Port of Seattle Fire Department's Code Amendments, Standards, and Interpretations

2024

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1.0 - Introduction

1.1 – Authority

The Port of Seattle Fire Department is responsible for administrating and ensuring fire and life safety compliance on all Port 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. 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 this document, all references to "Fire Department," shall be in reference to the Port of Seattle Fire Department.

The 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 permits. The Port of Seattle Fire Department also reviews construction plans, deferred submittals, and shop drawings for code compliance.

1.2 – Current Codes

The Port of Seattle Fire Department is currently enforcing the **2022 Edition of NFPA 415 - Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways** as well as the **2021 Edition of the International Fire Code with Washington State Amendments** and as amended by this document.

2.0 – Reference Standards

2.1 – Additional Reference Standards

The following reference standards shall be applicable to projects within the AAA and enforceable:

2.1.1 - NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems
2.1.2 - NFPA 90B - Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
2.1.3 - NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations

2.2 – Supersede Reference Standards

The following reference standards supersede the ones listed in International Fire Code - Chapter 80, Reference Standards:

2.2.1 - NFPA 12 - Carbon Dioxide Extinguishing Systems, 2022 Edition
2.2.2 - NFPA 12A - Halon 1301 Fire Extinguishing Systems, 2022 Edition
2.2.3 - NFPA 13 - Installation of Sprinkler System, 2022 Edition
2.2.4 - NFPA 14 - Installation of Standpipe and Hose Systems, 2019 Edition
2.2.5 - NFPA 20 - Installation of Stationary Pumps for Fire Protection, 2022 Edition
2.2.6 - NFPA 24 - Installation of Private Fire Service Mains and Their Appurtenances, 2022 Edition
2.2.7 - NFPA 72 - National Fire Alarm and Signaling Code, 2022 Edition
2.2.8 - NFPA 105 - Smoke Door Assemblies and Other Opening Protectives, 2022 Edition
2.2.9 - NFPA 110 - Emergency and Standby Power Systems, 2022 Edition
2.2.10 - NFPA 111 - Stored Electrical Energy Emergency and Standby Power Systems, 2022 Edition
2.2.11 - NFPA 400 - Hazardous Materials Code, 2022 Edition
2.2.12 - NFPA 407 - Aircraft Fuel Servicing, 2022 Edition
2.2.13 - NFPA 409 - Aircraft Hangars, 2022 Edition

2.2.14 - NFPA 410 - Aircraft Maintenance, 2020 Edition
2.2.15 - NFPA 720 - Installation of Carbon Monoxide (CO) Detection and Warning Equipment, 2015 Edition
2.2.16 - NFPA 750 - Water Mist Fire Protection Systems, 2023 Edition
2.2.17 - NFPA 1221 - Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2019 Edition
2.2.18 - NFPA 2001 - Clean Agent Fire Extinguishing Systems, 2022 Edition

3.0 – Operational Permits

3.1 - Operational Permits

In additions to the operational permits required by the International Fire Code (IFC), the following activities require an operational permit from the Port of Seattle Fire Department:

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

4.0 – Fire System Shutdowns and Inspections

4.1 – Fire System Shutdowns

4.1.1 - All utility shutdowns related to Fire Department system connections and testing are coordinated with Operations and AV/Maintenance utilizing the utility shutdown request form and must be submitted and approved a minimum 72 hours prior to work. This includes fire main, sprinkler system, and fire alarm system shutdowns. After Operations and AV/Maintenance have signed the shutdown request form; the Fire Department shall receive it for final review, approval, and signature prior to the submission to Operations and AV/Maintenance.

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

4.1.2.1 - Tracing water and sprinkler lines

4.1.2.2 - Scheduling shutdowns

4.1.2.3 – Operating valves during normal operation

4.1.2.4 - Draining and resetting systems

4.1.3 - If a utility shutdown results in fire system impairment, a fire watch shall be required and provided by the Contractor. The Fire Department will assess this condition for each request.

4.2 – Firewatch

4.2.1 - General: A firewatch shall be provided during all hot work activities.

4.2.1.1 – Firewatch shall continue for 60 minutes after the conclusion of the work.

4.2.1.2 - Exception: A designated firewatch may not be required when the hot work area is inspected by a qualified person and determined to have no fire hazards or combustible exposures with in 35 feet of the hot work activity.

4.2.1.3 - 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.

4.2.1.4 - 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 Fire Department immediately for investigation.

4.3 - Inspections

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

4.3.1.1 – POSFD will attempt to accommodate emergency inspections/work not covered by the above schedule based on a formal request, but shall not be held responsible for delays to the Contractor's schedule.

4.3.2 - Fire inspections include, but are not limited to, above ceiling, fire stopping, fireproofing, sprinkler, and sprinkler hanger/bracing, thrust blocks, pressure testing of fire systems, flow and flush tests of fire mains/hydrants, kitchen suppression systems and fire alarm acceptance.

4.3.3 - For inspection personnel and contact information. Please contact the Port of Seattle Fire Department front desk at (206) 787-5327.

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

5.0 – Hot Work Permits and Guidelines

5.1 – Hot Work Permits and Guidelines

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 of Seattle Fire Department.

5.1.1 - All hot works at STIA requires a hot work permit.

5.1.2 - Hot work permits fall under one of the following categories.

5.1.2.1 - Port Employee Self Issue Hot Work Program: Port maintenance divisions that have completed the required training will issue and track hot work permits via Origami.

5.1.2.2 - Project/Area Hot Work Permit: After proper coordination with the Fire Department, the General Contractor, is allowed to manage hot work program. Reference Section 29.0 for a "Daily Pre-Hot Work Checklist."

5.1.2.3 - Standard Hot Work Permit: Hot work being performed not tied to a project (e.g. tenant maintenance). Call Fire Dispatch to request hot work permit (206)-787-4653.

5.1.2.4 - Designated Area Permit: This permit is issued on an annual basis for a fixed approved hot work location. This permit will require coordination with the Fire Department.

5.2 – Pre-Hot Work Inspection

5.2.1 - All hot work requires a daily inspection

5.2.1.1 - If a hot work permit issued by the Fire Department exceeds a 24 hour period, the subsequent days shall requires a Daily Pre-Hot Work Checklist be filled out by a supervisor or safety representative and be kept on the individual doing hot work until hot work is complete. The completed checklist(s) to be turned into a supervisor at end of day. See Attachment.

5.2.1.2 – The daily inspection shall ensure that all of the below requirements are followed. The person doing the hot work shall not do the inspection.

5.2.1.2.1 - Hot work equipment is inspected and verified to be in good working condition by the operator.

5.2.1.2.2 - There are no exposed combustibles on the opposite side of partitions, walls, ceilings, or floors.

5.2.1.2.3 - Openings are protected and floors are kept clean

5.2.1.2.4 - Hot work site(s) shall be clear of combustibles.

5.2.1.2.5 - The fire watch shall be equipped with a fire extinguisher and shall be trained in its use.

5.2.1.2.5.1 - In all hot work areas, fire extinguishers shall be provided and maintained by the Contractor and verified to be operable.

5.2.1.2.5.2 – The Contractor shall use a minimum 10# multi-purpose fire extinguisher rated at 4A-80B:C.

5.3 – Requirements

5.3.1 - The Contractor/person performing pre-hot work inspection is responsible for making the work area as fire safe as possible.

5.3.2 - Hot work area: Any area exposed to sparks, hot slag, and radiant or convective heat because of hot work.

5.3.3 - All interior spaces require mechanical ventilation ducted to the exterior.

5.3.4 - 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.

5.3.5 - Combustibles: All combustible material within 35 feet of the hot work area shall be removed.

5.3.5.1 - All combustibles that cannot be removed shall be protected by an approved means. (ie. covered with a burn blanket to prevent ignition from heat, sparks, or slag)

5.3.6 - 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.

5.3.7 - 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.

5.3.7.1 - The Contractor shall provide a continuous 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.

5.3.8 - Housekeeping: Floors shall be kept clean and/or swept within the work area.

5.3.9 - Conveyor systems: Conveyor systems that could carry sparks to distant combustibles shall be shielded or shut down.

5.3.10 - 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.

5.3.11 - All hot work on the AOA requires 360 degree shielding to avoid activation of UVIR detectors, if 360 degree shielding is not possible UVIR's shall be covered.

5.3.11.1 – All UVIR's that are covered shall be provided with an informational tag indicating the name of the person who covered the UVIR, date, and contact information.

5.3.11.2 – UVIR's shall not remain covered for more than 24 hours without prior written approval from the Port of Seattle Fire Department.

5.3.12 - Fuel lines: Hot work involving fuel lines, containing fuel, may require standby Port Fire Department crash truck apparatus and crew. The decision shall be made by the Port Fire Marshall based on an approved Contractor work plan. If required, the Contractor/Project shall compensate the Fire Department using the Washington State Schedule of Standard Charges.

5.3.13 - If detectors (Smoke and/or Heat) are covered to prevent alarms, covers must be removed at end of workday.

5.3.14 - If hot works is near ventilation systems coordinate with your Port Construction Inspector.

5.3.15 - Coordinate with Fire Inspector for any hot works on the roof.

5.3.16 - Coordinate with Fire Inspector for any hot works on the ramp.

5.3.17 - Hot works in confined space must be coordinated with Port Construction, Safety and Fire Inspectors

6.0 – Construction Storage

6.1 – Construction Storage

Storage of flammable or combustible liquids shall comply with the IFC – Fire Safety during Construction and NFPA 241. Methods and locations must be approved by the Port of Seattle Fire Department.

6.1.1 - Construction materials storage is allowed only under the following circumstances:

6.1.1.1 - Within a secure, protected and Fire Department, Operations and AV Maintenance approved location for storage use.

6.1.1.2 - The amount of stored material does not exceed the amount needed for use of the specified project for that day.

6.1.1.3 - Stored materials are not within the exit corridor or path, blocking access to a fire lane or means of egress system, or under stairs.

6.1.1.4 - The Contractor shall supply and maintain suitable means of fire protection whenever combustible materials are used or stored at the work site.

6.1.1.4.1 - 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.

6.2 – Housekeeping

6.2.1 - Trash, refuse, or garbage within terminal projects shall be removed after each shift and never left-over night.

6.2.2 - Trash, refuse, or garbage shall be removed in a timely manner from all outdoor construction sites.

6.2.3 - 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.

6.2.3.1 - 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.

6.3 - Flammable/Combustible Gas and Liquid Containers

6.3.1 - 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.

6.3.2 - The amount of product stored must not exceed the amount specified by the Fire Department.

6.3.3 - All compressed gas cylinders must be chained in the upright position, valves closed and stored in an approved location.

7.0 – Fuel Storage and Distribution Systems

7.0 – Fuel Storage and Distribution Systems

7.1 - 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 Fire Department and the 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.

7.2 - 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. Piping not removed will be cleaned, purged and left inert.

7.3 - Portable Generators Requirements

7.3.1 - Fuel Tank needs to be minimum 20 feet away from an occupied building and the Sound Transit guideway and station and 5 feet away from a path of egress.
7.3.2 - Located 50' from air intake openings
7.3.3 - Provided with impact protection
7.3.4 - Fire/spill/fueling plan to review and approved by POS Safety and AV Operations.
7.3.5 - Need 24/7 Emergency contact info including clean-up companies posted near the generator in clear view
7.3.6 - Secondary containment and spill kits
7.3.7 - Minimum 18# ABC fire extinguishers
7.3.8 - No combustible materials allowed in operation area
7.3.9 – Inspections of the generator operation shall be required weekly. Reports shall be available for review by Port departments
7.3.10 - Generator should be electrically grounded

7.3.11 - Provide 704 placarding on all tanks

7.4 – Generators, Vehicles and Construction Equipment

7.4.1 – All generators, vehicles and similar equipment powered by a combustion engine shall utilize propane within the terminal's building envelope and within the Rental Car Facility's Customer Service Building area.

7.4.1.1 – Use of gasoline, diesel, or other sources of fuel will be at the sole discretion of the Fire Code Official.

8.0 – Temporary Structures

8.1 - Definitions

8.1.1 - 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.

8.1.2 - Protected terminal buildings are those passenger transportation terminals/concourses that include interior sprinkler protection and exterior deluge sprinkler protections.

8.1.3 - Construction barricades and partitions are temporary structures utilized to cordon off construction areas as described in Section 01 50 00 - Temporary Facilities and Controls of the Port's Guide Specifications.

8.2 - Life Safety Requirements Rationale

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.

8.2.1 - Factors that prompt the need for life safety systems include:
8.2.1.1 - The large proximity of aircraft and aircraft fueling operations to such buildings.
8.2.1.2 - 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.
8.2.1.3 - Large numbers of people near a construction area within any terminal building.

8.3 - Life-Safety Provisions

8.3.1 - 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.

8.3.2 - Minimum clearance of temporary structures from the terminals shall be in accordance with 8.3.2.1 through 8.3.2.4.

8.3.2.1 - Unprotected terminal building to protected temporary structure: 20 feet
8.3.2.2 - Protected terminal building to unprotected temporary structure: 20 feet
8.3.2.3 - Protected terminal building to protected temporary structure: 5 feet
8.3.2.4 - Unprotected temporary structures, other than construction barricades or partitions, shall not be placed within a terminal building.

8.3.3 - 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 Fire Code Official.
8.3.3.1 - Time limits or extensions may be revoked for due cause.

8.3.4 - 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.

8.4 - Installation and Use

8.4.1 - Temporary Structures on construction sites shall comply with the applicable sections of Port Fire Department code regulations.

8.4.2 - They shall be inspected prior to occupancy and equipped with the proper type and number of fire extinguishers.

9.0 – Fire Extingiushers, AED Location and Spacing

9.1 - Fire Extinguishers

9.1.1 - Fire Extinguishers shall be located in all general circulation areas and tenant spaces with a maximum travel distance of 75 feet per IFC 906.
9.1.2 - Fire Extinguishers shall be provided in all new mechanical room, electrical, communication and elevator machine rooms.
9.1.3 - All tenants shall provide at least 1 fire extinguisher for their space and shall not utilize general circulation extinguishers to meet this requirement. The fire extinguisher shall be at least a 10lb, ABC-type extinguisher rated at a minimum of 4A-60B:C.
9.1.4 - Fire Extinguishers for temporary kiosks, and kiosks or groupings of kiosks less than 300 square feet shall have a minimum 5lb 2A-10B:C, extinguisher, or be within 75 feet of a terminal fire extinguisher. Kiosks or groupings of kiosks greater than 300 square feet shall subject to the requirements of a tenant space.
9.1.5 - Fire Extinguishers for electrical and elevator machine rooms shall be the type and size required by the National Electric Code (NEC) and ASME A17.1.
9.1.6 - All Fire Extinguishers in public accessible areas shall be provided with and located within an approved cabinet.

9.2 - Automatic External Defibrillators (AED's)

9.2.1 - Within the terminal, AED's shall be located in all public circulation spaces and holdrooms with a maximum travel distance of 150 feet.
9.2.2 - A minimum of one (1) AED shall be located in each airline lounge, club, or tenant breakroom designed to serve more than 50 occupants.
9.2.3 - All building on Port property shall have a minimum of one (1) AED located in an obvious location such as an elevator lobby/entrance.
9.2.4 - All AED's in public accessible areas shall be provided with and located within an approved cabinet.

10.0 – Fire Department Access

10.1 - Fire Department Access

10.1.1 - Access Roads
Access roads for Fire Department use are required per the International Fire Code. Access roads must be at least 20 feet wide, maintain access to all portions of the construction site, and must always be kept clear.

10.2 - Site Access

10.2.1 - Where site access by key(s) is required, the 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.

10.2.2 - For Port of Seattle construction projects, the construction core for all locks is an AP-4. It is the Contractor's responsibility to coordinate with their appropriate Port Representative for any construction cores and obtaining any AP-4 keyed padlocks from the Port Lock Shop. The holes in barricade or partition doors for padlocks and chains shall be large enough for Fire Department personnel to reach through and unlock from either side of the barricade or partition. This prevents being locked in or locked out of an area. Refer to Section 01 50 00 – Temporary Facilities and Controls of the Port's Guides Specifications

10.3 - Barriers and Enclosures

10.3.1 - Barricades and enclosures required to separate construction areas from the public shall be in accordance with NFPA 241 and Section 01 50 00 – Temporary Facilities

and Controls of the Port's Guides Specifications. The location and extent of all barricades are required to be coordinated and approved by the Port of Seattle Fire Department prior to erection. If constructed of fire-treated wood or metal studs, and fire-treated plywood or gypsum wallboard, the fire-treated stamp must be visible on the inside of the barricade.

10.4 – Riser Room Access

10.4.1 - All fire sprinkler risers shall be located in a dedicated room with access provided through an exterior door.

10.4.1.1 – When an exterior door is not possible, the riser room shall be accessed through an exit passageway.

10.4.1.2 – Request for alternative means and compliance with the above requirements shall be made in writing and approval shall be at the sole discretion of the Fire Code Official.

10.5 – Roof Access

10.5.1 – All access to roofs, where required by the IBC or determined as needed by the Fire Code Official, shall be designed and provided by code compliant stairs.

10.5.1.1 – For non-airport terminal or Port owned buildings, access may be provided via regular or ship's ladders at the sole discretion of the Fire Code Official.

11.0 – Fire Mains and Hydrants

11.1 – Fire Mains

11.1.2 - Materials and Products
All materials and products shall be approved by both the Port of Seattle Facilities & Infrastructure Department and by Port of Seattle Fire Department prior to construction.

11.1.2.1 - All water mains shall be installed with field lock gaskets.

11.1.2.2 - Wedge restraint glands (Mega-lug type) connections are not approved for installations without thrust blocking or rodding.

11.1.3 – Inspection

The Port of Seattle Fire Department shall inspect all installations prior to backfill and/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."

Port of Seattle Fire Prevention shall witness all tests. Contractor will present all necessary test forms at the time of the test. All tests and inspections require a minimum 48 hours advance notice to both the Port Water Department and Fire Prevention.

Thrust block forming must be inspected by the Fire Department prior to concrete placement. The 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.

11.1.4 - Testing

Testing Notification – Notify the Fire Department and AV Maintenance a minimum of 48 hours hours prior to the fire main acceptance testing.

11.1.4.1 - Port of Seattle Fire Mains Testing Pressures/Times are as follows:
Mains shall be tested at not less than 250 psi for two (2) hours.

11.1.4.2 - The 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.

11.1.4.3 - Calibrated pressure gauge and valve locations for mains or hydrants being tested must have a gauge on the hydrant or main itself.

11.1.4.3.1 - 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.

11.1.5 - Construction Water

11.1.5.1 - 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.

11.1.5.2 - Use of Fire Hydrants During Construction
11.1.5.2.1 - The use of fire hydrants for construction purposes requires approval from Port F&I, AV/Maintenance, and Fire Department.

11.1.5.2.2 - A certified backflow prevention device (RPBA: Reduced Pressure Backflow Assembly) must be used and tested by AV/Maintenance prior to use.

11.1.5.2.3 - The hydrant used must be fully opened or fully closed at all times to prevent undermining.

11.1.5.2.4 - Contractors are restricted from operating hydrant keys or valves.

11.1.5.2.5 - A maximum of one, 2½" connection is allowed per hydrant for construction purposes.

11.2 – Fire Hydrants
The Port of Seattle Fire Department in cooperation with AV/Maintenance requires the following standards in hydrant installation to maintain uniformity on equipment and spare parts required to maintain hydrants.

11.2.1 – General Requirements

11.2.1.1 – The hydrants shall be a standard pattern of a single manufacturer approved by the Fire Department. 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.

11.2.1.2 – 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.

11.2.1.3 – 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.

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

11.2.1.5 – 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.

11.2.1.6 – Upright and Flush hydrant locations shall be marked with reflective hydrant signs to match present standards.

11.2.1.7 - Provide a quick connect fitting with blind cap and cable on all fire hydrants.

11.2.2 – Materials and Products

11.2.2.1 – Upright hydrant: M&H Style 929 "Reliant," Mueller Super Centurion, Kennedy Guardian, or approved equal Fire Hydrant.

11.2.2.2 – Flush hydrant: M&H Fire Hydrant or approved equal, Flush Model, and AWWA Compression Type

11.2.2.3 – 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.

11.2.2.4 – 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.

11.2.2.5 - Hydrant Steamer Adapter

11.2.2.5.1 - Quick connect fitting shall be 5" Storz to Rigid Rocker Lug Style. No substitution is permitted.
11.2.2.5.1.1 - 4" Pacific Coast Pumper thread: six (6) threads per inch
11.2.2.5.1.2 - Outside diameter: 4.828 inches
11.2.2.5.1.3 - Thread root diameter: 4.580 inches
11.2.2.5.1.4 - Thread length of male nipple: P.C.P. Standard
11.2.2.5.1.5 - Material to be hardcoat anodized MIL-A-8625-F, type 3, dark grey of 6061-T6.
11.2.2.5.1.6 - 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.

11.2.2.5.1.7 - All parts, cables, and levers to be AISI 304/316 stainless steel. Storz gasket shall be BUNA-N.

11.2.3 – Design

11.2.3.1 - 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.

11.2.3.2 - 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.

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

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

11.2.3.5 – Underground piping and foot valve for fire hydrant laterals shall be sized according to the following.
11.2.3.5.1 - Less than 50 feet: 6”
11.2.3.5.2 - Greater than 50 feet: 8” minimum with a reducer to 6” after the foot valve
11.2.3.5.3 - Underground piping from the foot valve to hydrant shall be 6”

11.2.3.6 - 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.

11.2.3.7 - Drain holes shall be connected by piping and shall terminate above ground.

11.2.3.8 - Flush hydrant box to be provided with adequate drainage to keep water from accumulating inside the box.

11.2.4 – Testing

All fire hydrants shall be tested in accordance with AWWA and Port of Seattle F&I Civil Standards.

Prior to being put in service, all new hydrants shall be flushed by fully opening the hydrant.

11.3 – Fire Department Connections (FDC)

All Fire Department Connections shall be one of the following as determined by the Fire Code official.

11.3.1 – 5" Storz Quick Connect with a 45 degree elbow, Blind Cap and Cable.

11.3.2 - Siamese Connection - 2 side hose nozzle connections with 2-½" NST
11.3.2.1 - 7.5 threads per inch at 60-degree V thread
11.3.2.2 - Thread length of 1 inch.
11.3.2.3 - Root diameter of thread to be 2.8715 inches.
11.3.2.4 - Outside diameter of finished nozzle to be 3.0625 inches.

12.0 – Fire Sprinklers and Standpipes

12.0 - Fire Sprinklers and Standpipes

All buildings on Port of Seattle property are required to be fully sprinkled, regardless of type of construction, setback distance, or individual fire area size.

12.0.1 - 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 of Seattle Fire Code Official for review. The final determination on the acceptability of the request will be solely the responsibility of the Fire Code Official.

12.1 – Room Requirements

12.1.1 - All new fire sprinkler riser rooms shall be provided with both a primary and a redundant feed. The primary feed shall be underground and installed in accordance with NFPA 24.

12.1.2 - All new rooms containing fire sprinkler control valves (deluge, wet, dry, pre-action, etc.) and/or rooms containing the installation of new sectional valve, shall be provided with a floor drain and the floor sloped to the drain. The floor drain shall be sized to accommodate the full capacity of the largest riser main drain located within the room.

12.1.3 - All fire sprinkler risers and associated valves shall be installed to provide a minimum of 36” clear space in front for all operational components to allow for fire fighter access.

12.1.4 - All riser rooms shall be provided with emergency lighting and heat.

12.1.5 – The Contractor shall be responsible for the installation of the POSFD provided "Fire Sprinkler Riser Inside" signage on all rooms containing fire sprinkler risers.

12.2 - System Requirements

12.2.1 – All piping, fittings, and materials shall be rated for a minimum of 175 psi working pressure.

12.2.2 - Regardless of the calculated required system hydraulic design pressure, for the purposes of hanger spacing and supports, all systems shall be designed for pressures exceeding 100psi.

12.2.3 - All sprinkler systems on Port property shall be designed for a minimum of Ordinary Hazard 1 per NFPA 13.

12.2.4 - All new piping shall be Sch 40 minimum.
12.2.4.1 - All existing Sch 10, thin walled, or XL piping within the established project scope limits shall be removed and replaced with Sch 40 at the sole discretion of Port F&I.

12.2.5 - All sprinklers within the terminal shall be quick response, glass bulb sprinklers.

12.2.6 - All sprinklers on Port property shall be glass bulb sprinklers.

12.2.7 - All hangers shall be clevis type to resist upward movement.
12.2.7.1 – Band and/or Ring hangers with surge clips shall be allow in lieu of clevis hangers at the discretion of Port F&I.

12.2.8 - Fittings above grade shall be actual elbows, tees, reducers, and other required fittings.
12.2.8.1 - Coupling reducers, coupling tees, or mechanical tees are not allowed. Plain end fittings or drain elbows are not allowed.

12.2.9 - 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).

12.2.9.1 - Coupling tees and mechanical tees are not allowed.

12.2.10 - The use of flex heads and/or adjustable drop nipples are not allowed. NO EXCEPTIONS.

12.2.11 - Provide guards where clear height under sprinkler head is less than 7'-0".

12.2.12 - 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.

12.2.13 - Every new sprinkler system shall include a double-check backflow preventer.
12.2.13.1 - 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.
12.2.13.2 - Double-check backflow preventers shall be installed above grade in the position approved for use (Horizontal or vertical).

12.2.14 - A 500 gpm outside hose allowance shall be added to each riser demand.

12.2.15 - 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 prior to design.

12.2.16 - All parts of the airport terminal shall be provided with a Class 1 standpipe system in accordance with NFPA 14.

12.2.16.1 - All new airport terminal buildings, for which a new fire pump is required, shall be provided with an automatic wet type standpipe system in accordance with NFPA 14.

12.2.16.2 - For terminal buildings not requiring a fire pump, the standpipe system shall be a manual type in accordance with NFPA 14.

12.2.16.3 – For standpipe hose connections located in non-secure, publicly accessible spaces, locking KNOX Standpipe Caps shall be provided.

12.2.17 – The maximum hose travel distance shall be 200 feet.

12.2.18 – Branch Line Restraints

A branch line shall be defined as a sprinkler line serving more than 1 sprinkler head. If a branch line is serving 2 heads in the same vertical plane (upright and pendant), then branch line restraint shall only be required if the branch line is greater than 10 feet when measured horizontally.

12.2.18.1 - For branch line restraints, wire shall NOT be used as a method to satisfy the requirement.

12.2.19 - For large air handlers, provide dry pendant sprinklers within the filter sections. A large air handler shall be defined as any air handler capable of providing airflows (supply or return) greater than or equal to 7,500 CFM.
12.2.19.1 - A separate control valve, drain and flow switch serving these sprinklers shall also be provided.

12.2.20 - Air vents as required by NFPA 13, Section 16.7 shall be of the automatic type. Manual valves and inspections test connections shall not be utilized to meet the requirements of Section 16.7.

12.2.20.1 – Automatic air vents shall be piped to drain or another approved location. Final location shall be approved by both POSFD and Port F&I.

12.3 - Design Criteria for New Systems

New Buildings: The design for new buildings shall be a minimum of Ordinary Hazard 1 and will be based on hydraulically calculated system as follows:

12.3.1 - General Areas in the Main Terminal, Concourses, Satellites, Telecommunication Rooms, and all Offices (Both Sterile and Non-Sterile)
12.3.1.1 - 0.15 gpm per square foot over most remote 2,200 sq. ft.
12.3.1.2 - Head Spacing: 130 sq. ft. per head maximum.
12.3.1.3 - 1/2-inch orifice sprinkler heads rated at 155 Degrees Fahrenheit.

12.3.2 - Non-sterile Baggage Claim
12.3.2.1 - 0.15 gpm per sq. ft. over most remote 2,000 sq. ft.
12.3.2.2 - Head Spacing: 130 sq. ft. per head maximum.
12.3.2.3 - 1/2-inch orifice sprinkler heads rated at 155 Degrees Fahrenheit.

12.3.3 - Sterile Ramp Level Areas Containing Storage and/or Baggage Handling Equipment
12.3.3.1 - 0.25 gpm per square foot over most remote 2,500 sq. ft.
12.3.3.2 - Head Spacing: 100 sq. ft. per head maximum.
12.3.3.3 - ½-inch orifice upright sprinkler heads rated at 200 Degrees Fahrenheit.

12.3.4 - Mechanical Rooms
12.3.4.1 - 0.20 gpm per sq. ft. over most remote 2,000 sq. ft.
12.3.4.2 - Head Spacing: 100 sq. ft. per head maximum.
12.3.4.3 - 1/2-inch orifice upright sprinkler heads rated at 200 Degrees Fahrenheit.

12.3.5 - Mechanical Rooms that Contain a Boiler and/or Chiller
12.3.5.1 - 0.25 gpm per sq. ft. over most remote 3,000 sq. ft.
12.3.5.2 - Head Spacing: 100 sq. ft. per head maximum.
12.3.5.3 -1/2-inch orifice upright sprinkler heads rated at 286 Degrees Fahrenheit.

12.3.6 - Electrical Room - Power Centers
12.3.6.1 - Rooms shall be 2-hr rated construction and provided with complete smoke detection.
12.3.6.2 - Systems shall be provided with a normally closed, electronically supervised, manual sectional valve, flow switch, and air maintenance device.
12.3.6.3 - 0.15 gpm per sq. ft. over most remote 2,000 sq. ft.
12.3.6.4 - Head Spacing: 130 sq. ft. per head maximum.
12.3.6.5 - 1/2-inch orifice sprinkler heads rated at 286 Degrees Fahrenheit.

12.3.7 - Electrical Room – Low Voltage Electrical Rooms (Less than 1,000 Volts)
12.3.7.1 - Sprinklers not required if rooms are 2-hr rated construction and provided with complete smoke detection.

12.3.8 - Telecommunication Rooms – Main Distribution Rooms (MDF's)

12.3.8.1 - Rooms shall be 2-hr rated construction.
12.3.8.2 - Shall be provided with a Clean Agent System in accordance with NFPA 2001.

12.3.9 - All Other Telecommunication Rooms

12.3.9.1 - Port Communication Rooms
12.3.9.1.1 - Shall be 2-hr rated construction.
12.3.9.1.2 - Sprinklers not required if rooms are 2-hr rated construction and provided with complete smoke detection.
12.3.9.1.3 - Installation of a Clean Agent System in accordance with NFPA 2001 shall be at the sole discretion of Port F&I and/or ICT.

12.3.9.2 - Tenant Communication Rooms

12.3.9.2.1 -Sprinklers not required if rooms are 2-hr rated construction and provided with complete smoke detection.

12.3.10 - Equipment Storage Rooms
12.3.10.1 - 0.20 gpm per sq. ft. over most remote 2,500 sq. ft.
12.3.10.2 - Head Spacing: 100 sq. ft. per head maximum.
12.3.10.3 - 1/2-inch orifice upright sprinkler heads rated at 286 Degrees Fahrenheit.

12.3.11 - Buildings permitted by City of SeaTac
12.3.11.1 - Shall be designed for minimum of Ordinary Hazard 1 per NFPA 13

12.3.12 - Design for Existing Systems
12.3.12.1 - Existing building or areas currently not sprinklered: Provide sprinkler system in accordance with new buildings design parameters.
12.3.12.2 - 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.

12.4 – System Labeling and Identification

12.4.1 - All fire mains and branch lines, 2 ½" in diameter or larger shall be labeled on both sides of all wall or floor penetrations and every 25 feet with a vinyl label.

12.4.1.1 - Labels shall have white letters at least 1" in height on a red background.
12.4.1.2- Labels shall indicate direction of water flow, the riser name, and include the words "Fire Sprinkler."
12.4.1.3 - For rooms/areas supplied with or by piping smaller than 2 ½" in diameter, the riser's name, flow direction, and "Fire Sprinkler" shall be written on the piping using a white paint pen.

12.4.2 - For all new fire sprinkler systems, risers, or sectional valve(s), a graphical floorplan indicating the system name, coverage area, and location of valve(s) shall be provided.
12.4.2.1 - Once approved by the Fire Department, the floorplan shall be laminated and hung within the riser room, at the riser, or at the valve(s). Coordinate final location with the Fire Department.

12.5 - Testing, and Acceptance

12.5.1 - All new systems/piping are required to be hydrostatically tested to 225 psi or 50 psi above the working pressure, whichever is greater.

12.5.2 - The test duration shall be minimum 2 hours.

13.0 – Fire Alarms

13.0 - FIRE ALARMS

13.1 - Systems
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 standard system is a Simplex 4100ES.

13.1.1 – In the event an existing space is not served by a Simplex 4100 system and/or circuit, it will be up to the project to locate an approved point of connection.

13.1.1.1 – Non-addressable devices shall not be reused or reinstalled without written permission.

13.1.2 – Terminal Design

For the purposes system design, the terminal shall be broken up by nodes and each node broken up by floors and areas.

13.1.2.1 - Each floor and area shall be served by a separate Fire Alarm Termination Cabinet (FATC)
13.1.2.1.2 - FATC's shall be red in color with the words "Fire Alarm Terminal Cabinet" in white lettering
13.1.2.1.3 - The minimum size for an FATC shall be 14" x 14"
13.1.2.1.4 – All new FATC shall be sized to provide a minimum 15% spare terminations for future connections

13.1.3 – Airport Dining and Retail - Tenant Lease Spaces Design

For the purposes of design, each tenant lease space shall be provided with the following minimum infrastructure.

13.1.3.1 – 6”x6” junction box that is located at an accessible and approved location as determined by a Port of Seattle Fire Alarm Technician.

13.1.3.2 – 1”conduit from the Fire Alarm Control Panel (FACP) serving the space to the junction box required by 13.1.3.1.

13.1.3.2.1 – Each conduit pathway installed under 13.1.3.2 shall be provided with the following required listed fire alarm rated cabling.
13.1.3.2.1.1 – IDNet Wire: 2-conductor solid – 14 GA
13.1.3.2.1.2 – IDNAC Wire: 2-conductor solid – 16 GA with no runner color
13.1.3.2.1.3 – Speaker Wire: 2-conductor solid – 16 GA with yellow runner color

13.1.4 – Fire Alarm Panel Networking

13.1.4.1 - The primary means for connecting fire alarm panels shall be Single Mode (SM) Fiber.

13.2 – Authority
The Port of Seattle 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 of Seattle Fire Department plan review process.

13.3 - Responsibility
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 of Seattle Fire Department.

13.3.1 - 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.

13.3.2 - The Contractor is responsible for all terminations and testing of fire alarm field devices.
13.3.2.1 – Pretesting of all new devices shall be the responsibility of the Contractor.

13.3.2.1.1 – The Contractor shall utilizing the manufacturer's addressable test tool (True Test) and provide test results upon request.
13.3.2.2 – Final testing and commissioning shall be performed by the Contractor and POSFD personnel in accordance with NFPA 72 and an approved test plan.

13.3.3 - All devices shall be installed and mounted in accessible locations.
13.3.3.1 – All devices shall be accessible without the need for special tools or equipment.
13.3.3.2 - In-duct type detectors are not allowed.

13.3.4 - All fire alarm panel terminations and system programming are provided by the Port of Seattle Fire Department's Fire Alarm Technicians.

13.3.4.1 - If required, the fire alarm systems will be inter-tied into the HVAC building automation system (BAS Siemens DDC) as shown on the design documents or as designated by Port of Seattle 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.

13.3.5 - For the purposes of smoke control, the design of smoke detection shall be of the air-sampling type, ie. VESDA (Very Early Smoke Detection Apparatus).

13.3.5.1 - Use of beam detection in lieu of air-sampling must be requested and approved in writing by the Fire Code Official. Approval of the request is at the sole discretion of the Fire Code Official.

13.3.6 – Smoke Detectors
Unless required by other systems for functionality (ie. Smoke control), smoke detection shall typically only be provided in the following locations.

13.3.6.1 - Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms.
13.3.6.2 - Elevator lobbies.
13.3.6.3 - The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.

13.3.6.4 - Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a listed smoke detector is allowed to be used in each return air riser carrying not more than 5,000 cfm (2.4 m3/s) and serving not more than 10 air inlet openings.
13.3.6.5 - Storage Rooms over 100 square feet in size
13.3.6.6 - Provide remote air sampling type detectors (Simplex XAD or similar) in the supply and return of all air handlers greater than or equal to 2,000 CFM.
13.3.6.7 - Provide air aspirating type detectors (VESDA-E or similar) in the supply and return of all air handling units greater than or equal to 10,000 CFM.

13.3.7 – Manual Pull Stations
Manual pull stations shall typically only be provided in the following locations.

13.3.7.1 - At the entrance to and at the exit discharge door for all interior exit stairs
13.3.7.1 - At all exit doors on the level of exit discharge
13.3.7.1 - At the back of house kitchen exits for all new Tenants with a Type 1 hood. Existing tenant spaces with a Type 1 Hood that are remodeled, that do not currently have back of house manual pull, do not need one added.
13.3.7.1 - Existing tenant spaces in the Main Terminal and Concourses A, B, C and D shall be provided with a manual pull station near the main entrance.
13.3.7.1 - Employee Break Rooms

13.3.8 – Fire Alarm and Siemens DDC Interactions
For typical fire alarm and DDC interactions, reference the POSFD Fire Alarm tenant guidelines found in Section 29.0 – Appendix.

14.0 – Smoke Control

14.0 - Smoke Control

14.1 - All public spaces within the terminal buildings shall be provided with an IBC/IFC 909 compliant Smoke Control System regardless of size, number of floors, or setback distance. The smoke control system is required to provide sufficient time to allow for a Fire Department response and evaluation prior to activating fire alarm notification devices.

14.2 - The primary means for activating and/or zoning Smoke Control shall be sprinkler waterflow alarms. If Smoke Detection is approved in lieu of sprinkler zoning, the primary method shall be VESDA (Very Early Smoke Detection Apparatus).

14.3 - The primary method for Smoke Control shall be a Smoke Containment System.

14.3.1 - If a Smoke Management System is approved, the design shall be required to:
14.3.1.1 - Provide a mechanical smoke exhaust capacity.
14.3.1.2 - All required makeup air shall be provided via supply fans directly from outside air.
14.3.1.3 - Transfer grills and other passive means to provide makeup air from other spaces or the exterior shall not be allowed.
14.3.1.4 - All smoke control exhaust and supply air must be ducted through interstitial spaces.
14.3.1.5 - The use of unducted plenums for the purposes of smoke removal shall not be allowed without prior approval from the Fire Code Official.

14.4 – Design Criteria

14.4.1 – Fire Size
The Smoke Control System shall be designed per NFPA 92 with the minimum design fire sizes/criteria.

14.4.1.1 – Any modification to the design fire sizes/criteria will be at the sole discretion of the Port of Seattle Fire Department.
14.4.1.2 - Circulation/Holdrooms – 2,500 BTU/sec
14.4.1.3 - Tenant Spaces – 3,500 BTU/sec
14.4.1.4 - Fuel limited fires shall be considered on a case-by-case basis by the Fire Code Official.
14.4.1.5 - The fire sizes above shall not be halted at time of sprinkler activation as described in IFC 909.9.4, but allowed to grow to achieve their maximum Heat Release Rate (HRR).
14.4.1.6 - No decay of the maximum HRR shall be allowed.
14.4.1.7 - T-Squared; Medium Growth Fire
14.4.1.8 - A visibility factor of C = 3 will be used for visibility estimates using the equation S = C/K. Where c is the non-dimensional characteristic of a light reflecting sign.
14.4.1.9 - Cell size must be 0.25 m or less.
14.4.1.10 - Max smoke control wind velocities shall be between 4.37 m/s and 6.51 m/s.
14.4.1.11 - A mass specific extinction coefficient of 7.6 m^2/g will be used in appropriate equations.
14.4.1.12 - An impaired egress speed of 1 m/s shall be used in all egress calculations.

14.4.2 – Tenability Parameters
The Smoke Control System shall be designed per NFPA 92 with the minimum Tenability Parameters
14.4.2.1 - Any modification to the Tenability Parameters will be at the sole discretion of the Port of Seattle Fire Department.
14.4.2.2 - Temperature: 57oC (135oF)
14.4.2.3 - Visibility: 15 meters (50 feet)
14.4.2.4 - Carbon Monoxide: 150 ppm
14.4.2.5 - Carbon Dioxide: 6% max

14.5 – Weekly Testing
In lieu of the weekly test required by IFC 909.12.1, all dedicated exhaust fans can be designed utilizing an “n+1” configuration.

14.6 – Enclosed Stairways
When enclosed stairways are required to be pressurized (IFC 909.6.3), they must be modeled with two open doors. The model must address the most demanding

configuration with at least one of the open doors located at either the level of exit discharge or door leading into an exit passageway.

14.5 - Non-Public Spaces

14.5.1 - In lieu of the requirements of IBC 910 for Smoke and Heat Removal, all areas that support baggage processing shall be provided with sprinklers in accordance POSFD design standards as well as a purge mode designed to exhaust a minimum of 0.75 CFM/ft2.
14.5.2 - All other non-public spaces of new terminal building shall be provided with controls on the Firefighter's Smoke Control Panel.
14.5.3 - Systems provided for non-public spaces do not have to be IBC/IFC 909 compliant.

15.0 – Emergency Responder (800 MHz) Radio Coverage

15.0 - Emergency Responder (800 MHz) Radio Coverage

15.1 - In lieu of the prescriptive requirements of NFPA 72 and NFPA 1221, POSFD will allow the following performance alternative for pathway survivability for the installation of emergency responder radio coverage systems:

15.1.2 - All backbone pathways (riser cables, donor antenna cables, BDA cables) between signal boosters, donor antennae and secondary power supplies and between head end and remote units for fiber based systems shall be protected by a 2-hour fire rated enclosure.
15.1.3 - All signal booster components and battery backup equipment, located in rooms with fire sprinklers, shall be installed in NEMA-4 type waterproof cabinets.
15.1.4 - The connection between the riser and feeder coaxial cables shall be made within the 2-hour rated enclosure, and passage of the feeder cable in and out of the 2-hour rated enclosure shall be fire stopped to a 2-hour rating.
15.1.5 - Feeder cables that are installed above ceilings in buildings that are protected with an automatic fire sprinkler system in accordance with NFPA 13 shall not require additional physical protection. Feeder cables in these installations shall be plenum rated. Feeder cables that are installed in areas without ceilings shall require additional physical protection such as EMT or equivalent.
15.1.6 - Both fiber and coaxial based systems shall be designed such that each floor or remote area shall be covered by a minimum of 2 independent feeders, whereas the failure of a single feeder does not cause signal lost for more than 50% of the required coverage for that floor or remote area. A remote area shall be defined as an area served by a feeder providing connectivity to 2 or more antennae.

15.1.7 - Reduction in the level of survivability based on the installation of sprinklers shall not be allowed.

16.0 – Kiosks

16.0 - Kiosks

16.1 - Kiosks shall be defined as a permanent or temporary, stand-alone booth(s) and/or display(s) within the public area of the airport terminal used to provide access to a good or service. For the purposes of this section, electronic vending machines shall not be considered kiosks.

16.2 - The below requirements shall be applied in conjunction with Chapters 4, 5 and 7 of the IBC. Where a conflict exists, the most stringent requirement shall take precedence.

16.2.1 - All kiosks regardless of size within the airport terminal shall be constructed entirely of non-combustible or Class A materials.
16.2.2 - All plastics shall conform to the requirements of IBC 402.6.4 and be either Class A per ASTM E84, V-0 per UL 94, or better.
16.2.3 - Kiosks or groupings of kiosks less than, or equal to, 300 square feet shall be separated from other kiosks or groupings thereof, by a minimum 20 feet per IBC 402.6.2.4. They shall be provided with a clear area and separated from in-line tenant spaces by a minimum of 10 feet per IBC 402.8.1.1.
16.2.4 - Kiosks or groups of kiosks greater than 300 square feet shall be considered a tenant space and required to be separated from other tenant spaces by a fire partition in accordance with IBC 402.4.2.1. In lieu of a fire partition, a clear area and separation from all other kiosks, or groupings thereof, and in-line tenant spaces by a minimum of 20 feet shall be provided.

17.0 – Type 1 Kitchen Hoods

17.0 - Type 1 Kitchen Hoods

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

17.2 - Ventless hoods are prohibited within the terminal.
17.2.1 – A variance to the above requirement may be issued upon approval from Port F&I, Port ABD, and POSFD based on unique and/or unusual circumstances. Cost shall not be a factor in determining variance approvals.
17.3.1 – POSFD reserves the right to re-evaluate the above prohibition at any time based on advancements in industry equipment, technology and/or innovation.

17.3 - 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.

17.4 - Type 1 hoods should not rely of 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.

18.0 – Interior Materials and Furniture

18.1 - Interior Materials

18.1.1 - 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 of the 8 of the IBC. This requirement applies to all casework, cabinetry, and woodwork.

18.1.2 - 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.
18.1.3 - All plastic sheeting used throughout the airport for construction, storage, maintenance, and repairs shall be flame retardant. Documentation is required for review and approval prior to bringing it on site.

18.1.4 - All other plastics within the airport terminal shall carry a fire rated classification of either a Class A or Class B fire rating when tested per ASTM E84. As an alternative to the requirements of ASTM E84, a minimum rating of V-1 when tested per UL 94 is acceptable. Both these requirements shall be applied in conjunction with Chapters 8 and 26 of the IBC.

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

18.2 Furniture

18.2.1 - All furniture in the airport terminals 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. In lieu of CAL 133, POSFD will accept furniture constructed entirely of CAL 117 (TB 117) compliant materials. 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. Based on individual applications/situations and approval from the Port of Seattle Fire Department, limited quantities of Manufactured or Purchased furniture constructed with a minimum of Class C materials maybe allowed. Plastic or injection molded furniture without a minimum of a Class B rating will not be allowed for any reason.

18.3 Fire Retardant Treatment

18.3.1 - If the application of a fire retardant is required/used to meet any of the requirements of Section 18, all materials and the proposed product(s) shall be submitted to the Fire Department for review and approval. After approval, all application(s) of fire retardants are required to be witnessed, certified, and documentation provided to the Fire Department by an approved 3rd Party Special Inspector prior to the issuance of a Certificate or a Temporary Certificate of Occupancy.

19.0 – Signage

19.0 - Signage

19.1 - Street Address Signage

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

19.2 - Fire Hydrant and Fire Department Connection (FDC's)
All new Fire Hydrants and Fire Department Connections (FDC's) shall be provided with approved signage mounted 12 ft minimum above finished grade and unobstructed.

19.2.1 - Fire Hydrant
19.2.1.1 - Size: 30" x 24"
19.2.1.2 - Shall be constructed of 0.90" Aluminum with 3M 280-10 (or equivalent) reflective White vinyl overlay and digitally printed graphics.
19.2.1.3 - Graphics for above grade hydrants shall be red (PMS 485 C or equivalent) in color.
19.2.1.4 - Graphics for below grade hydrants shall be blue (PMS 287 C or equivalent) in color.

19.2.2 - Fire Department Connection
19.2.2.1 - Size: 24" x 24"
19.2.2.2 - Shall be constructed of 0.90" Aluminum with 3M 280-10 (or equivalent) reflective White vinyl overlay and digitally printed graphics.
19.2.2.3 - Graphics shall be red (PMS 485 C or equivalent) in color.

19.3 - Maximum Occupancy Signage

19.3.1 - All tenant spaces within the terminal building shall be required to provide and install a sign indicating the maximum occupancy.
19.3.2 - All other spaces with a calculated occupant load greater than 49 shall be required to provide a sign indicating the maximum occupancy.
19.3.3 - New terminal buildings shall have maximum occupancy signage posted for every gate hold room and large public communal areas.

19.4 - Emergency Information Signage
Emergency Information Signage shall be provided throughout the terminal, airline/tenant lounges, and within all tenant breakrooms.

19.4.1 - Signs shall be convey at a minimum, the following information:

19.4.1.1 - Location within the terminal
19.4.1.2 - Direction to use or not use elevators during an emergency
19.4.1.3 - Exit Path(s)
19.4.1.4 - Emergency contact information (ie. Call 911)
19.4.1.5 - Fire Extinguisher Location
19.4.1.6 - AED Location
19.4.1.7 - 2-way Communication Device and directions (if required)

20.0 – Fire Command Center

20.0 - Fire Command Center

20.1 - All renovations and new construction for airport terminal buildings shall be provided with a new (or interface with an existing) Fire Command Center that complies with IFC 508.1.1 through IFC 508.1.6 (IBC 911.1.1 through IBC 911.1.6).

21.0 - Elevators

21.0 - Elevators
The following amends IBC 3002.4.

21.1 - On all airport Port property, where elevators are provided, the car shall be sized to accommodate an ambulance stretcher.

21.2 - 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.

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

22.0 – Emergency Lighting and Luminous Egress Path Markings

22.0 - Emergency Lighting and Luminous Egress Path Markings

22.1 – Single Occupancy Restrooms
The following amends IBC 1008.3.3.

22.1.1 - 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 except from this requirement.

22.2 – Exit Signs
The following amends IBC 1013.5.

22.2.1 - All internally illuminated exit signs shall be electrically powered, be listed and labeled in accordance with UL 924, and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times. Exception: Self-luminous and photoluminescent exit signs are allowed for temporary conditions when approved by the Fire Code Official. Self-luminous and photoluminescent exit signs, when approved, shall be listed and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27.

22.3 – Luminous Egress Path Markings
The following amends IBC 1025.1.

22.3.1 - Approved luminous egress path markings delineating the exit path shall be provided in all terminal buildings, regardless of occupancies in accordance with Sections 1025.1 through 1025.5.

23.0 – Exterior Concrete Stairs

23.0 - Exterior Concrete Stairs

23.1 - All new exterior concrete stairs shall be provided with anti-slip safety treads or troweled grooves and nosings complying with ACC 117.1.

24.0 – Exit Discharge Illumination

24.0 - Exit Discharge Illumination

The Port of Seattle Fire Department adopts IBC Section **1008.2.3 Exit Discharge** in its entirety. IBC 1008.2.3 is referenced below.

1008.2.3 Exit discharge. Illumination shall be provided along the path of travel for the *exit discharge* from each *exit* to the *public way*.

Exception: Illumination shall not be required where the path of the *exit discharge* meets both of the following requirements:

1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5.
2. A dispersal area shall be illuminated to a level not less than 1 footcandle (11 lux) at the walking surface.

25.0 – Common Path of Travel

25.0 – Common Path of Travel.

The following amends WSBC 1006.2.1.

25.1 – Common Path for Mechanical Rooms and Penthouses

25.1.1 – The Port of Seattle Fire Department does not recognize WSBC 1006.2.1, Exception 3; effectively requiring all spaces, including mechanical rooms and penthouses to comply with Table 1006.2.1.

26.0 – Exterior Metal Wall Panels

26.0 - Exterior Metal Wall Panels

26.1 - 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 of Seattle Fire Department.

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

26.3 - 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.

26.4 - Radiant Heat Exposure: No ignition when tested according to NFPA 268.

26.5 - Potential Heat: Acceptable level when tested according to NFPA 259.

26.6 - 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.

27.0 – Fireproofing

27.0 - Fireproofing

27.1 - Apply a minimum of 12” of fireproofing to any member that is attached to a protected primary structural member and/or a protected secondary structural member. The 12” of fireproofing shall be measured from the attachment point on the protected structural member along the length of the non-protected member.

27.2 - The minimum 12” of fireproofing shall be used in conjunction with the manufacture’s UL listing and the more stringent requirement shall prevail.
Where Spray Fire Resistive Materials (SFRM) and Intumescent Fire Resistive Materials (IFRM) overlap, provide a minimum 6” overlap in accordance with the manufacture’s installation instructions.

28.0 – Previously Accepted Performance Alternatives

2400 South 170th Street ♦ Seattle, Washington 98158 ♦ 206-787-5327 ♦ 206-787-4908 fax

AECOM

1111 3rd Ave., Suite 1600
Seattle, WA 98101
Tel: +1-206-438-2700
Fax: +1-866-495-5288

March 22, 2018

Mr. Jeff Nelson
Fire Protection Engineer
Port of Seattle Fire Department
2400 South 170th Street
SeaTac, WA 98158

Mr. Jeff Weir
Senior Plans Examiner/Inspector
Port of Seattle Airport Building Department
17900 International Blvd, Suite 400A
SeaTac, WA 98188

Re: North Satellite Modernization Project
Bagwell Occupancy Classification

Dear Mr. Nelson and Mr. Weir,
By way of this letter, AECOM desires to confirm our compliance with the requirements of the 2012 International Building Code for designation of the North Satellite Bagwell space as an F-1 Occupancy and eligible for waiver from portions of IBC Section 910-Smoke and Heat Removal due to equivalent life safety measures.

IBC Chapter 3-Use and Occupancy Classification defines buildings or portions of building by how they are used. Section 306-Factory Group F defines Factory Industrial uses as Moderate-hazard (Group F-1) or Low-hazard (Group F-2). Key to our interpretation of the Bagwell as an F-1 Occupancy is the IBC definition: *"Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair, or processing operations that are not classified as Group H Hazardous or Group S Storage"*. The term **"processing operations"** is key in that it describes the NSAT bagwell activities, which are a dynamic transient process by which passenger bags are delivered to the bagwell area via conveyors after security screening; transferred to makeup conveyors for designated flights; loaded onto baggage carts by destination; and delivered to aircraft prior to departure. The sortation of the bags for specific destinations and transitory nature of the bags between steps from passenger to aircraft, speak to a "processing function" and a F-1 occupancy, rather than a "storage function" and a S-2 occupancy in our opinion. We understand, a separate inquiry by the Port Building Department to the International Code Council (ICC) seeking a neutral party assessment of this issue yielded the same opinion. We have attached a copy of the correspondence with ICC to this letter.

Regards IBC Section 910-Smoke and Heat Removal, the Port has enacted requirements for Fire Suppression Sprinklers and Mechanical Ventilation that recognize the unique characteristics of Sea-Tac International Airport's building configuration and building operations, and respond to the intent of IBC Section 910 as follows:

1) **Fire Suppression Sprinklers**

AECOM

1111 3rd Ave., Suite 1600
Seattle, WA 98101
Tel: +1-206-438-2700
Fax: +1-866-495-5288

a. 0.25 GPM/SF over most remote 2,500 SF area
b. 100 SF maximum area per sprinkler head
c. ½" orifice, Quick-Response sprinkler heads, rated at 212 degrees F

POSFD noted the NFPA 13, 22.25.1.2 for airport terminal buildings states: Baggage, package, and mail-handling areas shall be classified as Ordinary Hazard Group 2(OH2) Occupancy for the purpose of sprinkler system design." POSFD also noted that the Port of Seattle's standard sprinkler head spacing, flow rate, and quick response type listed above are more stringent than standard OH2 requirements.

Based on: the facts above; the spatial architecture of the bagwell not being a traditional high bay / long span structure; the size and transient nature of the fuel load and commodities compared to that of a storage warehouse or factory type occupancy, the above stated sprinkler requirements are acceptable to POSFD and POSABD as an equivalent to Early Suppression Fast Response (ESFR) in the requested application. Based on the AHJ's decision of ESFR equivalency, the Smoke Removal and Draft Curtain requirements of the WSBC Section 910 would be exempted per IBC 910.1 exception #2 and the 910.3.5 exception. A copy of section 910 accompanies this letter for reference.

2) **Mechanical Ventilation**

Due to the fact that fumes are being introduced into the Bagwell area by baggage tugs, the ABD is requiring that the space be capable of ventilation to .75CFM/SF as required by the International Mechanical Code for enclosed parking garages and other similar occupancies. This functionality will also help the purge mode described below to be more effective.

POSFD requires the Bagwell ventilation fans to have a purge mode, and for this purge mode functionality to be integrated into the NSAT Smoke Control Panel, but does not required this functionality to be IBC/IFC 909-compliant. Additionally, the fans do not require a UL listing for smoke or heat removal unless otherwise required by another section of the IBC/IFC.

We believe this letter describes our code-compliant approach to classifying the NSAT Bagwell as a F-1 Occupancy in concurrence with the AHJ's opinion.
Please call me if questions or further discussion is desired.

Sincerely,

Robert L. Ohm II

Robert L. Ohm II, RA, LEED AP
Design Team Project Manager
AECOM

3976 REGISTERED ARCHITECT
ROBERT LEE OHM, II
STATE OF WASHINGTON

29.0 – Appendix and Reference Documents

Tenant Fire Alarm and DDC Guidelines

Port of Seattle Fire Department Tenant Guidelines

While the general area of the tenant spaces are indicated below, be careful with some of the Airport Dining and Retail (ADR) space identification names, such as CT-27. The building zones for fire alarms and smoke control are aligned with the air handler identifications for the air handler that feed the space not the ADR space identification. Tricky areas with this issue are noted and there are a few spaces that are unique that can not be covered in this general scope.

F&I Mechanical Systems Standards General Provisions 11 Smoke Control Systems provides additional information, especially useful for the A concourse, C1 and CTE areas.

F&I Mechanical Standard 23 35 00 Special Exhaust System provides additional information, especially useful for Type 1 Hoods

NSAT – Tenant with Type 1 Hood

- Manual Pull in back of house kitchen area near exit. No manual pulls in front of house.
- FA Speaker/Strobe Coverage
- VESDA system
- 1 FA Monitoring Modular within space connected to Hood Suppression System
- 2 FA to DDC Relay – Relays/Cross Connects are located in FCC
    - Fire Alarm (manual pull or VESDA) – Activates Smoke Control
    - Hood Suppression System - Does not activate Smoke Control. DDC system directly shuts down natural gas/electrical appliances under Type 1 hood, hood exhaust fan should keep running.

NSAT – Tenant without a Type 1 Hood

- No manual pulls stations within the space.
- FA Speaker/Strobe Coverage
- VESDA system
- 1 FA to DDC Relay – Relay/Cross Connect is located in FCC
    - VESDA – Activates Smoke Control

NSAT – Tenant – Non-Smoke Control Zones

- Manual pull stations required only in breakrooms or at exterior exits.
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA system.
- Supply/Exhaust to the space shutdowns from DDC command with AHU shutdown (return air smoke detectors) – No new FA/DDC relay connection required.

MT, SSAT, B, C and D Concourse – Tenant with a Type 1 Hood (There is no smoke control)
Applies to HMT, HSS, HBC, HCC and HDC Air handlers

- Manual pull station(s) at main front of store main exit (for FD notification purposes only, no tie to DDC).
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA.
- 1 FA Monitoring Modular within space connected to Hood Suppression System.

- DDC system directly shuts down natural gas/electrical appliances under Type 1 hood, hood exhaust fan should keep running.
- Supply/Exhaust to the space shutdowns from DDC command with AHU (serving the space) shutdown (return air smoke detectors) – No new FA/DCC relay connection required. Type 1 hood and gas shutdown based on this existing DDC point.

MT, SSAT, B, C and D Concourse – Tenant without a Type 1 Hood (There is no smoke control)

Applies to HMT, HSS, HBC, HCC and HDC Air handlers

- Manual pull station(s) at main front of store main exit (for FD notification purposes only, no tie to DDC).
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA.
- Supply/Exhaust to the space shutdowns from DDC command with AHU shutdown (return air smoke detectors) – No new FA/DDC relay connection required.

C1 Building– Tenant with Type 1 Hood

Applies to HC1 air handlers. Some C1 spaces have a "CC" ADR identification.

- Manual Pull in back of house kitchen area near exit. No manual pulls in front of house.
- FA Speaker/Strobe Coverage
- 1 FA Monitoring Modular within space connected to Hood Suppression System.
- Fire Alarm (existing waterflow) – Activates Smoke Control – No new FA/DDC relay connection required.
- Hood Suppression System - Does not activate Smoke Control. DDC system directly shuts down natural gas/electrical appliances under Type 1 hood, hood exhaust fan should keep running.

C1 Building – Tenant without a Type 1 Hood

Applies to HC1 air handlers. Some C1 spaces have a "CC" ADR identification.

- Manual pull station(s) at main front of store main exit (for FD notification purposes only, no tie to DDC).
- FA Speaker/Strobe Coverage
- VESDA system
- Fire Alarm (existing waterflow) – Activates Smoke Control – No new FA/DDC relay connection required.

A Concourse – Tenant with Type 1 Hood

Applies to HAC air handlers. Some A concourse spaces have a "CT" ADR identification.

- Manual Pull(s) in back of house kitchen area near exit and at main front of store main exit (for FD notification purposes only, no tie to DDC).
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA.
- 1 FA Monitoring Modular within space connected to Hood Suppression System.
- Fire Alarm (existing waterflow) – Activates Smoke Control – No new FA/DDC relay connection required.

- Hood Suppression System - Does not activate Smoke Control. DDC system directly shuts down natural gas/electrical appliances under Type 1 hood, hood exhaust fan should keep running.

A Concourse – Tenant without a Type 1 Hood

Applies to HAC air handlers. Some A concourse spaces have a "CT" ADR identification.

- Manual pull station(s) at main front of store main exit (for FD notification purposes only, no tie to DDC).
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA
- Fire Alarm (existing waterflow) – Activates Smoke Control – No new FA/DDC relay connection required.

CTE – Tenant with Type 1 Hood

Applies to HCT air handlers. Does not apply to some "CT" ADR identified spaces on A or D concourse.

- Manual Pull in back of house kitchen area near exit. No manual pulls in front of house.
- FA Speaker/Strobe Coverage
- No smoke detectors or VESDA within tenant space.
- 1 FA Monitoring Modular within space connected to Hood Suppression System
- 2 FA to DDC Relay – Relays/Cross Connects located in space
    - Fire Alarm – (Existing Waterflow or Manual Pull) – Activates Smoke Control
    - Fire Alarm – Tenant (Hood Suppression System) - Does not activate Smoke Control. DDC system directly shuts down natural gas/electrical appliances under Type 1 hood, hood exhaust fan should keep running.

CTE – Tenant without a Type 1 Hood

Applies to HCT air handlers. Does not apply to some "CT" ADR identified spaces on A or D concourse.

- No manual pulls stations within the space.
- FA Speaker/Strobe Coverage
- No smoke detector or VESDA
- Fire Alarm (existing waterflow) – Activates Smoke Control – No new FA/DDC relay connection required.

NEC 700, 701 and 702 Load Classifications

Port of Seattle - Emergency, Legall Required, and Standby System Classification							
Topic: Identification of Electrical Systems or Loads for Emergency Power per NEC 700, 701 & 702							
Action Required: Provide Yes / No for Identification of System or Load							
Systems or Loads	700		701		702		Comments
	Yes	No	Yes	No	Yes	No	
Egress Lighting	X						
Port space	X						
Tenant space	X						Tenant has to provide the emergency power source
Exit Signs	X						Tenant has to provide the emergency power source
Fire Alarm and MES	X						
Fire Pump and Jockey Pump	X						Reference NEC 695
Fire Sprinkler Compressor	X						
Access Control System Head End					X		
System Wide Paging							
Evacation paging	X						
Monitor and associated equipment for Emergency Visual Messages	X						
Other paging					X		
DDC			X				
Controlling 700 Equipment	X						
Controlling non-700 Equipment			X				
Smoke Control			X				
Supply Fans			X				
Return Fans			X				
AHU			X				
Exhaust Fans			X				
Fan Coil			X				
HVAC for Roadway Tunnel	X						
HVAC Required for Tenability	X						
HVAC					X		For continuity of operation - Coordinate with F&I for final decision
Supply Fans					X		For continuity of operation - Coordinate with F&I for final decision

Return Fans							X		For continuity of operation - Coordinate with F&I for final decision
AHU							X		For continuity of operation - Coordinate with F&I for final decision
Exhaust Fans							X		For continuity of operation - Coordinate with F&I for final decision
Fan Coil							X		For continuity of operation - Coordinate with F&I for final decision
Fire Smoke Dampers				X					
Comm Rm Rack Power		X					X		Comm rack power to NEC 700 system will be 700. Otherwise it will be 702 as required
Comm Rm Equipment unless above							X		
Mech Sys for Comm Rm Cooling							X		
DAS System		X							Comm rack power to NEC 700 system will be 700. Otherwise it will be 702 as required
800mhz Emergency Responders Radios		X							Comm rack power to NEC 700 system will be 700. Otherwise it will be 702 as required
Two-way communication		X							Comm rack power to NEC 700 system will be 700. Otherwise it will be 702 as required
Specialty Exit Doors		X		X					If battery backup and part of egress, then it'll be 701. If no battery and part of egress, then it'll be 700.
Door Operator									
Required for egress or to maintain door opening force		X							
Fire door - non egress							X		ie. Overhead Coiling Door
Elevator - Egress				X					All Elevators need UPS/battery backup for recall upon lost of power.
ACS Panel				X					

Elev Cab Power and LTG					X					
Lift Net					X					
Elev Hoist Recept					X					
Elev Pit Recept and LTG					X					
Elev/Esc Control Room					X					
Elevator - Evacuation		X								
ACS Panel		X								
Elev Cab Power and LTG		X								
Lift Net		X								
Elev Hoist Recept		X								
Elev Pit Recept and LTG		X								
Elev/Esc Control Room		X								
Baggage Handling System										
Control Room Recept								X		

Operational Permits

FIRE/LIFE SAFETY GUIDE

EVENT PLANNING

Port of Seattle Fire Department

2400 South 170th Street
Seattle, WA 98158

Phone: (206) 787-5327
Fax: (206) 787-4908

Fire/Life Safety Guide for Event Planning

This guide has been developed to provide information for event planners about fire code requirements in order to assure the safety of persons attending these events. To ensure compliance with applicable requirements, the contents outlined in this guide should be incorporated during the initial stages of planning. The information contained in this guide should not be considered all-inclusive and the Fire Marshal may require additional safety measures not covered in this guide.

The following are key elements of fire/life safety planning for events:

PERMITS

A "Special Event Permit" will be required for any event which temporarily deviates from normal use of the building/site and has 100 or more attendees. Examples of a Special Event would include: events in aircraft hangars, concert in airport terminal, outdoor locations with tent erection.

Airline events in the terminal do not need a permit and will still go thru Port Operations and the Fire Department will be notified if needed.

REQUIRED DOCUMENTATION & APPLICATIONS

Event application shall be submitted **at least 30 days prior** to the event.
The following items shall be submitted **at least 7 days prior** to the event:

- Site Safety Plan
- Written Emergency Plan
- Food Truck Permit request

After the required documentation has been submitted and approved, the Fire Marshal will review the information and schedule a site inspection prior to, or on the day of the event. Once the site has been inspected and deemed code compliant, any required permits will be issued to the authorized committee chairperson or representative. This guide and any permits issued will need to be posted at the event and immediately available for review along with the Emergency Plan documents.

WRITTEN EMERGENCY PLAN

The Written Emergency Plan shall be submitted to the Fire Marshal's office a minimum of 7 days prior to the event and shall contain the following information:

- Name of the company sponsoring the event.
- Name and address of the facility holding the event.
- Contact information for the following people:
  - Facility point of contact
  - Committee/Event Chairperson
  - Emergency Contact information
- The date and time of the event.
- Procedure for reporting emergencies to Port of Seattle Fire and Police Departments.
- Procedure for communicating with committee and personnel.
- Applicable Material Safety Data Sheet information, if applicable.
- Site Plan (see attached example).
- Documentation of flame spread performance ratings on fabrics and other decorations as appropriate (see Decorations section below).
- If suppression detection systems are disabled, provide plan for manual activation.
- If attendance is less than 1,000 attendees, 1 person per 250 attendees shall be designated to direct egress in the event of an emergency.
- Provide number of trained Crowd Managers for event, events with over 1,000 attendees require 1 crowd manger per 250 attendees unless reduced by the Fire Marshal. Certificates shall be present during inspection.
  IFC approved Crowd Manager Training:
  https://www.crowdmanagers.com/training or other approved training.

SITE PLAN

A Site Plan must be included with the Emergency Plan document. The following information shall be provided on the Site Plan:

- Layout of the site and basic floor plans of facility(s).
- Location of all fire extinguishers.
- Location of corridors, pathways and aisles.
- Location of all exits.
- Primary and secondary exit routes.

- Non-egress exits being used (hangar doors) must be identified on the plan.
- Fire department and rescue access lane location(s).
- Location of the evacuation assembly area(s) outside the building.
- Areas marked with brief description of activities.
- Location of decorative displays.
- Location of portable power equipment.
- Seating plan
- Location of any fuel cylinders, tanks and equipment (portable heaters, cooking equipment, etc.)
- Location of tents/air structures.
- Seating arrangement and aisles, to include aisle width.
- Location of food trucks if being used.

DECORATIONS

- All tents, decorations, fabrics, draperies, etc. shall be flame retardant from the manufacturer or a flame retardant material will be applied per code requirements.
- All documentation of the flame retardant material used and/or flame spread certificates must be submitted with the permit application and available to the Fire Marshal's representative on site at the time of inspection prior to the event.
    - Documentation of flame retardants may be found in labels permanently affixed to fabrics and decorations, may be obtained from manufacturer, and/or may be obtained from company/manufacturer/artisan who applied retardants to custom items.
- Decorations shall not obstruct or hang from any fire protection devices (fire sprinkler system, emergency lights and/or fire alarm).
- Decorations shall not obstruct or hang from any exit signs or means of egress.
- Decorations hung on the wall shall not cover more than 20% of the wall.

FIRE DEPARTMENT ACCESS/FIRE EQUIPMENT

- Fire Department access shall be maintained at all times. Designated permanent or temporary fire lanes and/or rescue access lanes shall remain free from any obstruction.
- Parking within 15 feet of a fire hydrant is prohibited.
- Fire alarm panels, fire sprinkler heads, fire department hose connections, pull stations, audible and visual alarm devices, and fire extinguishers shall not be obstructed from view or operation.

EXITS

- Exit signs shall be clearly visible at all times. Exit signs shall not be obstructed by decorative materials or objects of any kind.
- Exits and exit pathways shall not be obstructed.
- If non-egress exits are being used (hangar doors), temporary self-luminous exit signs shall be used.
- Roping or chaining exit doors closed or open is prohibited.
- All means of egress corridors, aisles, pathways, etc., shall remain free of obstruction at all times.
- Tripping hazards in the path of travel shall be removed.

ELECTRICAL SAFETY

- All light strings, lighting decorations, extension cords and electrical appliances shall be tagged with a UL® or FM® rating.
- Only heavy-duty extension cords of required electrical capacity can be used.
- Extension cords shall be intact and in good condition.
- Extension cords shall not be plugged together to make them longer.
- Extension cords shall not go through walls, ceilings, or under floors.
- Extension cords shall be taped down or otherwise secured to minimize tripping hazards.
- Multi-plug adapters shall not be used, with the exemption of approved surge protection devices and multi-plug adaptors of the fused type.

OPEN FLAME DEVICES

- Open flame devices are prohibited when aircraft or other types of liquid or gas fueled vehicles are present unless approved by the Fire Marshal.
- Candles, lanterns, pyrotechnics (fireworks) and other open flame devices are prohibited in any building unless approved by the Fire Marshal.
- Flammable/combustible liquids/gases and other hazardous, or potentially hazardous, materials shall be removed as directed by the Fire Marshal.

SPECIAL EFFECTS AND MUSIC

- All music and audio-visual special effects shall turn off in the event of a fire

alarm activation or emergency.

COOKING

- All outdoor cooking grills shall be no closer than 35 feet from any building.
- Food trucks will need to have a compliant hood/suppression system. Complete yellow section of Food Truck Permit and submit with Event Plan.
- Propane tanks shall not be stored or used under or inside of tents. All propane tanks shall be kept a minimum of 20 feet from any tent.
- Tents where cooking is performed shall be separated from other tents, canopies, or membrane structures by a minimum of 20 feet.
- Open flame devices of the following type may be used by permit and with the approval of the Fire Marshal:Cooking devices such as "sterno", gas burners, etc., which produce an open flame. Solid fuels (wood, charcoal, etc.) is prohibited for use on the ramp at Seattle-Tacoma Intl. Airport.

Food Trucks or BBQ on ramp need to be 100' from Aircraft.

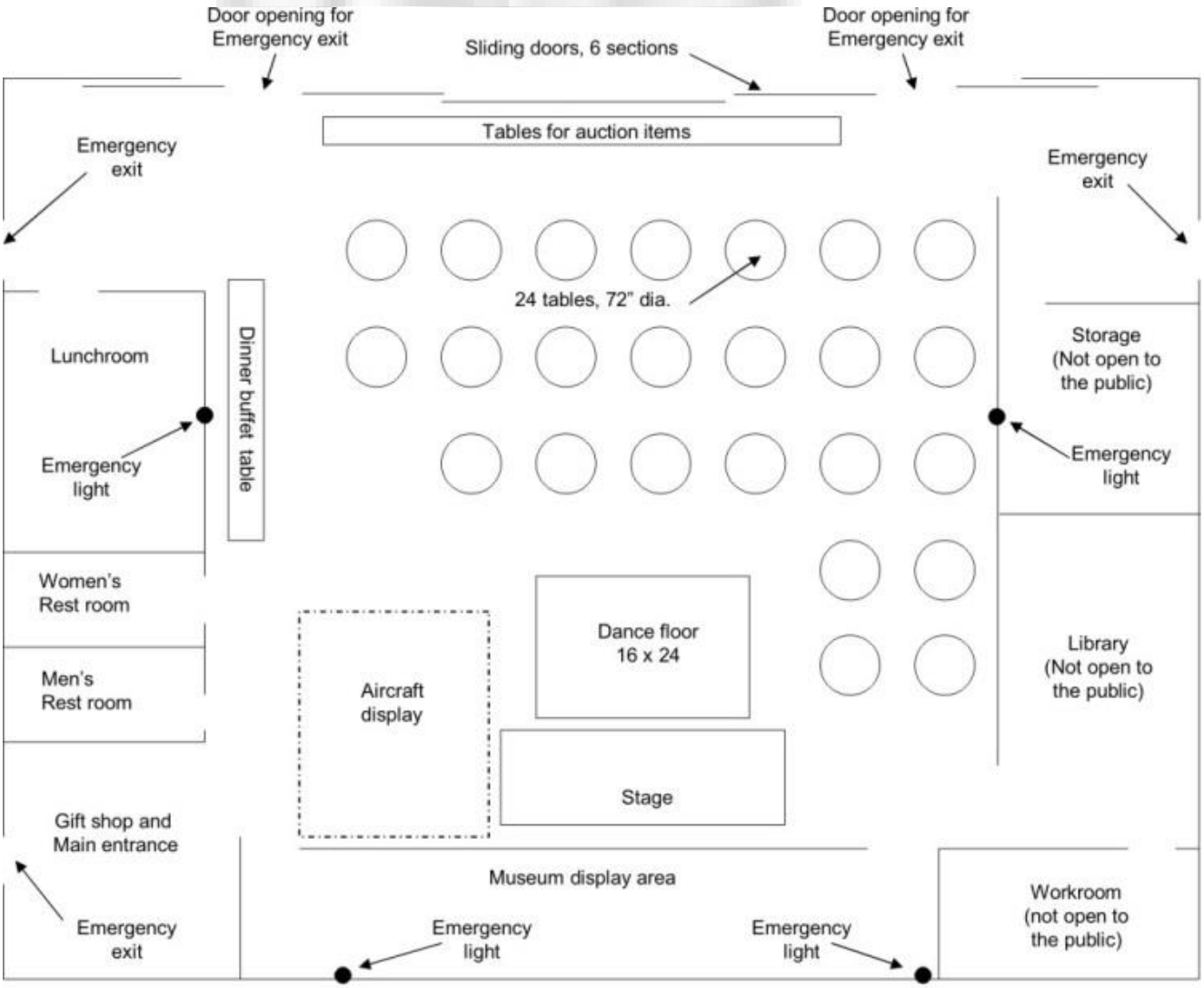
SEATING

- A Seating Arrangement Plan shall be submitted to the Fire Marshal's for approval. Exit access routes between seating/tables shall be a minimum of 36 inches clear width and shall remain unobstructed at all times. All seats shall be fastened together.

FIRE PROTECTION SYSTEMS

- Fire protection systems shall not be turned off or otherwise rendered ineffective unless approved by the Fire Marshal.
- If detection system is bypassed, a plan must be in place for activating the suppression system.
- A fire watch may be required in special circumstances at the discretion of the Fire Marshal.
- Fire extinguishers shall be readily available in all buildings, tents, and other areas.

EXAMPLE OF A SITE PLAN



CAF Museum Hangar Special Event Scale: 1 inch = 17.6 feet

PORT OF SEATTLE
FIRE DEPT

Special Event Permit Application

2400 South 170th Street
Seattle, WA 98158
Phone: 206-787-5327
Fax: 206-787-4908

*Permit not needed if less than 100 attendees

Date of Event:	**Event Start & End Time:**		
Name of Facility:			
Facility Address:			
Facility Point of Contact:	**Phone #:**		
Company Sponsoring the Event:			
Committee/Event Chairperson:	**Phone #:**		
1. How many people will be in attendance? **(NOTE: If there are more than 1,000 people, 1 trained crowd manager PER 250 people must be on site with approved IFC Crowd Manager training documentation.)**			
		YES	**NO**
2. Will the fire detection system be disabled? If yes, please explain.			
3. Will there be an airplane in the hangar?			
4. Will there be designated personnel to direct egress in the event of an emergency?			
5. Will there be any kind of cooking happening at the event? If yes, please explain.			
6. I acknowledge that both, an Event Safety Plan and Site Plan have to be submitted to the Fire Marshal for approval at least 7 days prior to the event.			

Food Truck Operational Permit

Permit Number:

This Permit must be filled out and submitted to Fire Prevention 7 days prior to the event.

This permit is issued to operate mobile food trucks on Port of Seattle property. Food truck operations must be in accordance with the conditions of use. This permit is not transferrable and any change in use or ownership shall require a new permit.

Company Name:
Contact Name & Phone Number:
NFPA Safety Sheet has been reviewed & adhered to? ☐Yes or ☐No *If no, a permit cannot be issued.*
Certified suppression hood system? ☐Yes or ☐No *If no, company cannot operate on Port property.*
Last date of hood system inspection? *Must be within the last 12 months.*

TO BE FILLED OUT BY PORT FIRE PREVENTION	
Date Issued:	**Expiration Date:**

Issued by: _____ Port of Seattle Fire Department
2400 S. 170th Street Seattle, WA
98158
Phone: (206) 787-5327

***** SEE REVERSE SIDE FOR CONDITIONS OF USE *****

CONDITIONS FOR USE

- Obtain a license or permit from local authorities (Sea-Tac, Seattle, Renton) etc.
- Adhere to the NFPA safety checklist.
- Food trucks must be equipped with fully charged and operable fire extinguishers appropriate for the type of possible fire along with a certified suppression hood system. Hood systems must be inspected every 12 months.
- Cooking equipment shall be in satisfactory operating condition and in good repair.
- No solid fuel (wood, charcoal, etc.) sources can be used to cook with.
- Ensure that workers are trained in the following:
  - Proper use of portable fire extinguishers and extinguishing systems.
  - Proper method of shutting off fuel sources.
  - Proper procedure for notifying the local fire department.
- All flammable liquids will be properly stored and cleaned up prior to operating.
- Ensure clearance is provided for the fire department to access fire hydrants and access fire department connections.
- Check that there is a clearance of at least 10 feet away from buildings, structures, vehicles, and any combustible materials.
- At least 100 feet away from fuel transfer operations.
- If location is on Ramp, location must be approved by Port Fire.

Port of Seattle Fire Department
Nitroset Fastener Permit

On projects that may require Nitroset fasteners be used, the Contractor is required to pay special attention with respect to the personnel qualifications, proper notifications, and control of the material.

A. Personnel Qualifications:

1. The operator must be competent in all aspect of tool usage, handling, storage, maintenance, and inspections, as required by the Port of Seattle safety manual, and all applicable WAC rules and regulations.

B. Notification Requirements:

The Contractor shall provide a specific Construction Advisory Form (CAF} and a copy of the approved permit every time Nitroset fasteners are to be used on the Project. The form should as a minimum contain the following information:

1. The location where the tool is to be used.

2. Description of the work; type of surface to be penetrated, and the material/item to be fastened.

3. Date(s), and times of operation.

4. The name and contact information for the qualified operator who will be in custody of the tool at all times while on the Port of Seattle property.

5. The amount of power loads to be kept on site at any given time. The Port of Seattle Fire Department will limit the number/amount of power loads (Per IFC table 5604.3} to a max. of 10lbs of 1.3 explosive and must be in a steel cabinet

6. The type of tool used; direct or indirect acting, and whether it is classified as low, medium or high velocity tool.

7. The method of storage and safekeeping

The Engineer will distribute the form to the Port of Seattle Operations, Security, Police, Fire and Building Departments. The Engineer must obtain concurrence from all five departments before the work can proceed.

C. Control of the Nitroset tools and power loads:

1. The tools and loads must never be left unattended.

2. When not in use, the loads must be locked in steel, properly marked container and within a site distance from the qualified operator in custody of the tools and power loads.

3. Overnight/off shift storage of the tools and loads on site is not permitted.

4. The number of tools and loads shall never exceed the amount authorized by the Port of Seattle Security and Fire Departments.

5. Unused or misfired loads must be neutralized, and properly disposed of.

6. Port of Seattle Dispatch (206) 787-5380 must be notified prior to beginning work using Nitroset tools.

The Qualified Operator\Contractor acknowledges and agrees to fully comply with all qualifications and requirements as stated above. Any violation of the permit may result in immediate suspension of work.

Date issued _____ Time issued _____ Permit Expires _____

Port of Seattle Project Name _____

Port of Seattle Work Project No. _____

Location _____ Contractor _____

Nitroset Tool Qualified Operators (list all) _____

_____

Name (Print) and Signature of qualified person performing tool work

_____ _____

Name (Print) and Signature of Fire Department Personnel

_____ _____

Permit Number _____

Port of Seattle Fire Department

Powder-Actuated Fasteners Permit

On projects that may require powder-actuated fasteners be used, the Contractor is required to pay special attention with respect to the personnel qualifications, proper notifications, and control of the material.

A. Personnel Qualifications:

1. Only a qualified operator is allowed to handle and operate the powder-actuated tools. A qualified operator is a person that meets the requirements of **WAC 296-155-36321** (1) and (2), and who is in possession of a qualified operator card signed both by the operator and the authorized instructor.
2. Qualified operators shall have their operator's card in their possession at all times while operating the equipment.
3. The qualified operator must be competent in all aspect of tool usage, handling, storage, maintenance, and inspections, as required by the Port of Seattle safety manual, and all applicable WAC rules and regulations.

B. Notification Requirements:

The Contractor shall provide a specific Construction Advisory Form (CAF) and a copy of the approved permit every time powder actuated fasteners are to be used on the Project. The form should as a minimum contain the following information:

1. The location where the tool is to be used.
2. Description of the work; type of surface to be penetrated, and the material/item to be fastened.
3. Date(s), and times of operation.
4. The name and contact information for the qualified operator who will be in custody of the tool at all times while on the Port of Seattle property.
5. A copy of the Qualified Operator's Card issued and signed by both the authorized instructor and the operator.
6. The amount of power loads to be kept on site at any given time. The Port of Seattle Fire Department will limit the number/amount of power loads (Per IFC table 5604.3) to a max. of 10lbs of 1.3 explosive and must be in a steel cabinet
7. The type of tool used; direct or indirect acting, and whether it is classified as low, medium or high velocity tool.

8. The method of storage and safekeeping.

The Engineer will distribute the form to the Port of Seattle Operations, Security, Police, Fire and Building Departments. The Engineer must obtain concurrence from all five departments before the work can proceed.

C. Control of the powder actuated tools and power loads:

1. The powder actuated tools and power loads must never be left unattended.
2. When not in use, the Powder actuated tools and power loads must be locked in steel, properly marked container and within a site distance from the qualified operator in custody of the tools and power loads.
3. Overnight/off shift storage of the powder-actuated tools and powder loads on site is not permitted.
4. The number of tools and power loads shall never exceed the amount authorized by the Port of Seattle Security and Fire Departments.
5. Unused or misfired loads must be neutralized, and properly disposed of.
6. Port of Seattle Dispatch **(206) 787-5380** must be notified prior to beginning work using powder actuated tools.

The Qualified Operator\Contractor acknowledges and agrees to fully comply with all qualifications and requirements as stated above. Any violation of the permit may result in immediate suspension of work.

Date issued_____ **Time issued** _____ **Permit Expires** _____

Port of Seattle Project Name _____

Port of Seattle Work Project No. _____

Location _____ **Contractor** _____

Powder Actuated Tool Qualified Operators (list all) _____

_____

Name (Print) and Signature of qualified person performing tool work

_____

Name (Print) and Signature of Fire Department Personnel

_____

Permit Number_____

Port of Seattle Fire Department

ANNUAL BARBECUE PERMIT

THIS PERMIT SHALL NOT BE TRANSFERABLE AND ANY CHANGE IN USE, OCCUPANCY OPERATION OR OWNERSHIP SHALL REQUIRE A NEW PERMIT.

Company Issued: _____ **Permit Number:** _____

Date Issued: _____ **Expiration Date:** _____ **Time:** _____

Issued to: **Name:** _____ **Title:** _____ **E-mail:** _____
Phone: _____

Address: _____

Permit Issued for: Propane Barbecue

This permit is issued for the following area: _____

Print Name: _____

Signature: _____

Issued by: _____

_____ - Inspector Fire Prevention
Port of Seattle Fire Department
2400 South 170th Street
Seattle, Washington 98158
Phone: (206) 787-5327

***** SEE REVERSE SIDE FOR CONDITIONS OF USE *****

CONDITIONS FOR BARBECUE AND OPEN FLAME OPERATION

Annual barbecue permit is valid only for the identified barbecue area. Fire Inspector and Manager/Supervisor will jointly review each barbecue area location. **Barbecue permits are only allowed in designated areas on Port property, authorized by the Port of Seattle Fire Department Fire Prevention Division. Propane barbecues only, no charcoal barbecue is allowed on Port property.**

REQUIRED PRECAUTIONS

1. Where practicable, all combustibles shall be relocated at least 35 feet horizontally from the barbecue site.
2. All flammable liquids and or vehicles containing flammable liquids must be 35 feet in distance prior to operating barbecue unit.
3. Fully charged and operable fire extinguishers appropriate for the type of possible fire shall be available at the work area.
4. Barbecue unit to be used shall be in good working condition prior to use, clean, and no grease build up.
5. Extinguisher are operable and fully charged, one ABC type and/or one water, or charged hose line.
6. A fire watch shall be maintained for at least one-half hour (30 Minutes) after completion barbecue activities and unit has been secured and adequately cooled.

Hot Work Permits

Port of Seattle Fire Department

PROJECT/AREA - HOT WORK PERMIT

Company Issued: _____ **Permit Number:** _____

Date Issued: _____ **Expiration Date:** _____ **Time:** _____

Issued to: **Name:** _____ **Title:** _____ **E-mail:** _____
Phone: _____

Name: _____ **Title:** _____ **E-mail:** _____
Phone: _____

Location/Space: _____

Permit Issued for: Welding, cutting, grinding, torching, and soldering.

Permit Conditions: *** SEE REVERSE SIDE FOR CONDITIONS OF USE ***

Notification: The Project Superintendent shall notify the Fire Prevention Inspector if transferred or removed from construction project for any reason (vacation, injury). Name, phone number, and e-mail of the new Project Superintendent shall be forwarded to the Fire Prevention Inspector.

Print Name: _____ **Signature:** _____
(Superintendent) (Superintendent)

Issued by: _____ _____ _____
(Fire Prevention Inspector) (Cell Phone) (E-mail)

Port of Seattle Fire Department
2400 South 170th Street
Seattle, WA 98158
Fire Prevention: (206) 787-5327
Fire Dispatch: (206) 787-5380

Port of Seattle Fire Department

CONDITIONS FOR HOT WORKS

Hot Work Permits issued for more than 24-hour duration by the Port of Seattle Fire Department shall require a Daily Pre-Hot Work Checklist completed and kept on individual performing hot works, turned into Project Superintendent at end of day and filed. For data collection at end of project or year, the total of hot work activities will be provided to the Fire Department.

The Area/Project Permit is valid only to the listed Superintendent for the identified area/project, if work area changes locations or changes Superintendents you will need to contact assigned Fire Inspector for new permit. Fire Inspector and Project Superintendent will jointly review each location.

Individuals conducting hot works shall not perform Pre-Hot Work inspection form. For each person performing hot work, the area shall be inspected by the Project Superintendent or identified competent person, supervisor of company performing hot work or safety rep/fire watch activity using pre-hot work checklist.

The Project Superintendent, safety or designated person should perform random audits of hot work activity.

The Project/Area Superintendent shall be responsible to collect daily Pre-Hot Work Checklists and monitor hot work activity and fire watch requirements.

Hot Works are not allowed in the following situations:

a. In sprinklered buildings while such protection is impaired or out of service, unless a designated. fire watch is posted for each hot work operator. Coordinate with the Fire Department.
b. In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids or dusts with air).
c. Over operating conveyors.

The Fire Department, Port Safety, and Port Construction Inspectors will perform random site visits; if conditions of permit are not adhered to, hot work permit for area or entire job may be revoked until corrective action are made.

Other Considerations:

A. If detectors (UVIR, Smoke) are covered to prevent alarms, covers must be removed at end of workday.
B. If hot works is near ventilation systems coordinate with your Port Construction Inspector.
C. Coordinate with Fire Inspector for any hot works on the roof.
D. Coordinate with Fire Inspector for any hot works on the ramp.
E. Hot works in confined space must be coordinated with Port Construction, Safety and Fire Inspectors

Questions or concerns contact your assigned Fire Inspector

Port of Seattle Fire Department

Daily Pre-Hot Work Checklist

Date: _____ Time: _____ Location/Space Hot Work: _____

Company Name: _____ Name Performing Checklist: _____

Check all that Applies: Hot work operator shall not fill out Pre-Hot Work Checklist.

Required Precautions

Y N/A

☐ ☐ Extinguishers are operable and fully charged. 2-A: 20-B:C min. size

☐ ☐ Hot Work equipment in good working condition

Requirements 35' from Hot Work

Y N/A *To determine fire watch requirements

☐ ☐ *Floors swept clean, remove or shield combustibles using approved welding fire blankets or curtains.

☐ ☐ *Isolate or remove potential sources of flammable gas, ignitable liquid or combustible dust/lint.

☐ ☐ Shut down ventilation and conveying systems (Contact Port Inspector).

☐ ☐ *Remove combustibles and consider second fire watch on opposite side of floor, wall, ceiling or roof when openings exist, or thermally conductive materials pass through.

Hot Work on/in Closed Equipment, Ductwork and Piping

Y N/A

☐ ☐ Contact Fire Prevention prior to all hot work performed on/in closed equipment, ductwork and piping.

Hot Work on Ramp

Y N/A

☐ ☐ No hot work within 50 feet aircraft, all hot work must cease when aircraft is fueling within 100 feet.

☐ ☐ All Hot works visible from or on ramp needs appropriate shielding (fire blankets or fire umbrellas) to prevent UVIR activation. If not possible, contact Fire Prevention Division to identify UVIR'S to cover **(206) 787-5327**

"Continue to Back Page"

Daily Pre-Hot Work Checklist - Continued

Elevated Hot Work Areas

Y N/A

☐ ☐ All elevated hot works producing sparks/slag shall require a **designated** fire watch and shall be maintained during all breaks.

☐ ☐ Elevated hot works requires inspection of space below.

☐ ☐ If sparks/slag fall, space below shall be cordoned off to protect other workers.

Fire Watch/Fire Monitoring the Hot Work Area

Y N/A

☐ ☐ Perform a continuous fire watch during hot works and breaks.

☐ ☐ *60-minute post hot work fire watch.

☐ ☐ Fire watch complete @ _____: _____

Fire Watch Requirements and other Considerations

A designated fire watch is required when the 35' requirement is not met or required by the Fire Department, this shall be an individual whose sole responsibility is to be on guard of potential fires and/or hazards, stopping operations if any hazardous condition is found and is prepared to operate a fire extinguisher in case of a fire and to immediately call 911.

A. If detectors (UVIR, Smoke) are covered to prevent alarms, covers must be removed at end of workday.
B. If hot works is near ventilation systems coordinate with your Port Construction Inspector.
C. Coordinate with Fire Inspector for any hot works on the roof.
D. Coordinate with Fire Inspector for any hot works on the ramp.
E. Hot works in confined space must be coordinated with Port Construction, Safety and Fire Inspectors

Port of Seattle Fire Department

DESIGNATED AREA HOT WORK PERMIT

THIS PERMIT SHALL NOT BE TRANSFERABLE AND ANY CHANGE IN USE, OCCUPANCY OPERATION OR OWNERSHIP SHALL REQUIRE A NEW PERMIT.

Company Issued: _____ **Permit Number:** _____

Date Issued: _____ **Expiration Date:** _____

Issued to: **Name:** _____ **Title:** _____ **E-mail:** _____
Phone: _____

Address: _____

Location/Space: _____

Permit Issued for: Welding, cutting, grinding, torching, and soldering.

This permit is issued for the following work area: _____

Print Name: _____

Signature: _____

Issued by: _____

_____ - Inspector Fire Prevention
Port of Seattle Fire Department
2400 South 170th Street
Seattle, Washington 98158
Phone: (206) 787-5327

***** SEE REVERSE SIDE FOR CONDITIONS OF USE *****

CONDITIONS FOR WELDING AND OPEN FLAME OPERATION

Hot works permit is valid only to the designated work area, if work area changes locations or changes Manager/Supervisor, contact assigned Fire Inspector for new permit. Fire Inspector and Manager/Supervisor will jointly review each work area location.

The Manager/Supervisor shall be responsible for hot works operation and oversee hot works operation. In addition, train all employees pertaining to hot work required precautions.

REQUIRED PRECAUTIONS

1. Where practicable, all combustibles shall be relocated at least 35 feet horizontally from the work site. Floors swept clean, remove or shield combustibles using approved welding fire blankets or curtains.
2. All flammable liquids will be properly stored and cleaned up prior to welding.
3. Fully charged and operable fire extinguishers appropriate for the type of possible fire shall be available at the work area.
4. Cutting or welding equipment to be used shall be in satisfactory operating condition and in good repair.
5. Cutting or welding is not allowed in the following situations:
    a. In sprinklered buildings while such protection is impaired or out of service, unless a designated. fire watch is posted for each hot work operator. Coordinate with the Fire Department.
    b. Presence of explosive atmospheres, mixtures of flammable gases, vapors, liquids or dusts w/ air).
    c. Simultaneous spray painting in or near the welding or cutting area.
    d. Within 50 feet of vehicles containing flammable liquids.
    e. Within 100 feet of an aircraft, fuel truck, or fueling operations.
6. A fire watch shall be maintained for at least one-half hour (30 Minutes) after completion of cutting or welding operations to detect and extinguish smoldering fires.
7. Welding curtains shall be used to screen oil collection drums.
8. Extinguishers are operable and fully charged. 2-A: 20-B:C min. size
9. Hot Work equipment in good working condition.
10. Isolate or remove potential sources of flammable gas, ignitable liquid or combustible dust/lint.
11. Perform a continuous fire watch during hot works; also perform a continuous fire watch following hot works completion for 30 minutes OR 60 minutes.

Queuing Standards

Port of Seattle Queuing Standard

Updated **2021**

Definitions:

Egress Pathway: A means of egress serving people within a given queue and/or directly associated with the queue or queuing activity.

Exiting Pathway: A means of egress serving people not related to the queuing activity.

General:

- All stanchions shall be magnetically attached or permanently anchored to the floor.
- All stanchions shall be of the "non-locking" type.
- Queuing width (measured perpendicular to direction of travel) shall be a minimum 42" wide (center to center of stanchion).
- Minimum 5 foot diameter turning circles shall be provided at all change in directions.
- Illuminated exit signage, meeting all requirements of the IBC, IFC and Rules of Airport Construction; shall be installed for both egress and exiting pathways.
- Stanchions delineating either egress or exiting pathways shall be "RED" in color.
- **2021 Update – Building Department has requested every new stanchion be purchased with a breakaway belt end if practical.**

Egress Pathway Requirements:

- Egress pathways for all queuing areas shall be established. Such egress pathways shall be installed at a maximum spacing of 50 feet, when measured along the perimeter of the queuing. This requirement applies to all sides of the queuing perimeter and shall be based on the maximum (worse case) extent of queuing.
- Egress pathways can be established perpendicular or in the direction of travel.
- Egress pathways shall be a minimum 48" wide (center to center of stanchion).
- Egress pathways shall be clear and unobstructed or clearly delineated with stanchions connected by ribbons meeting the below criteria:
    - Ribbons shall be "RED" in color and be a minimum 2" in height. Text shall "WHITE" in color and a minimum 1½" in height.
    - Text shall be 36" in Length, state "EMERGENCY EXIT," and be repeated every 48." Reference Example of Ribbon Text.
    - Ribbons shall be connected to adjacent stanchions utilizing magnetic or breakaway attachments that require less than 5lb of force.

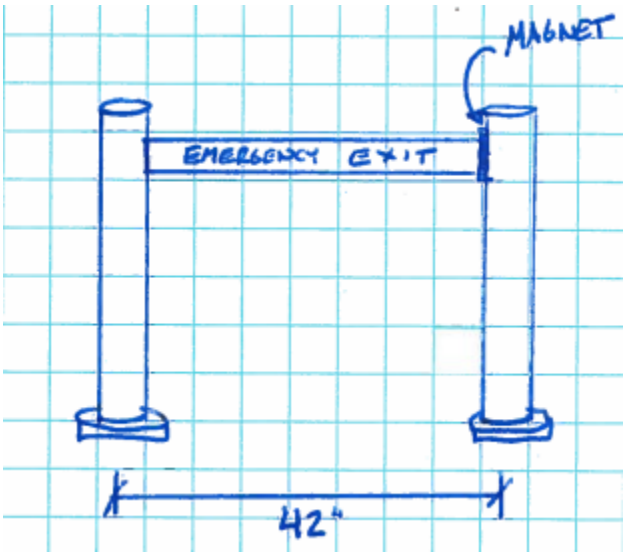
Exiting Pathway Requirements:

- If required exiting transverses queuing, permanent gates shall be installed.
    - **Exception**: With approval from POSFD and POS ABD, and where operationally impractical or infeasible; magnetic attachment, breakaway ribbons, or an approved equal can be substituted for the permanent gates.
- Gates shall provide the required exiting capacity and comply with all egress and accessibility code requirement.

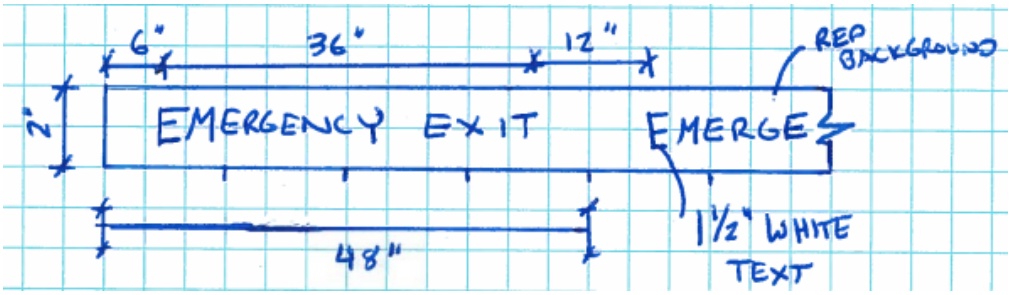
- Gates, when open, shall not block more than 50% of the queuing width and be labeled "Emergency Exit Push to Open."

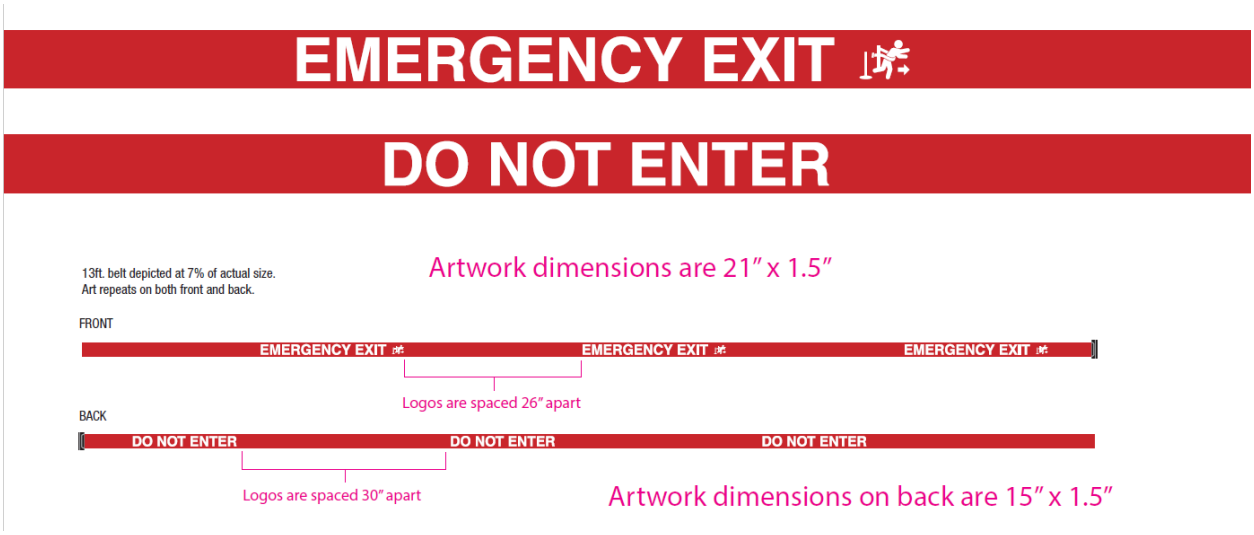
Examples of Egress Pathways:

Example 1: **Break Away Stanchion Straps – Preferred Solution**



Example of Ribbon Text:

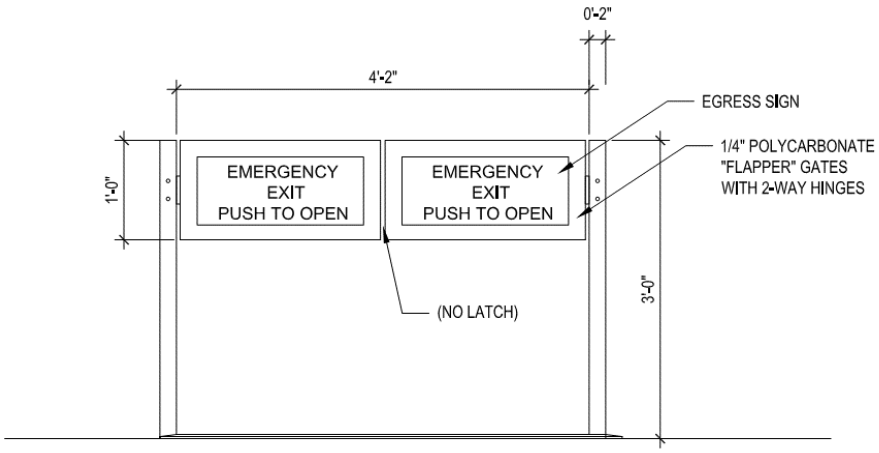




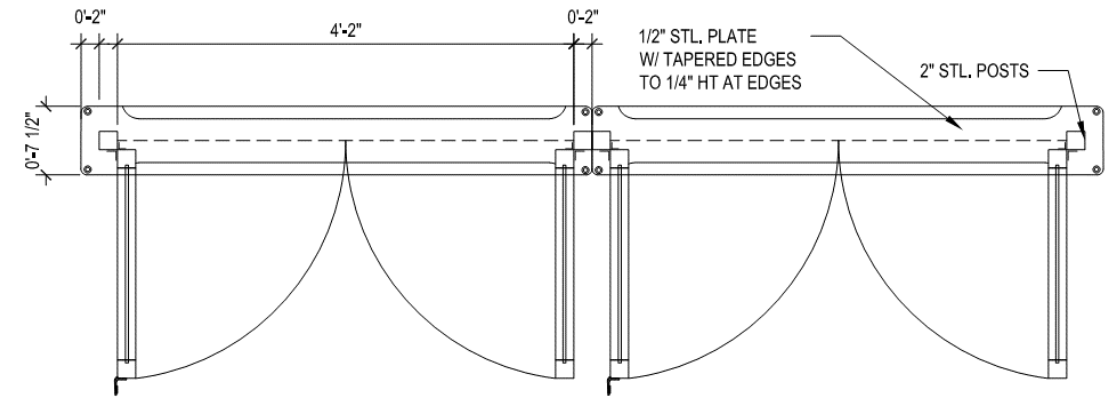

PUSH ME
PULL ME

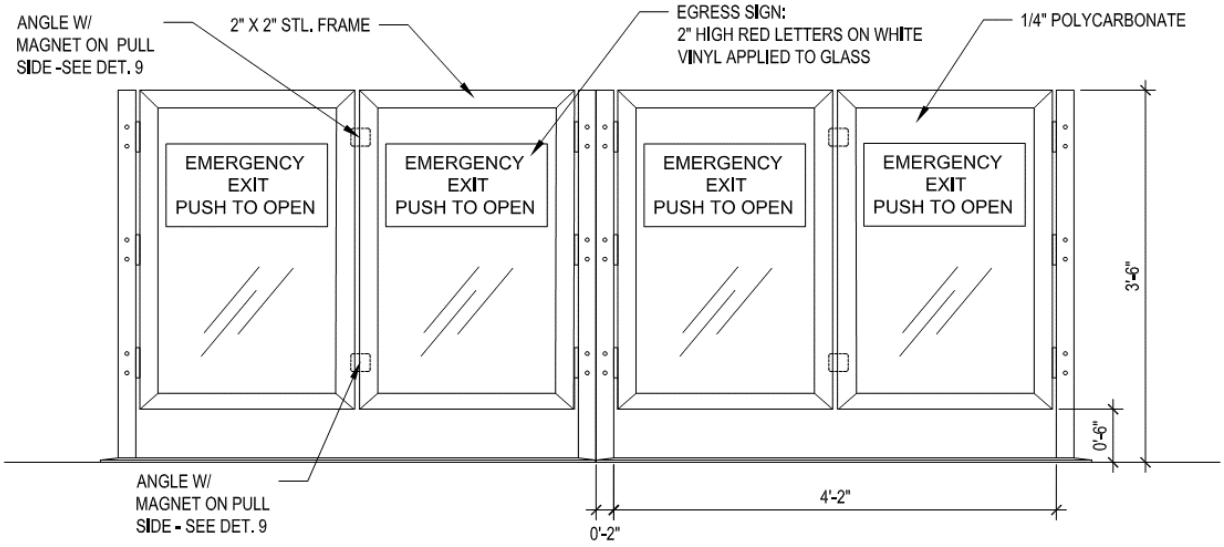
Examples of Exiting Pathway Gates:

Example 2: **Swing Gates with Black Acrylic**



Example 3: **Custom Made Clear Acrylic Swing Gates on Satin Frames. Used for perimeter of checkpoints when necessary.**





RED 4.46" TALL x 10.8 WIDE

DO NOT ENTER

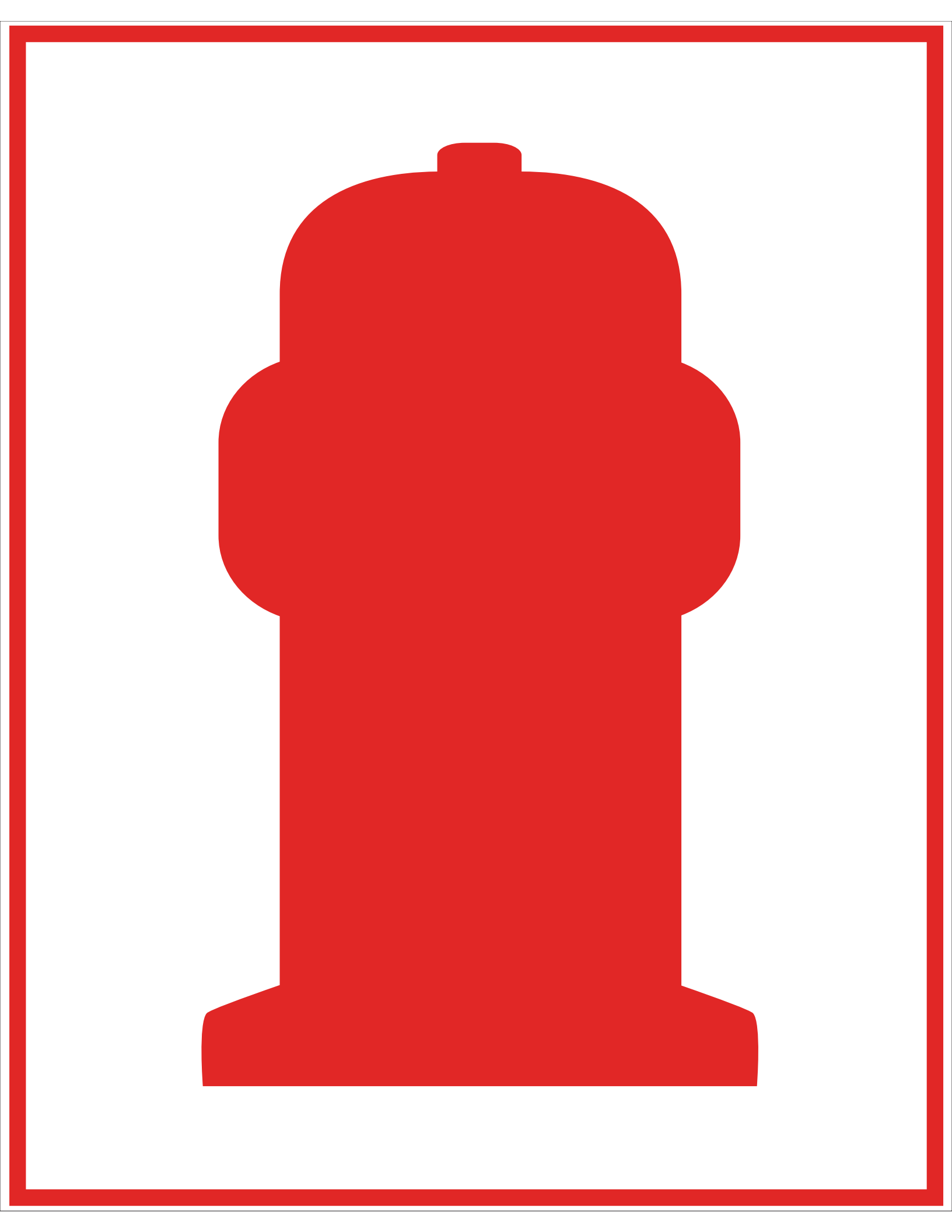
LETTERING 2" TALL

RED 4.46" TALL x 10.8 WIDE

EMERGENCY EXIT ONLY

LETTERING 2" TALL

Standard Signs



24.0″

12.0″

North Satellite Fire Pump Test Connections

1 each. single sided
Mount to wall.

24.0″

12.0″

Concourse A Fire Pump Test Connections

1 each. double sided
holes for hanging with chain.

12.0″

7.5″

FDC
Feeds NSM-1

FDC
Feeds NSM-1

FDC
Feeds NSM-2

FDC
Feeds NSM-2

24.0″

12.0″

FDC
Feeds All South Satellite Sprinklers


FIRE SPRINKLER
RISER INSIDE


FIRE ALARM
PANEL INSIDE

18.00 in

0.25 in

12.00 in

IN CASE OF FIRE, SPILL, OR RELEASE

Call the Fire Dept. at **911**
or **206-787-5380** from cell phone

Call the ACC at 206-787-5229

NORTH SATELLITE EMERGENCY GENERATOR
2400 S 170th St
SeaTac, WA 98158

Fire Extinguisher located next to fill port

WARNING

This room is protected by a sprinkler valve (Valve Name) that is normally closed. Prior to opening valve contact the Port of Seattle Electrical Shop to disconnect power. Valve is located in Room XX-2210-X.

Sole Source - Fire Alarm

2017-003

PORT OF SEATTLE
MEMORANDUM

DATE: May 15, 2017

TO: Port Commission

FROM: Dave Soike, Interim Chief Executive Officer

SUBJECT: Notification that the Port will execute a sole source competition waiver with SimplexGrinnell for all future fire alarm system needs on all projects at Seattle-Tacoma International Airport.

NOTIFICATION

This memo serves as notification that the Port approved a sole source competition waiver with SimplexGrinnell.

This action is justified by Resolution 3605 (as amended) in Section 6.5 (i), "There is only one source for the service or product;"

Please see attached competition waiver for details.

2017-003

Port of Seattle

PORT OF SEATTLE
MEMORANDUM

DATE: May 3, 2017

TO: Dave Caplan, Senior Director, Office of Strategic Initiatives

FROM: Jeffrey Brown, Director, Aviation Facilities and Capital Program
Wendy Rieter, Director of Aviation Security and Emergency Management
Jeffrey Nelson, Fire Protection Engineer, AV/Fire Department JN

SUBJECT: Sole Manufacturing Competition Waiver for all future fire alarm system needs on all projects at Seattle-Tacoma International Airport with SimplexGrinnell

---

REQUEST:

We request a sole source competition waiver authorizing the Port to purchase SimplexGrinnell for all future fire alarm system needs for the next 10 years (2017-2027) or until the Port decides otherwise. A single campus wide fire alarm system is essential to life safety operations at the airport and all surrounding facilities. The current fire alarm system at the airport is SimplexGrinnell and is a proprietary system. No other manufactuer's products are backwards compatiable and can be intergrated within this system.

PERIOD:

This waiver shall be in effect for 10 years or until the Port decides otherwise, whichever comes first.

BACKGROUND

Seattle-Tacoma International Airport has a proprietary fire alarm system that is referred to as a 'campus' system supplied by SimplexGrinnell. There are currently 112 fire alarm panels connected through 50 nodes and approximately 8100 field devices (detectors and alarms) connected to the existing system. Future projects at the Airport would add additional nodes and devices to the existing 'network' fire alarm system that protects and supervises all Airport buildings and facilities. The fire panels, field devices, and system software are unique and proprietary to SimplexGrinnell with no functional alternative available.

In order to accomplish a seamless system, each node must freely communicate with other nodes as well as the head end monitoring point located in the dispatch center in the Combined Communication and Control Center. In the dispatch center, the fire alarm system interfaces with computer aided dispatch (CAD) software. CAD provides the fire dispatcher(s) with the correct response teams appropriate to the condition and location as well as displaying graphically the location and actual floor plan of the protected premises.

As such, the ease of use for the dispatcher and the 'dove-tail' with the existing campus fire alarm system, and the integrated CAD information are the critical features of the system that must be maintained through this sole source equipment and software. It is only through this direct line communication that a timely dispatch signal and emergency personnel are notified of a fire alarm condition.

JUSTIFICATION FOR SOLE MANUFACTURED PRODUCT

A single campus wide fire alarm system in an essential part of intergrating the other terminal and airfield life safety systems (building smoke control system, ramp level UV/IR's, mass evacation and messaging system, etc.). A single fire alarm system simplies this intergration and reduces the failure mechanisms that could severly impact round-the-clock operations.

In case of an emergency, a single fire alarm system provides redunctancy and prevents a failure of a portion of the system from reduring the entire system non-operational. In addition, it also allows for the entire system to be analysed, troubleshooted and the restoration of the entire system to occur rapidly.

Although the fire panels, field devices, and system software are unique and proprietary to SimplexGrinnell, SimplexGrinnell products are available for purchase from multiple distributors and can be competitively bid.

REQUESTED ACTION/RECOMMENDATION

We request this sole manufacturer competition waiver be approved for 10 years, or until the Port decides otherwise, whichever comes first.

If you have any further questions, please contact Jeffrey Nelson, POS Fire Department at 206-787-6774.

CONCURRENCE WITH RECOMMENDATION:

Nora Huey, Director, Central Procurement Office — Date: 5-15-17

Craig Watson, General Counsel — Date: 5-16-2017

2017-003

APPROVAL:

Dave Caplan, Senior Diector, Office of Strategic Initiatives

5/18/2017
Date

2012-016

Port of Seattle

PORT OF SEATTLE
MEMORANDUM

DATE: June 25, 2012

TO: Port Commission
Tay Yoshitani, Chief Executive Officer

FROM: Ralph Graves, Managing Director, Capital Development RLG
Dave Soike, Director, AV Facilities and Capital Program DKS

SUBJECT: Notification that the Port intends to select the SimplexGrinnell and Cooper Wheelock product line for future fire alarm system needs on all projects at Seattle-Tacoma International Airport.

NOTIFICATION

Notification that the Port intends to select the SimplexGrinnell product line inclusive of: smoke detectors, duct detectors, manual pull stations, monitor modules, addressable relay modules and associated materials; and the Cooper Wheelock product line for speakers and strobes for future fire alarm system needs on all projects at Seattle-Tacoma International Airport.

This competitive waiver is for selection of SimplexGrinnell as the sole source for fire alarm systems, including the Cooper Wheelock product line for speakers and strobes, for future projects at Seattle-Tacoma International Airport.

This is justified under 3605, Section 6.5 Competition Waivers. This section reads, in part, "The CEO is authorized to approve competition waivers consistent with applicable federal and state laws and internal Port polices...".

The condition that applies here is:

Condition (i) which states, "there is only one source for the service or product".

This applies here because the existing Airport-wide fire alarm system is proprietary and can only support the addition of SimplexGrinnell fire alarm systems with new facilities. The Cooper Wheelock product line is compatible with the SimplexGrinnell fire alarm system.

Please see the attached sole source justification memo for additional details.

Attachment to May 2017 Sole source waiver

Jeffrey Bo
5/9/17

2012-016

Port of Seattle

PORT OF SEATTLE
MEMORANDUM

DATE: June 25, 2012

TO: Ralph H. Graves, Managing Director, CDD

FROM: Dave Soike, Director, AV Facilities and Capital Program
Jeff Gangnes, Battalion Chief/Fire Marshall, AV/Fire

SUBJECT: Sole Source Justification: SimplexGrinnell, Fire Alarm Systems and Cooper Wheelock, speakers and strobes

1. **How was it determined that SimplexGrinnell should be the sole source supplier for Fire Alarm Systems, including Cooper Wheelock for the speakers and strobes?**

   Seattle-Tacoma International Airport (Airport) has a proprietary fire alarm system that is referred to as a 'campus' system supplied by SimplexGrinnell. Future projects at the Airport would add additional nodes (fire alarm panels) to the existing 'network' fire alarm system that protects and supervises all Airport buildings and facilities. In order to accomplish a seamless system, each node must freely communicate with other nodes as well as the head end monitoring point located in the dispatch center in the Combined Communication and Control Center. This requires not only software but field device (detectors and alarms) capability. It is only through this direct line communication that a timely dispatch signal and emergency personnel are notified of a fire alarm condition.

   The fire alarm system interfaces with computer aided dispatch (CAD) software. CAD provides the fire dispatcher with the correct response teams appropriate to the condition and location as well as displaying graphically the location and actual floor plan of the protected premises. As such, the ease of use for the dispatcher and the 'dove-tail' with the existing campus fire alarm system, plus the CAD information are the critical features of the system that must be maintained through this sole source equipment and software.

   In addition, the Cooper Wheelock product line for speakers and strobes are compatible with the SimplexGrinnell fire alarm system to communicate audible and visual signals.

2. **Why is no other provider suitable for your requirements?**

   The Airport's existing Fire Alarm System is Simplex/Grinnell. This is a proprietary system, in that it serves contiguous Airport properties from a supervisory station located in the dispatch center at the Airport. The fire panel and system software are proprietary with no functional alternative available. The field devices (e.g., detectors and alarms) are required to be compatible with the SimplexGrinnell system in order to maintain system reliability and integrity. The Cooper Wheelock speakers and strobes are also compatible with the SimplexGrinnell system to maintain functionality of audible and visual signals.

2012-016

3. **Are there unique skills or knowledge required for SimplexGrinnell Fire Alarm Systems and Cooper Wheelock products?**

   No, Airport dispatch center staff have already been trained in the current SimplexGrinnell and Cooper Wheelock system requirements.

4. **Are there required mandates from the Federal or State Government?**

   No.

5. **What are the consequences of not approving the sole source request?**

   If the SimplexGrinnell Fire Alarm Systems were not approved as a sole source then the Airport would need to develop a parallel Fire Alarm System supporting the successful bidder. This would require additional operational and maintenance costs for the parallel system, as well as additional training for maintenance and dispatch staff. In addition, the CAD system would also have to be reconfigured to support the parallel system.

6. **What is the estimated cost of this request?**

   An Engineer's Estimate will be prepared for each project to determine the estimated cost prior to competitively bidding the project.

7. **Is this request a one-time requirement?**

   No. This is a request for fire alarm system needs of all future anticipated projects at Seattle-Tacoma International Airport for the next five (5) years, or until the fire alarm system is upgraded, whichever comes first. See attached System Area Map.

M: attach. DKS

2012-016

Certification that the preparer(s) making this recommendation to the Port Project Manager has/have no financial or other beneficial interest in SimplexGrinnell or Cooper Wheelock.

The Port of Seattle (employees listed below) warrant and covenant that they have no direct or indirect pecuniary or proprietary interest, and that they shall not acquire any such interest which conflicts in a manner or degree with the performances of the work and services required to complete this request. In the event that the Port or any of its Consultants or its agents, employees or hereafter acquires such a conflict of interest, the Port shall immediately disclose such interest to the Port of Seattle Legal Department, and take action immediately to eliminate the conflict. In addition, with my signature below I further state that I am not nor will I within 18 months of this justification seek employment with this firm. I hold that the information provided is true and complete to the best of my knowledge under the penalties of perjury in the State of Washington.

Dave Soike
Director, AV Facilities & Capital Program
6-26-12
Date

Jeff Ganshes
Battalion Chief/Fire Marshall, AV/Fire
6-28-12
Date

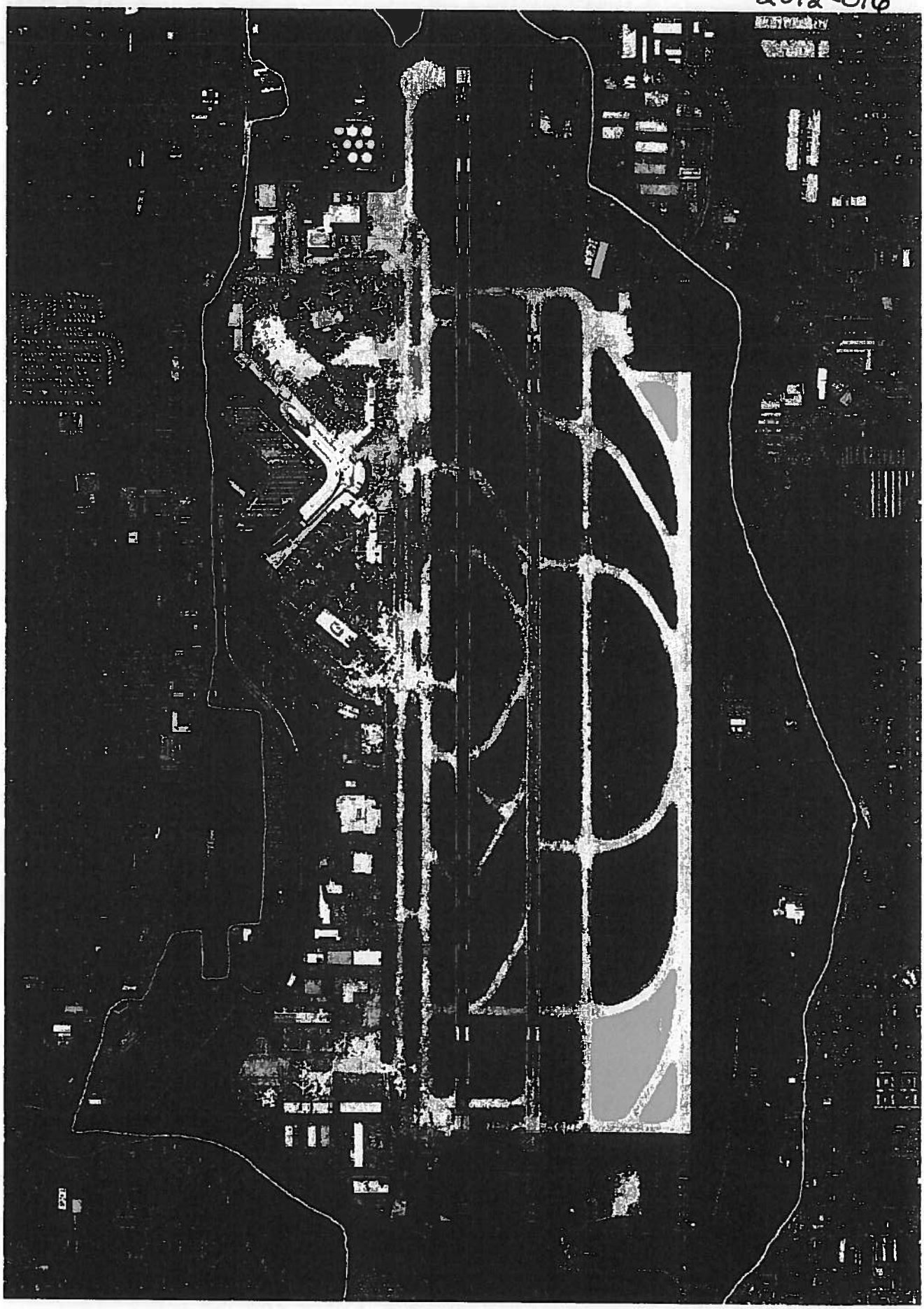
Routing/Approvals

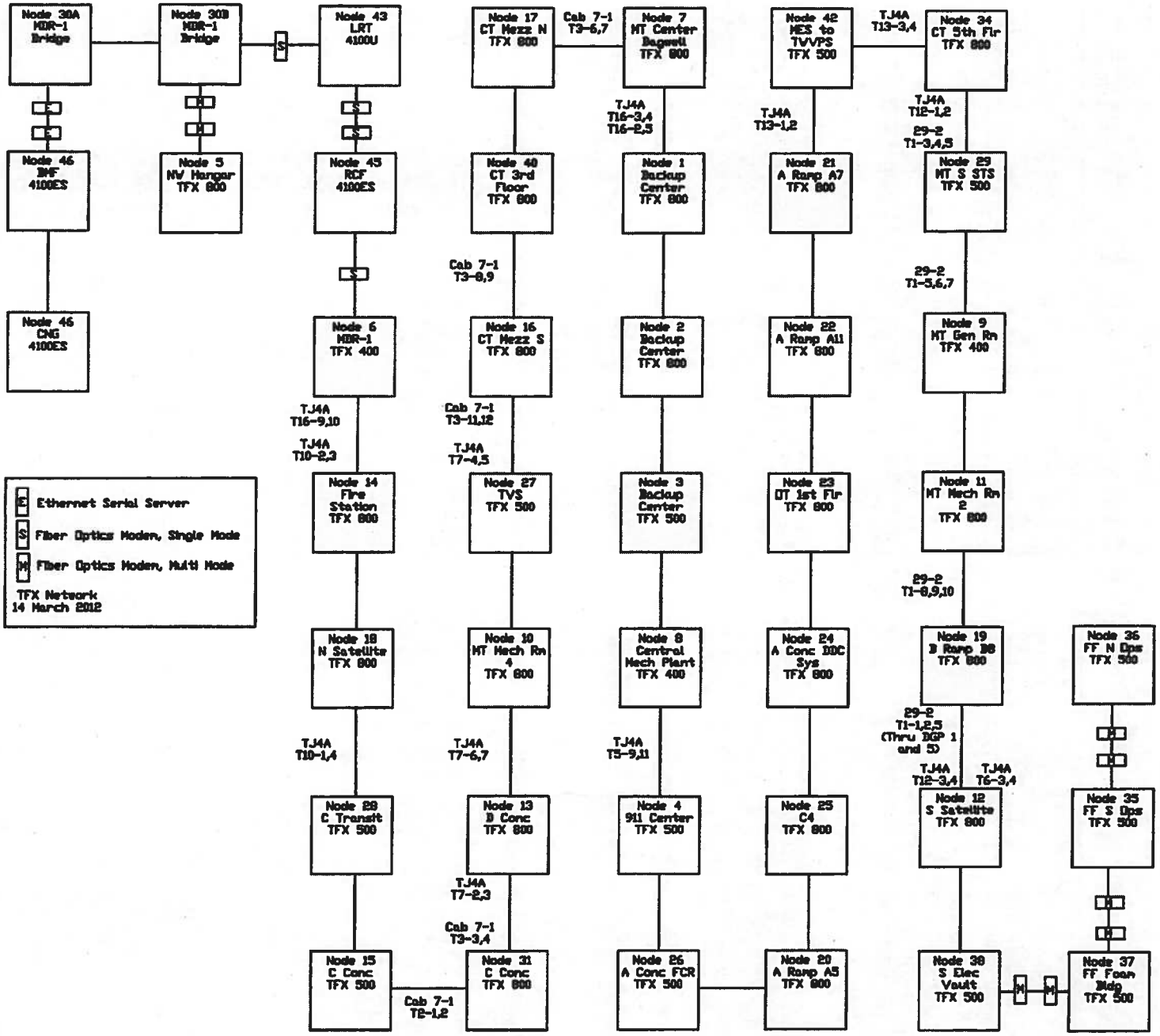
Nora Huey
Director, CPO
7-3-12
Date

Craig Watson
General Counsel
7/3/12
Date

Ralph H. Graves
Managing Director, CDD
7/3/12
Date

2012-016




Node 30A MDR-1 Bridge
Node 30B MDR-1 Bridge
Node 43 LRT 4100U
Node 17 CT Mezz N TFX 800
Cab 7-1 T3-6,7
Node 7 MT Center Bagwell TFX 800
Node 42 MES to TVVPS TFX 500
TJ4A T13-3,4
Node 34 CT 5th Flr TFX 800
Node 46 IMF 4100ES
Node 5 NV Hangar TFX 800
Node 45 RCF 4100ES
Node 40 CT 3rd Floor TFX 800
TJ4A T16-3,4 T16-2,3
Node 1 Backup Center TFX 800
TJ4A T13-1,2
Node 21 A Ramp A7 TFX 800
TJ4A T12-1,2
29-2 T1-3,4,5
Node 29 MT S STS TFX 500
Node 46 CNG 4100ES
Node 6 MDR-1 TFX 400
Cab 7-1 T3-8,9
Node 16 CT Mezz S TFX 800
Node 2 Backup Center TFX 800
Node 22 A Ramp A11 TFX 800
29-2 T1-5,6,7
Node 9 MT Gen Rm TFX 400
TJ4A T16-9,10
Cab 7-1 T3-11,12
TJ4A T10-2,3
TJ4A T7-4,5
Node 14 Fire Station TFX 800
Node 27 TVS TFX 500
Node 3 Backup Center TFX 500
Node 23 CT 1st Flr TFX 800
Node 11 MT Mech Rm 2 TFX 800
29-2 T1-8,9,10
Node 18 N Satellite TFX 800
Node 10 MT Mech Rm 4 TFX 800
Node 8 Central Mech Plant TFX 400
Node 24 A Conc IDC Sys TFX 800
Node 19 B Ramp B8 TFX 800
Node 36 FF N Ops TFX 500
29-2 T1-1,2,5 (Thru DGP 1 and 5)
TJ4A T10-1,4
TJ4A T7-6,7
TJ4A T5-9,11
TJ4A T12-3,4
TJ4A T6-3,4
Node 28 C Transit TFX 500
Node 13 B Conc TFX 800
Node 4 911 Center TFX 500
Node 25 C4 TFX 800
Node 12 S Satellite TFX 800
Node 35 FF S Ops TFX 500
TJ4A T7-2,3
Cab 7-1 T3-3,4
Node 15 C Conc TFX 500
Node 31 C Conc TFX 800
Node 26 A Conc FCR TFX 500
Node 20 A Ramp A5 TFX 800
Node 38 S Elec Vault TFX 500
Node 37 FF Foam Bldg TFX 500
Cab 7-1 T8-1,2
E Ethernet Serial Server
S Fiber Optics Modem, Single Mode
M Fiber Optics Modem, Multi Mode
TFX Network
14 March 2012

2012-016

Sole Source - Flush Fire Hydrant Vault and Access Hatch

Competition Waiver #2021-007

Memo

To: Dave Soike, Chief Operating Officer

From: David Baisch, Sr. Civil Engineer, Aviation Facilities and Infrastructure DB
Paul Shen, Civil Engineering Manager, Aviation Facilities and Infrastructure POS
Mike Tasker, Sr. Manager, Aviation Facilities and Infrastructure MT

cc: Eileen Francisco, Director Aviation Facilities and Capital Programs
Jeff Nelson, Sr. Fire Protection Engineer, Airport Fire Department

Date: May 3, 2021

Re: CPO-6 Competition Waiver for Cavotec Dabico Flush Fire Hydrant Vault and Access Hatch

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REQUEST:

We request a sole source CPO-6 competition waiver authorizing Facilities and Infrastructure (F&I) to standardize and require all construction projects to specify and provide a Cavotec Flush Hydrant Vault, model D38WP-FWEB-30D, with a Cavotec Dabico 200,000-lb rated access hatch for all below grade fire hydrant vaults called flush fire hydrants used at Seattle-Tacoma International Airport.

PERIOD:

We request this sole manufactured product waiver be approved for ten years, or until the Port of Seattle determines otherwise, whichever comes first.

BACKGROUND:

Flush fire hydrant underground vaults and access hatches located in the Aircraft Operations Area (AOA) must have an airport extra heavy-duty load rating designed to withstand a minimum 200,000-lb wheel load to ensure safety of aircraft and passengers. Apart from loading requirements, the hatch must have a latched closing mechanism to prevent unintentional openings, tool-less entry and lift assist to minimize fire department response time during emergencies as required by the Airport Fire Department (AFD) as the Authority Having Jurisdiction (AHJ). To optimize the flush hydrant lifespan and functionality, the vault and access hatch must also be waterproof.

This request seeks to obtain approval of a sole manufacturer that has been found to meet all the requirements for a flush hydrant vault and hatch, which is manufactured by Cavotec.

Flush hydrant access hatches from other manufacturers were installed on the NSAT project. The Contractor installed what they believed was an equal product prior to acceptance by F&I due to an accelerated schedule and alternative delivery method of the project. It was cost and schedule prohibitive to replace the hatches after installation as they are long lead items and are cast into the concrete pavement, repaving effects gate closures and airport operations. In order for the project to meet the tool-less entry AHJ requirement, the Contractor had to custom field modify the hatches, work that was not warrantied by the product manufacturer. These modifications have already proven to be problematic due to the repeated traffic loading, the hand lever latch mechanisms have already rattled apart. It is now being addressed as a Contractor's general warranty of work issue that has yet to be addressed. These types of problems can create issues with life safety, product durability and reliability, as well as maintenance and repair of a custom product.

JUSTIFICATION:

To meet safety and sustainability standards of airport application, the access hatch for the flush hydrant must meet five main requirements:

1) Size: Minimum 38" x 38" clear opening
2) Load Rating Requirements: Tested to AASHTO M306 proof load of 200,000 lbs.
3) Latched closed mechanism with hand lever or other tool-less entry to open
4) Hinged with Lift Assist Opening, maximum 35 lbs. lift to open and close
5) Waterproof gasketed

The F&I Civil Engineering group performed our own product research and contacted manufacturers and suppliers to determine what standard products were available that would meet the requirements. We found that the Cavotec Dabico is the only manufacturer that meets the product requirements for a flush hydrant vault and hatch. The following manufacturers were researched and results noted below:

- Cavotec Dabico – aluminum access hatch – meets all requirements
- EJ (East Jordan Iron Works) - Ductile Iron Access Hatch – tool-less entry not available
- Neenah Foundary (NFCO) – Ductile Iron Access Hatch – tool-less entry not available
- Bilco – aluminum access hatch – Does not meet load rating requirements
- LW Products - aluminum access hatch - Does not meet load rating requirements
- Olympic Foundry – no hinged access hatches

An independent third party civil engineering consulting firm was then tasked with verifying what products where available that met the requirements, their findings were the same as F&I's validating the conclusion.

A CPO-6 Competition Waiver for the Cavotec Dabico Flush Fire Hydrant Vault and Access Hatch is justified under the following policy:

- CPO-6, 4.2.1.4 "Products or services where only one firm meets the required certifications or statutory requirements."

Competition Waiver #2021-007

In addition, standardizing this product will greatly increase aviation maintenance's ability to minimize and stock spare parts as well as provide repair training and maintenance procedures for a single product. This will also enable the Fire Department to better train for operation of the flush hydrant and access hatch and respond to emergencies.

REQUESTED ACTION:

We request this sole source manufacturer waiver for a Cavotec Flush hydrant vault, model D38WP-FWEB-30D, with a Cavotec Dabico 200,000-lb rated hatch be approved for ten years, or until Port of Seattle determines otherwise, whichever comes first.

CONCURRENCE WITH EXEMPTION FROM COMPETITION:

Nora Huey
Director Central Procurement Office

7/28/2021
Date

Pete Ramels
General Counsel

08/16/2021
Date

APPROVAL:

Dave Soike
Chief Operating Officer

08/17/2021
Date

QUESTIONAIRE:

1. **How was it determined that the product is a sole manufacturer?**
    a. Multiple manufacturers were researched and contacted to find similar products that meet specific port needs, no other product met all the requirements for size, loading capacity, waterproof, latch with tool less entry, and lift assist.
2. **Why is no other product suitable for your requirements?**
    a. Other products lacked one or more of the following requirements: Size, loading capacity, waterproof, tool-less entry (hand lever etc.), and lift assist. Three manufacturers were EJCO, LW Products, and Neenah Foundry. EJCO has a similar hatch but the size is not large enough (EJCO has a 36"x36", 38"x38" is required), is not tool less entry (bolt down or cam-lock with key are only options), or waterproof. LW Products has a similar hatch with a hand lever latch opener, but the hatch is not rated for aircraft loading of 200,000-lb and is not waterproof. Neenah Foundry has a similar product but is not tool less entry or waterproof.
3. **Are there unique skills or knowledge required for the system?**
    a. No
4. **Mandate from Federal or State Government required?**
    a. No, however FAA does require a min. load rating for structures on the airfield.
5. **What are the consequences of not approving the sole manufacturer request?**
    a. The installed flush hydrant hatches and vaults might not
        i. meet aircraft loading resulting in infrastructure failure or aircraft damage.
        ii. have a hatch size not allowing adequate access to the fire hydrant during a emergency response.
        iii. have a lid latch which would prevent the lid from unplanned opening.
        iv. have toolless entry resulting in prolonged emergency response times.
        v. be waterproof to prevent corrosion of the system that could prevent the lid from opening during an emergency response.
        vi. have a lift assist resulting in prolonged emergency response times.
6. **What is the estimated cost of this request?**
    a. $23,000 per vault/hatch assembly.
7. **How was the cost determined to be reasonable?**
    a. Similar size, type, and capacity products that do not meet specification have slightly lower costs, and the Cavotec vault and hatch meets all specifications with only a slightly higher cost.
8. **Is this request a one-time requirement?**
    a. No, will be a standard for all projects requiring a flush hydrant vault/hatch assembly until other similar products are available.
9. **What other costs are incurred from this request?**
    a. None.
10. **What other methods of fulfilling this requirement have been explored?**
    a. Contacting other manufacturers to see if they meet port requirements for a vault/hatch assembly.

11. Certification that the preparer(s) making this recommendation to the Port Project Manager has/have no financial or other beneficial interest in Cavotec products.

The Port of Seattle (Employees listed below) warrant and covenant that they have no direct or indirect pecuniary or proprietary interest, and that they shall not acquire any such interest which conflicts in any manner or degree with the performances of the work and services required to complete this Small Capital project. In the event that the Port or any of its Consultants or its agents, employees or representatives hereafter acquires such a conflict of interest, the Port shall immediately disclose such interest to the Port of Seattle Legal Department, and take action immediately to eliminate the conflict. In addition, with my signature below I further state that I am not nor will I within 18 months of this justification seek employment with this firm. I hold that the information provided is true and complete to the best of my knowledge under the penalties of perjury in the State of Washington.

3/11/2021

David Baisch
Sr. Civil Engineer
Aviation Facilities & Infrastructure
Seattle-Tacoma International Airport

Date

Signature: David Baisch
David Baisch (Apr 28, 2021 15:22 PDT)
Email: baisch.d@portseattle.org

Signature: Mike Tasker
Mike Tasker (Apr 28, 2021 15:24 PDT)
Email: tasker.m@portseattle.org

Signature: Paul Shen
Paul Shen (Apr 28, 2021 15:26 PDT)
Email: shen.p@portseattle.org

----End of Document----

CAVOTEC

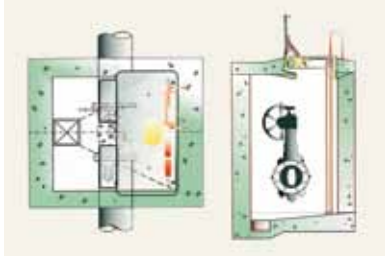
datasheet

DAS-CD-01-US

D-38
Vault Access Cover Assembly

D-741 Vault Access Cover (1905mm by 1041mm opening)

D-38 Vault Access Cover (965mm by 965mm opening)



Typical Valve Chamber (Plan and Section View)

GENERAL DESCRIPTION

Vault Access Covers provide easy access to a concrete vaults for operational maintenance requirements of In-Ground Pit Systems. The Vault Access Covers are dimensioned for easy entrance and exit of personnel. This allows for easier routine maintenance access or emergency access for confined entry requirements (D-38 = 38”[965]x38”[965] opening, D-725 = 75”[1905]x25”[635] opening, D-741 = 75”[1905]x41”[1041] opening), as well as equipment operational access (D-18, 24, 40 and 61).

Thanks to its innovative design Cavotec Dabico Vault Access Covers have a waterproof cover and frame preventing fluids and dirt/debris from entering the vault/pit area, complete with a 12kg lift weight. Cavotec Dabico’s patented torsion spring actuated covers maximize the available workspace within the Pit Assembly.

BENEFITS

- Easy operation and maintenance access with patented designed waterproof cover door. This door design has been aircraft load-rated and can be operated with one hand. It also features a fail-safe cover, an optional access ladder/handrail and a step-down platform.
- Reduction in operational and maintenance cost with the waterproof cover (optional) which reduces the need for a drainage system and/or frequency of pit sumping.
- Improved operational safety thanks to automatic cover latches which eliminate jet blast and vehicle-bounce cover openings.
- Easier Pit Assembly location and identification due to a special abrasion, corrosion and chemical resistant color-coded cover service lettering inserts.
- White pigmented GRP with internal gel-coat finish (US-non standard) ensures maximum reflection of light facilitating maintenance and cleaning inside the Pit Assembly.
- Enhanced operational safety with specifically designed orange safety cover panels which alert personnel to open covers.

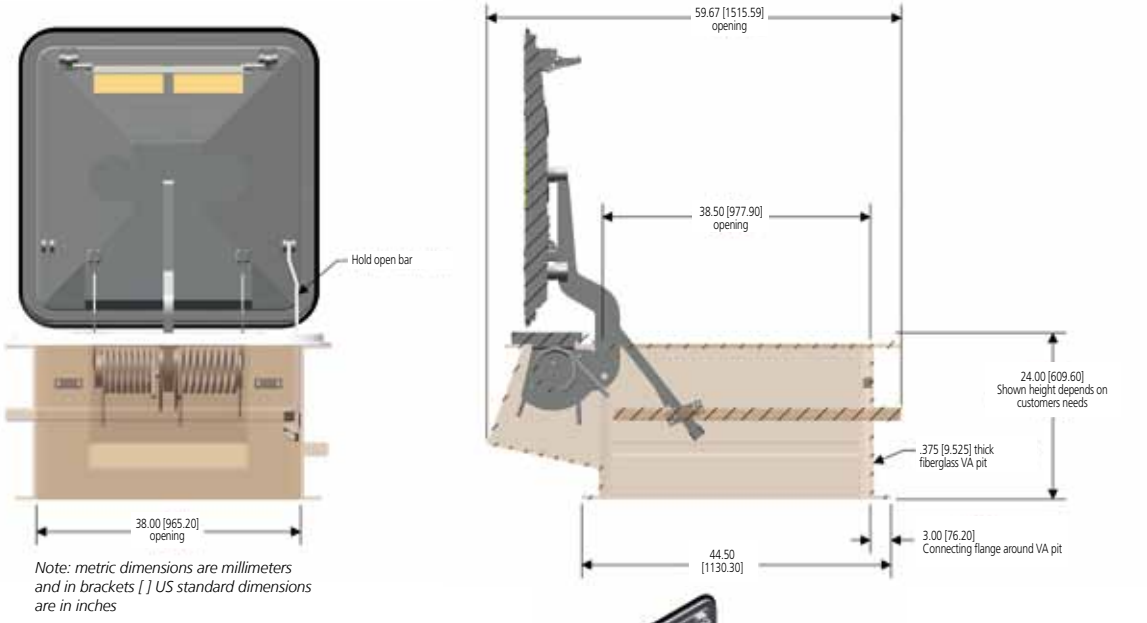
DABICO
A member of the Cavotec Group

datasheet

OTHER CAVOTEC DABICO PRODUCTS

- Commercial Fuel Hydrant Pit Assembly
- Military Fuel Hydrant Pit Assembly
- Low Point Drain Pit Assembly
- Surge Suppressor Pit Assembly
- Isolation Valve Pit Assembly
- Vault Access Cover Assemblies (for Valve Vaults)
- Rolling Covers
- Rolling Cover Pit Assembly
- Off-Apron Pit Assembly
- Test Well Pit Assembly
- Leak Detection Pit Assembly

TECHNICAL DRAWING D-38



Note: metric dimensions are millimeters and in brackets [ ] US standard dimensions are in inches

For further information please visit www.cavotec.com
Disclaimer: specifications are subject to change without notice

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