating is maintained at all penetrations using approved fire assembly details (3M Fire Seal or approved equal) to the designed fire resistance of the wall.
- t. The Port has a sole source with Siemens Building Technologies Division for the HVAC building automation system (BAS) direct digital control (DDC).
  - Prior to demolition of walls and ceilings Siemens must be under contract and perform site work to protect the DDC system
  - All Water and Gas Meters must be connected to Siemens DDC
  - All equipment, including kitchen hoods and exhaust fans, must be controlled by the DDC
  - Siemens must receive AutoCad files of mechanical sheets with architectural backgrounds and XREF files during final construction for use in the DDC Graphics

## 2) Plumbing

Please review the Port Mechanical Standards for further requirements and clarifications.

- a. All new piping shall be copper Type L above ground – Type K buried.
- b. No compression fittings such as "shark-bites" or crimping systems are allowed when connecting copper piping. Only solder connections are accepted. This requires a Hot Work Permit from the Port Fire Department.
- c. Dielectric fittings:
  - Dielectric unions are not allowed.
  - Only use dielectric nipples to prevent galvanic corrosion between dissimilar metals.

- d. Where several pipes are installed parallel at the same elevation, provide multiple or trapeze hangers.
- e. Do not support pipes from each other. Supports are to be attached to the building structure.
- f. Provide copper plated hangers and supports for copper piping pipe shields between hanger and support and piping.
- g. All couplings used to join no-hub cast iron pipe and fittings shall be Heavy Duty, Shielded, and Stainless-Steel with 4 or 6 bands see standards.
- h. Provide escutcheons at each point where pipe or other fittings enter the wall or ceiling.
- i. Install all valves with stems upright or horizontal, not inverted.
- j. Valve stem extensions are required for valves that will be insulated.
- k. Pipe relief from valves, back-flow preventers and drains to nearest floor drain. RPBA drain piping shall be sized for full RPBA discharge.
- l. Install trap primers at all floor drain locations. Trap primers shall be electronic type.
- m. Food service waste shall be collected separately from sanitary building waste and routed through a Port of Seattle approved grease interceptor (in accordance with UPC Appendix H).
- n. All kitchen waste piping shall be schedule 10 stainless steel type 304.
- o. Install water hammer arrestors in upright position complete with accessible isolation valve
- p. Provide new water service complete with approved reduced pressure back-flow assembly and water meter with by-pass valves pressure reducing valve. All water meters will be connected to Siemens DDC.
- q. An approved reduced pressure principal backflow assembly certified by the State of Washington is required to protect domestic water systems from contamination.
- r. All kitchen, food, drink service waste piping shall be Schedule 10, Type 304 Stainless Steel and routed to Port approved grease interceptor.
- s. Connection to potable water supply requires sterilization procedures and testing. REFERENCE – WATER SYSTEM CONNECTION PROCEDURES. Refer to procedures for time periods necessary for Port AV/F&I and AV/Maintenance activation request notifications and laboratory testing of new and modified water piping for contamination.
- t. Install cleanouts at grade.
- u. Install piping plumb and parallel to the building structure and so that it does not block access to service points on any equipment.
- v. Fire stopping is required at all penetrations through fire rated walls so that the rating is maintained at all penetrations using approved fire assembly details (3M Fire Seal or approved equal) to the designed fire resistance of the wall.

### 3) Fire Protection

Please review Port Fire Protection Standards for further requirements and clarifications

- a. Above grade piping 4" and smaller shall be schedule 40.

- b. Couplings shall be rated for operating temperature -20° f to 180° F and 700 psig pressure.
- c. Coupling reducers, coupling tees, or mechanical tees are not allowed.
- d. Seismic restraint design is required for all projects. The design shall be done by a structural engineer licensed in Washington State.
- e. Seal fixtures to wall and floor surfaces with non-hardening flexible sealer containing silicone rubber, color to match fixture or fire-stopping if fire rating applies to wall or floor assembly.
- f. Fire stopping is required at all penetrations through fire rated walls so that the rating is maintained at all penetrations using approved fire assembly details (3M Fire Seal or approved equal) to the designed fire resistance of the wall.

#### 4) Electrical

Please review Port Electrical Standards for further requirements and clarifications.

- a. Receptacles and branch circuit breakers are to be rated for 20A, not 15A, and 200% neutral wires for PCs, USB power outlet loads or any intended load with a non-linear power supply.
- b. Sectional receptacle boxes are not allowed. If installing under the conveyors or where exposed to the weather, the boxes must be gasketed.
- c. Extension collars are allowed, however, no conduit is allowed through the collar. The conduit must enter through the actual box.
- d. Install devices parallel to the floor and walls – do not install crooked devices.
- e. Fittings must be steel compression type. No set screw type fittings allowed.
- f. Separate supports for conduits – do not support from each other or the J-box or from ceiling grid wire supports. Conduits to be supported from building structure.
- g. Conduits shall be supported with mechanical bolted hardware type clamps. Clip type connectors such as caddy clips are not allowed.
- h. Install conduits so that they do not block access to service points on mechanical or other equipment.
- i. Conduit routing should be parallel and perpendicular to building structure and no more than 270° of bends between devices, junction boxes or pull boxes.
- j. Steel Flex conduit may be used but must be heavy duty, not reduced wall light gauge flex. There are also maximum lengths allowed depending on purpose.
- k. Metal Clad (MC) cable is not allowed.
- l. Panel boards:
  - Install door in door construction with (2) flush locks, one in each door.
  - New panel feeder pull – observe NEC requirements for bending radius of feeder cable to avoid scrapes on feeder and wire insulation.
  - Clean all dirt and debris in bottom of panel.
- m. Do not install bent or damaged equipment (light fixtures in particular).
- n. Install data and power outlets a minimum of 6" apart but not more than 12" apart.
- o. Switches and junction boxes must be accessible. If located above ceiling, make sure they are not blocked by HVAC equipment, ceiling grid or other obstructions.

- p. Label all J-boxes, switches, disconnect switches, conduits etc. Label with panel name and circuit number. Conduits should be labeled within 12" of all junction or pull boxes and at all wall, ceiling or floor penetrations, on both sides of penetration.
- q. Solid wire conductors shall not be allowed for power distribution or controls unless specifically required by the manufacturer. Solid wire found in possession of the Contractor shall be immediately removed from the site.
- r. Label all receptacles with panel name and circuit number.
- s. Contractor is responsible for removing light bulbs & lamps from the property for proper disposal per waste type.
- t. Fire stopping is required at all penetrations through fire rated walls so that the rating is maintained at all penetrations using approved fire assembly details (3M Fire Seal or approved equal) to the designed fire resistance of the wall.

## 5) Telecom Cables

Please review Port Telecom Standards for further requirements and clarifications.

- a. Plastic bushings are required on conduit stubs.
- b. Waterfalls/spillways in telecom rooms shall be above cable trays.
- c. Do not exceed Systimax standard cable bend radius.
- d. Protect terminated cables in dusty rooms from construction dust and debris using 10 micron disposable supply air filters positively pressurize to .1" of water in a sealed room.
- e. Telecom conduit shall have no more than (2) 90° bends or a combination of contiguous bends totaling over 180 degrees, a pull box must be installed.
- f. Fire stopping is required at all penetrations through fire rated walls so that the rating is maintained at all penetrations using approved fire assembly details (3M Fire Seal or approved equal) to the designed fire resistance of the wall.
- g. Clean dirt out of telecom room floor boxes and poke-throughs with a vacuum located outside the room with only hoses brought into the room. Dust and dirt degrades telecom cable terminations.
- h. Telecom room should be free of dust and debris and should have positive pressurization prior to cable terminations. As above, dust and dirt degrade telecom cable terminations.
- i. Antenna locations must be approved by the Port.

## 6) Hazardous Wildlife Mitigation and Pest Prevention:

- a. Seal or close all structural gaps or holes greater than 1/4" long or wide to prevent pest or animal access to buildings and between spaces.
- b. Install door sweeps on exterior doors for door gaps greater than 1/4" to prevent pest access.
- c. Unless otherwise agreed with the Wildlife biologist, install bird deterrents on horizontal exterior structures greater than 12" in length and 2" in diameter. Deterrents may also be required on interior structures.

## N. Project Close-Out

Where references are made to specification sections, Port Projects should refer to the Project Specifications, and Tenant Projects should refer to the Port's Tenant Improvement Construction General Requirements.

For Tenant Projects please see the Tenant Improvement Design and Construction Manual Section 7 Completion and Close-out for detailed close-out requirements.

- No project is a successful project without completing all the work associated with the construction contract including but not limited to the following:
- Complete stabilization of any disturbed areas
- Request, conduct and complete Punch List Inspections and corrections
- Commissioning
- Operations & Maintenance Manuals in fully text searchable PDF format. Include native Excel CMMS spreadsheet for Port maintained equipment, warranties and dates for warranties.
- Training
- Certificate of Occupancy
- As-built Documents CADD drawings and fully text searchable PDF formats. As-builts shall include panel schedules in Port Standard electronic Excel format for all new panels and for all panels where circuits have been modified. Mechanical AutoCad File with architectural background and XREF files to be sent to Siemens Building Technologies Division for DDC graphics.
- Return Badges and Keys
- See Specification Sections 01 74 00 Cleaning, 01 78 23.13 Aviation Operations and Maintenance Data, 01 78 29 As-built Redline Documents, 01 91 00 Commissioning, 01 79 00 Training Condensed for more detailed information.



## 11. APPENDIX – ABBREVIATIONS AND DEFINITIONS

Whenever in this document, the following words and defined terms are used, the meaning will be as follows, which meaning shall be applicable to both the singular and plural forms thereof:

Word/Abbreviation	Definition
Airport (STIA or Airport)	The entirety of Seattle-Tacoma International Airport (STIA or Airport) and properties owned by the Port of Seattle in and around the airport as shown on the Airport Layout Plan.
Airport Building Department (ABD)	The authority having jurisdiction over building permits and acceptance. The building official and/or authorized representative of the Airport Building Department.
Airport Building Inspector	The Airport Building Department representative who is responsible for the building permit processing for airport projects, and for the code inspection of construction projects at the airport.
ANSI	American National Standards Institute.
AOA	Air Operations Area.
Aviation Division	The division of the Port of Seattle, which has authority and control of the airport.
Building Code (General & Mechanical)	The building code used by the airport is the International Building Code (IBC).
City	City of SeaTac or City of Des Moines as applicable.
Concessionaire	Any person, firm, corporation, governmental agency or other entity which has entered into a contractual relationship with the Port for lease, or rental, or occupancy of a space inside a facility on Port property.
Contract Documents	The documents that governs the construction relationship between the Port and Contractor, or tenant and Contractor working on Port Property.
Contractor	The individual, partnership, firm, corporation, joint venture, or other business entity with whom the Port of Seattle, or its tenant, has entered into a contract, and who is referred to in contract documents as the Contractor. The term Contractor means and includes the Contractor and all of its representatives, subcontractors and suppliers.
County	King County.
Day	A calendar day unless otherwise specifically designated.
Drawings	The graphic presentation of the work, or parts thereof, which indicates the size, form, location, and arrangement of the various elements of the work.

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Word/Abbreviation	Definition
Engineer	The chief executive officer of the Port of Seattle's Engineering Services Department (the Director, Engineering Services) and such agents, including the Construction Manager and Resident Engineer, as are authorized to act in his/her behalf.
Engineering Department	The Port of Seattle Engineering Department comprised of Design, Construction Management and Safety.
FAA	The Federal Aviation Administration.
Final Inspection	The final inspection is the inspection that occurs to verify the Contractor's punch list items and items added by the Port Inspector from punch list inspection are complete.
Fire Chief	The head or head's authorized representative of the Port of Seattle Fire Department.
Fire Department	The Port of Seattle Fire Department located at the airport.
FOD	Foreign Object Debris.
IBC	International Building Code.
IFC	International Fire Code.
Improvements	All buildings, structures and facilities including paving, fencing, signs and landscaping which are constructed, installed, or placed on, under, or above any Airport building site by or on behalf of an airport tenant or the Port.
L&I	State of Washington Department of Labor and Industries.
NFPA	National Fire Protection Association.
Notice to Proceed (NTP)	Notice to Proceed (NTP) is formal notification issued by the Port of Seattle, indicating the Contractor can begin physical work at the project site.
Port (Owner)	The Port of Seattle, its commission, employees and other authorized representatives with delegated Port authority regarding the work.
Port Construction General Requirement	General requirements for working at the Port typically presented as Division 1 Specifications on Capital Projects and attached to design and construction documents for Tenant Improvement projects.

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Word/Abbreviation	Definition
Port Inspector (Inspector)	The Engineer's authorized representative assigned to monitor all construction work on Port property including ensuring Contractors comply with Port rules and regulation; support coordination efforts related to performing work at the Port and performing inspections of the Contractor's work including compliance with plans and specifications as well as installation.
Project Manager (PM)	The Port of Seattle's authorized representative assigned to lead and coordinate all aspects of project development and implementation.
Punch List Inspection	Punch list inspection is the activity that occurs prior to final inspection. The Contractor will prepare a punch list prior to requesting a punch list inspection by the Port Construction Inspector. Punch list items shall be limited to administrative requirements of the contract (i.e., final project record documents), training, landscaping, and minor deficiencies in the work requiring correction. A punch list inspection shall not be requested or granted if the work is incomplete.
Provide	The all-inclusive actions required to furnish, install, connect, adjust, test and make ready for use or occupancy.
SEPA	State Environmental Policy Act (RCW 43.21C) and implementing regulations (WAC 197-11).
Site or Building Site	Airport land or building area identified in Port contract documents (plans, specifications or lease agreements) upon which improvements are to be constructed.
Specifications	The portion of the contract documents consisting of the written requirements for contract administration, materials, equipment, systems, standards and workmanship for the work, and performance of related services.
Port Standards	Level of products and installation, quality, achievement, etc., identified by discipline that is considered acceptable or desirable by Port Facilities and Infrastructure.
State	State of Washington.
STIA	Seattle-Tacoma International Airport.
Subcontractor	A business entity that has a direct contract with the Contractor to perform a portion of the work. The term "subcontractor" means and includes the subcontractor and its authorized representatives.

## 11.APPENDIX – ABBREVIATIONS AND DEFINITIONS

Word/Abbreviation	Definition
Sub-Subcontractor	A business entity that has a direct or indirect contract with a subcontractor to perform a portion of the work.
Supplier	A vendor, supplier, distributor, or material provider that supplies material or equipment used in the performance of the contract.
Tenant	Any person, firm, corporation, governmental agency or other entity which has entered into a contractual relationship with the Port for lease, or rental, or occupancy of a building, land or other facilities on Port property.
Tenant Improvement	Any improvement project performed by a person, firm, corporation, governmental agency or other entity which has entered into a contractual relationship with the Port for lease, or rental, or occupancy of a building, land or other facilities on Port property.
UPC	Uniform Plumbing Code, latest edition.
Wildlife/Pest	The Wildlife Hazard Management and Conservation Program is organized under Airport Operations to implement FAA 14 CFR 139.337 under the STIA Wildlife Hazard Management Plan. The Unified Pest Management (UPM) Program is one component of the wildlife management program at the Airport.
Work	Work shall mean the completed construction as a result of the furnishing of all labor, materials, equipment, and all incidentals necessary to the successful completion of the construction. The work is sometimes generally referred to as the "project."